

TURNOVER® Lifecycle Manager

User Guide

Publication number

TN4U-2100-00 (January 2021)

Information in this publication is subject to change. Changes will be published in new editions or technical newsletters.

Copyright notice

TURNOVER® Lifecycle Manager (the Programs and associated materials) is a proprietary product of SoftLanding Systems, Inc. – a division of UNICOM Global. The Programs have been provided pursuant to License Agreement containing restrictions on their use. The programs and associated materials contain valuable trade secrets and proprietary information of SoftLanding Systems, Inc. and are protected by United States Federal and non-United States copyright laws. The Programs and associated materials may not be reproduced, copied, changed, stored, disclosed to third parties, and distributed in any form or media (including but not limited to copies on magnetic media) without the express prior written permission of SoftLanding Systems, Inc., 1 Vose Farm Road, Suite 110, Peterborough, NH 03458, USA.

TURNOVER® Lifecycle Manager (the Programs and associated materials) is a proprietary product of UNICOM Systems, Inc. – a division of UNICOM Global. The Programs have been provided pursuant to License Agreement containing restrictions on their use. The programs and associated materials contain valuable trade secrets and proprietary information of UNICOM Systems, Inc. and are protected by United States Federal and non-United States copyright laws. The Programs and associated materials may not be reproduced, copied, changed, stored, disclosed to third parties, and distributed in any form or media (including but not limited to copies on magnetic media) without the express prior written permission of UNICOM Systems, Inc., UNICOM Plaza Suite 310, 15535 San Fernando Mission Blvd., Mission Hills, CA 91345 USA.

TURNOVER® Lifecycle Manager

© Copyright 2005-2021 All Rights Reserved. Softlanding Inc. – a division of UNICOM Global.

No part of this Program may be reproduced in any form or by electronic means, including the use of information storage and retrieval systems, without the express prior written consent and authorization of SoftLanding Systems, Inc.

No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, without prior written permission from SoftLanding Systems, Inc.

© Copyright 2005-2021 All Rights Reserved. UNICOM Systems, Inc. – a division of UNICOM Global.

No part of this Program may be reproduced in any form or by electronic means, including the use of information storage and retrieval systems, without the express prior written consent and authorization of UNICOM Systems, Inc.

No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, without prior written permission from UNICOM Systems, Inc.

Disclaimer

We cannot guarantee freedom from, or assume any responsibility or liability for technical inaccuracies or typographical errors. The information herein is furnished for informational use only and should not be construed as a commitment by SoftLanding Systems, Inc. – a division of UNICOM Global.

Trademarks

The following are trademarks or registered trademarks of Macro 4 Limited, SoftLanding Systems, Inc. and/or of UNICOM Systems, Inc. in the United States and/or other jurisdictions worldwide: UNICOM, UNICOM Systems, Macro 4, SoftLanding, AUTOMON, CENTRAL, EXPRESSDESK, SUPERMON, TURNOVER.

For a list of third-party products, companies, trademarks, and registered trademarks that might be referenced in this manual, see www.softlanding.com/trademarks.

Contents

1	TURNOVER® Lifecycle Manager User Guide	8
2	Working with application definitions	9
	Work with Application Definition panel	12
	Define the Application panel	14
3	Setting up programmer profiles	48
4	Authorizing users to TURNOVER® Lifecycle Manager	50
	Authorizing users	50
	Authorizing users to applications, projects, or Wisedesk trees	53
	Deleting a user from TURNOVER® Lifecycle Manager	54
5	Working with object history	55
	Displaying object history	55
	Viewing archived information	70
6	Checking source in and out	72
	How TURNOVER® Lifecycle Manager finds the source to be checked out	72
	Using the Checkout/Check-in menu	73
	Viewing checked out objects or members	74
	Checking in source for production objects	76
	Checking in source members	76
	Checking out source by object or member	77
	Working with IFS objects	78
	Working with object references	80
	Accessing the Programmer Worklist Manager (PWM)	82
	Working with *DATA definitions	83
	Check out S/36 menu	84
	Check out S/36 DFU	85
	Checking out in a multi-level environment	85
	Checking out in a vendor environment	86
	Multiple checkout feature	87
	Checking out message IDs	88
	Managing message IDs on your programmer worklist	90

7 Working with forms	91
Creating forms	92
Adding forms	107
Working with forms	119
8 Submitting forms to run	142
Submitting a form to run	142
Scheduling form jobs	148
Submitting a group of forms to run together	150
Submitting an error-check job	152
Creating a recovery form	153
Working with form group jobs	154
Restarting a failed job	157
9 Utility menu	159
Deleting forms	159
Working with source archive files	160
Managing type code definitions	162
Setting global defaults	169
Displaying the current release level	174
Working with TURNOVER® Lifecycle Manager exits	174
Reorganizing TURNOVER® Lifecycle Manager files	175
Working with archived objects	176
Changing the source compare program	178
Setting defaults for the Programmer Worklist	178
Working with the type code conversion table	179
Saving an IFS archive directory	182
10 Setting up additional TURNOVER® Lifecycle Manager environments	184
Preparing the base TURNOVER® Lifecycle Manager environment	184
Creating the additional environments	185
11 Exits and APIs	190
Exits	191
APIs	196
12 Working with projects and tasks	201
Helpdesk view	203
User entry view	204
Coordinator's view	206
Project leader's and developer's view	209
Time reporting	209
Auditing task changes	210
How projects relate to software changes	210
Authorizing users to TURNOVER® Lifecycle Manager Projects	211
Authorizing users to projects	212
Working with projects	213

Creating a Helpdesk project	227
TURNOVER® Lifecycle Manager Projects views	229
Working with tasks and subtasks	246
Task escalation processing	250
Working with TURNOVER® Lifecycle Manager Projects control files	259
Recording time on a timesheet	279
Programmer Worklist Manager (PWM)	280
Project reports	294
Wisedesk	294
13 Reports	309
Application reports	310
Project reports	316
History reports	330
Distribution reports	337
Miscellaneous reports	339
Log report	340
14 Reports descriptions	342
SVN Metrics report	345
SVN Repository Metrics report	346
Weekly SVN Metrics report	347
Weekly SVN Repository Metrics report	348
Key CM Indicators report	349
Weekly CM Indicators report	351
Form report	352
Forms List report	352
Daily Tasks by Project report	353
Monthly Tasks by Project report	353
Weekly Tasks by Project report	354
Daily Tasks by Company report	355
Monthly Tasks by Company report	355
Time by Company – Top 20 report	356
Weekly Tasks by Company report	357
Resource Time by Day report	357
Resource Time by Month report	358
Resource Time by Week report	359
Daily Tasks by Resource report	359
Monthly Tasks by Resource report	360
Weekly Tasks by Resource report	361
Daily Resource Time report	361
Monthly Resource Time report	362
Weekly Resource Time report	363
Actual End Date Exceeds Planned report	363
Monthly New Tasks Completed report	364
Monthly Tasks New vs Completed report	365
Monthly Tasks Percent Complete report	366

Oldest Open Tasks report	367
Task Information report	368
Task Status over Limit report	368
Task Throughput report	369
Weekly Average Time to Completion report	370
15 Creating custom reports	371
TURNOVER® Lifecycle Manager physical files	371
TURNOVER® Lifecycle Manager file definitions	373
Example custom reports	383
16 Distributing changes to production computers	387
Distribution overview	387
Setting up systems for distribution	396
Distributing forms manually	413
Distributing forms automatically	417
Updating form distribution status	419
Using the form log	421
How distribution works	425
17 Configuring alternative network distribution methods	433
TCP/IP support	433
Using SNADS	433
Using a different network distribution method	435
Configuring for FTP	436
Configuring for Net/Wrk400	439
Configuring for CONNECT:Direct	440
18 Distributing changes to logical partitions	442
19 Configuring for direct FTP distribution	447
Creating a TURNOVER® Lifecycle Manager system definition for the target server	448
Configuring your application distribution defaults for *IFSFTP distribution	452
Testing direct FTP distribution	457
Recovery after full or partial distribution	461
Reference information	461
20 Distributing to virtual systems	463
1: Create physical system definitions	464
2: Create virtual system definitions	465
3: Distribute the physical computer's system definition	467
4: Create application definition for the physical system	467
5: Distribute the application definition for the physical system	468
6: Create virtual system definitions	468
7: Create application definitions for virtual systems	468
8: Add control records to the virtual systems file	469
9: Install exit programs on the remote computer	472
10: Set the authority for the distributing user	475

Form creation for virtual systems on the production computer	475
Partial distributions and re-distributions	477
21 Saving and restoring to another computer	478
22 Distributing changes to CD or tape	480
Distributing to CD	480
Distributing to tape	481
Using LODRUN to receive tape distributions	481
23 Distribution queues	482
Configuration	482
Managing the distribution queues	486
Changes to TURNOVER® Lifecycle Manager processing	487
Distributing message IDs	488
24 Effect of QALWOBJRST on distribution of program objects	489
25 Managing ASI software with TURNOVER® Lifecycle Manager	490
How TURNOVER® Lifecycle Manager manages ASI components	491
TURNOVER® Lifecycle Manager type codes for ASI	491
Worklist support for ASI objects	492

1 **TURNOVER[®] Lifecycle Manager User Guide**

This manual describes how to use the TURNOVER[®] Lifecycle Manager user interface on an IBM i computer. It assumes that you are familiar with:

- the IBM i operating system
- security administration
- the organization of your company's applications and databases
- Command Language (CL).

2 Working with application definitions

Application definitions tell TURNOVER® Lifecycle Manager about your software development, test and production environments.

You specify defaults to be used when checking out objects and source and when working with Projects and TURNOVER® Lifecycle Manager forms. For example, you can specify libraries; enforce a naming standard; and define rules about how to promote objects. When you create an application definition, TURNOVER® Lifecycle Manager applies the system defaults to it (except when you create an application definition by copying one.)

Review the settings of the defaults, and then change them as required. The more representative of your environments they are, the fewer changes you have to make when defining your applications later.

To design and maintain application definitions, use the TURNOVER® Lifecycle Manager Administrator module and its Application Designer feature.

Before you begin

- 1 Create a list of all of your software applications and identify all libraries associated with each application environment (QA, Production, and so on):
 - Where is the source stored?
 - Where are the data files?
 - Where are the programs and related objects?
 - Are any of the items stored in secured libraries (for example, vendor source) to prevent them from being changed?
- 2 Next, diagram your environments on paper.
- 3 Then copy one of the models provided with TURNOVER® Lifecycle Manager and modify it to reflect your diagram.

For more information, see the 'Application Planning' section of the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Getting started with application definitions

- 1 Sign on as **TURNOVER**, or use a profile that is authorized to work with application definitions.
- 2 Do one of the following:
 - On the **TURNOVER®** Lifecycle Manager main menu, select option 1 (Work with application definitions), and then press Enter.
 - Type the **WRKAPPDFN** command on a **TURNOVER®** Lifecycle Manager command line.

The Work with Application Definitions panel appears.

Work with Application Definitions panel

The Work with Application Definitions panel enables you to define and maintain application definitions. It displays application definitions to which you have authority to any level, or for applications that have no levels yet.

MM/DD/YY	Work with Application Definitions				Your Company Inc. SYSTEM: YOURSYS	
Position to . . . Application: ____ (Home) Rel: ____ Ver: ____						
Fltr: ____						
Type options (and Application), press Enter.						
1=Create 2=Change 3=Copy 4=Delete 5=View 6=Print 7=Rename						
14=Create missing items 19=Application relations . . .						
Opt	Appl	Rel	Ver	Description	Emer.	Relations
____	____	____	____	System-Wide Defaults	N	
____	AP			Accounts Payable - TurnOver Tutorial	N	
____	VNDF			Vendor Base with Fixes and Mods	N	
____	VNDR			Vendor Base with Mods	N	
____	YCAP	1		Your Company's Software Application	N	
____	01M			Model 1	N	
____	02M			Model 2	N	
____	03M			Model 3	N	
____	04M			Model 4	N	
____	05M			Model 5	N	
						More...
F3=Exit F5=Refresh F6=Create application definition F12=Cancel						
F14=WRKSBJOB F21=Command line F23=More options						

On this panel, you can work with both system-wide and application definition defaults. You can use the system-wide defaults as a base from which to create a new application entry.

- 1 Type the application, release, or version code associated with the application definition with which you want to work, and then press Enter.

TURNOVER® Lifecycle Manager moves the cursor to the application.
- 2 Select that application definition with the options described below.

Filtering the list

To filter the list of application definitions by application code, release, version, description, emergency setting, or application relationship, type an entry in one or more filter fields.

If you type a value in more than one field, TURNOVER® Lifecycle Manager displays only the definitions that meet *all* criteria specified.

Use * (asterisk) as a wildcard prefix or suffix to see all definitions with values that either contain or end the value. For example, to display only definitions that start with A, specify A*.

To	Do this
create a new application definition with no levels	Use option 1 (Create). You must add the levels before the application can be used.
change an application definition	Use option 2 (Change). This option also checks out the application. See 'Work with Application Definition panel' on page 12 .
create a new application definition by copying the selected one	Use option 3 (Copy). The Create Application Definition (CRTAPPDFN) panel appears.
delete an application definition	Use option 4 (Delete). The Delete an Application Definition panel appears, once for every level. You cannot delete an application if there are any forms, object history, or active checkout records for it. Check in all objects that are checked out and then purge the TURNOVER® Lifecycle Manager forms: specify Retain Object History of N on the Purge Forms panel. (See main menu option 8, then option 1.)
display information about an application's levels and defaults	Use option 5 (View) The View Application Definition panel appears.
print an application definition	Use option 6 (Print). See 'Print application definition' on page 310 .
rename an application definition	Use option 7 (Rename). Because the name includes the application release, version, and level, use *SAME if you are just changing the release, version, or level. TURNOVER® Lifecycle Manager updates all the related records (including forms, checkout records and object history) to the new application level code.
list the create commands for any libraries, source files, and reference objects that are missing from the selected application definition	Use option 14 (Create missing items).

To	Do this
change application relationships	Use option 19 (Application relations). See <i>'Application relationships panel' on page 46.</i>
specify the defaults for level n	Use option $2n$. See <i>'Define the Application panel' on page 14.</i> If the level does not exist, the Work with Application Definition panel appears.
display the defaults for level n	Use option $5n$. For example, for level 1, use 51. The Define the Application panel appears. You can view the defaults, but not change them. If the level does not exist, the Work with Application Definition panel appears.
create a new application definition from a model included with TURNOVER® Lifecycle Manager, or from an application you have already created.	Press F6. You are recommended to use the Application Designer feature in the TURNOVER® Lifecycle Manager Administrator module to design and maintain applications.
work with submitted jobs	Press F14. The Work with Submitted Jobs panel appears.
use the command line	Press F21.

Work with Application Definition panel

To work with a specific application definition and its levels, select the application definition with option 2 (Change) on the Work with Application Definitions panel.

The Work with Application Definition panel appears.

MM/DD/YY	Work with Application Definition		Your Company Inc.	
	Appl: AP	Rel: Ver:	SYSTEM: YOURSYS	
Description	Accounts Payable - TurnOver Tutorial			
Emergency	N			
Type options, press Enter.				
2=Change 3=Copy 4=Delete 5=View 6=Print 7=Rename 25=Deployment settings				
20=Sbm XRef 21=Lock/unlock 22=Distribute App 23=Sbm initial build . . .				
Deploy				
Opt	Lev	Description	Lock	XRef PC Objects
—	1	QA	N	Y N
—	2	Production	N	Y N
Bottom				
F3=Exit F5=Refresh F6=Create level F12=Cancel F14=WRKSBMJOB				
F16=User options F21=Command line F23=More options				

The panel displays the levels for the selected application definition. You can work with the defaults for these levels, and create new levels. If you have authority to update the highest unlocked level (Production) of the application, you can change the application description and emergency application flag.

To	Do this
submit a job to generate a cross-reference file for the application level	Use option 20.
	Before selecting this option, specify *TURNVER as the application's X-Ref method on the Application Defaults and Rules panel. (You do not need to do this if your application is using libraries that are already built into the cross-reference table.) This job is submitted on hold; release it when you want it to run.
lock the application to prevent anyone from entering or running a form for the application	Use option 21.
unlock a locked application	Use option 21 again.
distribute the application definition to production (remote) computers using the Remote Configuration Wizard=	Use option 22.
	For more information, see 'Distributing changes to production computers' on page 387 .

To	Do this
submit a job to load the TURNOVER® Lifecycle Manager object history file with initial entries for the application and level	Use option 23. TURNOVER® Lifecycle Manager writes a record for each object in the designated libraries for an application in the object history and audit database, and 'stamps' version information into each object's description. The status of each entry is <code>INITIAL</code> . These are visible when you view object history and are used to detect unauthorized access to production objects and source. Do this for the highest unlocked level (Production) of the application. To update the audit file without creating an object history record for each object, see 'Audit Adjustments report' on page 316 .
create an application level	Press F6.
work with user-defined options	Press F16.

For information about options 8 – 19 and option 24, see ['Define the Application panel' on page 14](#).

Define the Application panel

The Define the Application panel enables you to set the defaults for an application.

To display this panel, select the application definition with options 2*n* or 5*n* (where *n* is the application level) on the Work with Application Definitions panel. (This panel also appears after you define library list objects during the CRTAPPDFN process.)

Define the Application		Your Company Inc.
Application . . . AP	QA	SYSTEM: YOURSYS
Release	Lock No	Action: CHANGE
Version	XRef *TURNVER	
Level 1	Emergency. . . No	
Type options, press Enter. Press F21 to select all.		
1=Select		
— Description		
— Application defaults and rules		
— Project defaults		
— Library defaults		
— Form defaults		
— Line defaults		
— Type codes		
— Authorized users		
— Distribution defaults		
— Approval list		
— Form completion messages		
— Application relations		
— Version and stamping defaults		
F3=Exit F12=Cancel		F18=Next level F21=Select all

This panel lists all the categories of application defaults. TURNOVER® Lifecycle Manager uses these defaults when building a programmer worklist, during checkout, and when building a TURNOVER® Lifecycle Manager form.

Press F17 and F18 on this panel to go to higher or lower levels of the application definition.

Together, these defaults are referred to as an *application definition*. Some of these defaults, such as **Application Distribution Defaults** and **Approval List**, are optional. Any defaults you have previously specified are marked with >.

Changes made to these defaults are not applied to any existing form or programmer worklist items unless you re-edit the item or recreate the TURNOVER® Lifecycle Manager form.

To	Do this
select a category	Use option 2.
work with all parts of the application definition	Press F21.

Category	Description
Description	Application descriptive name, owner information, and so on.
Application defaults and rules	Application archiving, cross-reference method and similar defaults and rules.
Project defaults	Control how project status updates are applied.
Library defaults	From and Target libraries for the application and level.
Form defaults	Job control and related TURNOVER® Lifecycle Manager form defaults.
Line defaults	Control how source and objects are promoted.
Type codes	The object type entries for the application, and specific type entry defaults.
Authorized users	The list of users who are authorized to work with an application.
Distribution defaults	The list of systems to which objects promoted to this application and level should be distributed.
Approval list	The list of users who must approve TURNOVER® Lifecycle Manager forms before they are run.
Form completion messages	Additional messages to send when a TURNOVER® Lifecycle Manager form completes.
Application relations	Associate other applications with this application.

Category	Description
Version and stamping defaults	Rules for stamping object descriptions with object version numbers, and similar data. See the section 'Managing Multiple Versions' in the <i>TURNOVER® Lifecycle Manager Administrator's Guide</i> .

Application Description panel

MM/DD/YY 10:15:22	Application Description	Your Company, Inc. SYSTEM: YOURSYS
Type choices, press Enter.		
Application code	<u>AP</u>	
Application description	<u>Test Application</u>	
Release		
Version		
Level	<u>1</u>	
Audit application	<u>W</u>	W,E,N
Use reference object for owner	<u>N</u>	Y,N
Application default owner	<u>QSECOFR</u>	Usrprf
Application administrator	<u>QSECOFR</u>	Usrprf
Allow only administrator to submit form . .	<u>N</u>	Y,N
Pre-run/Post-run command authority	<u>QSECOFR</u>	Usrprf
Application level permanently locked . . .	<u>N</u>	Y,N
F3=Exit F12=Cancel		

If a user other than QSECOFR is the owner of production objects for this application, change the **Application default owner**.

Pre-run/Post-run command authority indicates the user profile under whose authority pre- and post-run commands (that is, commands that can be added to a TURNOVER® Lifecycle Manager form) will be run.

Application Defaults and Rules panel

Defaults and rules can be defined differently for each level of an application. For example, when you promote to a production level, you may want to archive source. However, when promoting to a test level, you may not be as concerned about archiving source. There are numerous other defaults and rules that can also be set by level.

The models we provide with TURNOVER® Lifecycle Manager are probably set appropriately for your needs. However, you should review these settings to make sure they meet your requirements.

MM/DD/YY	Application Defaults and Rules				Your Company, Inc.
10:25:30	Application: AP	Rel:	Ver:	Lev: 1	SYSTEM: YOURSYS
Type choices, press Enter.					Field attributes R=Restrict, L=Lock
Source archive file *DEFAULT					
Library					
Archive objects <u>N</u> Y,N <u>L</u>					
IFS archive subdirectory *DEFAULT					
Field mapping for copy file command *MAP *DROP					
Compress out deleted records on copy file command . . *YES *YES,*NO					
Require checkout *YES *YES,*NO,*NATIVE					
Checkout error severity <u>E</u> W,E					
X-Ref method *TURNOVER *TURNOVER, *HAWKEYE, *ABSTRACT					
Update X-Ref on form run: *YES *YES, *NO					
X-Ref table <u>DEFAULT</u>					
Last X-Ref build <u>05/01/20</u>					
Last X-Ref form update . <u>05/05/20</u>					
F3=Exit F12=Cancel F19=Submit X-Ref build					

Source archive file and library

You can manage the contents of your online source archive files and store files offline. If you choose to archive offline, periodically use main menu option 8, then option 2, and then option 3=Save). Archived source can be retrieved any time and restored from the Work with Object History panel (main menu option 4). For more information, see ['Viewing archived information' on page 70](#).

Archive objects

You can also archive objects. Objects that are being deleted or replaced can be kept in a library associated with the TURNOVER® Lifecycle Manager job (identifiable by its form number). You can run a regular job to either save these objects offline, or delete them. If you save the objects using TURNOVER® Lifecycle Manager's save procedure, you can view, retrieve, and restore them later, if necessary (see the SAVARCO command or main menu option 8, then option 9 and 10, and also the SAVARSBM command).

Value	Description
L Lock the field	The value you provide cannot be overridden when entering a TURNOVER® Lifecycle Manager form.
R Restrict the field	The value you provide here can be changed when entering a form.
Blank	The value you provide is used as a default, but you can change it when entering a form.

IFS Archive subdirectory

For applications with IFS type codes. For more information, see 'Managing IFS Objects' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Require checkout

You will usually require that source be checked out and that new object names be identified to TURNOVER® Lifecycle Manager (reserved) before they are permitted to be promoted. There are some instances when this may not be the case, as when you are promoting source and objects created by CASE software.

X-Ref method

You can use TURNOVER® Lifecycle Manager's cross-reference system or interface to Hawkeye's Pathfinder or HelpSystems' Abstract.

To use TURNOVER® Lifecycle Manager's cross-referencing system, set **X-Ref method** to *TURNOVER. You will be asked to specify whether or not to update the cross-reference whenever a TURNOVER® Lifecycle Manager form is run and also to supply an **X-Ref table** name.

X-Ref table

When specifying the **X-Ref table** name to be used to contain the cross-reference table, consider whether or not your applications share resources such as files.

You might set up several different cross-reference tables, if your applications do not intersect (such as share common files).

If an application shares any programs or files from another application, they should share the same cross-reference table, otherwise they should be separate.

Using a single cross-reference file ensures that you are aware of the true impact of a change across application boundaries. For example, a change to a file shared by AP, AR, and Purchasing programs will be understood at the time you make the file change.

Project Defaults panel

MM/DD/YY	Project Defaults				Your Company, Inc.
10:30:20	Application: AP	Rel:	Ver:	Lev: 1	SYSTEM: YOURSYS
Type choices, press Enter.					
Require Project entry <u>Y</u>					Y/N
Project entry verification program . . . <u>TURRPROJ</u>					
Library <u>*LIBL</u>					
Update Project task status <u>Y</u>					Y/N
New Task Status					
When checked out <u>S</u>					STARTED F4=List
When form requires approval . . . <u>2</u>					APPROVE F4=List
When form completes <u>T</u>					TESTING F4=List
When form distributes <u>-</u>					F4=List
When remote confirms <u>-</u>					F4=List
Project Task Status field will be updated to these values when the related event has occurred.					
F3=Exit F4=List F12=Cancel					

Require Project entry

You can require that all changes be associated with a project task in the TURNOVER® Lifecycle Manager Project database by setting this parameter to `Y`. For more information, see [‘Working with projects and tasks’ on page 201](#).

You are recommended to set this parameter to `Y`. This ensures that all of your changes are properly documented in the Project system. In the Status code control file, you can specify whether or not to update the Actual Start or End dates when the task status is set to the corresponding value. For example, you would probably want to set the task’s **Date-started** when you check out objects. You might want to set the end date the task status changes to **Completed** (or **In Production**, if distributing to production computers).

If you specify **Require Project entry** as `Y`, but leave one or more of the status update conditions blank, then TURNOVER® Lifecycle Manager does not update the status at the corresponding point in the process.

Update Project task status

If you choose to link events that occur during object management to TURNOVER® Lifecycle Manager’s project system, you can also specify the value to which the task status code should be updated when key events, such as checkout or form completion, occur. (You can also define escalation processing for your project, to automatically generate email notices or run commands, for any of the status codes you choose here.) For example, in a two-level application, your task status might progress like this:

- When you check out of Production for the first time, change the task status to `Started`.
- When you build any form and require approval to run it, change the task status to `Approve`.
- When you run a level 1 form to promote to test libraries, change the task status to `In Testing`.
- If you check out of level 1 to do revisions, change the task status to `In Revision`.
- When you run a level 2 form to promote to production, change the form status to `Completed`.

Status changes linked to the completion of a form occur only if the form completes with a status of `xxx-OK`.

All objects related to a task should be promoted together on the same TURNOVER® Lifecycle Manager form; however, if more than one TURNOVER® Lifecycle Manager form references the same project task, the status is not updated until the final form has run, been distributed, or confirmed.

The TURNOVER® Lifecycle Manager log report indicates whether the project task status was updated and, if not, why not. For example, if more than one form exists with the same project task reference and that form status is `Ready`, you see a message that “TURNOVER® Lifecycle Manager did not update the project task status because another form is pending.” For a sample TURNOVER® Lifecycle Manager log report, see [‘Log report’ on page 340](#).

Library Defaults panel

From and **Target** libraries are specified for each application and level.

MM/DD/YY		Library Defaults				Your Company, Inc.	
10:40:45		Application: AP	Rel:	Ver:	Lev: 1	SYSTEM: YOURSYS	
Type choices, press Enter.							
						Field Attributes R=Restrict, L=Lock	
Data objects	Target library	ACPTTEST				<u>L</u>	
Other objects	Target library	ACPTTEST				<u>L</u>	
Source	Target library	ACPTTEST				<u>L</u>	
Data objects	From library	DEVTEST				<u>L</u>	
Other objects	From library	DEVTEST				<u>L</u>	
Source	From library	DEVTEST				<u>L</u>	
Bypass copy prompt when checking out source . . . N (Y,N)						—	
Data object name mask						AP% <u>L</u>	
Other object name mask						AP% <u>L</u>	
F3=Exit F8=IFS Path defaults F12=Cancel F19=Explode data libraries							

This panel shows the Target and From libraries for this application level.

Target libraries

The libraries into which source is copied and to which objects are moved or created when a promotion occurs. These libraries can also be specified by object type (see *TURNOVER® Lifecycle Manager type defaults' on page 39*).

From libraries

The libraries from which source or objects (or both) should be moved, and where test objects should be found. (Read the online Help for the values you can type here.) These can also be specified differently by object type (see *TURNOVER® Lifecycle Manager type defaults' on page 39*).

If any of the libraries do not exist, TURNOVER® Lifecycle Manager displays a message and lets you create the libraries. TURNOVER® Lifecycle Manager creates the libraries using the profile and authority of the application owner, with PUBLIC(*CHANGE) authority. You can also create these outside of TURNOVER® Lifecycle Manager with different ownership and authority.

Name masks

You can specify *name masks* to check new object names when you enter a TURNOVER® Lifecycle Manager form. You can also specify name masks for each object type in the application (see *TURNOVER® Lifecycle Manager type defaults' on page 39*).

Maintaining IFS path defaults

To manage path defaults for Integrated File System (IFS) object types, press F8. The Path Defaults panel appears.

For more information, see 'Managing IFS Objects' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Exploding data libraries

If you have files duplicated in more than one library for the application, press F19 (Explode data libraries). This would probably be the case if you have multiple divisional or company databases.

You can specify a list of libraries that contain duplicate copies of files so that TURNOVER® Lifecycle Manager can "explode" all data object types into all of the libraries in the list. In other words, when a file object is promoted, TURNOVER® Lifecycle Manager recreates it in each explode library. TURNOVER® Lifecycle Manager maintains multiple members and it copies data forward from each old file member to each new file member within each library.

You can specify any number of explode data object libraries. If you add libraries to the list, make sure that the data objects are duplicated into the new library. You can either duplicate an existing data library or create a library and duplicate each file object from an existing library into the new one.

When you select this option, the Maintain Data Explosion Table panel appears.

Maintain Data Explosion Table panel

MM/DD/YY	Maintain Data Explosion Table				Your Company, Inc.
10:52:35	Application: AP4	Rel:	Ver:	Lev: 2	
Type options, press Enter.					
2=Change 4=Delete					
	Library	Allow	Override	Override library list	
	TSTDATABAS	N			
F3=Exit F5=View 2 F6=Add library F12=Cancel					

If reference objects exist in the explode library, they are used to set creation parameters and object authority, where applicable, otherwise the regular reference objects in the primary data library of the application are used. For more information, see ['Reference objects' on page 37](#).

If you have a pre- or post-run command that you want to run for an object that resides in all explode libraries, use "&ALLTGT" (including the quotation) in the Library parameter of the pre- or post-run command string. (For more information, see 'Change process' in the *TURNOVER® Lifecycle Manager Administrator's Guide*).

If you specify a library list, TURNOVER® Lifecycle Manager temporarily sets the library list to that value before compiling the data object in the explode library. Whether or not you specify an override library list, TURNOVER® Lifecycle Manager always places the explode library at the top of the library list before compiling the data object in the explode library.

Leave the **Override library list** field blank if you want TURNOVER® Lifecycle Manager to set the library list to the application library list with the explode library that is at the top.

Allow override

Value	Description
Y	You can decide when creating a form whether or not to explode data objects to the library.
N	Data object changes are always exploded to the library.

Application libraries in the system library list

You are recommended *not* to put application libraries in your *system* library list for these reasons:

- You cannot test a change to a program that is in both a test library and a library in the system library list. The system always use the older program. You can manipulate the system library list using the `CHGSYSLIBL` command, but its unrestricted use is bad for security.
- The `ADDLIBL`, `CHGLIBL`, and `EDTLIBL` commands are more flexible, so why not use them? If the production library is in the system library list, a user cannot write their own version of a production program and slip it into the list in front of a production program of the same name. This does not solve the testing problem and, if users have access to the `CHGSYSLIBL` command, they can still subvert security. You should control access to the `CHGSYSLIBL` command.

If you *must* include application libraries in your system library list, delete them before entering TURNOVER® Lifecycle Manager so they do not interfere with TURNOVER® Lifecycle Manager's operations. Write an exit program to remove them from TURNOVER® Lifecycle Manager's promotion job library list when the form starts to run. For more information about exit programs, see *TURNOVER® Lifecycle Manager exits and APIs' on page 189*.

For more security recommendations, see 'Change process' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Form Defaults panel

Form defaults control how the promotion job (that is, the job that promotes the source and objects to the next test level or to Production) runs.

When you create a form, these defaults comprise the form header. Form defaults control items such as the job description and library list to use; where to put the output; and which recovery option to use.

MM/DD/YY 11:05:00	Form Defaults			Your Company Inc. SYSTEM: YOURSYS
	Application: 01M	Rel:	Ver:	Lev: 1
Type choices, press Enter.			Field Attributes R=Restrict, L=Lock	
Job Description	<u>QBATCH</u>	Name, *PGMR	<u>L</u>	
Library	<u>QGFL</u>	Name	<u>L</u>	
Library list name	<u>QBATCH</u>	Name, F4=List	<u>L</u>	
Error Recovery	<u>1</u>	1=Recover entire form and end job	<u>L</u>	
Threshold	<u> </u>	2=Recover object in error and end job		
		3=Attempt to continue starting at next object		
		4=Process remaining objects, then recover all		
Error check form	<u>*BATCH</u>	*BATCH, *INTER	—	
Form schedule time . . .	<u>*CURRENT</u>	*CURRENT, hhmmss		
Schedule elapsed action .	<u>*SBMRLS</u>	*NEXTDAY, *SBMHLD, *SBMRLS, *NOSBM		
Submit Form on hold . . .	<u>Y</u>	Y, N		
Submit Finalization . . .	<u>N</u>	Y, N	—	
Retain Form Log Reports .	<u>N</u>	Y, N		
Form Level Programmer . .	<u>*USRPRF</u>	Name, *USRPRF	<u>L</u>	
Form Level Project mask .	<u> </u>		—	
F3=Exit F4=List F10=Override Jobd parameters F12=Cancel				

Library list name

The library list to use when compiling objects into the target library.

The library list must contain libraries identified for this application level and for higher levels. It can also include libraries for other applications, as when you have a joint logical file over files in this and other applications.

To create or work with library lists, move the cursor to the **Library list name** field, and then press F4. See also *'Working with an application's library list' on page 24*.

Error check, job submission, and form scheduling fields

The error check, job submission, and form scheduling fields specify default values for controlling local form jobs. You can change these values when you run the form.

Error Recovery

Specify how to deal with problems that occur during a promotion run (for example, compile or explode error or an unanticipated object lock)

You can back out the changes; stop the form wherever the error occurred; or bypass the object in error and continue with the next object on the form.

Threshold

(If Error Recovery is 3.) Specify how many errors are tolerates before backing out all changes.

For example, if you are promoting many objects to test, you might want to get as many objects compiled as possible, and then later on, promote the objects that could not be compiled.

Scheduling options

When you submit a form to run, you can run it immediately, put it on hold, or specify a date and time.

On a development computer that does not run production, scheduling is usually not a problem; however, on a busy production computer, it is usually very important.

Submit Finalization

Y defers some steps of the promotion process to a separate job, called a finalization job, making the objects you're promoting more quickly available. For more information, see '[Submit Finalization](#)' on page 28.

Overriding job descriptions

To override the fields of the job descriptions you will use to promote objects and source, press F10. You can change the **Logging Level**, **Logging Severity**, **Output Queue**, and **Job Accounting Code**.

If you have no special run requirements that would require a unique job description for each application and level, you can create a single job description for all your applications.

Working with an application's library list

You can define your application to use a named library list for each application and level.

250-library limit

IBM i allows a maximum of 250 libraries.

You can create a data area called TLIB# to store the maximum number of libraries that an application's library list can have. Put it in the TURNOVER® Lifecycle Manager data library, usually SOFTTURND. TURNOVER® Lifecycle Manager uses the stored number as the maximum number of libraries in a library list. TURNOVER® Lifecycle Manager checks for the following conditions, in this order:

Condition	TURNOVER® Lifecycle Manager does this
If data area TLIB# exists	Uses the stored number as the maximum allowable number of libraries it permits
If data area QUSRSYS/QLILMTLIBL exists	25 library limit
If data area QUSRSYS/QLILMTLIBL does not exist	250 library limit

To specify a library list

Move to **Library list name** on the Form Defaults panel, and then press F4 (List).

MM/DD/YY 11:05:05	Form Defaults				Your Company, Inc. SYSTEM: YOURSYS
	Application: AP	Rel:	Ver:	Lev: 1	
Type choices, press Enter.					Field Attributes R=Restrict, L=Lock
Job Description	<u>QBATCH</u>	Name, *	PGMR		<u>L</u>
Library	<u>QGFL</u>	Name			<u>L</u>
Library list name	<u>AP1</u>	Name, F4=List			<u>L</u>

If your system is configured for 25 libraries, the **Work with Application Library List** panel appears.

MM/DD/YY 11:09:19	Work with Application Library List				Your Company, Inc. YOURSYS
Type choices, press Enter.					
Library list name	<u>AP1</u>	Name, F4=List			
Library list	<u>LIBRARY001</u>	<u>LIBRARY002</u>			
Recommended	<u>LIBRARY001</u>	<u>LIBRARY002</u>			
F3=Exit and update F4=List F5=Reset for Appl F7=EDTLIBL F10=Usage F11=Display recommended library list F12=Cancel					

If your system is configured for 250 libraries, this panel appears:

MM/DD/YY 11:12:32	Work with Application Library List				Your Company, Inc. YOURSYS
Type choices, press Enter.					
Library list name	<u>AP1</u>	Name, F4=List			
Library list	<u>LIBRARY001</u>	<u>LIBRARY002</u>	<u>LIBRARY003</u>	<u>LIBRARY004</u>	<u>LIBRARY005</u>
	<u>LIBRARY006</u>	<u>LIBRARY007</u>	<u>LIBRARY008</u>	<u>LIBRARY009</u>	<u>LIBRARY010</u>
	<u>LIBRARY011</u>	<u>LIBRARY012</u>	<u>LIBRARY013</u>	<u>LIBRARY014</u>	<u>LIBRARY015</u>
	<u>LIBRARY016</u>	<u>LIBRARY017</u>	<u>LIBRARY018</u>	<u>LIBRARY019</u>	<u>LIBRARY020</u>
	<u>LIBRARY021</u>	<u>LIBRARY022</u>	<u>LIBRARY023</u>	<u>LIBRARY024</u>	<u>LIBRARY025</u>
				More...	(F7)
Recommended	<u>LIBRARY001</u>	<u>LIBRARY002</u>			
F3=Exit and update F4=List F5=Reset for Appl F7=EDTLIBL F11=Display recommended library list F12=Cancel					

If **Library list name** on the Form Defaults panel is blank, then the first time you view this panel, TURNOVER® Lifecycle Manager creates a library list based on the libraries identified in the current application definition and gives it the same name as the job description. You should define all the levels of your application first, and then build a library list for each level. If the **Library list name** already exists, TURNOVER® Lifecycle Manager appends 01, 02, and so on, to the name to make it unique.

To display a list of existing library lists

Go to **Library list name**, and then press F4.

To create a new library list based on an existing library list name

- 1 Go to **Library list name**, press F4, and then select a name.
- 2 On the Work with Application Library List panel, over-type the **Library list name** field. You can then edit your new list.

Changing the library list affects all applications that use the same library list name. You can change the library list only if you have authority to change all of the application definitions on it.

- 3 Press F5 to use the **Recommended** library list and then, if necessary, change it. Press F3 to update the list afterwards.
- 4 To see the current library list, move to **Library list name** field, and then press F7.

Edit Library List

System: YOURSYS

Type new/changed information, press Enter.

Sequence Number	Library	Sequence Number	Library	Sequence Number	Library
0		150	LIBRARY015	300	LIBRARY030
10	LIBRARY001	160	LIBRARY016	310	LIBRARY031
20	LIBRARY002	170	LIBRARY017	320	LIBRARY032
30	LIBRARY003	180	LIBRARY018	330	LIBRARY033
40	LIBRARY004	190	LIBRARY019	340	LIBRARY034
50	LIBRARY005	200	LIBRARY020	350	LIBRARY035
60	LIBRARY006	210	LIBRARY021	360	LIBRARY036
70	LIBRARY007	220	LIBRARY022	370	LIBRARY037
80	LIBRARY008	230	LIBRARY023	380	LIBRARY038
90	LIBRARY009	240	LIBRARY024	390	LIBRARY039
100	LIBRARY010	250	LIBRARY025	400	LIBRARY040
110	LIBRARY011	260	LIBRARY026	410	LIBRARY041
120	LIBRARY012	270	LIBRARY027	420	LIBRARY042
130	LIBRARY013	280	LIBRARY028	430	LIBRARY043
140	LIBRARY014	290	LIBRARY029	440	LIBRARY044

More...

F3=Exit F5=Refresh F12=Cancel

- 5 Edit the library list, and then press Enter.
- 6 Press F11 to display a list of the recommended libraries, including the library name, library type (PROD or TEST), and a text description.

```

                                Display Library List
                                System:  YOURSYS

Type options, press Enter.
  5=Display objects in library

Opt  Library      Type      Text
  _   LIBRARY001   PROD      Production Library One
  _   LIBRARY002   PROD      Production Library Two

                                Bottom

F3=Exit  F12=Cancel  F17=Top  F18=Bottom
    
```

7 Select a library with option 5 to view the objects in that library.

```

                                Display Library

Library . . . . . :  LIBRARY001      Number of objects . :  18
Type . . . . . :  PROD              ASP of library . . . :  1
Create authority . . :  *SYSVAL      Library ASP device . :  *SYSBAS
                                Library ASP group . :  *SYSBAS

Type options, press Enter.
  5=Display full attributes  8=Display service attributes

Opt  Object      Type      Attribute      Size  Text
  _   CLP98       *PGM      CLP              45056
  _   CLP99       *PGM      CLP              45056
  _   RPG01       *PGM      RPG             81920  uses file pr01F
  _   EVFEVENT    *FILE      PF             208896
  _   PF001       *FILE      PF              49152  Physical file
  _   PF002       *FILE      PF              49152  Physical file
  _   PR00F       *FILE      PF             65536  PHYSICAL FILE
  _   PR00FL1     *FILE      LF             12288  LOGICAL FILE OVER PRO
  _   PR01F       *FILE      PF              49152  PF 01
  _   QCBLSRC     *FILE      PF              8192   CBL source file
                                More...

F3=Exit  F12=Cancel  F17=Top  F18=Bottom
    
```

Use options 5 and 8 to display full attributes and service attributes for an object on the list.

Recommendation

When defining your library list, keep these suggestions in mind:

- Each level should have a unique library list.
- Include target libraries from the current level and higher levels. These should appear *after* all target libraries from the current level.
- Do not include any target libraries from lower levels.

Submit Finalization

Some steps in the form promotion job can be done in a separate job or the same job. This could result in being able to use the objects being promoted more quickly, especially if you are running several groups of forms together (see *'Submitting forms to run' on page 142*).

Value	Description
Y	When all of the lines on the form have been successfully processed, the form job submits another job to complete the form finalization steps, such as source archiving, and the refresh of cross-reference files.
N	TURNOVER® Lifecycle Manager continues to do these steps within the form-processing job.

Recommendation

During the form run, the form status is set to `FINAL` when the finalization step begins. Once the status is `FINAL`, it is safe to use the objects you have promoted. The work done during finalization, source archiving, and cross-reference refresh does not affect the objects you changed. Set **Submit Finalization** to `Y` only if you have a very busy system, when you want finalization to run in a separate job so that the next form in line can begin more quickly.

In a very busy system, you might want to submit finalization to a separate job queue, under a lower priority than your form jobs, so that other form jobs do not have to wait for the finalization job to complete. To do this, set **Finalization job queue** (main menu option 8, then option 5) to a different job queue name.

Line defaults panel

Line defaults are used when TURNOVER® Lifecycle Manager adds a line to a form or when you add an item to a form. One line corresponds to one object or source member to be promoted. This information is used during promotion processing to control how the object is processed.

When you copy a form to the same level of the same application, TURNOVER® Lifecycle Manager does not change the form lines. However, if you copy a form to a different level of the application, or to a different application, all values come from the application to which you are copying the form.

MM/DD/YY		Line Defaults				Your Company	
11:40:32		Application: AP	Rel:	Ver:	Lev: 1	SYSTEM: YOURSYS	
Type choices, press Enter.							
						Field Attributes R=Restrict, L=Lock	
Method	<u>CSCO</u>	CSCO, MO, CD, COPR,				<u>L</u>	
		CSMO, CSCD, CS, *NULL					
Check for Level-Check . .	<u>Y</u>	Y, N					
Update Objd	<u>N</u>	Y, N					
Create parameters	<u>P</u>	P, T, S, R					
Reference object	<u>REF*</u>	Name, REF*				<u>L</u>	
Library	<u>ACPTTEST</u>	Name				<u>L</u>	
Authority	<u>P</u>	P, T, S, R				<u>L</u>	
Reference object	<u>REF*</u>	Name, REF*				<u>L</u>	
Library	<u>ACPTTEST</u>	Name				<u>L</u>	
Delete test object . . .	<u>Y</u>	Y, N				<u>R</u>	
Delete test source . . .	<u>Y</u>	Y, N				<u>R</u>	
Programmer	<u>*CHECKOUT</u>	*USRPRF, *FORM, *CHECKOUT				<u>L</u>	
Project task reference .	<u>*FORM</u>	Code, *FORM				<u>R</u>	
F3=Exit F8=IFS Line defaults F12=Cancel							

Method

Specify how you want TURNOVER® Lifecycle Manager to promote the source or object:

- To compile the object, specify **CSCO** (Copy Source, Compile Object).
- To move or duplicate source and objects into the target libraries, but not compile them, specify **CSMO** (Copy Source, Move Object) or **CSCD** (Move Source, Create Duplicate Object).
- To recompile objects from source in production, use **COPR** (Compile the Object in Production).
- To distribute and install a subset of objects on a remote computer, without recreating the objects on the development computer, use ***NULL**.

In most cases, you should use **CSCO**. TURNOVER® Lifecycle Manager then performs the promotion by compiling the object from the promoted source. If you use **CSCO**, consider using application model 7, or a variation of it. For more information, see the section 'Application Planning' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

For non-source type objects such as data areas, or for source-only objects such as text members or /COPY code, TURNOVER® Lifecycle Manager recognizes these different types and adjusts the defaults appropriately.

- Non-source object types such as *data areas* default to method **MO** (Move Object) or **CD** (Create Duplicate Object).
- *Source-only* types such as copy code default to **CS** (Copy Source only objects).

You can also specify the method by application type code (see *TURNOVER® Lifecycle Manager type defaults' on page 39*).

Using multiple ASPs

In most cases, you would use method **CSCO** when promoting from one auxiliary storage pool (ASP) to another.

How does TURNOVER® Lifecycle Manager handle multiple user ASPs (auxiliary storage pools), if you were to specify MO? Your form will not run and will recover. You must set the Method to CD rather than MO if you are promoting from one ASP to another.

Note The IBM i requires that logical files be in the same ASP as the physical files over which they are built.

Message files

When you check out a message file, TURNOVER® Lifecycle Manager marks it as checked out, but does not move or duplicate it from the production library. Create it in test, code the messages you need to add or change, and then turn it over. TURNOVER® Lifecycle Manager merges the messages you changed or added into the message file in the target library. If you need to delete several messages, you can delete message IDs individually. For more about checking out and promoting individual message IDs, see 'Handling Message IDs' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

To manage more than one message file with one application, create a unique type code for each message file. See '[Managing type code definitions](#)' on page 162.

UIM panels, SQL types, and similar object types

UIM panel groups, SQL type programs, and virtually any object type for which a create command exists or for which one can be created can be managed using TURNOVER® Lifecycle Manager.

Special vendor application object types

Many vendor supplied applications have 'object types' that are unique only to those vendors. These can be defined to TURNOVER® Lifecycle Manager as TURNOVER® Lifecycle Manager type codes and managed just like your other program objects.

Check for Level-Check

A source level check checks that the From-source and object match; that is, that the From-object was created from the From-source. If they do not match, you cannot submit the form.

To bypass the source level check, specify N.

This parameter does not apply if the method is CSCO.

Update object description

To update the IBM i object description in the target library to point to the source at that level, after the form has run, as though the target object was created from the target source, specify Y.

The object description update updates the source file, source library, source member, and source change date in the object description to match the target source member. Y enables you to use method CSMO or CSCD without causing a level-check warning.

This parameter does not apply if the method is CSCO.

Create parameters

Create parameters tells TURNOVER® Lifecycle Manager where to get the parameters for the create (compile) command that you want it to use for objects it creates for the application.

When TURNOVER® Lifecycle Manager objects are created, parameters specific to the object type (such as the **size** parameter for physical files, and **User profile** and **Use adopted authority** parameters for programs) are transferred as follows:

Value	Parms transferred from	Authority based on
P	Target and higher	Old object in target library
T	'From' (or Test) object	Object being promoted
R	Reference object	Reference object R is the default for new objects in either case.
S	System defaults	PUBLIC (library definition)
C	User-defined create parameters	N/A After a form line for an object has been created, you can modify the create command parameters for the associated object using a value of C for this parameter in Form Line Maintenance. This C value is available only within Form Line Maintenance.

P tells TURNOVER® Lifecycle Manager to use the object in the target library. If the object is new (does not exist in a target library or in any higher-level library), TURNOVER® Lifecycle Manager uses R, and references the named object.

If you set **Create parameter** to P and TURNOVER® Lifecycle Manager does not find the object in the target library, it looks forward through all intermediate libraries until it reaches the production level. The first time the object is encountered, it is used as the reference object. If TURNOVER® Lifecycle Manager fails to find the object in any of these libraries, then it uses the reference object.

If you have not specified a reference object, or if you set **Create parameters** to S, TURNOVER® Lifecycle Manager uses whatever system defaults are associated with the create command in the global type code (including special type codes) for the object it is creating.

If you do not specify create parameters in the application definition line and type code defaults, TURNOVER® Lifecycle Manager uses the default parameter settings for the create command in the global type code. Next, TURNOVER® Lifecycle Manager looks for any overrides that previous developers have applied, shows them to the developer currently performing the change, and prompts the current developer for his/her overrides.

You can restrict developers from overriding any parameter settings in the create command in the global type code. You impose these restrictions using settings in the following data areas and file:

- TPROTECT data area (TURNOVER® Lifecycle Manager Protect)
- TKEYPRTF file (TURNOVER® Lifecycle Manager Keyword Protect)
- TALWKEYOVR data area (TURNOVER® Lifecycle Manager Allow Keyword Override)

TURNOVER® Lifecycle Manager protects, or does not protect, create command parameters against user modification based on the contents (Y or N value) of the one-character data areas, TPROTECT and TALWKEYOVR, and whether or not the TKEYPRTF file contains a record (such as *ALL CMD) for the create parameter.

The conditions you can set with the TPROTECT and TALWKEYOVR data areas and the TKEYPRTF file are summarized here:

- If the TPROTECT data area contains Y: TURNOVER® Lifecycle Manager protects create parameters
- If the TPROTECT data area contains N, and:
 - the TKEYPRTF file contains a record for the parameter: TURNOVER® Lifecycle Manager protects create parameters.
 - the TKEYPRTF file does *not* contains a record for the parameter: TURNOVER® Lifecycle Manager does not protects create parameters.

If the TALWKEYOVER data area contains Y, then when a form is copied to another application or application level or is received on another computer, TURNOVER® Lifecycle Manager does not reset non-protected parameters that are explicitly specified in the global type code.

Your setting control only what developers can override at the development level. Depending on the promotion levels (for example, CSCO) and create parameters (for example, P) that you have specified, these values might change when the form runs.

The initial settings are:

- TPROTECT is set to Y
- TKEYPRTF is empty
- TALWKEYOVR is set to *NO.

These are the preferred settings for most situations. Before you change them, contact your UNICOM Support Representative.

If **Create parameters** on the remote system is set to L (Locked), customized create commands do *not* copy forward during distribution. To use the customized create commands from the development system, change Locked to R (Restricted).

To protect create command parameters, see *'Changing a form line' on page 120*.

Authority

Authority tells TURNOVER® Lifecycle Manager where to get the object authorization for objects it creates or replaces for the application.

If you set **Authority** to **P** and TURNOVER® Lifecycle Manager does not find the object in the target library, it uses the object specified in the **Reference object** field, resets **P** to **R**, and uses the reference object. Otherwise, it changes **P** to **S**. TURNOVER® Lifecycle Manager does not look through the application libraries to process the object, as it does with the **Create parameters** field. It assumes that when you are promoting an object to a Test level, that you would not want to assert the Production authority of an existing object.

Create command parameters

This is a list of create command parameters that TURNOVER® Lifecycle Manager changes for different kinds of objects. Use this list when setting up your reference objects, or when determining the parameters TURNOVER® Lifecycle Manager will use when creating the target object:

Commands

ALWLMTUSR
CURLIB
HLPPNLGRP
HLPID
PMTOVRPGM
PRDLIB

Display files

CHRID
DTAQ
DEV
DFRWRT
ENHDSP
IGCDTA
IGCEXNCHR
LVLCHK
MAXDEV
RSTDSP
SHARE
WAITFILE
WAITRCD

Modules

OPTIMIZE

Physical files

ALLOCATE
DLTPCT
FRCACCPH
FRCRATION
LVLCHK
MAXMBRS
MAINT
RECOVER
REUSEDLT
SIZE
UNIT
WAITFILE
WAITRCD

Programs

FRCCRT
OPTIMIZE
USEADPAUT
USRPRF

Printer files

ALIGN
BACKMGN
BACKOVL
CHLVAL
CHRID
COPIES
CPI
CTLCHAR
DEV
DEVTYPE
DFRWRT
DRAWER
DUPLEX
FIDELITY
FILESEP
FNTCHRSET
FOLD
FONT
FORMFEED
FORMTYPE
FRONTMGN
FRONTOVL
HOLD
IGCCHRRTT
IGCCPI
IGCCDEFNT

IGCDTA
 IGCEXNCHR
 IGCSOSI
 JUSTIFY
 LPI
 LVLCHK
 MAXRCDS
 MULTIUP
 ODEFNT
 OUTBIN
 OUTPTY
 OUTQ
 OVRFLW
 PAGERANGE
 PAGESIZE
 PAGRTT
 PRTQLTY
 PRTTXT
 REDUCE
 RPLUNPRT
 SAVE
 SCHEDULE
 SHARE
 SPOOL
 UOM
 USRDTA
 WAITFILE

Service programs

USRPRF

User-defined objects

If the change management scheme is not TURNOVER, the `TRTVOBJDTA` command is issued to gather information about the object. For more information about user-defined objects, see *'Managing type code definitions' on page 162*.

Object ownership

The owner of objects being promoted can be based on Reference objects by setting the **Use Reference object for Owner** parameter on the Application description panel to `Y`. In this case, object ownership is set to the same owner as the **Reference object** rather than to the value of the **Application default owner** parameter. However, if no reference object exists of the object type being promoted, then the owner is set to the **Application default owner**.

Reference objects

For REF*, TURNOVER® Lifecycle Manager replaces * with the attribute code (RPG, LF, CLP, and so on) and looks for an object with that name in the designated library. You can duplicate a set of reference objects from TURNOVER® Lifecycle Manager's library into your own target or production libraries by using the DUPREFOBJ command. A reference object for special type codes should also be created or overridden to an existing object for the application type code. A reference object can also be duplicated individually from the application's Type Codes panel (see *'Reference objects' on page 37* and 'Security Recommendations' in the *TURNOVER® Lifecycle Manager Administrator's Guide*).

If reference objects exist in the Explode data library, they are used where applicable, otherwise the reference objects in the primary data object library defined for the application are used.

Delete Test Object

If **Delete Test Object** is Y, TURNOVER® Lifecycle Manager normally deletes the object in test; however there are instances when it does not. **Delete Test Object** is overridden to N when the test object is needed to test a file change in test; is checked out to another programmer; or is checked out to the same programmer for a different project task.

To void this rule, set the Global default parameter **Use delete test object rule** to N. See Main Menu option 8, then option 5.

Maintaining IFS line defaults

Use option F8 (IFS Line defaults) on the Line Defaults panel to display or maintain line defaults for Integrated File System (IFS) object types. For more information, see the 'Managing IFS Objects' section of the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Type Codes panel

The Type Codes panel displays the valid object types for your application.

The type codes should be consistent from one application level to another.

MM/DD/YY		Type Codes			Your Company, Inc.	
11:45:49		Application: AP	Rel:	Ver:	Lev: 1	SYSTEM: YOURSYS
2=Maintain definition 8=Edit reference authority						
Type	Description	Data Source	Creation	Authority	Ref Obj	
		Obj. File	Reference	Reference	Exists	
— CBL	Cobol/400 program	N QLBLSRC				
— CBLLE	ILE CBL Program	N QCBLLESRC				
— CLP	CL Program	N QCLSRC				
— CMD	Command	N QCMDSRC				
— DOC	Documents	N				
— DSPF	AS/400 Display File	N QDDSSRC				
— DTAARA	Data Area	Y				
— LF	AS/400 Logical File	Y QDDSSRC				
— LFDUP	SYNON Condition values LF	N				
— MSGF	Message File	Y				
— PF	AS/400 Physical File	Y QDDSSRC				
— PFDUP	SYNON Condition values PF	N				
— PFREF	PF-Field Reference	N QDDSSRC				
More...						
F3=Exit		F4=Add/Delete types	F6=Create missing items			
F8=User-defined parameters		F12=Cancel				

Press F4 to work with the list of all the available TURNOVER® Lifecycle Manager type codes and to select or deselect the object types appropriate for this application. Afterwards, this panel contains just the types that are appropriate for this application.

To	Do this
select a type code	Type 1 next it, and then press Enter.
delete type code from the application	Overtyping the 1 with a space, and then press Enter.
view a list of missing libraries, source files, and reference objects for this application level, with options to create these missing items	Press F6. See <i>'Creating missing items' on page 38</i> .
view and specify defaults for User-defined parameters	Press F8. For more about user-defined parameters, see <i>'User-defined parameter values' on page 40</i> .

Reference objects

Reference objects are used to set certain object specific default parameter values such as **Member size** for physical files and **Use adopted authority** for programs. They can also be used to grant object authority and establish ownership of an object at creation time. See also *'Reference objects' on page 36*.

When you create an application or copy an application to create a new one, reference objects are created for each TURNOVER® Lifecycle Manager object type for your new applications according to the following rules:

- A reference object exists in the model application you are copying and,

- There is a reference object in the model application or the application from which you are copying named REFxxxxxx, where xxxxxx=TURNOVER® Lifecycle Manager type code or type attribute code and,
- The library in which the reference object exists is the Target library for the corresponding object type, in the application you are copying.

Most reference objects can be created when you create a new application using the CRTAPPDFN command or option 1 on the Work with Application Definitions panel. However, if you add new type codes to the application definition, use option 6 to create them here.

Creating missing items

- 1 When you have set up the type codes for your application, press F6 to check for any missing libraries, source files, and reference objects for that application level.

If you specified *YES for **Show missing items** on the Create Application Definition (CRTAPPDFN) panel, the Create Missing Items panel appears.

MM/DD/YY 11:52:20		Create Missing Items		Your Company, Inc.	
Application: AP Rel: Ver: Lev: 1					
1=Run command 2=Change create command					
Create command					Type
1	CRTSRCPF	FILE(DEVTEST/QLBLSRC)	TEXT('CBL source file')		SRC-PF
1	CRTSRCPF	FILE(ACPTTEST/QLBLSRC)	TEXT('CBL source file')		SRC-PF
1	CRTSRCPF	FILE(ACPTTEST/QCBLLESRC)	TEXT('CBLLE source file')		SRC-PF
1	CRTSRCPF	FILE(ACPTTEST/UDDSSRC)	TEXT('PFASI source file')		SRC-PF
1	CRTSRCPF	FILE(PRODTEST/UDDSSRC)	TEXT('PFASI source file')		SRC-PF
1	CRTSRCPF	FILE(ACPTTEST/QRPGLESRC)	TEXT('RPGMOX source file')		SRC-PF
1	CRTSRCPF	FILE(PRODTEST/QRPGLESRC)	TEXT('RPGMOX source file')		SRC-PF
					Bottom
F3=Exit F12=Cancel F21=Command line					

TURNOVER® Lifecycle Manager presents a list of create commands to use for creating the object.

- To change the commands, use option 2.
- To run the commands, press Enter.

For example, when creating reference objects, you might want to duplicate an object other than the default reference object shipped with TURNOVER® Lifecycle Manager; or when creating source files, you might want to verify that the record length is appropriate for ILE source.

TURNOVER® Lifecycle Manager uses the Create Reference Object (CRTREFOBJ) command to create the reference objects.

Editing reference authority

Once the Reference authority objects exist, you can edit its object authority, if you need to. Option 8 displays the standard Edit object authority command panel for the object type you selected.

TURNOVER® Lifecycle Manager type defaults

On the Type Codes panel, type 2 next to one or more type entries in the list.

The CLP Defaults panel appears.

MM/DD/YY	CLP	Defaults	Your Company, Inc.	
11:55:30	Application: AP	Rel: Ver: Lev: 1	SYSTEM: YOURSYS	
Type choices and press Enter.				
			Field Attributes R=Restrict, L=Lock	
From Source file	QCLSRC	Name	L	
Library	DEVTEST	Name, *PGMR	L	
Target Source file	QCLSRC	Name	L	
Library	ACPTTEST	Name	L	
From object library	DEVTEST	Name, *PGMR	L	
Target object library	ACPTTEST	Name	L	
Naming mask	—			
Delete from object	—	Y, N	—	
Delete from source	—	Y, N	—	
Method	—	CSCO, MO, CD, COPR	—	
		CSMO, CSCD, CS, *NULL		
F3=Exit	F12=Cancel	More...		

The Defaults panel identifies the **From Source file** and **Target Source file** (usually QxxxSRC) and their respective libraries to be used by TURNOVER® Lifecycle Manager. It also identifies other information such as the **From object library** and **Target object library** for this object type. These can be specified globally for your application level (see *'Library Defaults panel' on page 20*), but you might want to set up one or more object types differently here. For example, test source for level one might be in a programmer library or a common development library; production might share one library or many application libraries.

Many of the defaults that can be specified on the type entry were also specified for the application and level on the Library Defaults and Line Defaults panels. These remain in effect unless you specify some other value for an object type default. Leave these blank or unchanged unless you want the object type to be treated differently. Entries you make at this level take precedence.

Recommendation

If you have non-standard source file names that cannot be set as defaults here, you may want to use an exit program to set the source file name programmatically using some other criteria. For example, your source files might be named differently for different parts of your application, having names such as APSRC, ARSRC, and so on, and can be determined based on how the object itself is named. TURNOVER® Lifecycle Manager provides many exit points and exit program samples. For more information, see *[Working with TURNOVER® Lifecycle Manager exits' on page 174.](#)*

Specialized type codes

You might want to store some data objects in a library other than the data object library specified for your application.

To do this, create a specialized type code, such as PF2, supplying the alternate data object library there. This way, any PF2-type objects would be stored in the alternate data object library. When you create such a type code, use the object type as the first few characters of your new type code.

User-defined parameter values

You can define up to 10 user-defined variables that can be used in commands. For example, you can specify this create command:

```
CRTCLPGM PGM("&LI"/"&OB") SRCFILE("&SL"/"&SF") SRCMBR("&SM")  
ALWRTVSRC("&U3")
```

In this example, &U3 is a user-defined parameter. It can be anything you define it to be: in this case, the ALWRTVSRC parameter values of *YES or *NO.

For more about type codes and user-defined parameters, see *[Managing type code definitions' on page 162](#)*

Example

Assume you are running a two-level application: one to promote source objects to a QA library and one to a production library. When you promote to level one, you might want objects to be created with ALWRTVSRC(*YES). Later, when you promote to level 2, you might want to change it to ALWRTVSRC(*NO). Once you define a user-defined parameter, you can set it differently for each application and level.

MM/DD/YY	User-defined Parameters				Your Company, Inc.
11:59:15	Application: AP	Rel:	Ver:	Lev: 1	SYSTEM: YOURSYS
Type choices, press Enter.					
User					
Parm	Description	Keyword	Default		
&TR	Target release	TGTRLS	V7R1M0		
&U0	Generation options	GENOPT	*NOOPTIMIZE		
&U1	Debugging views	DBGVIEW	*STMT		
&U2	Optimization level	OPTIMIZE	*NONE		
&U3	Target Release	TGTRLS			
&U4	no range checking	GENOPT			
&U5	Binding Directory	BNDDIR			
&U6	Unassigned				
&U7	Unassigned				
&U8	Unassigned				
&U9	Unassigned				
F3=Exit F12=Cancel					

This example defines four user-defined parameters. You can assign any parameter you want to each of the 10 user variables. These can then be used when promoting objects to this application level.

The **Target release** parameter enables you to specify the target release (TGTRLS) parameter to be used wherever appropriate when creating objects during the promotion process.

Authorized Users panel

You can specify which users should be authorized to work with each application. See also Main Menu option 3 (Maintain Users authority).

MM/DD/YY	Application Distribution Defaults		Your Company, Inc.
12:05:05			YOURSYS
Application . . . AP Position to system . . .			
Rel . . .			
Ver . . .			
Lev . . . 1			
Description . . . Test Application- Prod Level 1			
1=Add to distribution list 2=Change distribution 4=Delete from list			
Sys	System	Device	System description
80	JM	*SNADS	Non existent, to test failure
150	SLSWEB	*SNADS	SLS Web Server
410	S1014706	*SNADS	200 QA Environment
420	S1014706	*SNADS	4.2 to 4.1 Distribution
430	S1014707	*SNADS	4.2 to 4.2 Designed to fail
450	SLSTRAIN	*SNADS	SLS Training box
451	*V45011	*SNADS	Virtual system
452	*V45012	*SNADS	Virtual
Distribute			
	Src	Obj	
	N	Y	
	N	N	
	N	N	
	N	N	
	N	Y	
	N	N	
	N	+	
F3=Exit F11=Show only selected F2=System definitions			
F12=Cancel F21=Add all systems to list			
Highlighted systems are included in application distribution list.			

You can work with and view only those applications to which you have been granted authority.

To	Do this
give a user access to the application	Type 1 next to the user.
authorize all profiles in the list	Press F13.
remove authority from all profiles in the list	Press F14.
view or update a more information about application level authorities	Press F11. See <i>'Authorizing users to TURNOVER® Lifecycle Manager' on page 50.</i>
limit the results returned in the list	Type entries in one or more <i>filters</i> .

Distribution defaults panel

When changes are successfully promoted to the production level of your application on your development computer, the changes can be distributed to your remote computer. (Some users distribute changes when they are promoted to a test level for user testing and again when changes are promoted to production. You can distribute from any level.) These changes can be distributed automatically or manually. For more information, see *'Distributing changes to production computers' on page 387.*

MM/DD/YY
12:05:05
Application Distribution Defaults
Your Company, Inc.
YOURSYS

Application . . . **AP**
Position to system . . . ____

Rel . . .
Ver . . .
Lev . . . **1**

Description . . . **Test Application- Prod Level 1**

1=Add to distribution list 2=Change distribution 4=Delete from list

Sys	System	Device	System description	Distribute	
				Src	Obj
80	JM	*SNADS	Non existent, to test failure	N	Y
150	SLSWEB	*SNADS	SLS Web Server	N	N
410	S1014706	*SNADS	200 QA Environment	N	N
420	S1014706	*SNADS	4.2 to 4.1 Distribution	N	N
430	S1014707	*SNADS	4.2 to 4.2 Designed to fail	N	N
450	SLSTRAIN	*SNADS	SLS Training box	N	Y
451	*V45011	*SNADS	Virtual system	N	N
452	*V45012	*SNADS	Virtual	N	±

F3=Exit F11=Show only selected F2=System definitions
F12=Cancel F21=Add all systems to list
Hilghited systems are included in application distribution list.

For the application and level with which you are working, you can select those systems to which you want to distribute changes. For example, you may have several computers, but your application runs on only a few of them. Select the systems by typing 1 next to those that are appropriate.

You can also indicate that, for this application and level, objects and/or source should be included in the distribution. In fact, you can choose whether objects and/or source should be sent by computer, application, and object type. Object distribution parameters exist in the system definition, the application definition and the type definition within the application defaults. An entry of *SYSTEM here in the application definition tells TURNOVER® Lifecycle Manager to use the distribution Send defaults as they appear in the system definition. (For more about distribution defaults, see '*Distribution defaults panel*' on page 42.)

Approval lists panel

Approval lists can be defined for any application and level; however, they are not required. TURNOVER® Lifecycle Manager forms may require approval by different people at different levels of your application. For example, a programming manager may be required to approve a form before it is promoted to level 1, while the MIS manager and a user department manager must approve the form before it is promoted to level 2.

The Approval List panel lets you specify an *approval list object* to associate with your application definition.

MM/DD/YY		Approval List		Your Company Inc.				
12:20:18								
Application		YCAP						
Release		1						
Version		0						
Level		10						
Notify programmer upon approval . . .		*NO		*YES, *NO				
Approval list name		MYAPPRVS		F4=List				
5=Display								
Approve								
User	Admin	Notify	Override	Own Form	Type	MsgQ	MsgQ Lib	
BIKER	N	Y	N	Y	*USRPRF	BIKER	QUSRSYS	
COWLES	N	Y	N	Y	*USRPRF	COWLES	QUSRSYS	
MANAGER			Y		*GROUP			
SMITH	N	Y	N	Y	*USRPRF	SMITH	QUSRSYS	
F3=Exit F4=List F11=View 2 F12=Cancel								

An approval list object contains any combination of user profiles and/or *approval groups*. You can give any user authority to approve for other people on the list, in case of absence, by granting that user Override authority.

An *approval group* is a list of users, any one of whom must approve changes before a form is run. For example, you may have a Quality Assurance department. Anyone in that departmental group can be responsible for reviewing approving your changes. In other words, approval by any member of the group is approval by the entire group.

If the approval user usually works on another production computer, you can send a message to the person's profile on that computer (or to send an email, press F11). The user must either pass-through to the development computer to view details and approve the form, or use the Eclipse-based TURNOVER® Lifecycle Manager Administrator module.

Named approval list objects make it easier to assign one list to other applications or application levels.

To	Do this
select an approval list object	Move to Approval list name , and then press F4.
choose an existing approval list	Select it with option 1, and then press Enter.
create a new approval list object	Press F6.
add or remove users and groups	Use option 2.
delete a list	Use option 4.
view the contents of a list	Use option 5.
see what applications use an approval list object	Use option 7.

Recommendation

Approval list objects are named lists and consist of *approval groups* and/or individual user profiles. Approval list objects can be reused for several applications, to avoid re-keying the same list of users over and over again. Approval groups themselves can be named and reused in several approval lists. So, to avoid confusion:

- 1 If you intend to use approval groups, create those approval groups first. Use either this panel or the `WRKAPPGRP` command.
- 2 Create the approval list objects. Use either this panel or the `WRKAPPLST` command.
- 3 Assign the approval list object to your applications. (Use this dialog.)

How form approval works

When a programmer or administrator creates a TURNOVER® Lifecycle Manager form for an application level that has an approval list, the status of the form will be approval pending (`APL-PN`) rather than `READY` (as it would be if no list was defined).

- 1 On the Programmer's Worklist panel, select option 48 to view the approval list, and then send a message to all of the people on that list.
- 2 On the Work with TURNOVER® Lifecycle Manager Forms panel, select the form with option 10, and then send the message to all of the people on the approval list.

Messages are sent by system messaging or email, depending on the configuration in the list entries.

Each person on the list receives the message, usually 'Form `nnnnnnnn` is pending your approval.'

- 3 To approve the form, the user signs on to view the changes and, on the Work with TURNOVER® Lifecycle Manager Forms panel, selects option 10.

To approve the form, they type Y in the **Approved** column next to their profile name.

TURNOVER® Lifecycle Manager records the profile name, date and time that each person approved the form. This information is available later, online and on the Form Listing report.

- 4 When the last person has approved the form, the TURNOVER® Lifecycle Manager application administrator, and optionally the programmer, receives a message and the form status changes to READY.
- 5 The form can now be submitted to run.

Note If changes are made to either the TURNOVER® Lifecycle Manager form or the source members or objects being promoted, then the form status reverts to APL-PND and the form must be approved again. Users who have already approved the form receive a message notifying them that the form requires re-approval.

Form completion messages panel

By default, TURNOVER® Lifecycle Manager form completion messages are always sent to the programmer associated with the form.

You can add more messages to send to other people when the TURNOVER® Lifecycle Manager form has completed. You can condition these messages to be sent when the form runs successfully, when it fails, or both. You can override or delete them for a particular TURNOVER® Lifecycle Manager form. You can also add additional messages for any form.

Different messages may apply for different application levels.

MM/DD/YY 12:25:16	Form Completion Message	Your Company, Inc.
Application: AP Rel: 00 Ver: 00 Lev: 01 Description: Test Application		
Type in message information and press Enter.		
Termination code for which message will be sent: _ 1=Normal, 2=Abnormal, 3=Any		
Message: _____		

Message Queue	_____	Name
Library	_____	Name, *LIBL
or		
User ID	_____	Character Value
Address.	_____	Character Value
F3=Exit F9=Duplicate last message F12=Cancel		

Application relationships panel

Application definitions can be interrelated so that changes in one application prompt you to check to see if a similar change is required for a related application.

The Work with Application Relationships panel shows all existing application relationships for your current (or selected) application. You can also display this panel by selecting the application definition with option 19=Application relations on either the Work with Application Definitions panel or the Work with Application Definition panel.

MM/DD/YY	Work with Application Relationships	Your Company, Inc.																																			
Selected application . . . AP Test Application																																					
Release																																					
Version																																					
Parent application *NONE F7=Select parent																																					
Release																																					
Version																																					
The following applications have child relationships with the selected application:																																					
1=Add child 2=Change rule 4=Remove child relationship																																					
<table><thead><tr><th colspan="3"></th><th colspan="2">New Obj.</th></tr><tr><th>Appl</th><th>Rel</th><th>Ver</th><th>Rule</th><th>Description</th></tr></thead><tbody><tr><td>—</td><td>—</td><td>—</td><td>*NONE</td><td></td></tr><tr><td>—</td><td>ACAM</td><td></td><td>*NONE</td><td>ACAM application</td></tr><tr><td>—</td><td>ADIS</td><td></td><td>*NONE</td><td>Distribution Application</td></tr><tr><td>—</td><td>AMER</td><td>7 3</td><td>*NONE</td><td>American Software</td></tr><tr><td>—</td><td>AP3</td><td></td><td>*NONE</td><td>Application3</td></tr></tbody></table>						New Obj.		Appl	Rel	Ver	Rule	Description	—	—	—	*NONE		—	ACAM		*NONE	ACAM application	—	ADIS		*NONE	Distribution Application	—	AMER	7 3	*NONE	American Software	—	AP3		*NONE	Application3
			New Obj.																																		
Appl	Rel	Ver	Rule	Description																																	
—	—	—	*NONE																																		
—	ACAM		*NONE	ACAM application																																	
—	ADIS		*NONE	Distribution Application																																	
—	AMER	7 3	*NONE	American Software																																	
—	AP3		*NONE	Application3																																	
Bottom																																					
F3=Exit F4=Select child F7=Select parent F12=Cancel																																					

The names of the selected application and its parent application appear at the top of this panel. The names of any applications that have child relationships with the selected application are listed on the panel's lower half. Options let you add and remove relationships between the selected application and its child applications, and set new object rules for these relationships.

Interrelating applications is a specialized function that may or may not apply to your company. Build test cases before you apply it in the production environment. For more about related applications and managing versions of software, see 'Managing multiple versions' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

To	Do this
add a child relationship	Use option 1.
change the object rule between the selected application and one of the child applications listed at the bottom of the panel	Use option 2.
remove the relationship between the selected application and one of the child applications listed at the bottom of the panel	Use option 4.

To	Do this
select a child for the application	Press F4.
select a parent for the application	Press F7.
remove the relationship between the selected application and the parent application	Press F23. (This option is available only when a parent application has been selected.)

Version and Object Stamping Defaults panel

Object versioning enables you to identify:

- the version of a specific object, especially, by differentiating it from its predecessors and successors
- what version of an object a user is using
- how an object was changed, who changed it, why it was changed, and so on, *every time it was changed*, throughout the object's life.

The Version and Object Stamping Defaults panel lets you control whether or not the object description of the object TURNOVER® Lifecycle Manager promotes is to be updated by TURNOVER® Lifecycle Manager. For more information about object stamping, see the 'Object versioning' section (a sub-section of 'Managing Multiple Versions') of the *TURNOVER® Lifecycle Manager Administrator's Guide*.

MM/DD/YY	Version and Object Stamping Defaults				Your Company, Inc.
12:35:35	Application: AP	Rel:	Ver:	Lev: 1	SYSTEM: YOURSYS
Type choices, press Enter.					
Version Control Settings					
Version number to increment on promotion . . * <u>MINOR</u> *MAJOR, *MINOR, *NONE					
Object Stamping Settings					
Stamp object description <u>Y</u> Y, N					
Values to stamp:					
Object version number <u>Y</u> Y, N					
Form number <u>Y</u> Y, N					
Project/task reference <u>Y</u> Y, N					
TurnOver type code <u>Y</u> Y, N					
F3=Exit F12=Cancel					

3 Setting up programmer profiles

The programmer profile is used by TURNOVER® Lifecycle Manager to:

- determine defaults such as the programmer's development library name, used when checking out source and entering a form
- when reporting on TURNOVER® Lifecycle Manager history
- for reporting time associated with programming changes: see *'Resource Time report' on page 322*, *'Project timesheet report' on page 323*, and *'Project Cost report' on page 324*.

You must also authorize all programmers to TURNOVER® Lifecycle Manager by using option 3 on the main menu.

To authorize a user to TURNOVER® Lifecycle Manager or to delete a user from TURNOVER® Lifecycle Manager's enrollment files, see *'Authorizing users to TURNOVER® Lifecycle Manager' on page 50*.

To enrol programmers in TURNOVER® Lifecycle Manager

- 1 Sign on as TURNOVER, or another user who has authority to maintain programmer information.
- 2 On the main menu, select option 2, Maintain programmer information.

MM/DD/YY	Maintain Programmer Information				Your Company, Inc.	
09:02:15						
2=Change		4=Delete		Other		
	Programmer	Programmer Name	Data	Object	Source	
			Library	Library	Library	Rate
—	BERNARDI	Irvin Bernard	BERNARDI	BERNARDI	BERNARDI	20.00
—	ELSNOR	Steve Elsinore	ELSNORE	ELSNORE	ELSNORE	60.00
—	PHILLIPS	Ed Phillips	PHILLIPS	PHILLIPS	PHILLIPS	45.00
—	PSHIFTY	Peter Shifty	TESTLIB	TESTLIB	TESTLIB	25.00
F3=Exit F12=Cancel F10=User-defined fields						
F4=Add from List F5=Fold/Unfold F6=Add Programmer F21=System command						

- 3 Use F10 to define up to four 10-character user-defined fields. These fields are primarily used for CASE interfaces; otherwise they are not used by TURNOVER® Lifecycle Manager.

When you have defined one, you can enter a value as an additional parameter on either the Add or the Change a Programmer Profile panel.

- 4 To add a programmer profile, press F6.

MM/DD/YY 9:082:45	Add a Programmer Profile	Your Company, Inc.
Enter User Profile and press Enter.		
User profile . . .	JOEBURKE	Name
User name	_____	
Job description . . .	_____	Name
Library	_____	Name
Output queue . . .	_____	Name
Library	_____	Name
Message queue . . .	_____	Name
Library	_____	Name
Data library . . .	_____	Name
Object library . . .	_____	Name
Source library . . .	_____	Name
Folder	_____	
	_____	Folder name
Hourly rate	_____	
F3=Exit F12=Cancel F10=Additional parameters		

- 5 Type a name to identify the user profile, and then press Enter.

TURNOVER® Lifecycle Manager displays the rest of the information on the panel.

- 6 Edit the information.

If user-defined fields are available for this programmer, press F10 to provide additional information as necessary.

- 7 Press Enter to add the profile.

When you add a programmer profile, TURNOVER® Lifecycle Manager creates a project resource entry for you in the project system.

Recommendation

Assign each programmer an individual development library in which to work. This eliminates the likelihood of conflict with other programmers. Source checkout ensures that only one copy of code can be checked out at one time.

4 Authorizing users to TURNOVER[®] Lifecycle Manager

Each user must be authorized to use the functions in TURNOVER[®] Lifecycle Manager and to work with the applications that are defined in it. Different users can have different levels of authority to each application and level.

For example, a programmer might have authority to run a TURNOVER[®] Lifecycle Manager form to promote from development to acceptance test, but not from acceptance test to production.

In TURNOVER[®] Lifecycle Manager, a typical division of responsibility might be:

- Programmers are allowed to checkout and check-in source; and to view, add and update TURNOVER[®] Lifecycle Manager forms.
- Managers and administrator are allowed to run forms; distribute changes; purge form history; and maintain application definitions.
- Security officers are responsible for maintaining TURNOVER[®] Lifecycle Manager authority.
- Some application users might be allowed to work with TURNOVER[®] Lifecycle Manager projects and tasks.

However you divide up responsibilities, you can decide who can work with what applications and projects.

Authorizing users

- 1 Sign on as TURNOVER, or another user who has authority to maintain TURNOVER[®] Lifecycle Manager authority information for other users.
- 2 On the main menu, select option 3, Maintain users authority.

The Maintain Users Authority List panel appears.

```

MM/DD/YY          Maintain Users Authority List          Your Company, Inc.
09:52:37                                     YOURSYS

Position to user . . . : _____

1=Application authority  2=Project authority  3=Wisedesk  4=Delete user

      Source ----- FORMS ----- -- SYSTEM -- ----- PROJECTS -----
      User      Out In View Add Chg Run Dst Prg Dft Aut Pgmr Use Add Code Rsc Rqs
- BENNETT      X  X  X   X  X  X  X  X  X  X  X  X  X  X  X  X  X
- BLAKE        X  X  X   X  X  X  -  -  -  -  -  X  -  -  -  -  -
- DONNA        X  X  X   X  X  X  X  X  X  X  X  X  X  X  X  X  X
- DUMMY        X  X  X   X  X  X  -  -  -  -  -  X  X  -  -  -  -
- ELMSMIKE     X  X  X   X  X  X  X  X  X  X  X  X  X  X  X  X  X
- GILLIGAN     X  X  X   X  X  X  X  X  X  X  X  X  X  X  X  X  X
- GUEST        X  -  X   X  X  -  -  -  -  -  -  X  X  -  -  -  -
- KING         X  X  X   X  X  X  X  X  X  X  X  X  X  X  X  X  X
- MORKPHIL     X  X  X   X  X  X  X  X  X  X  X  X  X  X  X  X  X
- MILLER       X  X  X   X  X  X  -  -  -  -  -  X  -  -  -  -  -
- MARYLYN      X  X  X   X  X  X  X  X  X  X  X  X  X  X  X  X  X
- QPGMR        X  X  X   X  X  X  X  X  X  X  X  X  X  X  X  X  X
                                                    More...

F3=Exit  F4=Add from List  F6=Add User  F12=Cancel  F21=System command
  
```

3 To add a new user profile name, press F6.

To add multiple users, press F4 and select them from the list.

4 Type X in the appropriate task columns for each user.

SOURCE authority

Source authority enables you to check out and/or manually check in source code.

TURNOVER® Lifecycle Manager automatically checks in source when a TURNOVER® Lifecycle Manager form is run. You need to check source in manually only if:

- you decide not to change an object after checking it out
- a task was canceled.

Production source is not affected by source check-in. Manual check-in frees a lock on the source so it is available for another user to check out. It also lets you delete test source and objects from your development library.

FORMS authority

Value	Description
View	Display forms
Chg	Change forms
Add	Create forms
Run	Submit forms for processing and them to remote computers
Dst	Change distribution defaults, and manually distribute and receive forms

Value	Description
Prg	Purge old forms for those applications on which are authorized to work

A user might be allowed to run forms generally, but an application administrator might be the only user allowed to run forms for a particular application.

SYSTEM authority

Value	Description
Dft	Enter system-wide and application definition information
Aut	Maintain this authorization list
Pgmr	Maintain programmer profiles

In a multi-level application, if you want to allow programmers to have run authority to a lower level application, you can use application approval lists as an alternative. For more information, see ['Approval lists panel' on page 43](#).

PROJECTS authority

These columns appear only if you use the TURNOVER® Lifecycle Manager Projects system.

Value	Description
Use	Access to the project system
Add	Enter new projects into the system
Code	Maintain user-defined code tables within the project system, such as the status code table or other user-defined fields
Rsc	Add names to the project resource list
Rqs	Add names to the project requester list

You must have authority to the project system to grant access to other users. You also need access to a specific project in order to work on that project. This should be done when you or others define projects to TURNOVER® Lifecycle Manager. If projects are already defined, select a user in the authority list with option 2=Project Authorities to grant authority to a specific project. If Wisedesk help trees are defined, select option 3=Wisedesk to grant authority to specific decision trees. For more information, see ['Working with projects and tasks' on page 201](#).

The administrator is usually given authority to all project system functions *except* Requester Maintenance. (The requester file contains all of your department's or company's clients or contacts.)

Authorizing users to applications, projects, or Wisedesk trees

- 1 Select the user with the appropriate option (1 for applications, 2 for Projects, or 3 for Wisedesk trees).

The Authority Maintenance panel appears. This section shows the Application Authority Maintenance panel as an example.

MM/DD/YY		Application Authority Maintenance										Your Company, Inc.	
09:58:15													
User: BENNETT		Bob Bennett											
1=Authorize User 2=Reset User to default authority													
Fltr: _ _ _ _ _ _ _ _ _ _ _ _													
----SOURCE----						---TURNOVER FORM AUTHORITY---						SYSTEM	
Appl	Rel	Ver	Lev	Chkout	Chk-in	View	Add	Updt	Run	Distr	Purge	Dfts	
<u>1</u>				<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>1</u>	AKM		1	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>1</u>	AKM		2	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>1</u>	AKM		3	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>1</u>	AP		1	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>1</u>	AP		2	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>1</u>	APE		1	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>1</u>	APP		1	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>1</u>	APP		2	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>1</u>	APPO		1	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>1</u>	APTS		1	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>1</u>	APTS		2	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u> +

F3=Exit F11=Description F12=Cancel F13=Authorize all F21=Command Line

- 2 Do one of the following:

To	Do this
give the user access to a feature	Type <u>x</u> .
remove access to a feature	Replace <u>x</u> with a space.
restrict which applications are displayed	Use the Fltr fields. The results show only those applications that meet <i>all</i> the filter values.
exit and save the current filters for use during the next session	Press Enter or F3.
exit without saving the filters	Press F12.
display application descriptions	Press F11 (Description). F11 applies only when you are working with Application authorities.

To	Do this
display the user's authority settings	Press F11.
toggle authority for all currently-selected records	Press F13 to give authority; press F13 again to remove authority.

For applications, you can also select which application levels a user is allowed to use.

Deleting a user from TURNOVER® Lifecycle Manager

Deleting a programmer

- 1 On the main menu, select option 2.
- 2 If the user is a programmer, type 4 (Delete) next to the appropriate profile name and press Enter. Return to the main menu.
- 3 On the main menu, select option 3.
- 4 Overtyping all the Xs with spaces, and then press Enter. Return to the main menu.
- 5 On the main menu, select option 9, press F7 (Control files), and then select option 4 (Work with Resources).
- 6 Type option 4 (Delete) next to the user profile, and then press Enter.

Delete a user from the list of requesters

- 1 On the main menu, select option 9, press F7 (Control files), and then select option 5 (Work with Requesters).
- 2 Type option 4 (Delete) next to the user profile, and then press Enter.

This procedure does not deactivate the user profile or remove the user profile from the IBM i computer.

5 Working with object history

The change history of each object promoted by TURNOVER® Lifecycle Manager is maintained as long as you maintain the data in the TURNOVER® Lifecycle Manager database.

History of promotions to intermediate test levels is also available, but is usually purged more frequently, leaving only history of changes to production on file for a longer period of time (see Utility menu option 1).

To	Do this
review project task history	Use option 9 on the main menu.
review forms history	Use option 6 on the main menu.
review the history of individual objects	Use option 4 on the main menu.

Displaying object history

You can see a TURNOVER® Lifecycle Manager form while reviewing object history if you want to see what other objects were promoted at the same time as an object you are researching, or if you want to see comments about the changes made to the object.

If you use TURNOVER® Lifecycle Manager's project system, you can also view object history for objects related to a particular project or task, and project details from the Work with Object History panels.

You can see details about a change and also invoke a source compare utility when viewing history. For example, you might want to see what the source change was between the current version and the previous archived version.

To display object history

Do one of the following:

- On the main menu, select option 4, Work with object history.
- On a command line, type `TURNOVER 4`.

The Work with Object History panel appears.

MM/DD/YY 10:30:35		Work with Object History										Your Company, Inc. YOURSYS	
To reposition screen, enter Object: _____										Apply filters . . N Filter name: *DEFAULT			
1=Browse current source		2=Browse archived source		3=Copy archived source									
5=View form		6=Data explosion		7=Checkout		8=Archive information ...							
										Exists	Chk		
Object	Library	Type	Run Date	Appl	Rl	Vr	Lv	Cd	Obj	Src	Arc	Out	
___ MENCACU	T54PRDS	PF	3/02/20					A	N	N	N	N	
___ MENCADDU	T54PRDS	PF	3/04/20	TO	5	4	2		N	N	N	N	
___ MENCADDU	T54PRDS	PF	3/04/20	TO	5	4	2		N	N	N	N	
___ MENCADSA	T54PRDS	PF	6/28/20	TO	5	4	2		N	N	N	N	
___ MENCATST	T54PRDS	PF	6/28/20	TO	5	4	2		N	N	N	N	
___ MENCATTN	T54PRDS	PF	7/04/20	TO	5	4	2		N	N	N	N	
___ MENCATTY	T54PRDS	PF	7/18/20	TO	5	4	2		N	N	N	N	
___ MENCBADs	T54PRDS	PF	7/27/20	TO	5	4	2	A	Y	N	N	N	
___ MENCBADs	T54PRDS	PF	7/29/20	TO	5	4	2	A	N	N	N	N	
___ MENCACU	T54PRDS	PF	8/01/20	TO	5	4	2		Y	N	N	N	
___ MENCACAND	T54PRDS	PF	8/02/20	TO	5	4	2		N	N	N	N	
___ MENCACATU	T54PRDS	PF	8/09/20	TO	5	4	2		N	N	N	N	
More...													
F3=Exit F5=Refresh F8=IFS history F11=Alt. view F12=Cancel F24=More keys													

To	Do this
display more information about an object	Use option 11. <i>See 'Displaying line details for an object' on page 58.</i>
use the source compare function	Use option 12. <i>See 'Comparing source' on page 59.</i>
display the user-defined options	Press F16.
position the subfile to an object	Type the object name at the top of the panel. TURNOVER® Lifecycle Manager sequences objects by object name and sorts them alphabetically or by date.
display the current source for an object.	Use option 1 (Browse current source).
display the archive source for an object	Use option 2 (Browse archived source). The value in the Exists Arc column must be Y.
copy archived source to a new member	Use option 3 (Copy archived source). The value in the Exists Arc column must be Y.
display an object's archived source information. See <i>'Viewing archived information' on page 70.</i>	Use option 8 (Archive information).
display the form that is associated with an object	Use option 5 (View form).

To	Do this
display the project task associated with this change.	Use option 9 (View task).
display library names into which an object was duplicated	Use option 6 (Data explosion). This applies only if you are using the Application Explode data library feature. See <i>'Exploding data libraries' on page 21</i> .
check out an object	Use option 7 (Checkout). The Add TURNOVER® Lifecycle Manager Checkout (CHECKOUT) panel appears. See <i>'Checking source in and out' on page 72</i> .
displays an object's checkout history	Use option 10.
displays an object's distribution history, if it has been distributed to another system	Use option 16.
display a list of values for the field where the cursor is	Press F4. (Available only on selected fields.)
refresh the panel	Press F5.
work with the object history for IFS objects	Press F8.
display more information about the objects	Press F11. To return to the previous panel, press F11 again.
enter your own options	Press F16.
select which are objects are displayed	Press F17. See <i>'Filtering objects' on page 60</i> .

Fields

Exists Arc

Indicates whether or not archived source exists.

Chk Out

Indicates whether or not the source for this object is checked out.

Apply filters

To apply the filtering criteria you have specified on the Filtering panel, specify Y.

To ignore the filters (that is, display all items), specify N.

Filter name

Specify the set of filtering criteria you want TURNOVER® Lifecycle Manager to apply to the list of objects.

To see a list of filter sets, or add filter sets, press F4.

For more information, see *'Working with named filters' on page 60*.

Displaying line details for an object

Use option 11 to display the form line details for that object when it was promoted, including any line comments and task details.

The Line Details for Object panel appears.

MM/DD/YY 10:40:32	Line Details for Object		Your Company, Inc. YOURSYS
Object: AAITVAL	Attr: DTAARA	Action:	7/30/20 19:05:30
Library: QGPL	Pgmr:	Src archived: N	Obj archived: N
Form: 5103356 Initial Application Load		Line: 378 Sts: Initial	Version: 001 000
Checked out to programmer: JSMITH		+ Number of checkout records: 2	
Line Comments The line comment, if it exists, is displayed here with a "+" Following if additional comment lines exist.			
Task Details Details for the project or task are displayed here if they exist.			
F3=Exit	F10=View form	F11=View line	F12=Cancel
F17=Previous change			F24=More keys

This panel contains all of the details about the selected object, including date and time the object was created, TURNOVER® Lifecycle Manager form details, programmer name and also any form line comments and project details.

- To display information about earlier versions of the same object, press F17. This key appears only if earlier versions exist.
- To display information about later versions of the same object, press F18. This key appears only if later versions exist.
- If + (plus sign) appears after the programmer's name, press F19 to see other programmers who have the object checked out.

Comparing source

This option depends upon whether or not you have identified a source compare command to TURNOVER® Lifecycle Manager (see *'Changing the source compare program' on page 178*).

- 1 Select an object with option 12.

The Compare Source Members panel appears.

- 2 Select the member you want to compare with the one you selected.

For example, if you want to see the differences between the current source and the last version, select the first archived version listed with option 1 or 2.

MM/DD/YY		Compare Source Members				Your Company, Inc.	
10:48:50						YOURSYS	
Compare:		Member <u>TURCADDL</u>					
File	<u>QCLSRC</u>						
Library	<u>SOFTTURN</u>						
1=Compare interactive 2=Compare in batch 3=Copy member 5=Browse member							
6=View form 9=View task							
			Run	Archive	Archive	Archive	
Object	Library	Form	Date	Member	File	Library	
— TURCADD	SOFTTURN	92354	10/01/20	M000003023	ARCHIVE	YOURARCLIB	
— TURCADDL	SOFTTURN	90917	11/03/20	M000000394	ARCHIVE	YOURARCLIB	
							Bottom
F3=Exit		F4=Prompt		F10=Maintain source compare command			
F12=Cancel		F14=WRKSBMJOB		F18=WRKSPLF		F21=System command	

The number of versions of archived source available in this list depends on how you are managing your archive files. For more information, see *'How archiving works' on page 71*.

- 3 To view the source compare command you are using, press F10.

To change it, you must have System Defaults authority.

- 4 To compare two archived versions, type the Archived Member name of one member in the **Compare: Member** field, and then select the other member.

Display object history for IFS objects

To work with the object history for IFS objects, use option 8.

The Work with IFS object History panel appears.

MM/DD/YY		Work with IFS Object History		Your Company, Inc.	
11:05:15				YOURSYS	
To reposition screen, enter Object: _____					
Filter by Type: _____		Programmer: _____		Appl: _____	
Status: _____		Reference: _____			
3=Copy archived object 5=View form 6=Explode paths 8=Archive information					
9=View task 10=Checkout history 11=Line details 16=Dist History					
Object	Type	Path	Cd Status	Run Date	
___ ANOTHERLINEADDED	IFSA	/JFC/QA	A Ready	0/20/00	
Reference: JFC001 Pgmr: ELSEMORE Archived: N Checked out: N					
Form: 5103177 Appl: ETET Rel: Ver: Lev: 1					
___ OBJECT TEST	IFSA	/JFC/QA	A Ready	0/00/00	
Reference: JFC001 Pgmr: ELSEMORE Archived: N Checked out: N					
Form: 5103177 Appl: ETET Rel: Ver: Lev: 1					
___ OBJECT1	IFSA	.../JFC/DEMOPROD R	Ran-OK	8/10/18	
Reference: DEMO0001 Pgmr: ELSEMORE Archived: N Checked out: N					
Form: 5103179 Appl: DEMO Rel: Ver: Lev: 2					
More...					
F3=Exit F4=List F11=Show all F12=Cancel					
F21=System command F22=Full path					

This panel lists the most recent TURNOVER® Lifecycle Manager record for each IFS object. Only objects that are associated with applications to which you are authorized are displayed.

For more information, see the online Help and the section 'Managing IFS Objects' of the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Working with named filters

To add and change named filters, see *'Using named filters' on page 97*.

Filtering objects

The Filtering panel appears when you add and maintain filter names or when you press F17=Filters on the Work with Object History panel.

MM/DD/YY		Work with Object History		Your Company, Inc.	
11:3					
Filtering					
To Filter name: *DEFAULT _____					
Select one or more filters:					
1=B					
5=V	Field	Test	Value	List values	
	Object	___	_____		
	Library.	___	_____		
___	Type code.	___	_____		
___	Object type.	___	_____		
___	Programmer	___	_____		
___	Reference.	___	_____		
___	Line status.	___	_____		
___	Action code (A/R/D).	___	_____		
___	Run date	___	_____ and _____		
___	Form	___	_____		

More...					
F3=Exit F4=Prompt F5=Refresh F11=List F12=Cancel F17=Save Filters					
F16					

To display more criteria fields, press Page down.

MM/DD/YY		Work with Object History		Your Company, Inc.	
11:					
Filtering					
To	Filter name: *DEFAULT _____				
Select one or more filters:					
1=B					
5=V	Field	Test	Value	List values	
	Application.	___	___		
	Release.	___	___		
___	Version.	___	___		
___	Level.	___	___		
___	Object exists.	___	___		
___	Source exists.	___	___		
___	Archived source exists	___	___		
___	Checked out.	___	___		
___	Include only objects run in the past ___0 days. . . N				

___	More...				
F3=Exit F4=Prompt F5=Refresh F11=List F12=Cancel F17=Save Filters					
F3=Exit					

Filtering fields

- 1 In the Test field, specify the type of test. (The operators available depend on the type of data that you are testing.)

Test	Description
EQ	Equals
NE	Not equals
GT	Greater than
LT	Less than
GE	Greater than or Equal to
LE	Less than or Equal to
CT	Contains
BT	Between
LI	In the defined list
NL	Not in the defined list
XX	Do not test

Notes

- To see information for specific characters, use CT. You must specify a value that begins with a percent sign (%), ends with a percent sign, or both. You can use an underscore in the value to indicate that any single character must occupy that position. For example, if you wanted to see information for programmer TJEFFERSON, you could specify %JEFF% in the Programmer field. However, you would also see information for programmer TJEFFERSON if you specified %ERS_N (this has one underscore) or __EFF% (this has two underscores).

- To see information for multiple values, use LI.

For example, to see a list of forms run by a programmer who has multiple user IDs, specify LI as the test, and then press F11 to specify the list of user IDs.

- To exclude information for multiple values, use NL.

For example, you might want to see a list of forms run by all programmers except AUSER and SMITH. Specify NL as the test and press F11 to define the list of User IDs (AUSER and SMITH) you want excluded. Your results will include information for all User IDs except AUSER and SMITH.

- To retain a value that you often, but do not always, use XX. Specify XX with a value when you want TURNOVER® Lifecycle Manager to ignore that value.
- TURNOVER® Lifecycle Manager applies an AND condition to its filtering. This means that TURNOVER® Lifecycle Manager will only display information that matches ALL the filtering criteria you specify.
- In most cases, if you do not specify a **Test** value, it will default to EQ. However, there are these exceptions:

If you leave the Test field blank and supply this in the Value field	The default Test value is
A value that contains a percent sign (%)	CT
A list of values (using F11)	LI
Both dates for the Run date field	BT

- On some, but not all, of the **Value** fields, press F4 to see a list of choices. On the **Value** fields that you can prompt, press F11 to supply or edit a list of values. When you specify a list of values, TURNOVER® Lifecycle Manager displays a partial list under **List values** on the Filtering panel. For more information, see the online Help.

Include only objects run in the past n days

Specify for how many days you want TURNOVER® Lifecycle Manager to display objects that have been promoted.

For example, to show objects promoted today (the current day), specify 0. To show objects promoted yesterday and today, specify 1. The maximum number of days, is 999.

You might have a particular number of days that you repeatedly reuse. If you specify that number in this field, you can use the field (Y/N) to the right to toggle this criteria setting on and off.

User specific settings

Page down on the Filtering panel to see additional options that apply to your user profile. TURNOVER® Lifecycle Manager saves these settings when you press Enter, and it saves them independently of the settings you specify for named filters.

MM/DD/YY		Work with Object History		Your Company, Inc.	
11:3					
Additional Options					
To					
User specific settings:					
1=B					
5=V	Sort by run date				<u>N</u>
	Show Latest.				<u>N</u>
	Exclude deleted objects.				<u>N</u>
—					
	Prompt for filters when entering object history. . .				<u>Y</u>
	Automatically apply filters				<u>Y</u>
	Initial filter name.	*DEFAULT	name, *	LAST	
	Automatically save filters				<u>Y</u>
	Show 'Press ENTER to confirm' message.				<u>Y</u>
—					
—					
—					
—					
—					
Bottom					
F3=Exit F4=Prompt F5=Refresh F12=Cancel F17=Save Filters					
F3=					

Sort by run date

Sorts the object history data in the Work with Object History panel.

N sorts in this order:

Field	Description
Object	Ascending by object name
Type code	Ascending by TURNOVER® Lifecycle Manager type code
Library	Ascending by object library
Run date	Descending by form run date
Run time	Descending by form run time
Form	Descending by form number
Line	Ascending by form line number

Y sorts in this order:

Field	Description
Run Date	Descending by form run date
Object	Ascending by object name
Type Code	Ascending by TURNOVER® Lifecycle Manager type code
Library	Ascending by object library
Run Time	Descending by form run time
Form	Descending by form number
Line	Ascending by form line number

Show Latest

To display only the most recent change for each object, based on object name (**Object**), object type (**Type**), and object library (**Library**), specify Y.

To display all the changes, specify N.

Exclude deleted objects

To omit the history for objects that were deleted in their most recent promotion, specify Y.

To include the history for deleted objects, specify N.

Prompt for filters when entering object history

Specify whether or not, upon entering object history (option 4 on the TURNOVER® Lifecycle Manager main menu), you want to see the Filtering panel.

By visiting the Filtering panel first, you can specify filtering criteria that describe the objects whose history you want to see. TURNOVER® Lifecycle Manager fills the Work with Object History panel only with those objects, which improves the speed at which TURNOVER® Lifecycle Manager presents the data and helps you to quickly find what you need.

To exit from the Filtering panel, press one of these keys:

Key	Description
Enter	Saves any changes, and then displays the Work with Object History panel.
F12	Does not save any changes, and then displays the Work with Object History panel.
F3	Does not save any changes, and does not display the Work with Object History panel.

- To display the Filtering panel, specify Y.
- To display the Work with Object History panel, specify N.

Automatically apply filters

When you re-enter the Work with Object History panel, you can apply the filtering criteria you last saved: specify **Y**

- If you type **Y** here, and **Prompt for filters when entering object history** is **N**, TURNOVER® Lifecycle Manager applies any filtering criteria you saved.
- If you type **N** here, and **Prompt for filters when entering object history** is **N**, TURNOVER® Lifecycle Manager does not apply any filtering criteria.

To apply those criteria, you can set **Apply filters** on the Work with Object History panel to **Y**.

Initial filter name

Specify the named filter you want to be the active filter when you enter the Work with Object History panel.

Press F4 to see a list of existing named filters, or use one of these values:

Value	Description
*DEFAULT	Use your default filters.
*LAST	Use the named filter you used the last time you exited the Work with Object History panel.
<i>name</i>	Type the name of a specific named filter.

Automatically save filters

Specify whether or not you want to save your filtering criteria when you exit the Filtering panel.

Value	Description
Y	Saves the criteria automatically, making them the default values for the named filter and available the next time you enter the Work with Object History panel. This means that you do not have to press F17 on the Filtering panel to save your current settings.
N	Does not save your settings automatically. To save them, you must press F17. ▪ If you have changed the criteria but not yet saved them, you can press F5 to revert to the values initially shown. ▪ If you have changed the named filter values but need to reinstate the default values for that named filter, exit from the Work with Object History panel, and then re-enter it.

Show 'Press ENTER to confirm' message

Specify whether or not you want to see a "Press ENTER to confirm" message when you change a named set's filtering criteria.

Value Description

Y	TURNOVER® Lifecycle Manager issues the message, and then waits for confirmation.
N	TURNOVER® Lifecycle Manager validate the changes, and then applies them immediately after pressing Enter.

Filtering examples

Example 1: Filter by application and objects promoted in the past 30 days

This example shows how display objects that have been promoted for a specific application in the past 30 days. This information could help you determine how often you need to make custom modifications to a vendor application.

MM/DD/YY
11:

Named Filter Maintenance
Your Company, Inc.

Filtering

Filter name: LAST30DAYS Appl BFFJ & Objects Promoted this month

1=A Select one or more filters:

	Field	Test	Value	List values
1	Application.	EQ	BFFJ	
—	Release.	—	—	
—	Version.	—	—	
—	Level.	—	—	
—	Object exists.	—	—	
—	Source exists.	—	—	
—	Archived source exists	—	—	
—	Checked out.	—	—	
—	Include only objects run in the past	30	days. . . Y	

More...

F3= F3=Exit F4=Prompt F5=Refresh F11=List F12=Cancel F17=Save Filters

- 1 For the **Application** field, type EQ (Equals) in the **Test** field, and then type the application code in the **Value** field.

To see a list of applications, press F4.

- 2 In the **Include only objects run in the past n days** field, type 30, and then type Y to turn on that criteria setting.
- 3 Press Enter twice.

```

MM/DD/YY                      Work with Object History                      Your Company, Inc.
11:35:18                      YOURSYS

To reposition screen, enter Object: _____ Apply filters . . Y
Filter name: LAST30DAYS

1=Browse current source  2=Browse archived source  3=Copy archived source
5=View form  6=Data explosion  7=Checkout  8=Archive information  ...

      Object      Library      Type      Run Date      Appl Rl Vr Lv      Cd      Obj      Src      Arc      Out
      _____      _____      _____      _____      _____      _____      _____      _____      _____      _____
      J41590Y      J73SLSOBJ      CLPJDE      8/02/20      BFFJ      7      3      2      R      Y      Y      Y      N
      J41590Y      J73TSTOBJ      CLPJDE      8/02/20      BFFJ      7      3      1      R      N      N      Y      N
      P4101      J73SLSOBJ      RPGJDE      8/02/20      BFFJ      7      3      2      R      Y      Y      N      N
      P4101      J73TSTOBJ      RPGJDE      8/02/20      BFFJ      7      3      1      R      N      N      N      N
      P41590Y      J73SLSOBJ      RPGJDE      8/02/20      BFFJ      7      3      2      R      Y      Y      Y      N
      P41590Y      J73TSTOBJ      RPGJDE      8/02/20      BFFJ      7      3      1      R      N      N      Y      N
      R41590Y      J73SLSOBJ      PRTJD3      8/02/20      BFFJ      7      3      2      R      Y      Y      Y      N
      R41590Y      J73TSTOBJ      PRTJD3      8/02/20      BFFJ      7      3      1      R      N      N      Y      N
      V4101      J73SLSOBJ      DSPJDE      8/02/20      BFFJ      7      3      2      R      Y      Y      Y      N
      V4101      J73TSTOBJ      DSPJDE      8/02/20      BFFJ      7      3      1      R      N      N      Y      N

Bottom
F3=Exit F5=Refresh F8=IFS history F11=Alt. view F12=Cancel F24=More keys
NOTE: This is a subsetting list.

```

Example 2: Filter by objects modified for a particular task reference and application level

This example shows how display only the objects that have been modified for a particular task reference and application level. This information could help you determine what objects you need to work with to make additional changes for a task.

```

MM/DD/YY                      Named Filter Maintenance                      Your Company, Inc.
11:                      Filtering
Filter name: REGT0136  Production objects modified for REGT0136
1=A  Select one or more filters:

      Field                      Test  Value      List values
      _____      _____      _____      _____
      1  Object . . . . .      —      _____
      —  Library. . . . .      —      _____
      —  Type code. . . . .      —      _____
      —  Object type. . . . .      —      _____
      —  Programmer . . . . .      —      _____
      —  Reference. . . . .      EQ      REGT0136
      —  Line status. . . . .      —      _____
      —  Action code (A/R/D). . . . .      —      _____
      —  Run date . . . . .      —      _____ and _____
      —  Form . . . . .      —      _____

More...
F3=  F3=Exit F4=Prompt F5=Refresh F11=List F12=Cancel F17=Save Filters
Named filter REGT0136 does not exist. Press ENTER to create.

```

Page down to set additional filtering criteria.

```

MM/DD/YY                      Named Filter Maintenance                      Your Company, Inc.
11:

                                Filtering
                                Filter name: REGT0136  Production objects modified for REGT0136
1=A  Select one or more filters:

                                Field                                Test  Value                                List values
1   Application. . . . . EQ  REGT
   Release. . . . . EQ
   Version. . . . . EQ
   Level. . . . . EQ  20

   Object exists. . . . . — —
   Source exists. . . . . — —
   Archived source exists . . . . . — —
   Checked out. . . . . — —

   Include only objects run in the past  0 days. . . N

                                More...
F3=      F3=Exit  F4=Prompt  F5=Refresh F11=List  F12=Cancel  F17=Save Filters
  
```

- 1 For the **Reference** field, type EQ (Equals) in the **Test** field and supply the task reference in the **Value** field. Press F4 to see a list of reference codes.
- 2 On the bottom panel, you specify that you only want to see the production objects (Level 20) that have been modified for application REGT.
- 3 Press Enter twice.

```

MM/DD/YY                      Work with Object History                      Your Company, Inc.
11:42:09                      YOURSYS

To reposition screen, enter Object: _____  Apply filters . . Y
                                                Filter name: REGT0136
1=Browse current source  2=Browse archived source  3=Copy archived source
5=View form  6=Data explosion  7=Checkout  8=Archive information ...

                                Exists                                Chk
                                Object  Library  Type  Run Date  Appl  Rl  Vr  Lv  Cd  Obj  Src  Arc  Out
___ CLP001  REGT100PRD  CLP    6/05/20  REGT    20  R    Y    Y  Y  N  N
___ CMD01   REGT100PRD  CLP    6/05/20  REGT    20  R    Y    Y  Y  N  N
___ CMD01   REGT100PRD  CMD    6/05/20  REGT    20  R    Y    Y  Y  N  N
___ DTAARA01 REGT100PRD  DTAARA 6/05/20  REGT    20  R    Y    N  N  N  N
___ DTAQ01   REGT100PRD  DTAQ    6/05/20  REGT    20  R    Y    N  N  N  N
___ DXLF1    REGT100PRD  LF      6/05/20  REGT    20  R    Y    Y  N  N  N
___ DXPF1    REGT100PRD  PF      6/05/20  REGT    20  R    Y    Y  N  N  N
___ DXPF2    REGT100PRD  PF      6/05/20  REGT    20  R    Y    Y  N  N  N
___ FILE01   REGT100PRD  PF      6/05/20  REGT    20  R    Y    Y  N  N  N
___ FILE02   REGT100PRD  PF      6/05/20  REGT    20  R    Y    Y  N  N  N
___ FILE03   REGT100PRD  PF      6/05/20  REGT    20  R    Y    Y  N  N  N
___ FILE04   REGT100PRD  PF      6/05/20  REGT    20  R    Y    Y  N  N  N

                                More...
F3=Exit  F5=Refresh  F8=IFS history  F11=Alt. view  F12=Cancel  F24=More keys
NOTE: This is a subsetted list.
  
```

All the production objects that have been modified for application REGT and task reference REGT0136 are shown.

- 4 To see the task reference, press F11 (Alt. view) twice.

Example 3: Filter by RPG service programs

This example filters by RPG service programs that have been created or modified for all applications. A service program is generally a reusable chunk of code that performs a function like calculating dates or converting dollars into euros. You might want to see what service programs already exist before writing a new one.

```

MM/DD/YY                Named Filter Maintenance                Your Company, Inc.
11:

Filtering
Filter name: RPGSRV      RPG Service Programs
1=A  Select one or more filters:

Field                    Test  Value      List values
1   Object . . . . .    ___  ___
   Library. . . . .    ___  ___
   Type code. . . . .   EQ   RPGSRV
   Object type. . . . .  ___  ___
   Programmer . . . . .  ___  ___
   Reference. . . . .   ___  ___
   Line status. . . . .  ___  ___
   Action code (A/R/D). . . . .  ___  ___
   Run date . . . . .   ___  ___ and ___
   Form . . . . .      ___  ___

More...
F3=    F3=Exit  F4=Prompt  F5=Refresh F11=List  F12=Cancel  F17=Save Filters
Named filter RPGSRV does not exist. Press ENTER to create.
  
```

- 1 For the **Type code** field, type EQ (Equals) in the **Test** field and RPGSRV (the type code for service programs) in the **Value** field.
- 2 Press Enter twice to see the results.

```

MM/DD/YY                Work with Object History                Your Company, Inc.
11:49:12                YOURSYS

To reposition screen, enter Object: _____  Apply filters . . Y
Filter name: RPGSRV
1=Browse current source  2=Browse archived source  3=Copy archived source
5=View form  6=Data explosion  7=Checkout  8=Archive information ...

Object  Library  Type  Run Date  Form  Status  Reference  Maj  Min
RPG009  SKPROD   RPGSRV  2/12/20  6308180  Ran-OK  SAKP0008  003.000
RPG009  SKTEST   RPGSRV  2/12/20  6307922  Ran-OK  SAKP0004  000.001
T3ADDCHGSV A2PROD   RPGSRV  2/20/20  6312174  Ran-OK  JM520059  000.000
T3ADDCHGSV A2TEST   RPGSRV  2/20/20  6312134  Ran-OK  JM520059  006.000
T3MSG     A2PROD   RPGSRV  2/20/20  6312174  Ran-OK  JM520059  006.000
T3MSG     A2TEST   RPGSRV  2/20/20  6312134  Ran-OK  JM520059  006.000

Bottom
F3=Exit  F5=Refresh  F8=IFS history  F11=Alt. view  F12=Cancel  F24=More keys
NOTE: This is a subsetting list.
  
```

Viewing archived information

Select option 8 (Archive information).

The Work with Archived Member panel appears.

MM/DD/YY 11:55:35		Work with Archived Member				Your Company, Inc.	
Object APPF001							
Library PRODTST							
Type *FILE							
1=Restore 2=Browse							
Form	Line	Archive Date	Archive File	Archive Library	Archive Member	Save Date	Save Volume
— 103214	005	01/21/20	APARCHIVE	ARCLIB	M000043912		
— 100621	006	06/30/20	APARCHIVE	ARCLIB	M000003249	00/00/00	
— 100301	001	04/11/20			M000000911	07/18/20	SLS210
— 100027	003	03/21/20			M000000312	07/18/20	SLS210
F3=Exit F12=Cancel							

This panel lists archived source members for the object you selected. Some of the members in the list might be in the application's current online archive file; some might be in an old online archive file that has not yet been stored offline; and some might be stored offline on the indicated save volume.

You can browse any member shown.

You can restore *only those that have been saved offline*. If the source code has not been saved offline, you can get a copy of the archived source by using option 3 on the Work with Object History panel. For more information, see ['How archiving works' on page 71](#).

Restoring archived source members

To restore archived source from off line, load the volume indicated on the panel, and then select the object you want to restore with option 1.

Source is then restored into any source physical file you designate. By default, the restore-to file and library are those defined in your TURNOVER® Lifecycle Manager programmer record. The library specified must exist. The file is created if it does not already exist.

TURNOVER® Lifecycle Manager can track previous generations of source members both on line and off line. You can have any number of previous generations stored on line; the number of generations stored offline depends on how long you decide to keep the archive tapes before re-using them.

How archiving works

TURNOVER® Lifecycle Manager archives items in a source file defined by **Source Archive File** global default. You can change this value by specifying a qualified source archive file at the application level, on the Application Defaults and Rules panel.

When source is archived during a form run, it is compressed and copied to the source file. If the source file does not exist, it is created.

When the number of members in the archive source file approaches the upper limit, TURNOVER® Lifecycle Manager issues messages whenever a form archives a source member (one message per form). If you do not change the global default and/or application default to archive to a new source file, TURNOVER® Lifecycle Manager builds a new application archive file when the number of members exceeds the maximum (32,767). The name of the file is *Annnnnnnnnn* (*nnnnnnnnnn* is the next available sequential number). It is stored in the same library as the original archive file.

Information about archived source members is stored in object history. You can browse or copy archived source members from the Work with Object History panel as long as the archive file has not been stored off line, and you can restore members from archive files that have been saved off.

To manage source archive files, use option 2 (Work with Source Archive Files) on the Utility menu. For more information, see ['Working with source archive files' on page 160](#).

When you run the Purge TURNOVER® Lifecycle Manager Forms job (option 1 on the Utility menu), you remove forms from the system. You can also remove all associated object history information for those forms, which in turn removes all associated archive information. For more information, see ['Deleting forms' on page 159](#).

6 Checking source in and out

When you check out source, TURNOVER® Lifecycle Manager prevents anyone else from checking out the same source member until you check it back in. It copies the source member from *production* to a *development* source file.

When you run a TURNOVER® Lifecycle Manager form to promote source back into production, TURNOVER® Lifecycle Manager automatically checks in the source. Manual check-in of source frees the source in production so someone else can check it out, but it does not change the source in production.

The checkout functions are accessible from:

- the TURNOVER® Lifecycle Manager Checkout menu
- the command line
- PDM
- Programmer's Worklist Manager (PWM). For more information, see the *Developer's Guide*.

For information about the multiple checkout feature, see '[Checking out in a multi-level environment](#)' on page 85. See also 'Emergency Changes' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

How TURNOVER® Lifecycle Manager finds the source to be checked out

TURNOVER® Lifecycle Manager tries to check out source for a production object by referring to the object description to find the source that created it, and then checks out and copies that source to the development library. If it cannot find the source based on the object description, TURNOVER® Lifecycle Manager looks at the application definition to find the source and checks it out from there.

If you specify a source member name to be checked out and no object exists, TURNOVER® Lifecycle Manager checks out the source member from a source file, without referring to the production object.

When you check out source, you do not need to know the source file name and library. You can specify the application name and TURNOVER® Lifecycle Manager uses the application definition to determine these variables. Depending on how TURNOVER® Lifecycle Manager is set up, you might not need to specify the name of your development library; TURNOVER® Lifecycle Manager can determine this from the application definition or your programmer profile.

When you check out an object, specify a *project task reference*. This makes it easier to build a form later: you can typing the reference, and then TURNOVER® Lifecycle Manager completes the form with the object names that were checked out or reserved here. If you use the Programmer's Worklist, TURNOVER® Lifecycle Manager uses the **Project task reference** associated with the worklist, by default.

If you check out source and then decide not to change it, you can check it in manually. In this case, checking in the source only resets the lock in the checkout file. The only time production source is changed is during the TURNOVER® Lifecycle Manager run, when it is copied to production. TURNOVER® Lifecycle Manager automatically checks in the source at that time.

Using the Checkout/Check-in menu

You are recommended to use the Programmer Worklist instead of the Checkout/Check-in menu, because the Worklist provides more functionality. For more information about PWM, see [Working with projects and tasks' on page 201](#).

To access the Checkout/Check-in menu

On the main menu, select option 5.

MM/DD/YY 09:15:50	Checkout/Check-in Menu	Your Company, Inc. YOURSYS
----------------------	-------------------------------	-------------------------------

Select one of the following:

1. View checked out objects/members	31. Checkout S/36 Menu
2. Check-in by object	32. Checkout S/36 DFU
3. Check-in by member	
4. Checkout	
10. View checked out IFS objects	
11. Check-in IFS object	
12. Checkout IFS object	
20. Work with object references	
21. Work with user-defined references	
22. Programmer Worklist Manager	
30. Work with *DATA definitions	

Select option: ____

F3=Exit F6=DSPMSG F12=Cancel F14=WRKSBMJOB F20=PDM Menu F21=System command

Recommendation

Check out source by specifying the production *object* name (or select from a list of objects) rather than checking out directly from the production source file.

When you specify the object name, TURNOVER® Lifecycle Manager checks the object description and the application description to find the source. You see where the source for the current object is stored. The advantage of this approach is that you *know* that you have the correct source. If someone had bypassed TURNOVER® Lifecycle Manager and compiled an object directly from a test source member, you would see that condition immediately.

Viewing checked out objects or members

To view checked out objects and members, do one of the following:

- On the Checkout/Check-in Menu, select option 1 (View checked out objects/members).
- On a command line, type `DSPCHKOUT`.

The View Checked Out Members panel appears.

MM/DD/YY 09:22:45	View Checked Out Members	Your Company Inc. YOURSYS				
Position to member: _____						
2=Change checkout record 5=Browse current member 6=Print current member						
Fltr:						
Member	Library	Src File	Type	Programmer	Reference	Status
MYOBJECT	AUSRPRDSRC	QRPGLESRC	RPGLE	AUSER	YCWP0004	NEW
TESTPF	AUSRPRDSRC	QCLSRC	CLLE	JSMITH	YCWP0001	NEW
TESTPF	AUSRPRDSRC	QDDSSRC	LF	JSMITH	YCWP0001	NEW
						Bottom
F3=Exit F4=Select F5=Refresh F11=View2 F12=Cancel F16=User options F21=Command						

The information on this panel is organized according to the source file information for the object. The checkout records for object-only objects (data areas, queries, some ILE programs, and so on) contain no source information; they are at the top of the list. For object-only items, press Page Down (you can not use **Position to**).

To	Do this
refine the list of objects	Use the Fltr fields.
display the production source	Select an object with option 5.
print the production source	Select an object with option 6.
reassign the checkout to another user or make other changes to the checkout record	Select an object with option 2. See <i>'Changing a checkout record' on page 75</i> .

To	Do this
view and select project and task codes to use as a filter	Press F4. This feature is available only if you use TURNOVER® Lifecycle Manager Projects.
view checked out IFS objects for this task	Press F11. See <i>'Working with IFS objects' on page 78.</i>

Changing a checkout record

You can change the source checkout record if you want to transfer checkout responsibility for a source member from one programmer to another.

You can transfer source to another programmer, and also delete the source from the original programmer when you transfer control.

You might want to change the checkout record if you need to reset to type code. For example, you might check out a DDS member, and then convert it to SQL DDL. You can change the type code on the checkout record to type of RPG. This then becomes the default when the TURNOVER® Lifecycle Manager form is created so that the correct create command is used to create the object.

To change the checkout record for an item

- 1 Select option 2 (Change) on the View Checked Out Members panel.

The Change Checkout Record panel appears.

Change Checkout Record		Your Company, Inc.
11:16:18	Application: MSPR Rel: Ver: Lev: 4	
Object	ACTPYBMSTF	
Library	MSPRDDTA	
Type	*FILE	
Production source file	QDDSSRC	
Library	MSPRDSRC	
Member	ACTPYBMSTF	
Type code	PF	
Test source file	QDDSSRC	
Library	MARYSDEV	
Member	ACTPYBMSTF	
Programmer	ELMESMIKE	
Reference	PROJ0002	
New type code	<u>*SAME</u>	*SAME, Type code, F4=List
New programmer	<u>*SAME</u>	*SAME, *USRPRF, Name, F4=List
New reference	<u>*SAME</u>	*SAME, Char, F4=List
Copy test source	<u>N</u>	Y,N
Delete test source	<u>N</u>	Y,N
F3=Exit F4=List F12=Cancel		

- 2 TURNOVER® Lifecycle Manager closes the first checkout record and create a new checkout record for the new programmer. To produce a report of this activity, see *'Source Checkout History report' on page 334.*

Checking in source for production objects

If you checked out source by referring to the object name, you can manually check it in by using option 2 (Check-in by object) on the Checkout/Check-in menu.

Checking in source does not replace the production source. That is only done in the TURNOVER® Lifecycle Manager form promotion job.

To check in an object's source manually

You must have Check-in authority for the application and level you select.

- 1 Select option 2 (Check-in by object) on the Checkout/Check-in menu.

The Check in Source for Production Object panel appears.

MM/DD/YY		Check in Source for Production Object		Your Company, Inc.	
Position to object: _____		Filter by Programmer: <u>PGMR1</u>			
		Reference: _____			
		Appl/Rel/Ver/Lev: _____			
1=Checkin 2=Checkin,delete test member 3=Checkin,delete test member/object					
Object	Library	Type	Programmer	Test Lib	Reference
ACTPYBMSTF	MSPRDDTA	*FILE	PGMR1	PGMR1DEV	PROJ0002
ACTPYBMSTF	MSPRDDTA	*FILE	PGMR1	PGMR1DEV	PROJ0002
ACTPYBMSTF	MSQADTA	*FILE	PGMR1	PGMR1DEV	PROJ0002
APCLP999	PRODTST	*PGM	PGMR1	DEVTEST	APPR0078
GNRLDGMSTF	MSPRDDTA	*FILE	PGMR1	PGMR1DEV	PROJ0002
GNRLDGMSTF	MSPRDDTA	*FILE	PGMR1	PGMR1DEV	PROJ0002
GNRLDGMSTF	MSQASTGDTA	*FILE	PGMR1	PGMR1DEV	PROJ0002
MYCOMMAND	MSPRDOBJ	*CMD	PGMR1	PGMR1DEV	MLST0002
MYCOMMAND	MSQAQOBJ	*CMD	PGMR1	PGMR1DEV	MLST0002
PYRMSTF	MSPRDDTA	*FILE	PGMR1	PGMR1DEV	PROJ0002
PYRMSTF	MSPRDDTA	*FILE	PGMR1	PGMR1DEV	PROJ0002
TIFHAPPT	DOCPRD	*PNLGRP	PGMR1	DOCDEV	PROJ0003
+					
Note: Source for objects being turned over to Production is checked in automatically. Do not check in manually.					
F3=Exit		F5=Fold/Unfold			

- 2 Select the object for which you want to check in source. You can select options to delete the test source member, or to delete both the source member and test object from your development library.

Alternative method

Use option 22 on the Programmer's Worklist (PWM). For more information about PWM, see *'Working with projects and tasks' on page 201*.

Checking in source members

If you checked out the source member directly from the production source file, you can manually check it in. Do not check in source manually if you are promoting the object or a source member in a TURNOVER® Lifecycle Manager promotion job.

Checking in source does not replace the production source. That is only done in the TURNOVER® Lifecycle Manager form promotion job.

To manually check in a source member

You must have Check-in authority for the application and level you select.

- 1 On the Checkout/Check-in menu, select option 3 (Check-in by member).

The Check in Source Members panel appears.

MM/DD/YY	Check in Source Members						Your Company, Inc.
Position to member: _____		Filter by Programmer: _____					
		Reference: _____					
		Appl/Rel/Ver/Lev: _____					
1=Checkin 2=Checkin,delete test member 3=Checkin,delete test member/object							
Source	File	Library	Member	Type	Programmer	Test Lib	Reference
_ QDDSSRC		JFC	CALL087RL	LF	ELMSMIKE	ELMEMIKE	T99M0203
_ QCLSRC		JFC	CLPXX	CLP	ELMSMIKE	ELMSMIKE	JFC
_ QCLSRC		JFC	CLP01	CLP	ELMSMIKE	ELMSMIKE	ETEVMIK +
Note: Source for objects being turned over to Production is checked in automatically. Do not check in manually. F3=Exit F5=Fold/Unfold							

- 2 Select the member for which you want to check in source.

You can delete either only the source member, or both the source member and test object.

Checking out source by object or member

You can check out source by object or source member using option 4 (Checkout) on the Checkout/Check-in Menu.

The Add Checkout panel appears.

```

Add Checkout (CHECKOUT)

Type choices, press Enter.

Object . . . . . _____ Name
Type code . . . . . _____ AAUDIT, ABPGM, ADMDL, ADPGM...
Application . . . . . _____ CHAR
Level . . . . . _____ Number
Reference . . . . . _____ Char

Additional Parameters

Library . . . . . *APPL _____ *APPL, name
Source Member . . . . . *OBJ _____ Name, *OBJ, *OBJD
Source File . . . . . *APPL _____ Name, *APPL
Source Library . . . . . *APPL _____ Name, *APPL
Source copy option . . . . . *NONE _____ *NONE, *ADD, *REPLACE
Duplicate non-src object . . . . . *YES _____ *YES, *NO
Release . . . . . _____ Number
Version . . . . . _____ Number

More...

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

```

To check out source by object or source member, you must be a user of the application you specify and have Checkout authority to that application.

You must specify valid libraries for the object or member you are checking out.

You cannot check out an object or member that is already checked out (unless group checkout is allowed).

Working with IFS objects

Displaying checked out IFS objects

On the Checkout/Check-in menu, select option 10 (View checked out IFS objects).

```

MM/DD/YY                View Checked Out Files Objects                Your Company, Inc.

Position to object: _____ Filter by Programmer: _____
                                Reference: _____
                                Appl/Rel/Ver/Lev: _____

2=Change checkout record

Object                                Type                                Programmer Reference
AUTCOD.CLA                           CLASS                                BAUMGARTEN WEB 0001
    Path: /PROD/JAVA/SLSAPPLETS/COM.SOFTLANDING
    Application: WEB Release: 00 Version: 00 Level: 02
AUTCOD.HTM                           HTML                                SMITH                                WEB 0001
    Path: /PROD/HTML/SLSWEB
    Application: WEB Release: 00 Version: 00 Level: 02
AUTCOD.JAV                           JAVA                                SMITH                                WEB 0001
    Path: /PROD/JAVA/SLSAPPLETS/COM.SOFTLANDING
    Application: WEB Release: 00 Version: 00 Level: 02
AUTOMARK.DOC                         IFSDOC                             JONES                                PROJ0003
    Path: /DOCS/TURNOVER/PUBLISH/R51
    Application: DOC Release: 05 Version: 01 Level: 02          +

F3=Exit    F4=Reference selection    F12=Cancel    F22=Full path/object

```

Checking in IFS objects

On the Checkout/Check-in menu, select option 11 (Check-in IFS object).

The Check in IFS Objects panel appears. It shows all the IFS objects that are currently checked out.

```

MM/DD/YY                      Check in IFS Objects                      Your Company, Inc.

Position to object: _____ Filter by Programmer: _____
                                   Reference: _____
                                   Appl/Rel/Ver/Lev: _____

1=Checkin  2=Checkin, delete test object

  Object                                     Type           Programmer Reference
- AUTOMARK.DOC                             IFSDOC          JONES             PROJ0003
    Path: /DOCS/TURNOVER/PUBLISH/R51
    Application: DOC Release: 05 Version: 01 Level: 02
- DISTRIB.DOC                             IFSDOC          JONES             PROJ0003
    Path: /DOCS/TURNOVER/PUBLISH/R51
    Application: DOC Release: 05 Version: 01 Level: 02
- EXITS.DOC                               IFSDOC          JONES             PROJ0003
    Path: /DOCS/TURNOVER/PUBLISH/R51
    Application: DOC Release: 05 Version: 01 Level: 02
- FILES.DOC                               IFSDOC          JONES             PROJ0003
    Path: /DOCS/TURNOVER/PUBLISH/R51
    Application: DOC Release: 05 Version: 01 Level: 02      +
Note: Objects being promoted on a TURNOVER® Lifecycle Manager form are
      checked in automatically. Do not check in manually.

F3=Exit      F22=Full path/object

```

Checking out IFS objects

To check out IFS objects, do one of the following:

- On the Checkout/Check-in menu, select option 12 (Checkout IFS object).
- On a command line, type `TCHKOUTIFS`.

The Check Out IFS Object panel appears.

```

Check Out IFS Object (TCHKOUTIFS)

Type choices, press Enter.

Object . . . . . _____

_____

_____

Type code . . . . . _____ CLASS, DLL, EXE, HLP, HTML,...
Application . . . . . _____ Character value
Reference . . . . . _____ Character value

Bottom

F3=Exit    F4=Prompt    F5=Refresh    F10=Additional parameters    F12=Cancel
F13=How to use this display    F24=More keys

```

For more information, see 'Managing IFS Objects' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Working with object references

The Work with Object References option displays usage information in TURNOVER® Lifecycle Manager's cross-reference files, if you built them for your application.

To build a cross-reference file for an application

- 1 Set the **X-Ref method** parameter to *TURNOVER for that application level.
- 2 On the Work with Application Definitions panel, type 20 to submit a cross-reference build job.

For more information, see '[Work with Application Definitions panel](#)' on page 10.

To view cross-reference files for your applications

- 1 On the Checkout/Check-in menu, select option 20 (Work with object references).

The Work with Object References panel appears.

Work with Object References (WRKOBJREF)

Type choices, press Enter.

Object Name	TLINEF	Name
Library Name	SOFTTURND	Name
Type code	PF	AAUDIT, ABPGM, ADMDL, ADPGM...
X-Ref Table Name	DEFAULT	APDEMO, DEFAULT, J52XREF, L..
Output	*	*, *PRINT

Bottom

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
 F24=More keys

- 2 Type the **Object Name**, **Library Name**, **Object Type**, and **X-Ref Table name** that the cross-reference information is in, and then press Enter.

To display a list of the cross-reference (X-Ref) tables, move to **X-Ref Table**, and then press F4.

- 3 On the Work with Object References panel, press Enter.

The Work with Cross-Reference panel appears.

```

MM/DD/YY  10:30:55                Work with Cross-Reference          Your Company, Inc.
                                      X-Ref Depth= 01

Data set . . . . DEFAULT      Apply filters . . . Y  (F17=Filters)

5=View checkout  6=Work with relationships  8=Browse member

----- Uses/Used-by ----->
Object  Library  Attr  Object  Library  Attr  How Used  Out  U/B
-  TLINEF  SOFTTURND  PF  ADDCHKITMR  SOFTTURN  RPG  Input  N  B
-  TLINEF  SOFTTURND  PF  ADDCMDR  SOFTTURN  RPG  Input  N  B
-  TLINEF  SOFTTURND  PF  ADDCMDXR  SOFTTURN  RPG  Input  N  B
-  TLINEF  SOFTTURND  PF  CHGFORMPRR  SOFTTURN  RPG  Update  N  B
-  TLINEF  SOFTTURND  PF  CVTLINCMTR  SOFTTURN  RPG  Input  N  B
-  TLINEF  SOFTTURND  PF  DISTDATAR  SOFTTRUN  RPG  Input  N  B
-  TLINEF  SOFTTURND  PF  TCRTPGM  SOFTTURN  CLP  Not given  N  B
-  TLINEF  SOFTTURND  PF  TCRTSRVPGM  SOFTTURN  CLP  Not given  N  B
-  TLINEF  SOFTTURND  PF  TLINEH  SOFTTURND  LF  PF->LF  N  B
-  TLINEF  SOFTTURND  PF  TLINEL  SOFTTURND  LF  PF->LF  N  B
-  TLINEF  SOFTTURND  PF  TLINEN  SOFTTRUND  LF  PF->LF  N  B
                                      More...

F3=Exit  F5=Refresh  F10=Data set information  F12=Cancel  F13=Repeat
F17=Filters  F21=Command line                      F22=Print
  
```

The panel displays all of the objects that refer to the object you specified, and how the reference object is used.

How Used

Value	Description
Input	Program uses the referenced file as input
Output	Program uses the referenced file as output
Out/Upd	Program uses the referenced file both for output and update
Update	Program updates referenced file
Pgm-Call	Program is called by the referenced program
PF->LF	LF is built over referenced object
Pgm-module	Program includes a referenced module
Pgm-SRVPGM	Program called by a service program
DTAARA	Data area referenced by a program
Cmd-VLDCKR	Command uses the referenced program as a validity checker program
Cmd-CPP	Command uses the referenced program as a command-processing program

Alternative methods

- You can also see cross-reference usage information by selecting option 15 on the Programmer's Worklist and Work with Object History panels.

- If you use Hawkeye's Pathfinder or Helpsystems' Abstract, or another cross-reference package, you can create a user-defined option while viewing the Work with Object History or Work with TURNOVER® Lifecycle Manager Forms panels to get into your cross-reference files quickly.

Working with user-defined references

To define relationships between objects, use option 21 to display the command line, and then use the WRKUSRREF command.

For example, to document the relationship between a display file, TURSLINA and its panel group help text object, type:

```
WRKUSRREF XRFTBL (TURN100)
```

The Cross Reference Table panel appears.

MM/DD/YY 10:38:12		Work with User Defined References				Your Company, Inc.	
		Cross Reference Table: TURN100				YOURSYS	
2=Change 4=Delete							
				Reference -----			
Object	Library	Type	Attr	Object	Library	Type	Attr
_ TURSLINA	SOFTTURN	*FILE	DSPF	TURHLINA	SOFTTURNE	*PNLGRP	PNLGRP
_ TURSLIND	SOFTTURN	*FILE	DSPF	TURHLIND	SOFTTURNE	*PNLGRP	PNLGRP
_ TURSFOFS	SOFTTURN	*FILE	DSPF	TURHFORS	SOFTTURNE	*PNLGRP	PNLGRP
F3=Exit F6=Add X-Ref F12=Cancel F21=System command							

The X-Ref table you specify is the one you defined when you set up your application definitions. You can add additional relationships by pressing F6.

While these relationships can be added and updated from this panel, you could also write a program that uses the Add a user-defined reference API program to add these entries more efficiently.

Accessing the Programmer Worklist Manager (PWM)

To start the Programmer Worklist Manager (PWM), use option 22 (Programmer Worklist Manager) on the Checkout/Check-in menu.

The Work with Programmer Worklists panel appears.

```

MM/DD/YY 10:42:10      Work with Programmer Worklists      Your Company, Inc.

Position to Worklist . . . . _____
Filter by Programmer . . . . _____ Filter by Task status . . . . _____
Filter by Appl rel ver . . . . _____

1=Select 2=Change 3=Copy 4=Delete 5=Display task 6=Work with forms
7=Print 8=Clear Worklist Filters

  Worklist  Description                Status  App Rel Ver Programmer
  _ APR0031  Vendor master file change          Done    AP          PSCHMIDT
  _ TOPR0542  Batch related application chg       Started TO40          PSCHMIDT
  _ TOPR0547  User options on exit panel          Started TO32          PSCHMIDT

F3=Exit F4=List F6=Add F7=Previous Worklists F12=Cancel F21=Command line
  
```

For more information, see '*Programmer Worklist Manager (PWM)*' on page 280.

Working with *DATA definitions

You can use the special *DATA object type to manage data in special system control files (such as menu files and report control files) and control changes to these files the same way you do other object types. You can associate *DATA with a type code to manage data at the record level using that type code. Using *DATA for your file, you can check out data in your file, change it, promote it, and optionally, distribute it to other systems.

To work with *DATA files, select option 30 (Work with *DATA definitions) on the Checkout/Check-in menu.

The Work with *DATA Files panel appears.

```

MM/DD/YY      Work with *DATA Files      Your Company, Inc.
10:43:45      YOURSYS

1=Checkout 2=Change definition 4=Delete defn 5=View file 9=Update test file

  File      Library  Member      App  Rel/Ver  Lev  Rpl Test lib  C.O. File
  _ ARNOLDPF  HENRY    ARNOLDPF    HRS           2    Y
  _ GGSTRDTA  AAXPRD   GGSTRDTA    AAX           2    N  AAXDEVX      TD00005F
  _ GGSTRDTA  AAXQA    GGSTRDTA    AAX           1    N  AAXDEVX      TD00004F
  _ PRDATA03  PRTEST   PRDATA      PR01          10    Y
  _ PRDATA03  RICHARDS PRDATA      PR01          20    N              TD00001F
  _ SIXFIELD  AAXPRD   SIXFIELD    AAX           2    N  AAXDEVX      TD00003F
  _ SIXFIELD  AAXQA    SIXFIELD    AAX           2    N  AAXDEVX      TD00006F

F3=Exit F6=Add definition F11=Alternate view F12=Cancel F14=WRKSBJOB
  
```

While the *DATA object type serves its purpose, it is somewhat cumbersome to use and has some limitations. For example, *DATA object types:

- do not let you define how others should edit the source for the object or how TURNOVER® Lifecycle Manager should move, delete, and archive the object
- do not readily support file and record format names that are greater than eight characters
- only manage records in a single file. They do not handle records in a group of related files, such as menu header and menu option files.

You can use *change management schemes* to selectively override, for a user-defined object type, almost any change management method that you would execute for an object. You can use the sample change management schemes that ship with TURNOVER® Lifecycle Manager as examples, or create your own schemes. For more information, see 'Managing object types, schemes and data' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Check out S/36 menu

S/36 environments only: Option 31 is displayed only if the **Manage S/36 object types** global default is set to Y.

Select option 31 to check out an S/36 menu.

The Checkout S/36 Menu panel appears.

```

Checkout S/36 Menu (CHKOUTMEN)

Type choices, press Enter.

MENU . . . . . _____ Name
Library . . . . . *APPL _____ Name, *APPL, *LIBL
Programmer . . . . . *USRPRF _____ Name, *USRPRF, *SELECT
Source checkout library . . . . *APPL _____ Name, *PGMR, *APPL
Application code . . . . . _____ Name
Release . . . . . _____ Number
Version . . . . . _____ Number
Level . . . . . _____ Number
Reference . . . . . _____ Char, *SELECT

Additional Parameters

Bypass Prompt . . . . . _ Y,N

Bottom
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

```

For more about S/36 menus, see 'Menus, DFUs, and Queries' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Check out S/36 DFU

S/36 environments only: Option 32 is displayed only if the **Manage S/36 object types** global default is set to Y.

- 1 Select option 32 to check out an S/36 DFU.

The Checkout DFU panel appears.

```

Checkout DFU (CHKOUTDFU)

Type choices, press Enter.

DFU . . . . . _____ Name
Library . . . . . *APPL _____ Name, *APPL, *LIBL
Programmer . . . . . *USRPRF _____ Name, *USRPRF, *SELECT
Source checkout library . . . . . *APPL _____ Name, *PGMR, *APPL
Application code . . . . . _____ Name
Release . . . . . _____ Number
Version . . . . . _____ Number
Level . . . . . _____ Number
Reference . . . . . _____ Char, *SELECT

Additional Parameters

Include Source . . . . . N Y,N

Bottom
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys
    
```

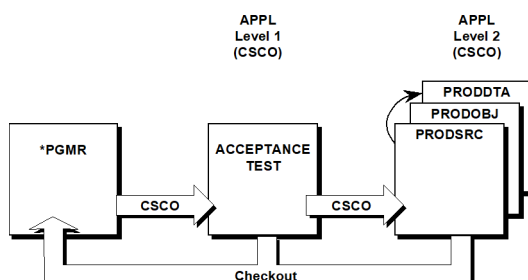
- 2 Do one of the following:

- To check out the source, set **Include Source** to Y.
- To check out only the DFU object, set **Include Source** to N.

For more about S/36 menus, see 'Menus, DFUs, and Queries' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Checking out in a multi-level environment

If you check out source from a multi-level environment, you do not have to tell TURNOVER® Lifecycle Manager from which level you are checking out.



When you check out source for an object, you specify the object name, object type, and application code. TURNOVER® Lifecycle Manager looks for the source by referring to the highest-level application description; in the example above, APPL level 2. If the source is checked out already, TURNOVER® Lifecycle Manager tells you that the source is checked out from the highest level (production) and, if it has been promoted to another level (Acceptance Test, in the example above), you can check it out from there.

If you have more than two levels defined, TURNOVER® Lifecycle Manager searches them all.

If you want to specify from which level you are checking out the source, you can still specify the level.

Checking out in a vendor environment

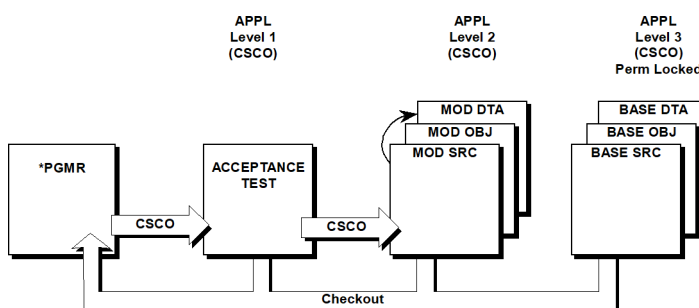
Checking out source in a vendor environment is useful if you are modifying software and want to keep the vendor's base versions intact.

You can specify one or more application levels (level 3 in the diagram below) to define the base libraries and source file names for your application. In the example, this level is “permanently locked” (controlled by a field on the Application Definition entry.) Most likely, you will never promote objects to that level; the exception to this is when you update the base with a new release from the vendor. However, you would use a different application definition for that purpose.

When you check out source for an object, you specify the object name, type, and application code. TURNOVER® Lifecycle Manager looks for the object and source by referring to the highest-level application definition *that is not permanently locked* (Modification Source Library, below).

- If TURNOVER® Lifecycle Manager does not find the source there (for example, if the base version had never been modified before), it checks for the source in the locked (base) level (3).
- If TURNOVER® Lifecycle Manager finds the source, it copies the source to your development library. TURNOVER® Lifecycle Manager creates a checkout record for the source member as if it had been found in the modification source file. Actually, it reserves the name at that level. When you create a form to promote the object, TURNOVER® Lifecycle Manager adds the object to the modification level libraries.

If you have more than one permanently-locked level, such as a PTF library and a Base library, TURNOVER® Lifecycle Manager searches the PTF library and then the base.



The Base level does not have to contain software from a vendor, but might be the previous release of an application you have developed. The modification level might represent work in progress on a later release.

To permanently lock an application definition

Select option 1 (Work with application definitions) on the TURNOVER® Lifecycle Manager main menu, and then select the **Application definition** for the permanently-locked levels. Set **Application permanently locked** to Y.

Multiple checkout feature

You can allow more than one programmer to check out the same object.

Enabling the multiple checkout feature

- 1 On the main menu, select option 8, and then select option 5 to set global defaults.
- 2 Set **Allow group checkout?** to Y.

Using the multiple checkout feature

When you enable the multiple checkout feature, a new parameter, **Exclusive lock**, appears on the Checkout commands. When you check something out, you must specify whether or not you want to lock it:

Value	Description
Yes	Other users can not check out the same object while you are working on it.
No	Other users can check out the same object.

- If you try to check out something that someone else has checked out, TURNOVER® Lifecycle Manager asks you to confirm that you want to check it out. If you do, all programmers that have it checked out receive a message telling them that you have checked it out.
- When you promote an object, if any other programmers have promoted the same object *while* you had it checked out, TURNOVER® Lifecycle Manager displays a list of all of the objects on your form that have been changed while you were working on it, along with who changed them and when. Before you can run your form, you must indicate that you have “reconciled” any changes the other programmers made. TURNOVER® Lifecycle Manager records that you confirmed that you have reconciled the changes. If you want a “Higher authority” to confirm that all changes have been made, attach an approval list to your applications and make sure the person responsible for approving and/or running the form confirms that the changes have been made.
- To display any objects you currently have checked out that have been changed concurrently by another programmer, use the `CHKCHGOBJ` (Check Changed Objects) command.

Multiple Checkout Approval
Your Company, Inc.

The objects listed below have been turned over by other programmers while checked out to **JIMCLARK**. Changes made by those programmers must be included in changes made by **JIMCLARK**.

Position to object _____
 Filter by programmer _____
 Filter by reference _____

Type options, press Enter.
 1=Approve 4=Cancel approval 5=View form 7=Project details

Object	Library	Type	Programmer	Form	Run Date	Reference	Approved
___ SLSF001	SLSLIB	RPG	ABFORTIS	10431	04/30/20	SLPR0321	PSMITH

F3=Exit F5=Refresh F12=Cancel F14=Display all

To confirm that the changes made by the other programmer have been made to your version of the object, selecting option 1 (Approve).

When the multiple checkout feature is enabled, TURNOVER® Lifecycle Manager will not run a form containing objects that you have not confirmed.

You cannot promote an object to an intermediate level while another programmer's work is in process (at the same target level).

You can check out an object from an intermediate level. The multiple checkout rules apply to any level.

Checking out message IDs

The Checkout Message ID (`CHKOUTMSG`) command checks out individual message IDs from a message file. You can specify an individual message ID, or `*SELECT` to build a list.

If you specify one ID, TURNOVER® Lifecycle Manager either checks out or reserves the ID, (provided it is not already checked out or reserved), and tries to copy the message ID into your development message file. If the message file does not exist, TURNOVER® Lifecycle Manager creates it first.

```

Checkout Message ID (CHKOUTMSG)

Type choices, press Enter.

Message ID . . . . . *SELECT      Message ID, *SELECT
Type code . . . . . _____    MSGID, MSGID2, MSGWI
Application . . . . . _____    Character value
Release . . . . . _____        Number
Version . . . . . _____        Number
Reference . . . . . _____      Character value, *SELECT

Bottom

F3=Exit   F4=Prompt   F5=Refresh   F10=Additional parameters   F12=Cancel
F13=How to use this display   F24=More keys

```

If you choose to select from a list of message IDs, this panel appears:

```

MM/DD/YY      Checkout Message IDs      Message file: MPMSGF
12:02:00      Library: PRODMP

Position to Msg ID . . _____

1=Checkout  5=Display Message Description

Msg ID  Description                                Chk
_____ Reserve message ID for programmer . . PHILLIPS      Out   To Pgmr
- LAN0001 Type is not a valid Lansa type for this applicat N
- LAN0002 Invalid from-partition entered.                  N
- LAN0003 Invalid from-Lansa program library entered.      N
- LAN0004 Invalid target partition entered.                  N
- LAN0005 Invalid target Lansa program library entered.     N
- LAN0006 Process must be entered if object is a function. N
- TUR0001 TURNOVER® Lifecycle Manager form &1 submitted to batch. Y FISHER
- TUR0002 TURNOVER® Lifecycle Manager job &1/&2/&3 started. N
- TUR0003 Form control record not on file for form &1. Tur N
- TUR0004 Form &1 has already been run or cancelled. Turno N
- TUR0005 Date/time range invalid for form &1. C=Cancel, G Y FISHER
- TUR0006 Invalid date/time warning was ignored by operato N
More...

F3=Exit  F12=Cancel  F21=System command

```

The list of messages is built interactively in a physical file in library QTEMP, and will be reused for subsequent checkouts, as long as the list is there. (In the unlikely event that messages have been added since the list was created and you want to rebuild the list, then you can delete file TMSGIDF in library QTEMP.)

To reserve a new message ID, type it on the line at the top of the list. When a programmer reserves an ID, only a checkout record is created; no message IDs are merged or created. Use the WRKMSGF command for this purpose.

To check out one or more IDs, select the message IDs you want to check out and press Enter. A checkout a record is created, and the message ID is merged into your development message file. At any point during the checkout, promotion, or distribution process, if a message ID is being merged into a message file that does not exist, the merge program will first create the message file.

Managing message IDs on your programmer worklist

Message ID types are fully supported by PWM.

You can add a message ID type item to the worklist just as you would any other item, with the exception that you cannot use a PDM user-option because message IDs do not appear in PDM. Therefore, you must use the `ADDPWLITM` command, F6 on the PWM panel. (The source for a sample exit program that will automatically add a checked out message ID to a programmer worklist has been provided in file ACLSRC in library SOFTTURN. The member name is TOEXIT9.)

Checkout and TURNOVER® Lifecycle Manager form creation is accomplished as it is for any other object type with options 21 and 46, either in batch or interactively. If you enter option 32 next to a message ID, it will execute the `WRKMSGD` command, positioning you in the message file to the ID you selected. If you enter option 35, the `DSPMSGD` command will be executed.

If a message ID exists at a given level, a `Y` appears in both the source and object found columns on the worklist.

Manual check-in of message IDs

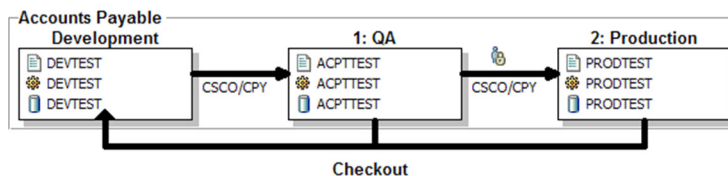
Check in manually using Checkout/Check-in option 4. All check-in options are supported, so you can either just check-in the message ID, or check it in and remove it from the development message file.

Recovery and roll-back of message IDs

Form recovery and roll-back are handled automatically, just as they are for any other object type. If you create a recovery form, the message IDs with action codes `A` and `R` (Add and Replace) are rolled back into the test message file, just as source is rolled back for normal types.

7 Working with forms

In TURNOVER[®] Lifecycle Manager, *form* means *promotion request*. Use forms to promote source and object from a test environment to a higher-level test environment, or to production.



A form is all the information TURNOVER[®] Lifecycle Manager needs to promote objects and source from left to right. Checkout occurs right to left and is done when you start a programming project-task. A form is created when you have finished programming and are ready to have your work certified and put back into production.

A form consists of:

- *Job control information*: the form header
- *Object information*: the lines on the form

A form can also contain:

- *Commands* (pre-run or post-run commands). Commands like override database file necessary for creating some objects can be included as pre-run commands. Commands can be associated with particular objects on the form: TURNOVER[®] Lifecycle Manager remembers this association for next time someone changes that object.
- *Create command overrides*. You can override the default create command TURNOVER[®] Lifecycle Manager uses to create this object. This command override is associated with a particular object on the form: TURNOVER[®] Lifecycle Manager remembers this association for next time someone changes that object.
- *Comments* (form and/or line). Documentation about the form; for example, instructions to the administrator or operations.
- *Lock checks* (objects which are checked for locks before the form starts to run). When you include objects to be checked, TURNOVER[®] Lifecycle Manager checks locks and allocate the object, if you want. You can check locks on any objects; not only those you are changing now.

- *Completion messages* (default messages or special messages to be sent when a form completes). Messages can be set up to be sent if the form runs successfully, fails, or in either case. Default messages can be set up for your application definition.

More information about forms

- Each form is identified by a 7 digit number: 2 digits as a *form prefix* number and 5 digits as a sequence number that is assigned by TURNOVER® Lifecycle Manager.
- If the number of lines on the form exceeds a number set by the XREFOVRFLW data area (default 900), the remaining lines are automatically added to one or more new forms, and a form group of is created.

Each form contains a reference to your project task (subject to how your environment is set up). This field is called **Reference** or **Project task reference**.

- Each form is run once. If a form needs to be rerun, it is copied to create a new form, and the new form is run. This enables TURNOVER® Lifecycle Manager to maintain a complete audit trail. The objects on a form are sequenced such that objects are created in the correct logical order (first, PF; then LF; then DSPF and so on).
- Logical files are added to the form automatically for physical files in a target library. You need to identify explicitly only the logical files that you have changed.
- When you purge forms, be careful not to remove valuable change history.
- Form status determines whether a form can be run. Only forms that are `READY` or `RECVD` status can be run. (`RECVD` is valid only on remote production systems where TURNOVER® Lifecycle Manager changes have been “received.”)

If Form status is `APL-PN` (Approval Pending), the form must be approved before being run.

- When a form is distributed to another system, it retains its original form number.
- Forms can be scheduled to run at any time in the future.
- Forms can run independently or as part of a group.
- Forms can be linked: that is, one form must complete successfully before another form can start.

Recommendation

Use the Programmer’s Worklist Manager (PWM) to manage your objects. You can do all of the steps you need such as checking out source and objects, editing source, compiling objects, creating and running TURNOVER® Lifecycle Manager forms, all from one panel.

Creating forms

- 1 On the TURNOVER® Lifecycle Manager main menu, select option 6 (Work with forms).

- 2 Press F6, and then enter the application level with which you are working; that is, AP level 1. You will be prompted for the last one you used; you can change this or press F4 to select another.
- 3 On the Add a Form panel, specify your project task code (or press F19 to select it from a list). Confirm the information on the form header.
- 4 Confirm the list of objects you checked out or reserved under that Project task code.
- 5 View and confirm the TURNOVER® Lifecycle Manager form on the Form Maintenance panel.
- 6 Exit and confirm exit panel choices.
- 7 Once you have returned to Work with Forms, you can request to have your form approved or run, or submit it yourself if you have the correct authority.

Work with Forms panel

MM/DD/YY 11:05:22		Work with Forms		Your Company, Inc. YOURSYS			
To reposition, enter form: _____		Apply filters . . N					
		Filter name *DEFAULT					
2=Update form	3=Copy to new form	4=Cancel form	5=Display form				
6=Print form	7=Run turnover	8=Work w/ job	9=Release job				
Form	Description	Appl	Rl/Vr	Lev	Run	Programmer	Status
5300189	Add CRM presentation	WEB		20	7/08/20	MARTIN	RAN-OK
5300188	Add CRM presentation	WEB		10	7/08/20	MARTIN	RAN-OK
5300187	Add press releases t	WEB		20	7/08/20	PHILLIPS	RAN-OK
5300186	Add press releases t	WEB		10	7/08/20	PHILLIPS	RAN-OK
5300185	Add press releases t	WEB		10	7/08/20	PHILLIPS	RECOVER
5300184	Add sales targets to	WEB		10	7/08/20	PHILLIPS	RAN-OK
5300183	Add CRM presentation	WEB		20	7/08/20	PHILLIPS	RAN-OK
5300182	Add CRM presentation	WEB		10	7/08/20	PHILLIPS	RAN-OK
5300181	Promote all web file	WEB		20	7/08/20	MARTIN	RAN-OK
5300180	Promote all web file	WEB		10	7/08/20	MARTIN	RAN-OK
5300178	Add development cont	WEB		10	7/08/20	MARTIN	RAN-OK
More...							
F3=Exit F4=Prompt F5=Refresh F6=Add form F7=DSPMSG F11=Alternate view							
F12=Cancel F14=WRKSBMJOB F16=User options F24=More keys							

The Work with Forms panel lists all the TURNOVER® Lifecycle Manager forms that have been entered. The most recent form is at the top of the list.

It displays only forms for applications that are unlocked and to which you have Forms authority.

If you are creating forms and receiving distributions on the same computer, this panel will position to the range of forms created on your computer. To see forms distributed to you from other computers, press Page Up.

Most developers use the Programmer Worklist Manager to perform many of the functions that described in this section. Although you might occasionally want to view and work with the list of TURNOVER® Lifecycle Manager forms, your change Administrator is more likely to use these panels frequently: you are more likely to work on objects associated with one request, while the change Administrator is more likely to want to work with all requests at one time.

Fields

To reposition, enter *field*

To find a form, type an identifying value, and then press Enter.

For example, if forms are sorted by number, type the number. If forms are sorted by programmer, type a programmer name.

To reposition, enter Programmer . . . : _____	Apply filters . . . <u>Y</u>
then form. : _____	

In the **then form** field, type a specific form number for that programmer and then press Enter.

If you type a form number to which you are not authorized, TURNOVER® Lifecycle Manager will position the panel to the next form matching your criteria.

For details about sorting and filtering TURNOVER® Lifecycle Manager forms, see [‘Maintaining named filters’ on page 100](#).

Apply filters

- To apply the sorting and filtering criteria you have specified, specify Y.

Y in reverse image indicates that you have already defined filtering criteria.

Y that is not in reverse image indicates that you have not defined filtering criteria.

For more information, see [‘Maintaining named filters’ on page 100](#).

- To list the forms in the default order, that is, descending order by form number, specify N.

Filter name

Specify the set of sorting and filtering criteria you want TURNOVER® Lifecycle Manager to apply to the list of forms.

For more information, see [‘Using named filters’ on page 97](#).

To	Do this
add a form	Press F6. See ‘Adding forms’ on page 107 .
change a form	Use option 2. The status must be READY or APL-PN.
copy a form	Select option 3.
cancel a form	Select option 4.
display a form	Use option 5.

To	Do this
print a form	Use option 6.
check a form for errors	Select option 1. This does not run the form. If you run this option in batch, an error checking report is printed. If you do not want the report to identify the line with errors, create a data area called TNO2100 and store it in a separate library that is defined to your TURNOVER® Lifecycle Manager environment. It does not matter what the data area contains; it only needs to exist.
submit a form	Use option 7.
submit the form to be run without checking for errors	Use option 17. You must have Run authority.
display the job if the has been submitted or run	Use option 8.
release the form from the job queue (if it was submitted on hold)	Use option 9.
approve a TURNOVER® Lifecycle Manager form, or to send messages to people who are on the approval list	Use option 10. Your user profile must be in the application approval list.
view and change the form distribution status	Use option 11. Applies only to applications that are being distributed to other computers. You must have distribution authority.
create a recovery form (to undo changes)	Use option 12.
sort and filter forms	Press F17. See <i>'Maintaining named filters' on page 100.</i>
display a list of valid values for the current field (where available)	Press F4.
display changes to the form statuses	Press F5.
display and respond to messages	Press F7.
display more information about the forms	Press F11. Press F11 again to toggle the view.

To	Do this
view and work with the status of jobs that you've submitted	Press F14.
select user defined options	Press F16. PP - Use option PP to flag a form to be purged. Status will be PURGEPND. SC - Use option SC to call your source compare program. (See ' Changing the source compare program ' on page 178.)
exit from the panel without saving any changes	Press F3 or F12.

Cancelling a form

When you cancel a form that is running, TURNOVER® Lifecycle Manager updates a data area that tells the form job that a cancellation has been requested. TURNOVER® Lifecycle Manager checks this data area just before it processes each line/object on the form. If the data area indicates that a cancellation has been requested, TURNOVER® Lifecycle Manager applies recovery processing to the form and restores, back to their original state, objects that have already been promoted. However, once all the lines/objects have been promoted and the form has moved to the finalization phase, the cancellation does not occur and the form completes normally.

Original status	Status after cancelling
READY	CANCEL
APL-PN	CANCEL
SUBMIT	READY
RUNNING	RECOVER
IN USE	READY
(Be sure no one is using the form before canceling it.)	
DST-PND	If all distributions for a form confirmed CONFIRM
	If all distributions for a form distributed but not all have been confirmed yet DISTRIB
	If some but not all distributions have distributed PARTIAL
	If there are no distributions for a form RAN-OK

Using named filters

A named filter defines a set of filtering criteria you want TURNOVER® Lifecycle Manager to apply to the forms list.

- 1 On the Work with Forms panel, move to **Filter name**, and then press F4.

The Select Named Filter panel appears.

MM/DD/YY 11:28:35		Work with Forms		Your Company, Inc. YOURSYS	
To reposition, enter form:		Apply filters . . N			
		Filter name: *DEFAULT			
2=Update form 6=Print form		Select Named Filter			
		Position to: _____			
		1=Select			
Form	Desc	Fltr: _____			
___ 5300189	Add	___ *DEFAULT			
___ 5300188	Add	___ KING_FORMS King's Forms that need approval			
___ 5300187	Add	___ RANOK_WRN Forms that RAN-OK or RAN-WRN			
___ 5300186	Add	___ RECOVER Recovered forms			
___ 5300185	Add				
___ 5300184	Add				
___ 5300183	Add				
___ 5300182	Add				
___ 5300181	Promo				
___ 5300180	Promo	F2=Maintain Filters F3=Exit F12=Cancel			
___ 5300179	Add				
___ 5300178	Add				
		Bottom			
		More...			
F3=Exit F4=Prompt F5=Refresh F6=Add form F7=DSPMSG F11=Alternate view					
F12=Cancel F14=WRKSBMJOB F16=User options F24=More keys					

- 2 Select a filter name with option 1, and then press Enter.

On the Work with Forms panel, TURNOVER® Lifecycle Manager sets the **Apply filters** flag to Y in reverse image to indicate that you have applied filtering criteria. To display the filtering criteria, press F17.

- 3 To add, change, copy, delete, and view named filters, do one of the following:

- On the Select Named Filter panel, press F2.
- Prompt the WRKNAMFLT command, and then specify *OBJHST as the filter program.

The Named Filter Maintenance panel appears.

```

MM/DD/YY                Named Filter Maintenance                Your Company, Inc.
11:23:17                W/w Object History - user filters

                        Position to . . . _____ (HOME)

1=Add  2=Change  3=Copy  4=Delete  5=View

    Name      Description
    _____
    *DEFAULT
    KING_OBJ   King's Objects that are ready
    RANOK_WRN  Objects that RAN-OK or RAN-WRN
    RECOVER    Recovered objects

                                                                Bottom
F3=Exit  F5=Refresh  F11=Show Shared  F12=Cancel  F21=System Command
  
```

To move the cursor to a filter, press the Home key to move the cursor to **Position to**, type the name of the filter, and then press Enter.

To add a named filter

- 1 Type 1 (Add) on the left top field, tab to the right, and then type a name.

The maximum length is 10 characters.

- 2 Press Enter.

The Filtering panel appears.

```

                                Filtering
Filter name: READYOBJS _____
1=A  Select one or more filters:

    Field                                Test  Value      List values
    _____
    1  Object . . . . .                ___  _____
    ___ Library. . . . .                ___  _____
    ___ Type code. . . . .                ___  _____
    ___ Object type. . . . .                ___  _____
    ___ Programmer . . . . .                ___  _____
    ___ Reference. . . . .                ___  _____
    ___ Line status. . . . .                ___  _____
    ___ Action code (A/R/D). . . . .                ___  _____
    ___ Run date . . . . .                ___  _____ and _____
    ___ Form . . . . .                ___  _____

                                                                More...
F3=      F3=Exit  F4=Prompt  F5=Refresh  F11=List  F12=Cancel  F17=Save Filters
Named filter READYOBJS does not exist.  Press ENTER to create.
  
```

- 3 Type a filter description (of up to 40 characters) in the field to the right of the filter name.

- 4 Specify the filtering criteria.

For more information about defining your filtering criteria, see [‘Sorting and filtering forms’ on page 100](#).

- 5 Press F17 to save the criteria settings, and then press Enter to create the filter.

Maintaining named filters

To copy and share filters

To make a filter available to other users, you can copy it to a *shared* filter.

- 1 Select the filter with option 3 (Copy).

The Copy Filter panel appears.

Copy Filter

From Filter: READYOBSJS Objects with a Ready status
Type: *USER

To Filter: READYOBSJS Objects with a Ready status
Type: *USER *USER, *SHARED

3 F3=Exit F12=Cancel

- 2 Specify the name and description of the new filter set.
- 3 Specify the type of filter.

Type	Description
*USER	Private filters: that is, they are specific to your user profile. Only you have access to these filter sets.
*SHARED	A pool of named filter sets that are shared among users. Only users with System Aut authority can delete shared filter sets.

You can interchange user and shared filter sets when copying:

Type	Description
*USER to *USER	Copy a private filter set, with the same criteria.
*USER to *SHARED	Copy a private filter set to a shared filter set to make it available to others to copy to their own private filters. Any changes that are made to the private filter do not affect the shared filter set.
*SHARED to *USER	Copy shared filter sets to user filter sets to create your own private versions. Any changes that you make to the resulting private filter set do not affect the original shared filter set.
*SHARED to *SHARED	You cannot change shared filters; this function is not allowed.

- 4 Press Enter.
- 5 On the Named Filter Maintenance panel, you can press F11 to toggle between lists of user filter sets and shared filter sets.

Maintaining named filters

To	Do this
display a named filter	Type 5 next to the filter, and then press Enter. To see other filters, press F19 (Previous) or F20 (Next).
change a named filter	Type 2 next to the filter, and then press Enter.
copy a named filter	Type 3 next to the filter, and then press Enter.
delete a named filter	Type 4 next to the filter, and then press Enter.

Sorting and filtering forms

The Sorting and Filtering panel appears when you add and maintain filter names, and when you press F17=Filters on the Work with Forms panel.

MM/DD/YY
11:3

Work with Object History

Your Company, Inc.

Filtering

To Filter name: *DEFAULT

Select one or more filters:

1=B

5=V

Field	Test	Value	List values
Object	—	_____	
Library.	—	_____	
Type code.	—	_____	
Object type.	—	_____	
Programmer	—	_____	
Reference.	—	_____	
Line status.	—	_____	
Action code (A/R/D).	—	—	
Run date		_____ and _____	
Form	—	_____	

More...

F3=Exit F4=Prompt F5=Refresh F11=List F12=Cancel F17=Save Filters

F16

Define sorting and filtering criteria for the forms listed on the Work with Forms panel.

Sorting fields

Select one field, with **A** (ascending order) or **D** (descending order).

Filtering fields

You define filtering criteria by supplying values in the **Test** and **Value** fields.

The value that you can specify in the **Test** field depends on which field you are filtering by. For example, if you are filtering by programmer, you can supply any valid test value except **BT**. Also, if you are filtering by programmer, you are likely to supply a specific programmer's profile name in the **Value** field.

TURNOVER® Lifecycle Manager applies an AND condition to its filtering: that is, it displays only forms that match *all* the filtering criteria you specify.

On most of the **Value** fields, you can press F4 to see a list of choices. To change the list, press F11.

Test	Description
EQ	Equals
NE	Not equals
GT	Greater than
LT	Less than
GE	Greater than or equal to
LE	Less than or equal to
CT	Contains
BT	Between
LI	In the defined list
NL	Not in the defined list
XX	Do not test

In most cases, **Test** defaults to **EQ**. There are these exceptions:

Value	Default Test
A value that contains a percent sign (%)	CT
A list of values (using F11)	LI
Both dates for the Entered date or Run date field	BT

To see information for specific characters

Use **CT**. Specify a value that begins or ends with % (percentage sign). Use _ (underscore) as a wildcard character.

For example, to see information for programmer **TJEFFERSON**, you could specify **%JEFF%** in the **Programmer** field.

You would also see information for TJEFFERSON if you specify %ERS_N (this has one underscore) or __EFF% (this has two underscores).

To see information for multiple values

Use LI.

For example, to see a list of forms run by a programmer who has multiple user IDs, specify LI as the test, and then press F11 to define the list of user IDs.

To exclude information for multiple values

Use NL.

For example, to see a list of forms run by all programmers except AUSER and SMITH, specify NL as the test, and then press F11 to define the list of user IDs (AUSER and SMITH) you want excluded.

To retain a value

Use XX to retain a value that you often, but do not always, test. Specify XX with a value when you want TURNOVER® Lifecycle Manager to ignore that value.

Include only approval pending for your user ID

This field only appears if you set **Status** to EQ APL-PN.

MM/DD/YY		Work with Forms		Your Company, Inc.	
11:					
Sorting and Filtering					
Filter name: *DEFAULT					
2=U	Select ONE field to sort by:		Select one or more filters:		
6=P	Sort A=Asc,D=Desc		Test	Value	List values
	Application		—	—	
	Release		—	—	
	Version		—	—	
	Level		—	—	
	Reference		—	—	
	Programmer		—	—	
	Status		EQ	APL-PN	
	Description		—	—	
	Entered date		—	—	and
	Run date		—	—	and
Include only approval pending for your user ID: N					
Include only forms entered in the past 0 days: N					
Include only forms run in the past 0 days: N					
More...					
F3=	F3=Exit F4=Prompt F5=Refresh F11=List F12=Cancel F17=Save Filters				
F12	Press ENTER to confirm.				

Y displays only forms with a status of APL-PN, and for which you are on the approval list.

N displays all forms with a status of APL-PN, including those for which you are not on the approval list.

Include only forms entered in the past n days

Specify for how many days you want TURNOVER® Lifecycle Manager to display forms that have been entered.

For example, 0 displays only forms that were entered today. 1 displays forms that were entered today and yesterday.

The maximum number of days is 999.

If you have a particular number of days that you often use, use the Y/N field to the right to toggle this criteria setting on and off. This works the same way for the following field, **Include only forms run in the past n days**.

Include only forms run in the past n days

Specify for how many days you want TURNOVER® Lifecycle Manager to display forms that have been run.

For example, 0 displays only forms that were run today. 1 displays forms that were run today and yesterday.

The maximum number of days is 999.

User specific settings

Page down on the Sorting and Filtering panel to see fields that apply to your User ID. TURNOVER® Lifecycle Manager saves these settings when you press Enter, and it saves them independently of the settings you specify for named filters (thereby keeping them apart from the shared filter settings).

MM/DD/YY 11:5	Work with Forms	Your Company, Inc.
Additional Options		
2=U	User specific settings:	
6=P	Automatically apply filters. <u>N</u>	
	Initial filter name. <u>*DEFAULT</u> name, *LAST	
—	Automatically save filters <u>N</u>	
—	Show 'Press ENTER to confirm' message. . . <u>Y</u>	
—		
—		
—		
—		
Bottom		
F3=	F3=Exit	F4=Prompt F5=Refresh F12=Cancel F17=Save Filters
F12		

Automatically apply filters

Y applies the last saved sorting and filtering criteria when you re-enter the Work with Forms panel.

If you set this to N, you can still apply the criteria when you re-enter the Work with Forms panel: type Y in **Apply filters**, and then press Enter.

To save the criteria you have set on the Sorting and Filtering panel, press F17 on that panel.

Initial filter name

Specify the named filter you want to use when you enter the Work with Forms panel.

Value	Description
*DEFAULT	Use your default filters.
*LAST	Use the named filter you used the last time you exited the Work with Forms panel.
<i>name</i>	A specific named filter. Press F4 to see a list of named filters.

Automatically save filters

Y automatically saves your sorting and filtering criteria when you exit the Sorting and Filtering panel. They will be applied the next time you enter the Work with Forms panel.

N does not save the criteria automatically: to save them, you must press F17.

Show 'Press ENTER to confirm' message

Y displays a “Press ENTER to confirm” message after you change the sorting and filtering criteria and press Enter. This message lets you verify your criteria you apply them.

N applies the new criteria to the named filter immediately.

Examples

Example 1: Sort by reference in descending order

[illegible]

Type **D** (Descending) in the **Reference** field, and then press Enter twice.

MM/DD/YY 12:20:14	Work with Forms	Your Company, Inc. YOURSYS
To reposition, enter Reference. . . : WEB0007		Apply filters . . Y
then form.		Filter name: *DEFAULT
2=Update form	3=Copy to new form	4=Cancel form
6=Print form	7=Run turnover	8=Work w/ job
		9=Release job
Sorted Descending by Reference		
Form	Description	Entered Reference Status
5300189	Add CCM FAQ to support site	8/08/20 WEB0007 RAN-OK
5300188	Add instructions to "Download fixes" pa	8/08/20 WEB0006 RAN-OK
5300191	Add instructions to "Download fixes" pa	8/08/20 WEB0006 RAN-OK
5300190	Add auth code generation and logging	7/03/20 WEB0005 RAN-OK
5300187	Add auth code generation and logging	7/03/20 WEB0005 RAN-OK
5300186	Add auth code generation and logging	7/03/20 WEB0005 RAN-OK
5300185	Add auth code generation and logging	6/20/20 WEB0005 RECOVER
5300201	Post new version of docs	6/13/20 WEB0004 RAN-OK
5300184	Post new version of docs	6/12/20 WEB0004 RAN-OK
5300183	Integration with IBM i Projects	4/16/20 WEB0003 RAN-OK
5300182	Integration with IBM i Projects	4/16/20 WEB0003 RAN-OK
5300181	Integration with IBM i Projects	4/16/20 WEB0003 RAN-OK
More...		
F3=Exit F4=Prompt F5=Refresh F6=Add form F7=DSPMSG F11=Alternate view		
F12=Cancel F14=WRKSBMJOB F16=User options F24=More keys		

To see the form references, as shown here, press F11 (Alternate view) from your initial view of the Work with TURNOVER® Lifecycle Manager Forms panel.

The reference codes (WEB0007 through WEB0003) are in descending order. The form numbers are in descending order in each reference code group. **Apply filters** is set to Y, but is not in reverse image; this indicates that you have not defined any filtering criteria.

Example 2: Filter forms by date range

MM/DD/YY 12:21:14	Work with Forms	Your Company, Inc.
Sorting and Filtering		
Filter name: *DEFAULT		
2=U	Select ONE field to sort by:	Select one or more filters:
6=P	Sort A=Asc,D=Desc	Test Value List values
—	Application	—
—	Release	—
—	Version	—
—	Level	—
—	Reference	—
—	Programmer	—
—	Status	—
—	Description	—
—	Entered date	BT 1/05/20 and 1/15/20
—	Run date	— and —
Include only forms entered in the past 0 days: N		
Include only forms run in the past 0 days: N		
More...		
F3=Exit F4=Prompt F5=Refresh F11=List F12=Cancel F17=Save Filters		
F12 Press ENTER to confirm.		

Type BT (Between) in the **Test** field and the dates in the **Value** field, and then press Enter.

MM/DD/YY 12:35:15	Work with Forms	Your Company, Inc. YOURSYS
To reposition, enter form: _____		Apply filters . . Y
		Filter name: *DEFAULT
2=Update form	3=Copy to new form	4=Cancel form
6=Print form	7=Run turnover	8=Work w/ job
5=Display form 9=Release job		
Form	Description	Entered Reference Status
___ 6402836	Error when processing new claims	8/01/20 SAKP0003 READY
___ 6402835	pre/post run command authority	7/31/20 PRPR0135 RAN-OK
___ 6402834	pre/post run command authority	7/31/20 PRPR0135 RAN-OK
___ 6402833	pre/post run command authority	7/31/20 PRPR0135 RAN-OK
___ 6402832	pre/post run command authority	7/31/20 PRPR0135 RAN-OK
___ 6402831	prepost	7/27/20 REGT0542 READY
___ 6402830	prepost	7/27/20 REGT0542 RAN-OK
___ 6402829	prepost	7/27/20 REGT0542 RAN-OK
___ 6402828	prepost	7/27/20 REGT0542 RAN-OK
___ 6402827	prepost	7/27/20 REGT0542 RAN-OK
___ 6402826	prepost	7/27/20 REGT0542 RAN-OK
___ 6402825	Recover Form 6402824	7/27/20 JPWP0104 RAN-OK
More...		
F3=Exit F4=Prompt F5=Refresh F6=Add form F7=DSPMSG F11=Alternate view		
F12=Cancel F14=WRKSBMJOB F16=User options F24=More keys		

In this example, all forms entered between July 27, 2020 and August 1, 2020 (inclusive) are shown. The forms are in descending order by form number. The **Apply filters** flag is set to Y, and is in reverse image to indicate that you have defined filtering criteria.

Example 3: Sort by reference in ascending order and filter for level 20 forms with a status of APL-PN

This example combines sorting and filtering. For example, you can sort forms by reference code in ascending order, and include only include level 20 forms for which you (the signed on user) are on the approval list.

MM/DD/YY 12:31:14	Work with Forms	Your Company, Inc.
Sorting and Filtering		
Filter name: *DEFAULT		
2=U	Select ONE field to sort by:	Select one or more filters:
6=P	Sort A=Asc,D=Desc	Test Value List values
___	Application	___
___	Release	___
___	Version	___
___	Level	<u>EQ</u> <u>20</u>
___	<u>A</u> Reference	___
___	Programmer	___
___	Status	<u>EQ</u> <u>APL-PN</u>
___	Description	___
___	Entered date	___ and ___
___	Run date	___ and ___
Include only approval pending for your user ID: <u>Y</u>		
Include only forms entered in the past <u>0</u> days: <u>N</u>		
Include only forms run in the past <u>0</u> days: <u>N</u>		
More...		
F3=Exit F4=Prompt F5=Refresh F11=List F12=Cancel F17=Save Filters		
F12 Press ENTER to confirm.		

- 1 In the **Reference** field, type A (Ascending).
- 2 Next to **Application/Level**, type EQ (**Equals**) in the **Test** field and 20 in the **Value** field.
- 3 Next to **Status**, type EQ (**Equals**) in the **Test** field and APL-PN in the **Value** field.

4 Press Enter twice.

The results will look something like this.

```

MM/DD/YY                      Work with Forms                      Your Company, Inc.
12:47:20                      YOURSYS

To reposition, enter Reference. . . : AAX 0062      Apply filters . . Y
                                then form. . . . . :      Filter name: *DEFAULT

2=Update form    3=Copy to new form    4=Cancel form    5=Display form
6=Print form     7=Run turnover        8=Work w/ job    9=Release job

                                Sorted Ascending by Reference

  Form   Description                               Entered Reference Status
  ___    _____                               _____
  ___ 6305668 Jean's first Helpdesk task           6/14/20 AAX 0062  APL-PN
  ___ 6310946 Testing application authorities for Don 8/01/20 AAX 0171  APL-PN
  ___ 6310867 Testing post runs for Brooks          8/13/20 BOB 0001  APL-PN
  ___ 6305979 This is a test                        7/31/20 JPHD0001  APL-PN
  ___ 6310044 General testing task                  7/10/20 JPWP000P  APL-PN
  ___ 6312373 Testing if checkout source/object      3/04/20 JPWP001F  APL-PN
  ___ 6306867 Dependent on PR01                    11/01/20 PRPR0002  APL-PN
  ___ 6308503 Blank form                            3/03/20 PRPR0003  APL-PN
  ___ 6400017 Blank form                            7/16/20 REGT0038  APL-PN
  ___ 6311369 Recover form 6311357                  11/21/20 REGT0109  APL-PN
  ___ 6312277 Blank form                            2/26/20 REGT0116  APL-PN
  ___ 6312219 BOB with pre and post LOCAL only      2/23/20 REGT0116  APL-PN
                                Bottom

F3=Exit F4=Prompt F5=Refresh F6=Add form F7=DSPMSG F11=Alternate view
F12=Cancel F14=WRKSBMJOB F16=User options F24=More keys
  
```

To see the form references, as shown here, press F11 (Alternate view) from your initial view of the Work with TURNOVER® Lifecycle Manager Forms panel.

The forms are in ascending within each reference code group. (Only the last two forms belong to the same reference code, and form number 6312277 precedes form number 6312219.)

Adding forms

1 On the Work with Forms panel, press F6 to add a form.

The Select Application for New Form panel appears.

```

MM/DD/YY                      Work with Forms                      Your Company, Inc.
12:56:53                      YOURSYS

To reposition, enter form: _____

2=Updat                      Select Application for New Form
6=Print

                                Application . . . AP      F4=List
  Form   Release . . . . . atus
  ___ 1423 Version . . . . . ADY
  ___ 1423 Level . . . . . 1  N-OK
  ___ 1423 ADY
  ___ 1423 ADY
  ___ 1423 STRIB
  ___ 1423 RTIAL
  ___ 1423 F4=List F12=Cancel R-OK
  ___ 1423 COVER
  ___ 1423 N-OK
  ___ 1423 ADY
  ___ 1423540 Test Threshold on fo AP 1 7/27/20 PHILLIPS RECOVER
  ___ 1423539 Test Threshold on fo AP 1 7/27/20 PHILLIPS RECOVER
                                More...

F3=Exit F5=Refresh F6=Add form F7=DSPMSG F11=Alternate view
F12=Cancel F14=WRKSBMJOB F16=User options F24=More keys
  
```

- 2 To display a list of forms from which you can choose, press F4.

MM/DD/YY	Application Selection					Your Company, Inc.
Function: Add new form						
Appl Rel Ver Lev Application Description						
Filter: _____						
1=Select						
	Appl	Rel	Ver	Lev	Application Description	
-					System-Wide	
-	1	A/P		1	Accounts Payable Level 1	
-		A/P		2	Accounts Payable Level 2	
-		FDA	2		File Design Aid Release 2	
-		FDA	3		File Design Aid Release 3	
-		MENU			CENTRAL® Menu	
-		PROB	1		Problem Tracking Release 1	
-		PROB	1	2	Problem Tracking Release 1.2	
-		SECR	1	1	Secret Application	
-		SECR	2	1	Secret Application release 2	
-		SECU	1	1	Security Management Release 1	
-		SECU	2	1	Security Management Release 2	
-		SLS		2	SoftLanding Prospect/Order System	
						Bottom
F3=Exit F12=Cancel						

- 3 On the Application Selection panel, select the appropriate application.

You can filter the list of applications by any or all of the filter fields. For more information, see the online help.

MM/DD/YY	Add a Form				Your Company, Inc.
12:59:43	Application:	A/P	Rel:	Ver:	Lev: 1
Key information and press Enter (Form number will be assigned)					
Project task reference . . . APPR0001 F4=List Proj F19=List Refs					
Form description Change check writing pgm					
Programmer ELMSMIKE Name, *USRPRF					
Error recovery 1 (1-3)					
Do not run before (date) . . 00/00/00 (time) 00:00:00 (hhmmss)					
or after (date) . . 00/00/00 (time) 00:00:00 (hhmmss)					
Do not run before form . . . Form number, F4=List					
Submit finalization Y Y,N					
Job description AP1 Name, *PGMR					
Library PROD Name, *LIBL					
Archive objects. Y (Y/N)					
Library list:*AP01					

_____ *JOBID, *CURRENT, *library list name, Lib List					
More...					
F3=Exit F4=List Proj F11=Unprotect fields F12=Cancel F19=List Refs					

- 4 Enter your project task and complete or confirm the form header information.
- 5 Press Page down to see additional parameters.

MM/DD/YY		Add a Form		Your Company, Inc.	
13:55:35		Application: A/P Rel: Ver: Lev: 1			
Key information and press Enter (Form number will be assigned)					
Listings	<u>Y</u>	Y/N			
Logging level.	<u>4</u>	0-4			
Severity	<u>0</u>	0-99			
Accounting code	<u> </u>				
Output queue	<u>APOQ</u>	Name, *JOB, *PGMR, *USRPRF			
Library	<u>QGPL</u>	Name, *LIBL			
F3=Exit F4=List Proj F11=Unprotect fields F12=Cancel F19=List Refs					

- Usually you need only type the reference code and a description and accept the remaining defaults.

If you use TURNOVER® Lifecycle Manager Projects, do one of the following:

- type the project and task code
- press F19 to select from your list of those Project Tasks associated with your profile
- press F4 to select from the list of project tasks.

You can also type a generic project and reference code (such as "APPR01*") to include all objects checked out with all projects and tasks within a generic group. The programmer on the form will be the programmer resource associated with the first task. Each form line will identify the programmer who checked out the object.

Field defaults and the rules that determine which fields are required and which can be changed are specified in your application definition. For more information, see ['Working with application definitions' on page 9](#).

- (Optional.) To restrict when the form can be run, specify a **Do not run before** date and time range.

The date format is: MMDDYY.

The time format is: HHMMSS.

The TURNOVER® Lifecycle Manager form will not run outside the date-time entered. Your operator will get a warning message and may allow it to be run.

- To specify a library list to be included in the job when the forms runs, use the **Library list** field.
 - If you use a named library list, the name of the list will appear here as *liblistname.
 - If you type *CURRENT, TURNOVER® Lifecycle Manager returns your current library list into this field that you can then modify.

You should create a unique library list for each application and level. Include only those libraries in the list that are required to create objects for the application *at this level*. Do not include the test from library in the library list; otherwise you risk creating logical files in production over physical files in test libraries.

- 9 When you complete the form-level entries, press Enter.

If you are using the Project task reference field, the Work with Check-out References panel appears: see *'Selecting items for the form' on page 110*.

Protected fields

If a field is protected, and you want to change its value, press F11.

The Temporarily Override Field Attributes panel appears. To unprotect a field, remove the R (restricted). You cannot remove an L: this indicates a locked field, which can be unlocked only by changing the application definition.

If F11 is not available, your application has been set up so you cannot change the defaults.

Selecting items for the form

The Work with Check-out References panel displays all of the objects checked out under the Project task code specified on the form header.

MM/DD/YY	Work with Checkout References		Your Company, Inc.		
13:58:48					
Form	200008				
Reference	APPR0123 Filter by level __				
	Filter by programmer . . . _____				
The objects listed below have been checked out using the above reference number but have not yet been included on the above form.					
1=Include on form					
Obj/Mbr	Library	Type	Attribute	Programmer	Reference
<u>1</u> APFILEF	APDATA LIB	*FILE	PF	ELMSMIKE	APPR0123
<u>1</u> APFILE1	APDATA LIB	*FILE	LF	ELMSMIKE	APPR0123
<u>1</u> APFILE2	APDATA LIB	*FILE	LF	ELMSMIKE	APPR0123
<u>1</u> APS0001	APPGMLIB	*PGM	CLP	ELMSMIKE	APPR0123
<u>1</u> APCL0323	APPGMLIB	*PGM	CLP	ELMSMIKE	APPR0123
<u>1</u> APRPG026	APPGMLIB	*PGM	RPG	ELMSMIKE	APPR0123
F3=Exit F12=Cancel F19=Submit form build F21=Select all					

Press F21 to include all of the objects on the form or select those objects you want to include on the form.

TURNOVER® Lifecycle Manager builds and displays the new TURNOVER® Lifecycle Manager form.

Form Maintenance panel

MM/DD/YY		Form Maintenance		Your Company, Inc.				
14:08:25								
Form		40567 Chg credit-term verify program						
Application		AP Rel/Ver/Lev 3/00/20						
Job description . .		AP2 Output queue ELMSMIKEOQ						
Library		PRODTEST Library ELMSMIKE						
Library list		APLIST Job accounting						
Programmer		ELMSMIKE Reference APPR0123						
Form comments: Y Lock checks: N Completion messages: Y Archive objects: Y								
Position to line . . . ____ or Object . . . ____ IFS objects (F8): N								
2=Change 4=Delete 7=Comments 8=Pgming time M=Move B=Before A=After								
10=CreateParms 11=PreRunCmd 12=PostRunCmd ... Source Libraries								
Ln	Object	Library	Type	Cd	FROM Lib	FROM	TARGET	Cmts
___ 001	APPF001	PRODTEST	PF	A	ACPTTEST	ACPTTEST	PRODTEST	N
___ 002	APLF991A	PRODTEST	LF	R	ACPTTEST	ACPTTEST	PRODTEST	N
___ 003	APLF993A	PRODTEST	LF	R	ACPTTEST	ACPTTEST	PRODTEST	N
___ 004	APDSPF01	PRODTEST	DSPF	A	ACPTTEST	ACPTTEST	PRODTEST	N
___ 005	APCLP991	PRODTEST	CLP	R	ACPTTEST	ACPTTEST	PRODTEST	N
___ 006	SNDMSG MSG ('Postrun command sample') TOUSR(ELMSMIKE)							
Bottom								
F3=Exit F4=Comments F5=Resequene F6=Add line F7=Locks F24=More keys								

To	Do this
add a line	Press F6. See 'Adding a line to a form' on page 114.
add a line before the line where the cursor is	Press F9. See 'Adding a line to a form' on page 114.
add a command to the line after the cursor	F18=Add cmd
change a line	Use option 2
delete a line	Use option 4
delete a block	Type DD on the first and last lines in the block.
add comments about an object	Use option 7
add comments about the form	Press F4.
record programming time for the line	Use option 8. See 'Recording programming time' on page 113.
display a list of the Explode libraries	Use option 9. The libraries to which data objects will be duplicated will be selected with a 1. If your application Explode library list allows overrides, you can de-select any of the libraries in the list by blanking out the 1.

To	Do this
move a line	Type M on a line to move it B (efore) or A (fter) another line. Press F5 to resequence the form into logical order.
override the create command parameters associated with the line	Use option 10. Some parameters cannot be changed: for example, if they are explicitly defined in the command string specified on the global type code. See <i>'Changing a form line' on page 120</i> .
specify a command to run before any objects on the form are changed	Use option 11.
specify a post-run command after all the objects on the form are changed	Use option 12.
review overridden create commands and linked pre- and post-run commands	Press F15.
reorder the form	Press F5. TURNOVER® Lifecycle Manager reorders the form in the correct logical order (PF, LF, DSPF, and so on).
enter form lock checks.	Press F7. Object locks can be checked for any object before running the form (not necessarily an object being promoted). The form does not run if a lock is on the objects.
display any IFS objects that are on the form.	Press F8.
change the form-level header information	Press F11
display a list of objects changed by other programmers during the time you have had the objects on the form checked out	Press F13. This applies only if you use the Multiple Programmer Checkout facility. See <i>'Checking out in a multi-level environment' on page 85</i>
enter completion messages	Press F14.
enter or select user-defined options	Press F16.

To	Do this
display any objects that use any file referenced on the form that has not already been included on the form.	Press F17. You must be using TURNOVER® Lifecycle Manager's X-Ref system or another 3rd party system.
display any objects that had been checked out with the same reference code as on the form header and not yet on the form	Press F19.
transfer control to the Programming Development Manager (PDM)	Press F20.
exit from the panel	Press F3 or Enter. The Form Maintenance Options panel appears: see 'Exiting from the TURNOVER® Lifecycle Manager Form Maintenance panel' on page 115 .

See also ['Working with forms' on page 119](#).

Recording programming time

MM/DD/YY 14:35:24	Enter Programming Time	Your Company, Inc.
Form: 40567	Description: Chg credit-term verify program	
Line: 2	Object . . . APLF991A	Code: ADD
	Library . . . PRODTST	
Type in time information and press Enter.		
Programmer	ELMSMIKE	
Rate	999.99	
Analysis time	_____	
Programming time	_____	
Testing time	_____	
Description	_____	
F3=Exit F12=Cancel		

This panel displays information about the line you have chosen.

Field	Description
Code	The action code (ADD, REPLACE, or DELETE) for the current line
Programmer	The user profile name of the programmer whose time you are recording.

Field	Description
Rate	The programmer's hourly rate. TURNOVER® Lifecycle Manager retrieves this from the programmer's TURNOVER® Lifecycle Manager profile record, or you can enter it here.
Analysis time	The amount of time, expressed in hours, that the programmer spent analyzing the change or planning the new object.
Programming time	The amount of time, expressed in hours, that the programmer spent programming.
Testing time	The amount of time, expressed in hours, that the programmer spent testing.
Description	A description or comment relating to the time entry. (Optional)

Adding a line to a form

Normally, if you use TURNOVER® Lifecycle Manager Projects and have set up applications as **Require project entry** of *Yes, you will not add lines manually*; TURNOVER® Lifecycle Manager does that for you when you create your form. Occasionally, you may need to change a line or override the create command parameters used on the form.

You can enter more object names, or view and edit the lines that TURNOVER® Lifecycle Manager added to your form when you selected objects on the Work with Checkout References panel.

- 1 Press F6 to add a line to the form.

The Add a Line to Form panel appears.

MM/DD/YY 15:05:15	Add a Line to Form	Your Company, Inc.
Form: 200008 Change check writing pgm		
Key choices, press Enter. Line: 3		
Object: <u>APFILE</u>	Type: <u>PF</u>	Code: <u>R</u> (A=Add, R=Replace, D=Delete)
Library: <u>APDATALIB</u>		
Method: <u>CSCO</u> CD, COPR, MO, CSCO, CSMO, CSCD, CS, *NULL Copy Source, Compile Object		
FROM Source File: <u>QRPGSRC</u>	Lib: <u>APDATALIB</u>	FROM Source Member: <u>APFILE2</u>
FROM Object Name: <u>APFILE</u>	Lib: <u>APDATATST</u>	
TARGET Source File: <u>QRPGSRC</u>	Lib: <u>APRPGSRC</u>	TARGET Source Member: <u>APFILE2</u>
Create Params: <u>P</u> <u>P</u> ,T,R,S,C	Create Reference Object: <u>REFPF</u>	Lib: <u>REFLIB</u>
Authority: <u>P</u> <u>P</u> ,T,R,S	Authority Reference Object: <u>REFPF</u>	Lib: <u>REFLIB</u>
Delete FROM Object (Y/N): <u>Y</u> Delete FROM Source (Y/N): <u>Y</u>		
Ref: <u>CR0123</u> Programmer: <u>ELMSMIKE</u> Comments (Y/N): <u>_</u>		
* File copy FMTOPT: <u>*MAP *DROP</u> *MAP *DROP, *NOCHK, *FROMFILE, *NONE		
F3=Exit F7=Change top F11=Unprotect fields F12=Cancel		

File copy FMTOPT only appears when type is a physical file type (PF).

- 2 Supply the **object name**, **type code**, and **action code**, and then press Enter. The remaining fields are filled in from the application definition defaults.

Field defaults and rules defining which fields are locked and which can be changed are determined from the application definition. For more information, see [‘Working with application definitions’ on page 9](#).

For information about the edit rules for the panel, see ‘Change Process’ in the *TURNOVER® Lifecycle Manager Administrator’s Guide*.

To display more information about the fields, press F1.

To toggle between the top and bottom halves, press F7.

To unprotect restricted fields, press F11.

- 3 Press Enter.

Exiting from the TURNOVER® Lifecycle Manager Form Maintenance panel

Once you have reviewed and updated your form, press F3 or Enter to exit from the Form Maintenance panel.

The Form Maintenance Options panel appears.

MM/DD/YY 15:16:25	Form Maintenance Options	Your Company, Inc.
To run Form Maintenance exit options, type choices and press Enter. To return to Form Maintenance without running options, press F12. To exit without running options, press F3.		
Form 40567 Description Chg credit-term verify program		
Resequence the form <u>N</u> Y, N		
Check for logical files and add them to the form . <u>Y</u> Y, N		
Check cross-reference file for related objects . . <u>Y</u> Y, N		
Check for objects changed by other programmers . . <u>N</u> Y, N		
Check for related application conflicts <u>Y</u> Y, N		
F3=Exit F12=Cancel		

Usually, you use the default values, and press Enter. If you have already performed the operations listed here, you can press F3 to exit without running them.

Resequence the form

Put the form in the correct logical order (PFREF, PF, LF, DSPF, Programs, and so on).

The order is controlled by the TURNOVER® Lifecycle Manager type codes and the sequence field. To see these values, type `TURNOVER 8` on a command line and then select option 4.

Check for logical files

Check the form for any logical files over physical files being replaced or deleted in the **Target library** for this form and add them for your form automatically.

The logical files must be in the **Target library** for TURNOVER® Lifecycle Manager to add them to the form for recompilation.

Check cross-reference file for related objects

If you are using TURNOVER® Lifecycle Manager's cross-reference function or Hawkeye's Pathfinder or Helpsystems' Abstract, you can check to see if there are related objects you need to include on the form for recompilation.

Check for objects changed by other programmers

If you are using the multiple programmer checkout feature, another programmer might have changed an object while you were working on it. For more information, see ['Multiple checkout feature' on page 87](#).

Check for related applications conflicts

Enter `Y` to check for related applications conflicts associated with objects on the form. A related applications conflict occurs when an object is checked out of the base application, but not from the related application. Related applications conflicts must be resolved before the form can run.

Approving a form

Each application and level may have an approval list defined as part of the application definition.

If your administrator has specified an approval list for your application, the form status for your new form is `APL-PN` (approval pending). You can send messages or emails to the users on the approval list to alert them that the form is ready for their approval

- 1 Type `10` next to the form.

MM/DD/YY	Work with Form Approval List		Your Company, Inc.		
15:27:35	Form: 200008 Change check writing pgm				
	Application: A/P Release: 0 Version: 0 Level: 1				
Message: Form 200008 is pending your approval					
1=Send message 5=Display Group					
	User Name	Approved	Date	Time	By
1	PSHIFTY Paul Shifty	N	00/00/00		
-	TURNOVER TURNOVER® System Admin.	Y	01/08/20	14:05:12	TURNOVER
-	QAGROUP Quality Assurance Group	N	00/00/00		
F3=Exit F8=Conflicts F9=View Task F11=View form F12=Cancel F21=Select all					
F5=Refresh F7=Message pgmr F19=E-mail pgmr F10=Message users F22=E-mail users					
Enter message text and press F10/F22 to send/e-mail message to selected Users.					

2 Do one of the following:

- To select a user, type 1 next to their name.
- To select all users, press F21.

3 Change the message, and then do one of the following:

- To send an operating system message, press F10.
- To send an email, press F22.

4 When the message has been sent, each user on the list must sign on to TURNOVER® Lifecycle Manager, select option 6 to work with TURNOVER® Lifecycle Manager forms, select the form with option 10, and approve the form by entering a Y in the approval column.

You can create approval groups so that if anyone in that group approves the form, it is approved for the group.

If the user has override authority for the application, they can enter an approval for all or some of the other users on the list. This is a useful feature if only one of several people needs to approve the form before it can be submitted to run.

- 5 When the form has been approved, the form status changes to **READY**. The last user to give their approval can use F7 or F19 to inform the programmer of this by message or e-mail.
- 6 If changes are made to the form, or if test objects or source members referenced on the form have changed, the status changed back to **APL-PN**, and it must be approved again.

Printing a form

You can print a hard copy of your TURNOVER® Lifecycle Manager form. The printout includes all form information, such as form header, lines, commands, comments, and approvals.

Form	Description	Appl	Rl/Vr	Lev	Run	Programmer	Status
1423554	Contact cmmnt changes	SLS		1		DELANEY	READY
1423553	1st top secret T.O.	SECR		1	2/04/20	ELMSMIKE	RAN-OK
1423551	Change check writing	AP		1		ELMSMIKE	READY
1423547	Chg. alloc. method 3	EQPT		1	1/29/20	ELMSMIKE	DISTRIB
1423546	Enhance budget format	ACCT		1	1/22/20	PHILLIPS	PARTIAL
1423545	Submenu call chg MENU			1	1/18/20	ELMSMIKE	EMER-OK
1423544	Prtfile paint enhance	FDA		2	1/18/20	PHILLIPS	RECOVER

- 1 Type 6 next to the TURNOVER® Lifecycle Manager form that you want to print.
- 2 Use these options:

To	Do this
print the approval box	Set Print for approval to Yes.
print full line-level details on the form	Set details to *FULL.
print several forms	See the TURNOVER® Lifecycle Manager Reporting Menu.
print the details of the task referenced on the form	Type *LINE or *FULL in the task details parameter.

- 3 Press Enter.

MM/DD/YY Form Listing Your Company, Inc.
 15:52:05 Page 2

```
*****
*****
* APPLICATION: A/P Accounts Payable * * * _____ / ____ / ____ *
* RELEASE-#: * * * _____ / ____ / ____ *
* VERSION-#: * * * _____ / ____ / ____ *
*****
*****
```

[illegible]

Line:	1	Object: APFILEF	Library: APDATA LIB	Type: PF	Code: Replace	Method:CSCO	Status: Ready
Line:	2	Object: APFILE1	Library: APDATA LIB	Type: LF	Code: Replace	Method:CSCO	Status: Ready
Line:	3	Object: APFILE2	Library: APDATA LIB	Type: LF	Code: Replace	Method:CSCO	Status: Ready

For an example of a form listing with all details specified, see *'List Forms report'* on page 330.

Working with forms

You can change a form at any time before you run it. You can also add or change certain information on a TURNOVER® Lifecycle Manager form such as programmer time, form comments and line comments after the TURNOVER® Lifecycle Manager form has been run.

To work with forms, select option 6 on the main men.

MM/DD/YY		Work with Forms		Your Company, Inc.			
16:00:18				YOURSYS			
To reposition, enter form: _____							
				Apply filters . . N			
2=Update form	3=Copy to new form	4=Cancel form	5=Display form				
6=Print form	7=Run turnover	8=Work w/ job	9=Release job				
Form	Description	Appl	Rl/Vr	Lev	Run	Programmer	Status
___ 1423554	Contact cmmnt changes	SLS		1		DELANEY	READY
___ 1423553	1st top secret T.O.	SECR		1	2/04/20	ELMSMIKE	RAN-OK
___ 1423551	Change check writing	AP		1		ELMSMIKE	READY
___ 1423547	Chg. alloc. method 3	EQPT		1	1/29/20	ELMSMIKE	DISTRIB
___ 1423546	Enhance budget format	ACCT		1	1/22/20	PHILLIPS	PARTIAL
___ 1423545	Submenu call chg MENU			1	1/18/20	ELMSMIKE	EMER-OK
___ 1423544	Prtfile paint enhance	FDA		2	1/18/20	PHILLIPS	RECOVER
F3=Exit F5=Refresh F6=Add form F7=DSPPMSG F11=Alternate view							
F12=Cancel F14=WRKSBMJOB F16=User options F24=More keys							

Changing a form line

To add a line, see *'Adding a line to a form' on page 114*.

To see the definition of specific fields on the panels, position the cursor on that field and press the F1/Help key.

MM/DD/YY		Form Maintenance		Your Company, Inc.				
16:04:35								
Form 40567		Chg credit-term verify program						
Application AP		Rel/Ver/Lev 3/00/20						
Job description AP2		Output queue ELMSMIKEOQ						
Library PRODTST		Library ELMSMIKE						
Library list APLIST		Job accounting						
Programmer ELMSMIKE		Reference APPR0123						
Form comments: Y Lock checks: N Completion messages: Y Archive objects: Y								
Position to line . . . ___ or Object . . . _____ IFS objects (F8): N								
2=Change 4=Delete 7=Comments 8=Pgmng time M=Move B=Before A=After								
10=CreateParms 11=PreRunCmd 12=PostRunCmd ... Source Libraries								
Ln	Object	Library	Type	Cd	FROM Lib	FROM	TARGET	Cmts
___ 001	APPF001	PRODTST	PF	A	ACPTTEST	ACPTTEST	PRODTST	N
<u>2</u> 002	APLF991A	PRODTST	LF	R	ACPTTEST	ACPTTEST	PRODTST	N
___ 003	APLF993A	PRODTST	LF	R	ACPTTEST	ACPTTEST	PRODTST	N
___ 004	APDSPF01	PRODTST	DSPF	A	ACPTTEST	ACPTTEST	PRODTST	N
___ 005	APCLP991	PRODTST	CLP	R	ACPTTEST	ACPTTEST	PRODTST	N
___ 006	SNDMSG MSG ('Postrun command sample') TOUSR(ELMSMIKE)							
Bottom								
F3=Exit F4=Comments F5=Resequene F6=Add line F7=Locks F24=More keys								

For more information about using this panel, see *'Form Maintenance panel' on page 111*.

- 1 To override the create command parameters for the form line, select the line with option 10, and then press Enter.

You can change the create command parameters for a form line, if they are not protected.

- 2 To change a line, select it with option 2, and then press Enter.

The Change a Line panel appears:

```

MM/DD/YY                               Change a Line                       Your Company, Inc.
16:12:15

                                Form: 200010 Contact cmnt changes
                                Type choices, press Enter.                Line: 2

Object: APLF991A   Type: LF       Code: R (A=Add, R=Replace, D=Delete)
Library: PRODLIB

Method: CSCO  CD, COPR, MO, CSCO, CSMO, CSCD, CS, *NULL
        Copy Source, Compile Object

FROM Source File: QDDSSRC   Lib: ACPTTEST   FROM Source Member: APLF991A
FROM Object Name: APLF991A   Lib: ACPTTEST
TARGET Source File: QDDSSRC   Lib: PRODLIB   TARGET Source Member: APLF991A

Create Parm: P P,T,R,S,C Create Reference Object: REFLF   Lib: REFLIB
Authority:   P P,T,R,S Authority Reference Object: REFLF   Lib: REFLIB

Delete FROM Object (Y/N): Y   Delete FROM Source (Y/N): Y
Ref: APPR0001   Programmer: SUEMRKS   Comments (Y/N):  
Press to change line, or press F3 to exit without update.
F3=Exit  F7=Change top  F11=Unprotect fields  F12=Cancel

```

3 Type the changes to the form line, and then press Enter.

You can change a field only if it is unlocked. See *'Protected fields' on page 110*.

Adding a form or line comment

On the Work with Form panel, select the form you want to update with option 2.

```

MM/DD/YY                               Form Maintenance                       Your Company, Inc.
16:25:23

Form . . . . . 40567   Chg credit-term verify program
Application . . . . . AP   Rel/Ver/Lev . . . . . 3/00/20
Job description . . . . . AP2   Output queue . . . . . ELMSMIKEOQ
  Library . . . . . PRODLIB   Library . . . . . ELMSMIKE
Library list . . . . . APLIST   Job accounting . . . . .
Programmer . . . . . ELMSMIKE   Reference . . . . . APPR0123
Form comments: Y Lock checks: N Completion messages: Y Archive objects: Y
Position to line . . . . . or Object . . . . . IFS objects (F8): N
2=Change 4=Delete 7=Comments 8=Pgmng time      M=Move B=Before A=After
10=CreateParms 11=PreRunCmd 12=PostRunCmd ...   Source Libraries

  Ln Object      Library   Type   Cd  FROM Lib   FROM      TARGET   Cmts
___ 001 APPF001   PRODTST  PF    A   ACPTTEST  ACPTTEST  PRODTST  N
___ 002 APLF991A  PRODTST  LF    R   ACPTTEST  ACPTTEST  PRODTST  N
___ 003 APLF993A  PRODTST  LF    R   ACPTTEST  ACPTTEST  PRODTST  N
___ 004 APDSPF01  PRODTST  DSPF  A   ACPTTEST  ACPTTEST  PRODTST  N
___ 005 APCLP991  PRODTST  CLP   R   ACPTTEST  ACPTTEST  PRODTST  N
___ 006 SNDMSG MSG ('Postrun command sample') TOUSR(ELMSMIKE)

                                           Bottom
F3=Exit  F4=Comments  F5=Resequene  F6=Add line  F7=Locks  F24=More keys

```

1 Do one of the following:

- To add or change form comments, press F4.
- To add or change line comments, select a form line on the Form Maintenance panel with option 7, and then press Enter.

2 Do one of the following:

- To add a comment, press F6.
- To change a comment, type 2 next to it.

MM/DD/YY	Line	Comments	Your Company, Inc.
16:39:42			
Form:	13	Description: Change check writing pgm	
Line:	1	Object . . . APLF991A Code: REPLACE	
		Library . . PRODLIB	
2=Change 4=Delete			
Date	Time	Added-by	Comment Text
Added	Added	Added-by	Comment Text
7/23/20	15:38:46	PHILLIPS	This is a sample comment about this line of th+
7/23/20	15:38:55	PHILLIPS	This is a 2nd, shorter comment about this line.
F3=Exit F6=Add comment F12=Cancel			

Adding pre-run and post-run commands

You can add commands to run before or after a form runs.

However, these are not needed often. TURNOVER® Lifecycle Manager handles functions such as lock checks, completion messages, automatic copying of physical file data, automatic recreation of logical files, making the need for other commands rare.

Examples of using pre-run and post-run commands

- 1 You might need to add commands when changes being made to a physical file are beyond the ability of the copy file command to accommodate, and where only a conversion program would suffice. You can either:
 - add a pre-run command to create a duplicate of the file (DATA *YES) and a post-run command to call a conversion program.
 - code your post-run command to access the copy data from the old file in TURNOVER® Lifecycle Manager's archive object library using your conversion program called in a post-run command.

The OVRDBF command as a pre-run command

The OVRDBF command is used to compile programs that use a temporary file.

TURNOVER® Lifecycle Manager programs use ILE. This means that any time you link an OVRDBF command string to a TURNOVER® Lifecycle Manager form line, you must specify a value of either *CALLLVL or *JOB for the OVRSCOPE parameter.

This is because the TURNOVER® Lifecycle Manager program that executes the OVRDBF command is an ILE program running in a named activation group. The default value of *ACTGRPDEFN on the OVRDBF command means that the override applies only to programs running in that activation group. Because the compile commands provided by IBM i are not ILE programs, they do not run in the same activation group, and therefore require the change to the OVRDBF command.

For a workaround, you can specify the OVRSCOPE parameter on the OVRDBF command.

Updating your existing OVRDBF commands using a program

You can write a program that updates the OVRDBF commands that you already have linked in TURNOVER® Lifecycle Manager. Your program should update files TCOMMAN (commands linked by form) and TCRTDEV (option 38 on worklist...commands linked by object).

Associating commands with objects

You can associate pre- and post-run commands with particular objects on the form. In the future, when you promote that object again, TURNOVER® Lifecycle Manager will prompt you to use the command again.

TURNOVER® Lifecycle Manager executes a pre- or post-run command either before or after it makes the stream-of-object changes, or before or after it runs a form line, depending on choices you make when you enter the command.

You can control the system on which a pre- or post-run command runs. For example, a command might run on all systems, only local systems, only remote systems, or on a specific system. (To run the command on more than one specific system, add a command for each system.)

Recommendation

Run pre- and post-run commands before or after all objects are promoted. In this way, it is less likely that a command you specify interferes with TURNOVER® Lifecycle Manager's promotion processing. Run a command just before or after an object is created only if absolutely necessary.

MM/DD/YY	Form Maintenance		Your Company, Inc.					
16:44:10								
Form	40567	Chg credit-term verify program						
Application	AP	Rel/Ver/Lev 3/00/20						
Job description . .	AP2	Output queue ELMSMIKEOQ						
Library	PRODLIB	Library ELMSMIKE						
Library list	AP1	Job accounting						
Programmer	ELMSMIKE	Reference APPR0004						
Form comments: Y Lock checks: N Completion messages: Y Archive objects: Y								
Position to line or Object IFS objects (F8): N								
2=Change 4=Delete 7=Comments 8=Pgming time M=Move B=Before A=After								
10=CreateParms 11=PreRunCmd 12=PostRunCmd . . . Source Libraries								
Ln	Object	Library	Type	Cd	FROM Lib	FROM	TARGET	Cmts
001	APPF001	PRODTEST	PF	A	ACPTTEST	ACPTTEST	PRODTEST	N
11 002	APLF991A	PRODTEST	LF	R	ACPTTEST	ACPTTEST	PRODTEST	N
003	APLF993A	PRODTEST	LF	R	ACPTTEST	ACPTTEST	PRODTEST	N
004	APDSPF01	PRODTEST	DSPF	A	ACPTTEST	ACPTTEST	PRODTEST	N
005	APCLP991	PRODTEST	CLP	R	ACPTTEST	ACPTTEST	PRODTEST	N
006	SNDMSG MSG ('Postrun command sample') TOUSR(ELMSMIKE)							
Bottom								
F3=Exit F4=Comments F5=Resequene F6=Add line F7=Locks F24=More keys								

To enter a pre-run command

- 1 Select the form with which you want to work on the Work with Forms panel with option 2.
- 2 Do one of the following:
 - Move the cursor to the point above which you want to insert a command, and then press F18.
 - Select an object with option 11, and then press Enter. Option 11 associates the command with a specific line, so TURNOVER® Lifecycle Manager can use it again the next time that the object is promoted.

The Add a command panel appears (see below).

To enter a post-run command

- 1 Select the form with which you want to work on the Work with Forms panel with option 2.
- 2 Do one of the following:
 - Move the cursor to the last line on the form, and then press F18.
 - Select an object with an option 12, and then press Enter. Option 12 associates the command with a specific line, so TURNOVER® Lifecycle Manager can use it again the next time that the object is promoted.

The Add a command panel appears.

Add a command panel

MM/DD/YY 16:50:05	Add a Command	Your Company, Inc.	
Form 40667			
Command type . . . Post-Run			
Sequence 2			
Type command, press Enter.			
Command to execute: <u>CHGPGM</u>			
Error recovery: <u>C</u> C=Cancel, G=Go, R=Recover			
Link to line: <u>1</u>	Object: PF1	Lib: DEVELOP	Type: PF
F10=Select			
When to execute . . . <u>*PREFORM</u> *PREFORM, *PRELINE			
Library list <u>*CURRENT</u> *APPL, *CURRENT			
Run on system <u>*ALL</u> *ALL, *LOCAL, *REMOTE, Name			
F3=Exit F4=Prompt command F9=Retrieve F10=Select line F12=Cancel			

Specify the pre-run or post-run commands.

You can prompt commands by typing the command and pressing F4.

Prompting the command enables you to change the case of the keywords and values in the command string.

The maximum number of commands is 999.

Error recovery

If the command fails, Error recovery tells TURNOVER® Lifecycle Manager whether or not to proceed.

Pre-run commands

Value	Description
G	Continue with the next step of the TURNOVER® Lifecycle Manager form.
C	Cancel the TURNOVER® Lifecycle Manager form. No objects are promoted.
R	Roll back all installed objects and end the job.

Post-run commands

Value	Description
G	Continue with the next step of the TURNOVER® Lifecycle Manager form.
C	End the TURNOVER® Lifecycle Manager job. All objects have already been successfully promoted. The TURNOVER® Lifecycle Manager Log Report indicates that the command was in error. The form is not rolled back.
R	Roll back all installed objects and end the job.

Linking a command to a line

To select the line, press F10. TURNOVER® Lifecycle Manager scrolls the lines of the form through one by one. Stop scrolling when the line you want appears.

When to execute and Library list fields

These fields control when the command runs and what libraries should be in the job library list at that time.

For more about pre- and post-run commands, see the 'Change Process' section of the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Run on system

Controls where the command runs when a form is distributed: only on the local system; only on the remote system; on all systems; or on specific systems.

When specifying more than one system, add the command for each system desired.

Settings defaults for pre/post commands: TSETPPCDFT command

to specify the defaults you want TURNOVER® Lifecycle Manager to use when you add pre- and post-run commands to a form, use the TSETPPCDFT command.

The Set Pre/Post Command Defaults panel appears.

Set Pre/Post Command Defaults (TSETPPCDFT)

Type choices, press Enter.

PreRun:	Error recovery	<u>C</u>	C=Cancel, G=Go, R=Recover
	When to execute	<u>*PRELINE</u>	*PREFORM, *PRELINE
	Library list	<u>*CURRENT</u>	*APPL, *CURRENT
	Run on system	<u>*ALL</u>	*ALL, *LOCAL, *REMOTE, Name
PostRun:	Error recovery	<u>C</u>	C=Cancel, G=Go, R=Recover
	When to execute	<u>*POSTFORM</u>	*POSTFORM, *POSTLINE
	Library list	<u>*CURRENT</u>	*APPL, *CURRENT
	Run on system	<u>*ALL</u>	*ALL, *LOCAL, *REMOTE, Name
Linked:	Command type	<u>*PRERUN</u>	*PRERUN, *POSTRUN

Bottom

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

See *'Defaults for pre/post commands'* on page 128.

Add a Command panel and Add IFS-Linked Command panel

MM/DD/YY
16:54:45
Add a **Command**
Your Company, Inc.

Form **40667**

Command type . . . **Post-Run**

Sequence **2**

Type command, press Enter.

Command to execute: CHGPGM

Error recovery: C C=Cancel, G=Go, R=Recover

Link to line: 1
F10=Select
Object: **PF1**
Lib: **DEVELOP**
Type: **PF**

When to execute . . . *PREFORM *PREFORM, *PRELINE

Library list *CURRENT *APPL, *CURRENT

Run on system *ALL *ALL, *LOCAL, *REMOTE, Name

F3=Exit
F4=Prompt command
F9=Retrieve
F10=Select line
F12=Cancel

MM/DD/YY	Add IFS-Linked Command	Your Company, Inc.
16:53:35		
Form	40668	
Command type . . .	Post-Run	
Sequence	1	
Type command, press Enter.		
Command to execute: _____		

Error recovery: C C=Cancel (end TurnOver job) G=Go (continue TurnOver job)		
Link to line: <u>1</u> Object: PF1		
F10=Select Path: /SMITH/QA		
Type: PF		
Library list *CURRENT *APPL, *CURRENT		
Run on system *ALL *ALL, *LOCAL, *REMOTE, Name		
F3=Exit F4=Prompt F9=Retrieve F10=Select F12=Cancel		

To access this panel, do one of the following:

- On the TURNOVER® Lifecycle Manager Main Menu, select option 6.
- From the list of forms, select a form with a status of READY or APL-PN with option 2 (Update form).
- On the Form Maintenance panel, press F8 (IFS objects).
- On the Form Maintenance – IFS panel, type 11 (PreRunCmd) or type 12 (PostRunCmd) to the left of a form line number.

The fields on this panel for which you can set pre- and post-run command defaults are **Error recovery**, **Library list**, and **Run on system**.

Add a Linked Command panel

1 To access this panel, do one of the following:

- On the TURNOVER® Lifecycle Manager Main Menu, select option 9.
- From the list of projects, select a project with option 12 (Work with tasks).
- From the list of tasks, select a task with option 20 (PWM) to see its worklist.
- On the worklist, select an object (usually at the development level) with option 38 (Pre/post-Cmds).

2 On the next panel, press F6 (Add command).

The fields on this panel for which you can set pre- and post-run command defaults are **Command type**, **Error recovery**, **When to execute**, **Library list**, and **Run on system**.

MM/DD/YY	Add IFS Type Code Default Command		Your Company, Inc.
Type code IFSOBJ			
Command type . . . <u>*PRERUN</u> *PRERUN, *POSTRUN			
Sequence <u>10</u>			
Type command, press Enter.			
Command to execute: _____			

&TY=Type code	&FP=From path	&PG=Programmer	&PO=Path/Object
&TP=Target path	&FO=From object	&RF=Reference	&UO-&U9=User defined
&OB=Target object	&ME=Method	&AL=Authority list	&TR=Target release
Error recovery: <u>C</u> C=Cancel (end TurnOver job) G=Go (continue TurnOver job)			
Library list <u>*CURRENT</u> *APPL, *CURRENT			
Run on system <u>*ALL</u> *ALL, *LOCAL, *REMOTE, Name			
F3=Exit F4=Prompt F12=Cancel			

Add IFS Type Code Default Command panel

- To access this panel, do one of the following:
 - On the TURNOVER® Lifecycle Manager Main Menu, select option 8.
 - On the Utility Menu, select option 4.
 - From the list of type codes, select an IFS type with option 2 (Change).
- On the next panel, press F6 (Add default linked command).

You can set defaults for pre- and post-run commands for **Command type**, **Error recovery**, **Library list**, and **Run on system**.

Defaults for pre/post commands

PreRun: Error recovery

Specify what you want to do if an error occurs when running the pre-run command.

Value	Description
C Cancel	Cancel (and recover) the form if the command ends in error.
G Go	Continue running the form (with warnings).
R Recover	Recover the form if the command ends in error.

PreRun: When to execute

Specify when you want to run the command (if the command is linked to an object on the form).

Value	Description
*PREFORM	Execute the command before promoting any objects on the form. You might use this option if, for example, a single override is required for compiling multiple objects on the form. If it does not matter when TURNOVER® Lifecycle Manager executes the command, use this value.
*PRELINE	Execute the command immediately before processing the object to which the command is linked.

PreRun: Library list

Specify the library list you want to use with the pre-run command.

Value	Description
*CURRENT	Use the current library list of the form job. This library list includes all TURNOVER® Lifecycle Manager product libraries. If the command references TURNOVER® Lifecycle Manager APIs, use this value.
*APPL	Use the application library list specified on the form. If the command makes unqualified references to objects that are part of the user application associated with the form, use this value.

PreRun: Run on system

Specify the systems on which you want to run the pre-run command.

Value	Description
*ALL	Run the command on all systems
*LOCAL	Run the command only on the local system
*REMOTE	Run the command only on the remote systems
<i>name</i>	Run the command only on the specified system

PostRun: Error recovery

Specify what you want to do if an error occurs when running the post-run command.

Value	Description
C Cancel	Cancel the form if the command ends in error. If When to execute is set to *POSTLINE, this value causes the form to recover if the command ends in error. If When to execute is set to *POSTFORM, this option does not cause the form to recover; use R (Recover) for this. However, it stops the form from processing subsequent commands, and the forms runs with warnings.
G Go	Continue running the form (with warnings).
R Recover	Recover the form if the command ends in error.

PostRun: When to execute

Specify when you want to run the command. If the command is linked to an object on the form, TURNOVER® Lifecycle Manager can execute the command at different points in the form process.

Value	Description
*POSTFORM	Run the command after promoting all objects on the form. TURNOVER® Lifecycle Manager will only execute the command if all objects on the form promote successfully.
*POSTLINE	Run the command immediately after processing the object to which the command is linked. If the form needs to recover because of failing to process a subsequent object on the form, TURNOVER® Lifecycle Manager does not undo the results of the *POSTLINE command.

PostRun: Library list

See *'PreRun: Library list' on page 129*.

PostRun: Run on system

See *'PreRun: Run on system' on page 129*.

Linked: Command type

Specify whether you want TURNOVER® Lifecycle Manager to run the command before or after it processes the objects on the form.

Value	Description
*PRERUN	Before processing the objects on the form.

Value	Description
*POSTRUN	After processing the objects on the form.

Changing form header information

Form level information can be changed at any time up to the time the form is submitted to run.

- 1 On the Work with Forms panel, select the form with which you want to work with option 2.
- 2 Press F11 to change the information in the form header.

MM/DD/YY	Change Form Header		Your Company, Inc.	
17:05:13	Application: AP	Rel:	Ver:	Lev: 1
Make changes and press Enter.				
Form	40567			
Project task reference . . .	<u>APPR0004</u>	F4=List Proj	F19=List Refs	
Form description	<u>Change credit-term verification program</u>			
Programmer	ELMSMIKE	Name, *USRPRF		
Error recovery & threshold .	<u>3</u> (1-4) <u>999</u> (1-999)			
Do not run before (date) . .	<u>0/00/00</u> (time)		(hhmmss)	
or after (date) . .	<u>0/00/00</u> (time)		(hhmmss)	
Do not run before form . . .		Form number, F4=List		
Submit finalization	<u>Y</u>	(Y,N)		
Job description	<u>AP1</u>	Name, *PGMR		
Library	<u>JOBDLIB</u>	Name, *LIBL		
Archive objects	<u>Y</u>	(Y,N)		
Library list	<u>*AP01</u>			
		*listname, *CURRENT, Lib List		
		More...		
F3=Exit F4=List F11=Unprotect fields F12=Cancel				

- 3 Press Page Down to see more fields.

You can change only fields that are unlocked. See *'Protected fields' on page 110*.

Entering a lock check

Locks for one or more objects can be checked at the beginning of the form run to ensure that the promotion will not fail because of object lock conflicts. To do this, you add a lock check to your form.

Some of the items you see on this panel might have been added automatically to your form when it was created. TURNOVER® Lifecycle Manager automatically adds lock checks for data objects or physical files if the **Automatic lock checking** global default is set to *DTAOBJ or *FILE respectively. TURNOVER® Lifecycle Manager will not add lock checks if this default is set to *NONE.

You can enter the name of any object. The object does not necessarily have to be one of those you are promoting in this TURNOVER® Lifecycle Manager run. For example, you could check locks on one or more key physical files, which would ensure that no users were accessing the application you are changing while the TURNOVER® Lifecycle Manager form is running.

- 1 On the Form Maintenance panel, press F7=Locks.

The Add Lock Checks panel appears.

MM/DD/YY		Add Lock Checks		Your Company, Inc.	
17:07:26					
Form 40567 Change credit-term verification program					
Type in object name, library and type and press Enter.					
Object	APPF002S	Name, *	ALL		
Library	PRODTEST	Name, *	ALL		
Type	*FILE	*FILE, *DTAOBJ, *DTAARA, . . .			
Allocate	Y	Y,N			
F3=Exit F7=Select from form F12=Cancel					

- 2 Type the name of the object that should be checked for locks.
- 3 If you want to allocate this object for the duration of the TURNOVER® Lifecycle Manager form run, set **Allocate** to Y.

Entering completion messages

Completion messages are delivered to the programmer and application Administrator when the form completes. In addition, you can type messages to be delivered to other users.

These messages can be sent unconditionally or conditionally when a promotion completes successfully or unsuccessfully.

- 1 Select the form with which you want to work on the Work with Forms panel with option 2=Change.
- 2 Press F8.

The Add Form Completion Message panel appears.

MM/DD/YY 17:15:39	Add Form Completion Message	Your Company, Inc.
Form: 40667 Description: Chg credit-term verify program		
Type in message information and press Enter.		
Termination code for which message will be sent: 1 1=Normal, 2=Abnormal, 3=Any		
Message: <u>The programmer did a great job.</u>		
Message Queue <u>PRESIDENT</u> Name Library <u>QUSRSYS</u> Name, *LIBL or User ID _____ Character Value Address. _____ Character Value		
F3=Exit F9=Duplicate last message F12=Cancel		

- 3 Enter the termination code, the message and message queue to which the message should be delivered. The message queue can be either a personal message queue or a device message queue.

Setting a cross-reference threshold

On large forms, it is possible to approach or exceed the maximum number of lines allowed on a form. To reserve space for the objects added during the cross-reference check, you can set an overflow threshold in the XREFOVRFLW data area. This threshold controls the number of lines that TURNOVER® Lifecycle Manager can add to a form before it begins adding cross-reference items to the form. The default number of lines that TURNOVER® Lifecycle Manager can add to a form before cross-referencing is 900.

Copying forms

You might copy forms when:

- Your applications are defined with more than one level (for example, development to quality-assurance to production), then after running forms for level one: copy the forms to prepare a form to run to the next level.
- A form fails and recovers (form status is RECOVER): you must copy it to create a new form to run. For audit control reasons, you cannot rerun a form that has already run.
- You enter a form, cancel it, and then decide that you want to do the same set of changes after all. (You cannot reactivate a form once it has been canceled or run.)

Copying a form to create a new form

- 1 Do one of the following:
 - On the Work with Forms panel, select the form you want to copy with option 3.

- on the Programmer Worklist panel, use option 43.

Copy Form		Your Company, Inc.
Copy From		
Form	104859	
Description	Corrections to Install program	
Form status	RAN-OK	
Application	TO	
Release	4	
Version		
Level	1	
Copy to		
Application	TO F4=Select	
Release	4	
Version		
Level	2	
New form description	Corrections to Install Program	
*Drop COPR lines	N Y, N	
*Copy commands.	Y	
*Copy comments	Y Y, N	
*Check cross-reference.	Y	
*Check related applications	Y	
F3=Exit F4=Select application F12=Cancel F19=Submit to batch		
Press Enter or F19 to copy form, or press F3 or F12 to cancel form copy.		

- 2 Accept the defaults, or type another target application and description, and then press Enter. TURNOVER® Lifecycle Manager creates the new form.

Consolidating forms

Consolidation combines several related forms into one. An object that exists more than once on several forms will appear only once on the new form. All of the forms involved must be for the same target application and level.

You can also copy forms from one application into another application. For example, you may want to copy a form from the “A/R Quality Assurance” application to the “A/R Production” application. The old forms are changed to conform to the rules associated with the new application, including changing the test and target libraries (if they are different), or changing the TURNOVER® Lifecycle Manager method.

MM/DD/YY 17:22:03		Work with Forms				Your Company, Inc. YOURSYS	
To reposition, enter form: _____							
Apply filters . . <u>N</u>							
2=Update form		3=Copy to new form		4=Cancel form		5=Display form	
6=Print form		7=Run turnover		8=Work w/ job		9=Release job	

Form	Description	Appl	Rl/Vr	Lev	Run	Programmer	Status
3 104555	LF member not added	TO	5	2		BRADLEY	READY
3 104554	LF member not added	TO	4	1	1	ELMSMIKE	READY
___ 104553	Checkout/promote Dre	TO	5	1	5/16/20	BRADLEY	APL-PND
___ 104552	Checkout/promote Dre	TO	4	1	1 5/15/20	DAVIS	INITIAL
___ 104551	Testing delete of LF	TO	5	1		DAVIS	READY
___ 104550	Incorrect text durin	TO	4	1	1 5/13/20	BRADLEY	PURGEFND
___ 104549	Removal of pre-run c	TO	5	2	5/13/20	DAVIS	PURGEFND
___ 104548	Correct requester fi	TO	4	1	2	ELMSMIKE	READY
___ 104547	HD420009 - CPF0001 i	TO	4	1	1	ELMSMIKE	PURGEFND
___ 104546	HD420009 - CPF0001 i	TO	5	1		ELMSMIKE	PURGEFND

F3=Exit	F5=Refresh	F6=Add form	F7=DSPMSG	F11=Alternate view
F12=Cancel	F14=WRKSBMJOB	F16=User options	F24=More keys	

Run multiple forms as a *group form* rather than consolidating forms. Group forms better preserve a single form-to-programmer relationship throughout the promotion cycle.

If you do decide to consolidate forms, keep these things in mind:

- TURNOVER® Lifecycle Manager eliminates any duplicate objects when it merges two or more forms.
- If more than 999 total lines are involved, TURNOVER® Lifecycle Manager splits the result into multiple, correctly-sequenced, dependent forms.
- If you request a cross-reference check, TURNOVER® Lifecycle Manager checks the table identified in the application definition. This is useful if applications other than that on the consolidated form share the same cross-reference table.

The consolidation job always submits to batch as job CPYFORMS. This job produces a log report showing:

- the names and descriptions of the forms you copied
- which, if any, lines were dropped during the copy, the associated reason codes, and footnotes explaining the reason codes
- a cross-reference listing, if you requested a cross-reference check.

To consolidate forms

1 Do one of the following:

- On the Work with Forms panel, select the forms with option 3.
- On the Programmer Worklist, use option 43.

The Copy Form Consolidation Prompt panel appears.

MM/DD/YY	Copy Form Consolidation Prompt	Your Company, Inc.
17:31:35	Type in selections and press Enter to Consolidate.	
	You have selected multiple forms for copying.	
	To copy all selected forms to one new form, enter Y below.	
	To copy each selected form to a separate form, enter N below.	
	Do you wish to consolidate forms . . . <u>Y</u> (Y/N)	
	Drop COPR lines <u>N</u> (Y/N)	
	Do you wish to copy comments <u>Y</u> (Y/N)	
	Do you wish to copy commands <u>Y</u> (Y/N)	
	Convert command library references . . <u>Y</u> (Y/N)	
	Check cross reference <u>Y</u> (Y/N)	
	Create related application forms . . . <u>Y</u> (Y/N)	
	New form description . . . <u>Cleanup</u>	
	Review sequencing of commands before running form.	
	F12=Cancel	

2 Set the properties (see below), and then press Enter.

3 Select the application and level for the new form.

Do you wish to consolidate forms

Use this option to combine two or more forms into a single form. For example, suppose three programmers each worked independently on three related subtasks, and each separately promoted his work to a test level. Those three forms can now be merged into one new form for all three tasks before promoting them to the next level.

Type Y if you want to consolidate the forms; type N if you are copying multiple forms to an equal number of new forms.

If you consolidate forms, the job is always submitted to batch.

Drop COPR lines

If you will want to recompile objects that are not checked out to the form programmer and reference, use N to keep the COPR lines on the resulting consolidated form. If you do not want to recompile these objects, drop the lines from the form by specifying Y.

You can later add COPR lines for these objects back to the form (if they refer to objects that are on the form) by using the object cross-reference.

Do you wish to copy comments

To copy the form comments, specify Y.

Do you wish to copy commands

To copy the pre-run and post-run commands, specify Y.

Convert command library references

If you are building a form to promote to the next highest level, type **Y** to have TURNOVER® Lifecycle Manager look for library references related to one level and convert them to comparable library names appropriate for the next level.

When copying forms, TURNOVER® Lifecycle Manager processes references to the data library first, then object library references, then source library references. If you are copying a form from a level with a common from- or to library to a level with multiple from- or to- libraries, then pre- or post-run commands on the resulting form will use the data library by default, and you must edit the new form afterwards to correct the commands if necessary.

Check cross reference

To check the cross-reference for the new forms that are created, type **Y**.

This field appears only if your application is set up to use cross-referencing.

Create related application forms

To create new forms for the applications that are specified as related to the application to which you are copying forms, type **Y**.

This field appears only if your application has related applications specified in the application definition.

New form description

Usually the same form description applies, but you can change it if you want.

Form copying rules

These rules apply to copying forms where the target application is different than the application on the form being copied. "Target application" is to the application to which the object will be promoted. The target application definition defaults determine many of the values on the new form.

- The test and production source file names and libraries are determined by the target application.
- The from library (from which objects may be duplicated or moved) is determined by the default entry for the target application.
- The object library name is determined by the default entry for the target application.
- The object name must conform to the naming convention defined in the default entries for the target application.
- Field protection (Lock or Restrict specifications) is determined by the default entries of the target application.
- The Method is determined by the target application.

- The P/T/S/R/C rules for Create Parm and the P/T/S/R rules for Authority are determined by the target application.
- If an object appears on more than one form being copied, it appears only once on the new form. A unique object is one with a unique name, type, action, attribute and library.
- The **Action** code (Add or Replace) is be set appropriately, depending on whether the object exists in the target library.
- The user doing the copy must have authority for both the existing form and target application.
- Pre-run or post-run commands are copied, unless you answer the prompt with N. TURNOVER® Lifecycle Manager looks for library references related to one level and convert them to comparable library names for the next level. If the library in the command is not referred to in the from application, TURNOVER® Lifecycle Manager does not convert these library names.
- Completion messages, line comments and form comments are copied unless you answer the prompt with NO.
- If you copy an LF line that was added automatically by TURNOVER® Lifecycle Manager on the from form, then TURNOVER® Lifecycle Manager deletes those lines from the new form. Logical file entries appropriate for the target level will be added to the form later, before it is run.
- If a create command has been customized for a form line (Create Parm: C), the command will be copied forward and library references will be converted appropriately to match test and production libraries of the target application. (See next rule for exception.)

This rule applies when copying a line from one application to another application with different object types. For example, you might want the create RPG program command set to *NOOPTIMIZE when you compile the program for acceptance testing and to *OPTIMIZE when you compile it into production. In this case, you can define two type codes (such as RPG and RPG2), each one set up to use different versions of the CRTTRPGPGM command.

Type code conversion rule for copying a line

If the type codes for the source and target applications are the same

TURNOVER® Lifecycle Manager copies the object type code to the same type code (for example, RPG to RPG). The same create command is used on the new form that was used on the old one.

If the type codes for the source and target applications are different

TURNOVER® Lifecycle Manager picks the first type code of the target application that matches the first *two positions* of the type code. For example, CLP might be changed to CLP2; PF1 to PFX; RPG to RPG2. Form lines with customized commands (Create parm: C) will *not* be copied forward in this instance.

If the source application has no equivalent type code

TURNOVER® Lifecycle Manager copies the line as it is, using the same type code, even though that type code may not be valid for the target application. In that case you will get an error when you try to submit the form to run.

For information about copying forms for interrelated applications, see the 'Managing multiple versions' section of the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Undoing changes to a form (recovery forms)

You can undo a TURNOVER® Lifecycle Manager form change after it has been run.

To use this feature, the application must have been set up to archive objects when the form you want to recover was created. TURNOVER® Lifecycle Manager uses the archived objects to undo the changes. If you have saved the archive objects offline, you must restore the TURNOVER® Lifecycle Manager library for the form you want to recover before running this procedure: see ['Working with archived objects' on page 176](#).

To undo a form

- 1 On the main menu, select option 6.

The Work with Forms panel appears.

- 2 Type 12 next to the form you want to recover.

The Create Recovery Form panel appears.

MM/DD/YY 17:46:27		Create Recovery Form				YOURSYS	
Form to be recovered . . . 1422905 Add field to Payroll, GL, and Accts Paya							
Select the objects to be recovered and press Enter to create recovery form.							
Press F21 to select all objects and create recovery form.							
1=Select							
Line	Object	Library	Type	Line Status	Action	Recovery Action	
_ 001	ACTPYBMSTF	MSQADTA	PF	RAN-OK	ADD	DELETE	
							Bottom
F3=Exit F12=Cancel F21=Select all							
Form nnnnnn was run as part of a form group.							

- 3 Do one of the following:

- Select the objects that you want to recover with option 1.
- To select all objects, press F21.

- 4 Press Enter.

TURNOVER® Lifecycle Manager creates a recovery form.

```

MM/DD/YY  17:47:35      Checkout Items to be Recovered      YOURSYS

The items below will be recovered.  Select the items that you wish to checkout
at this time.

Checkout in Batch: Y   Checkout Programmer: MARYS           Reference: PROJ0002

1=Select

   Object      Library      Type      Method
  _ ACTFYBMSTF  MSQADTA      PF         MO

                                                                    Bottom

F3=Exit  F9=Change task  F21=Select all
    
```

- 5 To check items out at the same time, select them, and then press Enter.
- 6 When you have created the recovery form, submit it to be run.

Notes

- Use caution if you are reversing a physical file. TURNOVER® Lifecycle Manager copies the data from the new version of the file to the old version, using the copy command **Record format field mapping** parameter *MAP *DROP. Normally this is what you would want it to do, but you must consider whether or not you want the file changes that have occurred since the form was run. The original data is in the TURNOVER® Lifecycle Manager Archive library. You might want to avoid the copy and have the data restored as well.
- The recovery form reverses changes. The recovery TURNOVER® Lifecycle Manager form uses the TURNOVER® Lifecycle Manager Archive library as the “from library” and the production libraries as the “target library.” The method of the recovery form will be MO (Move Object). Deleted objects are moved back into the production library, and replaced objects will replace the newer versions.
- If you only want to undo (recover) some of the objects, you can do so by editing the recovery forms and deleting lines you do *not* want to undo.
- If multiple ASPs (Auxiliary Storage Pools) are being used, up to sixteen temporary libraries might exist at the end of a TURNOVER® Lifecycle Manager run (if you are archiving objects); one for each of your ASPs. All of these must exist online when the recovery form runs. The temporary library names are TnnnnnnnnDx, where nnnnnnnn=form number and x=ASP, 0 through F representing from one to sixteen ASPs.

Approving forms

Each application and level can have an approval list specified in the application definition (see [‘Approval lists panel’ on page 43](#)).

The form status on forms is Approval Pending (APL-PN). You can send a reminder message to users who have not yet approved the form.

- 1 On the main menu, select option 6, select the form with option 10.

MM/DD/YY	Work with Form Approval List		Your Company, Inc.		
17:49:25					
Form: 200008 Change check writing pgm					
Application: A/P Release: 0 Version: 0 Level: 1					
Message: Form 200008 is pending your approval					
1=Send message 5=Display Group					
	User Name	Approved	Date	Time	By
1	PSHIFTY Paul Shifty	N	00/00/00		
-	TURNOVER TURNOVER® System Admin.	Y	01/08/20	12:45:15	TURNOVER
-	QAGROUP Quality Assurance Group	N	00/00/00		
F3=Exit F8=Conflicts F9=View Task F11=View form F12=Cancel F21=Select all					
F5=Refresh F7=Message pgmr F19=E-mail pgmr F10=Message users F22=E-mail users					
Enter message text and press F10/F22 to send/e-mail message to selected Users.					

- 2 View the project task details or the form details.
- 3 If you approve the changes, type Y in the approval column next to your profile name.

8 Submitting forms to run

A TURNOVER® Lifecycle Manager form is run to promote source and objects to a test application level or to production.

You can:

- run a form immediately
- submit it on hold and release it manually
- schedule it to be submitted and run later
- make a form job dependent on the completion of another form.

Several TURNOVER® Lifecycle Manager forms can be submitted together as a group, run together, and distributed together. Forms in a group can be set to recover *all* forms automatically, even if the last form in the group fails. Forms run in this way are run as one job.

When you create a form, you can select a range of dates and times to specify an early-start time and a late-start time. TURNOVER® Lifecycle Manager does not start the form outside of that date-time range. It sends a message to the operator and the operator can override the date-time range and start the job.

TURNOVER® Lifecycle Manager forms can be run unattended. TURNOVER® Lifecycle Manager verifies a form when it is entered, and again when it is submitted, and rolls back all objects if the form fails. You can also roll back a TURNOVER® Lifecycle Manager form after it has run if the results are not satisfactory. (See '[Creating a recovery form](#)' on page 153.)

This section assumes that you select the form from a list on the Work with Forms panel or from a Programmer Worklist, the most commonly used methods.

Submitting a form to run

The person running the TURNOVER® Lifecycle Manager may be someone other than the programmer. You must be authorized to run a TURNOVER® Lifecycle Manager form.

If you are unable to submit a form and you have run authority, your application might be set up to allow only an Administrator to submit forms.

To submit a form

1 Do one of the following:

- On the Programmer's Worklist panel, use option 47
- On the main menu, select option 6, and then Work with Forms option 7
- On the main menu, select option 7 (Submit a form to Run). To use this method, you must know the number of the form.

The Work with Forms panel appears.

MM/DD/YY		Work with Forms		Your Company, Inc.			
08:15:25				YOURSYS			
To reposition, enter form: _____							
				Apply filters . . N			
2=Update form		3=Copy to new form		4=Cancel form			
5=Display form		6=Print form		7=Run turnover			
8=Work w/ job		9=Release job					
Form	Description	Appl	R1/Vr	Lev	Run	Programmer	Status
___ 103340	Added by KLINE	T1		2		KLINE	READY
___ 103339	Change worklist Prob	T1		2		KLINE	READY
7 103338	Create worklist Prob	T1		2		KLINE	READY
___ 103337	Fixes to update pgm	SLS		2	6/17/20	PHILLIPS	RAN-OK
___ 103336	Session or device er	TO	3	1	2	6/17/20	MARKSSUE
___ 103330	Recursive call in app	TO	3	1	2	6/14/20	MILLER
___ 103327	Error checking not go	TO	3	1	2	6/10/20	ELMSMIKE
___ 103326	Error checking not go	TO	3	1	2	6/10/20	ELMSMIKE
___ 103325	Added by KLINE	T1		1	6/14/20	KLINE	RAN-OK
___ 103324	Added by KLINE	T1		1	6/14/20	KLINE	RAN-OK
___ 103321	Added by ELMSMIKE	T1		1	6/09/20	ELMSMIKE	RAN-OK
___ 103320	Added by ELMSMIKE	T1		1	6/08/20	ELMSMIKE	RAN-OK
More...							
F3=Exit		F5=Refresh		F6=Add form		F7=DSPMSG	
F12=Cancel		F14=WRKSBMJOB		F16=User options		F24=More keys	

2 To submit a form, type 7 next to it, and then press Enter.

The Submit Form panel appears. See ['Submit Form panel' on page 145](#).

Checking the form status

You can submit a form only if its status is **READY** (or **RECVD** on a remote computer).

Statuses

Status	Description
READY	The form is ready to be submitted.
RECVD	The form is ready to be submitted. The form is on a remote computer.
APL-PN	People on the approval list must approve it. Type 10 next to the form. (In the Programmer Worklist, use option 48 to see the approval list.) To see a list of forms pending <i>your</i> approval, press F10.

Status	Description
RECOVER	If you have fixed the problem that caused the form to recover, copy that form, and then run the new copy of the form.
IN-USE	Another user is editing it, TURNOVER® Lifecycle Manager is error checking it, or some other batch operation is in process. If none of these are the case, then it is possible that someone signed off while editing a form. If you are sure no jobs are using the form, type 4 next to the form. The status changes to READY, RECVD, or APL-PN.
other	Move to Filter by Status , and then press F4 to display a list of status codes and their meaning.

Form dependencies

You can make one form dependent on another; that is Form A runs only if Form B runs.

If you submit the dependent form and the predecessor form at the same time, they submit successfully.

If the first form fails, the second form starts, checks the predecessor form, and then returns to READY status.

TURNOVER® Lifecycle Manager sets some form dependencies automatically. For example, when you have a form containing a file and TURNOVER® Lifecycle Manager displays dependencies from another application, it creates a new form to recompile the related programs from the source in production, and sets that new form to be dependent on the first one.

On a remote production system, it will also set form dependencies automatically when a form contains an object that is on another form. If that form has not run, the dependent form will not run. You can clear (or set) dependencies on remote systems manually by updating the form header. On a remote system, the **Do not run before form** parameter is the only field in the form header that you can change. Changes to form dependencies are automatically logged as form comments by TURNOVER® Lifecycle Manager and these entries cannot be updated manually.

Submit Form panel

MM/DD/YY 08:18:45	Submit Form	Your Company, Inc. SYSTEM: YOURSYS
Form 1000131	Fix a program problem	
Application AP	Release:	Version: Level: 1
Status READY		
Type options, press Enter.		
Form schedule date <u>*CURRENT</u>	*CURRENT, date	
Form schedule time <u>*CURRENT</u>	*CURRENT, hhmmss	
Submit on hold <u>*NO</u>	*YES, *NO	
1=Select		
Opt	Form Submit Option	
<u>1</u>	Error-check in batch	
<u>—</u>	Error-check interactively	
<u>1</u>	Submit form	
<u>1</u>	Check for checked-out objects not on form	
<u>—</u>	Work with form	
<u>1</u>	Work with form distribution defaults	
F3=Exit F5=Refresh F10=Form approval F12=Cancel F15=Scheduling		

- Specify when you want the form to run:
 - To run it on a specific date and time, set the **Form schedule date** and **Form schedule time**. For more information about scheduling forms, see *'Scheduling form jobs' on page 148*.
 - To run the form now, specify *CURRENT in both fields.
 - To submit the form on hold, so that it runs only when you release it, specify Y.
- To check the form for errors before running it, set **Error-checking in batch** or **Error checking interactively** to 1.
 - If you have a short form, you can check for errors interactively. Errors and warnings are reported; if you only have warnings and they are acceptable, you can submit the form by pressing F6. See *'Submitting an error-check job' on page 152*.
 - If you submit the error-check to batch, the error-check job is called SBMnnnnnnnn, where nnnnnnnn is the TURNOVER® Lifecycle Manager form number. (If you submit an error check only job to batch, the job name begins with CHK.)

If no errors are found, TURNOVER® Lifecycle Manager submits the form job to be run.

If errors are found, TURNOVER® Lifecycle Manager sends a message to the programmer and print an error log; it does not submit the form to be run.

If any warnings are detected, F6 appears in the error-check messages window. To submit the form, press F6.

If you select option 17 (Run form without error-checking) on Work with Forms, error check options are not selected.

- To check for objects that have been checked out using the form reference, but are not included on the form, set **Check for checked out objects not on form** to 1.

If any such objects are selected and there is an approval list associated with the application, the form status becomes APL-PN and any submit options that were selected will be canceled.

- 4 To change the form, set **Work with form** to 1.

For more information, see *'Working with forms' on page 91*.

- 5 To change the distribution defaults for this application level, set **Work with form distribution defaults** to 1.

You must have authority to maintain distribution defaults.

See *'Changing form distribution defaults' on page 146*.

- 6 To submit the form, set **Submit** to 1.

The job name of the submitted job is TOnnnnnnnnG, where nnnnnnn is the form number.

Changing form distribution defaults

To change the distribution defaults for this application level, set **Work with form distribution defaults** to 1.

You must have authority to maintain distribution defaults.

The Form Distribution Defaults panel appears.

MM/DD/YY		Form Distribution Defaults		Your Company, Inc.	
08:19:12				YOURSYS	
Form 1000133					
Description . . . Demo form II					
Distribution job schedule date . . . *CURRENT *CURRENT, date					
Distribution job schedule time . . . *CURRENT *CURRENT, hhmmss					
Schedule elapsed action *SBMRLS *NEXTDAY, *SBMHL, *SBMRLS,...					
Automatic remote rollback *NO *NO, *RMT, *ALL					
Position to system . . . _____					
2=Change 4=Remove					
System				Receive	Receive
Name	Description	Device	Back	Logs	Confirmation
Back	Back				
— S1014444	SLS Product4	*SNADS	*RMTDFTS	Y	
— S1014445	SLS Product5	TAP01	*RMTDFTS	Y	
F3=Exit F5=Refresh F11=Alt. view F12=Cancel F13=Repeat F15=Scheduling					
Highlighted systems are selected for distribution.					

The system or systems that appear highlighted in the list are on the distribution list for the application to which this form applies.

To

Do this

accept the distribution defaults and continue processing your other form submit options	Press Enter.
---	--------------

To	Do this
change the distribution defaults	Selecting a system with option 2, and then press Enter. See <i>'Change Distribution Defaults for Form panel' on page 147.</i>
display more information	Press F11.
repeat the last option specified	Press F13.
change the form, distribution, or remote form job schedule	Press F15. See <i>'Scheduling form jobs' on page 148.</i>

Change Distribution Defaults for Form panel

```

MM/DD/YY      Change Distribution Defaults for Form      Your Company, Inc.
08:22:37

      Type changes and press Enter.

Form . . . . . 1000133
Description . . . . . Demo form II
Target system . . . . . S1014706
Description . . . . . UNICOM D4

Distribute . . . . . Y          Y, N
Target user id and address . . . . . TURNOVER S1014444  UserId-Address
Distribution device . . . . . *SNADS      Device, *SNADS, *NONE
Distribute source . . . . . Y          Y, N
Distribute objects . . . . . Y          Y, N
Remote form schedule date . . . . . *CURRENT  *CURRENT, date
Remote form schedule time . . . . . *RMTDFTS  *RMTDFTS, *CURRENT, hhmmss
  Schedule elapsed action . . . . . *RMTDFTS  *RMTDFTS, *NEXTDAY,...
Submit received forms automatically . . . . . *RMTDFTS  *RMTDFTS, Y, N
Receive logs back . . . . . *RMTDFTS  *RMTDFTS, Y, N
Receive confirmations back . . . . . Y          *RMTDFTS, Y, N
Receive forms method . . . . . *AUTOSTART  *AUTOSTART, *PASSTHRU

F3=Exit  F12=Cancel
  
```

For more information, see *'Distributing changes to production computers' on page 387.*

More about submitting TURNOVER® Lifecycle Manager forms

Authority for running forms

You can submit a form if you are authorized to the application and the application is not locked. (For more information, see the TURNOVER® Lifecycle Manager *Application Planning Guide*.)

Releasing forms

If the form was submitted on hold, it can be released by selecting it with option 9 on the Work with Forms panel.

Canceling forms

If a form is `SUBMIT` status and needs to be canceled, type a 4 next to it. The status changes to `READY`.

If a form's status is `RUNNING`, you can cancel it from Work with Forms by typing a 4 next to it. The status changes to `END-RQS` and, after it has backed out the changes already made, the status will change to `RECOVER`. Do not attempt to cancel a TURNOVER® Lifecycle Manager job outside of TURNOVER® Lifecycle Manager.

Rerunning forms

You *cannot* rerun most forms. If you need to rerun it, copy it to create a new form, and then run the copy.

You can rerun a form only if it is a form received from another computer that is now in `RECOVER` status. On a remote system, you can reset a form in `RECOVER` status to `RECVD`: On a command line, type `RESETFOR` followed by the form number.

Job queues for forms

The form is submitted to the batch job queue specified in the job description, or to the job queue specified on the Set Global Defaults panel (Main Menu option 8, then option 5.). The global job queue takes precedence (if one is specified).

Scheduling form jobs

You can specify when the jobs associated with running and distributing forms occur.

You control the date and time that your form can be run locally, distributed to a remote computer, and submitted on the remote computer. The distribution and remote job fields appear only if the form is for a distributed application. You can specify what to do if the job could not start on time.

To schedule form jobs

Do one of the following:

- On the Submit Form panel, press F15. See *'Submit Form panel' on page 145*.
- On the Form Distribution Defaults panel, press F15. See *'The Form Distribution Defaults panel appears.' on page 146*.
- On the Work with Form Group panel, press F15. See *'Submitting a group of forms to run together' on page 150*.

The Form Scheduling panel appears.

MM/DD/YY		Form Scheduling		Your Company, Inc.	
08:23:18					
Form group TO1000141G					
Type changes, press Enter.					
Local form schedule date		<u>*CURRENT</u>	*CURRENT, date		
Local form schedule time		<u>*CURRENT</u>	*CURRENT, hhmmss		
Schedule elapsed action		<u>*NO</u>	*NEXTDAY, *SBMHL, *SBMRLS,...		
Distribution job schedule date		<u>*CURRENT</u>	*CURRENT, date		
Distribution job schedule time		<u>*CURRENT</u>	*CURRENT, hhmmss		
Schedule elapsed action		<u>*SBMRLS</u>	*NEXTDAY, *SBMHL, *SBMRLS,...		
Automatic remote rollback		<u>*NO</u>	*NO, *RMT, *ALL		
	Form	Form	Schedule		
	Schedule	Schedule	Elapsed		
System	Date	Time	Action		
S1014706 200	<u>*CURRENT</u>	<u>*RMTDFTS</u>	<u>*RMTDFTS</u>		
Bottom					
F3=Exit F11=Work with form group forms F12=Cancel					

To	Do this
specify when the local form job should run	Type information in the local form scheduling fields.
specify when the form should be distributed	Type information in the distribution job scheduling fields.
control the timing of the form-processing job on each remote computer where it will be distributed	Type information in the fields next to the remote systems.
change the schedule and distribution information for forms in a form group	Press F11.

The remaining fields control the processing of the jobs on their respective systems:

- Local form jobs are processed on a development computer
- Distribution jobs are processed on a sending computer (which could be a development or a production computer)
- Remote form jobs are processed on a receiving computer (which also could be either development or production).

Schedule date and time fields

Specify the when you want the job to run.

To run the job today, type *CURRENT.

To run the job now, type *CURRENT.

For the remote form job schedule date, you can type `*RMTDFTS` to use the date in the remote computer's local form schedule defaults.

Schedule elapsed action fields

Specify what you want to do job if the scheduled date or time has already passed when the job processor starts to run the job.

Value	Description
<code>*NEXTDAY</code>	Submit it for processing the next day
<code>*SBMHLD</code>	Submit it immediately, with a status of <code>HOLD</code>
<code>*SBMRLS</code>	Submit and run it immediately
<code>*NOSBM</code>	Do not submit the job
<code>*RMTDFTS</code>	(For remote form jobs.) Use the remote computer's default elapsed action

Automatic remote rollback

Specify what you want to do on any other computers on which the form has already been promoted, if the form promotion fails on the remote computer.

Value	Description
<code>*NO</code>	Do not recover the forms on the other computers.
<code>*RMT</code>	Recover the form on the other computers.
<code>*ALL</code>	Recover the form on the other computers <i>and</i> on the development computer from which it was distributed. For recovery on the development computer, the <code>TOMSGRCV</code> user must be authorized to create and run forms there.

For form recovery to be possible, object archiving must be enabled on each computer concerned.

Submitting a group of forms to run together

- 1 To run several forms as a group, select each form with option 7, and then press Enter.

The Submit Multiple Forms panel appears.

MM/DD/YY 08:29:17		Work with Forms		Your Company, Inc. YOURSYS	
Submit Multiple Forms				Apply filters . . <u>N</u>	
Multiple forms have been selected for submit.				5=Display form 9=Release job	
Link submitted forms . . . <u>Y</u> Y, N					
F3=Exit F12=Cancel				Programmer Status	
				KLINE READY	
				KLINE READY	
				KLINE READY	
___	103337	Fixes to update pgm	SLS	2	6/17/20 PHILLIPS RAN-OK
___	103336	Session or device er	TO	3 1 2	6/17/20 MARKSSUE RAN-OK
___	103330	Recursive call in app	TO	3 1 2	6/14/20 MILLER RAN-OK
___	103327	Error checking not go	TO	3 1 2	6/10/20 ELMSMIKE RAN-OK
___	103326	Error checking not go	TO	3 1 2	6/10/20 ELMSMIKE RAN-OK
___	103325	Added by KLINE	T1	1	6/14/20 KLINE RAN-OK
___	103324	Added by KLINE	T1	1	6/14/20 KLINE RAN-OK
___	103321	Added by ELMSMIKE	T1	1	6/09/20 ELMSMIKE RAN-OK
___	103320	Added by ELMSMIKE	T1	1	6/08/20 ELMSMIKE RAN-OK
				More...	
F3=Exit F5=Refresh F6=Add form F7=DSPMSG F11=Alternate view					
F12=Cancel F14=WRKSBMJOB F16=User options F24=More keys					

2 Set Linked submitted forms to Y.

The Work with Form Group panel appears.

MM/DD/YY 08:29:17		Work with Forms		Your Company, Inc. YOURSYS	
.....					
: Work with Form Group :					
:					
:	Form group schedule date . . .	<u>*CURRENT</u>	*CURRENT, date		
:	Form group schedule time . . .	<u>*CURRENT</u>	*CURRENT, hhmmss		
:	Schedule elapsed action . . .	<u>*SBMRLS</u>	*NEXTDAY, *SBMHLD,...		
:	Submit on hold	<u>N</u>			
:	Submit form finalization . . .	<u>N</u>			
:					
:	Form Description	Seq	Error Check	Distribution	:
:	103338 Create worklist Prob	<u>10</u>	<u>Y</u>	N	:
:	103339 Change worklist Prob	<u>20</u>	<u>Y</u>	N	:
:	103340 Added by KLINE	<u>30</u>	<u>Y</u>	N	:
:					
:					
:					
:	Bottom :				
:	F3=Exit F12=Cancel F15=Scheduling				
:					
:					
:					
:					
F12=Cancel F14=WRKSBMJOB F16=User options F24=More keys					

- You can change the sequence in which the forms should be run, set the **Error Check** indicator on or off (if you are authorized to run without doing the pre-run error checking), and you can view or change the Distribution Defaults (if you have Distribution authority).
- If this form group will be distributed, press F15 to control the timing of the local form job, the distribution job, and the remote form job.

How form groups work

- All forms in the group run under the control of one job.

The name of that job is TOnnnnnnnG, where nnnnnnn is the form number of the first form in the group.

- When as you select the forms to be included in the group, their status changes to `IN-USE`.
- If you select the option to check the forms for errors, the job continue only if none of the forms have any errors.
- When you submit the form group, the status of each form changes to `SUBMIT`.
- When the group form job starts to run, the status of each form changes to `IN-USE`. The status of the form that is actually running changes to `RUNNING`.
- The form status stays as `RUNNING`, until all form processing has completed.
- When the finalization phase of the final form has started, the form status of all forms changes to `FINAL`. The completion messages are sent, and the objects can now be used.

Submitting an error-check job

To error check a form without submitting it to run

Do one of the following:

- On the Work with Forms panel, and then type 1 next to the form.
- On the Programmer's Worklist, use option 41.

The Submit Form panel appears (see *'Submit Form panel' on page 145*).

You can perform error checking interactively or in batch. Error checking can be done independently here, or when you submit the form. Only the Administrator can bypass error checking. Do not bypass the error-check unless you have just performed it, backed out, and then submitted again. If TURNOVER® Lifecycle Manager finds any errors, it sends a message to the programmer and prints an error log.

Error checking

TURNOVER® Lifecycle Manager checks:

- Are the source members, test objects, production objects (if you are replacing or deleting objects), and reference objects are in place?
- Has the form been approved?
- Are there any logical files related to any physical file on the form that have not been included on the form?
- Have any source members or test objects been changed since the form was approved (if you use the online approval feature)?
- Are all of the files that are referenced by the programs on the form found in the library list of the job description under which the form will be running?
- For methods `CSMO` or `CSCD`: Do the source and object members match?

- Have any objects or source been checked out under the same reference code since the form was created?
- Are all of the objects and members on the form reserved or checked out to this programmer and for the application and level indicated (depends on application settings), or for a higher level of the same application?
- Does any object on the form being submitted appear on another form that has not run to completion? If so, if the other form status is not RAN-OK, FIN-OK, RAN-WRN, FIN-WRN, EMER-OK, EMER-WRN (if the application is *not* being distributed) or is not CONFIRMED (if the application level *is* being distributed) then, TURNOVER® Lifecycle Manager puts a warning message in the error-check log.

Creating a recovery form

To undo changes, create a recovery form. If files are recovered, data will be copied back from the new file to the old file. Some data may have been lost if you have updated any new data fields in files being recovered since the form was run.

To create a recovery form, the application default entry **Archive objects** must be set to Y, and the **Archive object library** must be on the system when the recovery form runs.

- 1 Go to the Work with Forms panel, and then press F23.

Form	Description	Appl	RI/Vr	Lev	Run	Programmer	Status
103340	Added by KLINE	T1		2		KLINE	READY
103339	Change worklist Prob	T1		2		KLINE	READY
<u>12</u> 103338	Create worklist Prob	T1		2		KLINE	READY
103337	Fixes to update pgm	SLS		2	6/17/20	PHILLIPS	RAN-OK
103336	Session or device er	TO	3 1	2	6/17/20	MARKSSUE	RAN-OK
103330	Recursive call in app	TO	3 1	2	6/14/20	MILLER	RAN-OK
103327	Error checking not go	TO	3 1	2	6/10/20	ELMSMIKE	RAN-OK
103326	Error checking not go	TO	3 1	2	6/10/20	ELMSMIKE	RAN-OK
103325	Added by KLINE	T1		1	6/14/20	KLINE	RAN-OK
103324	Added by KLINE	T1		1	6/14/20	KLINE	RAN-OK
103321	Added by ELMSMIKE	T1		1	6/09/20	ELMSMIKE	RAN-OK
103320	Added by ELMSMIKE	T1		1	6/08/20	ELMSMIKE	RAN-OK

More...

F3=Exit F5=Refresh F6=Add form F7=DSPMSG F11=Alternate view
F12=Cancel F14=WRKSBMJOB F16=User options F24=More keys

- 2 Type 12 next to the form you want to recover or undo.

TURNOVER® Lifecycle Manager creates a new form set up to reverse previously applied changes.

- 3 If you want to undo only some of the objects or source, edit the new recovery form to remove objects you do not want to recover.
- 4 Submit the recovery form to run.

Form recovery

TURNOVER® Lifecycle Manager recover archived source and objects, and then puts them back into the original production or target libraries.

The method used on the recovery form is always CSMO, CSCD, MO, CD, or CS (for source-only objects) regardless of the method used on the original form.

If you want the source you promoted to be returned to the development library for further updates, select the items you want checked out during the recovery form create process (Checkout Items to be Recovered panel). (You cannot select compile-only objects from the original form).

Working with form group jobs

After a TURNOVER® Lifecycle Manager form or form group has been submitted to run, you can work with the jobs that are associated with the form group (if a *single* form is submitted, it is still submitted as a *form group*).

Do one of the following:

- On the Work with Forms panel, select option 8.
- On the Programmer Worklist, select option 40.

The Work with Form Group Jobs panel appears.

MM/DD/YY		Work with Form Group Jobs				Your Company, Inc.	
08:42:09							
Form group . . . TO3004868G							
2=Work with job 5=Display job 6=Release job							
7=Resume job 8=Work with spooled files 9=Jobs submitted by job							
Job name	Description	Status	Phase	Last Function	Last Form	Last Line	
_ TO3004868G	Run form group	*ACTIVE	*FORMPROC	*NEWSRCOBJ	3004868	2	
F3=Exit F5=Refresh F10=Forms F12=Cancel F14=WRKSBMJOB							

The panel lists one, two, or three jobs, depending on:

- what phase the form group is in (if the form group job is currently active)
- whether the form group finalization phase runs in-line or as a submitted job
- whether or not the form group is being distributed to other computers.

Job TOnnnnnnnnG (nnnnnnnn = the form number of the *first* form in the form group) will be the first job listed. This is the main form group-processing job.

Job `TOnnnnnnnnF` (`nnnnnnnn` = the form number of the *first* form in the form group) is the form group finalization job. It performs cleanup functions such as archiving source, deleting test source and objects, refreshing the cross-reference database, and deleting temporary objects used during the form group process. If finalization was *not* submitted, then these functions are performed by job `TOnnnnnnnnG`.

Job `DISddddddd` (`ddddddd` = the distribution job number) is the distribution job that sends the form group and associated objects to remote computers. This job will only be listed if the form group is being distributed to other computers.

The status of each of these jobs is indicated in the **Status** column. The group job status may be `*ACTIVE`, `*JOBQ`, `*OUTQ`, or `*FIN` (the job has completed and all associated spooled files have been either printed or deleted).

The last action *completed* by jobs `TOnnnnnnnnG` and `TOnnnnnnnnF` is indicated by the **Last Phase**, **Last Function**, **Last Form**, and **Last Line** columns. The form group phases and functions are listed below.

Phase	Function	Description
<code>*ERRORCHK</code>		Error-checking (performed for all forms in group before proceeding to next phase)
<code>*EXITPRE</code>		Pre-form group exit (TURNOVER® Lifecycle Manager exit 19)
<code>*FORMPROC</code>		Form pre/main processing (performed for all forms in group before proceeding)
	<code>*DEPEND</code>	Form dependency checks
	<code>*DATETIME</code>	Form time range checks
	<code>*LOCK</code>	Form lock checks
	<code>*SYNONPRE</code>	Pre-run processing for TURNOVER® for CA 2E (if you are using that interface product)
	<code>*PRERUNX</code>	Form pre-run exit (TURNOVER® Lifecycle Manager exit 8)
	<code>*CMDPRE</code>	Form pre-run commands
	<code>*LANSAPRE</code>	Pre-run processing for TURNOVER® for LANSAPRE (if you are using that interface product)
	<code>*CRTARCLIB</code>	Create temporary <code>TnnnnnnnnD</code> archive libraries
	<code>*MOVARCLIB</code>	Move source and object to archive libraries

Phase	Function	Description
	*NEWSRCOBJ	Copy source, compile object, and so on
	*CRTPARMS	Set creation parameters for object
	*MEMBERS	Add members to PFs and LFs
	*DATACOPY	Copy PF data
	*DOCUMENTS	Copy documents
*POSTRUN		Form post-run processing (performed for all forms in group before proceeding to next phase)
	*AUTHORITY	Set authorities
	*JOURNAL	Restart journaling
	*EXPLODE	Explode data objects
	*LANSAPOST	Post-run processing for TURNOVER® for LANSa (if you are using that interface product)
(*POSTRUN) ...	*SYNONPOST	Post-run processing for TURNOVER® for CA 2E (if you are using that interface product)
	*POSTRUNX	Post-run form exit (TURNOVER® Lifecycle Manager Exit 1).
	*CMDPOST	Post-run form commands.
*FINAL		Form Finalization
	*ARCHIVE	Archive source (TONnnnnnnnG or TONnnnnnnnF).
	*DELETETST	Delete test source/object (TONnnnnnnnG or TONnnnnnnnF).
	*XREF	Cross-referencing refresh (TONnnnnnnnG or TONnnnnnnnF).
	*DLTARCLIB	Delete temporary libraries (TONnnnnnnnG or TONnnnnnnnF).
(*FINAL)	*CHECKIN	Check in source (TONnnnnnnnG).
	*LOGS	TURNOVER® Lifecycle Manager log reports (TONnnnnnnnG and/or TONnnnnnnnF).
	*CONFIRM	Confirmation messages (TONnnnnnnnG).

Phase	Function	Description
	*MESSAGES	Form completion messages (TOnnnnnnnG).
	*DISTRIB	Submit distribution job (TOnnnnnnnG).
*EXITPOST		Post-form group exit (TURNOVER® Lifecycle Manager Exit 20).

The **Last Phase** and **Last Function** columns indicate the last step of the form group process that has completed. Even if a form group does not happen to make use of a particular phase or function, *all* phases and functions are processed when the form group runs. For example, it is possible that the 'Work with Form Group Jobs' will indicate that the last function completed was *CMDPRE (pre-run commands) even though the form group does not include any forms which have pre-run commands.

To	Do this
work with submitted jobs	Press F14.
with or display any job that has a status of *JOBQ, *OUTQ, or *ACTIVE	Use options 2 and 5.
release a held job (with status *JOBQ	Use option 6.
restart a job	Use option 7. See ' Restarting a failed job ' on page 157 .
access the spooled files for a job	Use option 8.
see a list of jobs it in turn submitted, and access those jobs' spooled files	Use option 9.
display all forms that are part of the form group	Press F10.
refresh the panel	Press F5.
exit from the Work with Form Group Jobs panel	Press F3 or F12.

Restarting a failed job

If a form group job has failed (perhaps because someone powered down your system or terminated a subsystem), you can restart the job where it failed. This does *not* apply to a form that ended with status of RECOVER, RAN-WRN, or RAN-ERR.

The resume form group feature is a safety net to be used in the event of an actual failure; do not use it as part of your day-to-day TURNOVER® Lifecycle Manager procedures. Schedule TURNOVER® Lifecycle Manager form group jobs to run when you are sure that there is sufficient time for them to complete.

When a form group is resumed, the new job uses temporary libraries and objects that were created by the failed job. It assumes that all source, objects, checkout records, and so on, are exactly as they were at the time that the original job failed. If, after the original form group job failed, source and objects related to the form group have been moved, changed, or deleted, then the resumed form group job may not run predictably.

To restart a failed group job

You must have authority to run forms for all forms in the form group.

1 Do one of the following:

- On the Work with Forms panel, select option 8.
- On the Programmer Worklist, select option 40.

The Work with Form Group Jobs panel appears.

MM/DD/YY		Work with Form Group Jobs			Your Company, Inc.	
08:42:09						
Form group . . . TO3004868G						
2=Work with job 5=Display job 6=Release job 7=Resume job						
			Last	Last	Last	Last
Job name	Description	Status	Phase	Function	Form	Line
<u>7</u>	TO3004868G Run form group	*OUTQ	*FORMPROC	*NEWSRCOBJ	3004868	2
F3=Exit F5=Refresh F10=Forms F12=Cancel F14=WRKSBMJOB						

2 Check the statuses:

- If job TOnnnnnnnnG has a status of *OUTQ or *FIN, the last phase should be *EXITPOST. Any other phase indicates that the form group job terminated abnormally (system failure, subsystem ended, and so on).
- If job TOnnnnnnnnF has a status of *OUTQ or *FIN, the last phase should be *FINAL and the last function should be *DLTARCLIB. Any other phase or function indicates that the form group finalization job terminated abnormally.

3 To resume the form group or form group finalization job, use option 7.

This resubmits job TOnnnnnnnnG or TOnnnnnnnnF. Form group processing resumes, starting at the phase, form, line and function where the failed job left off.

For more about this panel and a description of the status values, see [Working with form group jobs' on page 154.](#)

9 Utility menu

Housekeeping functions, such as deleting information from TURNOVER® Lifecycle Manager files, are on the Utility menu.

To access the Utility menu, select option 8 on the main menu.

To use the functions on this menu, you must have System Default authority.

MM/DD/YY 08:52:52	Utility Menu	Your Company, Inc. YOURSYS
Select one of the following:		
1. Submit file purge 2. Work with source archive files 4. Work with type code definitions 5. Set global defaults 6. Display current release level 7. Work with exits 8. Submit reorganize of files 9. Work with archived objects 10. Lookup archived objects 11. Set source compare defaults 12. Global Programmer Worklist session defaults 13. Work with type code conversion table 14. Submit IFS archive save		
Select option: __		
F3=Exit F6=DSPMSG F12=Cancel F14=WRKSBMJOB F21=System command		

Deleting forms

You can delete obsolete forms.

You can delete only canceled forms, or canceled forms and forms that have run or have been distributed. (The form status must be RAN-xx, CANCEL, or PURGEPND.)

You cannot delete forms that have not been run, distributed or canceled. If the form is “ready” and you want to delete it, cancel it first.

You can mark forms as deleted, without removing the associated object history information.

You can also tag specific forms to be purged by selecting option PP (Purge Pending) on the Work with Forms panel.

To delete forms

The user submitting the purge job must have TURNOVER® Lifecycle Manager purge authority.

- 1 Back up the TURNOVER® Lifecycle Manager data library, SOFTTURND.
- 2 Print the forms you are deleting (detail = *FORM) so that you have a record of them: On the main menu, select option 10, and then select option 20 (List Forms.)
- 3 On the main menu, select option 8 to display the Utility menu, and then select option 1.

The Purge Forms panel appears.

Purge Forms (PRGFOR)			
Type choices, press Enter.			
Application		Name, *ALL	
Release	<u>00</u>	00-99	
Version	<u>00</u>	00-99	
Level	<u>00</u>	00-99	
+ for more values			
	<u>00</u>		
	<u>00</u>		
	<u>00</u>		
Purge Date		Date	
From Form-#	<u>1</u>	Number	
To Form-#	<u>9999999</u>	Number	
Form Status	<u>C</u>	C=Cncl, R=Run, P=Pend, A=C/R/P	
Retain Object History	<u>Y</u>	Y,N	
Bottom			
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display			
F24=More keys			

- 4 Type Y to **Retain object history**.

The forms will be flagged as purged, but will not be deleted from the system. The forms will not be displayed on the Work with Forms panel. The object history will be available on the Work with Object History panel.

To completely delete all records from all TURNOVER® Lifecycle Manager files for the forms selected, specify N.

Recommendation

Use the form status and form number range if you want to purge a group of forms. If you run a purge for an overlapping range, and do not retain the object history, all records from all files will be deleted for form numbers that meet the purge criteria.

Working with source archive files

You can find out if any of your archive files are no longer used by any TURNOVER® Lifecycle Manager applications, and then reorganize, save, or delete unused files.

Source in the archive files is compressed. To restore compressed source members that have been saved offline, use Object History; see [‘Viewing archived information’ on page 70](#). For information about setting up archiving policies, see the *TURNOVER® Lifecycle Manager Administrator’s Guide*.

For a description of how the TURNOVER® Lifecycle Manager archiving process works, see [‘How archiving works’ on page 71](#).

To work with source archive files

On the Utility menu, select option 2.

The Work with Source Archive Files panel appears.

MM/DD/YY 08:56:12			Work with Source Archive Files				Your Company, Inc. YOURSYS			
Type choices, press Enter.										
2=Reorganize 3=Save 4=Delete 5=Usage 6=Display Size										
File	Library	Members	Size (Use Opt 6)	First Used	Last Used	In Use	Save Date	Save Volume		
_ ARCHIVE	APP199	8	1.64Kb	9/17/20	9/17/20	N	10/05/20	991005		
_ ARCHIVE	APP299	22	2.46Kb	9/17/20	9/17/20	Y	10/05/20	991005		
_ ARCHIVE	MLARCHIVE	9	1.64Kb	9/17/20	9/17/20	N	0/00/20	991005		
Bottom										
F3=Exit F5=Refresh F12=Cancel F14=WRKSBMJOB F21=System command										

This panel displays a list of the TURNOVER® Lifecycle Manager source archive files that are on your system. To find information about source members that have been saved off line, see [‘Working with object history’ on page 55](#). If you restore to your system a source archive file that has been saved off line, it does not show up in this list unless an application has since archived source to it.

The save date and volume information usually reflect either backup procedures or manual saves done from this panel.

To	Do this
move members to a different archive file	Use option 2. You might do this when you want to store specific contents of a file offline while continuing to use the file for your application archiving.

To	Do this
	You can move members from one file, or from several files at once. You can add conditional processing, moving only those archived before a certain date or version. (You can specify *ALL for the member and/or file parameters without adding conditional processing.) The members are deleted from the original file.
store an archive file offline	Use option 3. TURNOVER® Lifecycle Manager updates the object history records for all objects saved with appropriate save volume and date information. This does not delete the original file.
delete unused archive files	Use option 4. You cannot remove an archive file if a TURNOVER® Lifecycle Manager application is still using it.
display information about which files are in use, and which applications are using them	Use option 5.
display the size	Use option 6. If you later use F5 to refresh the screen, you will need to use this option again.

Managing type code definitions

You can maintain TURNOVER® Lifecycle Manager's system-supplied TURNOVER® Lifecycle Manager type codes.

TURNOVER® Lifecycle Manager is shipped with most object types already pre-defined.

You can control default command parameters such as **Target release** and **Replace *YES/*NO** that TURNOVER® Lifecycle Manager uses when it creates an object in Production.

You can create your own object type, as when you need to create an object using a vendor-supplied create command.

You can create your own command to use in place of the system-supplied commands, if you have some special requirements, such as collating source members before compiling an object.

Be careful when you change, delete, or create object type code entries. These entries affect all applications on your system. Coordinate changes with all TURNOVER® Lifecycle Manager users, and test new object types thoroughly. Be sure you understand how TURNOVER® Lifecycle Manager uses these entries before changing them.

To see a list of available type codes

On the Utility menu, select option 4.

MM/DD/YY	Work with Type Codes				Your Company, Inc.	
09:22:35					YOURSYS	
Filter:	Position to . . . _____					
2=Change	3=Copy	4=Delete		Dta		
Type	Description	Obj. Type	Obj	Seq	Create CMD	
_ AAUDIT	ASSET Audit Trail	*AAUDIT	N	250	SRCFILE("&SL"/"&SF") S	
_ ABPGM	ASSET Batch Program	*ABPGM	N	350	SRCFILE("&SL"/"&SF") S	
_ ADMDL	ASSET Data Model	*ADMDL	N	300	SRCFILE("&SL"/"&SF") S	
_ ADPGM	ASSET Display Program	*ADPGM	N	350	SRCFILE("&SL"/"&SF") S	
_ AFILE	ASSET File	*AFILE	N	200	SRCFILE("&SL"/"&SF") S	
_ AFLD	ASSET Field	*AFLD	N	100	SRCFILE("&SL"/"&SF") S	
_ ARPGM	ASSET Report Program	*ARPGM	N	350	SRCFILE("&SL"/"&SF") S	
_ ASHLP	ASSET Help Text	*ASHLP	N	350	SRCFILE("&SL"/"&SF") S	
_ ASUBR	ASSET Action Subroutine	*ASUBR	N	250	SRCFILE("&SL"/"&SF") S	
_ BAS	Basic/400 program	*PGM	N	500	CRTBASPGM PGM("&LI"/"&	
_ BASCPY	/COPY BAS Member	*SRC	N	100		
_ BKPDF	Manage PDF'd book files	*IFSOBJ	Y	20		
_ BMP	Windows Bitmap	*IFSOBJ	N	100		
_ BND	ILE Binder Language	*SRC	N	100		
_ BNDDIR	ILE Binding Directory	*BNDDIR	N	480		
More...						
F3=Exit	F6=Add Type	F8=User-defined parms			F24=More Keys	

To	Do this
filter the list	Use the Filter fields. For more information, see the online help.
view or change the details associated with a type code	Use option 2.
copy a type code in order to create a new one	Use option 3. All related commands are also copied.
delete a type code	Use option 4.
create a new type code	Press F6. <i>See 'Adding or changing TURNOVER® Lifecycle Manager type codes' on page 164.</i>
add and update user-defined parameters that can apply to any type	Press F8.

Adding or changing TURNOVER® Lifecycle Manager type codes

You can add your own type codes, so you can create variations of standard types.

You can use type codes in your application default definitions. TURNOVER® Lifecycle Manager will use the command you specify.

1 Do one of the following:

- To add a type code, press F6.
- To change a type code, select it with option 2.

MM/DD/YY		Add a Type Code		Your Company, Inc.	
09:25:15				YOURSYS	
Type code	_____	CM scheme	*TURNOVER		
Description	_____	Attribute	_____		
Object type	_____	Source file name . . .	_____		
Sequence	_____	Data object	N		
Create command . . .	_____				

"OB" = Object name		"RF" = Reference		"X0"-"X9" = Exit	
"LI" = Library name		"TO" = Test object name			
"TY" = Type code		"TL" = Test object library name			
"SM" = Source member name		"TR" = Target release			
"SF" = Source file name		"FM" = From source member name			
"SL" = Source library name		"FF" = From source file name			
"U0" = Generation options		"FL" = From source library name			
"U2" = Optimization level		"U1" = Debugging views			
"U4" = Source listing options		"U3" = Compiler options			
"U6" = Unassigned		"U5" = Unassigned			
"U8" = Binding directory		"U7" = Service program source file			
		"U9" = Module source file			
F3=Exit F4=Prompt/select F8=Add IFS type code F12=Cancel F22=Long command					

2 Specify the values for the type code, and then press Enter.

Type code

The name of a new code must start with a recognizable IBM i type code. For example, a different version of the create CL program command from the command associated with CLP, you could call the new type code type code, CLPNO.

Another example of a type that is already set up is PFREF. This can be used exclusively for creating a field reference file. It is defined with MEMBER (*NONE) and LVLCHK (*NO) and assigned a form sequence code that ensures that it is always listed first on the TURNOVER® Lifecycle Manager form (it needs to be created before physical and logical files are created).

If you define your own type entry, use the Attribute field to tell TURNOVER® Lifecycle Manager what the real attribute is. TURNOVER® Lifecycle Manager uses this code in Programmer's Worklist Manager (PWM) when you edit source so the correct editor is used. For example, the PFREF type referred to above should be defined with an attribute of PF.

Three categories of type codes are possible:

Category	Description
Source-only types	For example, text source members and copy books (see TXT type).
Object-only types	These types are always duplicated or moved into production. The associated command has no source reference (see DTAARA type). Object-only types without a command specified can only be moved or duplicated from test to production.
Source-created object types	Any object created using a create command, or moved or duplicated into production along with the source member from which the object was created (see RPG type).

TURNOVER® Lifecycle Manager also recognizes special types related to some case tools.

Some restrictions apply to the TURNOVER® Lifecycle Manager methods permitted to each of the above.

Method	Source only	Source compiled	Object only
CD Create Duplicate Object		X	X
COPR Compile/Create in Production		X	X
CS Copy Source	X		
CSCD Copy Source, Create Duplicate Object		X	
CSCO Copy Source, Compile Object		X	
CSMO Copy Source, Move Object		X	
MO Move Object		X	X
NULL No action	–	–	–

Source-only types have *SRC in the Object type code field.

Source-compiled types have a reference to a source member in the designated create command.

Object-only types have no create command, or a create command that does not reference a source member.

For more information about how each object type is promoted by TURNOVER® Lifecycle Manager, see 'Change Process' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Sequence

The **Sequence** field is used when sorting objects on a form into the correct logical order. For example, all PFs precede LFs that precede DSPFs, and so on. If you enter objects on a form out of order, TURNOVER® Lifecycle Manager displays a warning message.

Create command

To enter a command string longer than 256 characters (often necessary with use of substitution variables or when binding multiple ILE programs), press F22.

The **Create command** and default parameters entered here are used when creating an object or transferring this object type to production. The substitution parameters appearing below the command line can be used wherever appropriate in the command.

For example:

```
CRTCBLPGM PGM("&LI"/"&OB") SRCFILE("&SL"/"&SF") SRCMBR("&SM")
```

Parameter	Description
&LI	Library name (target library name)
&OB	Object name (program name)
&TY	Type code
&SL	Source library name
&SF	Source file name
&SM	Source member name
&TO	Test object name
&TL	Test object library name
&TR	Target release
&FM	From source member name
&FF	From source file name
&FL	From source library name
&U0-9	User-defined parameters (see below)

If the command line is blank and the object type (above) is not *SRC, only TURNOVER® Lifecycle Manager methods MO or CD will be allowed for this object type.

(See [‘Resolving the create command’ on page 168.](#))

Enter a command name, and then press F4 to prompt it.

When entering the & variables, surround each one with a double quote.

Adding or changing a type code for a change management scheme

Change management schemes enable you to override almost any change management method for a user-defined object type, for example, moving, copying and deleting an object. After you create a change management scheme and override its methods, you must create new type codes, or change existing ones, to use the new scheme. TURNOVER® Lifecycle Manager includes several sample schemes with their type codes already created.

To add a type code

- 1 Press F6.

MM/DD/YY		Add a Type Code		Your Company, Inc.	
09:25:15				YOURSYS	
Type code	_____	CM scheme	*TURNOVER		
Description	_____	Attribute	_____		
Object type	_____	Source file name	_____		
Sequence	_____	Data object	N		
Create command	_____				

"OB" = Object name		"RF" = Reference		"X0"-"X9" = Exit	
"LI" = Library name		"TO" = Test object name			
"TY" = Type code		"TL" = Test object library name			
"SM" = Source member name		"TR" = Target release			
"SF" = Source file name		"FM" = From source member name			
"SL" = Source library name		"FF" = From source file name			
"U0" = Generation options		"FL" = From source library name			
"U2" = Optimization level		"U1" = Debugging views			
"U4" = Source listing options		"U3" = Compiler options			
"U6" = Unassigned		"U5" = Unassigned			
"U8" = Binding directory		"U7" = Service program source file			
		"U9" = Module source file			
F3=Exit F4=Prompt/select F8=Add IFS type code F12=Cancel F22=Long command					

- 2 In the **CM scheme** field, do one of the following:

- Type the name of the change management scheme.
- To select a change management scheme from a list, press F4.

- 3 Specify the properties of the type code, and then press Enter.

TURNOVER® Lifecycle Manager adds the type code, and then displays it on the Work with Type Codes panel.

To change a type code for a CM scheme

- 1 Select the type code with option 2, and then press Enter.
- 2 Change the type code information, and then press Enter.

For more information about creating and using CM schemes, see 'Managing User-Defined Object Types' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Creating user-defined parameters

You can create up to 10 user-defined variables (or command parameters). These parameters can be used wherever you code a command in TURNOVER® Lifecycle Manager, as you can in the Type code create command. For example, you can specify the following create command string:

```
CRTRPGPGM PGM("&LI"/"&OB") SRCFILE("&SL"/"&SF") SRCMBR("&SM")
ALWRTVSRC("&U3")
```

In this instance, &U3 is a user-defined parameter. It can be anything you define it to be; in this case, the ALWRTVSRC parameter with value of *YES or *NO, depending on the default setting on the user-defined parameter panel, as illustrated below.

MM/DD/YY		User-defined Parameters		Your Company, Inc.	
09:33:38				YOURSYS	
2=Change 4=Delete					
User	parm	Description	Keyword	Default	
-	&U0				
-	&U1	Generation options	GENOPT		
-	&U2	Replace program	REPLACE	*NO	
-	&U3	Allow retrieve source	ALWRTVSRC	*NO	
-	&U4	User profile	USRPRF	*USER	
-	&U5				
-	&U6				
-	&U7				
-	&U8				
-	&U9				
F3=Exit F12=Cancel					

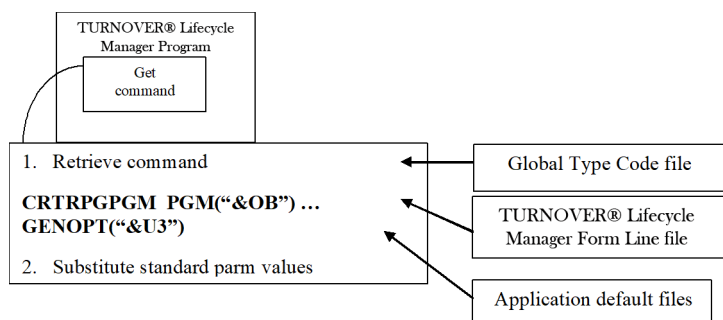
This example defines four parameters. You can assign any parameter you want to each of the user variables. You do not have to use all of them, and you can leave gaps. In this example, &U0 is unassigned.

How user-defined parameters are used

Assume you are running a two level application, one with a QA library and one with a Production library. When you promote to level one, you might want objects to be created with the ALWRTVSRC parameter set to *YES. Later, when you promote to production, you may want to set it to *NO. Once you define a user-defined parameter, you can set it differently for each application and level. For more information, see *'User-defined parameter values' on page 40*.

Resolving the create command

When TURNOVER® Lifecycle Manager promotes an object, the resolution of the create command substitution parameters proceeds as illustrated below.



Setting global defaults

To set the global default values, select option 5 on the Utility menu.

```
Set Global Defaults (SETGLOBE)

Type choices, press Enter.

Duplicate library warnings . . . > Y          *SAME, Y, N
Allow checkout by object only . . > N          *SAME, Y, N
Submit User . . . . . > *CURRENT          Name, *SBMJOB, *CURRENT...
Submit Form job queue . . . . . > *JOB        Name, *SAME, *JOB
Library name . . . . . > *LIBL          Name, *LIBL
Submit Finalization job queue . . > *JOB        Name, *SAME, *JOB
Library name . . . . . > *LIBL          Name, *LIBL
Target Release . . . . . > V7R1M0          Character value
Source File Name Exit Pgm . . . > *NONE        Name, *SAME, *NONE
Library name . . . . . > *LIBL          Name, *LIBL
Name Checking Pgm . . . . . > TURRNSTD       Name, *SAME, *NONE
Library name . . . . . > *LIBL          Name, *LIBL
Programmer check at check-in . . > Y          *SAME, Y, N
Level checking on checkout . . . > Y          *SAME, Y, N
Manage S/36 object types . . . . > Y          *SAME, Y, N
Allow group checkout . . . . . > N          *SAME, Y, N

More...

F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys
```

Duplicate library warnings

When you enter a form, if you type a target library name that is the target library for another application, a warning message appears.

If you do not want this warning message to appear, specify N.

If you have more than one application defined with the same target library, you probably want to set this entry to N.

Command: DUPLIBWRN

Allow checkout by object only

You can enforce checkout by object only or allow programmers to checkout directly from a source member in a source file. Checkout by source ensures that you get the right source member for the object you reference, but is not always possible to enforce. Yes will enforce checkout by object.

Command: OBJCHKONL

Submit User

Specify the user profile under which a form job runs.

Value	Description
*CURRENT	The current users profile name
*SBMJOB	The default parameter on the submit job command (usually *CURRENT)
*JOBID	The user profile referenced in the job description associated with the application definition. <code>Name</code> is a profile name to be used for this field.

Command: `USER`

Submit Form job queue/Library name

Specify the job queue to which forms should be submitted. For example, you might want to use one job queue specifically for all TURNOVER® Lifecycle Manager forms.

The default value is the job queue that is referred to in the job description for the form.

Command: `JOBQ`

Submit Finalization job queue/Library name

Specify the job queue to which form finalization jobs should be submitted.

The default value is the job queue that is referred to in the job description for the form.

Command: `FINALJOBQ`

Target Release

Target release for distributions.

If any of your production (target) systems use an earlier release level of the IBM i operating system than the development system, set this parameter to *PRV or to the version release of the target system, for example, V2R1M1.

See the `TGTRLS` parameter on the `SAVLIB` command for valid values.

If all systems use the same release level, specify *CURRENT.

Command: `TGTRLS`

Source File Name Exit Pgm / Library name

To use your own program to determine the source file name to use when checking out objects, or when adding or changing a line on a TURNOVER® Lifecycle Manager form, specify its name and library.

Command: `SRCFILNAM`

Name Checking Pgm / Library name

To use your own program to verify object names entered when reserving new object names, or when adding or changing a line on a TURNOVER® Lifecycle Manager form, specify its name and library.

Command: NAMSTDPGM

Programmer check at check-in

If you want forms to be submitted and run by only the programmer who checked out the objects, specify Y.

Command: PGMRCHECK

Level checking on checkout

Y: TURNOVER® Lifecycle Manager warns you that the object you are checking out does not match its known source. Checkout proceeds and the source is handled based on the copy option you specified. It is up to you to determine the reason for the mismatch.

N: TURNOVER® Lifecycle Manager does not advise you of such mismatch conditions when you check out objects.

For more information, see ['Checking source in and out' on page 72](#).

Command: COLVLCHK

Manage S/36 object types ()

If you are managing any System/36 object types, or source types, specify Y.

Command: S36

Allow group checkout ()

To enable TURNOVER® Lifecycle Manager's group checkout feature, specify Y. This feature allows more than one user to check out the same source at the same time.

Command: GRPCHK

Set Global Defaults: Page 2

Set Global Defaults (SETGLOBE)		
Type choices, press Enter.		
Use Delete Test Object rule . . . >	<u>Y</u>	*SAME, Y, N
Company name >	<u>'Your Company'</u>	
Specify method of distribution >	<u>*DISTRIB</u>	*SAME, *FORM, *DISTRIB
IFS Adopted authority user . . . >	<u>TURNIFS</u>	Name, *SAME, *CURRENT
QNTC Adopted authority user . . . >	<u>TURNIFS</u>	Name, *SAME, *CURRENT
IFS Archive subdirectory >	<u>ARCHIVEABC</u>	Character value
Source archive file >	<u>ARCHIVE</u>	Name, *SAME
Library name >	<u>ARCHIVELIB</u>	Name
Automatic form lock checking . . >	<u>*FILE</u>	*SAME, *NONE, *FILE, *DTAOBJ
Allocate form locks >	<u>Y</u>	*SAME, Y, N
Reference objects library . . . >	<u>*TURNOVER</u>	Name, *SAME, *TURNOVER
Bottom		
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display		
F24=More keys		

Use Delete Test Object rule

Use delete test object rules or bypass these rules. See 'Change Process' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Command: DTORULE

Company name

Specify the company name that you want to display on the panels.

Command: COMPANY

Specify method of distribution (DISTSARE)

Specify an alternate distribution method:

- To distribute objects that were promoted at the time of the form run, use *FORM.
- To distribute the objects that are in place when the distribution job is started, use *DISTRIB.

The default value is *DISTRIB.

Command: DISTSARE

IFS Adopted authority user (IFSUSER)

If you are managing IFS objects using TURNOVER® Lifecycle Manager, specify the user profile to be used for creating objects in IFS directories during promotion. For more information, see 'Managing IFS Objects' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Command: IFSUSER

QNTC Adopted authority user (QNTCUSER)

The user profile whose authority you want to use when checking out or promoting IFS objects from the /QNTC file system. The profile must have enough authority to copy, move, or delete any IFS objects being managed by TURNOVER® Lifecycle Manager.

Command: QNTCUSER

IFS Archive subdirectory (IFSARCHIVE)

The default archive subdirectory for IFS objects, if *DEFAULT is specified at the application level.

For more information about IFS archiving, see 'Managing IFS Objects' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Command: IFSARCHIVE

Source archive file / Library name

The archive file and library name to be used for archiving files.

TURNOVER® Lifecycle Manager can archive all applications to one file specified here, or you can specify different archive files and libraries for different applications (or application levels).

Command: SRCARCFIL

Automatic form lock checking

Specify whether you want to check for locks before replacing items during a form run.

To	Specify
check for locks on only files	*FILES
check for locks on all data objects (Data object field is set to Y in the type code definition)	*DTAOBJ
not check for locks	*NONE

The default value is *NONE.

You can change this value when you run a form.

Command: AUTOLOCK

Allocate form locks (ALLOCATE)

Y: TURNOVER® Lifecycle Manager keeps the allocation on the object for the entire form run.

N: TURNOVER® Lifecycle Manager keeps only the lock on the object at the very beginning of the form job; just long enough to determine that no one is using the object at that moment. Once TURNOVER® Lifecycle Manager determines that no one is using the object, it releases all locks on the object and the form processing begins.

The default value is *NONE.

You can change this value when you run a form.

Command: ALLOCATE

Reference objects library ()

The library that contains the reference objects that TURNOVER® Lifecycle Manager duplicates when creating missing objects for an application.

To use the TURNOVER® Lifecycle Manager product library, specify *TURNOVER.

Command: REFOBJLIB

Displaying the current release level

To display information about your TURNOVER® Lifecycle Manager release number; your operating system version and release; and a list of changes you have made to TURNOVER® Lifecycle Manager, select option 6 on the Utility menu.

The Version/Install History panel appears.

MM/DD/YY 10:12:13		TURNOVER® Version/Install History			Your Company, Inc.	
Currently installed TURNOVER Release : Ver 101						
Currently installed TURNOVER Cumulative Change Date . . . : 8/13/18						
Currently installed version of IBM i : V7R2M0						
----- Installation and PTF Log -----						
Date	Cum.	What was	Applied	Applied		
Applied	Date	Applied	By USRPRF	Type	OS level	
2/14/20	2/13/20	Changes	SODD	D	7 2.0	
12/19/20	12/19/20	Changes	SODD	D	7 2.0	
6/23/20	6/20/20	Changes	SODD	D	7 1.0	
12/07/20	12/07/20	Changes	SODD	D	7 1.0	
4/17/20	4/14/20	Changes	SODD	D	7 1.0	
9/27/20	9/24/20	Changes	SODD	D	7 1.0	
5/23/20	5/14/20	Changes	SODD	D	7 1.0	
1/16/20	1/15/20	Changes	SODD	D	7 1.0	
4/22/20	4/18/20	Changes	SODD	D	7 1.0	
12/12/20	12/05/20	Changes	SODD	D	5 3.0	
5/16/20	5/06/20	Changes	SODD	D	5 3.0	
9/23/20	9/19/20	Changes	SODD	D	5 3.0	
						More...
F3=Exit F12=Cancel F21=System command						

Working with TURNOVER® Lifecycle Manager exits

TURNOVER® Lifecycle Manager provides several program exit points and application program interfaces (APIs). The Work with Exits panel shows the exit programs that have been defined.

To specify an exit program that is to be called at an exit point, type in the program name and library in the fields provided.

MM/DD/YY		Work with Exits		Your Company, Inc.	
10:22:25				YOURSYS	
5=Browse exit program		7=Work with sample exits		8=Help	
Exit	Description	Active	Program	Library	Library List
_ EXIT 1	Form Finalization Processing	N			*APPL
_ EXIT 2	Pre-Distribution Form Exit	Y	TOEXIT2UDR	DXDDG	
_ EXIT 3	Pre-Distribution Library Exit	Y	TOEXIT3UDR	DXDDG	
_ EXIT 4	Receive of Distribution	Y	TOEXIT4UDR	DXDDG	
_ EXIT 5	Determining Source file names	Y		*LIBL	
_ EXIT 8	Form Initialization phase	Y	TOEXIT8RAY	SMITH	*CURRENT
_ EXIT 9	Post-Checkout Exit	Y	TPDWX9	SMITH	
_ EXIT 10	Manual check-in	N			
_ EXIT 11	Form Completion Processing	N	SNDEXIT12	RICHARDS	*APPL
_ EXIT 12	Add a line to TurnOver form	N			
_ EXIT 13	Pre-run Error check Exit	N			
_ EXIT 14	Pre-Checkout Processing	N			
_ EXIT 15	Add PWL Item	N	TOEXIT15AC	FRPROD	
_ EXIT 16	Form Approval	Y	TOEXIT16	SMITH	
_ EXIT 19	Pre-Form Group Exit	Y	LGEXIT19	RICHARDS	*CURRENT
					More...
F3=Exit		F8=IFS Exits		F12=Cancel F21=Command line	

To	Do this
display more exits	Press Page Down.
display the source for an exit	Use option 5. TURNOVER® Lifecycle Manager looks at the object description to find the source member used to create the program object.
display the sample program supplied with TURNOVER® Lifecycle Manager	Use option 7.
display the help text for an exit	Use option 8.
display the TURNOVER® Lifecycle Manager IFS exit programs	Press F8. For more information, see 'Managing IFS Objects' in the <i>TURNOVER® Lifecycle Manager Administrator's Guide</i> .

Important Once an exit is defined, it is called for *all* applications. The program is called immediately after you make the change on this panel. Therefore, if the exit applies to only one or a few applications, it must be coded to bypass processing for applications for which it does not apply.

Reorganizing TURNOVER® Lifecycle Manager files

Occasionally you may want to reorganize TURNOVER® Lifecycle Manager's files.

Select this option to submit a reorganize file job to batch. Make sure that no one is working with TURNOVER® Lifecycle Manager and that no TURNOVER® Lifecycle Manager forms or TURNOVER® Lifecycle Manager distributions are running when you run this reorganize job. The command to reorganize files is RGZTOFILES.

This job is submitted on hold status; it must be released manually at an appropriate time.

Working with archived objects

MM/DD/YY 10:28:27	Work with Archived Objects	Your Company, Inc.
Select one of the following:		
1. View/Save/Delete from list -- SAVARCO 2. Delete/Save by form number or *ALL -- SAVARSBM		
Select option:		
F3=Exit F6=DSPMSG F12=Cancel F14=WRKSBMJOB F21=System command		

If you have archived objects for your applications, the objects are in the TURNOVER® Lifecycle Manager form “temporary” library, TnnnnnnnnD (where *nnnnnnnn* = form number), at the end of each TURNOVER® Lifecycle Manager run. These remain online until you save them to offline media and delete them. If you save them offline using this procedure, TURNOVER® Lifecycle Manager keeps track of where each object archive library is saved.

You can set up a scheduled job to perform this function. Use the SAVARSBM command (option 2): see ‘Commands’ in the *TURNOVER® Lifecycle Manager Administrator’s Guide*, Appendix C.

The SAVARCO command (option 1) does NOT save archived explode libraries. To do this, use SAVARSBM.

To archive objects

1 Do one of the following:

- On the Utility menu, use option 9, then option 1.
- On a command line, run SAVARCO.

Submit Object Archive Save (SAVARCO)		
Type choices, press Enter.		
Form	<u>0</u>	number, 0=Select
From date	<u>000000</u>	Date, 000000
To date	<u>999999</u>	Date, 999999
Volume	<u> </u>	Character value
Device	<u> </u>	Character value
Bottom		
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display		
F24=More keys		

- 2 Type the device name and (first) volume serial number you intend to use to save the archived objects, and press Enter.
- 3 You can select a specific form number or a date-range of form run dates, such as all forms that ran between 01/01/20 and 01/31/18.

```

MM/DD/YY                      Save Archived Objects                      Your Company, Inc.
10:42:20

Form selected
  Date range selected      0/00/00 to 99/99/99
  Save device/volume      TAP01      SLS533

  4=Delete  5=Display  9=Save

      Archive  Run          Save      Save
      Form    Library Date      Date      Volume
  _  200005   T0200005D  1/28/18
  _  200008   T0200008D  12/01/17

F3=Exit      F12=Cancel
  
```

To	Do this
save a library offline	Use option 9.
display the contents of the object archive library	Use option 5.
delete the object archive library	Use option 4. Save the library before you delete it.

Looking up and restoring archived objects

Once you have saved an object archive library, you can view these libraries and a directory of save volumes by selecting option 10 on the Utility menu.

```

MM/DD/YY                      Lookup Archived Objects                      Your Company, Inc.
10:45:15

  To reposition screen, enter form: _____

  1=Restore

      Form    Description          Library    Saved    Save    Save
      _  200001  Changes to check-writer  T0200001D  1/02/20  VOL3
      _  200004  Revise TO purge program      T0200004D  1/02/20  VOL1
      _  200005  Fix program SMASOLDA         T0200005D  1/02/20  VOL3
      _  200008  Emergency Change TURSONFF    T0200008D  1/02/20  VOL3

F3=Exit  F12=Cancel
  
```

This panel lists of all of the object archive libraries that have been saved and deleted from your system using the SAVARCO or SAVARSBM commands. To restore any of these object libraries select option 1=Restore.

Changing the source compare program

TURNOVER® Lifecycle Manager includes a source compare utility, CMPSRCMBR. This command is also used by the TURNOVER® Lifecycle Manager Synchronizer system.

To use a different source compare program

- 1 On the Utility menu, select option 11.

MM/DD/YY 10:52:21	Maintain Source Compare Command	Your Company, Inc.
Type the necessary changes and press enter.		
Change command . . . CMPSRCMBR REFFILE("&OL"/"&OF") REFMBR("&OM")CMPFILE("&NL" /"&NF") CMPMBR("&NM")		
" &NF " = New Source File " &NL " = New Source Library " &NM " = New Source Member " &OF " = Old Source File " &OL " = Old Source Library " &OM " = Old Source Member		
F3=Exit F4=Prompt command F12=Cancel		

- 2 Type the source compare command and substitution variables just as they are displayed on this panel.

Setting defaults for the Programmer Worklist

These values affect all users when they use the Programmer Worklist.

- 1 On the Utility menu, select option 12, Global Programmer Worklist session defaults.

8/21/20 10:55:50		Global Worklist Session Defaults	Your Company, Inc.
			Lock (Y/N)
Default option 21/46 mode	*INTER	*BATCH, *INTER	<u>N</u>
Edit/compile authority	*SYSAUTH	*SYSAUTH, *DEVELOP,	<u>N</u>
		*CHECKOUT	
Test object creation parameters			
Link option 36 compiles	<u>Y</u>	Y, N	<u>N</u>
Job description	*USRPRF	*USRPRF, name	<u>N</u>
Library		Library name	<u>N</u>
Job queue	*JOBBD	*JOBBD, name	<u>N</u>
Library		Library name	<u>N</u>
Output queue	*JOBBD	*PGMR, *JOBBD, name	<u>N</u>
Library		Library name	<u>N</u>
Library list	*APP	*APP, *CURRENT	<u>N</u>
Replace object	<u>N</u>	Y, N	<u>N</u>
More...			
F3=Exit F12=Cancel			

2 Set the values, and then press Enter.

- To prevent a user from changing a value in their Programmer Worklist, set **Lock** to **Y**.
- To see more parameters, press Page Down.

For more information about the parameters, use the online help.

Working with the type code conversion table

TURNOVER® Lifecycle Manager lets you maintain the system-supplied type code conversion links that are used with the Convert Object Type (TCVTOBJTYP) utility. You can control the conversion process by creating links between your From and To type codes that direct which older style objects you'll be converting to newer style objects.

You can also specify a conversion command, either the IBM-supplied command (CVTRPGSRC), or any other vendor-supplied command.

To create entries in the Type Code Conversion Table, you must have TURNOVER® Lifecycle Manager system defaults authority. You must also ensure that the type codes in your conversion table entries, including type codes you have selected for removal from the table, exist at the global level and at each level of the application that you will use to perform the conversion. The type codes that you specify must also exist at permanently locked levels. TURNOVER® Lifecycle Manager comes with some predefined type code conversion entries.

To manage entries in the Type Code Conversion Table

On the Utility menu, select option 13.

The Work with Type Code Conversion Table panel appears.

```
MM/DD/YY 11:10:05    Work with Type Code Conversion Table    Your Company, Inc.
                                                                YOURSYS

Type choices, press Enter.

2=Change  3=Copy  4=Delete  5=Display

  Convert      Convert      Delete      Check
  From Type    To Type      Type        Out   Copy  Conversion Command
_  RPG         RPGLE       RPGCPY      Y     N    CVTRPGSRC FROMFILE("&PL"/ . . .
_  RPG         RPGMOD       RPGCPY      Y     N    CVTRPGSRC FROMFILE("&PL"/ . . .

                                                                Bottom

F3=Exit  F6=Add  F12=Cancel  F21=System command
```

The conversion table comes with two initial entries: one for converting RPG to RPGLE, and one for converting RPG to RPGMOD.

To	Do this
change an entry	Use option 2, and then see <i>'Type code conversion table entry properties' on page 180.</i>
copy an entry	Use option 3.
delete an entry	Use option 4.
display an entry	Use option 5.
create an entry	Press F6.

Type code conversion table entry properties

```
MM/DD/YY          Add Type Code Conversion Table Entry    Your Company, Inc.
11:21:27          YOURSYS

Type choices, press Enter.

Convert from type . . . . . _____  TURNOVER® Lifecycle Manager type code
Convert to type . . . . . _____  TURNOVER® Lifecycle Manager type code
Checkout . . . . . Y                Y, N
Copy source . . . . . N              Y, N
Type code to delete . . . _____  TURNOVER® Lifecycle Manager type code

Conversion command . . . _____

_____ F4=Prompt

The following substitution parameters may be used in the conversion command:
"&OB" = Production object           "&PM" = Production source member
"&OL" = Production object library    "&DF" = Development source file
"&PF" = Production source file       "&DL" = Development source library
"&PL" = Production source library    "&DM" = Development source member

F3=Exit  F4=Prompt  F12=Cancel  F21=System command
```

Convert or supply from type

Specify the type code that is to be converted (for example, RPG).

This type code must exist at the global level and at each level of the application definition (including permanently locked levels).

Convert or supply to type

Specify the new TURNOVER® Lifecycle Manager type code to which the object will be converted (for example, RPGLE).

This type code must exist at the global level and at each level of the application definition (including permanently locked levels).

Checkout

To check out the object when the TCVTOBJTYP utility run, specify Y.

To not check out the object, specify N.

Copy source

- To copy the source when the object is checked out, specify Y.

Use Y if you have a conversion utility that converts source “in place,” rather than converting source from one source member into another source member. For example, if your policy is that every time an RPG member is checked out it is converted to RPGLE, make QRPGLSRC the development source file for the RPG type code. TCVTOBJTYP copies from QRPGLSRC in production to QRPGLSRC in development when the object is checked out, and the conversion command converts the copied source in place.

- To not copy the source, specify N.

Use N if the conversion command creates the source member in development. In this case, it might not be necessary to copy the source during checkout.

Type code to delete

Type the type code to use to delete the obsolete source member when the object has been converted (for example, the RPG member that was converted). In most cases, you will have defined RPGCPY as the type code to delete, but you might use some other RPXXXX type code to designate a source-only type for RPG members.

If you type a type code here, a D delete line is added to the highest unlocked level (Production) TURNOVER® Lifecycle Manager form to delete the old source. The type code must be a *SRC (source-only) type code, and the type code must be defined to each level of the application definition.

If you leave this field blank, a line is NOT added to the form for the highest unlocked level (Production).

If the highest unlocked level (Production) form, once it is created, is cancelled and re-created, the **D** delete line is not automatically added to the new form. You must manually create the **D** delete line.

Conversion command

The command that converts the source from one type to another (for example, `CVTRPGSRC`).

You can include the substitution parameters that appear on the panel in the command string.

What happens to the “old” source member?

When you first created an entry in the type code conversion table, you may have entered a type code you wanted to delete. If you did, then when a form is created for the highest unlocked level (Production) of the application, a **D** delete line is added to the form for the object being converted. The type code to be deleted is used to remove the old source member (for example, the RPG member that was converted). In most cases, you will have defined `RPGCPY` as the type code you want deleted, but your company may use some other `RPXXXX` type code to designate a source-only type for RPG members.

If you did not specify a type code to be deleted, then a **D** delete line is NOT added to the highest unlocked level (Production) form.

Recommendation

Enter a value for the **Type code to delete** parameter in the conversion table entry. As long as the highest unlocked level of the application being used is set to archive source on line, TURNOVER® Lifecycle Manager archives the “old” source member.

Saving an IFS archive directory

You can save an Integrated File System (IFS) archive subdirectory and clear the subdirectory after it is saved.

To use this feature, you must have all necessary authority to the archive subdirectory.

1 Do one of the following:

- On the Utility menu, select option 14.
- On a TURNOVER® Lifecycle Manager command line, type `TSAVIFSARC`.

MM/DD/YY 11:32:30	Utility Menu	Your Company, Inc. YOURSYS
Select		
Save IFS Archive Directory		
Type choices, press Enter.		
Volume _____		
Device _____		
Archive subdirectory . . . _____ F4=List		
Clear subdirectory _ Y, N		
F3=Exit F4=Select subdirectory F12=Cancel		
14. Submit IFS archive save		
Select option: <u>14</u>		
F3=Exit F6=DSPMSG F12=Cancel F14=WRKSBMJOB F21=System command		

2 Enter the command parameters, and then press Enter.

TURNOVER® Lifecycle Manager submits your archive save job to batch.

10 Setting up additional TURNOVER[®] Lifecycle Manager environments

You can set up one or more additional TURNOVER[®] Lifecycle Manager environments, each one with its own TURNOVER[®] Lifecycle Manager data library.

The new environments use their own data library (for example, SOFTTURND2), created by saving and restoring either your existing SOFTTURND library, or (more likely) the clean data library that is supplied in the TURNOVER[®] Lifecycle Manager installation library.

TURNOVER[®] Lifecycle Manager applications, forms, projects, and so on in the second data library can be separate from those in the first TURNOVER[®] Lifecycle Manager data library. However, that your IBM i libraries can still be accessed from each of the two environments. For this reason, the IBM i libraries specified in TURNOVER[®] Lifecycle Manager applications in one of the environments should *not* be used in TURNOVER[®] Lifecycle Manager applications in the other environment.

When the second environment is set up, you can select it by using F22 on the TURNOVER[®] Lifecycle Manager main menu.

When you select a new environment, some libraries that are used by the previous environment remain in the library list in the new environment. If you have no use for these extra libraries, remove them from your library list.

Each environment needs a *unique form prefix*. If you plan to have only one additional environment, you might set the new environment's prefix to 50. For two additional environments, you might set their prefixes to 33 and 66; and so on. The original TURNOVER[®] Lifecycle Manager environment's prefix always starts at 0 and is incremented automatically from there (unless it has been manually changed).

For more information about multiple TURNOVER[®] Lifecycle Manager environments, see the *TURNOVER[®] Lifecycle Manager Installation guide*.

Preparing the base TURNOVER[®] Lifecycle Manager environment

If you will not be setting up escalation and Wisedesk dynamic updating in the new environments, you can omit this step: go to 'Creating the additional environments' in the following section.

Perform this step once only; do not repeat it for additional environments.

Prepare the base TURNOVER® Lifecycle Manager environment

- 1 Move your base environment data queues.

Create (or save and restore) the TSNDMAPI and WDDYNUPD data queues from your TURNOVER® Lifecycle Manager product library (SOFTTURN) into your TURNOVER® Lifecycle Manager data library (SOFTTURND).

Remove them from the product library afterwards. These data queues will continue to support your initial TURNOVER® Lifecycle Manager environment.

It does no harm to move the data queues, even if you decide later not to set up data queue-dependent processing in your additional environments.

- 2 Verify the base environment's company name.

The company name for the base environment is controlled by the contents of the **Company Name** field in the TURNOVER® Lifecycle Manager global defaults (main menu option 8, then option 5).

Creating the additional environments

Repeat each of these steps for every additional environment you create. Sign on as QSECOFR or equivalent, and do these steps while no one is using TURNOVER® Lifecycle Manager.

1: Create a data library for the new environment

Important When you copy your existing data library, you are also copying all the data those libraries contain. This includes all projects and tasks, all forms, checkout history, audit history, and so forth.

To create a new data library, you can either restore the shipped version of the TURNOVER® Lifecycle Manager data library **TLMxxxPRDD** from the installation library (where **xxx** is the release number, such as 200), or you can copy the TURNOVER® Lifecycle Manager data library used by your base environment.

Restore method

To restore a clean data library from your installation library, do the following:

- 1 Create an empty library to restore into:

```
CRTLIB LIB(SOFTTURND2) TYPE(*PROD)
```

- 2 Restore the data library shipped with TURNOVER® Lifecycle Manager into the new library:

```
RSTOBJ OBJ(*ALL) SAVLIB(TLMxxxPRDD) DEV(*SAVF) SAVF(TLM2XINST/DATALIB)
MBROPT(*ALL) ALWOBJDIF(*ALL) RSTLIB(SOFTTURND2)
```

Replace **xxx** with the number of your TURNOVER® Lifecycle Manager release, such as 200.

Copy base data library method

To copy the data library for your base TURNOVER® Lifecycle Manager environment, save and restore your existing data library (SOFTTURND, if you haven't used a different name).

If you are planning to set up escalation and Wisedesk dynamic updating for that environment, move the data queues from SOFTTURN into SOFTTURND: see ['Preparing the base TURNOVER® Lifecycle Manager environment' on page 184](#).

2: Create a new message file for the environment

In the new data library, create a new (empty) message file, such as TNLENGL2. Add to this message file one message, TUR9000, containing the name of the new environment (17-character maximum). While using this environment, this name will appear in the upper right corner of the TURNOVER® Lifecycle Manager panels.

The environment name that you specify in the TUR9000 message can be superseded by the default environment name of another environment. This occurs in the TURNOVER® Lifecycle Manager global defaults (main menu option 8, then option 5), then press F22 to select another environment. The name that appears on the panels in the second environment is the default environment name of the first environment.

3: Create a TURNOVER® Lifecycle Manager environment record

Add the TURNOVER® Lifecycle Manager product environment library (SOFTTURN) and the new environment data library (SOFTTURND2) to the library list.

- 1 Type the command WRKTOENV, and then use F6 to add a new environment record.
- 2 Supply a name and description for the new environment, and fill in the new data library and message file names.

Parameter	Value
Product library	SOFTTURN
Data library	SOFTTURND2
Language library	SOFTTURN
Message file	TNLENGL2

4: Set TURNOVER® Lifecycle Manager Authorities for the new library

- 1 For each new environment you are creating, type this command on a command line:

```
SOFTTURN/SETTOAUTH SCOPE (*ALL) ENV (newenvname)
```

- 2 Press Enter.

This command resets the TURNOVER® Lifecycle Manager file object authorities for the new environment, and resets the program and owner object authorities for the product library. It has two parameters, **Scope of change** and **Environment**.

Scope of change

Value	Description
*ALL	Reset the owner and authority of all TURNOVER® Lifecycle Manager objects to values recommended by UNICOM Systems, Inc.). This is the recommended value.
*PARTIAL	Reset the owner of all TURNOVER® Lifecycle Manager objects and set the authority of all objects to the minimum required level) also works for this situation.

Environment

(**Environment** appears when you press F10 on the Set TURNOVER® Lifecycle Manager Object Authority (SETTOAUTH) panel.)

Value	Description
*ALL	Reset authorities for all TURNOVER® Lifecycle Manager environments.
*PRV	Reset authorities for the environment you were in the last time you used TURNOVER® Lifecycle Manager
<i>name</i>	Reset authorities to a specific TURNOVER® Lifecycle Manager environment.

5: Enter TURNOVER® Lifecycle Manager and select the new environment

- 1 On the TURNOVER® Lifecycle Manager main menu, press F22 to display the Environment Selection panel.
- 2 Select the new environment with 1. Press Enter to return to the Main Menu. The environment message (TUR9000) shows in the top right corner of the menu.

6: Reset the environment's form number prefix

To avoid having two environments generating duplicate form numbers, reset your new environment's form prefix. To do this, run the following command:

```
CHGFORMPRE NEXTPREFIX (*NEXT)
```

This command set the environment's form prefix to the next valid, unused prefix.

7: Each TURNOVER® Lifecycle Manager user must select the environment (once)

- 1 On the TURNOVER® Lifecycle Manager main menu, press F22 to display the Environment Selection panel.
- 2 Select the new environment with 1. Press Enter to return to the Main Menu. The environment identification specified in the special message file appears in the top right corner of the TURNOVER® Lifecycle Manager menus.

TURNOVER® Lifecycle Manager remembers the environment selected: you only have to use F22 again if you want to use a different environment.

8: Set up escalation and Wisedesk dynamic updating (optional)

To use escalation processing and automatic Wisedesk tree updating in the new environment, do this:

- 1 Each environment needs its own set of escalation and Wisedesk data queues.

After creating the new data library, create (or save and restore) the TSNDMAPI and WDDYNUPD data queues that are now in the SOFTTURND library into the new environment's data library. (Make sure you have removed the data queues from the SOFTTURN library.)

- 2 You will need to run multiple instances of the Enhanced Mail Messenger – one for each additional environment.

To set this up, duplicate the HELPDESK *JOB.D. Change its name and add your new data library to its library list. Then edit the TSMTP32.INI file for the second mail messenger instance, find where it lists the HELPDESK job description, and change it to the new one. Make sure that the default HELPDESK job description includes the SOFTTURND library so that the first version of the mail messenger will work out of that environment.

- 3 You will need multiple versions of the TURNESCQ and WISEDESK auto start jobs; one set for each TURNOVER® Lifecycle Manager environment you create.

To do this, duplicate the job description that is used by each, and change their library lists as appropriate. Then add the second autostart job entries to your system.

Only the Enhanced Mail Messenger program requires additional copies installed for each environment it will support.

9: Confirm your distribution settings (optional)

If you plan to distribute TURNOVER® Lifecycle Manager forms from one of the new environments to another computer, make sure that:

- The remote computer has an environment record with the same name.
- Both systems have matching system definitions in the companion environment on the remote computer.

- The job descriptions for the autostart jobs TOMSGRCV and TURCRARE in the TSERVER subsystem contain the TURNOVER® Lifecycle Manager product and language libraries (usually SOFTTURN and SOFTTURN), but *no data libraries*.

11 Exits and APIs

Exits

The Exits are points throughout TURNOVER® Lifecycle Manager that look for user-written programs and run them.

To manage exits, use the Work with Exits panel (main menu option 8, submenu option 7.) You specify your exit and activate it on this panel:

MM/DD/YY 14:55:56		Work with Exits		Your Company, Inc. YOURSYS	
5=Browse exit program 7=Work with sample exits 8=Help					
Exit	Description	Active	Program	Library	Library List
EXIT 1	Form Finalization Processing	N			*CURRENT
EXIT 2	Pre-Distribution Form Exit	N			
EXIT 3	Pre-Distribution Library Exit	N	TOEXIT3	SMITH	
EXIT 4	Receive of Distribution	N			
EXIT 5	Determining Source file names	Y		*LIBL	
EXIT 8	Form Initialization phase	N			*CURRENT
EXIT 9	Post-Checkout Exit	N	TOEXIT9	SMITH	
EXIT 10	Manual check-in	N			
EXIT 11	Form Completion Processing	N			*APPL
EXIT 12	Add a line to TurnOver form	N			
EXIT 13	Pre-run Error check Exit	N			
EXIT 14	Pre-Checkout Processing	N	TOEXIT14	SMITH	
EXIT 15	Add PWL Item	N			
EXIT 16	Form Approval	N			
EXIT 17	Document pre-checkout exit	N			
					More...
F3=Exit F8=IFS Exits F12=Cancel F21=Command line					

APIs

APIs let you to write your own programs to run various TURNOVER® Lifecycle Manager functions.

For example, you might want to write a program that retrieves a list of objects, creates a form and then adds those objects to the form. Or you may want to create a project task from information available in another system you are running. With APIs, you can accomplish these tasks without writing complex code to update TURNOVER® Lifecycle Manager's database or accomplish processing that is already done efficiently by TURNOVER® Lifecycle Manager.

Exits

For more information about writing exit programs, and the exits' parameters, see the online help.

Exit 1: Form finalization processing exit

Exit 1 is called during the final stages of the TURNOVER® Lifecycle Manager form run. If you have a sequence of commands or a task that you want executed every time you have run a form, Exit 1 is the appropriate place to perform these commands.

Exit 2: Pre-distribution form exit

After a form has run successfully on your development computer and the distribution job has been initiated, Exit 2 is called. The exit is executed when the objects have been moved into the distribution library, but the library has not yet been sent to the target computers. Exit 2 is called once for each form being distributed.

The TOEXIT02B sample exit program is available for monitoring form confirmation. This program messages the distributing computer if a distributed form does not confirm after some interval.

Exit 3: Pre-distribution library exit

Exit 3 is called as part of the distribution job. It is called once per distribution job and after the following: the distribution library has been created (*Thhmmssjjj*); the temporary work library has been created (*TnnnnnnnS*); and the objects have been moved into the distribution library. Exit 3 can be used to move additional objects or other pertinent information into the distribution library before sending it to the target system(s).

Exit 4: Receive of distribution exit

Exit 4 is called by the form receive job on the target computers. If you have used Exit 3 to load the distribution library with information necessary for running the form(s) on the remote computer, you can use Exit 4 to unpack this information and move it to the desired location.

Exit 5: Determining source file names exit

Exit 5 is called whenever TURNOVER® Lifecycle Manager needs to determine a source file name, such as during checkout and when adding or changing a line on a form. If your application has source for one type code that resides in more than one source file, you will need to make use of this exit. Exit 5 is controlled in the TURNOVER® Lifecycle Manager global defaults, Source file name exit program and Library name (main menu option 8, followed by option 5).

Exit 8: Form initialization phase exit

If you have a sequence of customized commands or a task that you want executed just before every form run, Exit 8 is the appropriate place to do this work.

Exit 9: Post-checkout exit

Exit 9 is called after a source member, object, or message ID has been checked out and copied to your development area. This exit can come in handy when working with source members or objects that are associated with supplemental files such as control files or help files.

Exit 10: Manual check-in exit

Exit 10 is called when you use one of the manual check-in options for source code on the Checkout/Check-in Menu. Use this exit to perform additional check-in security processing, and/or other custom processing.

Exit 11: Form completion processing exit

Exit 11 is called during the final stages of a TURNOVER® Lifecycle Manager form run, after sending the form completion message(s). When a form has been run, completion messages are automatically sent to both the form programmer and the application administrator. Once a form runs and the completion messages are sent, you can use Exit 11 to propagate messages to users on other computer systems.

Exit 12: Add a line to a form exit

Exit 12 is called whenever a line is added to a form, you might decide to change or evaluate one or more of the many parameters passed in to the exit program.

Exit 13: Pre-run error check exit

Exit 13 is called during the form pre-run error checking process, and lets you to perform error checking beyond that which is automatically invoked by TURNOVER® Lifecycle Manager.

For a complete list of error checks that TURNOVER® Lifecycle Manager makes, see the *TURNOVER® Lifecycle Manager User Guide*.

Exit 14: Pre-checkout processing exit

Exit 14 is called before source members/objects are checked out and the source code copied to your development area. Given the list of parameters that are passed to the exit program, there are many different conditions you can evaluate to determine whether or not to allow a checkout request to proceed.

Exit 15: Add programmer worklist item exit

When you indicate that you want to add an item to a worklist, the CL program ADDPWLITM is called. This program checks data area TOEXIT15 for the name of a user exit program. If it exists, the Exit 15 program is called before adding any items to a worklist. Within your Exit 15 program, you might choose to modify any of the passed parameters before adding an item to your worklist.

Exit 16: Form approval exit

Whenever the form approval process starts in TURNOVER® Lifecycle Manager, your Exit 16 program is run. Exit 16 can be used to further condition form approval of the current application or some other parameters.

Exit 17: Document pre-checkout exit

Exit 17 is called before a document has been checked out and the document copied to your development folder. Perhaps you want to allow specific documents to be copied only to a project development folder, as opposed to the programmer's development folder. You can include these kinds of evaluations in your Exit 17 program.

Exit 18: Document post-checkout exit

Exit 18 is called after a document has been checked out and copied to your development area. You might write an Exit 18 program to raise a flag or send a message when company sensitive documents are checked out.

Exit 19: Pre-form group exit

Exit 19 is called before processing a form group. You might use this exit to check through the forms in the form group, check some condition, and either stop or continue processing, based on the result of the condition.

Exit 20: Post form group exit

Exit 20 is called after form status is updated; Exit 1 is called beforehand. If you want to perform some processing that depends on form status, use this exit rather than Exit 1.

Exit 21: Post-receive exit

Exit 21 is called by the form receive job on the remote production computer. If you have used Exit 3 to load the distribution library with information necessary for running the forms on the target systems, you can use Exit 21 to unpack this information and move it to the desired location.

Exit 22: Post add-line exit

Exit 22 is called after a line is added to a form. This exit might be used if you need to update a database to reflect the form and line number associated with the object being added to the form.

Exit 23: Create change impact file exit

Exit 23 is called after a Synchronizer change impact file is created. For example, you can use this exit to send warning messages based on programs that are listed in the change impact file being used to merge the vendor's changes.

Exit 26: Related forms creation exit

Exit 26 is called during the form creation process if there are applications related to the application for which you are creating the form. For example, you might use Exit 26 to create related forms only for selected application levels.

Exit 27: Remote Configuration wizard pre-save exit

Exit 27 is called during the Remote Configuration Wizard, just before saving the work library to a save file. One way to use this exit is for adding additional objects to the work library to be saved and sent to the remote. For example, maybe all of the libraries for the application are saved into save files and included here. You can then use Exit 28 on the remote system to extract those libraries. This could be a way to automate sending an entire application to a new system.

Another reason to use this exit is to prevent the Remote Configuration Wizard from running during normal business hours. You can use this exit to end the process.

Exit 28: Remote Configuration wizard post-receive exit

Exit 28 is called during the receive process of the Remote Configuration Wizard, just after restoring the save file to the work library, but before any application or system definitions are restored.

For example, you might use this exit to restore additional objects you sent using Exit 27, or to change the library names contained within the applications you sent.

Exit 29: Form confirmation exit

Exit 29 is called whenever confirmation is received for any of these form functions:

Function	Description
*CREATE	Form created
*COPY	Copied to form <i>nnnnnnnn</i>
*APPROVE	Form approved
*SBMERR	SBMJOB error
*SUBMIT	Form submitted
*RUNNING	Form started running
*RUN	Ran with status <i>xxxxxxxx</i>
*DISTRIB	Distributed to <i>xxxxxxxx</i>
*RECEIVE	Form received
*CANCEL	Canceled by <i>xxxxxxxxxxxx</i>

Function	Description
*RESET	Form reset by xxxxxxxxxxxx

You might use this exit if you want to require a successful automatic distribution to one remote computer before a form can be distributed to other remote computers.

The TOMSGRCV confirmation job must be running on your remote computer in order for this exit to be called. The TURCRARE job is *not* set up in subsystem TSERVER when you install TURNOVER® Lifecycle Manager. For information about setting up the TURCRARE form receive job on your remote computer, see the 'Ownership, profiles and jobs' section of the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Exit 30: Conflict resolution exit

Exit 30 is called when you attempt to resolve a related application conflict. You can use this exit to enforce controls over who can resolve conflicts and what resolution codes can be used. You can also use this exit to perform additional processing when a conflict is resolved.

Exit 31: Lock check exit

Exit 31 is called when TURNOVER® Lifecycle Manager form lock checking detects a lock on an object. You can use this exit to automatically remove locks on the object.

This exit can also be used when the TURCLOCK data area has been set to allocate files/members immediately after creation, instead of allocating the originals before replacing them. If the TURCLOCK data area contains a value of *X31 and this exit has been activated, then TURNOVER® Lifecycle Manager calls the exit program in place for this exit when it cannot allocate files or members immediately after creating them.

If the &LOCKED parameter returns a value of N, TURNOVER® Lifecycle Manager proceeds as if the lock has been removed. If the lock has really NOT been removed, the form might recover.

Xn exit: Create command replacement variable exit

The Xn exit resolves the &X0, &X1, &X2, ... &X9 replacement variables in creation commands (global type code definition).

PROJ 01: Timesheet exit

Project exit 1 is called (for both the 5250 and Clients) during an interactive add, change, or delete of a timesheet entry. The purpose of this exit is to let you stop a timesheet entry from being added, changed, or deleted.

PROJ 02: escalation blackout date/time exit

Project exit 2 is called in the escalation queue monitor job. It is called every time the job "wakes up" before it does any processing. Your exit program can then examine the current date/time and decide if the escalation monitor should continue its processing, or just go back to sleep.

PROJ 03: Escalation blackout item exit

Project exit 3 is called in the escalation queue monitor job. It is called for each item that the job is about to process. It does not call the exit program for items whose wakeup date/time is in the future. Your exit program can then examine the current item being processed and decide if processing should continue, the item should just be deleted from the queue, or the date/time for the item should be pushed into the future.

PROJ 04: Task authorization exit

Project exit 4 is called when the user takes the option to add, change or review a task. It is called from all support user interfaces (5250, TURNOVER® Client, Eclipse, TURNOVER® Web and TURNOVER® Helpdesk) so this should be taken into account when writing your exit program.

PROJ 05: Task validation exit

Project exit 5 is called before saving a task, after all built-in validations are performed. It is called from all supported user interfaces (5250, TURNOVER® Client, Eclipse, TURNOVER® Web and TURNOVER® Helpdesk) so this should be taken into account when writing your exit program.

XREF 01: Cross-reference exit 1/RPG source scan

X-Ref exit 1 is called during the source scan phase of the TURNOVER® Lifecycle Manager Cross-Reference process for an RPG program. This phase detects and writes cross-reference records for /COPY usage and externally defined data structures.

This exit enables you to enhance this process by performing your own processing. You can also tell TURNOVER® Lifecycle Manager to skip its processing.

APIS

General purpose APIS

API	Description
ADDCMD	Add a pre-run or a post-run command to a form.
ADDCMDI	Add command to form (interactive)
ADDFORM	Add form for an application
ADDFORMI	Add form for application (interactive)
ADDLINDLO	Add document line to a form that is a DOCUMENT type.
ADDLINEDLOI	Add document line to a form (interactive)

API	Description
ADDLINE	Add a line to a form You must have ADD authority for the application to execute this API.
ADDLINEI	Add a line to a form (interactive)
ADDUSRREF	Populate the X-Ref table with user-specific cross- reference information, not already provided by TURNOVER® Lifecycle Manager.
ADDXRFTBL	Add a member with the same name as specified in the application definition X-Ref Table parameter.
APVFORM	Approve or cancel a TURNOVER® Lifecycle Manager form. All form approval rules still are in effect when using the <code>APVFORM</code> command.
CHECKIN	Manually check-in a source member or object.
CHECKOUT	Check out an item by object or by source member.
CHKCHGOBJ	Approve changes made by other programmers as part of the form promotion process when multiple checkouts are enabled in TURNOVER® Lifecycle Manager.
CHKOUTDLO	Reserve a new document name and check it out.
CPYFORM	Copy a form
CPYFORMI	Copy a form (interactive)
CRTRCVFRM	Create recovery form
CRTRCVFRMI	Create recovery form (interactive)
DBRFORM	Check the objects on a form for logical file dependencies. When necessary, LFs are added to the form as COPRs.
DLTSYNCHGF	Delete Synchronizer change impact file entry
DSTFORM	Distribute a form to one or more systems, or to add a form to a distribution job.
DSTFORMI	Distribute form (interactive)
LODOBJREF	Loads the cross-reference data into the X-Ref Table for the objects specified. This can be done a single object or all objects in a library.

API	Description
PRMDISFORM	Promote distributed form The same as the <code>PRMFORM</code> command, except this command is run on the remote (receiving) computer
PRMFORM	Promote a form This command will copy a designated form and if indicated, will run the form.
RCVFORM	Receive a form that has been distributed to a remote (receiving) computer.
RMVLINE	Remove line from form
RMVOBJREF	Removes cross-reference information from the database for a particular object.
RMVUSRREF	Removes user-specific cross-reference information from the X-Ref Table.
RMVXRFTBL	Removes specified members from the cross-reference files.
RUNFORM	Run a form, as long as the status of the form is either <code>READY</code> or <code>RECVD</code> .
RUNFORMGRP	Run a form group
SEQFORM	Reorder lines on a form according to type code.
TADDFORGRP	Add form to a form group
TCRTFORGRP	Create a form group
TWRKCON	Work with conflicts between related applications.
TWRKLIC	Check license information and apply product authorization codes.

Project system APIs

The following TURNOVER® Lifecycle Manager Projects system APIs are available to help TURNOVER® Lifecycle Manager interact with other products. To see parameters for these commands, use F4 to prompt.

API	Description
TADDREQ	Adds requesters to the TURNOVER® Lifecycle Manager Requester file.
TADDREQCMT	Add requester comment: one line of free format text.

API	Description
TADDTSK	Adds a task to a project.
TADDTSKDTL	Adds one 79-character detail line to a project task. If you were adding details, you would call this command repeatedly for each line of task detail text. If you were updating task details, you would read all of the detail lines from the TURNOVER® Lifecycle Manager task database, update it in a PC-based text editor, and then write it all back using this API command. TADDTSKDTL includes a delete task details parameter so that you can delete the old details the first time through, and then write an entire new set of detail records. The rationale is that the editor you use might revise any part of the text, and line justification might also have changed it as well.
TADDTSKI	Add a task (interactive)
TADDTSKLNK	Add task, shortcut, document, requester, or URL links to a task.
TASGTSK	Assigns a helpdesk task to a valid working project, and requires that you enter project, task and subtask identifiers for a helpdesk project as well as a working project identifier.
TCHGREQ	Change the information defined for a requester.
TCHGAPPLIB	Change the libraries in an application definition.
TCHGTSK	Change a task record. Only values which need to be changed should be specified.
TCPYPRJ	Duplicates a project definition, with the option of copying tasks and subtasks as well. This command does not create links between tasks in the original project and tasks (and subtasks) that are copied. See TCPYTSK below.
TCPYTSK	Duplicates a task or subtask from one project to another. By default, this command creates a link between the original task and the new, copied task.
TCPYTSK2	The same as TCPYTSK, but in batch. It returns the new task ID.
TDLTAPPDFN	Deletes an application definition, after you have deleted all existing levels for the application. If authority issues, or existing forms or checkout records for the level prevent you from deleting levels, you will not be able to delete the application definition.

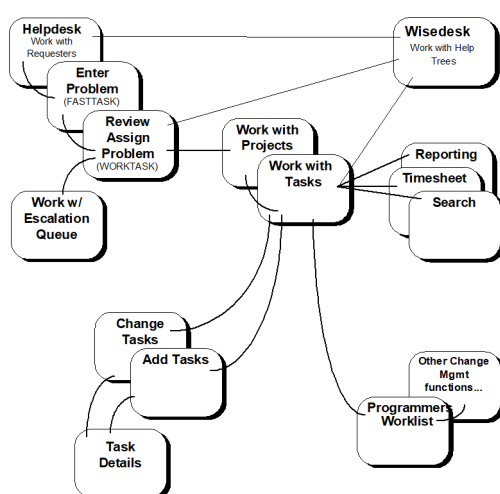
API	Description
TDLTAPPLEV	Delete application level Before you can delete a level, you must check in any items checked out from the level and purge any existing forms for the level, without retaining object history.
TDLTPRJ	Removes a project from your system.
TDLTREQ	Removes email or comment information from a requester record, <i>or</i> removes an entire requester record.
TDLTTSK	Delete a task from a project.
TMOVTSK	Move a task from one project to another.
TMOVTSK2	Move a task from one project to another, in batch. It returns the new task ID.
TPRJMSG	Sends a project message (that is defined in the Project Messages file) to an IBM i system user profile message queue.
TRTVREQ	Returns information about a requester to your calling program.
TSNDMAPI	Send MAPI message
TUPDHLPTSK	Update helpdesk task: Maps Working task values to their corresponding Helpdesk task counterparts. For use in escalation table entries.
WDDYNUPD	Initiate Wisedesk dynamic updating

Notes

- The only validity checking supported by these APIs pertains to passing a valid resource and valid status. The programs you code to call the APIs must supply validity checking on other fields.
- Most commands end in error if an error occurs, such as insufficient authority to the function, so you should use a MONMSG with the API.

12 Working with projects and tasks

Overview of TURNOVER[®] Lifecycle Manager projects



A request or problem can be entered at any stage, by a helpdesk person, by an authorized end-user, and by information system personnel.

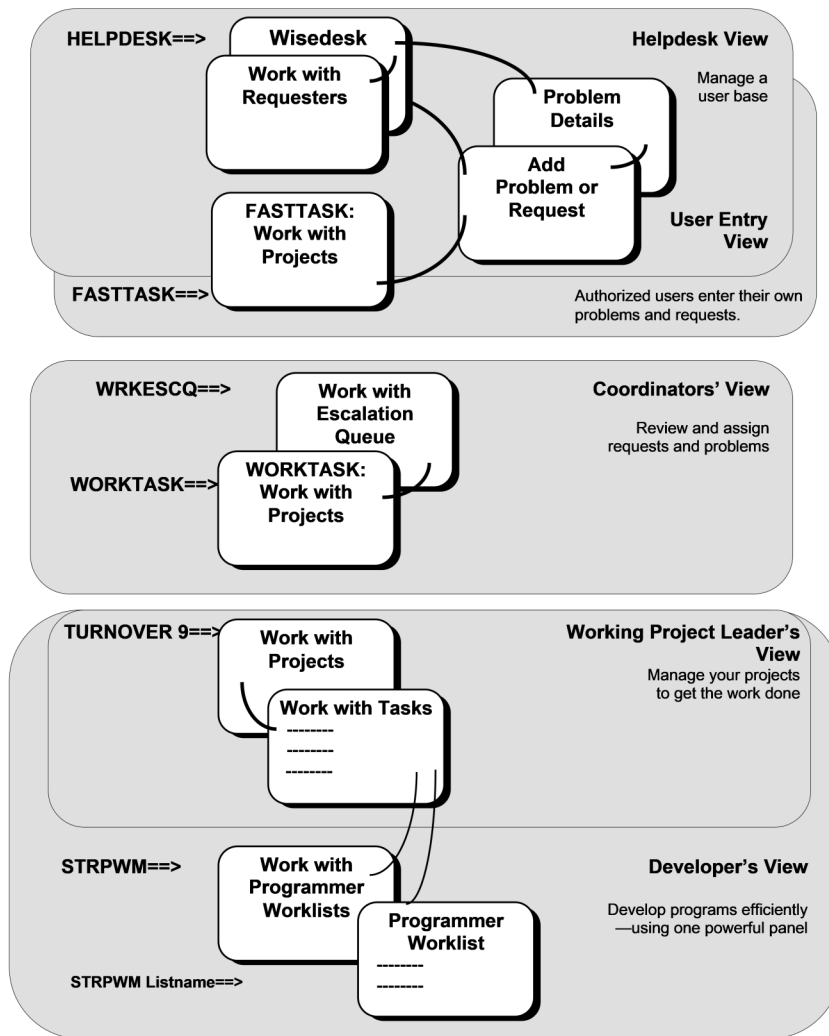
With TURNOVER[®] Lifecycle Manager Projects, authorized users or helpdesk personnel can enter requests and problems directly, and track them through the system. You can:

- limit user access to only those capabilities and projects you want them to see
- define rules for escalation and messaging to ensure that a project coordinator and programmer are informed of high-priority problems as soon as they enter the system
- define text masks to help you collect descriptive details of problems.
- use help trees to answer user questions; identify duplicate requests and problems; and find related tasks in any of your projects.

Once assigned a task, programmers can work from one panel (the Programmer's Worklist) to complete all phases of testing and development.

Project views

Another way to look at TURNOVER[®] Lifecycle Manager Projects is to consider the different user interfaces that have been provided to support these different user perspectives, as shown below.



This diagram shows the various views or perspectives supported by TURNOVER® Lifecycle Manager Projects.

Helpdesk personnel normally work from the perspective of the *requester* (or customer).

Using TURNOVER® Lifecycle Manager Projects, this person can look up a requester by first name, last name, company name, and phone number; check the status of outstanding requests for a requester or their company or department; search for answers using Wisedesk; and enter new problems or requests quickly using the **FASTTASK** command.

Authorized users can enter problems directly into the system using the **FASTTASK** command (or an equivalent menu option). They can also look up previously entered requests to learn their current status.

A *project coordinator* can review all pending requests (entered since the last time requests were reviewed) or review pending requests and problems, using the escalation queue.

Project leaders and *programmers* can manage their own *Working projects*; that is, those projects to which the Coordinator assigns requests and problems as Working tasks.

Assigned programmers can then use the Programmer Worklist to complete their assignments.

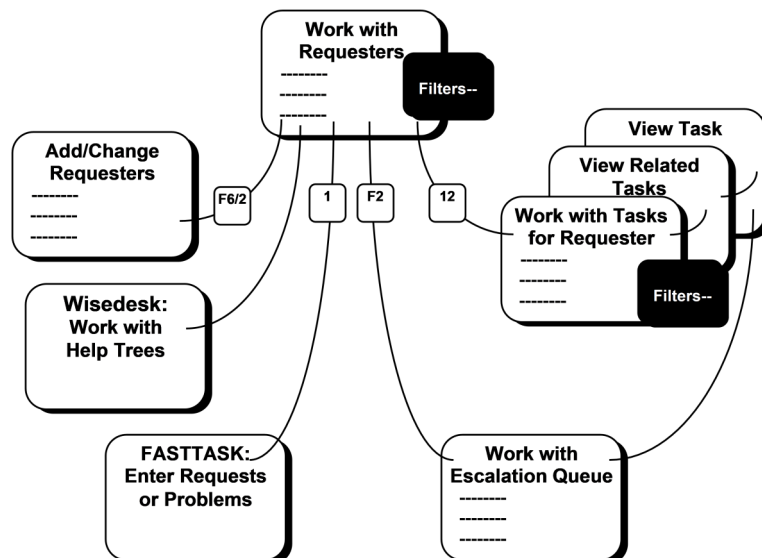
Projects, tasks, and subtasks

In TURNOVER® Lifecycle Manager Projects, work units are called *tasks*. They are keyed by *project*, *task*, and *subtask codes*. Projects define a group of related tasks. Subtasks are optional. If a task is too big for one programmer to complete, subdivide it into subtasks and assign each to a programmer. Each task or subtask should be the responsibility of only one person.

Usually, a project is associated with a particular application or group of applications. For example, you might define *working projects* for the next *release* of your product, and another one for its *Problems*. You might define a *helpdesk project* into which both you and your customers can enter problems and requests.

As the requests are entered, the *project coordinator* reviews and assigns each request to working projects that *are* associated with particular applications. This way, it is not necessary for your user or helpdesk person to know how your project teams or working projects are organized. Your users need only report a problem; it is the coordinator's job to assign it to the appropriate working project.

Helpdesk view



Identifying a requester

On a Helpdesk, responding to a problem or request starts with knowing to whom you are talking. In TURNOVER® Lifecycle Manager Projects, you can use the `HELPDESK` command to look up a requester by name, company name, location, or phone number. For example, you may want to see all of the people at a certain company or department. There are also several user-defined fields for special use in the requester file that you can use to filter the list. If authorized, you can add new requesters to the file or update requester information.

Validating the request or problem

Before entering a new request or problem, you might want to see if someone has already requested or reported something identical or related. Using Wisedesk, you can search all the projects on your system for existing tasks that describe the problem or request you want to report. Sometimes, you will add information to existing tasks without creating a new task. If it is a problem that has been fixed, you can tell the requester how to correct it.

Entering requests or problems

When you have determined that a problem or request is not a duplicate, you can create a new task in the appropriate Helpdesk project. When problems are entered by, or on behalf of, a person in the Requester file, a list of Helpdesk Projects appears, defaulting to the last project for which the Requester reported a problem or made a request.

Handling inquiries about previously reported problems

Besides being able to look-up and review problems that were reported earlier on the requester's behalf, you (the Helpdesk person) can view all of the Working tasks related to the FASTTASK request. For example, suppose a user reported a problem that impacts both the AR and AP projects. As a result, the Project Coordinator created and assigned two Working tasks. You can then view the status of both of these assigned tasks and review the details for each, if necessary.

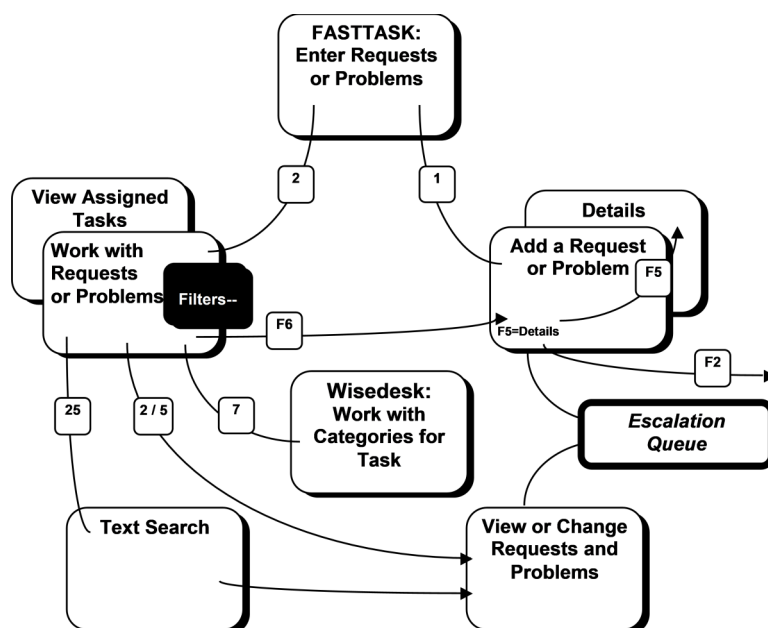
If no action took place, you can look up on the escalation queue all of the tasks for that requester to determine when action is scheduled to take place. If necessary, and assuming you are authorized to change the queue, you might change the wake-up date and time of the queue entry.

Helpdesk Projects and Working Projects

When you create a project entry, you tell TURNOVER® Lifecycle Manager whether the project you are defining is to be a Helpdesk project or a Working project. All projects share the same database, but a Helpdesk project includes additional default values used to manage a Helpdesk. For example, the project definition designates the project coordinator, that is, the person who reviews requests and problems and assigns them to Working project teams or programmers.

User entry view

You can access TURNOVER® Lifecycle Manager's problem entry panels by typing `FASTTASK`.



Entering problems

You can enter problems and tasks into TURNOVER® Lifecycle Manager Projects by selecting the appropriate Helpdesk project, and then completing the Enter a Problem/Request panels.

You enter data about the request, and then describe the request further on a text panel. This text panel can be set up as a mask, to prompt the user for specific information or to supply instructions.

More than one mask can be associated with a project. For example, if your Helpdesk project is Hardware Problems, you can have a mask for printer problems, PC problems, display problems, and so on. You select selects the appropriate mask and then describes the problem.

If you are authorized, you can also review and assign the request (see ['Reviewing tasks with WORKTASK' on page 236](#))

Looking up problems/requests

After a problem has been entered, you can look it up and view the current status of the original problem or the assigned tasks. Filtering and text searches can be done to quickly find previously entered problems.

Wisedesk can be checked to see and work with how a task fits into the categories defined there.

You can change or delete a request any time before the project coordinator reviews it.

Escalation queue

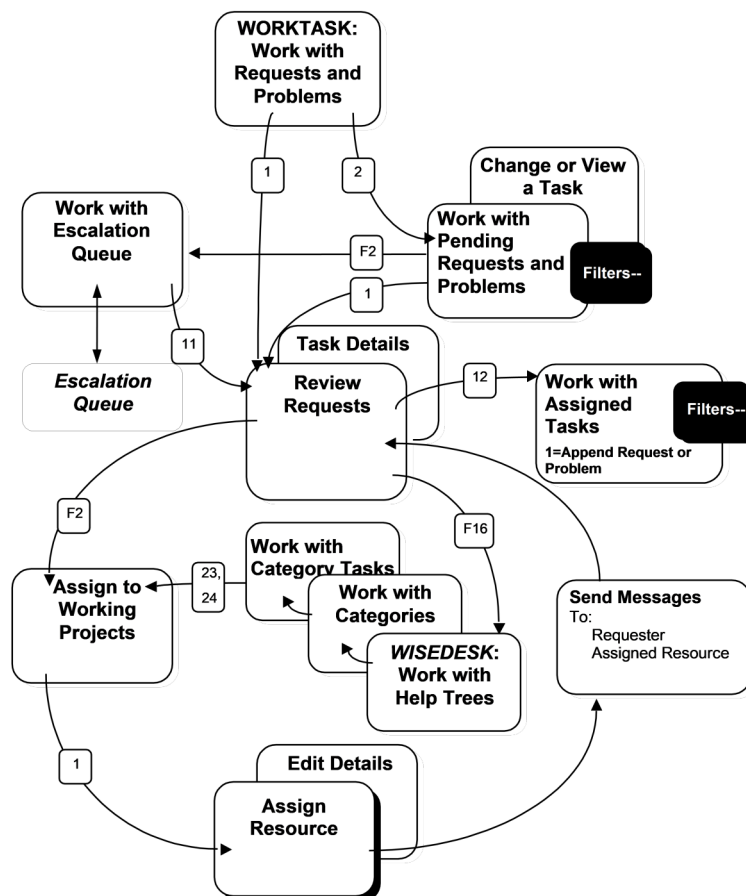
Each time a request is entered or changed, TURNOVER® Lifecycle Manager checks the project escalation rules and values changed (such as due date) to determine whether or not to add or change an escalation queue entry. When the wake-up time is reached, the escalation queue triggers processing, such as automatically advancing the task status or priority. See ['Task escalation processing' on page 250](#).

Tracking and working with tasks

Once a request or problem (referred to here generally as a “task”) is entered, an authorized Requester, Helpdesk person, or authorized systems person can track the request at each stage of the process, without calling you. They can also view text details that have been entered and see the current task status.

TURNOVER® Lifecycle Manager Projects provides messaging, work-with panels and reports to help keep everyone informed. You can generate reports of project and task information in several different useful formats. Each standard report is initiated using report commands that enable you to specify what information you want to see, and whether you want information summarized or in detail.

Coordinator's view



Coordinator's role

The project coordinator reviews new problems and requests, and then assigns, defers or rejects them. They can process requests either one by one or selectively, by referring to either the escalation queue or the list of requests and problems.

Using the escalation queue

The project coordinator can set up the escalation queue to show pending requests by priority or some other relevant criterion. This enables them to process the most important requests first.

Escalation rules

Escalation rules are based on the value of priority and status codes for a task. For example, a rule might say that requests with a status of New and a high priority must be reviewed within four hours.

An escalation rule specifies an action, for example, send a reminder message; change the task status; or even run another program; and when the action is to occur.

Escalation queue

When you add a problem or request for a project for which escalation rules are defined, an entry is made in the escalation queue. The escalation queue entry contains a wake-up time, which is a specific time at which some predefined action is to be taken. The queue entry is changed or removed, depending on the requirements defined in the project's escalation rules.

Reviewing a request

Before assigning a request or problem, you might want to see if a similar task has been reported and assigned. If help trees have been created across the projects on your system, you can use them to check for a similar, identical, or related task that already exists, and then either append the task you are reviewing to the existing task, or assign it as a subtask to the existing task.

If you append the new request to that previously assigned task (or add it as a subtask), you establish a link between the assigned task and the request or problem under review. You might also want to update the assigned task details at that time. Later, when that assigned task is completed, all originating requests can be viewed and, if appropriate, each of the requesters notified that the request has been completed.

Searching for a task

There are two ways to search your projects for duplicate or related tasks: manually, or using help trees within Wisedesk.

When you search manually, you can view the list of tasks by project, after you've started to assign the task, using F4. You can filter the list by requester, resource, status or any number of other filter values, including up to ten user-defined fields. Then you can search task text details using a powerful text search capability (option 25). For example, one project may be "Accounts Payable Problem Reports" with a task that describes a fix to a check-writing program. You can interactively search all tasks for the word "check" and then print or view the resulting list. Once you locate a task, you can view the task details. You can also view the list of program objects changed when the problem was resolved.

Using Wisedesk, you can accomplish the same work, but more efficiently. To use Wisedesk, you must have help trees set up. Help trees are structures consisting of reasonable categories and subcategories, into which the tasks from all the projects on your system are sorted using specific search requirements that you supply. If you are using Wisedesk, problems or requests reported by your users would be sorted and displayed using these logical categories, making it easy to spot duplicate or related tasks during a search.

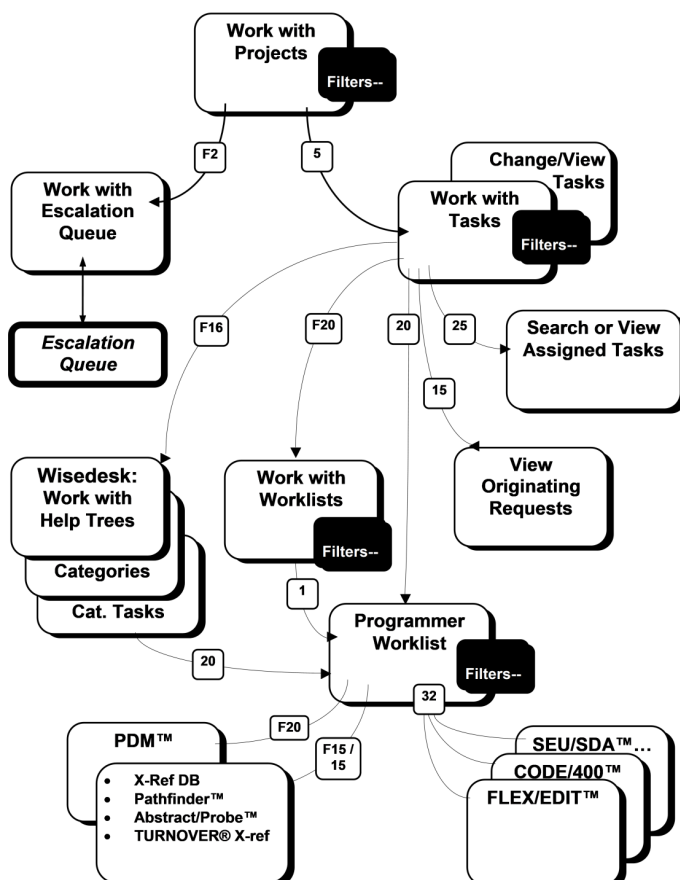
Assigning a request

If your search reveals that the request is a new problem, you can assign it to a Working project; in fact, you can assign it to more than one project or task. For example, a request may impact both the AP and the AR projects. The projects to which a particular problem or request can be assigned is determined by F10=Valid projects within the ***HELPDESK project-specific options** parameter of the Helpdesk Project definition. If you select more than one assignment project, TURNOVER® Lifecycle Manager performs the assignment cycle once for each project.

You can update the assigned task to include the resource, time-estimates, start time, and so on. After you complete the review, messages can be sent to the requester and assigned resource. You can set these to be sent automatically, or you can have TURNOVER® Lifecycle Manager prompt you to edit and send the message.

Requests are accepted and assigned, conditionally accepted, or rejected. Requests that are assigned are copied to a working project and assigned to a resource. The original request is preserved as the user entered it. The assigned task is given to the programmer or other resource to be completed.

Project leader's and developer's view



When the project coordinator has reviewed and assigned a task to a working project, TURNOVER® Lifecycle Manager informs the project leader or developer to whom the task was assigned.

As a developer, you then go to the Work with Tasks panel, select the assigned task, and build a Programmer Worklist. A worklist is a list of the objects and source needed to complete the task.

You can access cross-reference files and view objects and source in PDM to add items to the list. When the list is complete, you do all of your work from this Programmer Worklist Manager (PWM) panel, including things like checking out objects and source, building forms, and running the forms to promote your work into the next application level.

Time reporting

If you are required to account for time spent on your project tasks, you can use the timesheet to enter and track your time. You can also create administrative projects to track time spent in meetings, or sick time and holidays, and so on.

You can view the accumulated time reported for any project or task, no matter how many people have reported time.

Auditing task changes

TURNOVER® Lifecycle Manager Projects can track changes to tasks and subtasks. If you are auditing changes, you can view a change log showing dates and times that the changes were made.

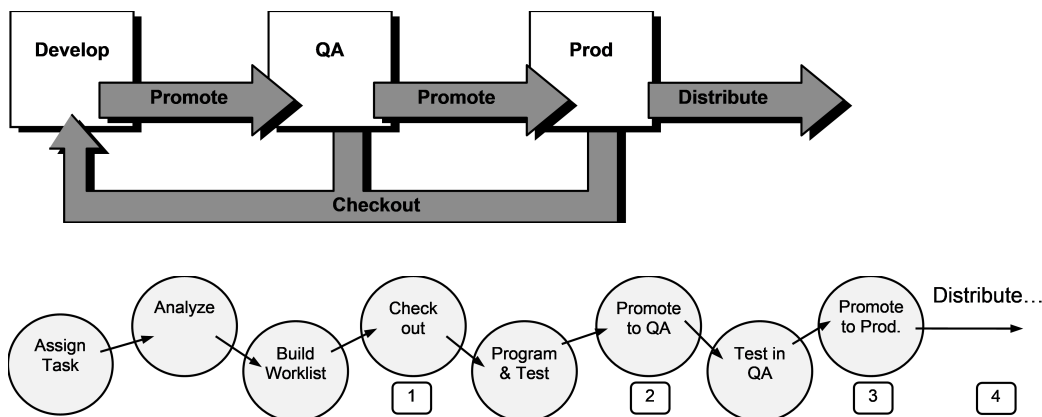
How projects relate to software changes

When you define applications in TURNOVER® Lifecycle Manager, you can tell it whether or not you are using TURNOVER® Lifecycle Manager Projects to track changes to the application.

You can also define how the project task should be updated. For example, when you check out objects in response to a request, TURNOVER® Lifecycle Manager associates the object you check out with a task. It sets the task status to *Started* (or a status code you define). After you promote your changes to the source and objects to quality assurance or production, TURNOVER® Lifecycle Manager changes the task status to *IN-QA* (or some other status value you define).

You can also update the status when changes are distributed to production computers, and when the production computers confirm that installation was successful.

Example of Automatic task status updating



1=Set task status to *START* at check-out

2=Set task status to *IN-QA* at promotion to QA

3=Set task status to *PROD* at promotion to Production

4=Set task status to *DONE* at distribution

Authorizing users to TURNOVER® Lifecycle Manager Projects

To use TURNOVER® Lifecycle Manager's project system, users must be authorized to work with projects and to each project with which they need to work.

- 1 On the main menu, select option 3.

The Maintain Authority List panel appears.

```
MM/DD/YY 08:46:10          Maintain Authority List          Your Company, Inc.
                           YOURSYS

Position to user . . . : _____

1=Application authority  2=Project authority  3=Wisedesk  4=Delete user

  User      Source ----- FORMS ----- -- SYSTEM -- ----- PROJECTS -----
            Out In View Add Chg Run Dst Prg Dft Aut Pgmr Use Add Code Rsc Rqs
- *NONE      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- BARCLAY    - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- COMPARDI   X X X X X X - - - - - - - - - - - - - - - - - - - - - -
- BIANCHA    - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- BLAINE     - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- ELMSMORE   X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X
- GILBERT    X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X
- RONNY      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- HOLMESBY   X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X
- JSCHMIDT   - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
2 KLINE      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- LELAND     - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                    More...

F3=Exit  F4=Add from List  F6=Add User  F12=Cancel  F21=System command
```

- 2 In the PROJECT column, specify for the authority for each user.

x in the **Use** column gives the user basic authority to use the project system.

The remaining columns define additional levels of project system authority; for more information, see the online help.

Assigning authority to groups of users

If you use group user profiles, you can assign project authority to the group profiles to avoid entering each individual member of the group into TURNOVER® Lifecycle Manager's authority list.

Assigning authority to individual users

If you do not use group profiles (the *group profile* parameter in the IBM i user profile is *NONE), you can add a user called *NONE to the TURNOVER® Lifecycle Manager Authority List, assigning to that user the project system authorities you want your individual users to have. Use caution: this means that *any user* without a group profile adopts the authority of the *NONE user when they enter the project system.

- 1 Select one or more users with option 2, and then press Enter.

The Edit Project Authority panel appears.

MM/DD/YY 08:48:19		<u>Edit Project Authority</u> For user: MARYLYN		Your Company, Inc.		
Project	Description	View	Add	Chg	Dlt	Rvw
APPR	Accounts Payable Problems & Requests	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
LANT	LANTURN Problems and Enhancement Request	<u>X</u>	—	—	—	—
MKTG	Marketing Requests	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
MKTP	Marketing Projects	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
OVER	Over/2E Problems and Enhancement Request	<u>X</u>	—	—	—	—
OEPR	Order Entry Problems and Requests	<u>X</u>	—	—	—	—

F3=Exit F12=Cancel

- 2 Move to the project, and then type x in the column for the kind of access you want the user to have for that project.

Authority	Description
View	The user can look at the information in the project definition, tasks or subtasks for the selected project.
Add	The user can add tasks or subtasks to the selected project.
Chg	The user can change information in the project definition, or in tasks and subtasks, for the selected project.
Dlt	The user can delete the project definition for, or tasks and subtasks from, the selected project.
Rvw	If the selected project is a HELPDESK project, this user can review tasks for approval and assign them to any WORKING project for which they have authority.

Authorizing users to projects

When you create a project, you must specify which users can access the project or task, and the degree of authority they can have.

The authority you set at the project level applies to all of the tasks and subtasks within the Project. Likewise, task authority applies to all subtasks within the task. If you change a project's authority, authority for all subordinate tasks and subtasks is also changed.

To change authority settings for a project

- 1 Do one of the following:

- On the Work with Projects panel, type 14 next to the project.
- Using option 2 next to the project, and then on the Define the Project panel, select **Authorized users**.

MM/DD/YY
08:53:15
Maintain Project/Task/Subtask Authority
Your Company, Inc.

Project DOC-
Task
Subtask
Description . . Documentation projects

User	Name	View	Add	Chg	Dlt	Rvw
DELANEY	Jim Delaney	X	X	X	X	X
BERNARD	Andrew Bernard	—	—	—	—	—
COMPARDI	Joe Compardi	X	X	—	—	—
BIANCHI	Biancha Paterson	X	—	—	—	—
BLAIRE	Blair Edwards	X	X	—	—	—
ELSNORE	Steve Elsinore	X	X	X	—	—
GILBERT	Gordon Gilbert	X	X	—	—	—
HOLMESBY	Bruce Holmesby	X	X	X	—	—
JSCHMIDT	Jeanne Schmidt	X	X	X	—	—

F3=Exit F12=Cancel F21=Authorize all
+

2 Do one of the following:

To	Do this
give a user access to the item	Type x in the appropriate columns.
remove a users access to the item	Type a space in the appropriate column.
authorize all users	Press F21.
display more information	Press F1.

Working with projects

You must be authorized to work with a project. If you can't view or change a project or task, see your TURNOVER® Lifecycle Manager Administrator.

1 Do one of the following:

- On the TURNOVER® Lifecycle Manager main menu, select option 9.
- On the command line, type TURNOVER 9.

The Work with Projects panel appears.

```

MM/DD/YY  08:59:39                Work with Projects                Your Company, Inc.
                                YOURSYS

Position to project . . . . ____
Filter by Administrator . . ____ Status . . . . ____ F4=List

1=Add task  2=Change  3=Copy  4=Delete  5=View  6=Print  7=Rename  9=View time
12=Work with tasks  14=Authority  16=Forms  17=Checkout  18=History

    Proj  Description                                Administrator Status
    ____ CENH  CENTRAL® Menu Enhancement Request      TURNERJIM  ASSIGNED
    ____ CMPR  CENTRAL® Menu Problem Reports           ANDREWS    ONGOING
    ____ PET   Product Evaluation                     TURNERJIM  STARTED
    ____ PHPT  Physical plant changes                 THOMASMA   ONGOING
    ____ PLOG  SLS Phone Log                          TURNERJIM  ONGOING
    ____ SE50  SoftMenu 5.0 Enhancements              TURNERJIM  ONGOING
    ____ SLSO  SLS Order System                       TURNERJIM  ONGOING
    ____ SMI   SoftMenu Release 5.0 Installation Programs ANDREWS    ONGOING
    ____ SM5   SoftMenu Release 5.0                   ANDREWS    ONGOING
    ____ SNEN  Serial Number Enhancements             ANDREWS    ONGOING
    ____ SP50  SoftMenu 5.0 Problem Fixes              ANDREWS    ONGOING
                                More...

F3=Exit  F4=List  F5=Refresh  F12=Cancel  F16=Wisedesk  F7=Control files
F18=Timesheet F24=More keys
Highlighted lines indicate HELPDESK projects
  
```

You can type a project code to position the panel to the project with which you want to work.

You can also filter the list by Administrator or status code to focus on just those projects you want to see. TURNOVER® Lifecycle Manager remembers the filter settings and applies them every time you go to this panel, until you change or delete them.

If you do not have View authority to a project, you will not see it on the list (see [‘Authorizing users to projects’ on page 212](#)).

To	Do this
add a project	Press F6
add a task to a project	Type 1 next to the project.
change a project definition	Type 2 next to the project.
copy a project	Type 3 next to the project.
delete a project, and all subordinate task and subtask entries	Type 4 next to the project. You must have Delete authority (see option 14 below).
display the details of a project	Type 5 next to the project.
print the project definition	Type 6 next to the project.
change the name of a project	Type 7 next to the project. All related information, including tasks, subtask, worklist, checkout and object history, and application references are also renamed.
display the time reported for all tasks and subtasks in a project	Type 9 next to the project.

To	Do this
work with all tasks and subtasks subordinate to a project	Type 12 next to the project. See <i>'Working with tasks and subtasks' on page 246.</i>
change the authority list for a project	Type 14 next to project.
display all forms related to a project	Type 16 next to the project.
work with checkout history related to this project.	Use option 17.
display object change history related for this project	Use option 18.
display the task escalation queue	Press F2. For more information, see <i>'Working with the escalation queue' on page 258.</i>
display values for the Filter fields	Move to a Filter by field, and then press F4.
go to the Project Control Files Menu	Press F7. See <i>'Working with TURNOVER® Lifecycle Manager Projects control files' on page 259.</i>
update the actual duration of all tasks	Press F9. See also <i>'Actual time update' on page 215.</i>
create help trees in Wisedesk	Press F16.
enter time on the daily timesheet report	Press F18.
work with your Programmer worklists	Press F20.
use the command line	Press F21

Project ID

A maximum of four letters or numbers.

Actual time update

To update the "Actual duration" of all tasks, press F9.

TURNOVER® Lifecycle Manager automatically updates the time when you run the Project report.

The Time Update function assumes an 8-hour work day, 40-hour work week. If you use a different schedule, create TDFTDAYM and TDFTWEEKM data areas in the SOFTTURND library. Set their values, measured in minutes.

For example, for a 7.5-hour work day, set TDFTDAYM to 450. For a 37.5-hour work week, set TDFTWEEK to 2250.

Creating projects

On the Work with Projects panel, press F6.

The Define the Project panel appears only when you are changing a project or immediately after the project has been created. When you create a new project, the Project description panel appears (see *'Project description panel' on page 217*).

MM/DD/YY 09:12:34	Define the Project	Your Company, Inc SYSTEM: YOURSYS ACTION: ADD
Project TP40		
Description . . . TURNOVER® Lifecycle Manager Problems Release 4.0		
1=Select		
Opt	Project Definition Option	
<u>1</u>	> Description	
<u>1</u>	Details	
<u>1</u>	User-defined fields	
<u>1</u>	Valid applications	
<u>1</u>	Valid resources	
<u>1</u>	Valid status codes	
<u>1</u>	Valid task types	
<u>1</u>	Task defaults	
<u>1</u>	Authorized users	
<u>1</u>	*Helpdesk project-specific options	
<u>1</u>	WISEDESK dynamic update options	
F3=Exit F12=Cancel F21=System command		

Type 1 next to each line and press Enter to view each of the definition panels.

Panel	Required	Description
Description	Y	A description of the project. See <i>'Project description panel' on page 217</i> .
Details	N	A text description of project. See <i>'Detail and report masks panel' on page 219</i> and <i>'Project details panel' on page 219</i> .
User-defined fields	N	User-defined fields, accessible to you when adding, changing, filtering, and reporting a task. See <i>'User-defined fields' on page 219</i> .
Valid applications	Y	The applications which are to be managed by the project. See <i>'Valid Applications panel' on page 222</i> .
Valid resources	Y	The resource personnel (usually programmers) who can be assigned to tasks in the project. See <i>'Valid Resources panel' on page 223</i> .

Panel	Required	Description
Valid status codes	Y	The status codes which are valid for the project. See <i>'Valid Status Codes panel' on page 223.</i>
Valid task types	N	The task types which are valid for the project. See <i>'Valid Task Types panel' on page 224</i>
Task defaults	Y	The default values TURNOVER® Lifecycle Manager should fill in for most task fields when entering a task or subtask for this project. See <i>'Task Defaults panel' on page 224</i>
Authorized users	Y	Give users access to the project. See <i>'Authorized Users panel' on page 226</i>
Helpdesk/Working project specific options	Y	Defaults for Helpdesk and Working projects. See <i>'Personality Defaults panel' on page 226</i>
WISEDESK dynamic update options	N	Control dynamic updating for Wisedesk help trees.

Project description panel

The Project description panel describes the nature of the project.

MM/DD/YY 09:17:29	Project Description	Your Company, Inc. YOURSYS
Project <u>TP40</u>		
Description <u>TURNOVER® Lifecycle Manager Problems Release 4.0</u>		
Status <u>O</u> <u>ONGOING</u>	F4=List	
Priority range <u>1</u> to <u>3</u>		
Project administrator <u>TURNOVER</u>	name	
Auto assign task numbers <u>Y</u>	Y=Yes, N=No, A=Aggressive	
Audit project changes <u>Y</u>	Y, N	
Requester validation <u>*FILE</u>	name, *FILE, *USRPRF, *BOTH, *NONE	
Personality <u>*WORKING</u>	*WORKING, *HELPDESK	
Escalation table <u>WORKPROJ</u>	F4=List	
Details editor <u>*TURNOVER</u>	*TURNOVER, *SEU	
F1=Help F3=Exit F4=List F12=Cancel F21=System command		

Project

The name can include letters, numbers, and these characters: # \$ @

It cannot include spaces.

Project Administrator

Either have a IBM i user ID, or a user that is specified in the Resource file.

Requester validation

The rules that check the **Requester** field in a project task, problem report, or enhancement request.

Value	Description
*USRPRF	The requester must have a user profile on the system.
*FILE	The requester must have an entry in the TURNOVER® Lifecycle Manager Requester file. They do not have to have a user profile on the system.
*BOTH	The requester must have a user profile <i>and</i> an entry in TURNOVER® Lifecycle Manager Project's requester database.

Auto assign task numbers

Determines if the task names are to be generated by TURNOVER® Lifecycle Manager or by you.

Value	Description
Y	Task numbers are generated automatically: from 0000 to 9999.
A	Task numbers are generated automatically: from 0000 to ZZZZ.
N	You specify the task numbers.

Escalation table

You can associate an escalation table with the project. Escalation tables contain rules that control when some automatic action should be triggered for a task, and they define that action that should occur.

To display a list of escalation tables, press F4.

For more information, see [‘Specifying escalation rules’ on page 253](#).

Details editor

On the Details editor panel, you can choose which editor you want to use to edit task details.

Value	Description
*TURNOVER	TURNOVER® Lifecycle Manager's editor
*SEU	SEU

The default value is *TURNOVER.

Detail masks cannot be used if you use SEU.

For *SEU, TURNOVER® Lifecycle Manager generates document or member names based on the project/task/subtask, unless a document or member name is specified by the user.

The **Initial status** field determines the beginning status of new task and subtasks.

Detail and report masks panel

You can define masks to format task information in any number of ways.

- *Detail masks* are used when entering text that describes the task (if the **Details editor** is set to *TURNOVER). If you require detail masks, you see the mask or a list of masks from which to choose, after entering the task data. Fill in the text description according to the format provided by the mask.
- *Report masks* are like text merge documents; virtually any data that is in the requester file or the project and task files can be included on the report mask. For example, you could create a report mask to create an email message of the task to be sent to a user, or a document for a programmer to record time spent on the task.

Project details panel

On the Project Details panel, you can type a description of the project.

MM/DD/YY 09:35:30	Project Details Project: PRPT	Your Company, Inc. YOURSYS
This is a sample project for assigning HELPDESK request. It is a good idea to set up special projects for assigning HELPDESK requests. You can, thus, ensure that User defined fields are the same for each project. When you assign a HELPDESK request the user defined fields simply map into the same position, assuming they are defined in the project. So it's possible to have nonsensical information in these fields, if you do not take the time to see that they match. There are two report masks set up for this project. One normal mask, and one FAX mask. The FAX mask will automatically fax a message to the person in the requester field. This of course assumes that you have an integrated FAX on your 400. The control instructions in this mask are for FAX*STAR. If you have a different fax system simply change the control variables. HINT: You must enter the fax number in the requester file EXACTLY as the fax system needs to receive it. i.e. 1-603-924-8508 or 9,1-603-924-8508 etc.. ***** END OF DOCUMENT ***** Bottom F3=Exit F4=Delete line F6=Insert line F12=Cancel F21=System command		

User-defined fields

You can specify up to ten user-defined fields for a project. When you create or change your project, you identify the predefined fields you want to associate with it and specify default values for them.

To set the properties of a user defined field, press F7 on the Work with Projects panel.

MM/DD/YY 09:38:32		User-defined Fields		Your Company, Inc. YOURSYS	
Project TP40					
				Default Value	
User-defined field 1		SUBSYSTEM	F4=List	_____	
User-defined field 2		USR013	F4=List	_____	
User-defined field 3		_____	F4=List	_____	
User-defined field 4		_____	F4=List	_____	
User-defined field 5		_____	F4=List	_____	
User-defined field 6		_____	F4=List	_____	
User-defined field 7		_____	F4=List	0	
User-defined field 8		_____	F4=List	0	
User-defined field 9		_____	F4=List	.00	
User-defined field 10		_____	F4=List	.00	
F3=Exit F4=List F11=View 2 F12=Cancel F21=System command					

Only those fields you associate with your project here will appear on the Add a request, Add a task, and Change a task panels (see *'Working with tasks and subtasks' on page 246*). If you provide a default value, it appears in the field when a new task is added to the project.

When setting up user-defined fields, keep in mind how the tasks in your organization will flow. For example, if you assign tasks from a help desk project to a working project, keep the user-defined fields for *both projects* parallel. This is because any information in a user-defined field of the help desk project is carried into the equivalent user-defined field of the working task. If no equivalent user-defined field is defined there, the information is dropped.

To select a value from a list of user-defined fields, position the cursor to a field with the desired characteristics, and then press F4.

MM/DD/YY 09:38:32		User-defined Fields		Your Company, Inc. YOURSYS	
Project TP40					
				Default Value	
User-defined field 1		_____	F4=List	_____	
User-defined field					
User-defined field					
Select User-Defined Field					
User-defined field	1=Select	(Type *CHAR, Length 10)			
User-defined field					
User-defined field		Field name	Description		
User-defined field	—	SUBSYSTEM	Application subsystem		
User-defined field	—	RESPONSE	Method of response--Fax?		
User-defined field	—	ACCT	Account number		
User-defined field	—	DOCCHG	Doc. Change required?		
User-defined field	—	DIV	Division		
User-defined field	—	METHOD	Method		
User-defined field	—	DOCUMENT	Which document impacted?		
More...					
F2=Maintain F3=Exit F12=Cancel					
F3=Exit F4=List F11=View 2 F12=Cancel F21=System command					

A list appears of all of the pre-defined fields that have the same characteristics as the field that you chose (such as 10-character decimal).

To choose an existing field definition, select it with option 1.

To add a new field, press F2 (see *'User-defined fields' on page 265*).

The field description is the field label that will actually appear on the Add and Change a Task panels.

Recommendation

Define one or more user-defined fields as keyword fields that must be entered when adding a request. Then you can filter on a field value when looking up tasks, or supply it as a search criterion in Wisedesk when categorizing tasks in help trees. This improves your ability to find information without relying on text searches later on.

User-defined field exit programs

When you create a user-defined field, you can specify:

- the program to use for F4 support
- the program to use for validity checking.

Normally, you use the program supplied (*DEFAULT). To use your own programs, see below.

Creating a program for F4 support

An F4 program is called with these parameters:

- the 10-character name you have assigned to this user-defined field
- the value for the field. This depends on the type of user-defined field: a 10-character field, 25-character, 7,0 decimal, or 7,2 decimal.

Your program will always be called by a CL program named TURCCUDP. If you need to send back messages, send them to the *PRV program queue of this program.

Generally, the program should display a list from which the user can select a valid value for the field, and should return that selection to the task.

Creating a program for validity checking

A validation program is called with these parameters:

- the 10-character name you have assigned to the field. This is the name of the validation program.
- the value for the user-defined field. This depends on the type of user-defined field (see *'Creating a program for F4 support' on page 221*).
- a 10-character value, which is the name of the program to which you want the validation program to send error messages. TURNOVER® Lifecycle Manager passes this name to the validation program.

TURNOVER® Lifecycle Manager does not automatically send error messages. To have display a message on the screen during the validation process, you must issue a SNDPGMMSG command to the program identified by this parameter.

- a one-character flag that you set to Y if an error occurs. The display program presents a default error message and reverses the field image. If your program sends any messages they are also displayed. If your program sends messages, but does not return Y, the messages are displayed on the panel, but the program treats it as if there were no errors.

Valid Applications panel

On the Valid applications panel, specify the applications for the project.

Usually, you need only one application for a project.

It is possible that you will have more than one application under the control of one project, but you will find it easier to specify only one. If a task affects more than one application, copy the task and assign it to the person most knowledgeable about that application.

If you specify more than one application, you have to choose which one is the default application, when you supply task defaults.

MM/DD/YY 09:42:56		Valid Applications		Your Company, Inc YOURSYS	
Project: TP40 TURNOVER® Lifecycle Manager Problems Release 4.0					
1=Select					
Appl	Rel	Ver	Description		
— *ALL			All applications are valid		
— *NONE			No application		
— AP			Accounts payable		
— AR			Accounts receivable		
— GL			General ledger		
— HR			Human resources application		
— INV			Inventory application		
— SM	3		SoftMenu Release 3.0		
— SM	3	5	SoftMenu Release 3.5		
— SM	4		SoftMenu Release 4.0		
— SM	5		SoftMenu Release 5.0		
<u>1</u>	TO	3	1	TurnOver Release 3.1	
<u>1</u>	TO	3	2	TurnOver Release 3.2	
<u>1</u>	TO	4		TurnOver Release 4.0	
					More...
F3=Exit F12=Cancel F21=System command					

In this example, earlier applications which might be affected are included.

- To include any new applications that might be created in the future, select *ALL.
- For non-software applications (for example, hardware problems, specify *NONE.

If you are defining a *HELPDESK project, you might decide not to specify *NONE. The Helpdesk project is intended as a collection point for problems and requests. The application is not assigned until the project coordinator reviews the request and assigns it to a *WORKING project that has one or more valid applications associated with it.

Valid Resources panel

When assigning a problem or request to a working project, the project coordinator can assign it to a specific resource. You may list those resources assigned to the project, if appropriate at your company.

MM/DD/YY 09:44:22 **Valid Resources** Your Company, Inc.
YOURSYS

Project: TP40 TURNOVER® Problem Release 4.0

1=Select

Resource	Description
<u>1</u> *ALL	All resources are valid
— BILL	Bill C.
— CHRISTINE	Christine P.
— CLARA	Clara G.
— DAVIS	Davis B.
— JON	Jon S.
— JULIETTE	Juliette W.
— KERRI	Kerri C.
— LISA	Lisa E.
— RICH	Rich C.
— ROB	Rob T.
— SANDY	Sandy L.
— TINA	Tina T.

Bottom

F3=Exit F12=Cancel F21=System command

For Helpdesk projects, you might decide not to specify any resource. The Helpdesk project is intended to be a collection point for problems and requests. The resource is not assigned until the project coordinator reviews the request and assigns it to a *WORKING project, for which valid resources are specified.

Valid Status Codes panel

MM/DD/YY 09:51:35 **Valid Status Codes** Your Company, Inc.
YOURSYS

Project: FTP2 FASTTASK/Problem Reports

1=Select

Code	Description	Allow as Reference	Update Start Date	Update End Date
*ALL	All status codes are valid			
<u>1</u> A ASSIGNED	Request/Task has been assigned.	Y	N	N
— B DISTRIB	Task has been distributed	Y	N	N
<u>1</u> C CANCEL	Has been canceled	N	N	N
<u>1</u> D DONE	The task has been completed	N	N	Y
— F FINISHED	Task has been completed	N	N	Y
— H HOLD	On hold. Awaiting instructions.	Y	N	N
— K DUPLICAT	The task is a duplicate of another	N	N	N
— M CONFIRM	Task has been confirmed	N	N	Y
<u>1</u> N NEW	A new request.	Y	N	N
— O ONGOING	Project/task is on-going	Y	N	N
— P IN-PROD	Task has reached production	Y	N	N
— Q IN-QA	Task has reached QA	Y	N	N

More...

F3=Exit F12=Cancel F21=System command

The Status code table is defined once and applies to all your projects. However, for a particular project, a subset of these valid status codes may be appropriate.

For example:

- A *HELPDESK project used to collect requests and problems might have these valid status codes assigned: NEW, REVIEWED, ASSIGNED, HELD, REJECTED, CANCELLED and DONE
- The *WORKING project to which problems can be assigned might have these valid status codes assigned: NEW, HELD, CANCELLED, CLOSED, STARTED, DONE, IN-QA and IN-PROD

The **Update start date** and **Update end date** determine whether to automatically set the task start and end dates when the task status is set to that value. For example, when you checkout an object, the application you are working on can be set such that the task status is automatically set to S (Started). The **Update start date** field for S Started is set to Y, so the **Task start date** will be set to today's date.

Valid Task Types panel

MM/DD/YY 09:54:12 **Valid Task Types** Your Company, Inc.
YOURSYS

Project: FTP2 FASTTASK/Problem Reports

1=Select

Type	Description
1 *ALL	All task types are valid
A ASAP	as soon as possible
C CONVEN	at your convenience
E ENHANCE	program enhancement request
F FIX	fixed
T TEMPORARY	Temporary fix required
W WRK-LTR	Work with later

Bottom

F3=Exit F12=Cancel F21=System command

Task type codes are descriptive: they can be useful when filtering lists of tasks for scheduling, but have no other effect on the task lifecycle.

The task types table is defined once and applies to all your projects, however a subset of the valid Task types may be appropriate for particular projects.

Task Defaults panel

This panel defines the values that you want to appear automatically (that is, by default) in the fields of new tasks or subtasks that users add to this project.

MM/DD/YY 09:55:50		Task Defaults	Your Company, Inc. YOURSYS
Project	TE40		
Application	TO	F4=List	
Release	4		
Version	0		
Resource	*USRPRF	name, *USRPRF, *NONE	
Requestor	*USRPRF	name, *USRPRF	
Status	N NEW	F4=List	
Status Transition Rules	*NONE	F4=List	
Priority	1	1 to 3	
Task type	A ASAP	F4=List	
Time units	H	H, D, W, M	
Billable time	Y	Y, N	
Test data library		name, *PGMR, *TASK	
Test object library		name, *PGMR, *TASK	
Test source library		name, *PGMR, *TASK	
F3=Exit F4=List F12=Cancel F21=System command			

You can override these defaults when you add or change the task.

- For *HELPDESK projects, you might supply default values for **Resource**, **Requester**, **Priority**, and **Task type**. (The other fields are for tracking change work, and are less applicable to the problem reporting function of a Helpdesk project.) These fields carry information forward to any *WORKING task to which the Helpdesk task is assigned.
- For *WORKING projects, you might specify defaults for the **Application**, **Status**, **Time units**, **Billable time**, **Test object library** and **Test source library**; this kind of information is more pertinent to tracking the changes made to satisfy a request.

When you add or change a project, you can specify blanks as the defaults for **Priority** and **Task type**. Also, unless you use **Status Transition Rules** to associate a status transition rules table with the project, you can specify a blank as the default for **Status**. (If you associate a status transition rules table with the project, you must specify a default status code.) However, when you add a task to the project, TURNOVER® Lifecycle Manager requires entries for **Status**, **Priority**, and **Task type**.

If you specify default test libraries, TURNOVER® Lifecycle Manager uses these library names as defaults in the test library fields of new tasks. You can use:

- specific library names
- *PGMR to use the library names from the TURNOVER® Lifecycle Manager programmer profile (main menu option 2)
- *TASK to build the library name from the project and task/subtask IDs (for example, TE40011801).

If the library does not exist, TURNOVER® Lifecycle Manager creates it.

If your application definition is not set up to get the **From** library name from the Project record, TURNOVER® Lifecycle Manager does not check the Project task for the test library name. However, it does populate a new task's test library fields with default values specified on this panel, and creates libraries if they do not exist. But these libraries are not used when checking out and promoting objects for this task; the application libraries are used instead.

Authorized Users panel

This list includes all users who have been enrolled in TURNOVER® Lifecycle Manager and have Work with Projects level of authority.

MM/DD/YY 09:58:20 Authorized Users Your Company, Inc.
YOURSYS

Project: **TP32 TURNOVER® Problem Reports**

User	Name	View	Add	Chg	Dlt	Rvw
BILL	Bill C.	<u>X</u>	<u>X</u>	<u>X</u>	—	—
CHRISTINE	Christine P.	<u>X</u>	<u>X</u>	<u>X</u>	—	—
CLARA	Clara G.	<u>X</u>	<u>X</u>	<u>X</u>	—	—
DAVIS	Davis B.	<u>X</u>	<u>X</u>	<u>X</u>	—	—
JON	Jon S.	<u>X</u>	<u>X</u>	<u>X</u>	—	—
JULIETTE	Juliette W.	<u>X</u>	<u>X</u>	<u>X</u>	—	—
KERRI	Kerri C.	<u>X</u>	<u>X</u>	<u>X</u>	—	—
LISA	Lisa E.	<u>X</u>	<u>X</u>	<u>X</u>	—	—
QSECOFR	Security officer	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
RICH	Rich C.	<u>X</u>	<u>X</u>	<u>X</u>	—	—
ROB	Rob T.	<u>X</u>	<u>X</u>	<u>X</u>	—	—
SANDY	Sandy L.	<u>X</u>	<u>X</u>	<u>X</u>	—	—
TINA T.	Tina T.	<u>X</u>	<u>X</u>	<u>X</u>	—	—
TURNOVER	TURNOVER® Lifecycle Manager Admin	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>

F3=Exit F12=Cancel F21=Authorize all

Bottom

For more information about authorization to TURNOVER® Lifecycle Manager Projects, see ['Authorizing users to projects' on page 212](#).

Authority	Description
View	Look at project, task, or subtask information for this project.
Add	Create tasks or subtasks for this project.
Chg (Change)	Update task or subtask information for this project.
Dlt (Delete)	Remove a project, task, or subtask from the system.
Rvw (Review)	Examine a Helpdesk task using WORKTASK, and assign it to a *WORKING project (to which the user is authorized).

Personality Defaults panel

The fields displayed here depend upon the value of the **Personality** parameter on the Project Description panel.

This example applies to a Personality of *WORKING.

MM/DD/YY 10:00:18	Personality Defaults	Your Company, Inc. YOURSYS
Project TP40		
Personality *WORKING		
Details mask required <u>Y</u>	Masks defined 1	F4=List
Report mask required <u>Y</u>	Masks defined 3	F4=List
F3=Exit F4=List F12=Cancel F21=System command		

This example applies to a Personality of *HELPDESK. (See [‘Creating a Helpdesk project’ on page 227.](#))

MM/DD/YY 10:00:58	Personality Defaults	Your Company, Inc. YOURSYS
Project FTRQ		
Personality *HELPDESK		
Details mask required <u>Y</u>	Masks defined 1	F4=List
Report mask required <u>Y</u>	Masks defined 3	F4=List
Task synonym <u>Request</u>		
Accept status <u>X</u> ACCEPTED		F4=List
Reject status <u>R</u> REJECTED		F4=List
Review status <u>V</u> REVIEWED		F4=List
Coordinator <u>BERMANJIM</u>		USRPRF
F3=Exit F4=List F12=Cancel F10=Valid Projects F21=System command		

Creating a Helpdesk project

Helpdesk projects enable your end-users and helpdesk personnel enter problems and change requests directly into the project system.

For example, you might have a helpdesk project called “Problems”. You can then log all problems into this one project. The problems are reviewed: if they are accepted, they are copied into working projects, and then assigned to a programmer or other resource.

As problems are reviewed, accepted, assigned, and completed, the status is updated at every stage so users can see its progress.

This section describes how to set up a Helpdesk project. The Helpdesk project is set up just as any project type is set up as described in the previous section, except that when you set a Personality parameter to *HELPDESK, the Personality Defaults panel looks like this:

MM/DD/YY 10:01:36	Personality Defaults	Your Company, Inc. YOURSYS
Project FTRQ		
Personality *HELPDESK		
Details mask required Y Masks defined 1 F4=List		
Report mask required Y Masks defined 3 F4=List		
Task synonym Request		
Accept status X ACCEPTED		F4=List
Reject status R REJECTED		F4=List
Review status V REVIEWED		F4=List
Coordinator BERMANJIM		USRPRF
F3=Exit F4=List F12=Cancel F10=Valid projects F21=System command		

The information on this panel controls the problem entry and messaging functions. For example, you can specify the profile name of the Project Coordinator. This might be a manager or project leader who is responsible for reviewing and assigning (or rejecting) the problems and requests. This person must either have a valid IBM i user ID or exist in the Requester file.

When assigned, the Helpdesk request displays the status of the task to which it has been assigned. If conditionally accepted, the status is determined by the **Accept status** parameter. If it is rejected or reviewed, then the **Reject status** and **Review status** parameters determine the setting of the task status.

When a problem or request is first entered, the coordinator can receive a message. Similarly, once the coordinator has assigned the request, the requester and/or the assigned resource (usually the programmer) can be sent a message automatically. Escalation table processing programs manage all such messaging.

All projects have available the task escalation features that provide for automatic messaging and updating of a task, upon entry and after a specified time-interval. For more information, see [Task escalation processing' on page 250](#).

How Helpdesk projects differ from Working projects

When you type FASTTASK on a command line or select the Add Problem/Request option on the Work with Requesters panel, you see those projects that have been defined as HELPDESK projects, and to which you are authorized.

If you select a HELPDESK type project on the Work with Projects panel, the View Request/Problems panel appears (instead of the Work with Tasks panel, which applies only to working projects).

The functions controlled by the HELPDESK Personality defaults on the previous page are available only for Helpdesk projects.

Wisedesk Dynamic Update Options panel

On this panel, specify whether you want your Wisedesk categories to be updated whenever a new task is entered into the project system.

MM/DD/YY 10:02:22	WISEDESK Dynamic Update Options	Your Company, Inc. YOURSYS
Project: APPR Accounts Payable Problems & Requests		
Dynamically update decision trees <u>N</u>		Y, N
F3=Exit F12=Cancel F21=System command		

To update your Wisedesk help trees each time a new task is created, type Y, and then press Enter.

For more information, see *'Setting up dynamic category updating' on page 306*.

TURNOVER® Lifecycle Manager Projects views

TURNOVER® Lifecycle Manager Projects has different views or perspectives for different users:

- A Helpdesk person usually starts with a list of customers or requesters: see 'Working with requesters with HELPDESK' in the next section.
- A user or Helpdesk person can enter problems and requests directly into the system by using the FASTTASK view (see *'Adding tasks with FASTTASK' on page 231*).
- A project coordinator reviews pending problems and requests, and then adds a new request to an old one, or assigns it to a working project (see *'Reviewing tasks with WORKTASK' on page 236*).
- A project manager needs direct access to all of the working projects for which they are responsible.
- A programmer needs direct access to working projects and tasks for which they are responsible.

Working with requesters with HELPDESK

Helpdesk services start with identifying the person calling for help.

To work with requesters

On the command line, type `HELPDESK`.

The Work with Requesters panel appears.

MM/DD/YY 10:28:14		Work with Requesters		Your Company, Inc. YOURSYS	
Position to and sort by:					
First name		Last name			
Requester code		Company			
Apply filters . . Y					
1=Add request 2=Change 4=Delete 7=Comments 9=View time 12=Tasks					
Requester	First name	Last name	Company	Phone number	Ext.
— BURBANK	Karen	Burbank	Quaker Publishing	703-463-8590	
— BUSHNEIL	Neil	Bush	BCCI	803-524-5540	
— CAMPBELL	David	Campbell	Merril-Lynch	413-848-2175	
— ELSINORE	Steve	Elsinore	UNICOM Systems	203-924-8818	23
— ESPNBERM	Chris	Berman	ESPN	503-438-6744	
— HAYES	Bernard	Hayes	Northeast Mutual	913-441-9989	
— NEWTON	Jane	Newton	Parade Systems	218-945-0412	
— PHILLIPS	Ed	Phillips	UNICOM Systems	103-924-8818	25
— SCHWARZC	Norman	Schwarzcopf	General Motors	213-483-8619	2
— STANLEY	Stephen	Stanley	FedReserve	603-418-8821	
More...					
F3=Exit F6=Add requester F8=User fields F12=Cancel F2=Escalation queue					
F10=View 3 F11=View 2 F17=Filters F18=Timesheets F21=System command					

This panel displays a list of your users or customers.

You can filter by company, locations, and so on. For example, you could filter by department `ACCT*` and then type `12` next to each person in the list to view all of the requests entered on behalf of each person in that department.

To	Do this
add a request or problem	Use option 1. See <i>'Adding tasks with FASTTASK' on page 231</i> .
change requester record	Use option 2.
copy an existing requester to create a new requester record for the same company/department	Use option 3.
delete a requester	Use option 4.
enter comments about interactions with the requester	Use option 7.
display how much time has been spent on this requester's tasks	Use option 9.
display all of the requests related to a particular requester	Use option 12. See also F2 and F14.

To	Do this
work with the escalation queue	Press F2. See <i>'Working with the escalation queue' on page 258.</i>
add a new record to the Requester file	Press F6.
review and change the user field definitions	Press F8.
display more information about a requester (including any user-defined fields)	Press F10 and F11.
set selection criteria	Press F17.
enter time in your timesheet	Press F18.

Adding tasks with FASTTASK

FASTTASK enables end users or helpdesk personnel to quickly enter problems, change requests or any other project-related tasks.

Later, the project coordinator can review the request and accept and assign it to an active working project); reject it; or conditionally accept it, pending more information: see *'Reviewing tasks with WORKTASK' on page 236.*

Recommendation

- Write all project information about office procedures, status codes, priority range, and the user-defined fields in the project description so that all users can easily refer to it.
- Put the FASTTASK command on the menu for each of your FASTTASK users, using CENTRAL® Menu or other menu software.

To start FASTTASK

On the command line, type FASTTASK.

The FASTTASK - Work with Projects panel appears.

```

MM/DD/YY          FASTTASK -- Work with Projects          Your Company, Inc.
10:28:32

Position to Project Name:_____

1=Add a task      2=Lookup a task      5=View project description

  Proj  Description                                Coordinator
  _
  FCRQ  Change Requests                            JONESMIKE
  _
  FHPR  Hardware Problem Reports                    JONESMIKE
  _
  FSPR  Software Problem Reports                     RAYMOND
  _
  MISC  Miscellaneous                               RYLAND

F3=Exit      F12=Cancel      F21=System commands

```

To	Do this
enter a request, task, problem, or other related information	Use option 1. See <i>'Entering a request' on page 232.</i>
work with requests that you have previously entered	Use option 2.
display more information about the project	Use option 5.

Entering a request

- 1 On the FASTTASK - Work with Projects panel, type 1 next to a project.

The Add a Request panel appears.

MM/DD/YY 10:35:25		Add a Request		Your Company, Inc.	
Project: FPPR FASTTASK/ SLS Products Problem Reports					
Description					
*Resource	PSCHMIDT	F4=List	Phip Schmidt		
*Status	N NEW	F4=List			
Requester		F4=List			
Priority	1 to 3	Sequence			
Date needed		Task type	A	ASAP	F4=List
'User-defined field1'		F4=List			
'User-defined field2'		F4=List			
'User-defined field3'		F4=List			
'User-defined field4'		F4=List			
'User-defined field5'			F4=List		
'User-defined field6'			F4=List		
'User-defined field7'		F4=List			
'User-defined field8'		F4=List			
'User-defined field9'		F4=List			
'User-defined field10'		F4=List			
F3=Exit F4=List F10=Additional parameters F12=Cancel F21=System command					

- 2 Specify the information (see below), and then press Enter.

If a details mask has been defined for this project, the Project Details Entry panel appears.

- 3 Type a detailed description of the request. Do not type over the information in the mask.
- 4 Press Enter to save the description, and return to the Add a Task panel.

Description

Type a short description of the entry.

You will be able to add a more detailed description later.

Requester

If you are entering a problem report or request from a client or another user, type their Requester ID. Press F4 to select from the list of all requesters.

Priority

Enter a number in this field that falls in the range on the right.

Find out from your coordinator the significance of the priority code. For example, is priority 1 the highest or lowest priority? View the project details first; that may provide you with the information you need.

Priority Sequence

(Optional.) Specify the order in which requests should be handled, when entering multiple requests of the same priority.

Date needed

Enter the date by which you want this request to be resolved, if applicable.

Task type

Enter the task type from a list.

User-defined fields

User-defined are specific to your company. You should always complete the information in these fields. View the project details or ask your coordinator if you are not sure what information is needed.

Looking up a previously entered request

To find all tasks that have been entered for a user entry project, select option 2 on the FASTTASK - Work with Projects panel.

The Work with Requests panel appears.

MM/DD/YY	Work with Requests		Your Company, Inc.
10:36:35	Project: FHPR	FASTTASK/Hardware Problems	
Position to task: ____ *TOP *BOT Apply filters. . . <u>Y</u> F17=filters			
2=Change 4=Delete 5=View 6=Print 10=Send message 15=View assigned task 25=Search			
	Rqst	Description	Assigned Task Status
—	0001	Laser printer jammed	PRTP0024 DONE
—	0002	Terminal flickers	CANCELED
—	0003	FAX not receiving--Comm. Error	FAXP0005 + STARTED
—	0004	Laser printer--'fuzzy' output	NEW
F3=Exit F5=Refresh F6=Add Problem Report F2=Escalation queue F10=View 3 F11=View 2 F12=Cancel F13=Repeat F17=Filters F21=System command			

Assigned Task

The Working task to which your request or problem was assigned (if applicable).

+ (plus sign) indicates that the request resulted in more than one Working task. Your original request is just as you entered it. The assigned Working task was copied from it. You can view both your original request and the assigned tasks. If more than one task was created to service a particular request, then you will see a list of the assigned tasks. If this field is blank then the task has not been assigned.

Status

The status of the assigned task.

If the assigned task field is blank, this is the original status.

Your Project Administrator controls the actual status. These may have been changed on your system since TURNOVER® Lifecycle Manager was installed. For each user entry project, each company can decide what the initial status, accept status, assigned status and completed status should be.

To	Do this
move to a specific task	Type its number in the Position to Task field.
move to the top of the list	Type *TOP in the Position to Task field.
move to the end of the list	Type *BOT in the Position to Task field.
apply filters	Press F17.
turn filters on	Type Y in Apply filters.
turn filters off	Type N in Apply filters.
work with assigned tasks	Use option 12.
work the assigned tasks	Type 12 next to a task. Then press F5. You can change the task only if it has not been reviewed yet.
change a task	Use option 2. You cannot change a task once it has been assigned to a working task.
copy a task (either within this project or to another task)	Use option 3.
delete a task	Use option 4. The status must be NEW.
display the original task	Use option 5. To see the assigned task, select option 15.

To	Do this
print the task	Type 6 next to a task.
display a list of Wisedesk categories in which it belongs	Type 7 next to a task.
send a message relating to that task	Type 10 next to a task.
move a task (either within this project or to another project)	Type 11 next to a task.
search the text of tasks	Type 25 next to one or more tasks. Press F13 to repeat the 25 selection to the end of the list.
work with the escalation queue	Press F2. See <i>'Working with the escalation queue' on page 258</i> .
add requests to this project	Press F6. This works the same as option 1 of the main panel.
set filters (selection criteria)	Press F17.
add an entry on your timesheet	Press F18.
display the command line	Press F21.

Sending messages

To send a message relating to a request

- 1 On the Work with Requests panel, type 10 next to a task.

The Send Message panel appears.

MM/DD/YY 10:39:15	Send Message	Your Company, Inc.
Task: FTPR0016 A new task		
Profile	User ID	Address
Resource: ELSEMIKE	ELMS	MIKE
Requester: PHILLIPS	PHILLIPS	ED
Coordinator: SMITHJ	SMITHJ	JAS
Send message to:		
User profile _____		
-- and/or --		
User Id/Address . . _____		
Message _____		

Key in message text and recipient and press F10 to send message.		
F3=Exit F10=Send F12=Cancel F21=System command		

If the person to whom you are sending the message is on the same system as you, you do not need the directory address. You can send the message to anyone who has a user profile on your system, or on a system in your network, accessible through a directory.

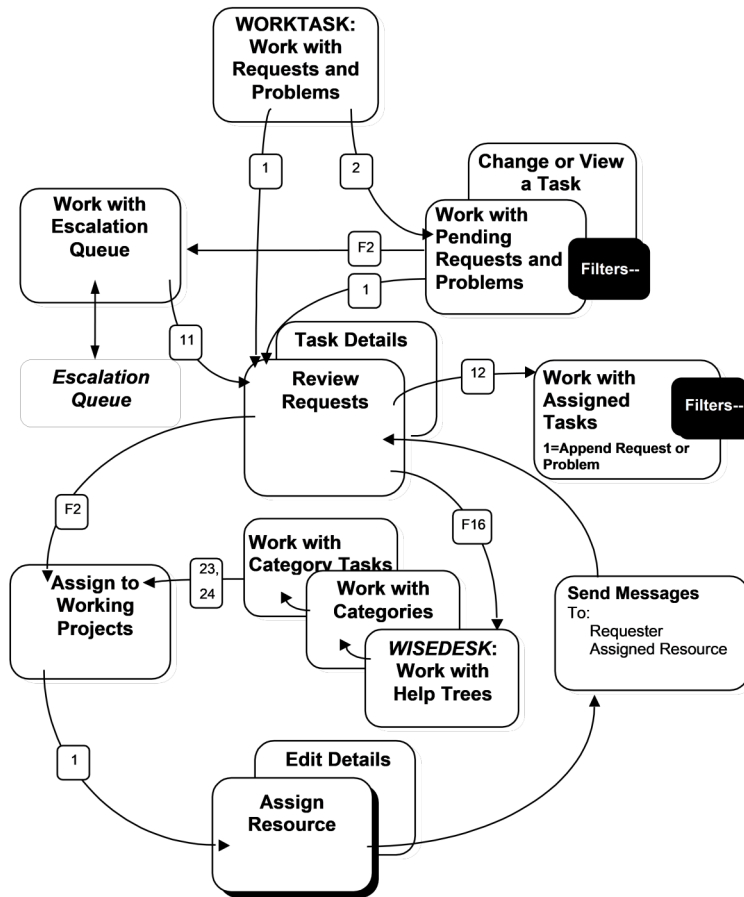
You can also change the default message by overtyping it.

- 2 To send the message, press F10.
- 3 Press F3 or F12 to exit.

Reviewing tasks with WORKTASK

To review, accept, assign, or reject requests that were made using FASTTASK, use WORKTASK.

When a task is assigned, it is copied to one or more Working projects and assigned to a resource. The Helpdesk person or user can view the original request to view and track the progress of the Working tasks that might have additional information appended to it.



Recommendation

Use the expanded project text description to record information about the project that the FASTTASK users may need, for example: a description of status codes set for this project; the priority code range, and its significance; the user-defined fields, the entry and report masks, and how they are to be used; and the priority codes that will result in messages being sent.

To review tasks

On a command line, type `WORKTASK`.

The Work with Projects panel appears.

MM/DD/YY	WORKTASK - Work with Projects	Your Company, Inc.
10:42:35		
Position to Project Name:_____		
1=Review all 2=Lookup tasks 5=View description		
Proj	Description	Coordinator
— FCRQ	FASTTASK/Change Requests	PSHIFTY
— FHPR	FASTTASK/Hardware Problem Reports	ELSinORE
— FSPR	FASTTASK/Software Problem Reports	PSHIFTY
— MISC	Miscellaneous	PSHIFTY
F3=Exit F12=Cancel F21=System command		

This panel displays you all of the projects that have been defined as user entry projects.

To	Do this
use the escalation queue (which shows pending entries in order or priority)	Press F2. See <i>'Working with the escalation queue' on page 258.</i>
cycle through all the entries that have not been reviewed yet	Use option 1.
display a list of all tasks for a project	Use option 2.
display the Helpdesk project description	Use option 5.

Working with requests

To look up tasks for a project, type 2 next to it.

The Work with Requests panel appears.

MM/DD/YY 11:22:44
Work with Requests
Your Company, Inc.

Project: **FHPR** FASTTASK/Hardware Problem Reports

Position to task: ____ *TOP *BOT Apply filters. . . N F17=Filters

2=Change 3=Copy 4=Delete 5=View 6=Print 9=View time
10=Message 11=Move 12=Assigned task 25=Find text 1=Review

		Assigned	
Task	Description	Task	Status
— 0001	Laser printer jammed	P RTP0024	DONE
— 0002	Terminal flickers		CANCELED
— 0003	FAX not receiving--Comm. Error	FAXP0005	STARTED
— 0004	Laser printer--'fuzzy' output		NEW

F3=Exit F5=Refresh F6=Add Problem Report F2=Escalation queue F7=Review All
F10=View 3 F11=View 2 F12=Cancel F13=Repeat F18=Timesheet F21=System command

To	Do this
find a task	Type its number in Position to task.
turn on filters	Set Apply filters to Y. To set the filters, press F17.
turn off filters	Set Apply filters to N.
review a task	Type 1 next to it. See below for more.
change a task	Type 2 next to it.

To	Do this
copy a task to another project	Type 3 next to it. See <i>'Copying tasks' on page 240.</i>
delete a task	Type 4 next to it.
view a task	Type 5 next to it. Then press F5 to view the details.
print a task	Type 6 next to it.
display the Wisedesk categories to which a task belong	Type 7 next to it.
to send a message relating to a task	Type 10 next to it.
move a task	Type 11 next to it. See <i>'Copying tasks' on page 240.</i>
view the assigned task	Type 15 next to it. Then press F5 to view the details.
search for text in task details	Type 25 next to one or more tasks.
display the escalation queue	Press F2. See <i>'Working with the escalation queue' on page 258.</i>
add a task to this project	Press F6.
review all pending requests for this Helpdesk project	Press F7.
display more information about the tasks	Press F10 and F11.
repeat an option down the list of request to the end of the list	Press F13.
set filters (selection criteria)	Press F17.
add an entry on your timesheet	Press F18
display the command line	Press F21.

Copying tasks

Direction	Description
*WORKING to *HELPDESK	Task created looks “new”. It is given the initial tasks status for that project, and escalation entries are processed if defined. Task will appear if Review All is selected.
*WORKING to *WORKING	Task is copied; no escalation processing is performed.
*HELPDESK to *HELPDESK	For copies, same as *WORKING to *HELPDESK. For moves, if the task has already been assigned, then the task and all its assignments are “moved”. The task is not made to appear as a new task. Escalation entries are not processed. If the task has not been assigned, then a move is treated the same as a copy.
*HELPDESK to *WORKING	A copy is performed; however “attachments” which existed for the HELPDESK task, if it had been assigned, are not copied or moved.

Reviewing requests

Type a 1 next to a task listed on Work with Requests to review it.

The Review a Request panel appears.

MM/DD/YY 10:32:12
Review a Request
Your Company, Inc.

Project: FHPR FASTTASK/Hardware Problem Reports

Task 0019 Status . . . NEW
Description A test request delete it.

Resource PSCHMIDT F4=List Phil Schmidt
Status V Reviewed F4=List
Requester MARSSTELLA F4=List Stella Mars
Priority 3 1 to 3 Sequence . . .
Date needed 0/00/00 Task type . . A ASAP F4=List
'User-defined field1' F4=List
'User-defined field2' F4=List
'User-defined field3' F4=List
'User-defined field4' F4=List
'User-defined field5' F4=List
'User-defined field6' F4=List
'User-defined field7' F4=List

More...

F2=Assign F11=Reject F13=Accept F9=Print F10=Addl. Parns F16=Wisedesk
F3=Exit F5=Edit details F7=Requester comments F12=Cancel F21=System command

To

Do this

assign the request to a Working project (see below)

Press F2.

To	Do this
view or change the text details for the request	Press F5.
view any requester comments that may have been entered by the Helpdesk person	Press F7.
print the request	Press F9.
to view additional parameters (not shown)	Press F10.
to reject the request	Press F11.
to cancel any changes you may have made to the request, and either proceed to the next one or return to the Work with Projects panel	Press F12.
accept the request without assigning it (the status changes to <code>ACCEPT</code> but no other changes are made automatically)	Press F13.
start Wisedesk and search for related duplicate tasks	Press F16.

Resource

You can enter a valid resource name before proceeding, or you can wait until you assign the task to a new project. You might assign the task to a project manager who will reassign it later to a programmer in their group.

Status

The status automatically changes when you take some action. You do not have to set the Status manually unless you want to override the automatic change of value.

Parameters in the project definition determine the values.

- If you take no action, the status changes to "Initial review".
- If you accept the task, the status changes to "Accept".
- If you reject the task, the status changes to "Reject".
- If you assign the request to a Working project, the status changes to "Assigned".

You can also set the status manually before taking any action, if you do, the status will not be changed automatically. This enables you to have more than one Reject status to provide more information about why you rejected a task. For example, your normal Reject status might be "Rejected". In some cases a request may have already been solved for someone else and you may want to return a status of "Duplicate" along with a note in the details as to which task to see for the solution.

Once a request is assigned, subsequent changes are made to the assigned tasks, not the original request. Look at the assigned tasks to view current status and details. Look at the original request if there are questions about the original request.

User-defined fields

In the project definition, you can define up to ten user-defined fields. These appear only if they are defined for the project.

To	Do this
assign the request to one or more Working projects.	Press F2. For more information, see ‘Assigning a request’ on page 242. Any data entered in the user-defined fields in the Helpdesk task is copied into the user-defined fields for the newly assigned Working task, if the same fields are defined for that project. Consider carefully how you name and use these fields. They should be used consistently between your Helpdesk projects and Working projects.
view or edit the text details that the requester entered	Press F5. Add a brief statement to the end of the details to explain the actions you have taken. If you are assigning the request, include instructions for the person (resource) to whom you have assigned the request.
reject the request	Press F11.
accept a request conditionally	Press F13. This means that you have accepted the request, but have not yet decided where and/or to whom to assign the request.
save your changes, and then exit the panel	Press Enter. The Status is set to the Initial review status.
print out a copy of the details	Press F6.
cancel your changes	Press F3.

Assigning a request

When you assign a request to a Working project, you can:

- assign it to one task of a Working project
- assign it as a subtask of another Working task

- append the request to an existing Working task or subtask, as in the case where more than one person reports a particular problem and the Working task has already been assigned
- assign the request to more than one Working task in more than one project, if the problem affects multiple projects.

To assign a task

- 1 Use F2 while you review requests in WORKTASK (see *'Reviewing tasks with WORKTASK' on page 236*).

The Assign Task panel appears.

```

MM/DD/YY 10:32:12          Review a Problem Report          Your Company, Inc.
                          Project: FTPR FASTTASK/Problem Reports

Task . . . . . 0019          Status . . . NEW
Descrip .....
:                               Assign Task                               :
Request :                               : rs
Priorit : To project . . . . . APPR          F4=Select          :
Priorit :                               :
Date ne :                               :
Task ty :                               :
TurnOve :                               : List
:                               :
: F4=Select project  F12=Cancel  F16=Wisedesk          :
:                               :
:.....:

F2=Assign  F11=Reject  F13=Accept
F3=Exit    F5=Edit details  F7=Requester comments  F12=Cancel  F21=System command
    
```

To change the project, overtype the value, or press F4 to select from a list.

To search for related tasks in Wisedesk, press F16. See *'Wisedesk' on page 294*.

- 2 Select one or more projects to which to add the request; or you can work with tasks in any one of the Working projects and either assign the request to an existing Working task, create one or more Working subtasks, or assign the request as a new Working task to the project.

```

MM/DD/YY 10:37:46          Assign Task - Select Project          Your Company, Inc.
                                                                YOURSYS

Position to project . . . .

1=Add task  12=Work with Tasks

      Proj  Description
  12 APPR  Demo Project sample problem reports
   __ OFC   Project with *OFFICE editor
   __ TP40  TURNOVER® Lifecycle Manager Release 4.0 Problems

                                                                Bottom

F3=Exit    F12=Cancel  F21=System command
    
```

3 Select one of the working projects with option 12.

The Select Task panel appears.

MM/DD/YY 10:39:12		Assign Task - Select Task		Your Company, Inc.	
Project . . . APFR		Position to task _____		*TOP, *BOT	
		Apply filters <u>Y</u>		F17=Select	
1=Assign as subtask 2=Add to existing task/subtask 3=Copy 4=Delete					
5=View 6=Print 12=Change 13=Details 15=Original tasks 25=Find text					
Task	Description	Resource	Pty	Status	
_ 0001	Fix check-writing program: This is a sam	ELMSMIKE	1	ASSIGNED	
_ 0002	Add status field to Vendor File	TURNOVER	1	ASSIGNED	
_ 0003	Test task 3	MARKPHIL	2	IN-QA	
_ 0004	Test task 4	MARKPHIL	1	ASSIGNED	
_ 0005	Test task 5	MARKPHIL	1	ASSIGNED	
_ 0006	Test task 6	MARKPHIL	1	ASSIGNED	
_ 0012	Add status field to Vendor File	TURNOVER	1	CANCEL	
_ 0013	Test task 13	MARKPHIL	1	DONE	
_ 0014	Update sales tax tables	MARKPHIL	1	ASSIGNED	
_ 0015	This is a big problem	PSCHMIDT	3	ASSIGNED	
_ 0016	This is a trivial problem	PSCHMIDT	1	ASSIGNED	
More...					
F3=Exit F5=Refresh F6=Add task F7=Control files F8=Assign to project					
F10=View 3 F11=View 2 F12=Cancel F13=Repeat F21=Command line F24=More keys					

To

Do this

assign the request to an existing task as a subtask

Type 1 next to the task.

append the request to an task

Type 2 next to the task.

apply selection criteria

Press F17.

search for text in existing tasks

Type 25 next to the tasks.

- If you do not find a related task, or the task status indicates that the one you were looking for is closed or completed, then press F6 to add a new Working task based on the request being reviewed.

If the choice you make results in adding a new Working task, the Assign a Task panel appears.

MM/DD/YY 10:42:55		Assign a Task		Your Company, Inc.	
Project: APPR Demo Project sample problem reports					
Description	Testing Helpdesk panels				
Resource	PSCHMIDT	F4=List	Pat Schmidt		
Status	A ASSIGNED	F4=List			
Requester	ASPINMAY	F4=List	May Aspin		
Application	AP	F4=List			
Release	—				
Version	—				
Priority	2	1 to 3			
Priority sequence					
Duration	Planned: _____	Actual: _____	Units: <u>H</u>		
Start date	Planned: <u>0/00/00</u>	Actual: <u>0/00/00</u>			
End date	Planned: <u>0/00/00</u>	Actual: <u>0/00/00</u>			
Date needed	<u>0/00/00</u>				
Date promised	<u>0/00/00</u>				
Task type	A ASAP	F4=List			
More...					
F3=Exit F4=List F7=Requester comments					
F10=Additional parameters F12=Cancel F21=System command					

5 Press Enter to edit the task details.

When you return to Work with Requests, you will see that the task status is now assigned and the **Assigned Task** field contains the working task ID.

At any time, you can see all of the assigned tasks associated with a Helpdesk request and the other way round.

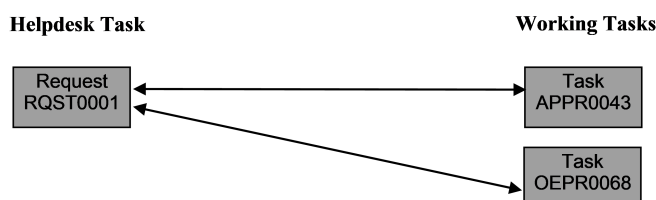
Associating tasks with multiple tasks

A helpdesk task can be associated with many working tasks, and vice versa.

For example: A user enters request RQST0001 on September 4th. The request requires action by two project teams. The project coordinator reviews the request and assigns it to two working projects, APPR and OEPR, as tasks APPR0043 and OEPR0068.

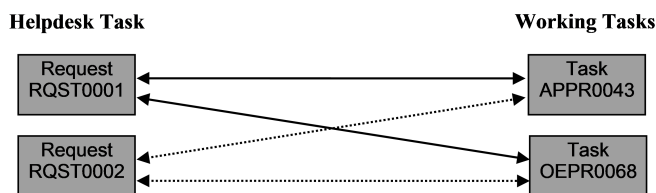
If you now look up HELPDESK task RQST0001 using option 2 from WORKTASK, + (plus sign) next to the task indicates that it is assigned to more than one working task.

Select the task with option 12 to see a list of all the WORKING tasks associated with this request, that is, APPR0043 and OEPR0068.



On September 6th, another request, RQST0012, is entered by another user. When you review the request, you recognizes it as a duplicate of RQST0001, and selects F16 to search for the request you already reviewed. Select it with option 12 to display which tasks it is assigned it to. Then you can look up the two assigned tasks, and select both with Wisedesk option 24 to append to each the task that you were reviewing.

Now you can select either working task with Wisedesk option 12, and see that it now has two originating helpdesk tasks: RQST0001 and RQST0012.



Working with tasks and subtasks

As a project leader or developer, you can view projects and tasks from the perspective of Work with Projects (option 9 on the TURNOVER® Lifecycle Manager main menu). Working projects contain all of the tasks on which a developer will work. You select a Working project, display the associated tasks assigned to you, and then you can work to complete them.

Work with Tasks panel

When you select an option to work with tasks on the Work with Project panel, the Work with Tasks panel appears.

```

MM/DD/YY  10:47:11          Work with Tasks          Your Company, Inc.
                                YOURSYS
Project . . . APPR  F4=List  Position to priority . . . *TOP, *BOT
                                Apply filters . . . . Y  F17=Select

1=Add subtask  2=Change  3=Copy  4=Delete  5=View  6=Print  9=View time
11=Move  13=Details  14=Authority  15=Original task  20=PWM  25=Find text ...

Task  Description                                Resource  Pty Status
__ 0001 Application distribution fails if applic BERNARDS  2 REVIEWED
__ 0002 Nickname field in Requester file is shor ELMSMIKE  2 REVIEWED
__ 0003 XREF did not grab a pgm to be COPR'd bec SANDSAMY  2 REVIEWED
__ 0004 Reserve Object Name allowed invalid name ELMSMIKE  3 REJECTED
__ 0005 CHKINOBJ does not recognize if source ha BERNARDS  2 REVIEWED
__ 0010 Form Reapproval Error                      *NONE     2 REVIEWED
__ 0011 FASTTASK tasks statuses are not being se SANDSAMY  2 REVIEWED
__ 0014 Source Checkout Problem                   ELMSMIKE  3 REVIEWED
__ 0015 Upgrade bombs if SOFTTURN is not in ASP  SANDSAMY  3 REVIEWED
__ 0018 Can't apply TO Changes to Remote systems BERNARDS  3 REVIEWED
__ 0020 Received error MCH0603 when printing a p *NONE     3 REVIEWED
                                More...
F3=Exit  F4=List  F5=Refresh  F6=Add task  F7=Control files  F8=All projects
F10=View 4 F11=View 2  F12=Cancel  F13=Repeat  F23=More options  F24=More keys
  
```

To	Do this
go to another project	Type the project code in the Project parameter.
see all tasks for all projects,	Press F8.
add one or more subtasks to any task	Type 1 next to the task.
change a task or subtask	Type 2 next to it.

To	Do this
copy a task or subtask	Type 3 next to it.
delete a task or subtask	Type 4 next to it.
display more information about a task or subtask	Type 5 next to it.
print a task or subtask	Type 6 next to it.
display and change the Wisedesk categories in which a task belongs	Type 7 next to the task.
display time reported against a task or subtask	Type 9 next to it. See <i>'Reason codes' on page 278</i> .
move a task to another project, or a subtask to another task	Type 11 next to it.
change the description for a task or subtask	Type 13 next to it.
change the task authority	Type 14 next to it. See <i>'Authorizing users to projects' on page 212</i> .
display the original Helpdesk requests for a task	Type 15 next to it.
display all the forms (promotion jobs) related to a task	Type 16 next to it.
display any system objects checked out with work in process that are related to a task	Type 17 next to the task. Then press F11 to see checked out IFS objects for the task.
display all object change history for a task	Type 18 next to it.
display the test plan associated with a task	Type 19 next to it.
work with a Programmer's Worklist associated with a task	Type 20 next to the task. For more information about PWM, see <i>'Programmer Worklist Manager (PWM)' on page 280</i> .
display all project change history for a task	Type 22 next to the task. The project's Audit project changes parameter (in the Project Description) must have been set to Y.
search the task descriptions and text details for specific text	Type 25 next to the tasks that you want to search.
add a new task	Press F6 (see the next section for illustration of add/change a task panels).

To	Do this
manage the control file information	Press F7. See <i>'Working with TURNOVER® Lifecycle Manager Projects control files' on page 259.</i>
display alternative views of the tasks	Press F10 and F11.
repeat an option from the current position to the end of the list	Press F13.
manage help trees in Wisedesk	Press F16.
enter timesheet information	Press F18. See <i>'Recording time on a timesheet' on page 279.</i>
work with your programmer worklists	Press F20. See <i>'Programmer Worklist Manager (PWM)' on page 280</i>

Filtering tasks

To apply selection criteria, press F17. For example:

- To see all of the tasks added this month that are assigned to you, press F17. Set the **Date entered** range to this month, and then set **Resource** to your profile name.
- To see the status of only the high-priority tasks, press F17, and then set **Priority** filter appropriately.
- To see all of the tasks completed this year on behalf of a particular customer or user (requester), press F17. Set **Requester** to the customer's **Requester ID** (press F4 to see a list) and set the **End date** range to this year followed by an **A** for *Actual* time.

To turn off filters, set **Apply filters** to **N**.

Adding and changing tasks

- 1 Press F6 on the Work with Tasks panel.

The Add a Task panel appears.

- 2 Select a task with option 1.

The Add a Subtask panel appears.

- 3 If the project definition parameter, **Auto assign task numbers**, is **N**, type a 4-character ID to identify the task. (See also *'Auto assign task numbers' on page 218*)

MM/DD/YY 11:02:08		Add a Task		Your Company, Inc.	
Project: APPR Accounts Payable Project					
Task	0001				
Description	Application distribution fails if Remote system is not active				
Resource	SCHMIDTP	F4=List	Phil Schmidt		
Status	V REVIEWED	F4=List			
Requestor	SLAWSONJIM	F4=List	Jim Slawson		
Application	AP	F4=List			
Release					
Version					
Priority	2	1 to 3			
Priority sequence					
Duration	Planned: 12.00	Actual: 13.00	Units: H		
Start date	Planned: 12/01/19	Actual: 12/04/19			
End date	Planned: 12/31/19	Actual: 0/00/00			
Date needed	1/02/03				
Date promised	12/31/19				
Task type	A ASAP	F4=List			
More...					
F3=Exit F4=List F7=Requester comments					
F10=Additional parameters F12=Cancel F21=System command					

Most of the defaults that you see and rules governing what information you can enter here are supplied by the project definition. For example: The **Resource** name might default to a particular profile name, but in our example, it is set to *NONE with the assumption that you will assign it appropriately.

Requester

The rules for entering a requester are determined by the Project definition. They can be set to require that it be a user profile; a requester ID selected from the Requester file, or both a profile and a requester ID.

Application, Release, and Version

The **Application**, **Release**, and **Version** fields are also determined by the Project definition. Normally, each project or task will relate to only one application.

If you need more than one person assigned to a task, consider dividing it into two or more tasks or adding subtasks. For best accountability, we recommend that only one person be responsible for a task. You can copy a task (option 3 on the Work with Projects panel) to create a new task or subtask.

Similarly, if a task relates to more than one application, divide it into two or more subtasks, each of which relates to a single application. These may or may not be assigned to the same resource (developer).

Test libraries

Test libraries might default to specific names. In this example, they are blank with the assumption that you are supplying test library names in your application definition. If the application definition test libraries are set to *PROJECT, TURNOVER® Lifecycle Manager looks to these fields for the names of the appropriate test libraries. (If you *are* supplying this information in your application definition, then you should leave these fields blank.)

To	Do this
see a list of valid entries for a field	On the field, press F4.
change a task	Press F5.
add a subtask	Press F6.
display any comments the requester included when the task was created	Press F7.
view the time logged for this task	Press F8.
print the task	Press F9.
display more fields	Press F10.
cancel entry and return to the Work with Tasks panel	Press F12.
work with the test plan for this task	Press F19.
use the command line	Press F21.
display more function keys	Press F24.

After adding or reviewing a task

Once a task has been created, you can start work by selecting option 20=PWM on the Work with Tasks panel to create a Programmer Worklist and start to work. See *'Programmer Worklist Manager (PWM)' on page 280*.

Task escalation processing

Tasks can be automatically escalated after a certain time interval if no progress has taken place.

You can specify the actions to take when a task is escalated: for example, send messages, change the task status, change the task priority, run commands to perform a particular function, or a combination of these.

For example, you might have a problem that was entered as high priority. The rule you establish might be that if the task has not been changed in four hours, send messages to a product manager and systems manager and then reset the timer to wake-up and send reminders every two hours. Assume that work on this same task had been started. Monitoring could continue. If no activity was recorded for a specified period of time, messages could be sent again. It is possible to have the status or priority updated automatically during the escalation process.

The information used to manage task escalation includes information about the Task itself, and the project's escalation table that defines the rules and actions for each combination of priority and status.

Besides being subject to the actions defined in the escalation table, tasks can be reported on the Task Aging Report, a report that can tell you which tasks need attention, and how long certain tasks have been on the escalation queue. Besides providing aging information for each task, a summary version of this report provides you with valuable statistics of numbers of tasks in each aging threshold.

Task escalation can be used with both Helpdesk projects and Working projects.

How task escalation works

An escalation queue (ESCQ) monitor all of the tasks for which escalation-monitoring rules apply.

- 1 A task or subtask is created or updated. The fields in the task file that are monitored for change include:

Status

Priority

Date promised

Duration

Projected completion date

- 2 TURNOVER® Lifecycle Manager checks for an entry in the escalation table (see *'Specifying escalation rules' on page 253*).
- 3 TURNOVER® Lifecycle Manager calculates the wake-up date and time.
- 4 Is there a matching escalation table entry?

Yes Did the task priority and/or status change?

No Calculate the wake-up date and time.

Update the wake-up date, time.

Yes Delete the queue entry for this task.

Update the wake-up date and time.

Add a new queue entry for this task.

No Is there already an entry on the escalation queue for this task?

Yes Delete the task escalation queue entry.

If the task status and/or priority has changed and there is no matching entry in the escalation table, the task is removed from the escalation queue and will no longer be monitored.

Calculating a wake-up date/time

The calculation of the wake-up date and time depends one of these variables:

- Escalation Interval (from escalation table)
- Alarm Interval (from the escalation table)
- Due date from task record
- Estimated completion date
- Estimated Duration from the task record

If Due date is blank and Estimated completion date is blank

Wake-up date/time = To date + Escalation-time-interval - Alarm-days/hours - Duration-days/hours

If Due date is < Estimated completion date, then

If Due date is not blank,

Wake-up date/time equals Due date/time - Alarm-days/hours - Duration days/hours

Else

If Estimated completion date is not blank,

Wake-up date/time equals Due date/time - Alarm-days/hours - Duration days/hours

Example 1

Time of day on due date assumed to be 0800hrs or .333.

Today's date	94100.333 (julian)
Escalation interval	+10.000 (days)
Duration 16 hours (default=7/day)	-2.183 (days)
Alarm interval (24 hours)	-1.000 (days)
Wake up date/time	94107.150 (or 4/17/94 at 03:36)

Example 2

Time of day on due date assumed to be 0800hrs or .333.

Due date	94100.333 (julian)
Est. Duration 16 hours (default=7/day)	-2.183 (days)
Alarm interval (24 hours)	-1.000 (days)

Wake up date/time

94097.150 (or 4/07/94 at 03:36)

Task escalation processing flow

A task is added to a project and, after checking the escalation table, an entry is made on the escalation queue. At periodic intervals, the escalation processing program, which is set to run as an autostart job, wakes up and checks the escalation queue, as follows:

Is any task's Wake-up date-time $\geq$ (greater than or equal) current date-time? If so, look up action in escalation table, and then perform the defined actions.

When an escalation queue entry is added or updated on the escalation queue, it is set to indicate whether the next wake-up date-time is to send an Alarm or to Escalate the entry.

Specifying escalation rules

On the Work with Projects or Work with Tasks panel, press F7 to display the Project Control Files menu, and then select option 10.

The Work with Escalation Table panel appears.

MM/DD/YY 11:22:35			Work with Escalation Table				Your Company, Inc.			
							SLS			
Table: HELPDESK			Description: Escalation Table for Helpdesk Projects							
2=Change 3=Copy 4=Delete 6=Command 7=Messages										
----- ACTIONS -----										
		Aging	Alarm	Repeat	Escalation	Esc	Esc			
Pty	Status	Rpt	Interval	Alarm	Interval	Pty	Status	Msg	Cmd	
—	A ASSIGNED	N		N				Y	N	
—	1 N NEW	N	48 Hrs	N	7 Days	1	U URGENT	Y	N	
—	2 N NEW	Y	24 Hrs	Y	48 Hrs	2	U URGENT	Y	N	
—	3 N NEW	Y	2 Hrs	Y	4 Hrs	4	N NEW	Y	N	
—	4 N NEW	Y	4 Hrs	Y				Y	N	
—	R REJECTED	N		N				Y	N	
—	1 U URGENT	N	24 Hrs	Y				Y	N	
—	2 U URGENT	Y	4 Hrs	Y				Y	N	
—	1 V REVIEWED	N	7 Days	Y				Y	N	
—	2 V REVIEWED	Y	2 Days	Y				Y	N	
—	3 V REVIEWED	Y	1 Days	Y				Y	N	
—	4 V REVIEWED	Y	4 Hrs	Y				Y	N	
Bottom										
F2=Print listing F3=Exit F6=Add table entry F12=Cancel F21=System command										

How the escalation table works

A task is added

The escalation table is checked for a matching **Priority** and **Status** entry. If found:

If one or more messages exist (**Msg=Y**) with **Action code** of N (New), send the messages.

If one or more commands exist (**Cmd=Y**) with **Action code** of N (New), run the commands.

Calculate the Alarm wake-up time based on the **Alarm interval**.

Calculate the Escalation wake-up time based on the **Escalation interval**.

Calculate the Task wake-up time based on the **Due dates and duration**.

Write an escalation queue entry for the task for the Alarm, Escalation, or Task wake-up time, which ever is sooner.

An Alarm wake-up time elapses for a task

The escalation table is checked to determine action to be taken.

If one or more messages exist (**Msg=Y**) with **Action code** of A (Alarm), send the messages.

If one or more commands exist (**Cmd=Y**) with **Action code** of A (Alarm), run the commands.

Calculate the Alarm wakeup time based on the **Alarm interval**.

Calculate the Escalation wake-up time based on the **Escalation interval**.

Calculate the Task wake-up time based on the **Due dates and duration**.

Update the escalation queue entry for the task for the Alarm, Escalation, or Task wake-up time, which ever is sooner.

An escalation wake-up time elapses for a task

The escalation table is checked to determine action to be taken.

Task is updated to new Status and/or Priority.

The escalation table is checked for a matching entry for the new Status and Priority. If found:

If one or more messages exist (**Msg=Y**) with **Action code** of E (Escalate), send the messages.

If one or more commands exist (**Cmd=Y**) with **Action code** of E (Escalate), run the commands.

Calculate the Alarm wake-up time based on the **Alarm interval**.

Calculate the Escalation wake-up time based on the **Escalation interval**.

Calculate the Task wake-up time based on the **Due dates and duration**.

Update the escalation queue entry for the task for the Alarm, Escalation, or Task wake-up time, which ever is sooner.

Note Escalation table messages and commands with **Action code** of E (Escalate) apply only *after* a task is escalated; that is, after its status and/or priority is changed. The table entry for the *new* status and/or priority is referenced to determine action to take.

When you set up your escalation table, be sure to consider whether the project is to be a user entry project, a Helpdesk project, a Working project, or is to be used for some other purpose. If the project is a Helpdesk project, the escalation table would be set up similarly to the table shown on page 253. However, a Working project (one used by your programmers) would most likely contain entries for status values of Assigned, Started, Held (or equivalent codes at your company) to track progress after a task is assigned. The next panel shows an escalation table for a typical Working project.

TURNOVER® Lifecycle Manager includes model Helpdesk and Working tables that you can use or copy as the basis for your own tables. The sample in *'Escalation tables' on page 272* is the Helpdesk table.

The following escalation table might govern a Working project to which tasks are assigned:

MM/DD/YY 11:23:43			Work with Escalation Table				Your Company, Inc.			
							YOURSYS			
Table: WORKING			Description: WORKING project Esc Table							
2=Change 3=Copy 4=Delete 6=Command 7=Messages										
----- ACTIONS -----										
		Aging	Alarm	Repeat	Escalation	Esc	Esc			
Pty	Status	Rpt	Interval	Alarm	Interval	Pty	Status	Msg	Cmd	
—	* A ASSIGNED	N		N	1 Days			Y	N	
—	1 A ASSIGNED	Y		N				Y	Y	
—	2 A ASSIGNED	Y	14 Days	Y	120 Days	3		Y	Y	
—	3 A ASSIGNED	Y	12 Hrs	Y	3 Days	4		Y	Y	
—	4 A ASSIGNED	Y	6 Hrs	Y				Y	Y	
—	1 D DONE	N		N				Y	Y	
—	2 D DONE	N		N				Y	Y	
—	3 D DONE	N		N				Y	Y	
—	4 D DONE	N		N				Y	Y	
—	* H HOLD	N		N	1 Days			Y	N	
—	* S STARTED	N		N	1 Days			Y	N	
—	* W WAITING	N		N	1 Days			Y	N	
Bottom										
F2=Print listing F3=Exit F6=Add table entry F12=Cancel F21=System command										

Priority

The priority value to which the rule applies.

Status

The status to which the rule applies.

To apply the rule to all statuses, leave this field blank.

Aging Rpt

To include the item in the Task Aging report, specify Y.

Alarm Interval

The time interval after the escalation time interval has been exceeded, when reminder messages are sent.

Repeat Alarm

Y sends alarm messages for a task whenever the Alarm interval time limit passes.

N sends an alarm message only once.

Escalation interval

The time interval after which an escalation action will occur.

Esc Priority

The priority code to which a task is changed after the task **Escalation time** interval has been exceeded.

To not change the priority, leave this field blank.

Esc Status

The status to which a task is changed after the **Escalation time** interval has been exceeded.

To not change the status, leave this field blank.

Msg

Y if messages have been defined that are to be sent when a task is added or an **Alarm interval** or **Escalation interval** expires; otherwise N.

More than one user can be a recipient of a message. Select option 7 to view recipients and messages.

You can set default recipients to a user profile name or *RSRC (task **Resource**), *RQST (Task **Requester**) or *COORD (project **Coordinator** for Helpdesk projects; **Administrator** for Working projects).

Cmd

Y indicates that commands have been defined that are to be run when an **Alarm interval** or **Escalation interval** expires. To see the commands, select the entry with option 6.

Example escalation policy

The Helpdesk and Working escalation table (illustrated earlier in this section) would serve to implement this policy in TURNOVER® Lifecycle Manager Projects. Remember that *when* the escalation action occurs depends upon the escalation table and other fields in the task under review.

If the **Priority** assigned to this problem/request is:

Priority	Description
4 (highest)	Most severe problem, must be reviewed in 2 hours, and must be addressed and fixed as soon as possible. Task takes precedence over all other tasks. Might require advisory be sent to all customers.

Priority	Description
3	Urgent, must be reviewed in 4 hours, and addressed immediately and fixed, or resolved with a work-around in two working days. If a satisfactory work-around is devised, it will be downgraded to priority 2.
2	Must be reviewed in 48 hours. It will be addressed in the next release of the product. If it has a due date assigned, the task will be completed by that due date.
1	Must be reviewed in 7 days. It will be addressed the next time the related function is revised or replaced, not necessarily in the next release, but will remain open no longer than 365 days.

Examples of escalation processing

(Refer to the escalation tables illustrated earlier in this section.)

A Priority 1 (lowest) priority task is entered.

Initial status is **N** (New).

Alarm messages will be generated every 48 hours.

If no action is taken within 7 days, it will be updated to status of **Urgent**.

This item will not appear on the Task Aging Report.

If the item is reviewed, but no action is taken, then the status would be set to **V** (Reviewed).
The 1 V table entry would then govern further action for this problem.

A Priority 2 (medium priority) task is entered

Initial status is **N** (New).

Alarm messages will be generated every 24 hours.

If no action is taken within 48 hours, it will be escalated to status of **Urgent**.

The item will be reported on the Task Aging Report.

If the item is reviewed, but no action is taken, then the status would be set to **V** (Reviewed).
The 2 V table entry would then govern further action for this problem item.

A Priority 3 (high priority) task is entered

Initial status is **N** (New).

It is reviewed by the coordinator. As a result of being reviewed, the coordinator downgrades to priority 2 and does not assign the task.

The 2 V table entry would then govern further action for this problem.

It will not appear on the Task Aging Report.

A Priority 3 task is entered

Initial status is N (New).

An initial Alarm message is sent when the task is entered and every 2 hours thereafter.

If no action occurs in 4 hours, it is escalated to priority status 4 N.

Rules for 4 N apply.

A task is escalated to priority status 4 N

An initial Alarm message is sent to several people when the task is escalated and every 2 hours thereafter.

No further action is specified until it is reviewed.

A Priority 3 task is reviewed by the Helpdesk project coordinator (status set to V)

The coordinator assigns this task to a Working project.

The task is now subject to the escalation rules defined for priority 3 with a status A (Assigned) for the Working project.

In the Helpdesk project, the table entry 3 A will cause a message to be sent.

No other action related to the Helpdesk task will occur.

Working with the escalation queue

To display the escalation queue, use the `WRKESQ` command.

The Work with Escalation Queue panel appears.

MM/DD/YY		Work with Escalation Queue				Your Company, Inc.			
Filter by:									
Project: ____		Status: __		Priority: _					
Soft by: _		1=Wake-up		1=Priority		2=Status		4=Project	
Type selection, press Enter:									
2=Change		4=Delete		5=View		11=Review task		12=Work with task	
						15=View task			
				Wake up		Task			
Proj/Task	Pty	Status	Date	Time	Date	Time	Changed by		
PRPT0049	1	N NEW	3/03/19	17:12:20	2/17/19	17:12:07	*UPDT		
PRPT004901	1	N NEW	3/03/19	17:20:47	2/17/19	17:20:40	*UPDT		
PRPT004902	1	N NEW	3/03/19	17:21:03	2/17/19	17:21:00	*UPDT		
PRPT0050	1	N NEW	3/04/19	17:36:47	2/18/19	17:36:40	*UPDT		
PRPB0001	1	A ASSIGNED	3/05/19	9:31:46	2/22/19	9:03:32	*ESCQ		
TP400012	2	N NEW	3/05/19	13:08:45	2/03/19	13:08:45	*ESCQ		
PRPT0052	1	A ASSIGNED	3/05/19	13:28:42	2/22/19	13:24:22	*ESCQ		
MARK0003	1	A ASSIGNED	3/05/19	14:27:26	2/24/19	14:49:53	*ESCQ		
PRPT0046	2	N NEW	3/05/19	16:57:05	2/06/19	16:43:14	*ESCQ		
PRPT0051	1	A ASSIGNED	3/05/19	17:47:53	2/18/19	17:38:56	*ESCQ		
PRPT0053	1	N NEW	3/07/19	16:28:17	2/17/19	10:04:21	*UPDT		
							More...		
F3=Exit F4=List F5=Refresh F12=Cancel F21=System command									

You can filter and change the sequence of the items in the queue. Only tasks with a priority/status combination that appear in the project's escalation table are listed.

To make a change to the queue, you must have full authority to the associated project.

You can override the **Wake-up date** and **time** manually. The **Chgd by** column will be set to the profile ID of the user who changed it. Other values for **Chgd by** are *ESCQ (by the escalation processing program) and *UPDT (by the Task update program) as a result of a task being added or significant data being updated.

To	Do this
view the complete queue entry	Use option 5.
work with the task and option 15 to view the task	Use option 12.
start WORKTASK and review a task that was entered using HELPDESK or FASTTASK	Use option 11.

To change how often the escalation queue is checked (wake up interval)

TURNOVER® Lifecycle Manager checks the escalation queue at a frequency you define (default is 30 minutes) and processes all entries that have a wake-up date and time that has expired.

To change the frequency, use the TSTRESCQ command, with a parameter for wake-up interval, in seconds.

The TSTRESCQ command must be submitted to run in batch.

Working with TURNOVER® Lifecycle Manager Projects control files

TURNOVER® Lifecycle Manager Projects includes some additional control files that enable you to define project-related codes, resources, requester data, and masks.

To display the Project Control Files menu, press F7 on the Work with Projects panel.

MM/DD/YY 11:28:15	Project Control Files	Your Company, Inc. YOURSYS
----------------------	------------------------------	-------------------------------

Select one of the following:

1. Work with Status codes
2. Work with Task type codes
3. Work with Timesheet categories
4. Work with Resources
5. Work with Requesters
6. Work with User-defined fields
7. Work with Entry masks
8. Work with Report masks
9. Work with Messages
10. Work with Escalation tables
11. Work with Conflict resolution codes

Select option: __

F3=Exit F6=DSPMSG F14=WRKSBJOB F12=Cancel F21=System command

Any user can get to this panel, but you must have the appropriate authority to access each option.

- Code maintenance authority (the **Code** column on the Maintain Users Authority List panel) allows the user access to options 1, 2, 5, 6, 7, 8, 9, and 10.
- Resource maintenance authority (the **Rsc** column on the Authority List panel) allows the user to access option 4.
- Requester maintenance authority (**Rqs** column on the Authority List panel) allows the user to access option 5.

Status codes

Status codes track the status of each task: to indicate that it is new, in process, completed, and so on. You can define your own status codes. They apply to all projects.

This is the master control file: changes affect all applications and projects.

Use care when changing them to avoid changing the meaning of tasks or projects that exist already.

MM/DD/YY 11:30:00		Work with Status Codes			Your Company, Inc. YOURSYS		
2=Change 4=Delete							
						Update	Update
Code	Short Desc.	Long Description	Show	Allow as Reference	Start Date	End Date	
— A	ASSIGNED	Request/Task has been assigned	Y	Y	N	N	
— B	DISTRIB	Task has been distributed	Y	Y	N	N	
— C	CANCEL	Has been canceled	Y	N	N	N	
— D	DONE	The task has been completed	N	N	N	Y	
— F	FINISHED	Task has been completed	N	N	N	Y	
— H	HOLD	On hold. Awaiting instruction	Y	Y	N	N	
— K	DUPLICAT	The task is a duplicate of ano	N	N	N	N	
— M	CONFIRM	Task has been confirmed	Y	N	N	Y	
— N	NEW	A new request.	Y	Y	N	N	
— O	ONGOING	Project/task is on-going	Y	Y	N	N	
— P	IN-PROD	Task has reached production	Y	Y	N	N	
— Q	IN-QA	Task has reached QA	Y	Y	N	N	
— R	REJECTED	Request was not accepted.	N	N	N	N	
— S	STARTED	Project or Task has been start	Y	Y	Y	N	
— V	REVIEWED	Request has been reviewed	Y	Y	N	N	
							More...
F3=Exit F6=Add code F12=Cancel F21=System command							

Show

Determines whether or not tasks with this status will be displayed on panels that you have filtered with a status code value of *LIMIT. Y means that tasks with this status are always shown.

Allow as Reference

Indicates whether any task assigned the related status value can be used as a reference when checking out or promoting objects in TURNOVER® Lifecycle Manager.

Update start date and Update end date

Specify whether to automatically set the task start and end dates when the task status is set to that value.

For example, when you check out an object, the application you are working can be set such that the task status is set to S (Started). The **Update start date** field for S Started is set to Y, so the **Task start date** is set to today's date.

Task types

Task type codes indicate how a task is to be scheduled.

To define task types, use option 2 on the TURNOVER® Lifecycle Manager Project Control Files menu.

MM/DD/YY 11:43:05	Work with Task Types	Your Company Inc. YOURSYS
2=Change 4=Delete		
Type code	Description	
_ A ASAP	As soon as possible	
_ C CNVNENCE	At your convenience	
_ F FIXED	Fixed	
_ L ALAP	As late as possible	
_ M MILESTON	Milestone	
F3=Exit F6=Add task type F12=Cancel F21=System command		Bottom

You can change or add codes to this table, but be aware that future releases of TURNOVER® Lifecycle Manager might lock its use to the values below.

Type code	Description
A ASAP	Schedule As Soon As Possible
L ALAP	Schedule As Late As Possible
M MILESTON	Milestone task: duration must be zero
F FIXED	Fixed date: task must be done on date specified

Timesheet categories

If you use TURNOVER® Lifecycle Manager's on-line timesheet function, you can report your time by category such as "Testing" or "Programming".

To define timesheet categories, use option 3 on the TURNOVER® Lifecycle Manager Project Control Files menu.

MM/DD/YY 11:45:25	Work with Timesheet Categories	Your Company Inc. YOURSYS
2=Change 4=Delete		
Code	Description	
_ A	Administration	
_ C	Consulting	
_ D	Design	
_ M	Marketing	
_ P	Programming	
_ Q	Quality Assurance	
_ R	Problem Resolution	
_ T	Testing	
_ W	Writing User Documentation, Etc.	
		Bottom
F3=Exit F6=Add category F12=Cancel F21=System command		

If you do not need to report specific categories of time, you might delete all of the category codes except one, and use that code when reporting all of your time.

Work with resources

Project resources are usually people who are assigned to perform a task or subtask, for example, a programmer, an analyst, or a technician who installs a computer. A resource can also be another type of resource such as a computer.

To define resources, use option 4 on the TURNOVER® Lifecycle Manager Project Control Files menu.

If you add a user to the resource list, that person will be included on the Maintain Project/Task Authority list. You must have authority to maintain resources to add or change resource information. If you delete a resource, that resource will be removed from all project authority lists but will remain on all tasks to which s/he was previously assigned.

MM/DD/YY 11:47:45	Work with Resources	Your Company, Inc.
2=Change 4=Delete		
	Resource Description	Dept./Category
_	*NONE no resource is assigned	
_	DELANEY Jim Delaney	Training
_	ELSinORE Steve Elsinore	Dev
_	PHILLIPS Ed Phillips	QA
_	PSHIFTY Paul Shifty	QA
_	QSECOFR Security Officer	
F3=Exit F6=Add resource F12=Cancel F21=System command		

To	Do this
add a resource	Press F6, and then enter Resource (usually a user profile), Name , and Department/Category .
change a resource	Type 2 next to it.
delete a resource	Type 4 next to it.

Names on the resource list can be included on the authority list for a project. You can specify which users should have access to specific project or task at that time. Only users authorized to a TURNOVER® Lifecycle Manager project can be authorized to a subordinate task or subtask within the project. (For more information, see *'Authorizing users to TURNOVER® Lifecycle Manager Projects' on page 211.*)

Work with requesters

You can define all of your clients/contacts in the Requester file by using option 5 on the TURNOVER® Lifecycle Manager Project Control Files menu.

You must do this for anyone who will add problems or requests to your Helpdesk projects.

MM/DD/YY 11:49:32
Work with Requesters
Your Company Inc.
YOURSYS

Position to and sort by:
First name Last name
Requester code Company
Apply filters . . Y

1=Add request 2=Change 4=Delete 7=Comments 9=View time 12=Tasks

Requester	First name	Last name	Company	Phone number	Ext.
— ANDERSOALB	Albert	Anderson	Meyers Co	1-804-555-9172	2232
— ANDERSODAV	Dave	Anderson	Warren Distributi	1-402-555-9397	0021
— ANDERSOJOE	Joel	Anderson	Margrove Ind.	1-515-555-8845	
— ANDERSOLIZ	Liza	Anderson	Yorkey Publishing	(603) 555-8111	
— ANGLEMMAR	Margo	Angleman	American Nutritio	1-409-555-6654	
— APPLEWORAY	Ray	Appleworks	The Bowles Group	44-53-555-4661	
— ARCSN KRO	Kronen	Arcson	UCC Industries	1-607-444-2841	0112
— ARCELMALOU	Lou	Arcelman	Cyruss Corp.	1-702-555-3515	
— ARGDENNIL	Niles	Argden	Busch Research	1-314-555-7470	
— ASHERMIK	Michael	Asher	Connector Box Co.	1-404-555-7182	

More...

F3=Exit F6=Add requester F8=User fields F12=Cancel F2=Escalation queue
F10=View 3 F11=View 2 F17=Filters F18=Timesheet F21=System command

If you plan to use the Helpdesk system then, in order to take full advantage of TURNOVER® Lifecycle Manager Project's messaging features, you should take time to complete the User ID and directory address information on the requester panel. Also, you will find that things will work smoothly if you enter all of your users in the Requester file and make their requester code name the same as their user profile.

Requester information might be useful for generating reports using a project Report Mask. For example, you can produce letters to users informing them of the latest status of their requests. For more information, see *'Considerations for using dependent user-defined fields' on page 267.*

To	Do this
enter a new requester	Press F6.
update requester information	Type 2 next to a requester name.
define user-defined requester fields	Press F8. (Changes affect all project system requester records.)
see alternate view panels	Press F10 or F11.
see the filters	Press F17.

User-defined fields

A project can include up to ten user-defined fields. You create the fields by using option 6 on the TURNOVER® Lifecycle Manager Project Control Files menu. The fields can have corresponding lists of possible values, and values for one field can determine the valid choices available for another. Once associated with a project, these fields appear on the task maintenance panels as well as in the Work with Tasks filter field window (press F17 on the Work with Tasks panel).

Once defined here, these fields can be referenced in any project definition (see *'User-defined fields' on page 219*).

MM/DD/YY 11:57:37

Work with User-Defined Fields

Your Company, Inc.
YOURSYS

Primary sort field . 1 1=Field name, 2=Type

Filter by type . . . 1=*CHAR (10), 2=*CHAR(25), 3=*DEC (7,0), 4=*DEC (7,2)

2=Change 4=Delete 6=Work with valid values

Field	Panel description	F4 Pgm	Valid. Pgm	Type
_ NUMERIC	Test numeric field	*NONE	*NONE	*DEC (7,2)
_ SUBSYSTEM	TURNOVER® subsystem	*DEFAULT	*DEFAULT	*CHAR (10)
_ TESTFIELD	Test field	*NONE	*NONE	*DEC (7,0)
_ USERNAME	User Name	*DEFAULT	*NONE	*CHAR (25)
_ USR0000001	Department ID/Location	*NONE	*NONE	*CHAR (25)
_ USR0000002	Product/Version	*NONE	*NONE	*CHAR (25)
_ USR0000003	Module -- AP, AR, GL etc.	*NONE	*NONE	*CHAR (10)
_ USR0000004	Accounting Module	*NONE	*NONE	*CHAR (10)

Bottom

F3=Exit F6=Add field F12=Cancel F21=System command

To add a field, press F6.

The Add Field Definition panel appears.

MM/DD/YY 11:57:37		Work with User-Defined Fields		Your Company Inc. YOURSYS	
.....					
:	Add Field Definition				:
:					:
:	Field name				:
:	Field type	1 = Character length (10)			:
:		2 = Character length (25)			:
:		3 = Decimal length (7,0)			:
:		4 = Decimal length (7,2)			:
:	Panel description				:
:	F4 program	program name, *DEFAULT, *NONE, *CHILD			:
:	Library	library name, *LIBL			:
:	Validation program . . .	program, *DEFAULT,*NONE, parent field			:
:	Library	library name, *LIBL			:
:	F12=Cancel				:
:					:
Bottom					
F3=Exit F6=Add field F12=Cancel F21=System command					

Field name

Must start with a letter. The maximum length is 10 characters.

Field type

Length and content characteristics.

Panel description

The field label that will appear on task panels.

F4 program

Either identifies a program that will prompt users to view and select field values when adding or changing a task, or defines a relationship dependency between this field's values and those of a parent field.

Value	Description
*NONE	F4=List option is not available.
*DEFAULT	Users can define a table of values by pressing F4, and then creating acceptable values for the field.
<i>program name</i>	You provide an exit program for TURNOVER® Lifecycle Manager to call. It must display a list of valid values from which users can select.
	Custom programs specified here run only when processing tasks from the 5250 interface. The TURNOVER® Lifecycle Manager Client cannot call custom programs. For prompting that works in all interfaces, use *DEFAULT.
*CHILD	The Validation program field must identify the parent field on which this field's valid values should depend.

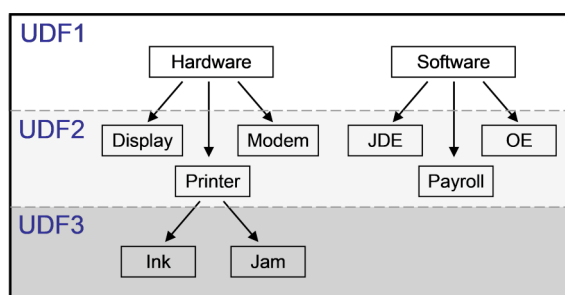
Validation program

Value	Description
*NONE	No validation is performed when entering information in the field.
*DEFAULT	The values are validated against the list of valid values defined for the field.
<i>program name</i>	You provide an exit program that TURNOVER® Lifecycle Manager will call and that must validate a value passed to it, returning a status flag back to TURNOVER® Lifecycle Manager's calling program. Custom programs specified here run only when processing tasks from the 5250 interface. The TURNOVER® Lifecycle Manager Client cannot call custom programs. For field validation that works in all interfaces, use the Task Validation exit point (PROJ 05).
<i>parent field name</i>	The values of the child field depend on the value chosen for the parent field during task maintenance.

Considerations for using dependent user-defined fields

- Only Type 1 and Type 2 fields (*CHAR fields) can be dependent.
- Only Type 1 fields (*CHAR, length 10) can be parent fields.
- Nesting is limited only by the number of fields you can specify for any given project (10), but dependencies themselves can be only one layer deep. In other words, using the diagram below, UDF2 dependencies apply only to UDF1 values, and UDF3 dependencies apply only to UDF2 values. The value chosen for UDF1 has no effect on the valid values for UDF3.
- Custom programs for prompting and validation are not supported when you are using field dependencies.
- TURNOVER® Lifecycle Manager does not try to make sure that you have added all related fields to your project.

Example of dependent user-defined fields



For instance, suppose you have a help desk project for end users to enter problems.

- UDF1 might be called TYPE of ISSUE with valid values of hardware or software.

- UDF2 might be called CATEGORY and have valid values defined that depend on UDF1.
- UDF3 might be called PROBLEM and have valid values defined that depend on UDF2.

Entry masks

Think of entry masks as templates that you can use in your projects to gather task detail information. You can assign entry masks to one or more of your projects.

Entry masks can contain text and variables that create a “form-like” appearance on the panel, letting you standardize the way users report descriptive details about requests and problems.

To create entry masks, use option 7 on the TURNOVER® Lifecycle Manager Project Control Files menu.

MM/DD/YY 12:05:10	Maintain Valid Project Masks	Your Company, Inc.
Add Mask Name		
Description		
2=Change mask details	4=Delete	
Mask	Mask	
Name	Description	
— CHANGEREQ	Program Change Requests	
— CMPR	CENTRAL® Menu Problem Rprt	
— HARDWARE	Hardware Problems	
— MASK	Standard Mask	
— PR	Standard Problem Report	
— SOFTWARE	Software Problems	
— TOPR	TURNOVER® Lifecycle Manager Prob. Rpt	
F3=Exit F12=Cancel		

To	Do this
add a mask	Fill out the name and description at the top of the panel, and then press Enter.
change a mask	Type 2 next to the mask, and then press Enter.
delete a mask	Type 4 next to the mask, and then press Enter.

Before creating an entry mask, try to anticipate all of the information that you might want to gather. Then create a form-like mask that “prompts” for the information you need.

When the task details from an entry mask are printed using a report mask, it operates like a mail merge for one task or request; everything (including the mask) is printed. The text prints starting with column one, so if you want a left margin, you’ll have to leave spaces for a margin.

If you are going to be print the task details using a report mask, do not put headings such as “Problem Report” on the entry masks. Put these on the report mask: otherwise when you print it out, you will have two headings in two places.

Example mask

This is an example of a mask you could use for problem reports:

MM/DD/YY 12:08:26	Project Mask Mask Name: PROBRPTS	Your Company, Inc. YOURSYS
----------------------	--	-------------------------------

Describe the problem below:

Resolution: (To be filled out by the programmer)

***** END OF DOCUMENT *****

F3=Exit and update F4=Delete line F6=Insert Lines
 F12=Discard Changes and Exit

Report masks

Report masks are similar to entry masks in that they collect and standardize information. However, in report masks you can use substitution variables that pull information from various project files, as well as including the descriptive information a user provided in the task entry mask.

To create report masks, use option 8 on the TURNOVER® Lifecycle Manager Project Control Files menu.

MM/DD/YY 12:11:18	Maintain Project Report Masks	Your Company, Inc.
----------------------	-------------------------------	--------------------

Add Mask Name _____
 Description _____
 Output queue _____ *CURRENT, Name
 Library _____ *LIBL, Name

2=Change mask details 4=Delete

Mask	Mask	Output	Outq
Name	Description	Queue	Library
CMR	CENTRAL® Menu Prob. Rpt	*CURRENT	*LIBL
CMR-FAX	CENTRAL® Menu Fax Form	FAXOQ	QGPL
FAX	Fax Form Mask	FAXOQ	QGPL
PR	Problem Report	QPRINT	QGPL
PR-FAX	Problem Report Fax Form	FAXOQ	QGPL
TOPR	TURNOVER® Lifecycle Manager Prob. Rpt	*CURRENT	*LIBL
TOPR-FAX	TURNOVER® Lifecycle Manager Fax Form	FAXOQ	QGPL

F3=Exit F12=Cancel

To	Do this
add a mask	Fill out the name, description, output queue and library at the top of the panel, and then press Enter.
change a mask	Type 2 next to the mask, and then press Enter.

Using substitution variables

You can use the substitution variables to merge information relating to the task you are working on from the project, task and requester files. This might include dates, durations, names, phone numbers, fax numbers, and so on.

Press F9, and then select the substitution variables.

The variables must be preceded with `.&`. For example, to print the text details, use `.&DTLS`.

Example report mask

MM/DD/YY 12:24:00	Report Mask Mask Name: PROBRPT	Your Company, Inc. YOURSYS
----------------------	--	-------------------------------

P R O B L E M R E P O R T

Requested by: `.&USR3`
 Company: `.&USR4`

Entered by: `.&FNME.&LNME`
 Date entered: `.&USR2`

Assigned to: `.&PROJ.&TASK.&SUBT` Resource: `.&RSRN` Status: `.&STSD`

	Planned	Actual
Start Date:	<code>.&SDTP</code>	<code>.&SDTA</code>
End Date:	<code>.&EDTP</code>	<code>.&EDTA</code>
Duration:	<code>.&DURP</code>	<code>.&DURA</code>

`.&DTLS`

***** END OF DOCUMENT *****

F3=Exit and update F4=Delete line F6=Insert Lines F9=Substitution parms
 F12=Discard Changes and Exit

Work with project messages

You can set up a helpdesk or working project to send messages whenever requests or problems are added to the project, or when a problem or task is escalated according to the rules defined in the project's escalation table.

Escalation processing is determined by the priority and status entered for a task. (See [Task escalation processing' on page 250.](#))

To define project messages, use option 9 on the TURNOVER® Lifecycle Manager Project Control Files menu.

MM/DD/YY 12:26:45	Work with Project Messages	Your Company, Inc.
1=Select 2=Change message 4=Delete message		
MSGID	Message text	
— ABC0001	Hey &RS. Deal with this problem (&PJ &TK &SK) now!	
— ABC0002	A priority &PY change request, &2, has been entered.	
— ABC0004	A priority &PY hardware problem, &2, requires your immediate atten+	
— ABC0005	A priority &PY hardware problem, &2,has been entered please look +	
— ABC0007	A priority &PY hardware problem, &2, has been entered.	
— ABC0010	A priority &PY software problem requires your immediate attention.	
— ABC0101	A priority &PY problem has been entered. Please review ASAP!	
— ABC0111	Task &PJ &TK &SK has been completed by &RS with aplomb!	
— ABC9999	No entry found in message table for task &PJ &TK &SK.	
F3=Exit F6=Add message F12=Cancel		

This message file contains messages by project and priority to be sent to the project coordinator when a task is entered, or to others during escalation processing.

You can also refer to and use messages when setting up the project's escalation rules. For more information, see *'Specifying escalation rules' on page 253*.

To add a message

Press F6.

The Add a Message panel appears.

MM/DD/YY 12:32:30	Add a Message	Your Company, Inc.
Message ID <u>ABC0001</u>		
Message text <u>Hey &RS. Deal with this problem (&PJ &TK &SK) now!</u>		
Substitution parameters:		
&PJ = Project	&U1 = User field 1	
&TK = Task	&U2 = User field 2	
&SK = Subtask	&U3 = User field 3	
&RS = Resource	&U4 = User field 4	
&RQ = Requester	&U5 = User field 5	
&PY = Priority	&U6 = User field 6	
&ST = Status	&U7 = User field 7	
&RF = Project/Task/Subtask (Reference)	&U8 = User field 8	
&DN = Date needed	&U9 = User field 9	
&DP = Date promised	&U0 = User field 10	
F3=Exit F12=Cancel F21=System command		

You can include any of the substitution parameters shown in the message text, as shown in the example.

Escalation tables

'Task escalation processing' on page 250 describes how to set up a project so that a task is automatically escalated whenever a request or problem has not been resolved within a designated period of time. Escalation processing is triggered by the priority and status of the problem or task. The rules that govern escalation processing are stored in escalation tables.

To create escalation tables, use option 10 on the TURNOVER® Lifecycle Manager Project Control Files menu.

MM/DD/YY 12:32:27 **Work with Escalation Tables** Your Company, Inc.
YOURSYS

2=Change 3=Copy 4=Delete 6=Print 12=Work with

Table	Description
_ FTPR	Queue created for project: FTPR
_ HELPDESK	Escalation Table for Helpdesk Projects
_ SLS	SoftLanding Internal Escalation Table
_ TEST	Escalation Table for Testing
_ WORKING	Escalation Table for Working Projects

Bottom

F3=Exit F6=Add escalation table F12=Cancel F21=System command

Escalation tables can be defined globally using this panel, and then applied to one or more projects. For example, you might have two escalation tables defined, one to be used for Helpdesk project, the other for Working projects. If you used task status and priorities consistently for all of your projects, two definitions would work best.

To	Do this
change the title of a table	Use option 2.
change the rules in a table	Use option 12.

MM/DD/YY 12:35:15		Work with Escalation Table					Your Company, Inc. YOURSYS					
Table: HELPDESK			Description: Escalation Table for Helpdesk Projects									
2=Change		3=Copy	4=Delete	6=Command		7=Messages						
								----- ACTIONS -----				
		Aging	Alarm	Repeat		Escalation	Esc	Esc				
Pty	Status	Rpt	Interval	Alarm	Interval	Pty	Status	Msg	Cmd			
—	A ASSIGNED	N		N				Y	N			
—	1 N NEW	N	48 Hrs	N	7 Days	1	U URGENT	Y	N			
—	2 N NEW	Y	24 Hrs	Y	48 Hrs	2	U URGENT	Y	N			
—	3 N NEW	Y	2 Hrs	Y	4 Hrs	4	N NEW	Y	N			
—	4 N NEW	Y	4 Hrs	Y				Y	N			
—	R REJECTED	N		N				Y	N			
—	1 U URGENT	N	24 Hrs	Y				Y	N			
—	2 U URGENT	Y	4 Hrs	Y				Y	N			
—	1 V REVIEWED	N	7 Days	Y				Y	N			
—	2 V REVIEWED	Y	2 Days	Y				Y	N			
—	3 V REVIEWED	Y	1 Days	Y				Y	N			
—	4 V REVIEWED	Y	4 Hrs	Y				Y	N			
												Bottom
F2=Print listing		F3=Exit	F6=Add table entry		F12=Cancel		F21=System command					

To	Do this
add an entry	Press F6.
copy an entry	Use option 3.
define a command to run when the escalation Alarm [time] interval has passed	Use option 6. See <i>'To work with commands that associate actions with task status' on page 273</i>

Actions can be defined to change (escalate), the task by changing the **Task status** or **Priority**, send messages to one or more individuals or groups and/or run a command.

For information how the escalation table works, see *'Task escalation processing'* on page 250.

To work with commands that associate actions with task status

- 1 Select a table entry with option 6.

```
MM/DD/YY 12:38:10      Work with Escalation Commands      Your Company, Inc.
                                                                YOURSYS

      Table: HELPDESK      Description: Escalation Table for Helpdesk Projects
Priority: 1
      Status: N NEW

2=Change  4=Delete
          Cmd  Act
      Seq  Env  Code  Command to execute
      10   I    N    TPRTTSK TASK("&RF") MASK(*SELECT) FAX(*YES)

                                                                Bottom

F3=Exit  F6=Add message  F12=Cancel  F21=System command
```

2 Press F6 to add a command.

MM/DD/YY 12:40:12	Add Escalation Command	Your Company, Inc.
Sequence <u>20</u>		
Restrict command to escalation action: <u>N</u> N=New, A=Alarm, E=Escalation		
Restrict command to execution environment: <u>I</u> I=Interactive, B=Batch, A=All		
Command to execute: <u>TPRTTSK TASK("&RF") MASK(*SELECT) FAX(*YES)</u>		
F4=Prompt command		
Substitution parameters:		
"&RF" = Project/Task/Sub (Reference) "&PJ" = Project "&TK" = Task "&SK" = Subtask "&DS" = Description "&PT" = Priority "&RS" = Resource "&RQ" = Requester "&Un" = User field 1-10 n=1-0		
F3=Exit F4=Prompt command F12=Cancel F21=System command		

Commands can include any of the substitution parameters listed on the Add and Change panels.

Press F4 to prompt the command.

Restrict command to escalation action

Specify the action for which the command should run.

Action	Description
N New	The command runs only when a task that matches the Task status and Priority defined for the associated escalation table entry is added to the project.
A Alarm	The command runs when a task has been on the escalation queue beyond the Alarm interval .
E Escalate	The command runs when a task has been on the escalation queue beyond the Escalation interval .

Restrict command to execution environment

Controls whether the command can be run only in batch, only interactively or both.

For example, if the escalation-processing program that runs in batch was processing an escalation queue entry, it bypasses any command that was set to I (interactive only). However, if the command were being run when the task was being interactively added to the project, then the command would run. In the example above, the `TPRTTSK` command is a TURNOVER® Lifecycle Manager Projects command that prompts the user to select a task report format from a list of predefined report masks.

The TUPDHLPTSK command is another command that you typically use in an escalation table. This command updates the helpdesk tasks that are associated with a working task: you can synchronize the information for a helpdesk task with the values of its associated working task. For example, when the status of the working task changes to ASSIGNED or DONE, TURNOVER® Lifecycle Manager updates the basic Helpdesk task information so it matches the Working task information. You can optionally also update the task details.

When using this command in an escalation table, use the &RF substitution parameter to specify the working task. The entry for this command looks like this:

MM/DD/YY 12:46:38	Add Escalation Command	Your Company, Inc.
Sequence 20		
Restrict command to escalation action: N N=New, A=Alarm, E=Escalation		
Restrict command to execution environment: I I=Interactive, B=Batch, A=All		
Command to execute: TUPDHLPTSK WORKTASK("&RF") HELPTASK(*ALL) DETAILS(*YES) PRCESC(*YES)		
F4=Prompt command		
Substitution parameters:		
"&RF" = Project/Task/Sub (Reference)		
"&PJ" = Project		
"&TK" = Task		
"&SK" = Subtask		
"&DS" = Description		
"&PT" = Priority		
"&RS" = Resource		
"&RQ" = Requester		
"&Un" = User field 1-10 n=1-0		
F3=Exit F4=Prompt command F12=Cancel F21=System command		

Escalation messages

One Action that can occur when a task is added to a project, or when the **Alarm** or **Escalation interval** has passed is to send a message to one or more users or groups. You accomplish this by associating messages you have defined in the Project Message Control File with specific escalation table entries.

To do this, select an escalation table entry (see *'Escalation tables' on page 272*) with option 7, and then press Enter.

The Work with Escalation Messages panel appears.

```

MM/DD/YY 12:48:35      Work with Escalation Messages      Your Company, Inc.
                                YOURSYS

      Table: HELPDESK      Description: Escalation table for Helpdesk Projects
Priority:
      Status: A ASSIGNED

2=Change  3=Copy  4=Delete
          USRPRF      User-ID/Address  Act.
Seq  MSGID  or Method  or E-mail Address  Code Message text
-----
  10  PRJ0001  *MAPI      Marylyn Schoop      A   Task &RF has been entered,
  20  PRJ0002  PSCHMIDT      Pablo Schmidt      A   Task &RF has been entered,

Bottom

F3=Exit  F6=Add message  F12=Cancel  F21=System command

```

In this example, two different alarm messages will be sent when the **Alarm interval** has passed. You can also have messages sent as soon as the task is added to the project or later, after the **Escalation interval** has passed.

To add a message entry, press F6.

Each message has specific delivery options that identify the recipient.

```

MM/DD/YY 12:49:55      Change Message Entry      Your Company, Inc.

Message ID  . . . . . PRJ0001
Sequence    . . . . . 20
Message text . . . . .

----- Message Delivery Options -----
Delivery method . . . . . *STD      *STD, *MAPI

User profile  . . . . .      name, *RSRC, *RQST, *COORD, *ENTERED

User ID      . . . . .      name, *RSRC, *RQST, *COORD, *ENTERED
Address      . . . . .

Action code  . . . . . N      N=New
                                A=Alarm
                                E=Escalation

F3=Exit  F4=List  F12=Cancel

```

To see a list of messages, press F4.

Delivery method

Value	Description
*STD	Standard – uses standard IBM i messaging commands.
*MAPI	Stores the message in an IBM i data queue for retrieval by a LAN-based PC email system.

The remaining fields on the panel vary according to which method you choose. When you press Enter after typing a method, fields appear that apply to the method you chose. For more information, see the online Help.

User profile and User ID

Rather than type a specific user profile name in the **User profile** and **User ID** fields, use one of these variables:

Variable	Description
*RSRC	Task resource
*RQST	Task requester
*COORD	The project coordinator or administrator

Action code

Controls when the message should be delivered.

Value	Description
N	When the task is added to the project
A	When the Alarm interval has passed
E	When the Escalation interval has passed

If the same person is to be notified at more than one of these events, you need more than one message entry.

Using *MASKNAME messages

You can define *MAPI escalation messages to use a report mask for determining their message content. This enables you to include the task details in your message, as well as any other task, requester, resource, or utility information.

For example, if you want the notification message you receive when a programming task is entered to contain the task details of the new task, do this:

- 1 Create or copy a report mask, giving it a name like PRGNEW, which contains information such as the task reference number and task details.
- 2 Create a new message in the escalation message file that uses the new report mask as its message text.

For example, you could create a message PRG0001 and give it a message text of *PRGNEW. By doing this, you refer to the new report mask described in the previous step.

- 3 Add the new message to the appropriate escalation table entry for your project.

You could add the PRG0001 message to an escalation table entry called PRGTABLE that controls what happens when a programming task has an A (Assigned) status. Specify *MAPI for the delivery method, press Enter, and then use the *RSRC variable for the email address.

The result of this escalation table entry is that, when you assign a new programming task to a resource, TURNOVER® Lifecycle Manager sends an email message to the resource. The message contains the task details that the resource needs to begin the task.

Reason codes

When you are working with related applications, you have to resolve development conflicts that occur when changes are being made to the same object in multiple versions of your software.

To resolve conflicts, use reason codes that explain how you resolved a conflict between the versions of a program in related applications.

To maintain reason codes

On the TURNOVER® Lifecycle Manager Project Control Files menu, select option 11.

The Work with Reason Codes panel appears.

MM/DD/YY 12:53:28

Work with Reason Codes

Your Company, Inc.
YOURSYS

2=Change 4=Delete

Reas

Code	Description
_ LT	Do later
_ OB	Obsolete code
_ OK	Normal resolution

F3=Exit F6=Add code F12=Cancel F21=System command

Bottom

All reason codes are valid for all projects and applications.

To	Do this
add a reason code	Press F6.
change a reason code	Select the code with option 2.
delete a reason code	Select the code with option 4.

Recording time on a timesheet

You can record the time you have spent in any project task on a timesheet. You can even define an administrative project, including tasks such as vacation, sick time, time spent in seminars, meetings, and so on, to track this time as well.

To record time on a timesheet

Do one of the following:

- On the Work with Projects or Work with Tasks panel, press F18.
- On the command line, type `TIMESHEET`.

The Work with Time Sheets panel appears.

MM/DD/YY 12:55:45		Work with Time Sheets				Your Company, Inc YOURSYS	
Resource . . . PShultz		Phil Shultz					
Date 9/08/19		Friday September 8, 2006					
1=Add Time Entry 2=Change Time Entry 4=Delete Time Entry							
		Sub	Cat.	-----Time-----			
Project	Task	Task	Code	From	-	To	Total
-----	-----	-----	-----	-----	-----	-----	-----
TE31	0001	01	P	08:00-		12:00	4:00
TE31	0001	02	P	12:00-		13:00	1:00
TE31	0001	03	P	13:00-		15:00	2:00
TE31	0001	03	R	15:00-		17:00	2:00
							Bottom
Total time for day 9:00							
F3=Exit F4=List F6=Add time entry F12=Cancel F17=Previous day F18=Next day							

You must enter either the **From** and **To** times, or the **Total** time.

To	Do this
add an entry	Either: ▪ Type 1, and then type the information for the underlined fields ▪ Press F6 to use the Add Time Sheet Entry window.
change an entry	Select the entry with option 2.
display a list of project tasks (on the Project , Task , or Subtask field)	Press F4.
display a list of category codes (on the Cat. Code field)	Press F4.

Viewing time reporting for projects and tasks

You can view and report time in a number of ways. You can see time reported against any project, task or subtask from Work with Projects by selecting the project or task entry with option 9.

MM/DD/YY		Daily Time Sheet Lookup				Your Company Inc.	
12:59:09							
Project TP31 TURNOVER® Program Fixes to Release							
Task							
Subtask							
Filter by Date: 00:00:00		Resource : _____		Cat: _		F4=List	
Task/ Subtask Date Comment	-----Time-----						
	Resource	From	-	To	Total	Cat	
3/30/19	EDELLIS12:00	14:00		2:00	T	Test	
0032 4/13/19	PSCMIDT8: 00	10:00		2:00	A		
0105 2/11/19	SUEMRKS	3:00		PChanged	USRT00L	Pgms	
0105 2/11/19	SUEMRKS	30		P			
0105 2/12/19	SUEMRKS	40		TTesting			
0105 2/12/19	SUEMRKS10:10	10:20		10	T	Testing	
0105 2/12/19	SUEMRKS12:00	13:00		1:00	P	Testing DDS	
0129 3/15/19	SUEMRKS	30	P			Chg'd TURRFAPS	
Total time	10:55						
F3=Exit	F4=List	F12=Cancel					

Time can be reported by project on the Project Timesheet Report and by resource on the Project Resource Time Report.

If you have included Rate in your Programmer Profile records (see *'Setting up programmer profiles' on page 48*), you can see projected and reported costs in the Project Cost Report.

Programmer Worklist Manager (PWM)

The Programmer's Worklist Manager is TURNOVER® Lifecycle Manager's most efficient 5250 development path. From the PWM panel, you can:

- check out objects, and identify (reserve) new object names
- work with cross-reference information and related application objects
- edit source code, and then compile and test objects
- compare source and merge source
- promote source and objects
- review object and project history.

When you fulfill a request or fix a problem, you must decide:

- which objects to change
- which ones to recompile

- what new objects you will need
- the code changes you must make. TURNOVER® Lifecycle Manager can help you build a list of objects and source members to change, and make sure that your list is complete.
- the impact of your changes on related objects.

During the analysis process, you may find that some of the objects you need are checked out to someone else; this means you may have to coordinate your changes with another programmer or wait until that person finishes. If you are using the multiple checkout feature, you might be able to check out an object while someone else is working on it; but you still need to coordinate with that other person to decide who will merge your changes.

Getting started with PWM

To build a working list of objects, do one of the following:

- On the Work with Tasks panel, select option 20.
- On the command line, type STRPWM.

To go to a specific worklist, type STRPWM LIST *name*.

To go the most recent worklist that you worked on, type STRPWM LIST *name* *PRV.

The Work with Programmer Worklists panel appears.

MM/DD/YY 14:10:29		Work with Programmer Worklists		Your Company, Inc.	
Position to Worklist					
Filter by Programmer		PSCHMIDT		Filter by Task status	
Filter by Appl rel ver					
1=Select 2=Change 3=Copy 4=Delete 5=Display task 6=Work with forms					
7=Print 8=Clear Worklist Filters 9=Reassign Worklist					
Worklist	Description	Status	App Rel Ver	Programmer	
APR0031	Vendor master file change	Done	AP	PSCHMIDT	
TOPR0542	Batch related application chg	Started	TO40	PSCHMIDT	
TOPR0547	User options on exit panel	Started	TO32	PSCHMIDT	
F3=Exit F4=List F5=Refresh F6=Add F7=Previous Worklists F24=More keys					

To select a worklist, type 1, and then press Enter.

To display the most recent worklists that you worked on, press F7.

Working with the Programmer Worklist

```
MM/DD/YY 14:10:29      Work with Programmer Worklist      Your Company, Inc.

Worklist. . . . . APPR0003      Chg credit-term verify program
Position to . . . . .          Apply filters . . . . . Y (F17=Filters)
Appl/Rel/Ver . . . APPR 0 0  Programmer . . . . . SMITHJ (F4 to change)
 2=Change 3=Copy 4=Delete 11=Move 12=Compare source 99=Next option
21=Checkout 22=Change checkout 24=Checkin 25=Task details 26=Conflicts

      Object          Chk
Object  Attr  Library  Obj Src Out  Form  FormSts  ItemSts  Opt
---  ---  ---  ---  ---  ---  ---  ---  ---  ---
APCLP001 CLP  PRODTEST  N  N  Y          0100212 RAN-OK  NEW      46
APCLP001 CLP  ACPTTEST  Y  Y  N          0100212 RAN-OK  NEW
APCLP001 CLP  DEVTEST   N  N  N          0100212 RAN-OK  NEW
APDSPF01 DSPF  PRODTEST  Y  Y  Y+         0100212 RAN-OK  NEW      46
APDSPF01 DSPF  ACPTTEST  Y  Y  N          0100212 RAN-OK  NEW
APDSPF01 DSPF  DEVTEST   N  N  N          0100212 RAN-OK  NEW
APRPG001 RPG  PRODTEST  N  N  Y          0100212 RAN-OK  NEW      46
APRPG001 RPG  ACPTTEST  Y  Y  N          0100212 RAN-OK  NEW
APRPG001 RPG  DEVTEST   N  N  N          0100212 RAN-OK  NEW
APRPG002 RPG  PRODTEST  Y  Y  Y          0100212 RAN-OK  NEW      46
More...

Parameters or command
====>
F2=Forms F3=Exit F4=Prompt F5=Refresh F6=Add item F9=Retrieve
F10=Command entry F11=View2 F19=Batch 21/46 F23=More options F24=More keys
```

When you first create a new worklist, the subfile is blank.

+ (plus sign) after the checkout flag indicates that the item is checked out to more than one user.

The key to using the worklist panel effectively is to use the filter fields; you'll find the next option, level (*DEV, *PROD, or the target application level code) and item status filters especially useful.

To set filters or change subfile sequence, press F17.

The Filters panel appears.

```
MM/DD/YY 14:10:29      Work with Programmer Worklist      Your Company, Inc.
:
:
:   Type filter value and Press Enter.
:
:
: Next option . . . . . F4=List
: Library . . . . . Library name, generic*
: Level . . . . . number, *DEV, *PROD
: Appl rel ver . . . . . F4=List
: Programmer . . . . . F4=List
: Item status . . . . .
: Object type . . . . .
: TurnOver Type. . . . . F4=list
: Checked out . . . . . Y, N, blank
:
:   F3=Exit F4=List F12=Cancel
:
:
:
:
Parameters or command
====>
F2=Forms F3=Exit F4=Prompt F5=Refresh F6=Add item F9=Retrieve
F10=Command entry F11=View2 F19=Batch 21/46 F23=More options F24=More keys
```

Setting default values or the programmer worklist

To view and set other session preferences, press F18.

The Change Session Defaults panel appears.

MM/DD/YY 14:10:29	Work with Programmer Worklist	Your Company, Inc.
.....		
:	Change Session Defaults	:
:		:
:	Save session defaults <u>Y</u>	Y, N
:	Default option 21/46 mode <u>*INTER</u>	*BATCH, *INTER
:	Edit/compile authority <u>*DEVELOP</u>	*SYSAUTH, *DEVELOP, *CHECKOUT
:		:
:	Test object creation parameters	:
:	Link option 36 compiles <u>Y</u>	Y, N
:	Job description <u>*USRPRF</u>	*USRPRF, name
:	Library _____	Library name
:	Job queue <u>*JOBDB</u>	*JOBDB, name
:	Library _____	Library name
:	Output queue <u>*JOBDB</u>	*PGMR, *JOBDB, name
:	Library _____	Library name
:	Library list <u>*APP</u>	*APP, *CURRENT
:	Replace object <u>N</u>	Y, N
:		More...
:	F3=Exit F12=Cancel	:
:		:
:		:
:.....		

Page down to see more default values.

You can specify how your test objects are to be created, including whether or not you want to use the application library list, what job description to use, where it should be submitted, and where the compile output should be placed.

These session defaults are saved for each user. When you create a new worklist, the last settings are applied to the new worklist.

List sequence

Controls the order of items in the worklist.

Value	Description
*LIBRARY	Sort by library, object, and type.
*OBJECT	Sort by object, type, and level.
*CRTSEQ	Sort by create sequence, object, type, and level.
*TYPE	Sort by type, object, library, and level.

View 2

Press F11 to see the next view.

MM/DD/YY 14:20:00 **Work with Programmer Worklist** Your Company, Inc.

Worklist APPR0003 **Chg credit-term verify program**
 Position to Apply filters Y (F17=Filters)
 Appl/Rel/Ver . . APPR 0 0 Programmer SMITHJ (F4 to change)
 2=Change 3=Copy 4=Delete 11=Move 12=Compare source
 21=Checkout 22=Change checkout 24=Checkin 25=Task details

Object	Attr	Library	File	Programmer	Appl	Rl	Vr	Lv	Xrf	Rel
APPR004	RPG	ACPTTEST	QRPGSRC		APPR			01	Y	
APCLP001	CLP	PRODTEST	QCLSRC	PSCHMIDT +	APPR			02	Y	N
APCLP001	CLP	ACPTTEST	QCLSRC	PSCHMIDT	APPR			01	N	N
APCLP001	CLP	DEVTEST	QCLSRC		APPR					
APDSPF01	DSPF	PRODTEST	QDDSSRC	PSCHMIDT	APPR			02	Y	N
APDSPF01	DSPF	ACPTTEST	QDDSSRC		APPR			01	N	N
APDSPF01	DSPF	DEVTEST	QDDSSRC		APPR					
APRPG001	RPG	PRODTEST	QRPGSRC	PSCHMIDT	APPR			02	N	N
APRPG001	RPG	ACPTTEST	QRPGSRC		APPR			01	N	N
APRPG001	RPG	DEVTEST	QRPGSRC		APPR					

More...

Parameters or command
 ===> _____

F2=Forms F3=Exit F4=Prompt F5=Refresh F6=Add item F9=Retrieve
 F10=Command entry **F11=View3** F19=Batch 21/46 F23=More options F24=More keys

Chk Xrf and **Chk Rel** indicate whether you have checked the cross-reference file for dependent objects and whether you have checked for related objects in related applications, respectively.

View 3

Press F11 to see the next view.

MM/DD/YY 14:20:00 **Work with Programmer Worklist** Your Company, Inc.

Worklist APPR0003 **Chg credit-term verify program**
 Position to Apply filters Y (F17=Filters)
 Appl/Rel/Ver . . APPR 0 0 Programmer SMITHJ (F4 to change)
 2=Change 3=Copy 4=Delete 11=Move 12=Compare source
 21=Checkout 22=Change checkout 24=Checkin 25=Task details

Object	Attr	Description	Programmer	ProjRef
APCLP001	CLP	Test item 1 desc	PSCHMIDT	APPR0212
APCLP001	CLP	Test item 1 desc	PSCHMIDT	APPR0212
APCLP001	CLP	Test item 1 desc	PSCHMIDT	APPR0212
APDSPF01	DSPF	Test display file desc	PSCHMIDT	APPR0212
APDSPF01	DSPF	Test display file desc	PSCHMIDT	APPR0212
APDSPF01	DSPF	Test display file desc	PSCHMIDT	APPR0212
APRPG001	RPG	Test RPG program desc	PSCHMIDT	APPR0212
APRPG001	RPG	Test RPG program desc	PSCHMIDT	APPR0212
APRPG001	RPG	Test RPG program desc	PSCHMIDT	APPR0212

More...

Parameters or command
 ===> _____

F2=Forms F3=Exit F4=Prompt F5=Refresh F6=Add item F9=Retrieve
 F10=Command entry **F11=View1** F19=Batch 21/46 F23=More options F24=More keys

By showing all objects at each level, you can see the progress of your work from development through to production. You can tell exactly where your objects are, no matter how many levels you use for your application.

Referring to the PWM panel, you can press F6 to add additional items to your worklist; or you can select other options to scan and select items to include on your worklist. For information about setting up user-defined options to use in PDM, or other documentation or cross-reference tools, see the *TURNOVER® Lifecycle Manager Developer's Guide*.

For example, you can press F20 to start PDM. Then, in PDM you can use option **AW** (Add to Worklist; as defined in TURNOVER® Lifecycle Manager's user option file `SOFTTURND/QAUOOPT`) to add items to your list. As you browse objects and source files, you can continue to add items to the list by selecting them with the 'AW' PDM option. As with PDM, you can also do the same with TURNOVER® Lifecycle Manager's view cross-reference, with Pathfinder and with Abstract/Probe+.

When you return to PWM, each of the items you selected will appear. You can continue to build your list by pressing F6=Add to add new objects (those you intend to create) or by removing others after you analyze them further.

For example, you may have included all items that referred to the Vendor file. Then, after analyzing the programs, you may have removed from the list those that did not refer to the vendor payment terms field.

Incidentally, notice that the PWM panel tells you if the object and source actually exist in any of the libraries associated with the application with which you are working.

As the sample shows, the PWM panel lets you position, filter by, and perform many development and change management functions.

Comparing source in PWM

To compare source, use option 12 next to a worklist item.

The Compare Source Members panel appears.

MM/DD/YY 14:25:15	Compare Source Members		Your Company, Inc. YOURSYS
Compare: Member APCLP001 File QCLSRC Library PRODTST			
1=Compare interactive 2=Compare in batch			
Member	File	Library	
—	—	—	
— APCLP001	QCLSRC	DEVTEST	
F3=Exit F4=Prompt F5=Archived members F10=Maintain source compare command F12=Cancel F14=WRKSBMJOB F18=WRKSPLF F21=System command			

You can select one of the items on the list or type in another member and its file and library names.

For more information, press F1.

Checking for cross-reference information

You can find out where an object is used. For example, you can see which programs use a particular file; which modules are included in a particular program; which programs are called by or call other programs.

To check for cross-reference information

For example, you are adding a field to files APPF001 and APLF001A and changing program APRPG01. You have added those objects to your Programmer Worklist, as shown:

MM/DD/YY 14:28:35	Work with Programmer Worklist	Your Company, Inc.
Worklist APPR0003 Chg credit-term verify program		
Position to (Object) Apply filters . . . Y (F17=Filters)		
Appl/Rel/Ver . . APPR 0 0 Programmer SMITHJ (F4 to change)		
15=Check X-Ref 16=Related objects 18=Object history 38=Pre/post-Cmds		
32=Edit source 35=Browse source 36=Compile 37=SDA/RLU 39=Debug		
	Object	Attr Library Obj Src Out Form FormSts ItemSts Nxt
15	APLF001A	LF PRODTEST Y Y Y NEW
—	APLF001A	LF ACPTTEST N N N NEW 46
—	APLF001A	LF DEVTEST Y Y N NEW
15	APPF001	PF PRODTEST Y Y Y NEW
—	APPF001	PF ACPTTEST N N N NEW 46
—	APPF001	PF DEVTEST Y Y N NEW
15	APRPG01	RPG PRODTEST Y Y Y NEW
—	APRPG01	RPG ACPTTEST N N N NEW 46
—	APRPG01	RPG DEVTEST Y Y N NEW
Bottom		
Parameters or command		
====>		
F2=Forms F3=Exit F4=Prompt F5=Refresh F6=Add item F9=Retrieve		
F10=Command entry F11=View2 F19=Inter. 21/46 F23=More options F24=More keys		

Type 15 next to the items you want to check, and then press Enter.

The Work with Cross-Reference panel appears. It displays all of the objects related each of the items you selected.

MM/DD/YY 14:31:26	Work with Cross-Reference	Your Company, Inc.
		X-Ref Depth= 01
Worklist APPR0003 Chg credit-term verify program		
Data set ACCTGSYS Apply filters . . . Y (F17=Filters)		
1=Add to Worklist 2=Add to Worklist/Checkout 4=Compile in Development library		
5=View checkout 6=Work with relationships 8=Browse member		
----- Uses/Used-by ----->		
Object	Library	Attr Object Library Attr How Used Out U/B
—	APLF001A	APRODLIB4D LF APRPG965 APRODLIB4 RPG Input N B
—	APLF001A	APRODLIB4D LF APRPG977 APRODLIB4 RPG Input N B
—	APLF001A	APRODLIB4D LF APRPG980 APRODLIB4 RPG Input N B
—	APLF001A	APRODLIB4D LF APRPG982 APRODLIB4 RPG Input N B
—	APLF001A	APRODLIB4D LF APRPG983 APRODLIB4 RPG Input N B
—	APLF001A	APRODLIB4D LF APRPG993 APRODLIB4 RPG Input N B
—	APPF001	APRODLIB4D PF APLF001A APRODLIB4 LF Input N B
—	APPF001	APRODLIB4D PF APRPG993 APRODLIB4 RPG Input N B
—	APPF001	APRODLIB4D PF APRPG993 APRODLIB4 RPG Update N B
—	APRPG991	APRODLIB4D RPG APRPG001 APRODLIB4 RPG Input N U
—	APRPG991	APRODLIB4D RPG APRPG005 APRODLIB4 RPG input N U
More...		
F3=Exit F4=Prompt F5=Refresh F10=Data set information F12=Cancel		
F17=Filters F19=Submit 1/2 F21=Command line F22=Print		

In this example:

- The logical file (LF in the first Attr column) is used by six programs.
- The physical file (PF) is used by the logical file (LF in the second Attr column) and two programs (RPG in the second Attr column).
- The program calls three programs.

To	Do this
add objects to your worklist	Type 1 next to each one, and then press Enter.
add object to the worklist, and check them out	Use option 2.
to compile related objects (that is, objects that you do not need to change but need to test)	Use option 4. The objects are created in the development library identified for that application's first level. If *PGMR is specified, then into your own development library.

Options 1 and 2 can be submitted to batch by pressing F19. Option 4 is always submitted. You can prompt options 1, 2, and 4 by pressing F4.

Filtering items

To filter items, press F17. You can set filters on these conditions:

- type attribute code of related item
- show only items that "use" or items that are "used by" the reference items
- cross-reference method code
- library checked out.

Working with relationships

You can find out if an item listed uses other items, or is used by other items, by selecting it with option 6.

For example, suppose you were researching a physical file that you had placed on your worklist. When you reach this panel, you might see related logical files and programs that refer directly to the physical file.

- Type 6 next to one of the related logical files to see all of the programs that refer to it.
- Type 6 next to one of the programs to see if another program that calls it.

You can drill-down to see all of the objects that might be affected by the pending file change. Each time you see a dependent object, you can add it to the list. This way, you can be sure that your analysis provides you with a complete picture.

Each time you use option 6, the **X-Ref depth** field advances to indicate how far you have “drilled down.”

- If you select option 6, **X-Ref depth** advances to 02.
- If you select option 6 again on the X-Ref depth 02 panel, the **X-Ref depth** becomes 03, and so on.
- Once you go beyond the first depth of dependencies, F12 will return to the previous depth; F3 will return to your Programmer Worklist.

The cross-reference check also shows any logical files that are built over any physical files on the form. You can add these logical files to the form so that they will be recompiled in the test environment. Be aware, though, that any programs that use a logical file you add from the cross-reference selection panel are *not* added automatically. You must edit the form and recheck the cross-reference file for programs related to the additional logical files.

A logical file is automatically added to the form if it exists in the target library for the form you are creating. In that case, any programs that use the logical file will be found by the cross-reference check because the additional logical file will be added to the form *before* the cross-reference check occurs.

If an object you need to change is currently checked out to someone else, then you can read the checkout information to find out more about when, and by whom, it was checked out. Depending on whether the multiple-checkout feature is enabled, you might then decide to check it out. Otherwise, you might want to coordinate your changes with the programmer who already has it checked out. Note that you can add an item to your Programmer Worklist, whether it is checked out or not.

Add only add items to the worklist that you intend to change. If you intend only to have the item recompile when you promote it, as in the case where you change a file and want only to recompile dependent programs to avoid level checks, TURNOVER® Lifecycle Manager will prompt you to recompile these objects later, when you add the items to your TURNOVER® Lifecycle Manager form.

When you add an item to your programmer worklist from the Work with Cross-reference panel, it sets the **X-Ref checked** indicator for that item to Y. (See [“What happens if you forget to check cross-reference?”](#) on page 288.)

What happens if you forget to check cross-reference?

TURNOVER® Lifecycle Manager maintains a field for each worklist item that is set on when you select option 15=Check X-Ref on the Programmer Worklist.

If cross-reference information exists in the cross-reference database for any item on your worklist, and you forget to check the cross-reference file during development using option 15, then TURNOVER® Lifecycle Manager will remind you to check when you add the item to the TURNOVER® Lifecycle Manager form using option 46. After you check, **Cross-reference checked** changes to Y. TURNOVER® Lifecycle Manager will not allow you to add an item to a TURNOVER® Lifecycle Manager form, interactively or in batch, if **Cross-reference checked** is N.

You can set this **Cross-reference checked** flag manually with the Change Worklist Item (CHGPWLITM) command (option 2 on the worklist).

Recompiling related items that did not change

Suppose you checked the cross-reference database earlier and decided that no other related items needed to be changed. (That is, you did not add these items to your Programmer Worklist at that time). Now you are ready to promote your changed objects. When you add the worklist items to a TURNOVER® Lifecycle Manager form, TURNOVER® Lifecycle Manager lets you to add the unchanged related objects to your TURNOVER® Lifecycle Manager form to be recompiled. They are recompiled from source in the application's target library or a library at a higher level.

The process of adding items works differently when done interactively or in batch.

Adding items to the form in batch

If cross-reference information exists in the cross-reference database for any item on your worklist, and you forget to do a cross-reference check (using option 15), TURNOVER® Lifecycle Manager adds the item to the TURNOVER® Lifecycle Manager form when you select it with option 46=Add to form and press F19=Batch 21/46 to build the form in batch (as you would do if you had several items on the form). To avoid having cross-reference items added automatically in this fashion, add the items to your form interactively. An alternative is to delete some of the reference items from the form afterwards.

Adding items to the form interactively

If cross-reference information exists in the cross-reference database for any item on your worklist, and you forget to do a cross-reference check (using option 15), TURNOVER® Lifecycle Manager reminds you to do so when you add the item to the TURNOVER® Lifecycle Manager form when you select it with option 46=Add to form (interactively).

If cross-reference information exists and has not been checked, then you will not be able to add the item to a TURNOVER® Lifecycle Manager form until you either select the item with option 15 to check cross-reference information, or set the **Cross-reference checked** indicator to Yes.

MM/DD/YY 14:33:25		Work with Cross-Reference		Your Company, Inc.				
				X-Ref Depth= 01				
Worklist APPR0003		Chg credit-term verify program						
Data set ACCTGSYS		Apply filters . . . Y (F17=Filters)						
1=Add to Worklist 2=Add to Worklist/Checkout 4=Compile in Development library								
5=View checkout 6=Work with relationships 8=Browse member								
----- Uses/Used-by ----->								
Object	Library	Attr	Object	Library	Attr	How Used	Out	U/B
— APLF001A	APRODLIB4D	LF	APRPG965	APRODLIB4	RPG	Input	N	B
— APLF001A	APRODLIB4D	LF	APRPG977	APRODLIB4	RPG	Input	N	B
— APLF001A	APRODLIB4D	LF	APRPG980	APRODLIB4	RPG	Input	N	B
— APLF001A	APRODLIB4D	LF	APRPG982	APRODLIB4	RPG	Input	N	B
— APLF001A	APRODLIB4D	LF	APRPG983	APRODLIB4	RPG	Input	N	B
— APLF001A	APRODLIB4D	LF	APRPG993	APRODLIB4	RPG	Input	N	B
— APPF001	APRODLIB4D	PF	APLF001A	APRODLIB4	LF	Input	N	B
— APPF001	APRODLIB4D	PF	APRPG993	APRODLIB4	RPG	Input	N	B
— APPF001	APRODLIB4D	PF	APRPG993	APRODLIB4	RPG	Update	N	B
— APRPG991	APRODLIB4D	PF	APRPG001	APRODLIB4	RPG	Input	N	U
— APRPG991	APRODLIB4D	PF	APRPG005	APRODLIB4	RPG	input	N	U
						More...		
F3=Exit F4=Prompt F5=Refresh F10=Data set information F12=Cancel								
F17=Filters F19=Submit 1/2 F21=Command line F22=Print								

You can avoid a recompile of these related objects by de-selecting them. If added to the form, the items are recompiled in the target libraries using the source found in the target source library. If an item had been added to the worklist, but never checked out, it is also recompiled from target source.

Only physical-to-logical file, file-to-program and program-to-module relations will be included on the Work with Object Cross-Reference panel. If a logical file is selected, then *that* files relatives (that is, programs that use the logical file) are also displayed so you can include those items on the TURNOVER® Lifecycle Manager form.

Cross-referencing related items from other applications

If you or TURNOVER® Lifecycle Manager need to add a related cross-reference item to a form for a different application than the primary worklist application, then TURNOVER® Lifecycle Manager will create a new form and add the related item to that form. If this is done interactively, then you will see a message informing you that a related form has been created. If done in batch, the log report will indicate that TURNOVER® Lifecycle Manager has done this. The related application forms will be dependent on your primary form and cannot run unless the primary form has run successfully. If you run all of the forms as a group, then the rules that apply to running group forms apply.

If an item is already on your Worklist, then TURNOVER® Lifecycle Manager assumes you have added it or will be adding it to a form in the standard manner. You will not be able to select it here.

If you add items to the TURNOVER® Lifecycle Manager form in batch, then TURNOVER® Lifecycle Manager adds items to the form automatically. If, for some exceptional reason, you do not want the cross-reference items on the form, you can delete them from the form after it is created. If you do not want the cross-reference items on the form, add items to the form interactively, instead of in batch.

Important Do you use one production library for more than one application? When TURNOVER® Lifecycle Manager detects a related object in the cross-reference, it adds it to the same TURNOVER® Lifecycle Manager form or, if it is in another application, to a new form. Which application to use is not always clear when more than one application uses the same target library. TURNOVER® Lifecycle Manager first looks at its own history database to determine the correct application. If TURNOVER® Lifecycle Manager cannot determine the application in this way, TURNOVER® Lifecycle Manager assumes that it is part of the first application it encounters for which a matching target library was found. In some cases, it does not matter and the object is recreated correctly. However, if it does matter, build a form interactively so that you will see a panel that lets you determine the correct application interactively.

What happens if you do not use the Programmer's Worklist?

If you do not use the Programmer's Worklist, TURNOVER® Lifecycle Manager prompts you to check the cross-reference database when you checkout an item and again when you edit your TURNOVER® Lifecycle Manager form, to ensure that you do not overlook anything.

Editing a TURNOVER® Lifecycle Manager form

If you build a TURNOVER® Lifecycle Manager form from a Programmer's Worklist, then the **Check cross-reference file for related objects** prompt on the Form Maintenance Exit options panel defaults to **N**. If you do not use the Programmer Worklist and there are files on the TURNOVER® Lifecycle Manager form, it defaults to **Y**. However, if you chose to edit a form, the exit options work the same, no matter how the form was created.

If you set **Check cross-reference file for related objects** to **Y**, the Work with Object Cross-reference panel appears.

Related application processing

The related application feature of TURNOVER® Lifecycle Manager lets you define several application promotion paths that are related to one another.

You can use the related application feature to map the same object name across several related applications or software releases. (See also 'Managing Multiple Versions' in the *TURNOVER® Lifecycle Manager Administrator's Guide*).

For example, you can set up two application definitions, one for Release 7 and one for release 8 of your application. If you need to change an object for Release 7 and the same object name has been modified and therefore now exists for Release 8, TURNOVER® Lifecycle Manager reminds you to look at the related item in Release 8 and decide whether or not it also needs to be changed.

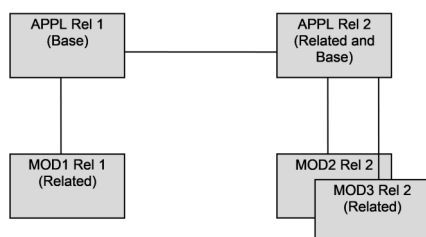
Another example might be that you must customize changes for several company locations that you support. You may have base application libraries and several location or customer specific libraries, each containing modified versions of objects that exist in the base libraries. Suppose you need to modify RPG program SDRWRKLU in base application SDU. If this program has been modified for three other locations – Canada (CN), Mexico (ME) and the United Kingdom (UK) – then when you select program SDRWRKLU with Worklist option 16=Related objects, TURNOVER® Lifecycle Manager displays a panel like this one:

MM/DD/YY 14:40:03		Work with Related Applications										Your Company, Inc.																																																																		
Worklist TP400060 Add Line to Form Unrestrict fails																																																																														
1=Add to Worklist 2=Add to Worklist/Checkout 8=Browse base 9=Browse related																																																																														
<table border="0"> <thead> <tr> <th colspan="6">-----Base-----</th> <th colspan="6">-----Related-----</th> <th></th> </tr> <tr> <th>Mbr/Obj.</th> <th>Attr</th> <th>Appl</th> <th>Rel</th> <th>Ver</th> <th>Lev</th> <th>Attr</th> <th>Appl</th> <th>Rel</th> <th>Ver</th> <th>Lev</th> <th>Out</th> <th>Programmer</th> </tr> </thead> <tbody> <tr> <td>_ SDRWRKLU</td> <td>RPG</td> <td>SDU</td> <td></td> <td></td> <td>2</td> <td>RPG</td> <td>SDCN</td> <td></td> <td></td> <td>2</td> <td>N</td> <td></td> </tr> <tr> <td>_ SDRWRKLU</td> <td>RPG</td> <td>SDU</td> <td></td> <td></td> <td>2</td> <td>RPG</td> <td>SDME</td> <td></td> <td></td> <td>2</td> <td>N</td> <td></td> </tr> <tr> <td>_ SDRWRKLU</td> <td>RPG</td> <td>SDU</td> <td></td> <td></td> <td>2</td> <td>RPG</td> <td>SDUK</td> <td></td> <td></td> <td>2</td> <td>N</td> <td></td> </tr> </tbody> </table>														-----Base-----						-----Related-----							Mbr/Obj.	Attr	Appl	Rel	Ver	Lev	Attr	Appl	Rel	Ver	Lev	Out	Programmer	_ SDRWRKLU	RPG	SDU			2	RPG	SDCN			2	N		_ SDRWRKLU	RPG	SDU			2	RPG	SDME			2	N		_ SDRWRKLU	RPG	SDU			2	RPG	SDUK			2	N	
-----Base-----						-----Related-----																																																																								
Mbr/Obj.	Attr	Appl	Rel	Ver	Lev	Attr	Appl	Rel	Ver	Lev	Out	Programmer																																																																		
_ SDRWRKLU	RPG	SDU			2	RPG	SDCN			2	N																																																																			
_ SDRWRKLU	RPG	SDU			2	RPG	SDME			2	N																																																																			
_ SDRWRKLU	RPG	SDU			2	RPG	SDUK			2	N																																																																			
												Bottom																																																																		
F3=Exit F4=Prompt F11=Alt. view F12=Cancel F19=Submit 1/2 F21=Commands																																																																														

To	Do this
add objects to the worklist	Use option 1.
add objects to the worklist, and also check them out	Use option 2. Options 1 and 2 can be submitted to batch by pressing F19. Options 1 and 2 can be prompted by pressing F4.
see an alternate view	Press F11.

If you add an item to the worklist using option 1 or 2, and if you have nested related applications, TURNOVER® Lifecycle Manager displays related items in the nested applications. The **Depth** indicator shows how many nested levels you have.

For example, suppose you are managing two releases of your software and have defined them as APPL Release 1 and APPL Release 2. You can relate these applications. You would probably related APPL Release 2 to APPL Release 1, referred to as the Base. If you maintain custom modifications for each of these (one set of modifications for Release 1 and two for Release 2), you can relate these modification applications to whichever Release they apply. Then you will see any object of the same name that resides in any of the related application libraries as you drill down through the nested applications.



If you do use the related applications feature, check for related application objects (option 16) and add them to your worklist (if necessary), *before* you check the cross-reference database (option 15).

Because the related object is associated with another application (related to the base application), each item you add to your Programmer Worklist will be associated with a separate application. The project definition associated with the worklist must have all of the applications in its related application list. Later, when TURNOVER® Lifecycle Manager forms are created using option 46, one TURNOVER® Lifecycle Manager form is created for each application represented on the Programmer Worklist.

What happens if you forget to check for related applications?

TURNOVER® Lifecycle Manager maintains an indicator for each worklist item that is turned on when you select option 16=Related object on your Programmer Worklist. You can set this **Related application checked** indicator with the Change Worklist Item (CHGPWLITM) command (Programmer Worklist option 2).

If related applications exist for any item on your Programmer Worklist (as determined by the item application) and you forget to check for related objects, then TURNOVER® Lifecycle Manager prevents you from adding the item to a TURNOVER® Lifecycle Manager form with option 46=Add to form until you check for related applications or turn on **Related application checked**.

Adding items to the form in batch

If objects exist in a related application for any item on your worklist, then TURNOVER® Lifecycle Manager creates a form automatically when you select the object with option 46=Add to form and press F19=Batch 21/46 to build the form in batch (as you would do if you had several items on the form). To avoid having forms created for related applications, add the items to your form interactively. You then see a panel on which you can void the creation of forms for one or more of the related applications. Alternatively, you can delete the related items from the forms afterwards.

Using the multiple-checkout option

If you use the multiple-checkout processing option that allows more than one programmer to check out an object at the same time, TURNOVER® Lifecycle Manager displays the Multiple Checkout Approval panel when you add the item to a TURNOVER® Lifecycle Manager form and, if not resolved then, again when you submit the TURNOVER® Lifecycle Manager form to run.

Multiple Checkout Approval
Your Company, Inc.

The objects listed below have been turned over by other programmers while checked out to PSCHMIDT. Changes made by those programmers must be included in changes made by PSCHMIDT.

Position to object _____
 Filter by programmer _____
 Filter by reference _____

Type options, press Enter.
 1=Approve 4=Cancel approval 5=View form 7=Project details

Run

Object	Library	Type	Programmer	Form	Date	Reference	Approved
APRPG001	PRODTEST	RPG	SMITHRAY	100021	042194	APPF0002	

F3=Exit F5=Refresh F12=Cancel F14=Display all

This panel will not appear if no items were promoted while you were working on the item.

If one or more items were changed and promoted while you were working on them, you must merge those changes with your own, or using TURNOVER® Lifecycle Manager's source merge command, test them and then certify that you have done so by selecting option 1=Approved on this panel.

Project reports

There are many reporting options you can use to retrieve and report all of the project and task data in a variety of ways.

For more information about reports, see ['Reports' on page 309](#).

Wisedesk

The Wisedesk feature enables you to find out whether a working task, problem report, or change request already exists for an issue that someone is describing to you. It can also help users gather information from the project tasks defined on your system to see how the projects affect each other.

Overview

In Wisedesk, you define "logical views" over your projects, without creating a special question and answer database. Although you can build a special project for this purpose and build a Wisedesk decision tree over it, you'll probably prefer to build decision trees over your existing projects, especially if you are already using TURNOVER® Lifecycle Manager Projects.

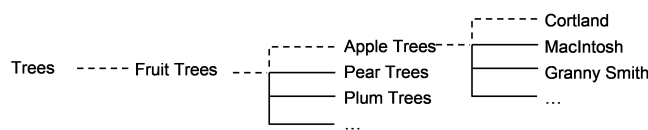
You can build a decision tree over several projects, ensuring that every relevant task is represented in the tree. If a task matches the criteria of two or more categories, it appears in each related tree branch, even though it only exists once in the project database.

Help trees

To use Wisedesk, you build *help trees*.

- A help tree is a group of related tasks that are organized in a tree structure.
- The levels in the tree structure are called *categories*.
- The first level of categories in a tree are called *root categories*.
- A category can have one or more levels under it, called *subcategories*.

For example, you might have a tree called Trees, with categories and subcategories like these:



To access a category, you specify its path through the levels. In this example, the dotted line shows the path to the Cortland category. To specify this path on a Wisedesk panel, you type:

```
/fruit trees/apple trees/cortland/
```

The path does not include the help tree name, "Trees".

You tell TURNOVER® Lifecycle Manager how to group tasks into categories by specifying selection criteria. TURNOVER® Lifecycle Manager compares these criteria to values in the task definition, description and details, selecting the tasks that satisfy them. When you have built the trees, you can view task lists by category to find out what work is under way for a given project, problem, or change request.

Grouping tasks like this helps you find relevant information fast, so you can see if something has already been reported, determine whether a fix is available, or clear up confusion about how a product feature is designed to work.

You can access Wisedesk help trees from these areas of the Helpdesk process:

- On the command line, type `WRKHLPTREE`.
- On the HELPDESK Work with Requesters panel, use option 16.
- In TURNOVER® Lifecycle Manager Projects, press F16 on the Work with Tasks or Work with Projects panels.
- In WORKTASK, use F16 from the task review panel or the Assign Task panel.

Setting up a help tree

1: Create a help tree

- 1 On the TURNOVER® Lifecycle Manager command line, type `WRKHLPTREE`, and then press Enter.

The Work with Help Trees panel appears.

- 2 In the selection fields on the first row of the panel, type 1 and a tree name, and then press Enter.

MM/DD/YY 14:43:15	Work with Help Trees	Your Company, Inc. YOURSYS
1=Create 2=Change 3=Copy 4=Delete 6=Print 7=Authorities 12=Work with Categories 14=Build		
Tree	Description	
1 <u>NEWTREE</u>		
— CENTRAL	CENTRAL® Menu Items	
— HARDWARE	Hardware Related Items	
— TURNOVER	TURNOVER® Lifecycle Manager Related Items	
— USI	UNICOM Systems, Inc. Internal Items	
F3=Exit F5=Refresh F12=Cancel F21=System command		

The Add Help Tree panel appears.

Add Help Tree (ADDHLP TREE)	
Type choices, press Enter.	
Help tree	> NEWTREE Name
Description	<u>New Help Tree</u>

Bottom	
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display F24=More keys	

- 3 Type a description for the help tree, and then press Enter.

2: Assign tree authorities

- 1 On the Work with Help Trees panel, select the tree with option 7, and then press Enter.

The Wisedesk Authorities panel appears.

```

MM/DD/YY 14:48:08      Wisedesk Authorities      Your Company, Inc.
                                      YOURSYS

Tree: NEWTREE      New help tree

User      Name      View      with      Bld      Dlt      Match      Exclude
*NONE      Unassigned      X      X      X      X      X      X
BERNEY      Berney Fern      X      X      X      X      X      X
COMPARDI      Roy Compardi      X      X      X      X      X      X
BIANCHI      Biancha Jefferson      X      X      X      X      X      X
BLAIRE      Blaire Peterson      X      X      X      X      X      X
ELLISMAN      Stephen Ellisman      X      X      X      X      X      X
GIBBONS      Greg Gibbons      X      X      X      X      X      X
HOLMER      Denise Holmesby      X      X      X      X      X      X
JSCHMIDT      Joan Schmidt      X      X      X      X      X      X
KLINE      Sandy Kline      X      X      X      X      X      X
LEBLANC      Louie LeBlanc      X      X      X      X      X      X
MIKEPHIL      Mike Phillips      -      -      -      -      -      -

F3=Exit      F12=Cancel      F21=Authorize all
    
```

- 2 For each user in the list, type x in the columns representing the kind of authority the user should have for this tree, and then press Enter.
 - To search for information in the help trees, you need at least View and Match authority.
 - To update the trees, you need all authorities.

You can see task information only from projects to which you are authorized, regardless of your authority to the tree.

- 3 Review the results, press Enter, and then press F3 to return to the Work with Help Trees panel.

3: Create root categories

- 1 Select the tree with option 12.

The Work with Categories panel appears.

```

MM/DD/YY 15:51:22      Work with Categories      Your Company, Inc.
                                      YOURSYS

Tree . . NEWTREE      F4=List      Maximum indent level . . . 99
.....
1 :      Add Category      :
12 :      :      :      :      :      :      :
: Tree . . . . . NEWTREE      :
: Path . . . . . /      :
:      :      :      :      :      :      :
:      :      :      :      :      :      :
:      :      :      :      :      :      :
:      :      :      :      :      :      :
:      :      :      :      :      :      :
:      :      :      :      :      :      :
: Category . . . .      :
: Description . .      :
:      :      :      :      :      :      :
: F3=Exit      F12=Cancel      :
:.....

Bottom

F3=Exit      F4=List      F5=Refresh      F6=Add category      F12=Cancel      F14=WRKSBMJOB
F17=Collapse      F18=Expand      F19=Collapse all      F20=Expand all      F21=Command
    
```

On this panel, you create the tree categories and specify criteria for selecting related tasks to include in the categories' task lists.

- 2 Press F6 to add a root category to your tree.

The Add Category panel appears.

- 3 Type a name and description, and then press Enter.

The Change Help Tree Category panel appears.

MM/DD/YY 15:10:32	Change Help Tree Category	Your Company, Inc. YOURSYS
Tree . . NEWTREE		
Path . . /ROOT1/		
Logical relationship between criteria and strings . . *AND *OR, *AND		
1=Set criteria 2=Remove criteria		
Selection Criteria Category		Selection Criteria Defined
☐ Projects		Y
☐ Resources		N
☐ Requesters		N
☐ Status codes		N
☐ Priority codes		N
☐ Task type codes		N
☐ User-field 1		N
☐ User-field 2		N
☐ User-field 3		N
☐ User-field 4		N
		More...
F3=Exit F4=List F10=Change description F12=Cancel F21=System command		

Press Page Down to see the next page of this panel.

MM/DD/YY 15:12:35	Change Help Tree Category	Your Company, Inc. YOURSYS
Tree . . NEWTREE		
Path . . /ROOT1/		
Logical relationship between criteria and strings . . *AND *OR, *AND		
1=Set criteria 2=Remove criteria		
Selection Criteria Category		Selection Criteria Defined
☐ User-field 5		N
☐ User-field 6		N
☐ User-field 7		N
☐ User-field 8		N
☐ User-field 9		N
☐ User-field 10		N
☐ Search strings		N
		Bottom
F3=Exit F4=List F10=Change description F12=Cancel F21=System command		

4: Provide task selection criteria

On the Change Help Tree Category panel, specify tasks you want to include in the category by using selection criteria.

- Project criteria identify to which projects a task must belong to be included in a category list.
- Task criteria identify values that a task must match to be included in a category list.
- Search strings identify specific words or portions of words, acronyms, or other text that the task description or details must contain to be included in a category list.

If the category you are working with is a root category (that is, a category in the first level of the tree), TURNOVER® Lifecycle Manager applies the criteria to all projects and tasks. If the category is a subcategory, TURNOVER® Lifecycle Manager applies the criteria only to the parent category's task set.

Project criteria

Type the IDs for up to ten specific projects that might contain tasks for issues related to this category, or use one of the following:

Value	Description
*ALL	All projects
*HLP	All *HELPDESK projects
*WRK	All *WORKING projects
<i>generic*</i>	Projects that have some portion of their IDs in common

A task must match one of the projects you specify; otherwise, TURNOVER® Lifecycle Manager will not select it. A task that meets the projects requirements must also meet at least one requirement from *either* the task criteria or the search strings. If not, TURNOVER® Lifecycle Manager will not select it.

Task criteria

Select any of the task criteria listed here with option 1 to supply information TURNOVER® Lifecycle Manager can use to identify tasks relating to this category. You can supply up to ten specific values for each of these task fields:

- Resources
- Requesters
- Status codes
- Priority codes
- Task type codes
- User-defined fields 1 – 10.

In addition to specific values, you can also supply one of the following:

Value	Description
*ALL	All possible values for a task field. *ALL can be used for any of the task fields shown above.
<i>generic*</i>	Values for a task field that have one or more characters in common. <i>generic*</i> applies only to Resources, Requesters, and user-defined fields.

TURNOVER® Lifecycle Manager compares these values to the contents of the corresponding task fields. If any one matches, TURNOVER® Lifecycle Manager includes it in the category's task list.

Search strings

Select **Search strings** with option 1 to supply an unlimited number of text strings. Search strings are automatically treated as *Generic** values. To add a string, type a 1 in the selection field on the first line. Tab past the **Seq** field, position the cursor in the **Search string** column, and type a text string that you think is most likely to appear in the description or details of a task relating to this category.

When you press Enter, the Add Category Search String (ADDCATSTR) prompt appears with your information filled in. Additional parameters appear so you can tell TURNOVER® Lifecycle Manager where to look for these strings – in the task description or the task details, or both. You can also make the search case-sensitive, if necessary.

If you enter your strings in order from most to least common, you can let TURNOVER® Lifecycle Manager sequence your strings for you. If necessary, you can change the order later by selecting the string with option 2 and typing in a different sequence number.

Make the strings as all-inclusive as you can, such that you supply as few strings as possible.

Use strings sparingly at the root category level, where the list of tasks to choose from is large.

These measures save time during the category build, when tasks are selected.

For additional information about specifying and sequencing search strings, see the online help.

Logical relationship between criteria and strings

You can assign a logical relationship between the task selection criteria (project, resources, requesters, and so on) and the search string selection criteria.

Value	Description
*OR	Any task that either meets all the task selection criteria OR matches one search string criterion is included in the category during a build.
*AND	Any task that both meets all of the task selection criteria AND matches one search string criterion is included in the category.

- 1 Press F3. A pop-up prompt appears asking if you want to build the category you have just created. You can either build category-by-category as you go along, or build the entire tree later when you finish defining categories.
- 2 Answer **N**, and then press Enter. The Work with Categories panel reappears.
- 3 To define more root categories, return to the beginning of Step 2 and proceed as before.
- 4 If you have finished adding root categories, you can now begin branching out using subcategories. Continue with Step 5.

5: Create subcategories

You can add subcategories to root categories, or to other subcategories.

To add a subcategory, select a category with option 1 and press Enter.

The panels presented are the same ones you saw when adding root categories. Proceed as you did before, again skipping the build after each subcategory is defined.

When you finish supplying the selection criteria for the last subcategory, press F3. The build prompt appears.

6: Build the help tree

Method 1

- 1 Answer **N** to the build prompt, and then press Enter. Press F3 to return to the Work with Help Trees panel.
- 2 Select your help tree with option 14=Build and press Enter. The Build Help Tree Category panel appears.
- 3 Press Enter to accept the defaults and submit the job.

Method 2

- 1 Answer **Y** to the build prompt, and then press Enter. The Build Help Tree Category panel appears.
- 2 Position the cursor at the **Path** field.

What you see here represents the subcategory you just defined. You want to build the entire tree – not just the last subcategory you created.

- 3 To build the entire tree, type ***ALL** in the **Path** field, and blank out any remaining path information. Press Enter. The build job is submitted.

Result

A build job called BLDHLPCAT is submitted to the job queue.

When the job completes, a spool file called BLDHLPP is in your default output queue. This spool file contains the Help Tree Category Build Summary report, which describes all the categories and subcategories you created, and lists the tasks that were selected for each.

Press F3 to return to the Work with Help Trees panel.

7: Check your work

Review the task list for each category you created. Look for information that can help you refine your search strings or other selection criteria. Then make any changes to the categories that are necessary, rebuilding each category as you finish changing it.

You might want to create a “Question and Answer” project to compliment your existing project database. This complimentary project contains answers to users’ questions that are not requests or problems. Once the answers are entered, they can be shared by your entire support staff.

For example, you might have a problems project and an enhancements project for *each* release, and a general Question and Answer project. This ensures that all relevant issues can be documented and represented in the decision tree.

Finding information in a help tree

As a Help desk staff member, you know that TURNOVER® Lifecycle Manager stores mounds of information as project tasks. You also know that related information stored this way can be scattered over several projects. This is fine for project execution; each piece of work gets done, as it should. But when it comes to answering user questions about the product, finding all the related pieces of information can be a challenge.

With TURNOVER® Lifecycle Manager’s Wisedesk, existing project tasks are organized into broad topics called *help trees*. Each tree is broken down into neat, logical, increasingly-specific layers you can browse, following only those branches that apply to the question you’re answering. Using Wisedesk, you can quickly find out whether a fix has already been created for your user’s problem, or whether the problem is unreported; or you can provide answers about how to use the software to its best advantage. These instructions explain how to use Wisedesk to locate the information you need.

1: Start Wisedesk

To start Wisedesk, do one of these:

- In the HELPDESK command, select a requester with option 16=Wisedesk.
- On the task review panel in the WORKTASK command, press F16.
- On the Work with Tasks or Work with Projects panels in TURNOVER® Lifecycle Manager Projects, press F16.
- On a TURNOVER® Lifecycle Manager command line, type `WRKHLPTREE`.

The Work with Help Trees panel appears:

```
MM/DD/YY 15:23:35          Work with Help Trees          Your Company, Inc.
                                YOURSYS

1=Create  2=Change  3=Copy  4=Delete  6=Print  7=Authorities
12=Work with Categories  14=Build

      Tree      Description
  1  NEWTREE
    — CENTRAL      CENTRAL® Menu Items
    — HARDWARE     Hardware Related Items
    — TURNOVER    TURNOVER® Lifecycle Manager Related Items
    — USI         UNICOM Systems, Inc. Internal Items

F3=Exit  F5=Refresh  F12=Cancel  F21=System command
```

2: Choose a tree

Select a tree with option 12 to view its categories, and press Enter.

The Work with Categories panel appears.

```
MM/DD/YY 15:33:42          Work with Categories          Your Company, Inc.
                                YOURSYS

Tree . . TURNOVER          Maximum indent level . . . 99

  1=Add  2=Change  4=Delete  5=View  6=Print  7=Strings  8=Subcategories
12=Work with Tasks  14=Submit build

      Category                      Tasks      Last
      Category                      Tasks      Build   Chg
  —  API                          29      1/24/19  N
  12 APPL                        39      1/24/19  N
  —  |~APPROVAL                    25      1/10/19  N
  —  |~AUDIT                       10      1/24/19  N
  —  |~AUTHORITY                   15      0/00/19  Y
  —  |~AUTHUSERS                    7      0/00/19  Y
  —  |~COMPMSGSGS                   3      1/10/19  N
  —  |~DEFAULTS                     8      0/00/00  Y
  —  |~DESC                         5      0/00/00  Y
  —  |~DISTRIB                      42      0/00/00  Y
  —  |~FASTTURN                     30      0/00/00  Y
  —  |~FORM                         27      0/00/00  Y
                                More...

F3=Exit  F4=List  F5=Refresh  F6=Add category  F12=Cancel  F14=WRKSBJMJOB
F17=Collapse  F18=Expand  F19=Collapse all  F20=Expand all  F21=Command
```

This panel shows the categories and subcategories that are part of the help tree you selected. You can go directly to the task list for any layer, without having to “dig” through each preceding layer. (Option 8 provides an alternative style of viewing subcategories for a category.) The number of tasks that meet each category’s selection criteria are shown.

The number of tasks shown for a category can disagree with the number you actually see, because what you see depends on what projects you are authorized to look at.

3: Choose a category or subcategory

Select a category or subcategory with option 12 to see its task list. Press Enter.

The Work with Tasks for Category panel appears.

MM/DD/YY 15:36:12

Work with Tasks for Category

Your Company, Inc.
YOURSYS

Position to task . . . *TOP, *BOT Apply filters . . . Y

1=Add subtask 2=Change 3=Copy 4=Delete 5=View 6=Print 7=Recategorize ...
8=Add time 9=View time 10=Match 11=Move 12=Assigned/Original 13=Details

Task	Description	Match	Count	Pty	Status
TE41003702	File changes for versioning		0	2	DONE
TE41003703	Create new application definition panel for		0	2	DONE
TE410039	Option to distribute application history		0	2	WAITING
TE410049	Allow application libraries in the system 1		0	1	WAITING
TE410058	Add ability to update HAWKEYE & ABSTRACT/PR		0	2	CLOSED
TE410076	Audit application definition changes		0	2	GROUP
TE41007602	Display application changes and change data		0	2	STARTED
TE41007603	Archive Application definition and related		0	2	OPEN
TE410079	Application Definition Enhancements		0	2	GROUP
TE41007903	Allow multiple check Y/N		0	1	OPEN

F3=Exit F5=Refresh F6=Add task F10=Change path F11=Alt. view F23=Options
F12=Cancel F13=Repeat F16=Task Seq. F17=Filters F21=System command

Many of the options on this panel are similar, if not identical to, options you use when working with tasks using Main Menu option 9; these are explained earlier in this chapter. When you press F23, you see these additional options:

14=Authority 16=Forms 17=Checkout 18=History 20=PWM 22=Audit 25=Search
19=Test plan

The options specific to Wisedesk are described on the next couple of pages.

Note The tasks listed may not match the number of tasks shown for that category on the Work with Categories panel. TURNOVER® Lifecycle Manager does not display tasks belonging to projects that you are not authorized to use.

To	Do this
add or remove a task from a category	Select the task with option 7.
mark a task that contains that information that you need	Select the task with option 10.
append a requester to the task	Select a task with option 21. This option is available only when you enter a help tree from HELPDESK.
assign a *HELPDESK task as a subtask to the task you located in Wisedesk	Select a task with option 23. This option is available only when you start Wisedesk from WORKTASK.
add a new task to a project	Press F6.
assign a *HELPDESK task to a *WORKING project	Press F6.

To	Do this										
	If you reached this panel from Work with Categories in Wisedesk, then a list appears containing projects you can access, so you can select where to add the task.										
	If you reached this panel from the Work with Tasks panel, F6 adds a task to the project you came from.										
	If you reached this panel after selecting a requester with option 16 from HELPDESK, the requester is carried in from your selection. Which projects you can add to is controlled by the contents of the Add task default field on the filter panel (F17), as follows:										
	<table> <tr> <th>Value</th><th>Description</th></tr> <tr> <td><i>project</i></td><td>The name of a project.</td></tr> <tr> <td>*ALL</td><td>Displays a list of all projects to which you have access.</td></tr> <tr> <td>*HELPDESK</td><td>Displays a list of all *HELPDESK projects to which you have access.</td></tr> <tr> <td>*WORKING</td><td>Displays a list of all *WORKING projects to which you have access.</td></tr> </table>	Value	Description	<i>project</i>	The name of a project.	*ALL	Displays a list of all projects to which you have access.	*HELPDESK	Displays a list of all *HELPDESK projects to which you have access.	*WORKING	Displays a list of all *WORKING projects to which you have access.
Value	Description										
<i>project</i>	The name of a project.										
*ALL	Displays a list of all projects to which you have access.										
*HELPDESK	Displays a list of all *HELPDESK projects to which you have access.										
*WORKING	Displays a list of all *WORKING projects to which you have access.										
	If you reached this panel while reviewing tasks in WORKTASK (F16), then F6=Asg. new shows you a list of the valid *WORKING projects for the task, so you can choose where to assign it.										
go to another tree or to another category in this tree	Press F10.										
see different information about the tasks in the list, including who entered them and to whom they are assigned	Press F11.										
toggle the order of the list between match sequence and task ID sequence	Press F16. "Match sequence" means the tasks appear in order from most often matched to least often matched.										

Setting up dynamic category updating

You can set up TURNOVER® Lifecycle Manager such that, when new tasks are added to projects, they are searched for criteria that match categories within Wisedesk, and added to any appropriate help trees. This is called *dynamic updating*. This topic explains how to set up Wisedesk dynamic updating.

1: Create a data queue and a data queue monitoring job

- 1 Type WDDYNUPD on a command line, and then press F4.

The Wisedesk Dynamic Update (WDDYNUPD) command prompt appears:

Wisedesk Dynamic Update (WDDYNUPD)

Type choices, press Enter.

Action code		*START, *STOP, *DLYJOB...
Data queue	WDDYNUPD	Character value
Data queue library	*LIBL	Character value

Bottom

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
 F24=More keys

- 2 To start a monitoring job, type *START in the **Action code** field.
- 3 Leave the other fields as is, or type the name of a data queue that you want TURNOVER® Lifecycle Manager to create, and the name of the library where you want it to be.
- 4 Press Enter.

TURNOVER® Lifecycle Manager creates the data queue, and creates and starts the monitoring job. The monitoring job is controlled by the WDDYNUPD job description in the TURNOVER® Lifecycle Manager product library.

2: Configure your projects for dynamic updating

TURNOVER® Lifecycle Manager needs to know which projects should dynamically update your help trees.

- 1 Select Main Menu option 9. Select a project with option 2, and then press Enter.

The Define the Project panel appears.

MM/DD/YY 15:43:25	Define the Project	Your Company, Inc. SYSTEM: YOURSYS ACTION: CHANGE
Project APPR		
Description . . . Your Project		
1=Select		
Opt	Project Definition Option	
—	Description	
—	Details	
—	User-defined fields	
—	Valid applications	
—	Valid resources	
—	Valid status codes	
—	Task defaults	
—	Authorized users	
—	*WORKING project-specific options	
<u>1</u>	WISEDESK dynamic update options	
F3=Exit F12=Cancel F21=System command		

- 2 Select Wisedesk dynamic update options with option 1, and then press Enter.

The Wisedesk Dynamic Update Options panel appears.

MM/DD/YY 15:45:37	WISEDESK Dynamic Update Options	Your Company, Inc. YOURSYS
Project: APPR Your project		
Dynamically update decision trees <u>N</u>		Y, N
F3=Exit F12=Cancel F21=System command		

- 3 Type Y in **Dynamically update decision trees**, and then press Enter.

The panel is refreshed.

MM/DD/YY 15:50:12	WISEDESK Dynamic Update Options	Your Company, Inc. YOURSYS
Project: APPR Your project		
Dynamically update decision trees Y		Y, N
Dynamic update data queue WDDYNUPD		queue name
*LIBL		library
1=Update tree		
Tree	Description	
— *ALL	Update all trees	
— CENTRAL	CENTRAL® Menu Items	
— DOCUMENT	Tasks that affect TurnOver Documents	
— HARDWARE	Hardware Related Items	
— NEWTREE	New tree to test steps	
— TURNOVER	TURNOVER® Lifecycle Manager Related Items	
— USI	UNICOM Systems, Inc. Internal Items	
Bottom		
F3=Exit F12=Cancel F21=System command		

- 4 Select with option 1 the trees that you want this project to update. Press Enter.

By selecting the trees a project can update, you limit the CPU cycle time spent processing project tasks for trees that are not related. For example, you probably do not want your software project updating the HARDWARE tree.

- 5 Press F3 twice to return to the Work with Projects panel.
- 6 Repeat this step for each project that should update your help trees.
- 7 Press F3 until you return to the TURNOVER® Lifecycle Manager main menu.

Dynamic updating

Data integrity and file conflicts

You can use the `WDDYNUPD` command to stop or delay the monitoring job whenever necessary (for example, during system backups). Then you can restart it to continue monitoring.

System performance

You can set up more than one job to monitor the same data queue. This way, while the first job is handling one update, the second job can handle the next. One job is adequate in most cases.

To optimize performance for a high-volume or high priority project, you can create a dedicated data queue for it, to which none of the other projects are defined. Updates for the project will go only to that data queue, while updates for all others will be processed using the other data queue.

You can set up the monitoring job as an autostart job, or you can include the `WDDYNUPD` command in your system's startup program.

If one does not already exist, set up a dynamic updating autostart job.

This is done for you in subsystem TSERVER during a typical install; but if an autostart job called WISEDESK does not exist on your system, you can create it manually. For instructions, see the 'Ownership, profiles and jobs' section of the *TURNOVER® Lifecycle Manager Administrator's Guide*.

13 Reports

This section lists all the standard TURNOVER® Lifecycle Manager reports, and shows how to specify report selection parameters.

All TURNOVER® Lifecycle Manager reporting functions respect user authority settings, and all report jobs are submitted to batch.

In addition to the standard reports described here, you could write reports or query the TURNOVER® Lifecycle Manager files directly. All files can be queried using standard IBM i queries. For a list of the files you might want to query, see 'Files and Data Areas' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

To use the reports

On the TURNOVER® Lifecycle Manager Main Menu, select option 10.

The Reporting menu appears.

MM/DD/YY 08:02:15	Reporting Menu	Your Company, Inc. YOURSYS
Select one of the following:		
Application Reports 1. Print application definition 2. Check application definition 3. Audit report 4. Audit adjustments and report Project Reports 10. Projects and tasks 11. Resource time report 12. Project timesheet report 13. Projects and tasks by priority 14. Project cost report 15. Task aging report 16. Project definition report	History Reports 20. List Forms 21. Object history 22. Programmer history 23. Source checkout history 24. Reference activity report 25. Related application conflict report Distribution Reports 30. Form distribution report 31. Object distribution report Miscellaneous 40. List authorized users 41. Programmer profile information	
Select option: __		
F3=Exit F6=DSPMSG F12=Cancel F14=WRKSBMJOB F21=System command		

Application reports

Print application definition

List Default Values (LISTDFTS)		
Type choices, press Enter.		
Application code	<u>*ALL</u>	Application code, *ALL
Release	—	Number
Version	—	Number
Level	—	Number
Defaults to list	<u>*ALL</u>	*ALL, *DESC, *SYSTEM...
Suppress underlines	<u>*YES</u>	*YES, *NO
Bottom		
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display		
F24=More keys		

This option prints the system-wide and/or application definitions on your system. Report sequence is by application, release and version.

Application definition report sample

For more information, see *Working with application definitions* on page 9.

8/23/19		Application Definitions		YOUR COMPANY, INC.	
YOURSYS				Page: 2	
IFS PATH DEFAULTS					
Target path . . . (Unlocked) /ACCOUNTS//PAYABLE/CLOSED					
From path (Unlocked) /ACCOUNTS/PAYABLE/OPEN					
IFS EXPLODE PATHS					
Path (Unlocked) /QNTC/SERVER/SHARE/DEPLOYPC/&F/&L					
FORM DEFAULTS					
Job description	QBATCH	Name, *PGMR	Restricted		
Library	QGPL	Name	Restricted		
Library list name	APA1	Name	Restricted		
Library list	QBATCH				
Error Recovery	3	1-3	Restricted		
Threshold	0	0-99			
Error check form.	*BATCH	*BATCH, *INTER	Restricted		
Form schedule time.		*CURRENT, hhmmss			
Schedule elapsed action	*SBMRLS	*NEXTDAY, *SBMHLD, *SBMRLS, *NOSBM			
Submit Form on hold	Y	Y, N			
Submit Finalization	N	Y, N	Restricted		
Form Level Programmer	*USRPRF	Name, *USRPRF	Restricted		
Produce Listings	Y	Y, N			
Restricted					
Logging Level	4	Blank, 0-4	Restricted		
Logging Severity	0	0-99	Restricted		
Output Queue	*JOB	Name, *PGMR, *USRPRF,			
		*JOB	Restricted		
Library		Name, *LIBL	Restricted		
Job Accounting Code	*JOB	Code, *JOB	Restricted		
LINE DEFAULTS					
Method	CSCO	CSCO, CSMO, CSCD, COPR, MO, CD, CS,			
		*NULL	Unlocked		
Check for Level-Check	Y	Y, N			
Update Object Description	N	Y, N			
Create parameters	P	P, T, S, R, C	Unlocked		
Reference object		Name, REF*	Unlocked		
Library		Name	Unlocked		
Authority	P	P, T, S, R	Unlocked		
Reference object		Name, REF*	Unlocked		
Library		Name	Unlocked		
Delete test object	N	Y, N	Unlocked		
Delete test source	Y	Y, N	Restricted		
Programmer	*CHECKOUT	*USRPRF, *FORM,			
		*CHECKOUT	Locked		
Reference	*FORM	Code, *FORM	Restricted		
IFS LINE DEFAULTS					
Target authority list (Unlocked) ACCOUNTS					
Development authority list ACCOUNTS					
Promotion method (Unlocked) MOV					
Delete from object (Unlocked) N					

Check Application Definition report

Once you have defined an application, you can select this report to check that application. TURNOVER® Lifecycle Manager assumes that the actual production objects are in the libraries you defined for your application.

Check Application Definition (CHKAPPDFN)

Type choices, press Enter.

Application		Character value
Release	*LAST	*LAST, Release Number
Version	*LAST	Number, *LAST
Level	*PROD	Number, *PROD
Detail	*ALL	*ALL, *OBJNAMSTD, *JOB...
+ for more values		

Bottom

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

If you set **Detail** to *ALL, TURNOVER® Lifecycle Manager prints these reports:

Report	Description
*OBJNAMSTD	Objects that do not match the object naming standards in the application type code.
*JOB	TURNOVER® Lifecycle Manager checks the library list in the job description to make sure that it is correct for the application. From libraries, or libraries referenced at lower levels, should not be contained in the library list.
*APPLLIBL	The recommended application library list, and the libraries that have been defined to the application library list name.
*OBJNOSRC	Objects for which TURNOVER® Lifecycle Manager could find no source in the target libraries.
*LVLCHK	Objects for which source was found in the correct library, but for which the change date does not match the object description.
*REFOBJ	All missing reference objects (objects which are used by TURNOVER® Lifecycle Manager when creating new objects and granting authority to objects).
*SRCNOOBJ	All source members for which no object exists.
*OBJOWNER	All objects with owners that are different than TURNOVER® Lifecycle Manager expects, given the application settings.
*OBJNOTYP	Any objects of a type not included in the list of valid type codes for the application.

Application Check reports sample

(Not all categories are shown.)

TURNOVER® Lifecycle Manager produces a list similar to this for each category described above.

MM/DD/YY 08:45:05	Check Application Definition Report	SLS-US Division Page: 1

* APPLICATION: AP	Test Application- Prod Level 2	*
* RELEASE-#:		*
* VERSION-#:	LEVEL-#: 2	*

Selection: *OBJNAMSTD - Objects that do not match naming standards		
Object	Library	Type Name-Std
APREFF	PRODTEST	PF APPF%%%
QCLSRC	PRODTEST	PF APPF%%%
QCMSRC	PRODTEST	PF APPF%%%
QDDSRC	PRODTEST	PF APPF%%%
QRPGSRC	PRODTEST	PF APPF%%%
QXTSRC	PRODTEST	PF APPF%%%
REFCLP	PRODTEST	CLP APCL%%%
REFCMD	PRODTEST	CMD APCMD%%%
REFDSPF	PRODTEST	DSPF APDSPF%%
REFLF	PRODTEST	LF APLF%%%
REFMSGF	PRODTEST	MSGF APMSGF%%
REFPF	PRODTEST	PF APPF%%%
REFPGM	PRODTEST	CLP APCL%%%
REFRPG	PRODTEST	RPG AP%%%

Application Audit report

Application Audit Report (AUDITRPT)		
Type choices, press Enter.		
Application	<u>*ALL</u>	Character value, *ALL
Release	<u>0</u>	Number
Version	<u>0</u>	Number
Level	<u>*PROD</u>	Number, *PROD, *ALL
Object	<u>*ALL</u>	Name, generic*, *ALL
Object Type	<u>*ALL</u>	Character value
Library	<u>*ALL</u>	Character value, *ALL
+ for more values		
Starting Date	<u>000000</u>	Date, 000000
Include past number of days	<u>000000</u>	Number of days, 0000
Outfile		Name
Library name		Name
Add or replace outfile	<u>*ADD</u>	*YES, *NO
Bottom		
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display		
F24=More keys		

The Application Audit report identifies any application objects or source members that might have been changed, added or deleted outside of TURNOVER® Lifecycle Manager (including objects in explode libraries). After you have resolved any discrepancies, you can run another reporting option to adjust TURNOVER® Lifecycle Manager's audit control file so that it matches

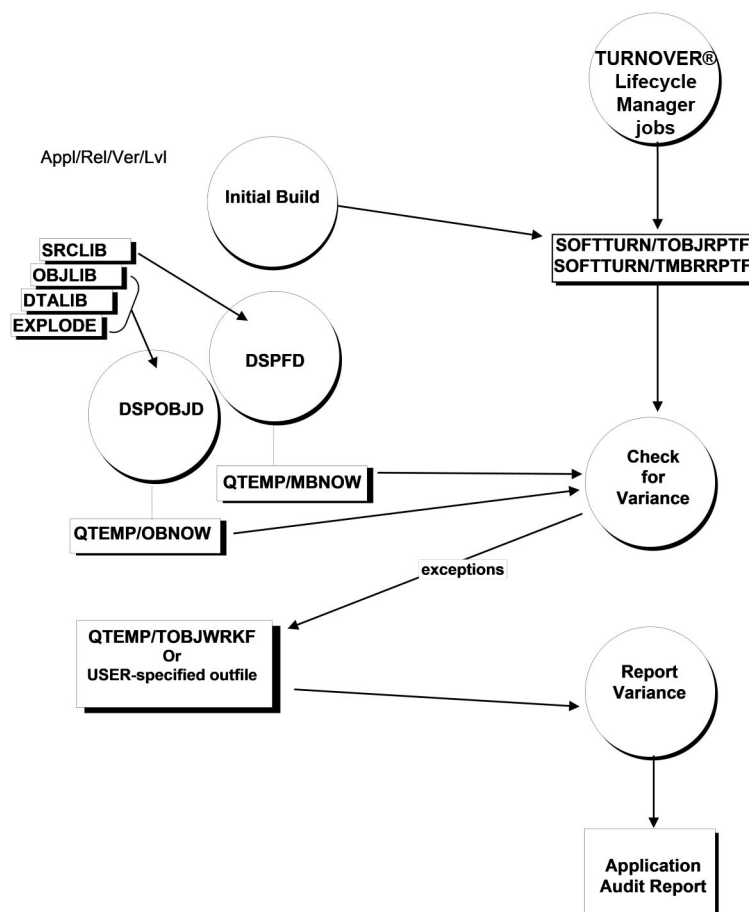
the application's object and source. If you run the initial application build job (Work with Application Definitions, option 23), or the Audit Adjustment Report, TURNOVER® Lifecycle Manager builds an audit control file (*TOBJRPTF*) that contains information about each of the objects and source members for the application you select.

If any levels of your application definition have no issues to report, a separate "No Variances" report is generated listing all levels to which that condition applies.

TURNOVER® Lifecycle Manager updates the audit control file every time you run a TURNOVER® Lifecycle Manager form. The flow chart on the next page illustrates the procedure followed during the *AUDITRPT* job.

Supply an output file name if desired, to create a file for special reporting. This file contains records of discrepancies identified during the verification run. You can have TURNOVER® Lifecycle Manager replace the output file if it already exists.

The following diagram illustrates the steps that are performed when you run the initial build job, when you run TURNOVER® Lifecycle Manager forms and by this audit job.



Audit Report example

Date: MM/DD/YY	Audit Report	SLS-US Division
Time: 09:15:15		Page 1
Application: AAX		
Release: 2		
Version:		
Level: 1		
Objects: *ALL		
Object Type: *ALL		
Library: *ALL		
Starting From: 0/00/00		
Object: "&A"		
Library: AAXPRD		
Type: *PGM		
	TURNOVER Values	Actual Values
	-----	-----
OBJATR		CLLE
OWNER		QPGMR
ASP		01
CRTDATE	00/00/00-00:00:00	04/07/19-15:05:05
CHGDATE	00/00/00-00:00:00	04/08/18-22:09:16
RSTDATE	00/00/00-00:00:00	04/08/18-22:09:15
CRTUSER		BIKER
CRTSYSTEM		YOURSYS
SRCF		QCLSRC
SRCFLIB		BIKER
SRCMBR		"&A"
SRCDATE	00/00/00-00:00:00	04/07/18-15:04:57
No Record of Object Creation in TURNOVER® Lifecycle Manager		
Object: ACME01		
Library: AAXPRD		
Type: *PGM		
	TURNOVER Values	Actual Values
	-----	-----
Not Found--Deleted Outside of TURNOVER® Lifecycle Manager		
Member: SOMECLPGM	TURNOVER Form Nbr: 6401844	
LibFile: QCCLSRC	Line Nbr: 001	
Library: AAXPRD	Run Date: 2/13/18 10:19:25	
	TURNOVER Values	Actual Values
	-----	-----
SRCCHGDATE	06/02/17-10:19:26	06/02/19-10:28:10

When all objects in an application level meet audit expectations, a No Variance report is generated along with other report output:

Date: 8/23/19	Audit Report	Your Company, Inc.
Time: 09:30:30	System: YOURSYS	Page 1
Objects: *ALL		
Object Type: *ALL		
Library: *ALL		
Starting From: 0/00/00		
No Object or Member Variances Found for the following Application/Release/Version/Levels:		
AAX /00/00/01		
AAX /02/00/02		
AAX /02/00/03		
AAX /02/00/04		

Audit Adjustments report

The application adjustment procedure lets you correct the TURNOVER® Lifecycle Manager audit control file so that it matches the objects and source members for your application. Run this report *only* after you thoroughly understand the reasons for any discrepancies and have corrected the source of these discrepancies. The flow is the same as for the Audit Report except that TURNOVER® Lifecycle Manager updates the audit control file (TOBJRPTF) and writes records to the Audit adjustment history file (TAUDHSTF), making a permanent record of any changes.

Use the **Library** parameter to include all application libraries (including explode libraries), or identify up to 10 specific libraries to include.

Use the **Starting date** parameter to select only objects promoted or created since the date you specify.

A 32-character **Comment** field is available to enter the reason this adjustment is being done. This comment appears in the report should you decide to print and file it for auditing purposes (however, the comment information is not retained).

Audit Adjustments Report example

Date: MM/DD/YY	Adjustment Report				Your Company, Inc.	
Time: 09:45:45	System: YOURSYS				Page 1	
Application: AAX						
Release:						
Version:						
Level: 1						
Objects: *ALL						
Object Type: *ALL						
Library: *ALL						
Starting From: 0/00/00						
Comment:						
Library	Object	Type	Form-#	Line-#	Run Date	Message
-----	-----	-----	-----	-----	-----	-----
AAXQA	QCLLESRC	*FILE	6311001	104	0/00/00	Chg-d TO Audit Obj
AAXQA	QCLSRC	*FILE	6311001	105	0/00/00	Chg-d TO Audit Obj
AAXQA	QCLSRCGPG	*FILE			0/00/00	Added TO Audit Obj
AAXQA	QCLS36SRC	*FILE	6311001	107	0/00/00	Chg-d TO Audit Obj
AAXQA	QCMSRC	*FILE	6311001	108	0/00/00	Chg-d TO Audit Obj
AAXQA	QCSRC	*FILE	6311001	109	0/00/00	Chg-d TO Audit Obj
AAXQA	QCUMBER	*FILE	6311001	110	0/00/00	Rmv-d TO Audit Frm
AAXQA	QDDSSRC	*FILE	6311001	111	0/00/00	Chg-d TO Audit Obj
AAXQA	QDDSSRCGPG	*FILE	6311001	112	0/00/00	Rmv-d TO Audit Frm
AAXQA	QLBLSRC	*FILE	6311001	113	0/00/00	Chg-d TO Audit Obj
AAXQA	QMNUSRC	*FILE	6311001	114	0/00/00	Chg-d TO Audit Obj
AAXQA	QRPGLSRC	*FILE	6311001	115	0/00/00	Chg-d TO Audit Obj
AAXQA	QRPGSRC	*FILE	6311001	116	0/00/00	Chg-d TO Audit Obj

Project reports

If you use TURNOVER® Lifecycle Manager's project system, you can print project and task information with this report. A variety of selection criteria can be specified to limit the detail or define the breadth of information reported. You can run this report from the TURNOVER® Lifecycle Manager Reporting menu or by typing the command PRJTSKRPT.

Projects and Tasks report: Summary

The summary version of the Project Task Report prints one line of information for each task.

In addition to being able to report all tasks for one or more projects, you can also print selected tasks. You can further limit the report by specifying Requester, Resource, Status, and Priority.

To run the report

Do one of the following:

- On the Reporting Menu, select option 10.
- On the command line, type PRJTSCRPT, and then press F4.

Press Enter again to view the parameters for the summary version.

MM/DD/YY 09:50:05	Project Task Report (PRJTSCRPT)		Your Company, Inc.	
Type choices, press Enter.				
Report option.....	*SUMMARY			
Print cover page.....	<u>Y</u> Y,N			
Project.....	<u>*ALL</u>	_____	_____	_____
Task.....	<u>*ALL</u>	_____	_____	_____
Subtask.....	<u>*ALL</u>	_____		
Resource.....	<u>*ALL</u>	_____	_____	_____
		_____	_____	_____
		_____	_____	_____
More...				
F3=Exit F4=Prompt F10=Additional parameters F12=Cancel				

Page down to see more parameters.

You can also search the task description and/or task details for a character string value to further limit your search. This search, also available interactively on the Work with Task panel, is a very effective way to focus in on previously entered requests.

MM/DD/YY
09:55:10

Project Task Report

Your Company, Inc.
Page: 1

Selection criteria

Report option *SUMMARY

Project *ALL

Task *ALL

Subtask *ALL

Resource *ALL

Status *ALL

Requester *ALL

Priority *ALL

Task type *ALL

User-defined field #1 . . . *ALL

: : : : :

User-defined field #10 . . *ALL

Date needed 0/00/00 to 99/99/99

Date promised 0/00/00 to 99/99/99

Actual Start Date 0/00/00 to 99/99/99

Actual End Date 0/00/00 to 99/99/99

Date entered 0/00/00 to 99/99/99

Search string

=====

8/23/20

Project Task Report

Your Company, Inc.
Page: 2

09:55:10

Proj/Task

Status

Pty

Resource

Requester

Description

APPR0001

ASSIGNED

1

ELMSMIKE

MERKMD

Fix check-writing program: This is a high priority

APPR0002

ASSIGNED

1

ELMSMIKE

CARPENTER

Add status field to Vendor File

APPR0003

IN-QA

2

ELMSMIKE

MARKPHIP

Update sales tax tables

APPR0012

CANCEL

1

TURNERIV

MERKEMD

Add priority field to Vendor File

Projects and Tasks report: Detail version

The detail version of the Project Task report prints one page of information for each task.

In addition to being able to report all tasks for one or more projects, you can also print selected tasks. You can further limit the report by specifying Requester, Resource, Status, and Priority. In addition, you can specify which detail sections you want to see.

To run the report

- Do one of the following:
 - On the Reporting menu, select option 10.
 - On the command line, type PRJTSCRPT, and then press F4.
- Type *DETAIL, and then press Enter again to view the parameters for the detailed version.

MM/DD/YY 10:15:30		Project Task Report (PRJTSKRPT)		Your Company, Inc.	
Type choices, press Enter.					
Report option.....	*DETAIL				
Print cover page.....	Y	Y,N	Print related tasks.....	Y	Y,N
Print task details.....	<u>Y</u>	Y,N	Print timesheet entries...	<u>N</u>	Y,N
Print checked out objects.	<u>N</u>	Y,N	Print object history.....	<u>N</u>	Y,N
Print test plan.....	<u>R</u>	Y=Yes, N=No, R=Results			
Project.....	<u>*ALL</u>	_____	_____	_____	_____
	_____	_____	_____	_____	_____
Task.....	<u>*ALL</u>	_____	_____	_____	_____
	_____	_____	_____	_____	_____
Subtask.....	<u>*ALL</u>	_____	_____	_____	_____
Resource.....	<u>*ALL</u>	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
					More...
F3=Exit F4=Prompt F10=Additional Parameters F12=Cancel					

The parameters, **Print related tasks**, **Print task details**, and so on, correspond to sections of the report.

Press Page Down to see more parameters.

You can print all of the tasks or requests entered on behalf of a particular Requester or for a particular Resource. You can print all of the text details available for the tasks you select.

Projects and Tasks report: Detail report example

MM/DD/YY		Project Task Report		Your Company, Inc.									
10:30:40				Page: 1									
Task	TP320383	Fix TOMSGRCV for NLS -enabling											
Resource	ELMSMIKE	Mike Elms											
Status	DONE												
Requester	MERKEMD	M.D. MERKE											
Priority	1	1 to 3											
Priority sequence													
Task type	ASAP												
Application	TO 3 2												
Date needed	0/00/00												
Date promised	3/02/21												
	Planned	Actual											
Duration	1.00 H	1.00 H											
Start date	10/26/20	10/26/20											
End date	10/26/20	10/26/20											
Dependency													
Billable time	N												
Subsystem	Distrib [User defined field example]												
Entered Changed													
User profile	PHILLIPSMA	PHILLIPSMA											
Date	10/26/19	12/07/20											
Time	9:23:32	17:09:32 Task details:											
Problem:													

Fix TOMSGRCV for NLS -enabling. It is not recognizing the correct environment when it sends back confirmations, and confirms to the wrong environment.													

Resolution:													

Program TURCAUTR fixed on 10/26/19. This program was sending back the wrong environment ID on confirmations.													

<u>Originating Tasks:</u>													
Task	Requester	Date entered	Entered by	Date reviewed	Reviewed by	Date assigned	Assigned by						
FTPR0221	CARLSONRA	2/12/19	TAGERTMIKE	2/12/19	TAGERTMIKE	2/12/19	TAGERTMIKE						
FTPR2554	CLARKKENT	2/12/20	TAGERTMIKE	2/12/19	TAGERTMIKE	2/12/19	TAGERTMIKE						
<u>Timesheet entries:</u>													
----- Time -----													
Resource	Date	From	-	To	Total	Cat	Comment						
ELMSMIKE	3/17/20	8:00		10:00	2:00	P	All done						
				Total:	2:00								
<u>Checked out objects:</u>													
Object	Library	Type	Programmer	Appl	Rel	Ver	Lvl	Date	Time	Reference			
CLP1	SOFTTURN	CLP	ELMSMIKE	TO	3	2	2	2/14/19	11:56:50	TP320383			
CLP2	SOFTTURN	CLP	ELMSMIKE	TO	3	2	2	2/14/19	11:56:50	TP320383			
<u>Object History:</u>													
Object	Library	Type	Programmer	Appl	Rel	Ver	Lvl	Cd	Method	Form	Run Date	Status	Reference
CLP1	SOFTTURN	CLP	ELMSMIKE	TO	3	2	2	R	CSCO	4100190	2/14/19	Ran-OK	TP3203883
CLP2	SOFTTURN	CLP	ELMSMIKE	TO	3	2	2	R	CSCO	4100190	2/14/19	Ran-OK	TP3203883

Projects and Tasks report: *MASK version

When you specify the Report type *MASK (see the PRJTSKRPT command on page [‘Project reports’ on page 316](#)), you can specify the name of a Report mask you want to use. Complete the Report mask and other parameters and press Enter to run the report. For more about Report Masks, see [‘Details editor’ on page 218](#).

Here is an example of the Report mask before being merged with data from the project files. The substitution variables all start with . & which is followed by the field name as in . &FNME which stands for Requester’s first name.

```

TO:
.&FNME.&LNME
.&TITL
.&COMP
.&TEL1

Project ID: .&PROJ.&TASK.&SUBT
Priority: .&PRTY
Planned start date: .&SDTP
End date: .&EDTP

      T U R N O V E R   P R O B L E M   A C K N O W L E D G E M E N T
      =====

.&DATL
.&DTLS

```

To maintain report masks, select option 9 on the main menu, and then press F7. Then select option 8 to work with report masks.

Example report

This is what the resolved mask document looks like after the merge program replaces the substitution variables.

```

TO:
Rachael Carlson
Environmental/Analyst
Silent Spring Publishing, Inc.
1-700-924-8818

Project ID: TP32 0383
Priority: 1

Planned start date: 10/26/20
End date: 10/26/20

      T U R N O V E R   P R O B L E M   A C K N O W L E D G E M E N T
      =====

      March 17, 2020

      Problem:
      -----
      Fix TOMSGRCV for NLS -enabling.  It is not recognizing the correct environment
      when it send back confirmations, and confirms to the wrong environment.

      -----
      Resolution:
      -----
      Program TURCAUTR fixed on 10/26/20.  This program was sending back the wrong
      environment ID on confirmations.

```

You can design virtually any output format for reporting a task. Any of the variables in the Project, Task, or Requester file, including user-defined fields, can be used as substitution variables.

Resource Time report

Project Resource Time Report (PRJRSRTIM)

Type choices, press Enter.

Resource (User-Id)	<u>*ALL</u>	Usrprf, *ALL
+ for more values		
Project	<u>*ALL</u>	Char, *ALL
Task	<u>*ALL</u>	Char, *ALL
SubTask	<u>*ALL</u>	Char, *ALL
Status	<u>*ALL</u>	Code, *ALL
+ for more values		
From date	<u>000000</u>	Date, 000000
To date	<u>999999</u>	Date, 999999
Print Selection Criteria	<u>Y</u>	Y, N
Only print summary info	<u>N</u>	Y, N
Page break on resource	<u>N</u>	Y, N

Bottom

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

The Resource time report shows time entered by one or more resources. The report sequence is Resource, Date, Project, Task, Subtask. The **Page break on resource** field controls whether or not each resource prints on a separate page.

Resource Time report example

MM/DD/YY		Project Resource Timesheet Report						SLS-US Division	
11:15:05									
Page: 1									
		Sub			---Time---				
Resource	Project	Task	Task Description	Date	From	- To	Total	Cat	Comment
PHILLIPS	APPR	0001	Fix check-writing program	2/10/20			2:00	P	
PHILLIPS	APPR	0001	Fix check-writing program	2/12/20			2:00	P	Found a shortcut
PHILLIPS	APPR	0001	Fix check-writing program	2/16/20			2:00	T	
PHILLIPS	APPR	0002	Change Trial Balance	9/24/20	6:30	3:30	9:00	C	
PHILLIPS	APPR	0002	Change Trial Balance	10/27/20			1:00	P	
PHILLIPS	APPR	0002	Change Trial Balance	12/17/20			2:00	P	
PHILLIPS	APPR	0047	Change PWM tasking	4/28/20			2:00	P	
PHILLIPS	APPR	0047	Add postal codes to checks	6/08/20			2:00	P	
PHILLIPS	APPR	0053	Demonstrate PWM	5/25/20	3:00	5:00	2:00	R	
PHILLIPS	APPR	0059	Change FPC position on label	3/09/20			2:00	P	
PHILLIPS	FPPR	0012	TURNOVER® issuing CHECKOUT	4/21/20			2:00	P	
PHILLIPS Subtotal:							88:30	***	
MM/DD/YY		Project Resource Timesheet Report						SLS-US Division	
11:15:05									
Page: 2									
		Sub			---Time---				
Resource	Project	Task	Task Description	Date	From	- To	Total	Cat	Comment
PALANO	APPR	0001	Fix check-writing program	7/07/20			4:20	A	
PALANO	TP31	0032	TPR3 - In work with object	4/13/20	8:00	10:00	2:00	A	
PALANO Subtotal:							6:20	***	
Total:							184:00	****	

Project timesheet report

Use this command to produce a detailed report of time spent on a project and/or tasks.

```

Project Timesheet Report (TIMERPT)

Type choices, press Enter.

Project . . . . . *ALL          Char, *ALL
Task . . . . . *ALL          Char, *ALL
Subtask . . . . . *ALL        Char, *ALL
Status . . . . . *ALL        Code, *ALL
    + for more values . . .
Resource (User-Id) . . . . . *ALL      Usrprf, *ALL
    + for more values . . .
From date . . . . . 000000      Date, 000000
To date . . . . . 999999      Date, 000000

Bottom

F3=Exit  F4=Prompt  F5=Refresh  F12=Previous  F13=How to use this display
F24=More keys

```

Project Timesheet Report example

MM/DD/YY	Project Time Sheet Report					Your Company, Inc.				
11:48:25						Page: 1				
Selection parameters										
Project:		TE31								
Task:		*ALL								
Subtask:		*ALL								
Status codes:		*ALL								
Resources:		EMERSON								
From date:		04/01/20								
To date:		04/01/20								

MM/DD/YY	Project Time Sheet Report					Your Company, Inc.				
11:48:25						Page: 2				
Sub		-----Time-----								
Project	Task	Task	Description	Date	Resource	From	To	Total	Cat	
TE21	0001	01	This is the first task	040120	EMERSON	11:00	3:00	4:00	P	
TE21	0001	02	This is the first task	040120	EMERSON	11:00	3:00	4:00	P	
TE21	0001	01	This is the first task	040120	EMERSON	11:00	3:00	4:00	T	
Total:								12:00		

Priority report

This report produces a list of Project tasks in Priority and Priority sequence order, by Resource or other selection criteria.

Priority Report (PRJPTYRPT)

Type choices, press Enter.

Resource (User-Id) <u>*ALL</u>	Name, *ALL
+ for more values	
From Project/Task/Subtask <u>*START</u>	ProjTaskSb, *START
To Project/Task/Subtask <u>*PRJEND</u>	ProjTaskSb, *PRJEND, *END
From Priority <u>1</u>	Priority Range
To Priority <u>9</u>	Priority Range
Status Codes <u>-</u>	Status, Blank for All
+ for more values	
Summary Description? <u>Y</u>	Y, N
Page Break on Task and Subtask. <u>N</u>	Y, N
Print Selection Criteria <u>Y</u>	Y, N

Bottom

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

Project and Tasks by Priority report example

MM/DD/YY
12:05:35

Priority Report

Your Company Inc.
Page 1

Selection parameters:

Resource: PHILLIPS

From Project: *START to *END

From Priority: 1 to 9

Status:

Summary: Y

Page Break: N

MM/DD/YY
12:05:35

Priority Report

Your Company Inc.
Page 2

Pty	Resource	Prj/Tst/SubTsk	Status	Description
1	PHILLIPS	APPR0047	STARTED	Sample PWM task
1	PHILLIPS	APPR0059	NEW	Sample programmer Worklist
1	PHILLIPS	CMA 0001	NEW	First Customer MO
1	PHILLIPS	CWI 0001	NEW	First change to Rel 8
2	PHILLIPS	FTRQ0107	REVIEWED	Change Timesheet to allow accuracy down to the second
2	PHILLIPS	FTRQ0120	REVIEWED	Application audit report doesn't accept *ALL
2	PHILLIPS	PET 0001	STARTED	Add new fields to database
2	PHILLIPS	PET 0002	STARTED	Fix bugs in existing programs
3	PHILLIPS	PET 0003	STARTED	Add UIM Help
3	PHILLIPS	PET 0004	ASSIGNED	Recover print check list source
3	PHILLIPS	PET 0005	STARTED	Create menu with authorization check
3	PHILLIPS	PET 0006	STARTED	Recompile for V2R2M0
3	PHILLIPS	PET 0007	STARTED	Create a non-rating mode
3	PHILLIPS	SLSO0002	DONE	Update Tape Dates from Packing list pram
3	PHILLIPS	SLSO0003	DONE	Send Fax from Contact Scan & Select Scen
3	PHILLIPS	SLSO0008	DONE	Can't delete contact

Project Cost report

This report shows time spent and costs incurred on a project and its tasks.

Project Cost Report (PRJCSTRPT)

Type choices, press Enter.

Project <u>*ALL</u>	Char, *ALL
Task. <u>*ALL</u>	Char, *ALL
Subtask <u>*ALL</u>	Char, *ALL
Status <u>*ALL</u>	Code, *ALL
+ for more values	
Resource <u>*ALL</u>	Resource Id, *ALL
+ for more values	
Requestor <u>*ALL</u>	Requestor Id, *ALL
+ for more values	
From date <u>000000</u>	Date, 000000
To date <u>999999</u>	Date, 000000
Calculation method <u>*TIMESHEET</u>	*TIMESHEET, PROJECT
Print selection criteria <u>Y</u>	Y, N

Bottom

F3=Exit F4=Prompt F5=Refresh F12=Previous F13=How to use this display
F24=More keys

To run this report, you must be authorized to Programmer Defaults. For more information, see [‘Authorizing users to TURNOVER® Lifecycle Manager’ on page 50.](#)

Project Cost Report example

MM/DD/YY		Project Cost Report							Your Company, Inc.		
12:15:30									Page: 1		
----Planned---			-----Actual-----								
Proj	Task	Sub	Description	Status	Requestor	Resource	Rate	Time	Cost	Time	Cost
TE31	0038		Partial Distributions	DONE	SULLIVAN	SUEMRKS	15.00	8:00	120.00	3:00	45.00
TE31	0095		Archive compile listings	ASSIGNED	SULLIVAN	EDDOYLE	5.00	24:00	120.00		.00
TE31	0117		Fields on form that are	ASSIGNED	DURANELI	EL SINOR	75.00	8:00	600.00		.00
TE31	0121		Time Sheet Report	DONE	KANEPAT	SUEMRKS	15.00	4:00	60.00	12:36	189.15
TE31	0123		Allow Create Parm	ASSIGNED	KLINEM	EL SINOR	75.00	8:00	600.00		.00
...											
...											
...Total:								324:00	12,143	121:00	6,058

Subtotals by project, and totals, are shown for the entire selection.

Task Aging report

The Task Aging Report can be used to keep track of overdue tasks that need attention or it can be used to see an Aging report of all tasks, based on priority and the date they were added to the file. Detail and summary versions of the report can be produced.

To run the report, select option 15 on the Reporting menu or type the command `TSKAGERPT` and then press F4.

Task Aging Report (TSKAGERPT)		
Type choices, press Enter.		
Project	<u>*ALL</u>	*ALL, *HELPDESK, *WORKING ...
Time interval one	<u>7</u>	days
Time interval two	<u>*PRV</u>	days, *PRV
Time interval three.	<u>15</u>	days, *PRV
Time interval four	<u>30</u>	days, *PRV
Time interval five	<u>60</u>	days, *PRV
Only tasks exceeding due date . . .	<u>Y</u>	Y, N
Resource	<u>*ALL</u>	Character value, *ALL
Requester	<u>*ALL</u>	Name, generic*, *ALL
Requester company	<u>*ALL</u>	
Status	<u>*ALL</u>	Character value, *ALL
Priority	<u>*ALL</u>	Character value, *ALL
Report date	<u>*TODAY</u>	Date, *TODAY
Report type	<u>*DETAIL</u>	*DETAIL, *SUMMARY
Aging report criteria	<u>*TABLE</u>	*TABLE, *DATE
Print cover page	<u>Y</u>	Y, N
Bottom		
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display		
F24=More keys		

You can generate an Aging Report for a single project, for all *HELPDESK projects, for all *WORKING projects or for *ALL projects.

Only tasks exceeding due date

Y includes only tasks reported whose Planned end date or Date promised are beyond the Report date.

N includes all tasks.

Tasks will be grouped by Priority and Time thresholds, according to the length of time the task has been on file as compared to the Report date.

Aging report criteria

*TABLE includes only those tasks whose task status and priority in the Escalation Table for the project and whose Aging Report parameter is set to Y. This provides a means to limit the report only to the most important requests and tasks.

*DATE includes all tasks where the **Actual End Date** is zero.

Task Aging Report: Summary version example

The summary version provides summary statistics (counts) of tasks within each time threshold. For example, between 1 day and 7 days old, 8 and 15 days, 16 and 30, and so on, including up to five time ranges.

MM/DD/YY

12:35:05

Task Aging Report

Your Company, Inc.

System: SLSDEV

Selection criteria:

Project *ALL

Time interval one 7

Time interval two 7

Time interval three. 15

Time interval four 30

Time interval five 60

Only tasks exceeding due date . *YES

Resource *ALL

Requesters *ALL

Requester company *ALL

Include status *ALL

Include priority *ALL

Report date. *TODAY

Report type. *SUMMARY

Aging report criteria *DATE

Project: APPR AP Project

Priority Group

1 to 7 Days

8 to 14 days

15-30 days

31-60 days

60-90 days

91+

Priority 1 tasks

3

31

4

10

Priority 2 tasks

3

6

2

43

Priority 3 tasks

4

1

3

14

Priority 4 tasks

1

3

All

Project: ARPR AR Project

Task Aging report: Detailed version example

Each task for which action is due is reported on the Task Aging Report. This version provides you with a list of the highest priority problems and total duration of tasks within each aging threshold.

MM/DD/YY
12:55:05

Task Aging Report

Your Company, Inc.
System: SLSDEV

Selection criteria:

Project

*ALL

Time interval one

7

Time interval two

7

Time interval three.

15

Time interval four

30

Time interval five

60

Only tasks exceeding due date .

Y

Resource

*ALL

Requester

*ALL

Requester company

*ALL

Status

*ALL

Priority

*ALL

Report date.

*TODAY

Report type.

*DETAIL

Aging report criteria

*DATE

Project: APPR AP Project

Priority 1 tasks 3 to 7 Days

Task/subtask	Description	Resource	Date added	Plan Date	Duration	Date Promised	Status
APPR002402	This is a task description	SMITHJOE	08/25/20	08/30/20	6 hrs	00/00/00	Started
APPR0027	This is another task	ADAMSANN	08/25/20	08/30/20	5 hrs	00/00/00	Started
APPR0031	This task is makes one more	*NONE	08/25/20	08/30/20	2 hrs	00/00/00	Started
APPR0042	This is yet another task	TRANTEM	08/25/20	08/30/20	16 hrs	00/00/00	Started
Total: 4 tasks total duration 29 hrs							

Priority 1 tasks 8-14 Days

APPR000102	This is a task description	MERCHTO	08/10/20	08/30/20	6 hrs	00/00/00	Started
APPR0002	This is another task	DANIEL	08/11/20	08/30/20	6 hrs	00/00/00	Started
APPR004202	This is yet another task	MURPHYA	08/09/20	08/30/20	6 hrs	00/00/00	Started
Total: 3 tasks total duration 18 hrs							

Priority 1 tasks 15-30 Days

Project Definition report

This report can be produced by selecting option 6 on Work with Projects panel, or by running the Project Definition Report command (PRJDEFRPT). It lists all the project parameters and rules.

Project Definition report example

MM/DD/YY 13:15:25	Project Definition	Your Company, Inc.
Project: APPR Demo Project sample problem reports		Page: 1
<u>Project Description</u>		
Status	STARTED	
Priority range	1 to 3	
Project administrator	TURNOVER	
Auto-assign task numbers	Y	
Audit project changes	N	
Requester validation	*FILE	
Personality	*WORKING	
Escalation table		
Details editor	*TURNOVER	
<u>Project Details</u>		
AP Demo problems: Demo project for TURNOVER® Lifecycle Manager examples.		
<u>User-defined fields</u>		
User field 1		
User field 2		
User field 3		
User field 4		
User field 5	DEPT	Department ID/Location
User field 6	PRODUCT	Product/Version
User field 7		
User field 8		
User field 9		
User field 10		
<u>Valid applications</u>		
Appl Rel Ver Description		
AP	Test Application-	Test Level 1
AR	Test Application-	Prod Level 2
<u>Valid Resources</u>		
Resource Description		
*ALL	All resources are valid	
<u>Valid status codes</u>		
Sts Description		
*ALL	All status codes are valid	
<u>Task defaults</u>		
Application	AP	
Release		
Version		
Resource	*USRPRF	
Requester	*USRPRF	
Status	ASSIGNED	
Priority	1	
Task type	ASAP	
Time units	H	
Billable time	Y	
Test data library		
Test object library		
Test source library		
<u>Authorized users</u>		
User Description	View Add Chg Dlt Rvw	
*NONE Unassigned	X X	
ELMSMIKE Mike Elms	X X X X X	
QSECOFR Security officer	X X X X X	
TURNOVER TURNOVER® Lifecycle Manager Administrator	X X X X X	
<u>Personality defaults</u>		
Details mask required	Y Masks defined	1
Report mask required	Y Masks defined	3

History reports

List Forms report

List Forms (LISTFORMS)	
Type choices, press Enter.	
Application	*ALL
Release	0
Version	0
Level	0
Reference	*ALL
From form	1
To form	999999
Programmer.	*ALL
+ for more values	
Job accounting code	*ALL
+ for more values	
Form status	*ALL
+ for more values	
Form Detail Level	*LINE
Task Detail Level	*NONE
Print Selection Criteria . .	Y
Print Form for approval . .	N
List all forms in Group . .	Y
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display F24=More keys	

This report prints one or more TURNOVER® Lifecycle Manager forms. You can select forms by application, by form number or range of form numbers, level of detail and other selection criteria. Report sequence is by form number.

List Forms report: Example

This sample Form Listing includes:

- Form Detail Level of *FULL detail
- Task Detail Level of *LINE
- Print Form for approval of Y.

This sample includes a form comment, a pre-run command, and a post-run command.

MM/DD/YY 13:30:35	Form Listing	Your Company Inc. Page 1
A P P R O V A L S		

* APPLICATION: AP Test Application- Test Level 1 *	* _ _ _ _ _ / _ _ _ _ _ *	
* RELEASE-#:	* _ _ _ _ _ / _ _ _ _ _ *	
* VERSION-#:	* _ _ _ _ _ / _ _ _ _ _ *	

* Form: <u>0100331</u>	Description: Fix check-writing program	Status: <u>READY</u>
* Run date: 00/00/00	Job description: AP1	Reference: APPR0001
* Run time:	Library: ACPTTEST	Programmer: PSCMIDT
* Job number:	Job accounting:	
* From date: 0/00/00	From time:	
* To date: 0/00/00	To time:	
* Library list: *JOB		
* Submit Finalization: *YES		
* Forms in run Group: 0100331		

Description: Fix check-writing program: This is a sample task description from the project task file		
<u>FORM COMMENTS:</u> PSCMIDT 6/09/20 This is a Form comment. This form must complete by 12 midnight, 6/10/20		
<u>LOCK CHECKS:</u> Object: TLINEF Library: SLSPROD Type: *FILE Allocate: Y		
<u>PRE-RUN COMMANDS:</u>		
CPYF FROMFILE(SLS/TOINVF) TOFILE(QTEMP/TOINVF) CRTFILE(*YES)		
Line: 1 Object: APCLP991 Library: ACPTTEST Type: CLP Code: Add Method: CSCO Ref: APPR0001 Status: <u>READY</u>		
TEST source file:	QCLSRC	Library: DEVT EST Member: APCLP991
TEST object name:	APCLP991	Library: DEVT EST
PROD source file:	QCLSRC	Library: ACPT TEST Member: APCLP991
Compile parms: C	Reference object: APCL P991	Library: PRODTST
Create command: CRTCLPGM PGM(ACPTTEST/APCLP991) SRCFILE(ACPTTEST/QCLSRC) SRCMBR(APCLP991)		
USRPRF(*OWNER) ALWRTVSRC(*NO) TGTRLS(V2R1M0)		
Authority: R	Reference object: REFC LP	Library: *LIBL
Programmer: PSCMIDT	Reference#: APPR00 01	Delete test object: Y Delete test source: Y
Line: 2 Object: APR00991 Library: ACPTTEST Type: RPG Code: Add Method: CSCO Ref: APPR0001 Status: <u>READY</u>		
TEST source file:	QRPGRSRC	Library: DEVT EST Member: APR00991
TEST object name:	APR00991	Library: DEVT EST
PROD source file:	QRPGRSRC	Library: ACPT TEST Member: APR00991
<u>POST-RUN COMMANDS:</u>		
CALL SLSCVTF		

Object History report

Report Object History (RPTOBJHST)	
Type choices, press Enter.	
Application	*ALL
Release	0
Version	0
Level	0
Reference	*ALL
Object	
Library.	*ALL
+ for more values	
*ALL	
Object type	*ALL
From date	000000
To date	999999
Detail	*BASIC
Appl, *ALL	
Rel	
Ver	
Lev	
Char, *ALL, generic*	
Name, *ALL	
Name, *ALL	
*PGM, *FILE, *ALL	
Date, 000000	
Date, 999999	
*BASIC, *FULL	
Bottom	
F3=Exit F4=Prompt F5=Refresh F12=Previous F13=How to use this display	
F24=More keys	

This report prints the change history of one or more objects that have been promoted by TURNOVER® Lifecycle Manager. You can select objects by application, by object type, by change date range, by programmer and by reference code. Also see the Programmer History Report. The report is sequenced by object name within promotion date.

Object History Report example

The Object History Report lists objects changed or about to be changed; in this example programmer profile EDELLIS. The report sample was produced with the default of **Detail** *BASIC. It contains one line for each object listed. If we had selected **Detail** *FULL, you would see all of the data associated with TURNOVER® Lifecycle Manager form line when it was promoted to production (see *List Forms report: Example' on page 330*). For an explanation of fields on this report, see *Working with object history' on page 55*.

MM/DD/YY
13:45:15

Object History Report

Your Company Inc.
Page 1

Selection parameters

Application: *ALL
Release-#: 0
Version-#: 0
Level-#: 0
Reference: *ALL
Object: *ALL
Library: *ALL
Type: *ALL
From date: *FIRST to date: *LAST
Detail: *BASIC

Object	Library	Type	Form	Line	Date	Time	Job#	Code	Status	Test Src Lib	Tst Obj Lib	Programmer	Reference
APCLP99	ACPTTEST	CLP	101808	1	0/00/00	00:00		A-CSCO	READY	DEVTEST	DEVTEST	PSCMIDT	APPR0001
APRPG01	ACPTTEST	RPG	100971	1	0/00/00	00:00		R-CSCO	READY	DEVTEST	DEVTEST	PHILLIP	APPR0001
TURASIP	ASILIB	RPG	100712	1	9/23/20	16:45	043123	R-CSCO	RAN-OK	SUEMRK	SUEMRK	SUEMRK	TPR30198
ADCALT	ADLIB	CLP	101669	8	4/28/20	11:50	043127	A-CSCO	RAN-OK	EDELLIS	EDELLIS	EDELLIS	ADID0001
ADCBRO	ADLIB	CLP	101669	9	4/28/20	11:12	043127	A-CSCO	RAN-OK	EDELLIS	EDELLIS	EDELLIS	ADID0001
ADCKKD	ADLIB	CLP	101734	2	5/19/20	15:41	043127	A-CSCO	RAN-OK	PHILLIP	PHILLIP	PHILLIP	ADID0001
ADCCMP	ADLIB	CLP	101674	2	4/29/20	9:53	043127	R-CSCO	RAN-OK	PHILLIP	PHILLIP	PHILLIP	ADID0001
ADCL022	ADLIB	CLP	101669	10	4/28/20	11:22	043127	R-CSCO	RAN-OK	EDELLIS	EDELLIS	EDELLIS	ADID0001
ADCL024	ADLIB	CLP	101669	11	4/28/20	11:26	043127	A-CSCO	RAN-OK	EDELLIS	EDELLIS	EDELLIS	ADID0001
ADCL043	ADLIB	CLP	101669	12	4/28/20	11:33	043127	A-CSCO	RAN-OK	EDELLIS	EDELLIS	EDELLIS	ADID0001
ADCL044	ADLIB	CLP	101669	13	4/28/20	11:44	043127	R-CSCO	RAN-OK	EDELLIS	EDELLIS	EDELLIS	ADID0001
ADCL046	ADLIB	CLP	101669	14	4/28/20	11:47	043127	A-CSCO	RAN-OK	EDELLIS	EDELLIS	EDELLIS	ADID0001
ADCL066	ADLIB	CLP	101669	15	4/28/20	11:48	043127	R-CSCO	RAN-OK	EDELLIS	EDELLIS	EDELLIS	ADID0001
ADCL067	ADLIB	CLP	101669	16	4/28/20	11:55	043127	A-CSCO	RAN-OK	EDELLIS	EDELLIS	EDELLIS	ADID0001
ADCL088	ADLIB	CLP	101669	17	4/28/20	12:01	043127	R-CSCO	RAN-OK	EDELLIS	EDELLIS	EDELLIS	ADID0001
ADCL089	ADLIB	CLP	101669	18	4/28/20	12:04	043127	R-CSCO	RAN-OK	EDELLIS	EDELLIS	EDELLIS	ADID0001

Programmer History report

Report Programmer History (RPTPGMRHST)		
Type choices, press Enter.		
Programmer	<u>*ALL</u>	Usrprf, *ALL
+ for more values		
Reference	<u>*ALL</u>	Char, *ALL, generic*
Object	<u>*ALL</u>	Name, *ALL
Library	<u>*ALL</u>	Name, *ALL
+ for more values		
	<u>*ALL</u>	
Object type	<u>*ALL</u>	*ALL, *FILE, *PGM ...
From date	<u>000000</u>	Date, 000000
To date	<u>999999</u>	Date, 999999
Detail	<u>*BASIC</u>	*BASIC, *FULL
Print Selection Criteria	<u>Y</u>	Y, N
Bottom		
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display		
F24=More keys		

The Programmer History report provides a chronological history of changes made by one or more programmers. Report sequence is change date within object name within programmer name.

Programmer History Report example

The Programmer History Report lists objects changed by a selected programmer; in this example EDELLIS. The report example was produced with **Detail** *BASIC. It contains one line for each object listed. If you select **Detail** *FULL, you see all of the data associated with TURNOVER® Lifecycle Manager form line when it was promoted to production (see *'List Forms report: Example' on page 330*). For an explanation of fields on this report, see *'Working with object history' on page 55*.

MM/DD/YY
15:05:27

Programmer History Report

Your Company, Inc.
Page 1

Selection Parameters

Programmer: EDELLIS

Reference: *ALL

Object: *ALL

Library: *ALL

Type: *ALL

From date: 5/20/19 to date: *LAST

Detail: *BASIC

8/23/20
15:05:27

TURNOVER® Lifecycle Manager Programmer History Report

Your Company, Inc.
Page 2

Appl	Rel	Ver	Lev	Object	Library	Type	Form	Line	Date	Code	Status	Test Src Lib	Tst Obj Lib Reference
SM				MENRCMD	SFTMNU	RPG	101784	2	6/02/20	R-CSCO	Ran-OK	EDELLIS	EDELLIS SMPR0342
SM				MENXCMD	SFTMNU	LF	101784	1		R-CSCO	Ran-OK	SMTEST	SMTEST SMPR0342
SM				UPGRADE	SFTMNU	CLP	101785	1		A-CSCO	Ran-Wrn	SMTEST	SMTEST SMPR0342
TO	3	1	2	CHKOUTR	SOFTTURN	RPG	101759	1		R-CSCO	Ran-OK	SMTEST	SMTEST SMPR0342
TO	3	1	2	DISTDATA	SOFTTURN	CLP	101774	3	6/12/20	R-CSCO	Ran-OK	TRNTST	TRNTST SMPR0342
TO	3	1	2	DISTDATA	SOFTTURN	CMD	101774	2	6/12/20	A-CSCO	Ran-OK	TRNTST	TRNTST SMPR0342
TO	3	1	2	DISTDATA	SOFTTURN	PNLG	101774	1	6/12/20	A-CSCO	Ran-OK	TRNTST	TRNTST SMPR0342
TO	3	1	2	DISTDATAR	SOFTTURN	RPG	101774	4	6/12/20	A-CSCO	Ran-OK	TRNTST	TRNTST SMPR0342
TO	3	1	2	TURCCCLO	SOFTTURN	CLP	101732	2	6/12/20	A-CSCO	Ran-OK	TRNTST	TRNTST SMPR0342
TO	3	1	2	TURCDDRS	SOFTTURN	CLP	101774	5	6/12/20	R-CSCO	Ran-OK	TRNTST	TRNTST SMPR0342
TO	3	1	2	TURCDDR2	SOFTTO	CLP	101774	6	6/12/20	A-CSCO	Ran-OK	TRNTST	TRNTST SMPR0342
TO	3	1	2	TURCOAEP	SOFTTO	CLP	101732	3	6/12/20	A-CSCO	Ran-OK	TRNTST	TRNTST SMPR0342
TO	3	1	2	TURCPGDF	SOFTTO	CLP	101762	1	6/12/20	A-CSCO	Ran-OK	TRNTST	TRNTST SMPR0342
TO	3	1	2	TURCSRCH	SOFTTO	CLP	101752	1	6/12/20	R-CSCO	Ran-OK	TRNTST	TRNTST SMPR0342
TO	3	1	2	TURRAUTO	SOFTTO	RPG	101764	1	6/12/20	R-CSCO	Ran-OK	TRNTST	TRNTST SMPR0342
TO	3	1	2	TURRCLO	SOFTTO	RPG	101732	4	6/12/20	R-CSCO	Ran-OK	TRNTST	TRNTST SMPR0342
TO	3	1	2	TURRDDRS	SOFTTO	RPG	101774	7	6/12/20	R-CSCO	Ran-OK	TRNTST	TRNTST SMPR0342
TO	3	1	2	TURRDESC	SOFTTO	RPG	101746	1	6/12/20	A-CSCO	Ran-OK	TRNTST	TRNTST SMPR0342

Source Checkout History report

Report Source Checkout History (RPTSRCUSE)	
Type choices, press Enter.	
Source Member.	*ALL
Name, *ALL	
Source File.	*ALL
Name, *ALL	
Library	*ALL
Name, *ALL	
+ for more values	*ALL
	*ALL
Object type.	*ALL
*PGM, *FILE, *ALL	
Programmer	*ALL
USRPRF, *ALL	
+ for more values	
From date	000000
Date, 000000	
To date	999999
Date, 999999	
Status	*ALL
*IN, *OUT, *ALL	
Reference	*ALL
Char, *ALL	
Print Selection Criteria . . .Y	
Y, N	
Bottom	
F3=Exit F4=Prompt F5=Refresh F12=Previous F13=How to use this display	
F24=More keys	

This report lists source and object checkout history for selected objects, source members or group of members. The report sequence is library, source file and member. All non-source objects appear first, and then all source members.

To select what information you want to include, set the **Status** parameter.

Value	Description
*IN	Check-in activity
*OUT	Check-out activity
*ALL	Both check-out and check-in activity

Source Checkout History Report example

For more information about the fields in this report, see *'Checking source in and out'* on page 72.

MM/DD/YY

15:25:25

Source Checkout History Report

Your Company, Inc.

Page 1

Selection parameters

Source Mbr: *ALL

Source File: *ALL

Library: *ALL

Type: *ALL

Programmers: *ALL

From date: 5/20/19 to date: *LAST

Status: *ALL

Reference: *ALL

MM/DD/YY

15:25:25

Source Checkout History Report

Your Company, Inc.

Page 2

***-- P R O D U C T I O N -- ***

Library

Object

Type

DEVELOP

TESTMSG

MSGF

DEVELOP

JFCOUTQ1

*OUTQ

Check-Out

Date

Time

5/26/20

3:11

6/12/20

14:00

101721

EDELLIS

JFPA0121

Check-In

Date

Time

5/26/20

12:16

6/12/20

14:00

101721

EDELLIS

JFPA0121

Form

Number

Programmer

Reference

P R O D U C T I O N

***** T E S T ----**

Library

File

Member

Library

File

Member

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

Checkout

Date

Time

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

Check-In

Date

Time

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

Form

Number

Programmer

Reference

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTMNU40

QCMSRC

ADDBAS

SMTEST

QCMSRC

ADDBAS

11/25/20

3:04

11/25/20

3:04

101751

SUEMRK

SENH0021

SFTM

Reference Activity report

This report lists all of the Checkout and Object change history related to any particular Project task reference. Reference is only one parameter on the command prompt. You can enter a specific project task or a generic* reference.

MM/DD/YY 15:45:30		Reference Activity Report Reference: TP31010*										Your Company Inc. Page: 1			
<u>Checkout History</u>															
							---Checkout---			---Checkin---					
Object	Library	Type	Programmer	Appl	Rel	Ver	Lev	Date	-	Time	Date	-	Time	Form	Reference
TADDDAT	SOFTTURN	CLP	SUEMRK	TO	3	1	1	15/04/20	8:54:42	15/05/20	11:35:55	101286	TP3101053		
TADDTIM	SOFTTURN	CLP	SUEMRK	TO	3	1	1	15/04/20	8:55:22	15/05/20	11:35:55	101286	TP3101053		
TCLCTIM	SOFTTURN	CLP	SUEMRK	TO	3	1	1	15/04/20	9:06:14	15/05/20	11:41:55	101286	TP3101053		
TRTVDAT	SOFTTURN	CLP	SUEMRK	TO	3	1	1	15/04/20	9:07:42	15/05/20	11:35:55	101286	TP3101053		
TRTVDAT	SOFTTURN	CLP	SUEMRK	TO	3	1	1	15/04/20	9:13:12	15/05/20	11:35:55	101286	TP3101053		
TURCSBCJ	SOFTTURN	CLP	SUEMRK	TO	3	1	1	15/04/20	9:13:32	15/05/20	11:35:55	101286	TP3101053		
TURSWTSP	SOFTTURN	CLP	SUEMRK	TO	3	1	1	15/04/20	8:14:42	15/05/20	11:35:55	101286	TP3101053		
TURRWTRR	SOFTTURN	CLP	SUEMRK	TO	3	1	1	15/04/20	8:14:44	15/05/20	11:35:55	101286	TP3101053		
TURRWTRX	SOFTTURN	CLP	SUEMRK	TO	3	1	1	15/04/20	8:16:49	15/05/20	11:35:55	101286	TP3101053		
<u>Form History</u>															
Object	Library	Type	Programmer	Appl	Rel	Ver	Lev	Date	-	Time	Date	-	Time	Form	Reference
TURNMAIN	SOFTTURN	CLP	SUEMRK	TO	3	1	1	14/04/20	10:12:12	14/04/20	10:43:01	Ran-ok	TE310312		

Related Application Conflict report

This report lists related application conflicts, including an audit history of conflict resolutions. For information about related application conflicts, see “Managing Multiple Versions” in the TURNOVER® Lifecycle Manager Administrator’s Guide, page 149.

Report Conflicts (TRPTCON)

Type choices, press Enter.

Object	<u>*ALL</u>	Name, *ALL
Base library	<u>*ALL</u>	Name, *ALL
Type code	<u>*ALL</u>	Character value
Include only objects on form . .	<u>*NO</u>	Number, *NO
Base application	<u>*ALL</u>	Character value
Base release	<u>*ALL</u>	Number, *ALL
Base version	<u>*ALL</u>	Number, *ALL
Base level	<u>*ALL</u>	Number, *ALL
Conflict type	<u>*ALL</u>	*ALL, *CHKOUT, *FORM
Conflict from date	<u>000000</u>	Date, 000000
Conflict to date	<u>999999</u>	Date, 999999
Base programmer	<u>*ALL</u>	Name, *ALL
Base reference	<u>*ALL</u>	Name, *ALL
Related library	<u>*ALL</u>	Name, *ALL
Related application	<u>*ALL</u>	Character value
Related release	<u>*ALL</u>	Number, *ALL

More...

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

Page down to see more parameters.

Related Application Conflict report example

MM/DD/YY 16:10:12		Conflict Report for System: YOURSYS								Your Company, Inc. Page: 1	
		-----Base-----				-----Related-----					
<u>Object</u>	<u>Type</u>	<u>Appl</u>	<u>Rel</u>	<u>Ver</u>	<u>Lev</u>	<u>Appl</u>	<u>Rel</u>	<u>Ver</u>	<u>Lev</u>	<u>Type</u>	<u>Res</u>
CLP07	CLP	LS01		2		LS02		2		*CHKOUT	Y
		Base programmer: SMITH				Base reference: PRPR0103				Base form:	
		Base library: LSMOD1				Related library: GH0190B					
		Conflict time stamp: 20161129082623				Related time stamp: 20170205112552					
		Resolved by user: SWAIN				Related reference: PRPR0102				Related form:	
		Resolution code: OK Comment:									
		-----Base-----				-----Related-----					
<u>Object</u>	<u>Type</u>	<u>Appl</u>	<u>Rel</u>	<u>Ver</u>	<u>Lev</u>	<u>Appl</u>	<u>Rel</u>	<u>Ver</u>	<u>Lev</u>	<u>Type</u>	<u>Res</u>
COPY01	RPGCPI	GH		5		GH		1		5	*CHKOUT Y
		Base programmer: SMITH				Base reference: PRPR0117				Base form:	
		Base library:				Related library: GH0190B					
		Conflict time stamp: 20170205103433				Related time stamp: 20170205113407					
		Resolved by user: SMITH				Related reference: PRPR0102				Related form:	
		Resolution code: OK Comment:									
		-----Base-----				-----Related-----					
<u>Object</u>	<u>Type</u>	<u>Appl</u>	<u>Rel</u>	<u>Ver</u>	<u>Lev</u>	<u>Appl</u>	<u>Rel</u>	<u>Ver</u>	<u>Lev</u>	<u>Type</u>	<u>Res</u>
COPY01	RPGCPI	GH		5		GH		1		5	*CHKOUT Y
		Base programmer: SMITH				Base reference: PRPR0117				Base form:	
		Base library:				Related library: GH0190B					
		Conflict time stamp: 20170205112612				Related time stamp: 20170205113536					
		Resolved by user: SMITH				Related reference: PRPR0102				Related form:	
		Resolution code: OK Comment:									
		-----Base-----				-----Related-----					
<u>Object</u>	<u>Type</u>	<u>Appl</u>	<u>Rel</u>	<u>Ver</u>	<u>Lev</u>	<u>Appl</u>	<u>Rel</u>	<u>Ver</u>	<u>Lev</u>	<u>Type</u>	<u>Res</u>
COPY01	RPGCPI	GH		5		GH		1		5	*CHKOUT Y
		Base programmer: SMITH				Base reference: PRPR0117				Base form:	
		Base library:				Related library: GH0190B					
		Conflict time stamp: 20170205113417				Related time stamp: 20170206094300					
		Resolved by user: SMITH				Related reference: PRPR0102				Related form:	
		Resolution code: OK Comment:									

Distribution reports

Form Distribution report

Report Form Distribution (RPTFORMDST)	
Type choices, press Enter.	
Application	*ALL Appl, *ALL
Release	0 Rel
Version	0 Ver
Level	0 Lev
Target System	*ALL System name, *ALL
Reference	*ALL Char, *ALL, generic*
From form	1 number
To form	9999999 number
Programmer	*ALL Usrprf, *ALL
+ for more values.	
Detail Level.	*BASIC *FULL
Bottom	
F3=Exit	F4=Prompt
F5=Refresh	F12=Cancel
F13=How to use this display	
F24=More keys	

Select this option to print a report of all forms that have been distributed to one or more systems.

Form Distribution report example

MM/DD/YY 09:10:10	Form Distribution Report	Your Company, Inc. Page 1																								
<u>Selection Parameters</u> Application: ANCB Release-#: 0 Version-#: 0 Level-#: 0 System: *ALL Reference: *ALL From form: 1 to form: *LAST Programmers: *ALL Detail: *BASIC																										
MM/DD/YY 20:41:13	Form Distribution Report	Your Company, Inc. Page 2																								
<table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Form: 101809 Account Balance Rpt</td> <td style="width: 15%;">App: ANCB Lev 2</td> <td style="width: 15%;">Ref: ANPR0023</td> <td style="width: 15%;">Pgmr: DOYLE</td> <td style="width: 15%;">Sts: CONFIRM</td> <td style="width: 10%;">Run: 6/01/20</td> </tr> <tr> <td>System: SLSE</td> <td>Job: DIS0000510</td> <td>Date: 6/02/20</td> <td>Media: APPN</td> <td>Confirmed: Y</td> <td></td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Form: 101567 Account Recon</td> <td style="width: 15%;">App: ANCB Lev</td> <td style="width: 15%;">Ref: TESTUSER</td> <td style="width: 15%;">Pgmr: DOYLE</td> <td style="width: 15%;">Sts: DIST-PND</td> <td style="width: 10%;">Run: 6/01/20</td> </tr> <tr> <td>System: SLSE</td> <td>Job: DIS0000490</td> <td>Date: 5/02/20</td> <td>Media: APPN</td> <td>Confirmed: N</td> <td></td> </tr> </table>			Form: 101809 Account Balance Rpt	App: ANCB Lev 2	Ref: ANPR0023	Pgmr: DOYLE	Sts: CONFIRM	Run: 6/01/20	System: SLSE	Job: DIS0000510	Date: 6/02/20	Media: APPN	Confirmed: Y		Form: 101567 Account Recon	App: ANCB Lev	Ref: TESTUSER	Pgmr: DOYLE	Sts: DIST-PND	Run: 6/01/20	System: SLSE	Job: DIS0000490	Date: 5/02/20	Media: APPN	Confirmed: N	
Form: 101809 Account Balance Rpt	App: ANCB Lev 2	Ref: ANPR0023	Pgmr: DOYLE	Sts: CONFIRM	Run: 6/01/20																					
System: SLSE	Job: DIS0000510	Date: 6/02/20	Media: APPN	Confirmed: Y																						
Form: 101567 Account Recon	App: ANCB Lev	Ref: TESTUSER	Pgmr: DOYLE	Sts: DIST-PND	Run: 6/01/20																					
System: SLSE	Job: DIS0000490	Date: 5/02/20	Media: APPN	Confirmed: N																						

Object Distribution report

Report Object Distribution (RPTOBJDST)
Type choices, press Enter.

Application <u>*ALL</u>	Appl, *ALL
Release <u>0</u>	Rel
Version <u>0</u>	Ver
Level <u>0</u>	Lev
Target System <u>*ALL</u>	System name, *ALL
Reference <u>*ALL</u>	Char, *ALL, generic*
Object _____	Name, *ALL
Library <u>*ALL</u>	Name, *ALL
+ for more values _____	
	<u>*ALL</u>
Object type <u>*ALL</u>	*PGM, *FILE, *ALL
From date <u>000000</u>	Date, 000000
To date <u>999999</u>	Date, 999999

Bottom

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

This report lists all objects distributed to one or more systems.

Object Distribution report example

MM/DD/YY	Object Distribution Report										Your Company, Inc.	
09:20:25											Page	1
Selection Parameters												
Application: ANCB												
Release-#:											0	
Version-#:											0	
Level-#:											0	
System: *ALL												
Reference: *ALL												
Object: *ALL												
Library: *ALL												
Type: *ALL												
From: *FIRST To: *LAST												

MM/DD/YY	Object Distribution Report										Your Company, Inc.	
09:20:25											Page	2
Object	Library	Type	Form	Line	Run	Code	Status	System	Dstrb Date	Media	Ref#	Confirmed
JDATA	JALIB	DTAA	101107	1	1/05/20	R	Ran-OK	SLSB	12/14/20	APPN	JAPR0001	N
JDPF001	JALIB	PF	101107	2	1/05/20	R	Ran-OK	SLSB	12/14/20	APPN	JAPR0001	N
JDPF002	JALIB	PF	101107	3	1/05/20	R	Ran-OK	SLSB	12/14/20	APPN	JAPR0001	N
JDPF003	JALIB	PF	101107	4	1/05/20	R	Ran-OK	SLSB	12/14/20	APPN	JAPR0001	N
JDPF005	JALIB	PF	101107	5	1/05/20	R	Ran-OK	SLSB	12/14/20	APPN	JAPR0001	N
JDLF001A	JALIB	LF	101107	6	1/05/20	R	Ran-OK	SLSB	12/14/20	APPN	JAPR0001	N
JDLF001B	JALIB	LF	101107	7	1/05/20	R	Ran-OK	SLSB	12/14/20	APPN	JAPR0001	N
JDLF001C	JALIB	LF	101107	8	1/05/20	A	Ran-OK	SLSB	12/14/20	APPN	JAPR0001	N
JDLF003A	JALIB	LF	101107	9	1/05/20	R	Ran-OK	SLSB	12/14/20	APPN	JAPR0001	N
JDLF003B	JALIB	LF	101107	10	1/05/20	A	Ran-OK	SLSB	12/14/20	APPN	JAPR0001	N
JDCL001	JALIB	CLP	101107	11	1/05/20	A	Ran-OK	SLSB	12/14/20	APPN	JAPR0001	N
JDCL004	JALIB	CLP	101107	12	1/05/20	A	Ran-OK	SLSB	12/14/20	APPN	JAPR0001	N
JDCL006	JALIB	CLP	101107	13	1/05/20	A	Ran-OK	SLSB	12/14/20	APPN	JAPR0001	N

Miscellaneous reports

Authorized TURNOVER® Lifecycle Manager Users report

This report prints a list of users who are authorized to perform TURNOVER® Lifecycle Manager functions. To see user application authority, print the System default reports, detail *SYSTEM or *ALL.

There are no command parameters for this report. Report sequence is User Profile.

Authorized Users Report example

For an explanation of fields on this report, see *'Authorizing users to TURNOVER® Lifecycle Manager'* on page 50.

[illegible]

Programmer Profile Information report

```

List Programmer Profiles (LISTPGMRS)

Type choices, press Enter.

Programmer . . . . . *ALL      Uprpf, *ALL
+ for more values . . . . .

Bottom

F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel    F13=How to use this display
F24=More keys
```

Type a programmer's user profile name or *ALL.

Programmer Profile Information report example

This report sample lists the programmers defined to TURNOVER® Lifecycle Manager along with programmer profile information. Report sequence is user profile name.

MM/DD/YY		Programmer Profile Information					Your Company Inc.
09:45:50							Page 1
Programmer	JobD	OutQ	MsgQ	Data Lib	Pgm Lib	Source Lib	Rate
ELMSMIKE	ELMSMIKE	ELMSMIKEQ	ELMSMIKE	ELMSMIKE	ELMSMIKE	ELMSMIKE	85.00
Steve Elsemore	ELMSMIKE	ELMSMIKE	QUSRSYS				
Folder:							
DOLLAR	DOLLAR	DOLLARQ	DOLLAR	DOLLAR	DOLLAR	DOLLAR	85.00
John Dollar	DOLLAR	DOLLAR	QUSRSYS				
Folder:							
FORDMAN	FORDBILL	FORDBILL	FORDBILL	FORDBILL	FORDBILL		65.00
Bill Fordman	QGPL		QUSRSYS				
Folder:							

For an explanation of programmer profile information, see *'Setting up programmer profiles' on page 48*.

Log report

This report is generated when you run a TURNOVER® Lifecycle Manager form. It lists every step executed during the form run. It includes information types, errors and warning messages.

The TURNOVER® Lifecycle Manager Log Report is printed in two formats; one sequenced chronologically and one sequenced by form line.

To view the log reports

- 1 Select the form with option 8 on the Work with Forms panel to work with the form job.
- 2 Select the form job with option 5 to see the job's spool files.

The Display Job Spooled Files panel appears.

Display Job Spooled Files							
Job: TO4200751G		User: MARYLYN		Number: 215092			
Type options, press Enter.							
5=Display							
Opt	File	Device or Queue	User Data	Status	Total Pages	Current Page	Copies
—	TL4200751G	PRT01	TURRLOGR	RDY	1		1
—	TL4200751G	PRT01	TURRLOG2	RDY	1		1
—	QPJOBLOG	QEZJOBLOG	TO4200751G	RDY	3		1
—	TL4200751F	PRT01	TURRLOGR	RDY	1		1
—	TL4200751F	PRT01	TURRLOG2	RDY	1		1
—	QPJOBLOG	QEXJOBLOG	TO4200751F	RDY	2		1

Bottom

F3=Exit F10=View 3 F11=View 2 F12=Cancel F24=More keys

In this example, TL4200751G is the log report for the form group job, and TL4200751F is the log report for the form group finalization job, if it was run separately.

The log reports are in TURRLOGR (the chronological version) and TURRLOG2 (the version sequenced by object). The version sequenced by form line does not contain information about pre- and post-run commands.

In addition to the log report, TURNOVER® Lifecycle Manager *always* prints a joblog for all form runs.

Log report: Example

MM/DD/YY		Log Report for job: TO0110111G				Page: 1
		Form:	110111	Status: RAN-OK	System: YOURSYS	
Type	Date	Time	Message			
Info	4/06/20	11:36:15	Temporary library T0110111D created.			
Info	4/06/20	11:36:16	Temporary data area T0110111DA created.			
Info	4/06/20	11:36:19	Member APPF001 in file JBDEVTEST/QDDSSRC copied to library JBACPTTEST.			
Info	4/06/20	11:36:22	Object APPF001 type PF created in library JBACPTTEST.			
Info	4/06/20	11:36:29	Member APLF001A in file JBDEVTEST/QDDSSRC copied to library JBACPTTEST.			
Info	4/06/20	11:36:31	Object APLF001A type LF created in library JBACPTTEST.			
Info	4/06/20	11:36:34	Object APLF001B type LF created in library JBACPTTEST.			
Info	4/06/20	11:36:36	Member APRPG001 in file JBDEVTEST/QRPGSRC copied to library JBACPTTEST.			
Info	4/06/20	11:36:41	Object APRPG001 type RPG created in library JBACPTTEST.			
Info	4/06/20	11:36:44	Object APRPG002 type RPG created in library JBACPTTEST.			
Info	4/06/20	11:36:46	Object APRPG003 type RPG created in library JBACPTTEST.			
Info	4/06/20	11:36:47	Owner changed to ELSINORE for object APPF001.			
Info	4/06/20	11:36:47	Owner changed to ELSINORE for object APLF001A.			
Info	4/06/20	11:36:48	Owner changed to ELSINORE for object APLF001B.			
Info	4/06/20	11:36:48	Owner changed to ELSINORE for object APRPG001.			
Info	4/06/20	11:36:48	Owner changed to ELSINORE for object APRPG002.			
Info	4/06/20	11:36:48	Owner changed to ELSINORE for object APRPG003.			
Info	4/06/20	11:36:56	Test object JBDEVTEST/APLF001A deleted.			
Info	4/06/20	11:36:56	Test object JBDEVTEST/APPF001 deleted.			
Info	4/06/20	11:36:57	Test source member APPF001 removed from file JBDEVTEST/QDDSSRC.			
Info	4/06/20	11:37:01	Test source member APLF001A removed from file JBDEVTEST/QDDSSRC.			
Info	4/06/20	11:37:04	Test object JBDEVTEST/APRPG001 deleted.			
Info	4/06/20	11:37:05	Test source member APRPG001 removed from file JBDEVTEST/QRPGSRC.			
Info	4/06/20	11:37:09	Temporary data area T0110111DA deleted.			
Info	4/06/20	11:37:09	Temporary library T0110111D deleted.			

14 Reports descriptions

This document contains an outline of each report available through the TURNOVER® Client application.

Auditing information

'Form report' on page 352

'Forms List report' on page 352

'Task Information report' on page 368

Approval

'Form report' on page 352

'Forms List report' on page 352

'Key CM Indicators report' on page 349

'Task Information report' on page 368

Exceptions/service levels

'Oldest Open Tasks report' on page 367

'Actual End Date Exceeds Planned report' on page 363

'Task Status over Limit report' on page 368

Productivity

'Resource Time by Day report' on page 357

'Resource Time by Month report' on page 358

'Resource Time by Week report' on page 359

'Monthly Tasks by Company report' on page 355

'Weekly Tasks by Company report' on page 357

'Daily Tasks by Company report' on page 355

'Daily Tasks by Project report' on page 353

'Weekly Tasks by Project report' on page 354

'Monthly Tasks by Project report' on page 353

'Daily Tasks by Resource report' on page 359

'Monthly Tasks by Resource report' on page 360

'Weekly Tasks by Resource report' on page 361

'Monthly New Tasks Completed report' on page 364

'Monthly Tasks New vs Completed report' on page 365

'Monthly Tasks Percent Complete report' on page 366

'Task Throughput report' on page 369

'Weekly Average Time to Completion report' on page 370

'Key CM Indicators report' on page 349

'SVN Metrics report' on page 345

'SVN Repository Metrics report' on page 346

'Weekly CM Indicators report' on page 351

'Weekly SVN Metrics report' on page 347

'Weekly SVN Repository Metrics report' on page 348

Billable time

'Resource Time by Day report' on page 357

'Resource Time by Month report' on page 358

'Resource Time by Week report' on page 359

Customer tracking

'Monthly Tasks by Company report' on page 355

'Weekly Tasks by Company report' on page 357

'Daily Tasks by Company report' on page 355

'Time by Company – Top 20 report' on page 356

Progress tracking

'Resource Time by Day report' on page 357

'Resource Time by Month report' on page 358

'Resource Time by Week report' on page 359

'Actual End Date Exceeds Planned report' on page 363

'Monthly Tasks by Project report' on page 353

'Daily Tasks by Resource report' on page 359

'Monthly Tasks by Resource report' on page 360

'Weekly Tasks by Resource report' on page 361

'Monthly New Tasks Completed report' on page 364

'Monthly Tasks New vs Completed report' on page 365

'Monthly Tasks Percent Complete report' on page 366

'Oldest Open Tasks report' on page 367

'Task Status over Limit report' on page 368

'Task Throughput report' on page 369

'Weekly Average Time to Completion report' on page 370

'Forms List report' on page 352

'Key CM Indicators report' on page 349

'SVN Metrics report' on page 345

'SVN Repository Metrics report' on page 346

'Weekly CM Indicators report' on page 351

'Weekly SVN Metrics report' on page 347

'Weekly SVN Repository Metrics report' on page 348

Trend analysis

'Resource Time by Day report' on page 357

'Resource Time by Month report' on page 358

'Resource Time by Week report' on page 359

'Actual End Date Exceeds Planned report' on page 363

'Daily Tasks by Company report' on page 355

'Weekly Tasks by Company report' on page 357

'Monthly Tasks by Company report' on page 355

'Daily Tasks by Project report' on page 353

'Weekly Tasks by Project report' on page 354

'Daily Tasks by Resource report' on page 359

'Monthly Tasks by Resource report' on page 360

'Weekly Tasks by Resource report' on page 361

'Monthly New Tasks Completed report' on page 364

'Monthly Tasks New vs Completed report' on page 365

'Monthly Tasks Percent Complete report' on page 366

'Task Status over Limit report' on page 368

'Task Throughput report' on page 369

'Weekly Average Time to Completion report' on page 370

'Forms List report' on page 352

'Key CM Indicators report' on page 349

'SVN Metrics report' on page 345

'SVN Repository Metrics report' on page 346

'Time by Company – Top 20 report' on page 356

'Weekly CM Indicators report' on page 351

'Weekly SVN Metrics report' on page 347

'Weekly SVN Repository Metrics report' on page 348

SVN Metrics report

This report presents an overview of current TURNOVER® SVN repository activities over a specified date range.

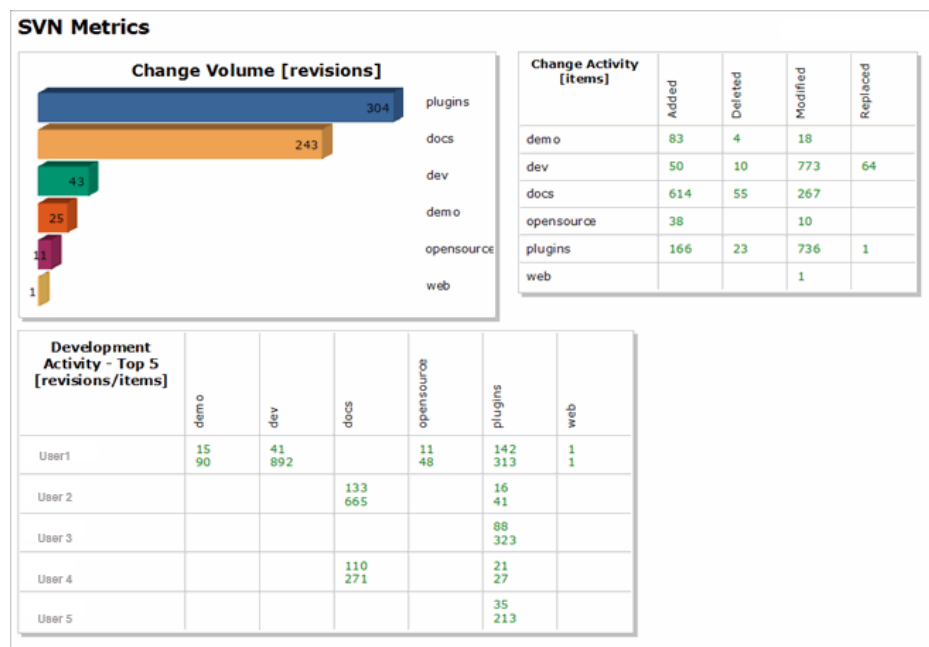
The information presented is from a top level repository perspective. If a repository is not shown, it means that there was no activity for that particular repository over the report time period.

Value	Description
Change Volume	The number of revisions committed to individual repositories during the specified time frame.
Change Activity	Transaction item counts by transaction type for revisions committed to individual repositories during the specified time frame.
Development Activity	Repository revision counts and transaction item counts performed by the 5 developers with the greatest number of commitments made during the specified time frame.

Each measure is displayed as its own chart. The charts are bundled as a single view in the main report.

To display a chart on its own page, double-click it.

Example report



SVN Repository Metrics report

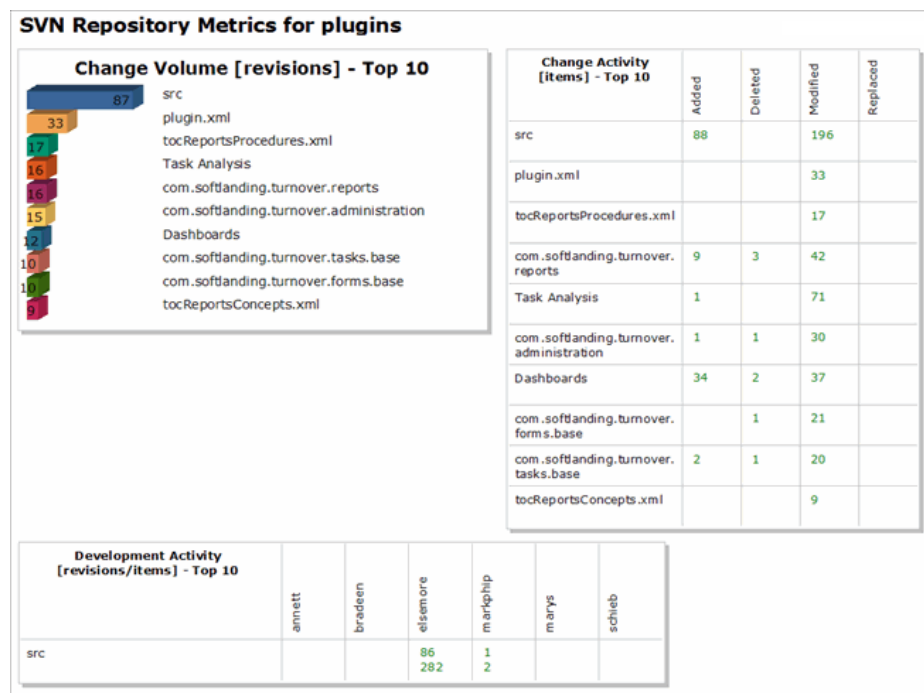
This report presents an overview of current TURNOVER® SVN activities for a specific repository and subdirectory level over a specified date range.

Value	Description
Change Volume	The 10 subdirectories with the greatest number of revisions for the selected repository and time frame.
Change Activity	Item counts by transaction type (add, delete, modify, replace) for the 10 subdirectories with the greatest number of revisions for the selected repository and time frame.
Development Activity	Subdirectory revision counts and transaction item counts by developer for the 10 subdirectories with the greatest number of revisions for the selected repository and time frame.

To display a chart on its own page, double-click it.

Each measure is displayed as its own chart and presented together as a single view in the main report.

Example report



Page 2

	User1	User2	User3	User4	User5	User6
plugin.xml			28 28	1 1	4 4	
tocReportsProcedures.xml				1 1	4 4	12 12
com.softanding.turnover.reports				16 54		
Task Analysis		15 70		1 2		
com.softanding.turnover.administration				15 32		
Dashboards		12 73				
com.softanding.turnover.forms.base				10 22		
com.softanding.turnover.tasks.base				10 23		
tocReportsConcepts.xml					3 3	6 6

Weekly SVN Metrics report

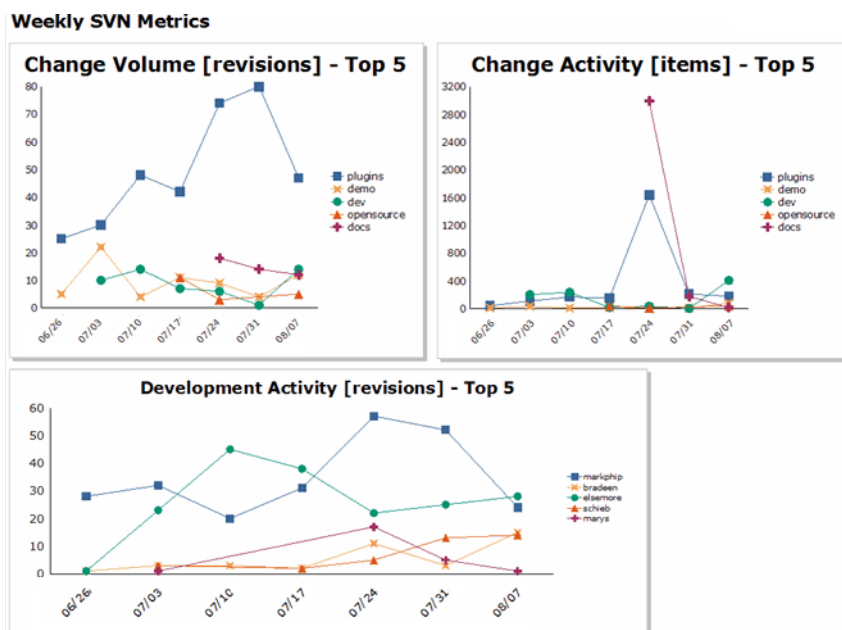
This report presents an overview of weekly TURNOVER® SVN repository activities for a specified date range.

The information shown is from a top level repository perspective indicating the 5 highest measures for repository change volume, repository change activity and development activity. Each measure is displayed as its own chart; the charts are bundled into a single view in the main report.

Value	Description
Change Volume	The number of revisions committed for each repository on a weekly basis, for the 5 repositories having the most revisions committed in the specified time frame.
Change Activity	The number of items changed for each repository on a weekly basis, for the 5 repositories having the most items changed in the specified time frame.
Development Activity	The number of revisions committed for each developer on a weekly basis, for the 5 developers having the most revisions committed in the specified time frame.

To display a chart on its own page, double-click it.

Example report



Weekly SVN Repository Metrics report

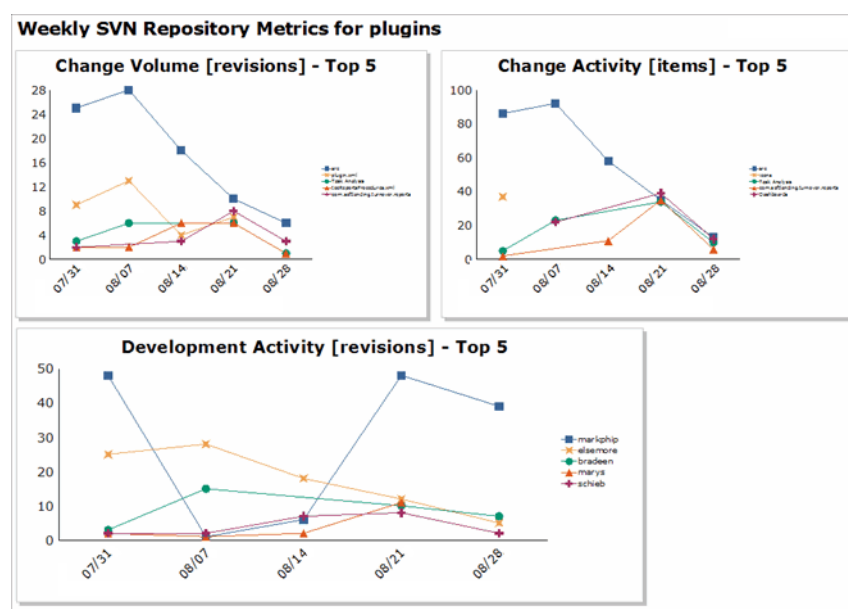
This report presents an overview of weekly TURNOVER® SVN activities for a specific repository and subdirectory level. Weekly measures shown are change volume, change activity and development activity. Each measure is displayed as its own chart and presented together in a single view.

Value	Description
Change Volume	The number of revisions committed by week for the 5 subdirectories with the greatest number of revisions for the selected repository and time frame.

Value	Description
Change Activity	Transaction item counts by week for revisions committed to the 5 subdirectories with the greatest number of changed items for the selected repository and time frame.
Development Activity	The number of revisions committed by week for the 5 developers who have made the greatest number of commits for the selected repository and time frame.

To display a chart on its own page, double-click it.

Example report



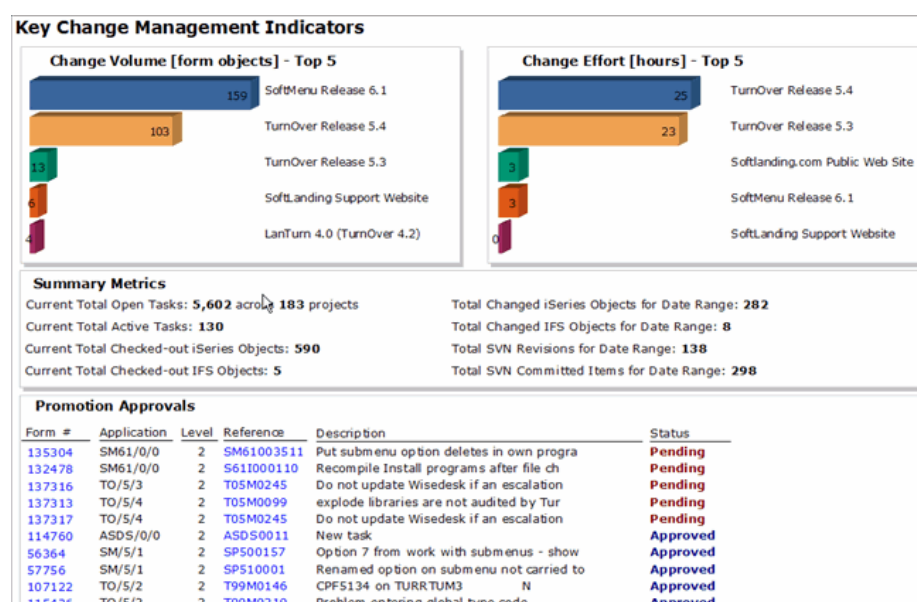
Key CM Indicators report

This report presents a high level view of various key measures associated with the change management process. These key measures include the volume of changes made for individual applications, the amount of effort required by individual applications, summary of task and object data and form approval status information.

Value	Description
Change Volume	A bar chart based on the total number of form objects promoted by application. The 5 applications associated with the highest number of promoted objects for the specified date range are shown. To display a bar or application text on its own page, double-click it. Double-click again to display a list of the forms on which the objects were promoted. To display the details of a form, click its link.

Value	Description
Change Effort	A bar chart based on the five applications that have required the most effort over the specified time frame. Application effort is measured by summing the total timesheet data for tasks associated with an application. To display a bar or application text on its own page, double-click it. Double-click again to display a list of the tasks against which the time was logged. To display the details of a task, click its link.
Summary Metrics	A snapshot of change management activity. The data shown in the first column is not date dependent; rather, it is a view of current status with regard to open tasks, active tasks and checked out objects. A task is considered 'active' if any checkout records exist for it. The second column is based on the specified date range, and provides totals for changed IBM i and IFS objects as well as SVN version control data.
Promotion Approvals	A list of forms waiting to be approved (Status = Pending) or already approved and consequently eligible to run. To display a form or task on its own page, double-click it. To display the details of a form or task, click its link.

Example report



Weekly CM Indicators report

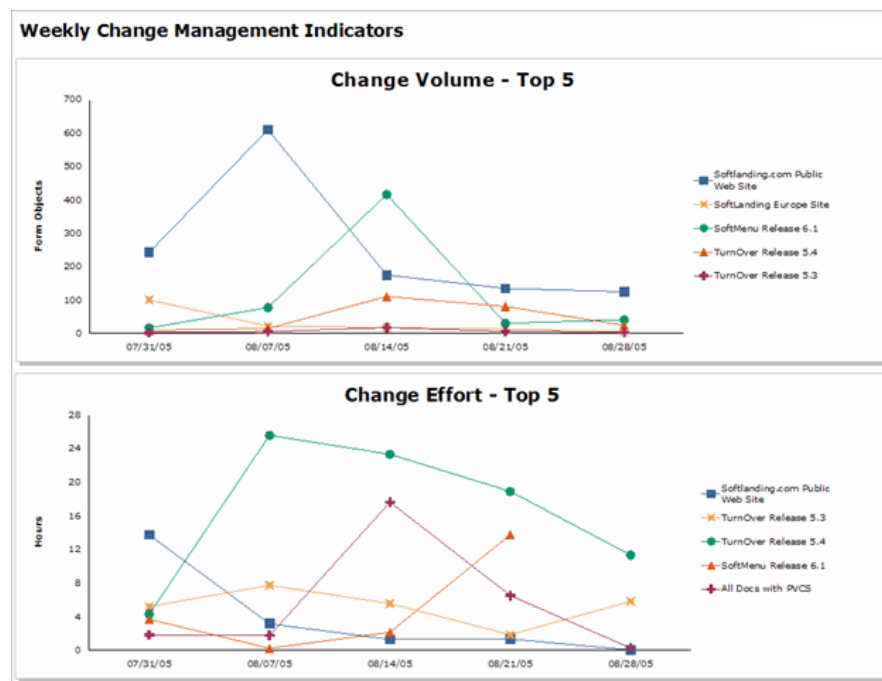
This report presents two weekly measures of the change management process for individual applications:

Value	Description
Change Volume	The total number of form objects promoted by application on a weekly basis. The 5 applications associated with the highest number of promoted objects for the specified date range are shown.
Change Effort	A graph based on the five applications that have required the most effort over the specified time frame. The graph presents total effort on a weekly basis. Application effort is measured by summing the total timesheet data for tasks associated with an application.

Each weekly measure is displayed in its own chart, and bundled as a single view in the main report.

To display a graph on its own page, double-click it.

Example report



Form report

This report categorizes form data and presents the categories one after the other. Each category represents one aspect of the form or its promotion process. The categories are broken down into header properties, form jobs, form approvals, form objects (with optional line details), pre- and post-run commands, form events (create, approve, submit, and so on), and form log messages. Some categories are omitted if they do not apply to a given form (for example, some forms may not require approval).

To display information about the form's associated task, double-click the report category. To display more information about a task, click its link.

Example report

Form - 137234

Form 137234 Duplicate messages

Status: RAN-WRNJob description: QGPL/QBATCH

Appl/Rel/Ver: SM61/0/0Level: 2Accounting code:

Reference: SM61002013Submit finalization: NError recovery: Rollback on Error

Programmer: TOCHTERMANArchive objects: Y

Library list: SM61SRC SM61PGM SM61MOD SM61DTA SM60QA SM60QAD SM60SRC SM60PGM SM60DTA SM52SRC SM52PGM SM52DTA XF61LIB XFILELIB ABSTRACT

Form Jobs

Job Type Submit Date and Time Submit User Job Name Submitted From Job

*FORM 9/1/2005 1:34:34PM TOCHTERMAN 636811/TOCHTERMAN/TO0137234G 636707/TOCHTERMAN/QPADEV000L

Form Approvals

Form Approval List

BARNEY Bernadette Fernandes

KING Sandy King

QATEST

TOCHTERMAN Susan Tochtermann

WESTON Ian Weston

Approved Date and Time

9/1/2005 1:34:27PM

9/1/2005 1:34:27PM

9/1/2005 1:34:27PM

9/1/2005 1:34:27PM

9/1/2005 1:34:27PM

Approved By

TOCHTERMAN

TOCHTERMAN

TOCHTERMAN

TOCHTERMAN

TOCHTERMAN

Form Objects

Line #	Object	Library	Type Code	Action Code	Promotion Method	From Source Lib	From Object Lib	Target Source Lib	Version #	Status
1	SSUBMCPY	SM61PGM	CLLE	R	CSCO	SM61QA	SM61QA	SM61SRC	018.000	Ran-O

Form Events

System	Function	Details	Date and Time
ZEUS	*CREATE	Form created	9/1/2005 1:34:19PM
ZEUS	*APPROVE	Form approved	9/1/2005 1:34:27PM
ZEUS	*SUBMIT	Form submitted	9/1/2005 1:34:34PM
ZEUS	*RUNNING	Form started running	9/1/2005 1:35:51PM
ZEUS	*RUN	Ran with status RAN-WRN	9/1/2005 1:35:59PM

Forms List report

This report displays a list of forms for a specific application over a given date range. Form Details pages for each form in the report follow the initial summary page(s).

The report categorizes form data and presents the categories one after the other. Each category represents one aspect of the form or its promotion process. The categories are broken down into header properties, form jobs, form approvals, form objects (with optional line details), pre- and post-run commands, form events (create, approve, submit, and so on), and form log messages. Some categories are omitted if they do not apply to a given form (for example, some forms may not require approval).

To display information about the form's associated task, double-click the form. To display more information about a task, click its link.

Example report

Forms List					
08/20/20 to 09/09/20					
Application SM61 Release 0.0 Level 1					
Form Number	Description	Status	Run Date	Reference	Programmer
137022	Use "blanks lines after" when formatting	RAN-OK	08/22/20	SM61000202	TOCHTERMAN
137027	Mismatch parameter list	RAN-OK	08/22/20	SM61001705	TOCHTERMAN
137049	Submitted message is not appearing	RAN-OK	08/23/20	SM61001706	TOCHTERMAN
137052	Report overflow problem when writing rep	RAN-OK	08/23/20	SM610039	TOCHTERMAN
137056	Create file to hold last-used values whe	RAN-OK	08/23/20	SM61005405	TOCHTERMAN
137084	List Administrator report	RAN-OK	08/24/20	SM61005409	TOCHTERMAN
137130	Report overflow problem when writing rep	RAN-OK	08/29/20	SM610039	TOCHTERMAN
137139	Protect GOSUB command for unauthorized u	RAN-OK	08/29/20	SM610032	TOCHTERMAN
137141	Change programs where SOFTMENU60 is hard	RAN-OK	08/29/20	SM610021	TOCHTERMAN
137166	Not authorized to work with submenus	RAN-OK	08/30/20	SM61003311	TOCHTERMAN
137167	Not authorized to work with submenus	RAN-OK	08/30/20	SM61003311	TOCHTERMAN
137173	Use new option group authority bits	RAN-OK	08/30/20	SM61003310	TOCHTERMAN
137172	Message MEN0206	RAN-OK	08/30/20	SM61003312	TOCHTERMAN
137175	Use new option group authority bits	RAN-OK	08/30/20	SM61003310	TOCHTERMAN
137179	Not authorized to work with submenus	RAN-OK	08/30/20	SM61003311	TOCHTERMAN
137186	Not authorized to work with submenus	RAN-OK	08/30/20	SM61003311	TOCHTERMAN
137190	Use new option group authority bits	RAN-OK	08/30/20	SM61003310	TOCHTERMAN
137193	Use new option group authority bits	RAN-OK	08/30/20	SM61003310	TOCHTERMAN
137197	Not authorized to work with submenus	RAN-OK	08/30/20	SM61003311	TOCHTERMAN
137223	Use new option group authority bits	RAN-OK	08/31/20	SM61003310	TOCHTERMAN
137224	Use new option group authority bits	RAN-OK	08/31/20	SM61003310	TOCHTERMAN
137226	Use new option group authority bits	RAN-OK	09/01/20	SM61003310	TOCHTERMAN
137227	Duplicate messages	RAN-OK	09/01/20	SM61002013	TOCHTERMAN
137228	Use new option group authority bits	RAN-OK	09/01/20	SM61003310	TOCHTERMAN
137229	Use new option group authority bits	RAN-OK	09/01/20	SM61003310	TOCHTERMAN
137231	Use new option group authority bits	RAN-OK	09/01/20	SM61003310	TOCHTERMAN
137233	Use new option group authority bits	RAN-OK	09/01/20	SM61003310	TOCHTERMAN
137301	Uniform appearance of display panels for	RAN-OK	09/08/20	SM610057	TOCHTERMAN

Daily Tasks by Project report

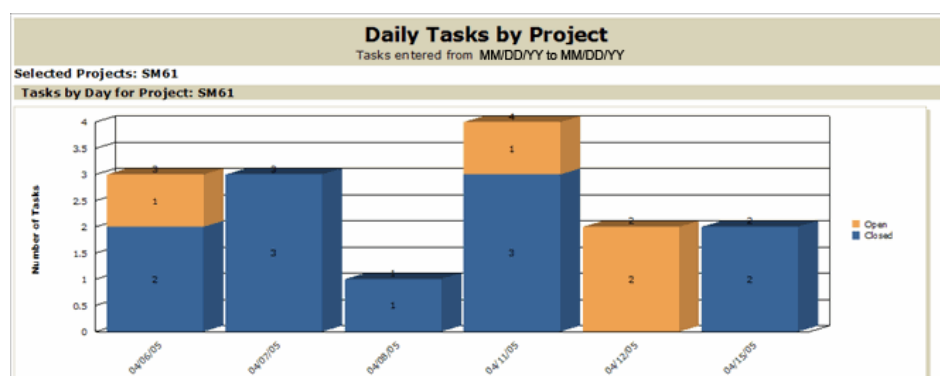
This report depicts the open and/or closed tasks associated with one or more specified projects on a daily basis.

The main report presents a bar chart for each project spanning the specified time frame.

- Double-click the daily time frame labels to display a tasks-per-day list view.
- Double-click the chart column data to display an open/closed task list view.

Then click a task link to display more information about a task.

Example report



Monthly Tasks by Project report

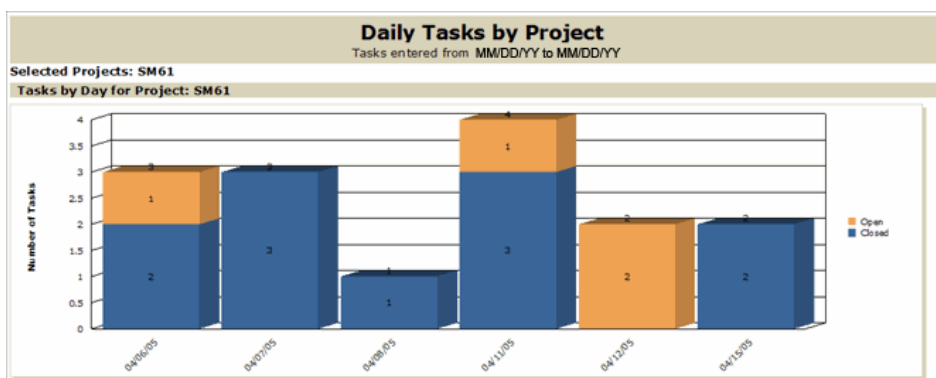
This report depicts the number of open and/or closed tasks associated with one or more specified projects on a monthly basis.

The main report presents a bar chart for each project spanning the specified time frame.

- Double-click the month time frame labels to display a tasks-per-month list view.
- Double-click the chart column data to display an open/closed task list view.

Then click a task link to display more information about a task.

Example report



Weekly Tasks by Project report

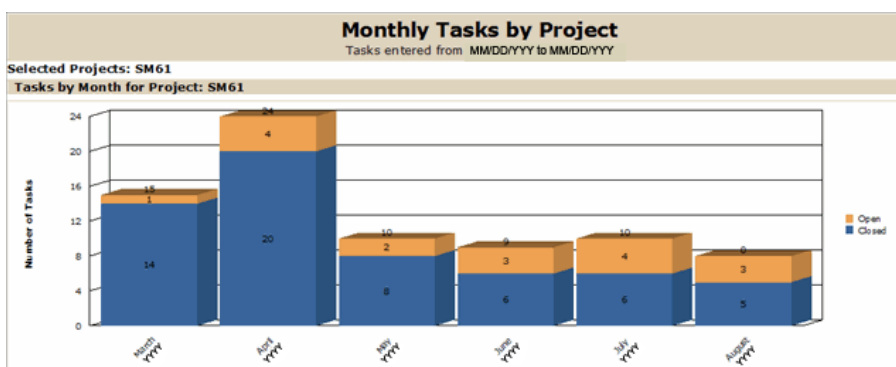
This report charts the number of open/closed tasks associated with one or more specified projects on a weekly basis.

The main report presents a bar chart for each project spanning the specified time frame.

- Double-click the week time frame labels to display a tasks-per-week list view.
- Double-click the chart column data to display an open/closed task list view.

Then click a task link to display more information about a task.

Example report



Daily Tasks by Company report

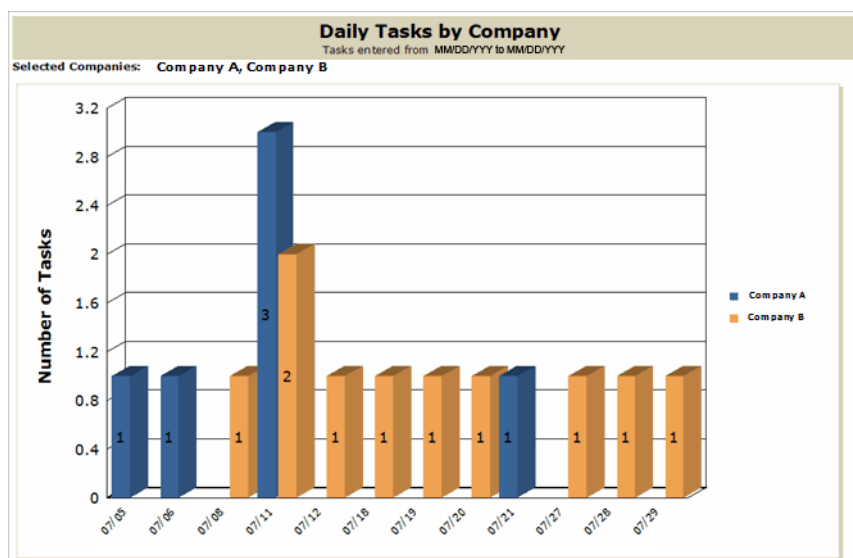
This report tallies tasks entered into your Helpdesk projects on a daily basis for one or more companies, over a given time frame.

The main report presents a bar chart showing the tasks entered for each day over the specified date range.

Double-click the bar chart element or the time frame labels to display a list of tasks opened on behalf of the requesting company on that day.

Then click a task link to display more information about a task.

Example report



Monthly Tasks by Company report

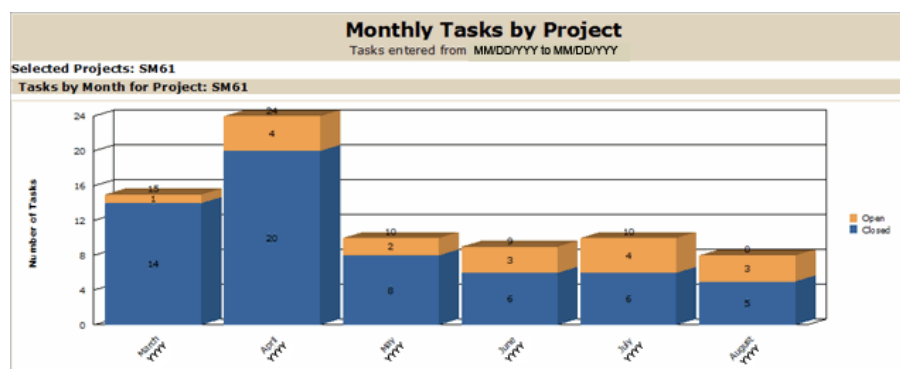
This report tallies tasks entered into helpdesk projects on a monthly basis, for one or more companies, over a given time frame.

The main report presents a bar chart showing the tasks entered for each month over the specified date range.

Double-click either the bar chart element or the time frame labels to display a list of tasks opened on behalf of the requesting company during the selected month.

Then click a task link to display more information about a task.

Example report



Time by Company – Top 20 report

This report presents a list of the twenty companies that have consumed the most resource time, over a given time frame, for selected projects.

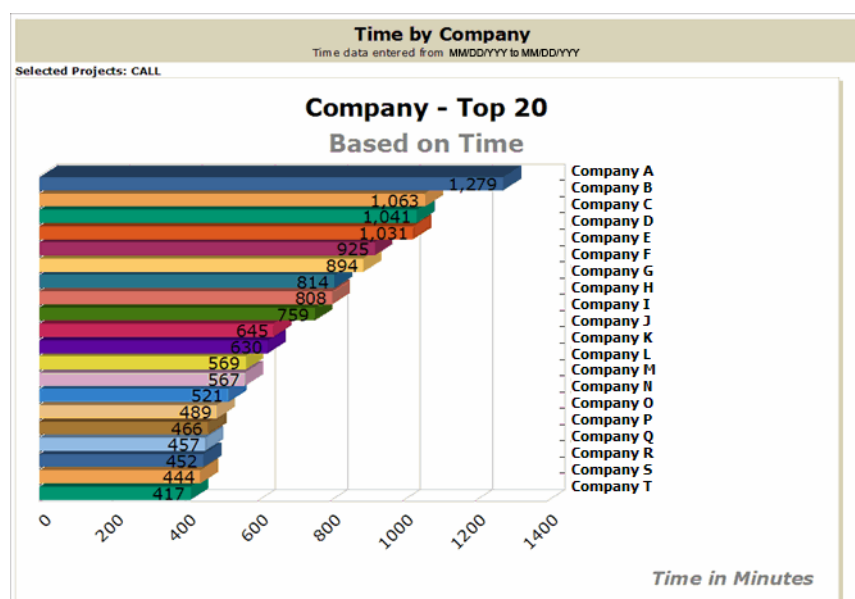
The top 20 companies are selected based on the total amount of task time logged in their name over the specified time span. Tasks for a company are selected based on the date entered.

The main report presents a bar chart showing each company's total recorded time spent on tasks over the specified date range.

To display details for a company, double-click either the bar chart element or the company name labels.

Then click a task link to display more information about a task.

Example report



Weekly Tasks by Company report

This report tallies tasks entered into helpdesk projects on a weekly basis, for one or more companies, over a given time frame.

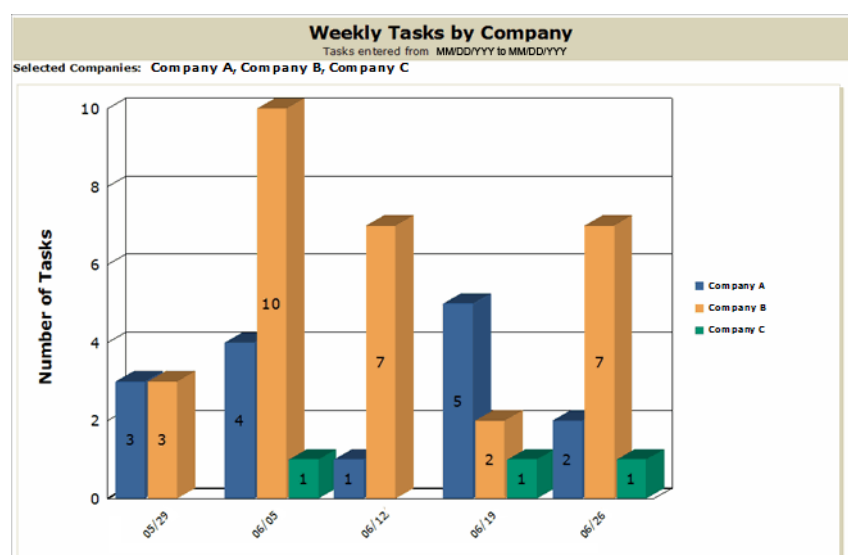
The main report presents a bar chart showing the tasks entered for each week over the specified date range.

To display details for a company, double-click either the bar chart element or the time frame labels.

Then click a task link to display more information about a task.

Tasks are selected for the date range based on their entry date.

Example report



Resource Time by Day report

This report presents one or more specific resource's timesheet information over a given time frame, broken down by day, for selected projects.

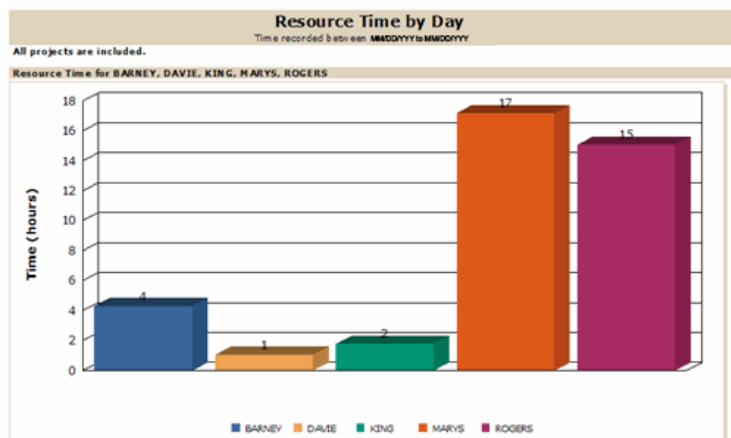
The main report presents a bar chart showing the chosen resources' total recorded time spent on tasks during the specified date range, followed by a summary page showing total time for each chosen resource over the time frame.

To display time details for a resource, double-click on that resource's bar chart element or legend label.

Then click a task link to display more information about a task.

Timesheet entries are selected for the date range based on their entry date.

Example report



Resource Time by Month report

This report presents one or more resource's timesheet information over a given time frame, broken down by month, for selected projects.

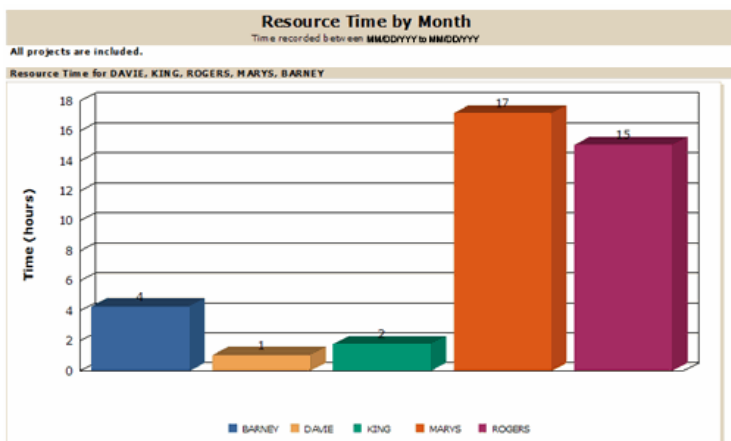
The main report presents a bar chart showing the chosen resources' total recorded time spent on tasks during the specified date range, followed by a summary page showing total time for each chosen resource over the time frame.

To display time details for a resource, double-click on that resource's bar chart element or legend label.

Then click a task link to display more information about a task.

Timesheet entries are selected for the date range based on their entry dates.

Example report



Resource Time by Week report

This report presents one or more resource's timesheet information over a given time frame, broken down by week, for selected projects.

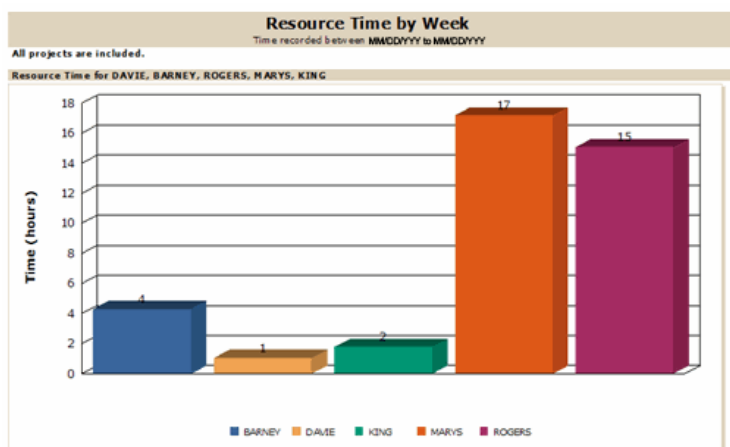
The main report presents a bar chart showing the chosen resources' total recorded time spent on tasks during the specified date range, followed by a summary page showing total time for each chosen resource over the time frame.

To display time details for a resource, double-click on that resource's bar chart element or legend label.

Then click a task link to display more information about a task.

Timesheet entries are selected for the date range based on their entry date.

Example report



Daily Tasks by Resource report

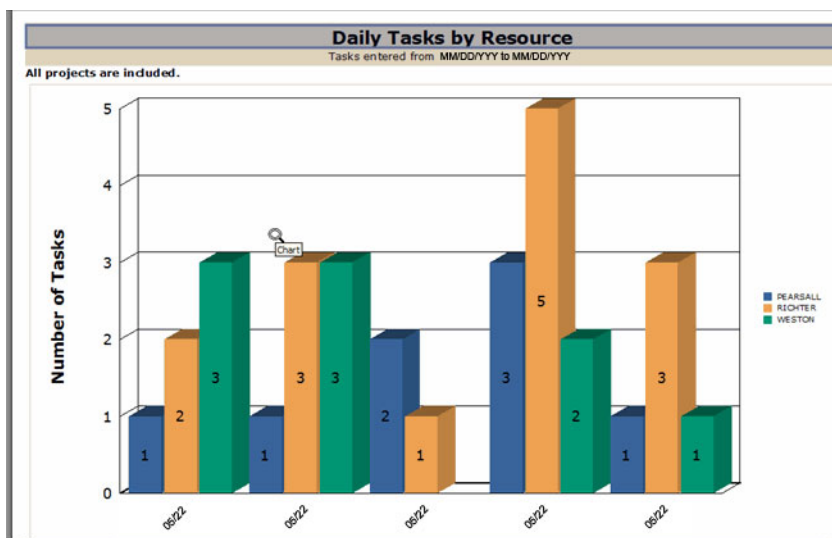
This report presents tasks entered by a resource on a daily basis for selected projects. The top report level presents a bar chart displaying number of tasks by day for each resource.

- To display more information about a day's tasks, double-click a date in the chart.
- To display more information about a resource's tasks, double-click on the bar representing the resource.

Then click a task link to display more information about a task.

Tasks entered during the specified date range are evaluated against the remaining criteria.

Example report



Monthly Tasks by Resource report

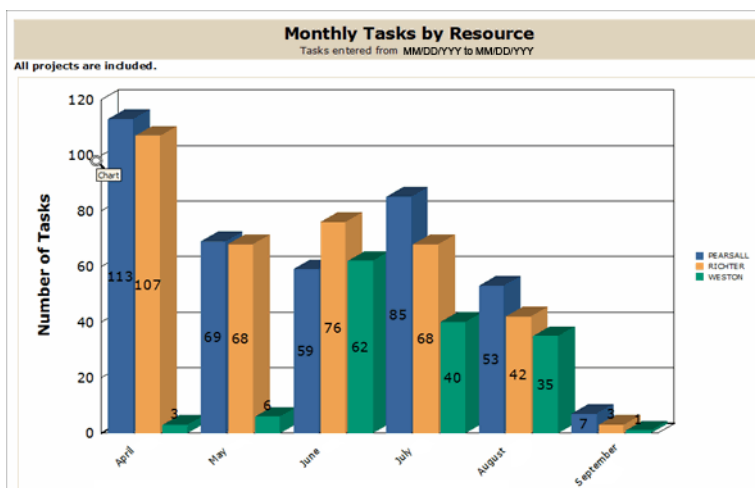
This report presents tasks entered by a resource on a monthly basis for selected projects. The top report level presents a bar chart displaying number of tasks by month for each resource.

- To display more information about a month's tasks, double click a date.
- To display more information about a resource's task, double-click the bar representing the resource.

Then click a task link to display more information about a task.

Tasks entered during the specified date range are evaluated against the remaining criteria.

Example report



Weekly Tasks by Resource report

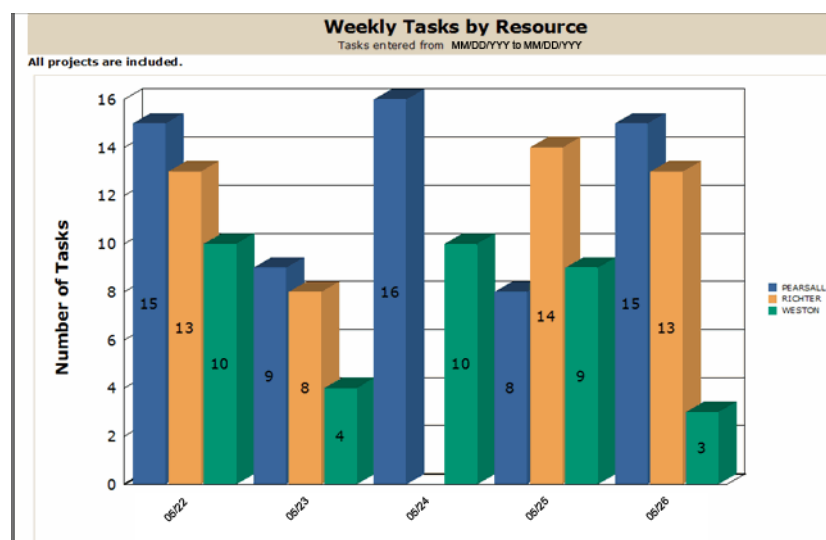
This report presents tasks entered by a specific resource on a weekly basis for selected projects. The top report level presents a bar chart displaying number of tasks by week for each resource.

- To display more information about a week's tasks, double click a date.
- To display more information about a resource's task, double-click the bar representing the resource.

Then click a task link to display more information about a task.

Tasks entered during the specified date range are evaluated against the remaining criteria.

Example report



Daily Resource Time report

This report presents daily timesheet information for a specific resource, over a given time frame, for selected projects.

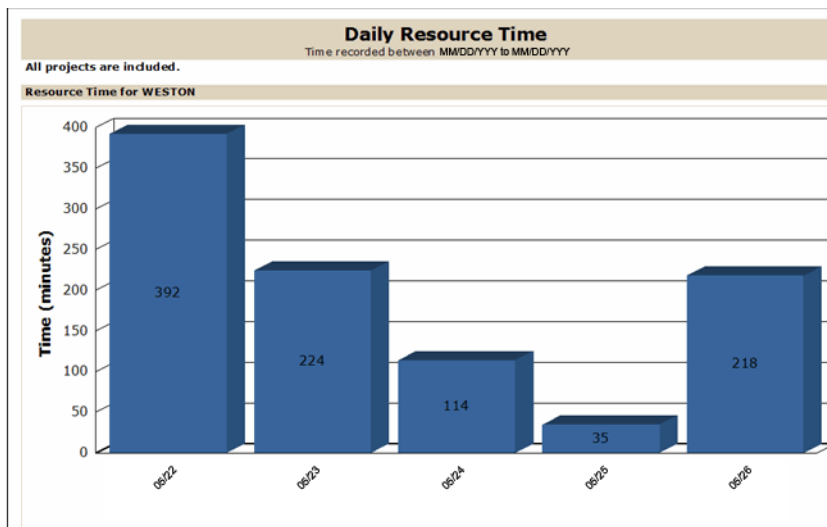
The main report presents a bar chart showing the resource's total recorded time spent on tasks for each day over the specified date range.

To display more information about a day, double-click either the bar chart element or the time frame labels.

Then click a task link to display more information about a task.

Tasks are selected for the date range based on their entry date.

Example report



Monthly Resource Time report

This report presents monthly timesheet information for a specific resource, over a given time frame, for selected projects.

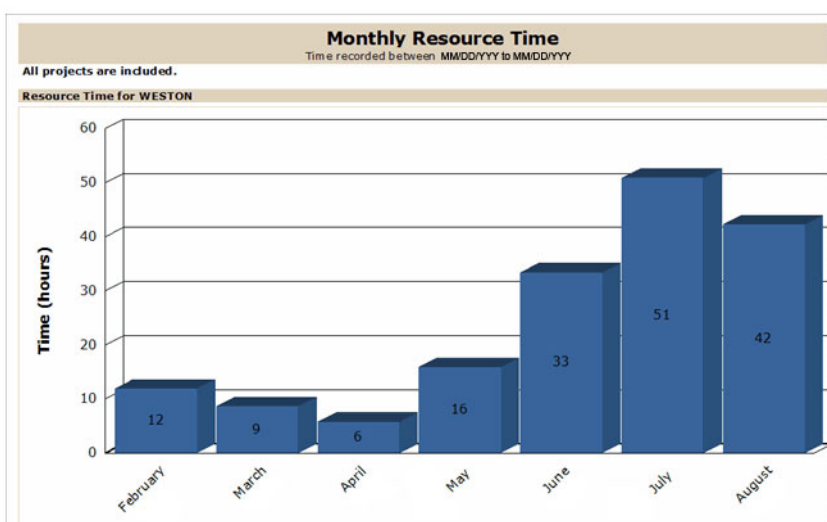
The main report presents a bar chart showing the resource's total recorded time spent on tasks for each month over the specified date range.

To display more information, double-click either the bar chart element or the time frame labels.

Then click a task link to display more information about a task.

Tasks are selected for the date range based on their entry date.

Example report



Weekly Resource Time report

This report presents weekly timesheet information for a specific resource, over a given time frame, for selected projects.

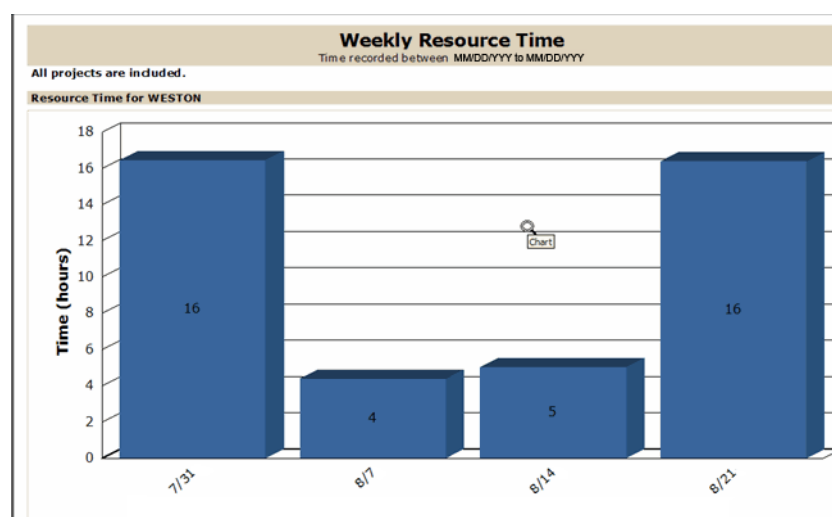
The main report presents a bar chart showing the resource's total recorded time spent on tasks for each week over the specified date range.

To display more information about a, double-click either the bar chart element or the time frame labels.

Then click a task to display more information about it.

Timesheet records are selected for the date range based on their creation date.

Example report



Actual End Date Exceeds Planned report

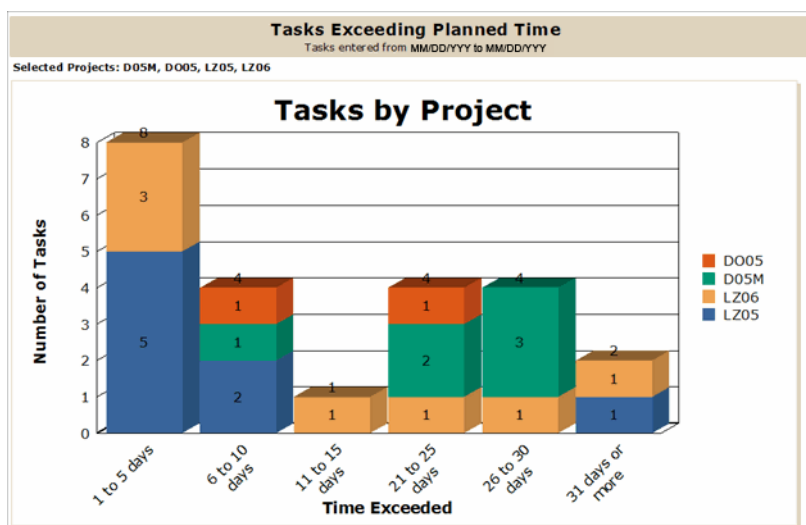
This report shows the number of tasks for selected projects that were not completed on or before their planned end dates. This includes closed tasks that have an actual end date exceeding the planned end date, as well as open tasks with a planned end date prior to the current day.

The main report presents a bar chart showing task counts by project and time categories.

Double-click a time category displays project and task information for the selected category. Then double-click a project to display a list of its task. Click a task link to display more information about a task.

Tasks are selected based on their entry date.

Example report



Monthly New Tasks Completed report

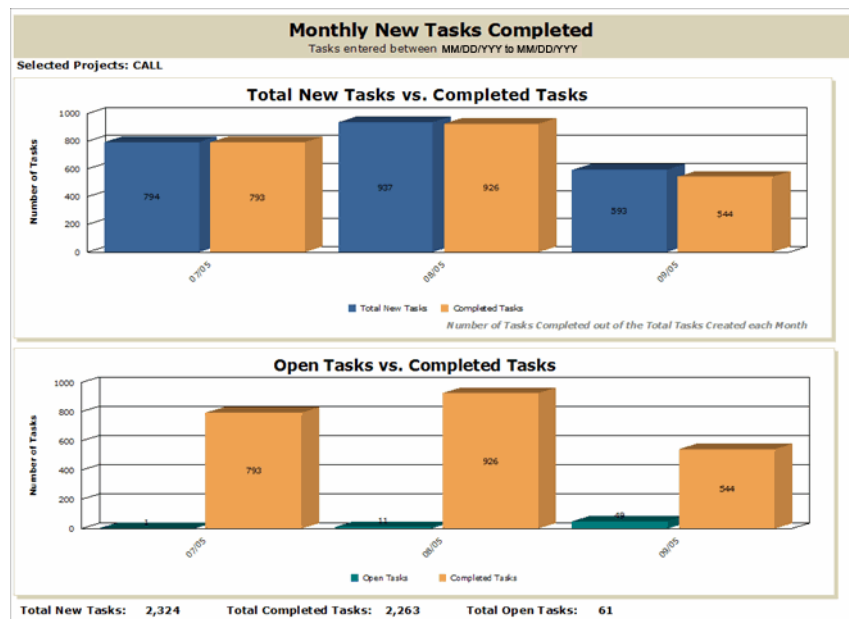
This report compares, for all projects or for selected projects, the number of new tasks entered to the number completed for a given month, as well as the number of new open tasks versus the number completed.

The main report presents two bar charts. The first shows new task counts and completed task counts for all included projects. The second shows currently open task counts versus completed task counts for all included projects.

- To display a list of open tasks, double-click the Open Tasks bar in the bottom chart.
- To display a list of completed tasks, double-click the Completed Tasks bar in the bottom chart.

Then click a task to display more information about it.

Example report



Monthly Tasks New vs Completed report

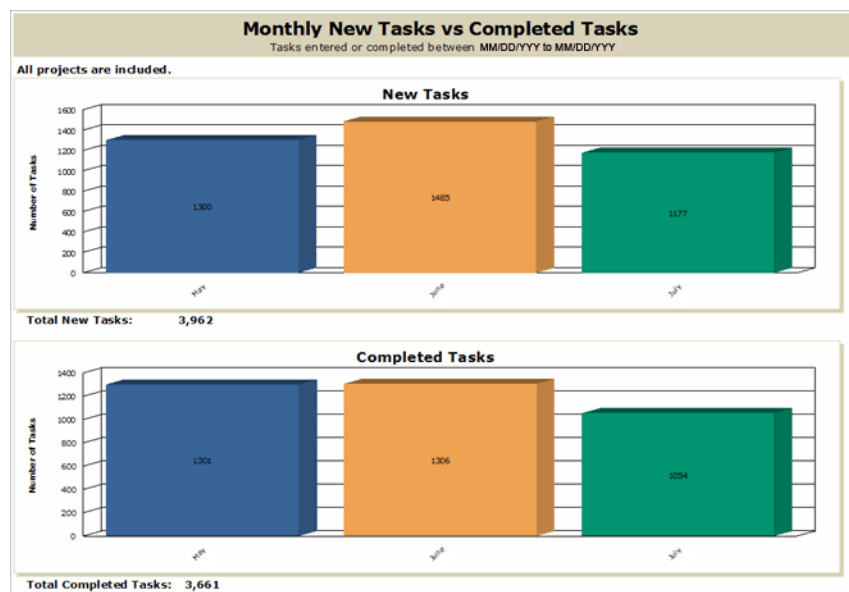
This report shows the total number of new tasks entered and total number of tasks completed for all or selected projects during each month in the chosen time span.

The main report presents two bar charts:

- The first chart totals the new tasks that were opened for all included projects during each month in the time span.
- The second chart shows how many tasks were completed (regardless of when they were opened) for all included projects during each month in the time span.

To display more information about new and completed tasks, double-click a month's bar in either chart. Double-click again to display a list of tasks. You can then display more information about a task by clicking it.

Example report



Monthly Tasks Percent Complete report

This report compares the tasks opened to the tasks closed as a percentage, for all or selected projects, over a given time span.

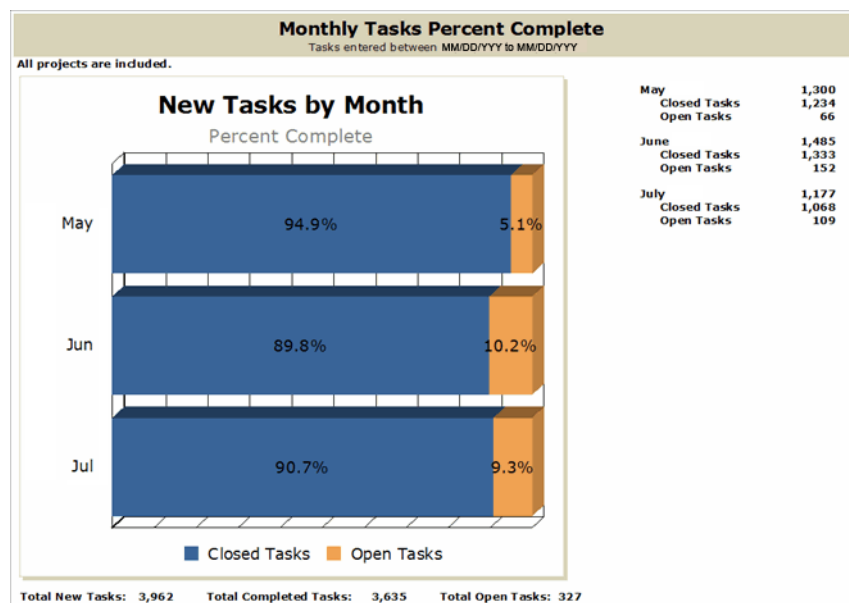
The main report presents a bar chart for each month in the time span.

- To display a list of a open and closed tasks for a month, double-click the month label.
- To display a list of only closed tasks for a month, double-click the Open bar.

You can then display more information about a task by clicking it.

A task status code is considered an open status code if Show = Yes in the status code definition.

Example report



Oldest Open Tasks report

This report lists, by month and year and from oldest to most recent, tasks that have been open longest for a specific project.

To display more information about a task, double-click it.

A task status code is considered an open status if Show = Yes in the status code definition.

Example report

Oldest Open Tasks					
Open Tasks by Date Entered					
Selected Projects: SM61					
December 2015					
Task ID	Description	Status	Priority	Resource	Entered Date
SM610008	Add field to option masterfile file to enter password protection	TESTING	4	WESTON	12/07/15
Total December 2015 Tasks:					1
June 2017					
Task ID	Description	Status	Priority	Resource	Entered Date
SM61001003	Enhance auditing capabilities	TESTED	2	TOCHTERMAN	06/17/17
Total June 2017 Tasks:					1
June 2018					
Task ID	Description	Status	Priority	Resource	Entered Date
SM610005	View FKey Group Assignment and System from Softmenu Inquiry Menu	ASSIGNED	4	WESTON	06/07/18
Total June 2018 Tasks:					1
September 2018					
Task ID	Description	Status	Priority	Resource	Entered Date
SM61005404	PRTOPTUSG allow *ALL divisions to be selected for the report	HOLD	4	*NONE	09/18/18
Total September 2018 Tasks:					1
April 2019					
Task ID	Description	Status	Priority	Resource	Entered Date
SM610006	Change FASTPATH window to have labels	HOLD	4	*NONE	04/18/19
Total April 2019 Tasks:					1
July 2020					
Task ID	Description	Status	Priority	Resource	Entered Date
SM610042	Other programs which CRTD TAARAS	HOLD	2	*NONE	06/19/20
Total June 2020 Tasks:					1
July 2020					
Task ID	Description	Status	Priority	Resource	Entered Date
SM610043	Assign Option Groups and Submenu Combine in Process	HOLD	2	*NONE	07/21/20

Task Information report

This report presents all the information stored in the database for a given task.

Example report

Task Information - SM61000119			
Description MRPT field incorrectly set when adding a new division			
Resource	TOCHTERMAN	Susan Tochterman	
Requester	TOCHTERMAN	Susan Tochterman	
Status	FINISHED	Type	A
Priority	2	Sequence	0
Date Needed		Date Promised	
Software Subsystem	OPTIONS	Customer is on Release	6.0
Fix to be made on Release	6.1	Agents Customer	
Help text?			
Entered by			

	Planned	Actual	Time Units
Duration	12/29/19	12/29/19	Hours
Start Date		12/29/19	Billable Yes
End Date		12/29/19	

Dependency on Task	SM61	0	0
Application/Release/Version			
Source Library			
Object Library			
Data Library			

Task Details
Details:

When a new division is created (F6 from "Work with Divisions" panel), Masterfile options SM and 90 are created for the division. MRPT field (1-char) is set to "OFF". The result is "F" for this field. Should be "N".

Resolution:

Instead of "OFF", set MRPT to "N".

Summary of Changes:

☐
Forms

Task Status over Limit report

For this report, you can select only projects that audit task changes.

This report compares the length of time that tasks in a project have been set to a given status against a time limit you specify.

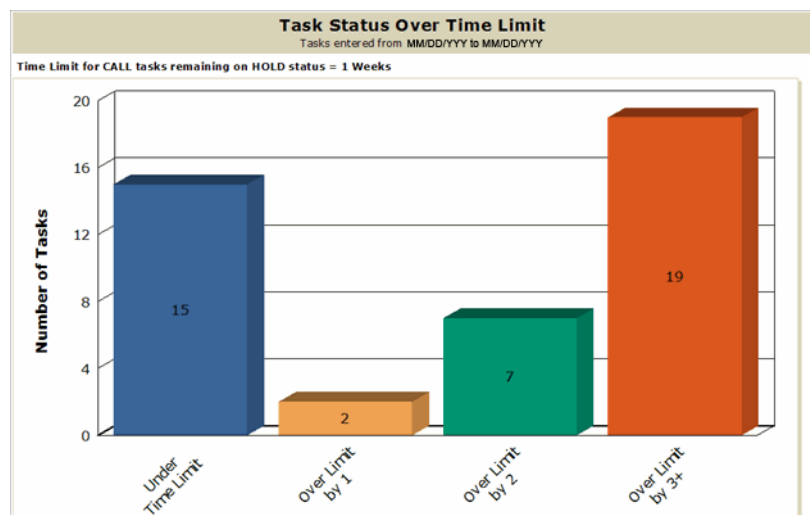
The main report presents a bar chart showing task counts in applicable time categories. The possible categories are:

- Tasks that are under the limit
- Tasks that exceed the limit by 1 times the limit, but less than 2 times
- Tasks that exceed the limit by 2 times the limit, but less than 3 times
- Tasks that exceed the limit by 3 or more times the limit.

If any category is empty, it does not appear.

To display a list of the tasks that are in a category, double-click the category. You can then display more information about a task by clicking it.

Example report



Task Throughput report

This report summarizes tasks entered into a given project during a specific time period, and categorizes them in status code categories.

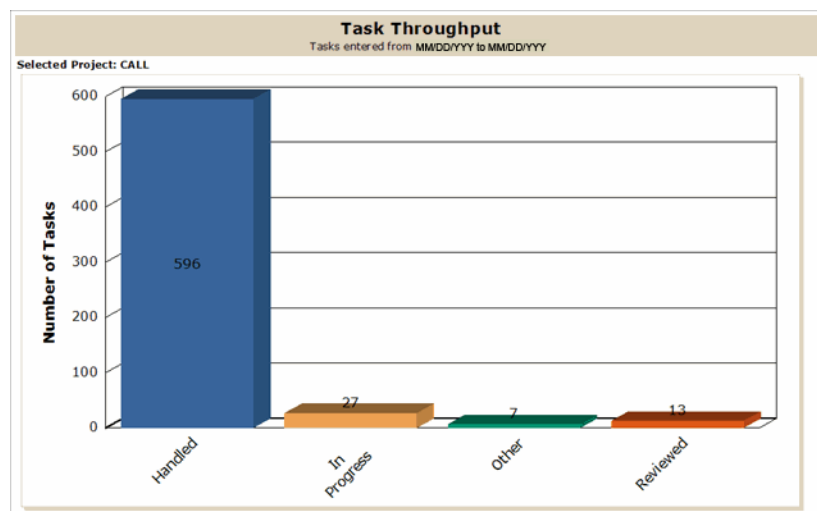
The main report presents a bar chart showing task counts in four user-customizable categories and one static category called "Other."

The customizable categories are based on status codes you choose; the Other category contains all status codes you did *not* choose. Examples of possible categories are New tasks, Review tasks, In Process tasks, and Closed tasks.

If any category is empty, it does not appear in the report.

To display a list of tasks that are in a category, double-click the category. You can then display more information about a task by clicking it.

Example report



Weekly Average Time to Completion report

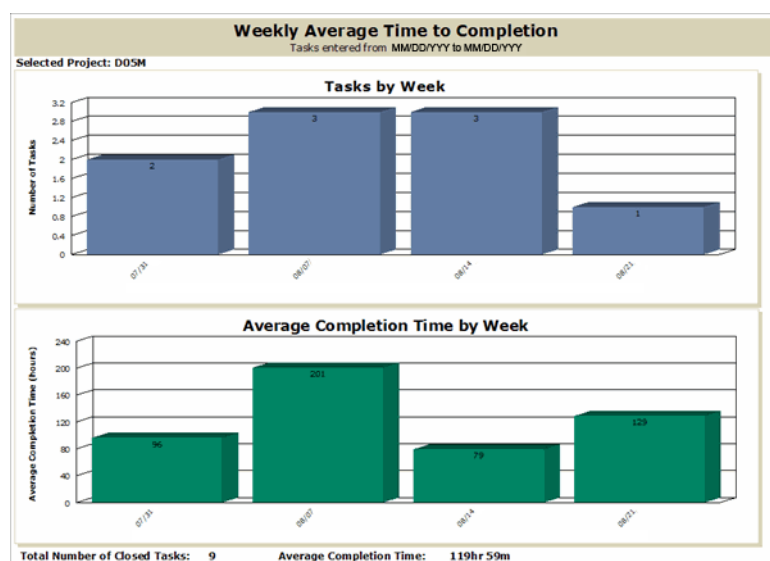
This report shows the average time resources spent completing tasks entered into a project during a time span.

The main report presents a bar chart showing completion times by week.

To display a week's task count by resource, and the average completion time by resource, double-click the week's bar.

To display a list of individual tasks, double-click a resource's task count bar. You can then display more information about a task by clicking it.

Example report



15 Creating custom reports

The TURNOVER® Client Projects and Helpdesk applications include some TURNOVER® Lifecycle Manager reports that analyze project information as “Completed Tasks by Month” and “Open Tasks by Resource.”

You can change these reports, and create new ones by using Crystal Reports.

You can use any SQL-based reporting tool to retrieve information from the TURNOVER® Lifecycle Manager files.

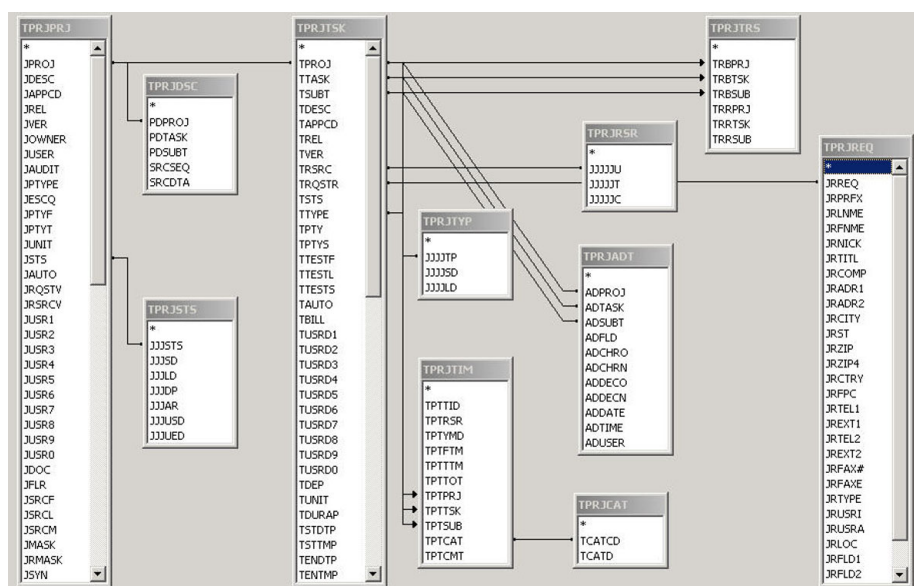
In general, the data required for reporting is in the TURNOVER® Lifecycle Manager project files (see *‘TURNOVER® Lifecycle Manager physical files’ on page 371*). Logical files have an eighth character in their name. If you are using an SQL-based reporting tool, reference the physical files in your queries and let the database query utility choose the appropriate logical files to most efficiently return the results.

TURNOVER® Lifecycle Manager physical files

File name		Description
TPRJADT	Project Audit Information	The change history for a task. A single record exists for each task field that is modified. The record lists the field name from the TPRJTSK file, the old and new value, the date on which the change was made, and the user who made the change.
TPRJCAT	Timesheet categories	The description of any timesheet category referenced from file TPRJTIM.
TPRJDSK	Project details	The task details. The details are made up of a series of 80-character records, with each record corresponding to one line of the details.
TPRJPRJ	Project information	Project information as project description, type, status, and task defaults.

File name		Description
TPRJREQ	Requester information	Requester information such as the requester's name, telephone number, and company (name, address, telephone, and so forth).
TPRJRSR	Resource information	The resource first and last name and resource category.
TPRJSTS	Project and task status	Short and long status descriptions used for both projects and tasks. The status Show indicator is often used to indicate if projects or tasks are considered closed or finished. Show = N means the task is logically "closed;" Show = Y means it is "open."
TPRJTIM	Project timesheet	The individual time entries that have been logged against a task.
TPRJTRS	Related tasks	The relationship between Helpdesk task and the corresponding Working project task. An entry is generated when a Helpdesk task has been assigned to a Working project task.
TPRJTSK	Project tasks	The primary file for holding such task information as the project, resource, requester, status, priority, and date entered. A single entry exists for each task or subtask.
TPRJTYP	Task type	Short and long descriptions that indicate the task type.

Relational diagram of the TURNOVER® Lifecycle Manager physical files



TURNOVER® Lifecycle Manager file definitions

TPRJADT: Audit information

Field name	Data type	Column heading
ADPROJ	CHAR(4)	Project
ADTASK	CHAR(4)	Task
ADSUBT	CHAR(2)	Subtask
ADFLD	CHAR(10)	Audit Field Name
ADCHRO	CHAR(25)	Audit Old Character Value
ADCHRN	CHAR(25)	Audit New Character Value
ADDECO	DECIMAL(10, 2)	Audit Old Numeric Value
ADDECN	DECIMAL(10, 2)	Audit New Numeric Value
ADDATE	DECIMAL(8, 0)	Audit Date
ADTIME	DECIMAL(6, 0)	Audit Time
ADUSER	CHAR(10)	Audit User

TPRJCAT: Timesheet category

Field name	Data type	Column heading
TCATCD	CHAR(1)	Time Category ID
TCATD	CHAR(40)	Time Category Description

TPRJDSC: Project details

Field name	Data type	Column heading
PDPROJ	CHAR(4)	Project
PDTASK	CHAR(4)	Task
PDSUBT	CHAR(2)	Subtask
SRCSEQ	DECIMAL(6, 2)	Details Sequence
SRCDTA	CHAR(80)	Details Data

TPRJPRJ: Project definition

Field name	Data type	Column heading
JPROJ	CHAR(4)	Project
JDESC	CHAR(80)	Project Description
JAPPCD	CHAR(4)	Project Application
JREL	DECIMAL(2, 0)	Project Release
JVER	DECIMAL(2, 0)	Project Version
JOWNER	CHAR(10)	Project Administrator
JUSER	CHAR(10)	Project User
JAUDIT	CHAR(1)	Project Audit Changes
JPTYPE	CHAR(10)	Project Type
JESCQ	CHAR(10)	Escalation Table Name
JPTYF	CHAR(1)	Project From Priority
JPTYT	CHAR(1)	Project To Priority
JUNIT	CHAR(1)	Project Default Time Units
JSTS	CHAR(1)	Project Status
JAUTO	CHAR(1)	Project Auto Number Tasks
JRQSTV	CHAR(10)	Project Requester Validation
JRRCV	CHAR(10)	Project Resource Validation
JUSR1	CHAR(10)	Project User Field 1
JUSR2	CHAR(10)	Project User Field 2
JUSR3	CHAR(10)	Project User Field 3
JUSR4	CHAR(10)	Project User Field 4
JUSR5	CHAR(10)	Project User Field 5
JUSR6	CHAR(10)	Project User Field 6
JUSR7	CHAR(10)	Project User Field 7

Field name	Data type	Column heading
JUSR8	CHAR(10)	Project User Field 8
JUSR9	CHAR(10)	Project User Field 9
JUSR0	CHAR(10)	Project User Field 10
JDOC	CHAR(12)	Project Document
JFLR	CHAR(80)	Project Folder
JSRCF	CHAR(10)	Project Source File
JSRCL	CHAR(10)	Project Source Library
JSRCM	CHAR(10)	Project Source Member
JMASK	CHAR(1)	Project Auto Enter Details
JRMASK	CHAR(1)	Project Report Mask Required
JSYN	CHAR(15)	Project Task Synonym
JISTS	CHAR(1)	Project Default Task Status
JRSTS	CHAR(1)	Project Rejected Status
JASTS	CHAR(1)	Project Accepted Status
JDSTS	CHAR(1)	Project Reviewed Status
JMSGRS	CHAR(1)	Project Auto Message Resource
JMSGRQ	CHAR(1)	Project Auto Message Requester
JCOORD	CHAR(10)	Project Coordinator
JRSRC	CHAR(10)	Project Default Resource
JRQSTR	CHAR(10)	Project Default Requester
JTYPE	CHAR(1)	Project Default Task Type
JPTY	CHAR(1)	Project Default Priority
JBILL	CHAR(1)	Project Default Billable Time
JTESTF	CHAR(10)	Project Default Data Library
JTESTL	CHAR(10)	Project Default Object Library

Field name	Data type	Column heading
JTESTS	CHAR(10)	Project Default Source Library
JCOUNT	DECIMAL(7, 0)	Project Last Used Task Number
JENTBY	CHAR(10)	Project Entered By
JENTDT	DECIMAL(8, 0)	Project Date Entered
JENTTM	DECIMAL(6, 0)	Project Time Entered
JCHGBY	CHAR(10)	Project Changed By
JCHGDT	DECIMAL(8, 0)	Project Change Date
JCHGTM	DECIMAL(6, 0)	Project Change Time
JEDIT	CHAR(10)	Project Details Editor
JDYNUD	CHAR(1)	Project Dynamic Update
JDTAQ	CHAR(10)	Project Update Data Queue
JDTAQL	CHAR(10)	Project Update DTAQ Library
JRSV1	CHAR(10)	Project Reserved 1
JRSV2	CHAR(10)	Project Reserved 2
JRSV3	CHAR(10)	Project Reserved 3
JRSV4	CHAR(10)	Project Reserved 4
JRSV5	CHAR(10)	Project Reserved 5
JMPRSD	DECIMAL(8, 0)	Project Start Date
JMPRED	DECIMAL(8, 0)	Project End Date
JUSRD1	CHAR(10)	Project Default User 1
JUSRD2	CHAR(10)	Project Default User 2
JUSRD3	CHAR(10)	Project Default User 3
JUSRD4	CHAR(10)	Project Default User 4
JUSRD5	CHAR(25)	Project Default User 5
JUSRD6	CHAR(25)	Project Default User 6

Field name	Data type	Column heading
JUSRD7	DECIMAL(7, 0)	Project Default User 7
JUSRD8	DECIMAL(7, 0)	Project Default User 8
JUSRD9	DECIMAL(7, 2)	Project Default User 9
JUSRD0	DECIMAL(7, 2)	Project Default User 10
JMSPUID	DECIMAL(9, 0)	MSP ProjectUniqueID

TPRJREQ: Requester

Field name	Data type	Column heading
JRREQ	CHAR(10)	Requester ID
JRPRFX	CHAR(4)	Requester Prefix
JRLNME	CHAR(18)	Requester Last Name
JRFNME	CHAR(12)	Requester First Name
JRNICK	CHAR(18)	Requester Nickname
JRTITL	CHAR(30)	Requester Title
JRCOMP	CHAR(30)	Requester Company
JRADR1	CHAR(30)	Requester Address Line 1
JRADR2	CHAR(30)	Requester Address Line 2
JRCITY	CHAR(18)	Requester City
JRST	CHAR(2)	Requester State
JRZIP	CHAR(5)	Requester Zip Code
JRZIP4	CHAR(4)	Requester Zip4
JRCTRY	CHAR(18)	Requester Country
JRFPC	CHAR(10)	Requester FPC
JRTEL1	CHAR(20)	Requester Telephone
JREXT1	CHAR(4)	Requester Phone Extension
JRTEL2	CHAR(20)	Requester Telephone 2

Field name	Data type	Column heading
JREXT2	CHAR(4)	Requester Phone Extension 2
JRFAX#	CHAR(20)	Requester Fax Number
JRFAXE	CHAR(4)	Requester Fax Extension
JRTYPE	CHAR(2)	Requester Type
JRUSRI	CHAR(8)	Requester SNADS User ID
JRUSRA	CHAR(8)	Requester SNADS Address
JRLOC	CHAR(15)	Requester Location
JRFLD1	CHAR(10)	Requester User Field 1
JRFLD2	CHAR(10)	Requester User Field 2
JRFLD3	CHAR(10)	Requester User Field 3
JRFLD4	CHAR(10)	Requester User Field 4

TPRJRSR: Resource

Field name	Data type	Column heading
JJJJU	CHAR(10)	Resource ID
JJJJT	CHAR(40)	Resource Full Name
JJJJC	CHAR(10)	Resource Category

TPRJSTS: Status

Field name	Data type	Column heading
JJJSTS	CHAR(1)	Project Status ID
JJJS D	CHAR(8)	Project Status Short Description
JJJLD	CHAR(40)	Project Status Long Description
JJJDP	CHAR(1)	Project Status Show
JJJAR	CHAR(1)	Allow as Reference
JJJUSD	CHAR(1)	Update Start Date

Field name	Data type	Column heading
JJJUED	CHAR(1)	Update End Date

TPRJTIM: Timesheet

Field name	Data type	Column heading
TPTTID	DECIMAL(9, 0)	Timesheet ID
TPTRSR	CHAR(10)	Timesheet User ID
TPTYMD	DECIMAL(8, 0)	Timesheet Date
TPTFTM	DECIMAL(6, 0)	Timesheet From Time
TPTTTM	DECIMAL(6, 0)	Timesheet To Time
TPTTOT	DECIMAL(4, 0)	Timesheet Total Minutes
TPTPRJ	CHAR(4)	Project
TPTTSK	CHAR(4)	Task
TPTSUB	CHAR(2)	Subtask
TPTCAT	CHAR(1)	Time Category ID
TPTCMT	CHAR(80)	Timesheet Comment

TPRJTRS: Task relationships

Field name	Data type	Column heading
TRBPRJ	CHAR(4)	Project
TRBTSK	CHAR(4)	Task
TRBSUB	CHAR(2)	Subtask
TRRPRJ	CHAR(4)	Helpdesk Project
TRRTSK	CHAR(4)	Helpdesk Task
TRRSUB	CHAR(2)	Helpdesk Subtask

TPRJTSK: Task

Field name	Data type	Column heading
TPROJ	CHAR(4)	Project
TTASK	CHAR(4)	Task
TSUBT	CHAR(2)	Subtask
TDESC	CHAR(80)	Task Description
TAPPCD	CHAR(4)	Task Application
TREL	DECIMAL(2, 0)	Task Release
TVER	DECIMAL(2, 0)	Task Version
TRSRC	CHAR(10)	Resource ID
TRQSTR	CHAR(10)	Requester ID
TSTS	CHAR(1)	Project Status ID
TTYPE	CHAR(1)	Task Type
TPTY	CHAR(1)	Task Priority
TPTYS	DECIMAL(3, 0)	Task Priority Sequence
TTESTF	CHAR(10)	Task Data Library
TTESTL	CHAR(10)	Task Object Library
TTESTS	CHAR(10)	Task Source Library
TAUTO	CHAR(1)	Task Auto Number Subtasks
TBILL	CHAR(1)	Task Billable Time
TUSRD1	CHAR(10)	Task User Field 1
TUSRD2	CHAR(10)	Task User Field 2
TUSRD3	CHAR(10)	Task User Field 3
TUSRD4	CHAR(10)	Task User Field 4
TUSRD5	CHAR(25)	Task User Field 5
TUSRD6	CHAR(25)	Task User Field 6

Field name	Data type	Column heading
TUSRD7	DECIMAL(7, 0)	Task User Field 7
TUSRD8	DECIMAL(7, 0)	Task User Field 8
TUSRD9	DECIMAL(7, 2)	Task User Field 9
TUSRD0	DECIMAL(7, 2)	Task User Field 10
TDEP	CHAR(10)	Task Dependency
TUNIT	CHAR(1)	Task Default Time Units
TDURAP	DECIMAL(7, 2)	Task Planned Duration
TSTDTP	DECIMAL(8, 0)	Task Planned Start Date
TSTTMP	DECIMAL(6, 0)	Task Planned Start Time
TENDTP	DECIMAL(8, 0)	Task Planned End Date
TENTMP	DECIMAL(6, 0)	Task Planned End Time
TDURAA	DECIMAL(7, 2)	Task Actual Duration
TSTDTA	DECIMAL(8, 0)	Task Actual Start Date
TSTTMA	DECIMAL(6, 0)	Task Actual Start Time
TENDTA	DECIMAL(8, 0)	Task Actual End Date
TENTMA	DECIMAL(6, 0)	Task Actual End Time
TNDDT	DECIMAL(8, 0)	Task Date Needed
TPRDT	DECIMAL(8, 0)	Task Date Promised
TDOC	CHAR(12)	Task Document
TFLR	CHAR(80)	Task Folder
TSRCF	CHAR(10)	Task Source File
TSRCL	CHAR(10)	Task Source File Library
TSRCM	CHAR(10)	Task Source Member
TCOUNT	DECIMAL(5, 0)	Task Last Subtask
TENTBY	CHAR(10)	Task Entered By

Field name	Data type	Column heading
TENTDT	DECIMAL(8, 0)	Task Date Entered
TENTTM	DECIMAL(6, 0)	Task Time Entered
TCHGBY	CHAR(10)	Task Changed By
TCHGDT	DECIMAL(8, 0)	Task Change Date
TCHGTM	DECIMAL(6, 0)	Task Change Time
TRVWBY	CHAR(10)	Task Reviewed By
TRVWDT	DECIMAL(8, 0)	Task Date Reviewed
TRVWTM	DECIMAL(6, 0)	Task Time Reviewed
TASGBY	CHAR(10)	Task Assigned By
TASGDT	DECIMAL(8, 0)	Task Date Assigned
TASGTM	DECIMAL(6, 0)	Task Time Assigned
TACPBX	CHAR(10)	Task Accepted By
TACPDT	DECIMAL(8, 0)	Task Date Accepted
TACPTM	DECIMAL(6, 0)	Task Time Accepted
TRJTBY	CHAR(10)	Task Rejected By
TRJTDT	DECIMAL(8, 0)	Task Date Rejected
TRJTMM	DECIMAL(6, 0)	Task Time Rejected
TDYNDT	DECIMAL(8, 0)	Task Refresh Date
TDYNTM	DECIMAL(6, 0)	Task Refresh Time
TMATCH	DECIMAL(5, 0)	Task Match Count
TRSV1	CHAR(10)	Task Reserved 1
TRSV2	CHAR(10)	Task Reserved 2
TRSV3	CHAR(10)	Task Reserved 3
TRSV4	CHAR(10)	Task Reserved 4
TRSV5	CHAR(10)	Task Reserved 5

Field name	Data type	Column heading
TMSPUID	DECIMAL(9, 0)	MSP TaskUniqueID

TPRJTYP: Task type

Field name	Data type	Column heading
JJJJTP	CHAR(1)	Task Type
JJJJSD	CHAR(8)	Task Type Short Description
JJJJLD	CHAR(40)	Task Type Long Description

Example custom reports

This section provides examples of how you can use the TURNOVER® Lifecycle Manager physical files and their fields to specify the data you want to include in your custom report.

Example 1: Task resource report

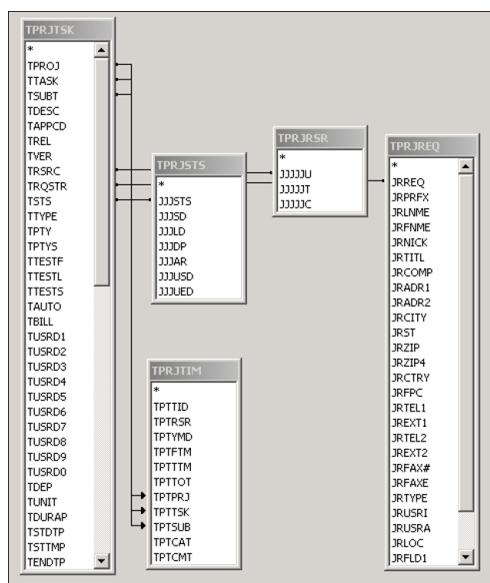
This example creates a report of task resource information. This report will list the following information for each resource:

- Resource name
- Requester name
- Project
- Task ID
- Task name
- Subtask
- Task status (short description)
- Task priority
- Total time spent on each task.

The files and fields you need to build this report are the following:

File	Field	Description
TPRJTSK	TPROJ	Project ID
	TTASK	Task ID
	TSUBT	Subtask ID
	TDESC	Task description
TPRJTSK	TPTY	Task priority
TPRJTIM	TPTTOT	Total time in minutes
TPRJRSR	JJJJT	Resource's full name
TPRJREQ	JRFNME	Requester's first name
	JRLNME	Requester's last name
TPRJSTS	JJJS	Short status description

The model for this report would look something like the following:



Example 2: Task escalation report

This example creates a report of task escalation information. This report will list the following information for each task:

- Project
- Task ID
- Task name
- Subtask

- Requester name
- Resource name
- Escalation date
- Escalation time
- Action taken
- Old value
- New value.

The files and fields you need to build this report are the following:

File	Field	Description
TPRJTSK	TPROJ	Project ID
	TTASK	Task ID
	TSUBT	Subtask ID
TPRJTSK	TDESC	Task description
TPRJRSR	JJJJJT	Resource's full name
TPRJREQ	JRFNME	Requester's first name
	JRLNME	Requester's last name
TPRJADT	ADUSER	Filter escalation entries (*ESCQ)
	ADDATE	Escalation date
	ADTIME	Escalation time
	ADFLD	Name of modified field (status, priority, and so on)
	ADCHRO	Old value of the modified field
	ADCHRN	New value of the modified field

The model for this report would look something like the following:

The diagram illustrates a multi-ported register architecture with three main components: **TPRJTSK**, **TPRJADT**, and **TPRJREQ**.

- TPRJTSK** (Task Register) contains 16 ports labeled **TPR00** through **TPR0F**.
- TPRJADT** (Address Register) contains 8 ports labeled **ADAP00**, **ADTASK**, **ADUSBT**, **ADFLD**, **ADCHRP0**, **ADCHRN1**, **ADCHRC0**, and **ADCHRN0**.
- TPRJREQ** (Request Register) contains 16 ports labeled **JREQ00** through **JREQ0F**.

Connections are shown as follows:

- Ports **TPR00**, **TPR01**, **TPR02**, **TPR03**, **TPR04**, **TPR05**, **TPR06**, and **TPR07** from **TPRJTSK** are connected to ports **ADAP00** through **ADCHRN0** in **TPRJADT**.
- Ports **ADAP00** through **ADCHRN0** from **TPRJADT** are connected to ports **JREQ00** through **JREQ0F** in **TPRJREQ**.

Below the **TPRJADT** register, there is a sub-register labeled **TPRJRSR** with three ports: **31130U**, **31130T**, and **31130C**.

16 Distributing changes to production computers

Before defining your computers and applications to TURNOVER® Lifecycle Manager, draw a change and distribution schematic diagram (see [‘Setting up systems for distribution’ on page 396](#)).

This section describes standard IBM i-to-IBM i distribution practices.

TURNOVER® Lifecycle Manager can distribute IFS objects using FTP, to a target computer outside your firewall (or to other platforms that run FTP). For more information about this kind of TURNOVER® Lifecycle Manager distribution, see [‘Configuring for direct FTP distribution’ on page 447](#).

Distribution overview

In this section, the *development computer* is the source computer, where software changes originate, and the *production computer* is the target computer, to which changes are sent for installation.

Distribution comprises these stages:

- 1 Send a TURNOVER® Lifecycle Manager form and its associated changed items (objects only, source and objects, or source alone) from a development system to one or more remote systems.
- 2 Receive the form and source/objects on the production computer.
- 3 Submit the form on the production computer to process it according to the instructions in the remote computer’s Send defaults.

These stages can be handled either automatically or manually: see [‘Combination distribution’ on page 389](#).

To distribute changes using TURNOVER® Lifecycle Manager, you must have either the production or development version of TURNOVER® Lifecycle Manager on the production computers. The production version of TURNOVER® Lifecycle Manager has all of the functions necessary to receive forms, run them, and track change history. It does not have functions for checking source in or out, creating forms, or distributing to other computers.

TURNOVER® Lifecycle Manager can distribute source and/or objects to any number of remote computers.

The names of libraries on the development and production computer can be different.

TURNOVER® Lifecycle Manager can “explode,” or duplicate, data-type objects into multiple libraries on each production computer.

Only forms that have a form status of `RAN-xx`, `FIN-xx`, `EMER-xx`, or `PARTIAL` (indicating that a distribution has already been sent to some, but not all, production computers) are eligible for distribution.

Manual distribution

To distribute manually, you run a TURNOVER® Lifecycle Manager form on the development computer, and then manually send it to the production computer.

You sign onto the production computer using pass-through or a locally attached device, receive the distribution, and schedule the TURNOVER® Lifecycle Manager form to be run.

You can distribute several forms to the same production computer at the same time.

If the TURNOVER® Lifecycle Manager form completes with a status other than `RAN-OK`, `EMER-OK`, or `FIN-OK`, you must check it and then distribute it manually.

Automatic distribution

To distribute automatically, you set up TURNOVER® Lifecycle Manager to send a form to the production computer, as soon as the form finishes running on the development computer.

You set up the production computer to receive the form, schedule it to run, run it unattended and, optionally, send log spool files and status back to the development computer to update the TURNOVER® Lifecycle Manager form status there.

With automatic distribution, you can override the distribution defaults at run-time for all or some of the production computers. For example, today you might only want to distribute a TURNOVER® Lifecycle Manager form automatically to one of several production computers when it completes, and then manually distribute to the remaining computers tomorrow.

Automatic distribution is done one form or form group at a time (see *[‘Submitting a group of forms to run together’ on page 150](#)*). If distribution is specified for an application level, TURNOVER® Lifecycle Manager displays a list of the production computers and distribution defaults when you run a form. You can accept these options or change them.

Distribution occurs immediately after the form runs, unless you override distribution for *all* production computers; or the form status is `xxx-ERR`, `xxx-WRN`, `xxx-ERR`, or `RECOVER`. Form status must be `RAN-OK`, `FIN-OK`, or `EMER-OK` for it to be distributed automatically. Otherwise, you must inspect the form and, if it is correct, distribute it manually.

Automatically receiving changes

The automatic receive feature uses on a TURNOVER® Lifecycle Manager autostart job called **TURCRARE** that must be running on each production system where you want to receive changes. This job enables forms to be received even if the changes are distributed by SNADS after the distribution job has ended on the development computer. If you want a production system to automatically receive changes sent from other systems, first set up the TURCRARE autostart job there.

Recommendation

Set up TURNOVER® Lifecycle Manager to automatically receive changes on your production systems. See 'Autostart jobs' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

Specifying the distribution job queue

Use the data area called TDSTJOBQ (type *CHAR, length 20) to specify to which job queue you want to submit the distribution job:

- In positions 1-10, specify the job queue name.
- In positions 11-20, specify the job queue library name.

If you want to use the job queue specified in TURNOVER *JOBQ, specify *JOBQ in positions 1-10.

If the TDSTJOBQ data area does not exist, or if it contains invalid values, TURNOVER® Lifecycle Manager use the value of **Submit Form job queue** in the global defaults (on the main menu, select option 8, and then select option 5.)

Combination distribution

You can control how automatic the distribution process should be by using a combination distribution: for example, you can send a form manually, but receive it automatically, or send it automatically, and receive it manually.

Application definitions

Changes promoted to any application level can be distributed to all or some of your production computers. Once you have identified all of your computers to TURNOVER® Lifecycle Manager, you must specify to which computers you want changes to be distributed, for each application level definition that is to be distributed:

- 1 On the main menu, select option 11, and then select option 1.
- 2 On the Maintain System Definitions panel, select a system with option 16 (Distributed Applications).

For example, if you have ten computers, but application "AR" only runs on six of them, then you must specify to which six computers to distribute "AR" changes.

Any level of an application for which forms are distributed requires equivalent application level definition entries on each computer to which changes are sent. For example, if you are distributing from application “AP level 1”, you must have an application level definition called “AP level 1” on each remote computer that will receive changes.

Copying application definition entries to remote systems

You can copy application definition entries to remote computers. There are two ways of doing this:

Using remote application definition records

This is the recommended approach because it requires no physical connection between systems; it works with SNADS or with media. It is also automated – you don’t have to remember to change the application definition on the remote system before you can process a distributed form.

To use this method, you create and maintain remote application definition records for each application you distribute in a file *on the sending system*. If this feature is in use, TURNOVER® Lifecycle Manager checks to see if the definition has been changed since the last distribution. If it has, TURNOVER® Lifecycle Manager sends the definition to the production system along with the related form. The definition is applied when the form runs on the production computer, and then the form is received.

You control use of this feature with the **Distribute application definition** (Y/N) field in this system’s Send distribution defaults on the development computer. Create entries in the remote application definition file using Distribution menu option 5.

Using the Remote Configuration Wizard

See *‘9: Distribute application and system definitions to the remote computer’ on page 407*.

Distributing source members

You can send source code to all, some or none of your production computers. You might want to keep a backup copy of source on one computer, or you might want to compile objects on one or more production computers instead of distributing objects.

Use the Application Definition Distribution Defaults to tell TURNOVER® Lifecycle Manager to distribute source for a given application. Then, in the System Definitions, set up the Send Distribution Defaults entry for each remote computer to indicate whether the computer can receive source.

You might decide to distribute source for some applications and not for others. Source-only objects, such as text members, can be distributed in either case.

Source-only distribution

If you are distributing only source code, you can specify which source to send by object type and application. The application determines if source and/or objects are to be distributed. If only source is distributed, then the application definition on the production computer (where local promotions are controlled) must specify TURNOVER® Lifecycle Manager method of CS (Copy Source) or CSCO (Copy Source, Compile Object).

Objects-only distribution

If you tell TURNOVER® Lifecycle Manager that you will not be distributing source code, then only objects and source-only objects, such as Help text, are distributed. If only objects are distributed, then the application definition on the production computer must specify TURNOVER® Lifecycle Manager method of MO (Move Object) or CD (Create Duplicate).

To distribute objects for an application definition that uses MO (Move Object) or CD (Create Duplicate) as its promotion method, you must turn off object stamping in the remote application definition: see [‘5: Create remote application definitions for distributed applications’ on page 405](#).

You can set defaults to let you distribute source and object types differently for an application. For example, you might want to send only objects for most object types (files, programs, and so on) but only source for a few object types such as an SQL logical view, which must be compiled on the target system. Distribution of source or objects (or both) depends upon the defaults settings in the application definition and in the TURNOVER® Lifecycle Manager type code entry. See [‘Distribution decision chart’ on page 391](#).

Distribution decision chart

Prompt: Distribute source?

System definition	Application definition	Type code entry	Distrib?
Y	Y	Y or S or blank	Y
Y	Y	N or O	N
N	N	Y or S	Y
Y	Y	N or O	N
Y	Y (See Note below.)	Blank	Y

The application definition can also contain *SYSTEM in these fields, which refers back to the Y/N value in the system definition.

Note When blanks are entered for the type code, the source is distributed if the application definition is set to *SYSTEM and the system definition is set to Y, unless someone with the authority to do so, overrides the **Distribute source** parameter by changing it to N when the form is submitted or when a manual distribution is submitted.

Prompt: Distribute: object?

System definition	Application definition	Type code entry	Distrib?
Y	Y	Y or O or blank	Y
Y	Y	N or S	N
N	N	Y or O	Y
Y	Y	N or S	N
Y	Y (See Note below.)	Blank	Y

The application definition can also contain *SYSTEM in these fields, which refers back to the Y/N value in the system definition.

Note When blanks are entered for the type code, the object is distributed if the application definition is set to *SYSTEM and the system definition is set to Y, unless someone changes **Distribute object** to N when the form is submitted or when a manual distribution is submitted.

Distributing physical file data

When you distribute physical files, you can pass along data from test to production, and then on to a target computers.

You can change the Copy file FMTOPT parameter on the form line to *FROMFILE. This copies the data from the file specified by the **from library** into the new file specified by the **target library**. This, in turn, distributes that data to remote systems and installs it there.

If you do not want the data distributed and installed on remote system, only copied from test on the development system, do not override the **Copy file FMTOPT**. Instead, use the CPYTSTDTA command as a post-run command. This command has one parameter: the file name. The command will determine the from and to library names from the form line. To include this command, it should be your intention to copy the data from test to your target library. The CPYTSTDTA command used as a pre- or post-run command will be dropped from a distributed form.

To distribute from your development computer without first promoting the data, use the DISTDATA command as a post-run command. This has one parameter: the file name.

*DATA and *SRC (source-only) object types also cause TURNOVER® Lifecycle Manager to distribute data.

- The *DATA object type lets you define a physical file so you can check out and promote the contents of a file without changing the file format.

- The *SRC type lets you define a TURNOVER® Lifecycle Manager type code to check out and promote, and optionally distribute, a source or non-source file member. For more information, see *'Managing type code definitions' on page 162*.

Distributing logical files

If you distribute a logical file, TURNOVER® Lifecycle Manager distributes the source for the logical file and use the source to create the logical files on the production computers, regardless of the default method defined there. It puts the source in the target source library on the production computer, if it is defined, or in a temporary source file in QDDSSRC in QTEMP. If you want to retain the logical file source on your production computers, you can create QDDSSRC source files in your target data libraries. However, we do not recommend keeping the logical file source on your production computer.

Updating form status

Distributed forms

When a form is distributed, its status on the development computer changes to `DISTRIB`.

If the form is partially distributed (that is, distributed to some of the production computers designated for the application, but not all), the status changes to `PARTIAL`. When the form is distributed to the remaining computers, the status changes to `DISTRIB`.

After the form has run successfully on the production computer and, if you have told TURNOVER® Lifecycle Manager to send a confirmation back to the development computer, a message is sent from each production computer. When the message is received by the development system, the distribution history record for the distribution is updated. When confirmations have been received from all production systems to which the form was sent, the status changes from `DISTRIB` to `CONFIRM`. You can view and update the distribution history record manually for each form: see *'Updating form distribution status' on page 419*.)

Received forms

When a form is received on a production computer, its status is `RECVD`. This is equivalent to `READY` on the development computer.

After the form runs, its status changes to `RAN-OK` or `RAN-WRN`.

If the form fails and is recovered (status `RECOVER`) (for example, when an object is in use when the form is running), you can reset it by typing the command `RESETFOR` on a command line, and then pressing F4 to fill in the form number. The form status will be reset to `RECVD`. (To avoid this condition, use the **Lock check** feature.)

Form status on the development computer must be `xxx-OK` for the form to be distributed automatically.

Form status must be `xxx-OK`, `xxx-WRN`, `xxx-ERR`, or `PARTIAL` to be eligible for manual distribution.

You can make `RAN-WRN` forms eligible for automatic distribution by creating a 1-character data area called `DSTRANWRN` in your TURNOVER® Lifecycle Manager product library. You need not initialize the data area; it just has to exist.

TURNOVER® Lifecycle Manager form numbers

Duplicate form numbers might occur if you develop on multiple computers, all or some of which then distribute changes to a common computer.

You can use the `CHGFORMPRE` command to change the form prefix on one or more computers in the network to be different, so that form numbering on all systems will be unique.

Recommendation

Distributing from a development computer with multiple environments to production computers with a single environment *can* produce duplicate form numbers on the receiving system. A form generated in one environment on your development computer can have the same number as a form produced in another environment on the same computer. If your production computer does not have multiple environments, the result is duplicate form numbers. TURNOVER® Lifecycle Manager does not process duplicate form numbers on a remote computer correctly.

The simplest solution is to put TURNOVER® Lifecycle Manager's form number and distribution number files into TURNOVER® Lifecycle Manager's program library; this way, the same file is used regardless of environment.

Network versus media distribution

There are some differences between network and media distribution.

You can run several distribution jobs simultaneously using network distribution. Network distribution uses a variable distribution library and savefile name on the development and production computers, thus eliminating the possibility of any conflict between multiple distributions running at the same time.

You cannot mix network and media distributions in the same distribution request. If you must distribute via network to some computers and media to others, you must select one method first and then the other. Form status for forms being distributed will be `PARTIAL` until the form has been distributed to all production computers.

At the time you distribute forms, you can override the media parameter from the default to another medium; as in the case where a communications line is down and you decide to distribute by tape.

You must have need matching application level definitions on your development and production computers. You must either create the application definition directly on the production computer, or maintain your remote application definitions centrally and package them with distributions (see ['5: Create remote application definitions for distributed applications' on page 405](#)).

More about network distribution

TURNOVER® Lifecycle Manager uses the send network file (`SNDNETF`) command, which in turn uses SNADS (system network architecture distribution services); however, alternative methods are available. The actual time of distribution depends on distribution queue scheduling and also on the availability of a physical connection between computers. If you send a distribution, it won't be transmitted or received until a physical connection is established *and* the distribution queue threshold is reached.

If a distribution is sent and never reaches a production (target) system or is misdirected, as sometimes occurs with a network failure, the form can be distributed again, by redistributing the form on the development computer to all or just a few of the production computers.

If your auxiliary storage threshold on the production computer is beyond the storage threshold, that computer will not receive the distribution and the distribution will fail. You can view and change this threshold from the IBM System Service Tool menus (see the `STRSST` command).

Confirmation messages and form log entries

Confirmation messages are returned to the development computer. These messages are sent to user profile `TOMSGRCV` on the development computer. This user profile is created automatically when you install TURNOVER® Lifecycle Manager.

You must set up the `TOMSGRCV` autostart job on your development computer to receive and process messages (See 'Autostart Jobs' in the *TURNOVER® Lifecycle Manager Administrator's Guide*). When a message is received in message queue `TOMSGRCV`, TURNOVER® Lifecycle Manager runs a program that updates the distribution form status on the development computer. If the transmission of these messages is lost or misdirected, or you elected not to send back confirmation messages, you can update the form distribution status to `CONFIRM` manually. These messages are also passed on to the form programmer and the application Administrator.

Form log entry messages are also returned from remote computers to user `TOMSGRCV` on the development computer. If the autostart job is running, user `TOMSGRCV` makes form log entries describing the form distribution or processing activity that occurred on the remote and local systems. For more information, see *'Using the form log' on page 421*.

Distribution authority

You must have application default authority to maintain or distribute application definitions to production computers.

You must have run authority to run and distribute forms automatically. You must have distribution rights to change distribution options when you submit a form, or to distribute a form manually.

You must have forms run authority to distribute a form automatically, and forms distribution authority to override or change distribution defaults.

Distributed object ownership and authority

Distributed objects are assigned ownership and authorities on your production computers according to the application default definitions there. For more information, see [‘Application Description panel’ on page 16](#) and [‘Line defaults panel’ on page 28](#).

Distribution user

You can specify which user is to receive a distribution at each production computer. The default user name is user profile `TURNOVER`. We recommend that you use this profile.

When `TURNOVER®` Lifecycle Manager is installed, it creates a user profile called `TURNOVER` and a directory entry for that user. It sends distributions to `TURNOVER`, unless you specify different user when you set the system distribution defaults. That user profile must exist on the production computer.

If you do specify another user name for target user, `TURNOVER®` Lifecycle Manager creates a directory entry on the sending computer for that remote target user. If you change the target user name, `TURNOVER®` Lifecycle Manager changes directory entries appropriately.

For more about the form distribution process, see [‘How distribution works’ on page 425](#).

User to receive confirmation messages

`TURNOVER®` Lifecycle Manager also creates user profile `TOMSGRCV` (password `*NONE`) when you install `TURNOVER®` Lifecycle Manager.

This profile is used exclusively by autostart job `TOMSGRCV` to receive messages from a production computer and to update the distribution and form status for that computer on the development computer. A distribution entry for the development computer is also created on the production computer when you define the development computer there.

Setting up systems for distribution

These instructions assume that:

- you have established communications between your computers and can pass-through from one to another
- your applications have already been defined. For information about setting up application definitions, see [‘Working with application definitions’ on page 9](#).
- you plan to use SNADS for exchanging information between your development and production computers. If this is not the case, you can use other network communications protocols.

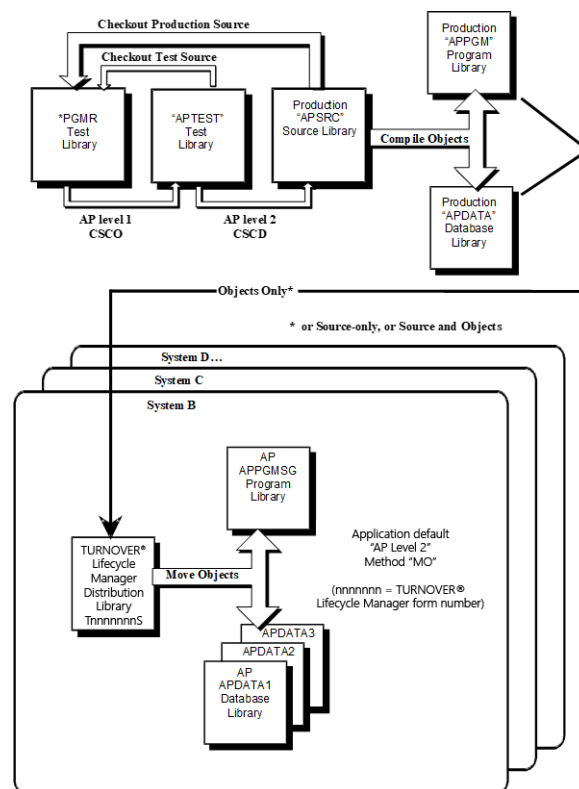
Overview

- 1 Draw a change and distribution schematic diagram.
- 2 Define your computers to `TURNOVER®` Lifecycle Manager.

- 3 Verify the operating system levels of all computers involved, and set the `TGTRLS` parameter if necessary.
- 4 Create remote application definitions on the development computer.
- 5 Set up the autostart job TOMSGRCV on the development computer (this job is usually already set up for you at install time).
- 6 Set up the automatic receive autostart job TURCRARE on the remote computer.
- 7 Use the Remote Configuration Wizard to distribute system and application definitions to your remote computer.
- 8 Test your change and distribution process.

1: Draw a change and distribution schematic

Draw a schematic diagram of your change and distribution environment for each of your applications.



This example has two application level definitions on the development computer: AP level 1 and AP level 2. For each of the production computers, it distributes objects from the APPGM and APDATA production libraries on the development computer to the production libraries on each production computer. (The library names on the production computers can be different than on the development computer.)

We have set up application definition AP level 2 on the production computers. Also, this has been defined to Explode data libraries; that is, duplicate object changes from one production data library into multiple data libraries, as might be the case if you were supporting multiple divisions or companies.

The application definition on the production computers specifies TURNOVER® Lifecycle Manager method MO (Move Object). If we specified CSCO, CSCD, or CSMO, we would have to tell TURNOVER® Lifecycle Manager to distribute source as well as objects.

There are many possible variations. Your environment might be more or less complex, and each of your applications might be different.

Your diagram might also include:

- the serial numbers and operating system of each computer
- the production systems on which the TURCRARE autostart job is needed for automatically receiving changes
- the development systems on which the TOMSGRCV autostart job is needed for processing incoming confirmation messages or distribution log entries from a receiving system.

Recommendation

Set up your systems for automatic distribution. If you need to, you can override defaults to distribute manually under exceptional circumstances.

2: Define your computers

All of the production computers in your network must be defined to TURNOVER® Lifecycle Manager *on the development system*. The development computer must be defined on each production system. Each computer, whether it is a development or production computer, must have a local definition for itself.

- 1 Sign on to the development computer.
- 2 On the main menu, select option 11, and then select option 1.

The Maintain System Definitions panel appears.

Sys	System	Device	System Description
10	USI	TAP01	UNICOM Systems, Inc. Headquarters
20	UIUK	TAP01	UNICOM Systems, Inc. U.K.
30	CDC	TAP01	Confederated Data Company
40	WASH	*SNADS	UNICOM Systems, Inc. Washington
50	FLOR	*SNADS	Florida Fifty Group
60	ALAS	*SNADS	UNICOM Systems, Inc. Alaska
70	TORON	*SNADS	UNICOM Systems, Inc. Toronto

F3=Exit F6=Add system definition F12=Cancel

Each system has a unique 3-digit system number. TURNOVER® Lifecycle Manager uses this number as a prefix when it generates a form number.

The system definition record is where you define Send and Receive defaults to control how forms are handled on your systems during a distribution. If you need to distribute manually, this is where you tell TURNOVER® Lifecycle Manager what device to use for saving or restoring changes on tape.

If your systems have been defined to TURNOVER® Lifecycle Manager already, they are listed here. The entry for the system on which you are working (the development system) should be highlighted. If it is not, make sure the serial number specified in the system definition entry matches the system value QSRLNBR. (Do not start it with s.) In your development system entry, you can use *LOCAL in **Serial number**; this retrieves the system value automatically.

To	Do this
add a system definition	Press F6.
change an entry	Select it with option 2.
delete an entry	Select it with option 4.
change the application definitions for an entry	Select it with option 7. Select a system entry with option 7 to view and update its application definitions.
	If you select a remote production system, an active network connection must exist for it.
	To get around this, you can either: ▪ pass-through to the production computer and work with applications directly ▪ use Distribution Menu option 5 for another way of maintaining application definitions for your remote systems. (See ‘5: Create remote application definitions for distributed applications’ on page 405.)
	You must have system defaults authority to update application definition entries.
change the distribution default entry	Select an entry with option 9.
	For a remote production system with this option, you see its Send defaults.
	For the local system, you see its Receive defaults.

To	Do this
	These defaults control the scheduling of the form on the development and production computers.
	To use this option, you must have forms distribution authority.
distribute the system definition to production (remote) computers	Use option 12. See <i>'Accessing the Remote Configuration Wizard' on page 407.</i>
rebuild the DDM file connection to a remote computer (after changing any system definitions	Select the system with option 13.
change the list of applications that are distributed by a system	Select the system with option 16

3: Add a system definition

All of the systems in your network, including the one you are on, must be defined to before you can distribute forms to them. The sending and receiving computers must be defined on each production computer.

- 1 On the Maintain System Definitions panel, press F6.

The Add a System Definition panel appears.

MM/DD/YY 08:25:30	Add a System Definition	Your Company, Inc.
Type choices, press Enter.		
System name	WASH	
System number	40	
System description	UNICOM Systems, Inc. Washington	
Machine type	400	
Model	E8A	
Serial number	*LOCAL	Char, *LOCAL
Contact name	Neal Bush	
Title	Finance Manager	
Address Line 1	IRS Data Center	
Address Line 2	100 Pennsylvania Avenue	
City/State/Zip	Washington	DC 20341
Country/FPC		
Phone	2023378899	
F3=Exit F12=Cancel		

- 2 Specify the information as described below, and then press Enter.

System number

A number between 1-999.

The System number must be consistent across all systems. For example, if Model E8A is System number 20 on the development computer, it must also be defined as System number 20 on the remote production computer.

However, on a remote production computer, only the development (source) and local production (target) system need to be defined. On the development computer, *all* systems, including the development computer, need to be defined.

System name

The system name must match the **Current system name** on the Display Network Attributes panel *on the system you are defining*. (Use the `DSPNETA` command.)

Serial number

The serial number must match the **Serial number** on the Display System Value panel on the system you are defining. To get the value, you can type `*LOCAL`, or use the `DSPSYSVAL QSRLNBR` command on that system.

3: Set system Send and Receive distribution defaults

- 1 On the Maintain System Definitions panel, select your *local system entry* with option 9.

The System Receive Distribution Defaults panel appears.

MM/DD/YY 08:27:32	System Receive Distribution Defaults	Your Company, Inc. YOURSYS
System name USI UNICOM Systems, Inc. F10 System number . . . 100		
Distribution device <u>*SNADS</u> Device, *SNADS, *NONE User profile to receive Snads files . . . <u>TURNOVER</u> User profile Automatically submit received forms . . . <u>N</u> Y, N Send logs back to host <u>N</u> Y, N Send confirmations back to host <u>N</u> Y, N Allow override from sending system . . . <u>Y</u> Y, N		
F3=Exit F12=Cancel		

System Receive distribution defaults apply to a system that will receive changes from other computers in the network.

If you do not plan to use the local system (that is, the system you are working on now) to receive changes, press Enter to accept the defaults, and continue with '[System Send Distribution Defaults panel](#)' on page 402.

- 2 Fill out the panel and press Enter to accept the Send defaults for this system.
- 3 Repeat the process for your remaining remote production systems.
- 4 When you finish, use F3 to return to the Maintain System Definitions panel, then proceed with the next step.

Automatically submit received forms

Controls the automatic submit component of the distribution process. If this field is Y, TURNOVER® Lifecycle Manager automatically submits forms for processing as soon as they are received.

Allow override from sending system

Controls whether you can override the Receive distribution defaults for a target system when you submit a form on the sending system. If this field is Y, Receive default overrides that are sent with the form to the receiving system are accepted and applied when the form is received there.

Once you have supplied the system Receive distribution defaults for your local system, return to the Maintain System Definitions panel. Select one of your remote production systems with option 9. The System Send Distribution Defaults panel appears.

System Send Distribution Defaults panel

MM/DD/YY	System Send Distribution Defaults	Your Company, Inc.
08:35:16		
System name S1010101 UNICOM Systems, Inc. D4		
System 200		
Target user id and address TURNOVER S1014706 UserId-Address		
Distribution device *SNADS Device, *SNADS, *NONE		
Distribute application definitions . . . N Y, N		
Distribute source N Y, N		
Distribute objects Y Y, N		
Automatically distribute forms N Y, N		
Distribution job schedule time *CURRENT *CURRENT, hhmmss		
Schedule elapsed action *SBMRLS *NEXTDAY, *SBMHL, . . .		
Submit received forms automatically . . N Y, N, *RMTDFTS		
Receive logs back N Y, N, *RMTDFTS		
Receive confirmations back N Y, N, *RMTDFTS		
Receive forms method *AUTOSTART *AUTOSTART, *PASSTHRU		
F3=Exit F12=Cancel		

System Send distribution defaults control how the local development system packages and sends application changes to the remote production system you selected. These defaults are system-specific, but you can override them for each application you distribute to the remote system. For example, if most applications are to be distributed via SNADS, but, for whatever reason, your AP application is to be distributed via tape, specify SNADS here at the system level, and then override the **Distribution device** parameter for the AP application definition.

Automatic distribution can be fully or partially automatic. That is, you may not want the form sent automatically, but when the form *is* sent, you may want it to be received and run automatically. Or, you may want forms to be sent and received automatically, but submitted to be run manually. The Send distribution defaults specify the degree of automation for each production computer.

If you have forms distribution authority, you can override the distribution defaults at run-time for all or some of the production computers. For example, today you may only want to distribute a TURNOVER® Lifecycle Manager form automatically to one of several production computers when it completes, and then distribute to the remaining computers manually tomorrow.

Automatic distribution is done one form at a time. If automatic distribution is specified for any production system to which an application would be distributed, TURNOVER® Lifecycle Manager presents the list of production computers and distribution defaults when you submit a form to run. At that time, you can change or accept these options. Distribution occurs immediately after the form runs, unless it has form status `xxx-ERR`, `xxx-WRN`, or `RECOVER`. (Form status must be `RAN-OK`, `FIN-OK`, or `EMER-OK` to be distributed automatically. Otherwise, you must inspect the form and, if it is OK, distribute it manually.)

Recommendation

You can control the receive process completely from your development computer, or locally on each production computer.

If you are distributing to more than one computer, or if your communication lines are slow, or if your connection is intermittent (switched-line), set up the automatic receive autostart job, `TURCRARE`, on each production system and control the receive process locally, at each system.

If you use this method, then here in the Send distribution defaults for each remote computer, set **Automatically distribute forms** to `Y` and **Receive forms method** to `*AUTOSTART`. (Do *not* set **Receive forms method** to `*PASSTHRU` if the autostart job is running, because this will cause conflicts.)

In each production computer's Receive distribution defaults, set **Distribution device** to `*SNADS`, supply a user profile (usually user TURNOVER) for receiving SNADS files, and indicate whether TURNOVER® Lifecycle Manager should automatically submit received forms.

4: Identify distributed applications for each system

- 1 On the Maintain System Definitions panel, select a remote system with option 16.

The System Distributed Applications panel appears.

```
MM/DD/YY                System Distributed Applications                Your Company, Inc.
08:37:22                YOURSYS

System name . . . . S1014706 UNICOM Systems, Inc. D4
System number. . . . 200

1=Add to distribution list  2=Change distribution  4=Delete from list

                                Distribute
Appl Rel Ver Lev  Description                               Src   Obj
_ AP                1   System-Wide Defaults                               N     N
_ AP                10  Test Application- Test Level 1                       N     N
_ APR               1   Test Application- Test Level 1                       N     N
_ APR               2   Test Application- Prod Level 2                      Y     Y
_ APR               3   Test Application- Test Level 1                       N     N
_ APR               4   Test Application- Prod Level 2                      N     N

F3=Exit  F11=Show only selected  F12=Cancel
Highlighted applications are included in system distribution list
```

This panel lists all applications defined on the development system. Highlighting identifies any applications that are distributed to the remote system shown at the top of the panel. If none are highlighted, no applications are currently distributed to the remote system you selected.

To	Do this
distribute an application to this remote system	Select an application level entry from the list with option 1.
supply application-level Send defaults for a highlighted application	Select it with option 2.
select an application for distribution	Use option 2 (when the application is not highlighted). The application appears in the list when you return to the System Distributed Applications panel.
remove an application from the distribution list	Use option 4.

When you have selected all the applications you want to distribute to the remote system shown, press Enter; then press F3 to return to the Distribution menu.

5: Create remote application definitions for distributed applications

Any application level you distribute from your development computer must have a matching application definition on each remote computer that receives it. The recommended approach for maintaining application definitions on your remote computers uses a Remote Application Definition file on the local development computer. This method does not require a physical connection between systems, and it is fully automatic, regardless of what medium you use to distribute changes. (You do not have to sign onto each remote computer and change the application definition there before you distribute a form.)

Test any changes you make to your application definitions. Take the time to set up some sample objects. Then, when you do make a change, create a worklist, check them out, promote them through all levels, distribute them, and install them on your production computers.

To create an entry in the Remote Application Definition file

Select option 5 on the Distribution menu.

The Work with Remote Application Definitions panel appears.

MM/DD/YY	Work with Remote Application Definitions	Your Company, Inc. SYSTEM: YOURSYS															
Position to . . . Application: ____ Rel: ____ Ver: ____ Lev: ____																	
Type options to be executed against remote applications, press Enter.																	
1=Create 2=Change 4=Delete 5=View 6=Print 8=Description																	
9=Application defaults and rules 10=Project defaults 11=Library defaults																	
12=Form defaults 13=Line defaults 14=Type codes . . .																	
<table border="1"> <thead> <tr> <th>Appl</th> <th>Rel</th> <th>Ver</th> <th>Lev</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>AP</td> <td>3</td> <td>2</td> <td>2</td> <td>Accounts Payable- Prod Level 2</td> </tr> <tr> <td>AR</td> <td>2</td> <td>4</td> <td>2</td> <td>Accounts Receivable- Prod Level 2</td> </tr> </tbody> </table>			Appl	Rel	Ver	Lev	Description	AP	3	2	2	Accounts Payable- Prod Level 2	AR	2	4	2	Accounts Receivable- Prod Level 2
Appl	Rel	Ver	Lev	Description													
AP	3	2	2	Accounts Payable- Prod Level 2													
AR	2	4	2	Accounts Receivable- Prod Level 2													
Bottom																	
F3=Exit F12=Cancel F14=WRKSBMJOB F21=Command line F23=More options																	
Highlighted lines have remote application definitions defined.																	

This panel shows application level entries that have been identified in the system definition as distributed applications. Highlighting identifies the applications that have remote definitions already.

To create a remote application definition for an application

Select its unhighlighted entry with option 1.

To change an existing entry

Select it with option 2 or one of the other topic-specific options. (These options are the same as those found on the Work with Application Definitions panel.) For example, if you are not distributing source, you should change the TURNOVER® Lifecycle Manager promotion method to MO (Move Object) in your remote application definitions. Read the Note and the recommendations below.

Note If you plan to distribute objects for an application definition that uses MO (Move Object) or CD (Create Duplicate) as its promotion method, make sure that object stamping is turned off in the remote application definition. For more information about object stamping, see 'Managing Multiple Versions' in the *TURNOVER® Lifecycle Manager Administrator's Guide*; specifically the section entitled *Object Versioning*.

Recommendation

Check these application default parameters for your production computers. Consider changing them to these suggested settings:

Field	Setting	Location
Require source checkout	N	Application defaults and rules
Require Project entry	N	Project defaults
Update Project task status	N	
Form level programmer	blank	Form defaults
Form level project mask	blank	
Method	MO	Line defaults
Delete test object	blank	
Delete test source	blank	
Line programmer	blank	
Project task reference	blank	

You should also:

- Change any *PGMR values to some other value, or leave them blank.
- Make sure that the libraries in the library list referenced in your application definition exist on your production computers.
- If you plan to use reference objects on the production system, make sure they exist and are set up appropriately for each object type being distributed. (Use F6 on the application definition Type codes panel while signed on to your remote product computer to create any missing items there.)

6: Check IBM i release level, and set the TGTRLS parameter

If you are distributing objects, check your diagram for the operating system release level of all computers concerned. If your development computer is running a newer release of the operating system than your production computers, you must do the following:

- 1 On the development computer, specify the remote computer's target release value in the Target Release global default (Utility Menu option 5). (If you are distributing to multiple computers with different release levels, use the lowest release level.
- 2 Add the following TGTRLS parameter specification in the create command for all global type codes that handle programs, modules, or service programs:

```
TGTRLS ("&TR")
```

The &TR substitution variable is replaced with *either* the global default, or with an override specified at the application level with a user-defined parameter value (F8 on the Type Codes panel of your application definition).

7: Set up message processing autostart job

If you want to have distribution status messages returned from your production systems processed on the development computer, you must define the message-processing job, TOMSGRCV, as an autostart job on your development computer.

8: Set up a remote receive autostart job

If you want to have distributions automatically received by the production computers, then set up the auto-receive job, TURCRARE, on each production computer.

9: Distribute application and system definitions to the remote computer

After you create your application and system definitions, you can use the Remote Configuration Wizard to distribute them to your remote computer. (An application's library list objects are included with the distributed definition, but they are NOT overlaid on the remote computer if they already exist.)

Accessing the Remote Configuration Wizard

- 1 Do one of the following:

To distribute	Do this
an application or a system definition (or both)	On the Distribution menu, select option 7 (Remote Configuration Wizard).
	On a TURNOVER® Lifecycle Manager command line, type TRMTCFGWIZ.

To distribute	Do this
an application definition	On the main menu, select option 1 (Work with Application definitions), and then select an application definition with option 2 or 5. On the Work with Application Definition panel, select option 22 (Distribute App).
a system definition	On the Distribution menu, select option 1 (Maintain system definitions). On the Maintain System Definitions panel, select a system definition with 12 (Distribute System).

Panel 1 of the wizard appears.

```
MM/DD/YY      Remote Configuration Wizard      Your Company, Inc.
09:10:15      Panel 1 of 5                      YOURSYS

Welcome to the TURNOVER® Remote Configuration Wizard. The Wizard is designed
to simplify the process of sending TURNOVER® application and system
definitions to the remote system. You will step through a series of
panels that will gather information about what you need to send to your
remote systems.

On each panel, after responding to the necessary prompts, you can press ENTER
to continue to the next panel, or press F12 to go back to the previous panel.
You can press F3 at any time, to end the process.

Press ENTER to continue.

ENTER=Next Panel      F3=Exit Wizard
```

2 Press Enter.

Panel 2 appears.

```

MM/DD/YY          Remote Configuration Wizard          Your Company, Inc.
09:10:45          Panel 2 of 5                          YOURSYS

Specify the information you wish to send: 1    1=Applications and systems
                                           2=Applications only
                                           3=Systems only

If you have selected options 1 or 2, then please specify where to get the
application data. Your two choices are: Remote definitions and Local
definitions. The remote definitions are configured using option 5 on the
Distribution menu. These give you the ability to setup locally, the way
the definition should appear on the remote. The local definitions are the
definitions you are actively using on this system (Main menu option 1).
This option would be useful if you are sending the data to another TURNOVER®
Development system.

Specify the application data to send:    1    1=Remote Definitions
                                           2=Local definitions

Press ENTER to continue.

ENTER=Next Panel   F3=Exit Wizard   F12=Previous Panel
  
```

Distributing application and system definitions

- 1 On panel 2, select option 1=Applications and systems.
- 2 Indicate whether the application definitions are remote or local definitions, and then press Enter.

Panel 3 appears.

```

MM/DD/YY          Remote Configuration Wizard          Your Company, Inc.
09:11:15          Panel 3 of 5                          YOURSYS

Select Application data to include and press ENTER:

1=Select

  Appl Rel Ver Lev Application Description
  System-Wide Defaults
- ADIS          10  Marlene's Distribution Application
- AEB            2  Alan's Test Appl-level 2
- AP             1  Test Application- Test Level 1
- AP             2  Test Application- Prod Level 2
- AP4            1  Test Application- Test Level 1
- AP4            2  Test Application- Prod Level 2
- AX             20  AGQA40 to AGPTF40
- AXE            1  *EMER to AGPTF40
- BARB           2  Virtual App - QA to Prod
- BFP           10  Test Application- Prod Level 2
- DEB            2  Deb's App - QA ==> PROD

More...

ENTER=Next Panel   F3=Exit Wizard   F12=Previous Panel   F21=Select all
  
```

- 3 Select the application definitions that you want to send to the remote computer with option 1.
To select all applications (including those on subsequent panels), press F21.
- 4 Press Enter.

Panel 4 appears.

```

MM/DD/YY          Remote Configuration Wizard          Your Company, Inc.
09:11:55          Panel 4 of 5                          YOURSYS

Select System data to include and press ENTER:

1=Select

  System      Serial  Mdl System Description
  --
  JM          080 12345678 F10 Non-existent, to test failure
  _ USIWEB    150 1000D6R 150 USI Web Server
  _ S1014706  410 1038112 200 QA Environment
  _ S1014706  420 1038112 200 100 to 5.4 Distribution
  _ S1014707  430 1038112 200 100 to 5.4 Designed to fail
  _ USITRAIN  450 101314R 150 USI Training box
  _ *V45011   451 *V45111 150 Virtual system
  _ *V45012   452 *V45112 150 Virtual
  _ USI       510 1048206 400 Development
  _ DEBS      555 1048208 999 Debs system
  _ PAULR     999 123456  620 Paul's system
  _

                                                    Bottom

ENTER=Next Panel  F3=Exit Wizard  F12=Previous Panel  F21=Select all

```

5 Select the system definitions that you want to send to the remote computer with option 1.

To select all the system definitions, press F21.

6 Press Enter.

```

MM/DD/YY          Remote Configuration Wizard          Your Company. Inc.
09:12:30          Panel 5 of 5

Select systems to send data to and press ENTER:

Specify the Target Release for the save command: V5R1M0
Create one tape for all tape distributions? N

Overlay existing definitions upon receive? *YES

1=Select 8=Copy to Tape

  System      Serial  Mdl Method      System Description
  --
  JM          080 12345678 F10 *SNADS    Non-existence, to test failure
  _ SLSWEB    150 1000D6R 150 *NONE      SLS Web Server
  _ S1014706  410 1038112 200 *NONE      QA Environment
  _ S1014706  420 1038112 200 *NONE      100 to 5.4 Distribution
  _ S1014707  430 1038112 200 *NONE      100 to 5.4 Designed to fail
  _ USITRAIN  450 101314R 150 *NONE      USI Training box
  _ *V45011   451 *V45111 150 *NONE      Virtual system
  _

                                                    More...

ENTER=Next Panel  F3=Exit Wizard  F5=Reset to Defaults  F12=Previous Panel
F21=Select all

```

7 Specify such information as the lowest release level of the target systems and whether or not you want to create only one tape for all the distributions that will result from your selections during this procedure. Refer to the online Help for detailed information about this panel.

8 Press Enter to start the distribution process. See also '[Distribution messages](#)' on page 412.

Distributing application definitions only

1 To distribute only application definitions, select option 2 on the second panel.

- 2 Indicate whether the application definitions are remote or local definitions. Specify this information and press Enter.

```

MM/DD/YY          Remote Configuration Wizard          Your Company, Inc.
09:11:15          Panel 3 of 5                          YOURSYS

Select Application data to include and press ENTER:

1=Select

  Appl Rel Ver Lev Application Description
  ----
  System-Wide Defaults
  _ ADIS          10  Marlene's Distribution Application
  _ AEB           2   Alan's Test Appl-level 2
  _ AP            1   Test Application- Test Level 1
  _ AP            2   Test Application- Prod Level 2
  _ AP4           1   Test Application- Test Level 1
  _ AP4           2   Test Application- Prod Level 2
  _ AX            20  AGQA40 to AGPTF40
  _ AXE           1   *EMER to AGPTF40
  _ BARB          2   Virtual App - QA to Prod
  _ BFP           10  Test Application- Prod Level 2
  _ DEB           2   Deb's App - QA ==> PROD

                                                    More...

ENTER=Next Panel  F3=Exit Wizard  F12=Previous Panel  F21=Select all
    
```

- 3 Select with option 1 the applications that you want to send to the remote computer. Press F21 to select all the applications listed, including those displayed on subsequent panels.
- 4 Press Enter.

```

MM/DD/YY          Remote Configuration Wizard          Your Company, Inc.
09:12:30          Panel 5 of 5

Select systems to send data to and press ENTER:

Specify the Target Release for the save command: V5R1M0
Create one tape for all tape distributions? N

Overlay existing definitions upon receive? *YES

1=Select 8=Copy to Tape

  System      Serial  Mdl Method      System Description
  ----
  _ JM         080  12345678 F10 *SNADS      Non-existence, to test failure
  _ USIWEB     150  1000D6R  150 *NONE       USI Web Server
  _ S1014706   410  1038112  200 *NONE       QA Environment
  _ S1014706   420  1038112  200 *NONE       100 to 5.4 Distribution
  _ S1014707   430  1038112  200 *NONE       100 to 5.4 Designed to fail
  _ USITRAIN   450  101314R  150 *NONE       USI Training box
  _ *V45011    451  *V45111  150 *NONE       Virtual system

                                                    More...

ENTER=Next Panel  F3=Exit Wizard  F5=Reset to Defaults  F12=Previous Panel
F21=Select all
    
```

- 5 Specify such information as the lowest release level of the target systems and whether or not you want to create only one tape for all the distributions that will result from your selections during this procedure. Refer to the online Help for more information about this panel.
- 6 Press Enter to start the distribution process. See ['Distribution messages' on page 412](#).

Distributing system definitions only

- 1 To distribute system definitions only, select option 3 on the second panel and press Enter.

Panel 4 appears.

```

MM/DD/YY                      Remote Configuration Wizard          Your Company, Inc.
09:11:55                      Panel 4 of 5                          YOURSYS

Select System data to include and press ENTER:

1=Select

  System      Serial  Mdl System Description
  ---
  JM          080 12345678 F10 Non-existent, to test failure
  _ USIWEB    150 1000D6R 150 USI Web Server
  _ S1014706  410 1038112 200 QA Environment
  _ S1014706  420 1038112 200 100 to 5.4 Distribution
  _ S1014707  430 1038112 200 100 to 5.4 Designed to fail
  _ USITRAIN  450 101314R 150 USI Training box
  _ *V45011   451 *V45111 150 Virtual system
  _ *V45012   452 *V45112 150 Virtual
  _ USI       510 1048206 400 Development
  _ DEBS      555 1048208 999 Debs system
  _ PAULR     999 123456  620 Paul's system
  _

                                          Bottom

ENTER=Next Panel  F3=Exit Wizard  F12=Previous Panel  F21=Select all

```

- 2 Select with option 1 the system information you want to send to the remote computer. Press F21 to select all the systems listed, including those displayed on subsequent panels.
- 3 Press Enter to confirm your choices and to display the next panel.

```

MM/DD/YY                      Remote Configuration Wizard          Your Company, Inc.
09:12:30                      Panel 5 of 5

Select systems to send data to and press ENTER:

Specify the Target Release for the save command: V5R1M0
Create one tape for all tape distributions? N

Overlay existing definitions upon receive? *YES

1=Select 8=Copy to Tape

  System      Serial  Mdl Method      System Description
  ---
  JM          080 12345678 F10 *SNADS      Non-existence, to test failure
  _ USIWEB    150 1000D6R 150 *NONE        USI Web Server
  _ S1014706  410 1038112 200 *NONE        QA Environment
  _ S1014706  420 1038112 200 *NONE        100 to 5.4 Distribution
  _ S1014707  430 1038112 200 *NONE        100 to 5.4 Designed to fail
  _ USITRAIN  450 101314R 150 *NONE        USI Training box
  _ *V45011   451 *V45111 150 *NONE        Virtual system
  _

                                          More...

ENTER=Next Panel  F3=Exit Wizard  F5=Reset to Defaults  F12=Previous Panel
F21=Select all

```

Specify such information as the lowest release level of the target systems and whether or not you want to create only one tape for all the distributions that will result from your selections during this procedure. Refer to the online Help for detailed information about this panel. When you're finished, press Enter to confirm your entries and to start the distribution process.

Distribution messages

During the distribution process, TURNOVER® Lifecycle Manager displays a series of status messages in the lower left corner of the panel.

This information is packaged in a save file and sent to the remote computer, in care of user `TURNOVER`. Once that network file arrives on the remote, a message is sent to the user profile's message queue. The remote receive `TURCRARE` job monitors the message queue; when it receives a file, it runs these jobs:

- The `RCVTONET` job, which receives the network file.
- The `RCWAUTORCV` job, which unpacks the save file and restores its contents on the remote box.

If this process fails, check job logs on the remote system for the job logs associated with these jobs.

The save file that is created remains in `QTEMP` after the process completes.

8: Test changes and distribution process

After you have set up each application on your development and production computers, follow a complete change cycle from start to finish for a variety of object types to ensure that everything is set up properly before you commit to changing and distributing live objects.

Also, make sure that each person working with `TURNOVER®` Lifecycle Manager understands your change and distribution strategy and has been trained to use the parts of `TURNOVER®` Lifecycle Manager with which they will be working.

Distributing forms manually

This section describes how to distribute forms from a development computer to one or more production computers, manually. Manual distribution consists of:

Sending one or more forms to a remote system

Receiving the `TURNOVER®` Lifecycle Manager forms on the remote system, and Submitting the forms to be run.

This discussion assumes that you have already submitted the form for processing on the development computer with satisfactory results. Then you send the form to a remote production computer. On the production computer, you or someone local receives the distribution and then submits the form to be run.

(See the section following this one for a description of the automatic distribution process.)

1: Select forms to be distributed

- 1 Sign on to the development computer.
- 2 On the `TURNOVER®` Lifecycle Manager main menu, select option 11.
- 3 On the Distribution menu, select option 2.

The Distribution Forms panel appears.

MM/DD/YY		Distribute Forms		Your Company, Inc.	
09:24:50				YOURSYS	
To reposition screen, enter form:					
Filter by Programmer: _____		Filter by App/Rel/Ver/Lev: _____			
Filter by system: _____		Filter by Reference: _____			
1=Select 5=Browse					
Form	Description	App/Rel/Ver/Lev	Run	Programmer	Status
200039	Add extended cmd	SFTM	1 1/05/19	ELSINORE	RAN-OK
200038	Chg Submenu custom	SFTM	1 1/03/19	ELSINORE	RAN-WRN
200037	Emergency change to	AGL	2 1/03/19	PSHIFTY	EMER-OK
200011	Chg to Upload Wt.	DIST	2 1/01/19	PHILLIPS	RAN-OK
200010	Chg UPS Tables	DIST	2 12/16/19	PHILLIPS	RAN-OK
200009	Delete XAR distr.	DIST	2 12/16/19	PHILLIPS	RAN-WRN
200008	Installment billg	AR	1 12/15/19	PSHIFTY	RAN-OK
200005	Invoice form chg	AP	1 12/12/19	DELANEY	RECOVER
200004	Invoice form chg	AP	1 12/07/19	DELANEY	CANCEL
200003	Statement format chg	AP	1 12/06/19	DELANEY	RAN-WRN
F3=Exit F4=List F10=Redistribute F12=Cancel F21=Select all					

The list contains all forms eligible for distribution (that is, forms with status RAN-xx, EMER-xx, FIN-xx, or PARTIAL).

- Type 1 next to each form you want to distribute, and then press Enter.

You can select two or more forms, if you want to send them to the same group of computers.

To redistribute a form that was distributed earlier, go to Step 3 on page 415.

2: Submit distribution job

The Select Systems for Distribution panel appears.

MM/DD/YY		Select Systems for Distribution		Your Company, Inc.	
09:27:14					
Type changes, press Enter.					
Distribution job schedule date . . .		*CURRENT *CURRENT, date			
Distribution job schedule time . . .		*CURRENT *CURRENT, hhmmss			
Schedule elapsed action		*SBMRLS *NEXTDAY, *SBMHL, *SBMRLS,...			
Submit to batch		Y, N			
Automatic remote rollback		*NO *NO, *RMT, *ALL			
1=Select 4=Remove					
System	Device	Receive	Submit	Form	Schedule
		Select	Received	Schedule	Form Schedule Elapsed
1 USITRAIN	450	*SNADS	*AUTOSTART Y	*CURRENT	*RMTDFTS *RMTDFTS
1 *V45011	451	*SNADS	*AUTOSTART N	*CURRENT	*RMTDFTS *RMTDFTS
Bottom					
F3=Exit F12=Cancel					

All systems to which the forms should be distributed appear, along with form receive and scheduling information. All systems are selected.

- 1 If you do not want to distribute to one of the systems, type 1. next to it.
 - If you distribute a form to all systems, its status changes to DISTRIB.
 - If you distribute a form to only some of the systems, its status changes to PARTIAL.
- 2 If you have distribution authority, you can change the form receive and scheduling information for each system, and the scheduling information.

For more information about the fields on this panel, press F1.

- 3 Press Enter.

TURNOVER® Lifecycle Manager sends the form from the development computer to each production computer you selected.

- 4 On the production computer, you must receive it manually and submit it to be run (if the form was not received automatically). To do this, see ['4: Receive a form manually' on page 416](#).

3: Redistributing forms

to redistribute a form that has a status of RECOVER on the production computer, do this.

- 1 On the Distribute TURNOVER® Lifecycle Manager Forms panel, press F10.

The Work with Distribution Status panel appears.

MM/DD/YY		Work with Distribution Status		Your Company, Inc.	
09:30:03					
To reposition screen, enter form:					
Filter by programmer: _____		Filter by appl/rel/ver/lev: _____			
Filter by reference: _____					
To flag a form for redistribution, change the Dist field to 'N'.					
Form	Form description	Sys	System description	Dist	Dist date
100613	Test Distribution 113	WASH	40 Washington	N	1/15/20
100311	A/P Chk writing fix	USI	10 Headquarters	Y	1/15/20
100304	Emer. Chg TESTDIST	CDC	30 Confederated Data Com	Y	1/15/20
100295	Invoice form chg	USI	10 Headquarters	Y	1/15/20
100296	Statement format chg	FLOR	50 Florida Fifty Group	Y	12/29/19
F3=Exit F4=List F12=Cancel					

This panel lists all forms that TURNOVER® Lifecycle Manager has distributed. The most recent forms are first.

- 2 Change **Dist** to N, and then press Enter.
- 3 Distribute the form again: see ['1: Select forms to be distributed' on page 413](#).

TURNOVER® Lifecycle Manager replaces the original form with the new one.

4: Receive a form manually

If the remote computer has not been set up to receive forms automatically, you must receive the forms manually.

Receiving the distribution occurs in two steps:

- 1 First the network file is received.
- 2 Then the network file is restored to a distribution library. The contents of the distribution library are unbundled into multiple temporary (*TnnnnnnnnS*) libraries, one for each form contained in the distribution. TURNOVER® Lifecycle Manager also copies its own data into TURNOVER® Lifecycle Manager files and prepares the forms to be run.

The forms must be received manually if:

- The forms were distributed on a medium such as tape or diskette, or
- The automatic receive autostart job, *TURCRARE*, is not running on your target system.
- If forms are being distributed by media, load the medium in the reader and proceed.

To receive a form

- 1 On the TURNOVER® Lifecycle Manager main menu, select option 11.
- 2 On the Distribution menu, select option 3.

The Receive Forms panel appears.

MM/DD/YY 09:34:22	Receive Forms	Your Company, Inc. YOURSYS
Type choices, press Enter.		
Restore device name	<u>*SNADS</u>	Device name, *SNADS
User profile to receive Snads file	<u>TURNOVER</u>	User profile
Receive schedule date	<u>*CURRENT</u>	*CURRENT, date
Receive schedule time	<u>*CURRENT</u>	*CURRENT, hhmmss
Submit receive job to batch	<u>Y</u>	Y, N
Submit received forms	<u>N</u>	Y, N
Send logs back to host	<u>N</u>	Y, N
Send confirmation back to host	<u>N</u>	Y, N
F3=Exit F12=Cancel		

- 3 Change or confirm the prompts, and then press Enter.

The Select Network File to Receive panel appears.

If more than one distribution is ready to be received, you will see a list of distributions, as shown on the sample panel.

If only one distribution is ready to be received, the form is received interactively or in batch, according to your choice on the previous panel.

MM/DD/YY		Select Network File to Receive				Your Company, Inc.	
09:37:25							
1=Select							
	Net File	User	Sending User	ID	Date Sent	Time Sent	Date Arrived
1	T162401675	QSECOFR	UK		1/21/20	09:43	1/21/20 10:01
-	T162521676	QSECOFR	DELANEY		1/21/20	16:32	1/21/20 17:05
-	T174543733	QSECOFR	TORON		1/21/20	09:01	1/21/20 18:01
-	T175500755	QSECOFR	ALAS		1/21/20	18:54	1/21/20 19:33
F3=Exit F12=Cancel							

- 4 Select one or more network files to be received with option 1.

5: Submit form to be run

Once the receive step has completed, the forms are either automatically submitted for processing, or you manually submit the forms, depending on how you set up the Receive TURNOVER® Lifecycle Manager Forms panel (in ['4: Receive a form manually' on page 416](#)).

You can view the form using the Work with TURNOVER® Lifecycle Manager Forms panel (see ['Submitting forms to run' on page 142](#).)

Distributing forms automatically

To distribute forms automatically, you must:

- Set **Automatically distribute forms** for one or more of the system Send distribution defaults entries to Y, and
- Set **Submit received forms automatically** for any of the system Send distribution defaults entries to Y, and
- Set **Automatically submit received forms** for any of the system Receive distribution defaults entries to Y.

1: Submit a form

- 1 On the TURNOVER® Lifecycle Manager main menu, select option 6.
- 2 Type 7 next to the form you want to submit for processing.

The Submit Form panel appears.

```

MM/DD/YY                      Submit Form                      Your Company, Inc.
09:40:13                      SYSTEM: YOURSYS

Form . . . . . 108888      Test form
Application . . . . . T1      Release:      Version:      Level: 1
Status . . . . . READY

Type options, press Enter.
Form schedule date . . . *CURRENT *CURRENT, date
Form schedule time . . . *CURRENT *CURRENT, hhmmss
Submit on hold . . . . *NO *YES, *NO

1=Select
Opt  Form Submit Option
1    Error-check in batch
_    Error-check interactively
1    Submit form
_    Check for checked-out objects not on form
_    Work with form
1    Work with form distribution defaults

F3=Exit  F5=Refresh  F10=Form approval  F12=Cancel  F15=Scheduling
    
```

For more information about this panel, see *'Submitting forms to run' on page 142*.

- 3 Type 1 next to Work with form distribution defaults, and then press Enter.

2: View distribution defaults

```

MM/DD/YY                      Form Distribution Defaults          Your Company, Inc.
09:42:55                      YOURSYS

Form . . . . . 4100114
Description . . . Test form

Distribution job schedule date . . . *CURRENT *CURRENT, date
Distribution job schedule time . . . *CURRENT *CURRENT, hhmmss
Schedule elapsed action . . . . . *SBMRLS *NEXTDAY, *SBMRLD, *SBMRLS,...
Automatic remote rollback . . . . . *NO *NO, *RMT, *ALL
Position to system . . . _____

2=Change  4=Remove

System
Name      Description                      Device
_  UK      UNICOM Systems, Inc. UK                *SNADS
_  WASH     UNICOM Systems, Inc. Washingt          TAP01

Receive  Receive
Logs     Confirmation
Back     Back
N         *RMTDFTS
N         N

F3=Exit  F5=Refresh  F11=Alt. view  F12=Cancel  F13=Repeat  F15=Scheduling
Highlighted systems are selected for distribution.
    
```

- To change the distribution defaults, type 2 next to any system, and then go to Step 3.
- To accept distribution defaults as they were defined in the System Send Distribution Defaults, press Enter. The form is submitted for processing, then distributed as you have specified. When the forms reach the target computer, they are received and submitted for processing automatically. The form log is updated with information during each processing step on each computer.

If an application is defined as a distributed application, TURNOVER® Lifecycle Manager presents this panel when you submit a form for that application.

Some or all of the production systems might be defined for distribution.

3: Change distribution defaults

MM/DD/YY	Change Distribution Defaults for Form		Your Company, Inc.
10:01:03	Type changes and press Enter.		
Form	.5103437		
Description	.Test form		
Target system	.WASH		
Description	.UNICOM Systems Inc, Washington Office		
Distribute	<u>Y</u>	Y, N	
Target user id and address.	.TURNOVER	S1014706	UserId-Address
Distribution device.	*SNADS	Device, *SNADS, *NONE	
Distribute source.	<u>N</u>		
Distribute objects	<u>Y</u>		
Remote form schedule date.	*CURRENT	*CURRENT, date	
Remote form schedule time.	23:30	*CURRENT, time	
Schedule elapsed action.	*NEXTDAY	*NEXTDAY, *SBMHL, . . .	
Submit received form automatically	*RMTDFTS	Y, N, *RMTDFTS	
Receive logs back.	*RMTDFTS	Y, N, *RMTDFTS	
Receive confirmations back	*RMTDFTS	Y, N, *RMTDFTS	
Receive forms method	*AUTOSTART	*AUTOSTART, *PASSTHRU	
F3=Exit F12=Cancel			

If any of the target systems are to be sent a distribution after the TURNOVER® Lifecycle Manager form is complete, the TURNOVER® Lifecycle Manager job submits the distribution job when the form has completed successfully. Form status must be RAN-OK, FIN-OK, or EMER-OK.

Y in the **Distribute** field indicates that the form is to be distributed to the target system when the form completes successfully. N indicates that it should not be distributed.

When you have completed reviewing these defaults, press Enter to return to the Submit TURNOVER® Lifecycle Manager Form panel and submit the TURNOVER® Lifecycle Manager form.

Updating form distribution status

You can update the form distribution status automatically, or you can maintain the distribution status manually. Occasionally, even if you use the automatic procedure, a message may fail to be transmitted back to the development computer. In this case, you might need to update the distribution status manually.

On the development computer, the form distribution status is set to CONFIRM when the form has been run successfully on all of the target computers.

For the automatic confirmation procedure to work, you must set up an autostart job TOMSGRCV on your development computer. This runs in a subsystem, usually QINTER or QSNADS, as long as the subsystem is active. The job updates the form status when a message is received in message queue TOMSGRCV from a production computer. For more information, see [7: Set up message processing autostart job' on page 407](#).

To update the form distribution status

- 1 On the main menu, select option 6.

```

MM/DD/YY                      Work with Forms                      Your Company, Inc.
10:15:00                                                                YOURSYS

      To reposition screen, enter form: _____

Filter by Programmer: _____  Appl/Rel/Ver/Lev:  _ _ _ _
      Status code: _____      Reference:  _____

2=Update form   3=Copy to new form   4=Cancel form   5=Display form
6=Print form    7=Run turnover       8=Work w/ job   9=Release job

      Form Description          Appl Rl/Vr Lev   Run   Programmer Status
_  103340 Added by KLINE        T1           2   0/00/00 KLINE    READY
_  103339 Change worklist Prob T1           2   0/00/00 KLINE    READY
_  103338 Create worklist Prob T1           2   0/00/00 KLINE    READY
11 103337 Fixes to update pgm  USI           2   6/17/19 PHILLIPS PARTIAL
_  103336 Session or device er TO    3  1  2   6/17/19 MARKSSUE RAN-OK
_  103330 Recursive call in ap TO    3  1  2   6/14/19 MILLER   RAN-OK
_  103327 Error checkine not g TO    3  1  2   6/10/19 ELMSMIKE RAN-OK
_  103326 Error checking not g TO    3  1  2   6/10/19 ELMSMIKE RAN-OK
_  103325 Added by KLINE        T1           1   6/14/19 KLINE    RAN-OK
_  103324 Added by KLINE        T1           1   6/14/19 KLINE    RAN-OK
_  103320 Added by ELMSMIKE     T1           1   6/08/19 ELMSMIKE RAN-OK

F3=Exit  F4=List  F5=Refresh  F6=Add form   F23=More options  F24=More keys
  
```

- 2 Select a form with option 11.

The Maintain Form Distribution Status panel appears.

```

MM/DD/YY                      Maintain Form Distribution Status      Your Company, Inc.
10:27:35

Form . . . . . 100613
Description . . . . Test Distribution 113
Status . . . . . PARTIAL

2=Change

      Distribution
      System      Description      Job      Date      Dist  Device      Confirmed
_  UK             20 USI UK Office  DIS0000377  2/11/19  Y   TAP01      Y
2 WASH           40 USI Wash Office DIS0000377  2/11/19  N   TAP01      N

      F3=Exit  F12=Cancel
  
```

- 3 Type 2 next to a system entry to change the distribution status.

The Change Form Distribution Status panel appears.

If confirmations have been received from all systems, the form status is CONFIRM.

You can determine if a form has been distributed, to which computers it has been distributed and whether or not it has been run on the production computers.

MM/DD/YY	Change Form Distribution Status		Your Company, Inc.
10:43:10			
Form	5100613		
Description	Test Distribution 113		
Status	PARTIAL		
Target system	WASH	40	
Distribution job name . . . DIS0000377			
Type choices, press Enter.			
Distribution date	2/11/19	Date	
Distribution device	TAP02	Device name, *SNADS, *NONE	
Distributed	<u>Y</u>	Y, N	
Confirmation received	<u>Y</u>	Y, N	
F3=Exit F12=Cancel			

4 Change the distribution or confirmation field, and then press Enter.

Using the form log

You can track the progress of forms that you are distributing by using the form log.

The form log enables you to see the status of each form on all remote computers while you are working on your development or hub computer, even if you are distributing through intermediate systems.

To use the form log

The TOMSGRCV autostart job must be running on the computers where logging should occur. Logging is not limited to sending systems; local log entries for a non-distributing system are written if TOMSGRCV is running there.

For information about starting the TOMSGRCV autostart job, see “Ownership, profiles and jobs” in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

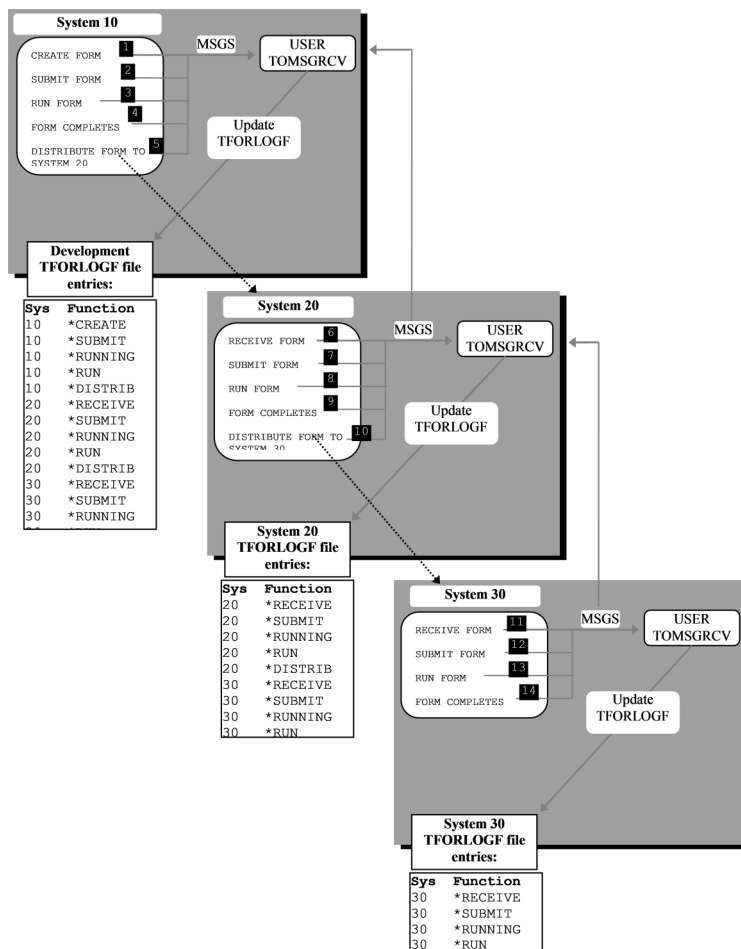
How the form log works

TURNOVER® Lifecycle Manager sends a message to local user TOMSGRCV whenever a local form is:

- created
- copied
- approved
- submitted

- running
- completed
- distributed
- received.

If the Send distribution defaults for the remote system are set as described above, TURNOVER® Lifecycle Manager sends a message to a sending computer's user TOMSGRCV to update the remote form log whenever one of these same actions occur for a distributed form on the remote system.



- 1 A form is created on development computer.

TURNOVER® Lifecycle Manager sends a message to user TOMSGRCV on the development computer. TOMSGRCV then writes a *CREATE record in the log on the development computer (system = development computer).

- 2 The form is submitted on development computer.

TURNOVER® Lifecycle Manager sends a message to user TOMSGRCV on the development computer. TOMSGRCV then writes a *SUBMIT record in the log on the development computer (system = development computer).

- 3 The form runs on development computer.

TURNOVER® Lifecycle Manager sends a messages to user TOMSGRCV on the development system; TOMSGRCV then writes a *RUNNING record in the log on the development system.

- 4 The form completes on development computer.

TURNOVER® Lifecycle Manager sends a message to user TOMSGRCV on the development computer. TOMSGRCV then writes a *RUN record in the log on the development computer (system = development computer, status = 'RAN-OK').

- 5 The form is distributed to System 20.

TURNOVER® Lifecycle Manager sends a message to user TOMSGRCV on the development computer. TOMSGRCV writes a *DISTRIB record in the log on the development computer (system = development computer, target distribution system = System 20).

- 6 The form is received on System 20.

TURNOVER® Lifecycle Manager sends a message to user TOMSGRCV on the development computer. TOMSGRCV writes a *RECEIVE record in the log on the development computer (system = System 20). TURNOVER® Lifecycle Manager also sends a message to TOMSGRCV on System 20. TOMSGRCV writes a *RECEIVE record on System 20 (system = System 20).

- 7 The form is submitted on System 20.

TURNOVER® Lifecycle Manager sends a message to user TOMSGRCV on the development computer. TOMSGRCV writes a *SUBMIT record on the development computer (system = System 20). TURNOVER® Lifecycle Manager also sends a message to TOMSGRCV on System 20. TOMSGRCV writes a *SUBMIT record on System 20 (system = System 20).

- 8 The form runs on System 20.

TURNOVER® Lifecycle Manager sends a message to user TOMSGRCV on the development computer; TOMSGRCV writes a *RUNNING record in the log on the development computer. TURNOVER® Lifecycle Manager also sends a message to TOMSGRCV on System 20. TOMSGRCV writes a *RUNNING record on System 20 (system = System 20).

- 9 The form completes on System 20.

TURNOVER® Lifecycle Manager sends a message to user TOMSGRCV on the development computer. TOMSGRCV writes a *RUN record on the development computer (system = hub computer). A message is also sent to TOMSGRCV on System 20. TOMSGRCV writes a *RUN record on System 20 (system = System 20).

- 10 The form is distributed from System 20 to System 30.

TURNOVER® Lifecycle Manager sends a message to user TOMSGRCV on the development computer. TOMSGRCV writes a *DISTRIB record on the development computer (system = System 20, target distribution system = System 30). TURNOVER® Lifecycle Manager also sends a message to TOMSGRCV on System 20. TOMSGRCV writes a *DISTRIB record on System 20 (system = System 20).

- 11 The form is received on the System 30 computer.

TURNOVER® Lifecycle Manager sends a message to user TOMSGRCV on System 20.
TOMSGRCV writes a *RECEIVE record in the System 20 form log (system = System 30).
TURNOVER® Lifecycle Manager also sends a message to System 30's user TOMSGRCV, which then writes a *RECEIVE record in the System 30 form log (system = System 30).

12 The form is submitted on the System 30 computer.

TURNOVER® Lifecycle Manager sends a message to user TOMSGRCV on System 20.
TOMSGRCV writes a *SUBMIT record in the System 20 form log (system = System 30). A message is also sent to TOMSGRCV on System 30. TOMSGRCV then writes a *SUBMIT record in the System 30 form log (system = System 30).

13 The form runs on the System 30 computer.

TURNOVER® Lifecycle Manager sends a message to user TOMSGRCV on System 20.
TOMSGRCV writes a *RUNNING record in the System 20 form log (system = System 30).
TURNOVER® Lifecycle Manager also sends a message to user TOMSGRCV on System 30, which then writes a *RUNNING record in the System 30 form log (system = System 30).

14 The form completes on the System 30 computer.

TURNOVER® Lifecycle Manager sends a message to user TOMSGRCV on System 20.
TOMSGRCV writes a *RUN record in the System 20 form log (system = System 30). TURNOVER® Lifecycle Manager also sends a message to user TOMSGRCV on System 30. TOMSGRCV then writes a *RUN record in the System 30 form log (system = System 30).

Displaying the form log

1 To display the form log, do one of the following:

- On the Distribution menu, select option 4 (Work with form log).
- On the main menu, select option 6, and then select ##You can also access this panel from the Work with TURNOVER® Lifecycle Manager Forms panel ().
- On the command line, type WRKFORMLOG.

The Work for Form Log panel appears.

```

                                Work with Form Log (WRKFORMLOG)
Type choices, press Enter.

Form number . . . . . *LAST      Number, *LAST
System name . . . . . *PRV       Name, *PRV, *ALL
System number . . . . . *PRV     Number, *PRV, *ALL
Function . . . . . *PRV         *PRV, *ALL, *CREATE, *COPY...
                                + for more values
Time period:
  Beginning time . . . . . *PRV   Time, *PRV, *AVAIL
  Beginning date . . . . . *PRV   Date, *PRV, *AVAIL
  Ending time . . . . . *PRV     Time, *PRV, *AVAIL
  Ending date . . . . . *PRV     Date, *PRV, *AVAIL

                                Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
  
```

- 2 Specify the information you want to see in the list, and then press Enter.

The Work with Form Log panel appears. The latest form is at the top.

```

MM/DD/YY                                Work with Form Log                                Your Company, Inc.
10:55:40

Position to form . . . _____

5=Display local form  6=Print local form  8=Work w/job  11=Distribution status

      Form
  Form  Description      System  Function Date/Time
_ 5303023 NL Enable all DSPF's DEV    10 *CREATE 10/05/20 11:30:24
_ 5303023 NL Enable all DSPF's DEV    10 *SUBMIT 10/05/20 12:45:20
_ 5303023 NL Enable all DSPF's DEV    10 *RUNNING 10/05/20 12:45:30
_ 5303023 NL Enable all DSPF's DEV    10 *RUN    10/05/20 12:47:02
_ 5303023 NL Enable all DSPF's DEV    10 *DISTRIB 10/05/20 17:30:00
_ 5303023 NL Enable all DSPF's HUB    20 *RECEIVE 10/05/20 17:45:19
_ 5303023 NL Enable all DSPF's HUB    20 *SUBMIT 10/07/20  9:33:33
_ 5303023 NL Enable all DSPF's HUB    20 *RUNNING 10/07/20  9:33:37
_ 5303023 NL Enable all DSPF's HUB    20 *RUN    10/07/20 10:12:57
_ 5303023 NL Enable all DSPF's HUB    20 *DISTRIB 10/07/20 10:29:05

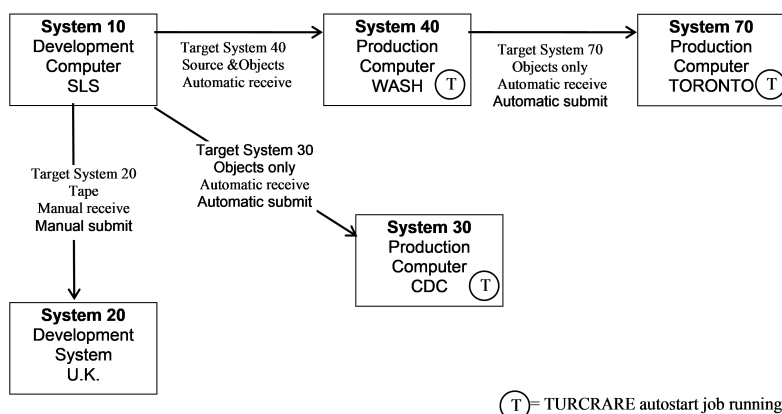
F3=Exit F5=Refresh F11=View2 F12=Cancel F14=WRKSBJJOB F17=Filters F21=Commands
  
```

F11 shows you an alternate view, including form status, programmer, and details. Use F17 to manipulate the contents of the list.

How distribution works

Overview

You can distribute any number of TURNOVER® Lifecycle Manager forms to any number of target systems. This diagram illustrates a distribution example.



Development is done at SLS on System number 10.

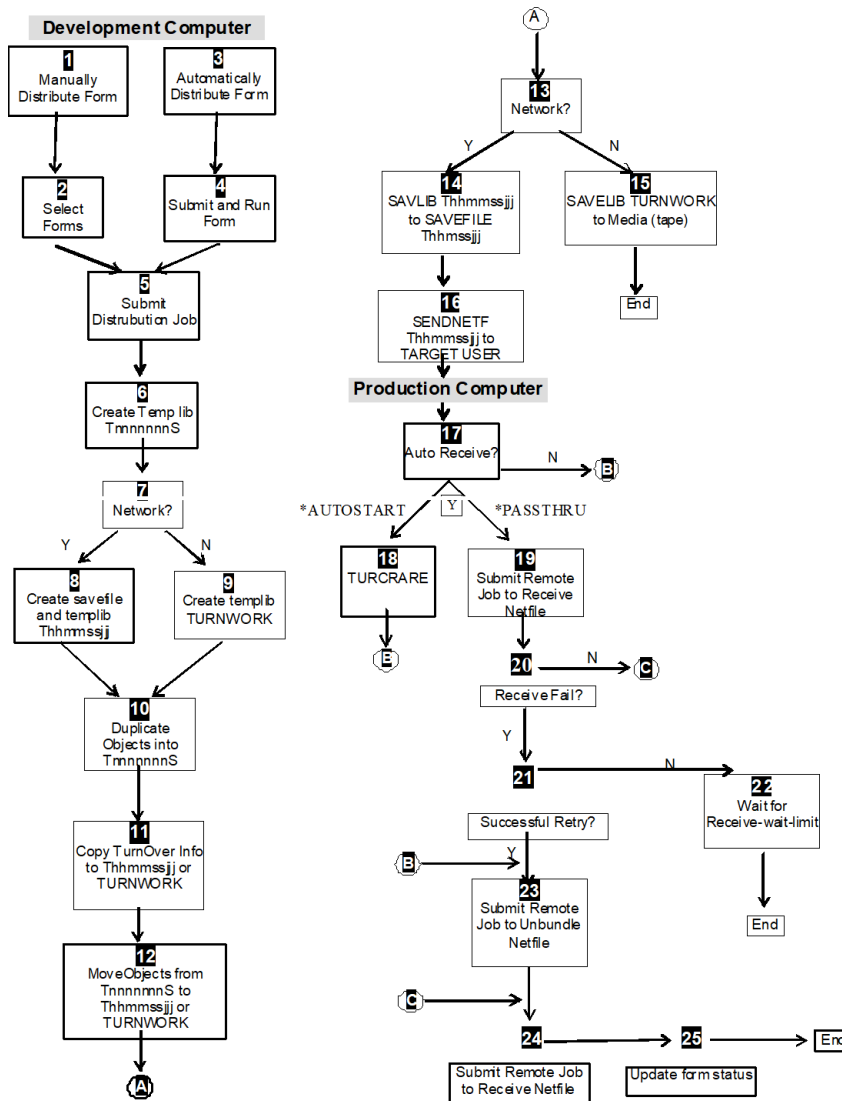
System number 40 is set up to have distributions of source and objects received automatically.

System number 70, which passes through System 40 in an APPN Network, is set up to have distributions of objects only received and forms submitted to run automatically.

System number 30 is set up to have distribution of objects only received and submitted to run automatically.

System number 20 is set for manual distribution. When you select systems for distribution, you must select tape distributions separately from network distributions.

This flowchart and the notes that follow it describe the steps that occur on the development and production computers when forms are distributed.



What happens on the development computer

1/Manually distribute forms.

After forms are run successfully, you must select forms from a list of eligible forms. See [‘Distributing forms manually’ on page 413](#).

2/Select forms.

One or more forms can be distributed at the same time. The forms you select must all be destined for the same set of computers. You cannot mix network distribution and media distribution in the same run.

Multiple network distributions can be run concurrently. Distributions using tape or diskette must be run one at a time.

3/4/Automatically distribute forms.

Automatic distribution is initiated at the time you submit a form to be run. Automatic distribution includes one form at a time.

Multiple network distributions can be run concurrently. Media distributions must be run one at a time.

5Submit distribution job.

Manual distributions can be run interactively or can be submitted to batch, either to be run immediately or as a timed job.

Automatic distributions are submitted when the TURNOVER® Lifecycle Manager form completes successfully (RAN-OK) by the TURNOVER® Lifecycle Manager job itself. It can run in batch immediately, or as a timed job.

For information about specifying the job queue for the manual or automatic distribution job, see *'Specifying the distribution job queue' on page 389*.

6Create Temporary Library *TnnnnnnnS* (where *nnnnnnn* is the form number).

TURNOVER® Lifecycle Manager uses this library to stage objects being distributed. If multiple forms are being distributed at the same time, then multiple *TnnnnnnnS* libraries are created.

7Network?

Is distribution via network (such as SNADS) or a medium (tape, diskette)?

8If distributing via network, create savefile and temporary library named *Thhmmssjjj*, where *hhmmss* is time and *jjj* is the last three characters for the distribution job number.

9If using media distribution, create temporary library TURNWORK. All media distributions are done through this temporary library.

10Duplicate objects in *TnnnnnnnS* library.

All objects on the TURNOVER® Lifecycle Manager form being distributed are duplicated from the production library into *TnnnnnnnS* library. If a form line for a PF specifies File Copy FMTOPT of *FROMFILE, TURNOVER® Lifecycle Manager distributes the data from the file. This enables you to pass data through from test to production, and then onto target systems.

11Copy TURNOVER® Lifecycle Manager Info.

Create duplicates of TURNOVER® Lifecycle Manager files in the distribution library (*Thhmmssjjj* for network distribution and TURNWORK for media distribution) and copy form data into that library. This data is necessary to run a TURNOVER® Lifecycle Manager form on the target system.

12Move objects from *TnnnnnnnS* to *Thhmmssjjj* or TURNWORK.

Objects are moved from the distribution form library to the distribution library. Duplicate object names from different libraries are given an alias, as in the case of distributing multiple forms concurrently.

13Network?

Is distribution via network (SNADS) or a medium (tape, diskette)? Refer to the flowchart.

14If distribution is on network, the distribution library is saved to a savefile of the same name. SAVLIB *Thhmmssjjj* to SAVFILE *Thhmmssjjj*.

15If distribution is via media, save library TURNWORK to a medium.

Update the form status to DISTRIB or PARTIAL.

If distribution is by a network:

16SNDNETF *Thhmmssjjj* to Target User

The distribution network file is sent to the user identified as the target user on the system distribution default panel for the target system.

17Auto Receive?

If receiving forms automatically, which method? If not receiving automatically, then manually unbundle and receive the network file using option 3 on the Distribution Menu.

18If the system/application Send defaults on the development system for the production system specify a **Receive forms method** of *AUTOSTART and the autostart job, TURCRARE is running locally, the distribution will be received automatically.

If the system/application Send distribution defaults on the development system for the production (target) system specify a **Receive forms method** of *PASSTHRU, then TURNOVER® Lifecycle Manager will call a program on the target system to receive the network file using the SBMRMTCMD command from the development system.

19-22Receive fail? (*PASSTHRU only)

If the network file has not yet arrived at the target system, TURNOVER® Lifecycle Manager will retry the receive command. First, TURNOVER® Lifecycle Manager will automatically retry in 10 seconds. Then TURNOVER® Lifecycle Manager will retry after waiting the time specified in the system distribution default field **Auto receive delay time** for the number of times specified in **Auto receive retries**. If the receive fails after the specified delay and retries, TURNOVER® Lifecycle Manager will stop attempting to receive the distribution. It will continue with the next target computer on the distribution list. You or someone else will then have to receive the distribution manually on the Target system.

23Submit job to unbundle netfile.

TURNOVER® Lifecycle Manager calls a program (on the target system from the production system, if *PASSTHRU; using TURCRARE if *AUTOSTART) that unbundles the contents of the savefile. See below for more about what happens on the production computer.

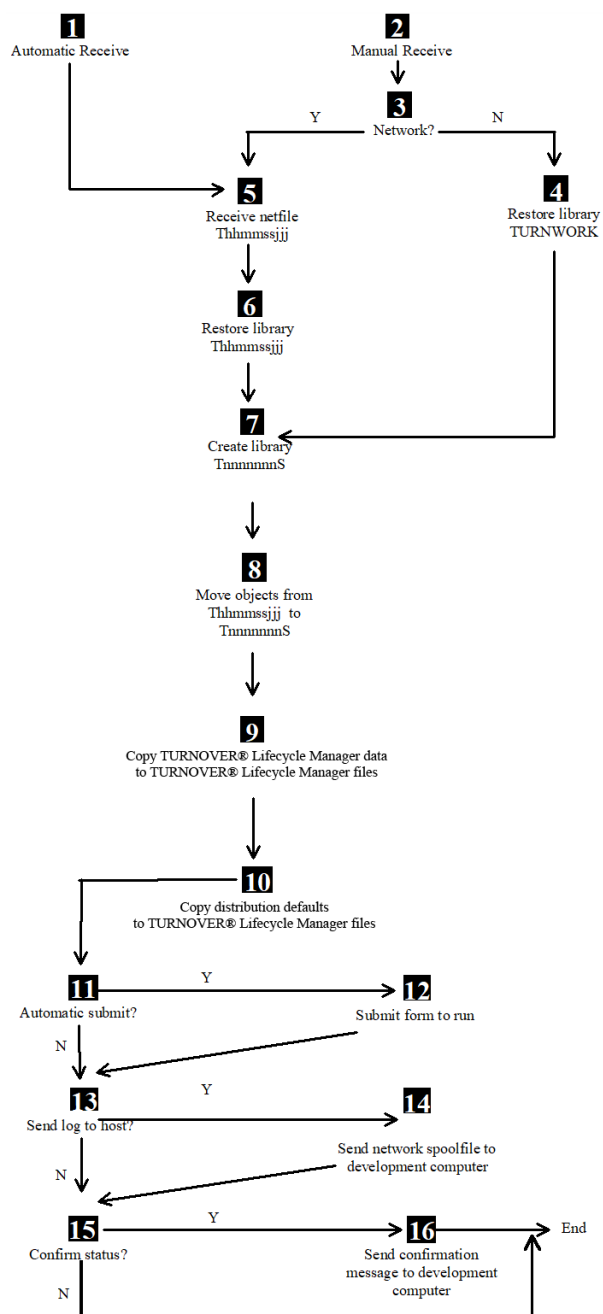
24Submit job to receive netfile.

TURNOVER® Lifecycle Manager calls a program (on the target system from the production system, if *PASSTHRU; or using TURCRARE if *AUTOSTART) that stores the contents of the netfile onto the receiving system.

25Update form status on development computer.

If a form is distributed to all of the intended computers, the form status is `DISTRIB`; if only some computers on the list, the form status will be set to `PARTIAL`. Once run confirmations have been received from all of the target computers at the development computer, the form status is set to `CONFIRM`.

This diagram and the notes that follow it describe what happens on the target system when a form is received.



What happens on the production computer

1Automatic receive

Forms are received automatically by a job initiated from the development computer (*PASSTHRU method) or, as recommended, by the autostart job, TURCRARE, running on the production computer (*AUTOSTART method). The receive of the savefile, the unbundling of the savefile and the running of the TURNOVER® Lifecycle Manager form can be initiated by jobs submitted automatically by the development computer.

2Manual receive.

You can receive forms manually at the target computer, either as a network file or on media. If more than one distribution has been received as a network file, TURNOVER® Lifecycle Manager will display a list from which you select the files you want to receive.

3/4.Network?

If the manual distribution is on media, you will select an option to receive the distribution; in this case, restoring to library TURNWORK. Only one distribution can be received at a time (once a receive step has been run, another one can begin).

If the manual distribution is using a network file, you select an option to receive the file.

5Receive netfile *Thhmmssjjj*.

TURNOVER® Lifecycle Manager receives a savefile called *Thhmmssjjj* where *hhmmss* is the time and *jjj* is the last three characters of the job name of the distribution job on the development computer. If more than one distribution is queued up to be received, TURNOVER® Lifecycle Manager displays a list from which to select.

6Restore library *Thhmmssjjj*,

The savefile is restored into a library name of *Thhmmssjjj*.

7Create library *TnnnnnnnS*.

A temporary library for each form called *TnnnnnnnS* (where *nnnnnnn* is the form number) is created on the production computer.

8Move objects from *Thhmmssjjj* or TURNWORK to *TnnnnnnnS* library.

Each object in the distribution library is moved to the appropriate form library.

9Copy TURNOVER® Lifecycle Manager data to TURNOVER® Lifecycle Manager files.

Control data for each form is copied to TURNOVER® Lifecycle Manager files. The TURNOVER® Lifecycle Manager entries are changed to conform to the application definitions on the target computer. For example, production library names on each form line are changed to the library names in the application definition locally. There must be a matching application definition for the application level entry that matches the application and level on the form.

10Copy the distribution defaults to TURNOVER® Lifecycle Manager file TDISTHF. (See 11/12.)

11/12 Automatic submit?

The distribution history record (in TDISTHF) and the system Receive distribution default record on the target computer control the degree to which processing is automatic.

TURNOVER® Lifecycle Manager looks at the defaults in TDISTHF first. If they say to submit the forms to run, the form will be submitted. Otherwise, TURNOVER® Lifecycle Manager looks at the **Automatically submit received forms** field in the system's Receive distribution default entry. If that says ∇ , TURNOVER® Lifecycle Manager will submit the forms automatically; otherwise the forms must be submitted to run manually.

13/14 Send log to host?

If either distribution control file is set to have the run logs returned to host, TURNOVER® Lifecycle Manager sends network spool files to the development computer.

15/16 Confirm status?

If either distribution control file is set to have a confirmation message sent back to the development computer, then TURNOVER® Lifecycle Manager will send a network message to user TOMSGRCV on the development computer. This message will be processed by job TOMSGRCV to update the distribution history record and form status there.

During a form run, TURNOVER® Lifecycle Manager creates a duplicate of every object on your TURNOVER® Lifecycle Manager forms. If you are distributing very large objects or forms, make sure that there is enough space on the computer to hold the duplicates of objects being distributed. It is also your responsibility to make sure you have enough space on the remote computer to receive the TURNOVER® Lifecycle Manager forms. *If the target computer is above the warning threshold, the distribution will be rejected.* To determine what that threshold is, type STRSST, select **Work with disk units**, then **Work with ASP Thresholds**.

17 Does the target user (usually user TURNOVER) have maximum storage allowed *NO MAX?

If distributions exceed the storage allowed for that user, TURNOVER® Lifecycle Manager will not be able to receive the network file.

17 Configuring alternative network distribution methods

TCP/IP is the standard method for network distribution, but you can use other distribution methods.

Alternative methods supported

TURNOVER® Lifecycle Manager supports these methods:

- File Transfer Protocol (FTP) over TCP/IP
- System Network Architecture Distribution Services (SNADS)
- Net/Wrk400™ by Proginet Corporation
- CONNECT:Direct™ by Sterling Commerce, Inc.

For these methods to work, you must:

- configure your TURNOVER® Lifecycle Manager application and system definitions as you would for SNADS distribution
- have the necessary software running.

These methods do not require the TURCRARE autostart job that SNADS distribution requires.

TCP/IP support

Transmission Control Protocol/Internet Protocol (TCP/IP) is supported by normal SNADS distribution techniques under IBM i normal SNADS and APPC operations, such as SNDNETF (Send Network File), DDM, and STRPASTHR to work over a TCP/IP connection. TCP/IP support is also provided through native FTP, as explained in this section.

Using SNADS

System Network Architecture Distribution Services (SNADS) is the default TURNOVER® Lifecycle Manager distribution method. This distribution method performs the following:

- Sends the save file from the development system to the remote system (using the SNDNETF command).

- Sends the confirmation message from the remote system back to the development system (using the `SNDNETMSG` command).

Using SNADS to send application definitions remotely

TURNOVER® Lifecycle Manager uses SNADS (specifically DDM) to perform functions such as sending application definitions to a remote system.

If you can not establish DDM connections to the remote system, you cannot send the application definitions. Instead, you have to pass-through to the remote system and manually add the application definition. However, if you are using TURNOVER® Lifecycle Manager, you can maintain remote applications centrally. TURNOVER® Lifecycle Manager then sends the application definitions to your remote systems with the distribution.

Other SNADS characteristics

Characteristic	Description
Asynchronous transmission (with built-in queuing functions)	Sends a save file as a background process. This allows the distribution job to complete faster.
Robust	As a high-level application over a transfer protocol (APPC), SNADS can do the following: ▪ retry a connection at specified intervals ▪ automatically initiate a connection, as well as send and disconnect, at any time ▪ resume where it left off, if a transmission fails ▪ queuing.

Bypassing the system distribution directory

Typically, all users and user groups who use SNADS to perform distribution are entered in the system distribution directory. However, you might not want to give particular users the privileges that accompany entry in the directory. The two ways you can permit these people to distribute, without entering them in the system distribution directory, are:

- Set the TURNOVER® Lifecycle Manager global default, **Submit User**, to TURNOVER. Be aware that this method leaves no audit trail of who ran the form or performed the manual distribution.
- Use FTP instead of SNADS. See [‘Configuring for FTP’ on page 436](#).

Using a different network distribution method

To work with network distribution methods, you must have TURNOVER® Lifecycle Manager distribution authority.

- 1 On the Distribution menu, select option 6.

The Override Network Distribution Methods panel appears.

4/28/20 12:45:23 **Override Network Distribution Methods** Your Company, Inc.
 YOURSYS

2=Change override 4=Delete override

System	Method	Product Library	Data Library	Language Library	Remote Address
— *DEFAULT	*SNADS	*LOCAL	*LOCAL	*LOCAL	*SYSTEM
— SLSTRAIN	*FTP	SOFTTURN	T50QAD	SOFTTURN	SLSTRAIN
— SLSWEB	*FTP	SOFTTURN	SOFTTURN	SOFTTURN	SLSWEB.SLS.COM

F3=Exit F6=Add override F12=Cancel
 Bottom

- 2 On this panel, you can specify the distribution method for one or more systems, as well as for a *DEFAULT system.

The *DEFAULT system enables you to apply default parameter values to all systems for which you have not defined an individual profile, as long as they all use the same values for parameters such as library names, User ID, and password.

For example, you could specify Net/Wrk400 as the default distribution method to be applied to all systems, and this would require only one setup. If you later acquired a system that supports a different distribution method, for example SNADS, you could add a profile specifically for that system.

If you do not define a *DEFAULT system, TURNOVER® Lifecycle Manager creates one automatically and assigns SNADS as the distribution method.

If, for the *DEFAULT system, you specify CONNECT:Direct as the distribution method, the remote system node name must match the system name, and you must enter *SYSTEM as the value for the node name. See *'Configuring for CONNECT:Direct' on page 440*.

- 3 Press F6 to override the *SNADS method for a system (or select an existing override with option 2 to change it).

The Add Distribution Method Override panel appears.

Add Distribution Method Override		
System name	_____	*DEFAULT
Network distribution method	*SNADS _____	*FTP, *KNET, *CDIRECT
Remote TURNOVER product library . .	*LOCAL _____	*LOCAL
Remote TURNOVER data library	*LOCAL _____	*LOCAL
Remote TURNOVER language library . .	*LOCAL _____	*LOCAL
Message receive job user profile . .	*LOCAL _____	*LOCAL

F12=Cancel

The fields shown in the Add Distribution Method Override panel also appear in the panel for changing an override. When you specify a network distribution method of *FTP, *KNET, or *CDIRECT, additional fields appear.

For more information, see:

[‘Configuring for FTP’ on page 436](#)

[‘Configuring for Net/Wrk400’ on page 439](#)

[‘Configuring for CONNECT:Direct’ on page 440](#)

Deleting an override

Select the override you want to delete with option 4.

Configuring for FTP

The FTP (*FTP) distribution method sends the save file using the FTP support built into IBM i. When you use FTP for distribution, you must configure each system individually. You cannot use the *DEFAULT system because there are parameters related to TCP/IP that you need to specify for each system.

In some situations, such as if the data transfer is obstructed by a firewall, the FTP SENDPASV (or SENDPA) command might be required. If this is the case, you can create a one-character data area called SENDPA in the TURNOVER® Lifecycle Manager Data library (SOFTTURND), and then set it to Y to send the data in passive mode.

FTP characteristics

Synchronous transmission

Without distribution queues: The distribution job sends to one system and waits for it to finish, sends to the next system and waits for it to finish, and so on.

With distribution queues: You can set up TURNOVER® Lifecycle Manager Distribution Queues to handle multiple simultaneous FTP distributions if you distribute to a large number of systems using FTP. For more information about this feature, see *'Distribution queues' on page 482*.

Transfer protocol

FTP is really just a transfer protocol. It lacks the capabilities described previously for SNADS. However, FTP is faster than SNADS and imposes less overhead on the system.

Internet distribution of forms

Using FTP, you can distribute forms over the internet.

Insecure

Sends User IDs and passwords in plain view over the wire.

System requirements

- TURNOVER® Lifecycle Manager V2.1 or higher.
- IBM I V7.1 or higher.

Information requirements

- 1 Type *FTP as the network distribution method, and then press Enter.

The Add Distribution Method Override panel appears.

Add Distribution Method Override		
System name	SLSDOC	*DEFAULT
Network distribution method	*FTP	*FTP, *KNET, *CDIRECT
Remote TURNOVER product library . .	*LOCAL	*LOCAL
Remote TURNOVER data library	*LOCAL	*LOCAL
Remote TURNOVER language library . .	*LOCAL	*LOCAL
Message receive job user profile . .		*LOCAL
**** FTP-specific values ****		
Remote system address	 	
User profile for FTP		
Password for FTP		
Use Distribution Queues		Confirm . . *YES, *NO
F12=Cancel		

Common parameters

System name

Type the system name as it appears in TURNOVER® Lifecycle Manager.

To specify the default values you want applied to all systems that do not have an entry, enter *DEFAULT.

Remote TURNOVER® Lifecycle Manager libraries (product, data, and language)

Specify the product, data, and language libraries in which TURNOVER® Lifecycle Manager objects are installed on the remote system.

If TURNOVER® Lifecycle Manager is installed in the same library name on the remote system as on the local system, specify `*LOCAL`.

Message receive job user profile

Specify the user profile under which the message receive job (TOMSGRCV) is running. This is the user profile to which confirmation messages are sent after a distributed form has run on a remote system.

Fields specific to *FTP

Remote system address

Specify the TCP/IP address of the remote system. This can be in decimal notation or, if you are using DNS, you can enter the name of the system (for example, `system.domain.com`).

You can specify a port number for your target system, in the format:

```
system.domain.com:990
```

This example shows port 990, which is the default port for Secure FTP. You can use any other port for standard FTP transmissions. (If you use Secure FTP, you must use the default port 990.)

User profile for FTP

Specify the user ID and password of the user on the development system who sends TURNOVER® Lifecycle Manager form distributions. This can be any user profile with authority to create a save file and use the `FTP PUT` command.

However, if the distribution is performed automatically, this profile is also carried through to the form receive job, as well as to the form submission. For this reason, you should use the TURNOVER user profile.

For the form to run, the profile you specify must have authority to the application within TURNOVER® Lifecycle Manager.

If the system variable named QCRTAUT is set to `*USE` on your system, make sure the user profiles you are using for FTP distributions have explicit authority to the SOFTTURN library.

Password for FTP and Confirm

Specify the password for the specified user profile. This value is encrypted when stored in our database files.

Use Distribution Queues

If you have set up TURNOVER® Lifecycle Manager distribution queues for handling multiple simultaneous FTP distributions, specify `*YES`.

For information about setting up TURNOVER® Lifecycle Manager distribution queues, see *'Distribution queues' on page 482*.

Configuring for Net/Wrk400

The Net/Wrk400 (*KNET) distribution method performs the following:

- sends the save file from the development system to the remote system (using the KNSNDSAVEF command)
- executes the confirmation process on the development system (using the KNEXECMD command).

System requirements

- TURNOVER® Lifecycle Manager V2.1 or higher

Information requirements

Type *KNET as the network distribution method, and then press Enter.

The Add Distribution Method Override panel appears.

Add Distribution Method Override			
System name	SLSDOC		*DEFAULT
Network distribution method	*KNET		*FTP, *KNET, *CDIRECT
Remote TURNOVER product library . .	*LOCAL		*LOCAL
Remote TURNOVER data library	*LOCAL		*LOCAL
Remote TURNOVER language library . .	*LOCAL		*LOCAL
Message receive job user profile . .			*LOCAL
**** Net/Wrk 400 Special Values ****			
Remote location name	*SYSTEM		*SYSTEM
Net/Wrk 400 product library	KNETWRK		
F12=Cancel			

System name, Remote TURNOVER® Lifecycle Manager libraries, Message receive job user profile

See *'Common parameters' on page 437*.

Fields specific to *KNET

Remote location name

The remote location name. Usually, this is the same as the system name, but if you have specified a different value in your Net/Wrk400 configuration, specify that value here.

Net/Wrk 400 product library

The library in which Net/Wrk400 is installed on the system you specified in the previous field.

Configuring for CONNECT:Direct

The CONNECT:Direct (*CDIRECT) distribution method performs the following:

- compress the save file (using the CDCOMP command)
- send the save file from the development system to the remote system (using the CDSND command)
- activate the receive job and sends the confirmation message to the development system (using the CDRUNTASK command).

System requirements

- TURNOVER® Lifecycle Manager V2.1 or later
- CONNECT:Direct 3.1 or higher
- The user who runs the distribution job, and the remote form job, must both be enrolled and authorized within CONNECT:Direct.
- The user running the distribution job must have "Override" authority in CONNECT:Direct to specify the User ID and password for the remote job.

Configuring TURNOVER® Lifecycle Manager for CONNECT:Direct

Type *CDIRECT as the network distribution method, and then press Enter.

The Add Distribution Method Override panel appears.

Add Distribution Method Override		
System name	SLSDOC	*DEFAULT
Network distribution method	*CDIRECT	*FTP, *KNET, *CDIRECT
Remote TURNOVER product library . .	*LOCAL	*LOCAL
Remote TURNOVER data library	*LOCAL	*LOCAL
Remote TURNOVER language library . .	*LOCAL	*LOCAL
Message receive job user profile . .		*LOCAL
*** Connect:Direct Special Values ***		
Connect:Direct product library . . .		
Target node name		*SYSTEM
Target user ID		
Password		
Retype password to confirm		
F12=Cancel		

System name, Remote TURNOVER® Lifecycle Manager libraries, Message receive job user profile

See *'Common parameters' on page 437*.

Fields specific to *CDIRECT

Connect:Direct product library

The name of the library in which CONNECT:Direct is installed on the system you are currently on.

Target node name

The name of the remote system.

Target user ID and Password

The User ID and password of the user on the remote system, to whom TURNOVER® Lifecycle Manager form distributions are sent.

Retype password to confirm

Retype a user password that you have changed to confirm what you entered.

18 Distributing changes to logical partitions

You can distribute changes from a TURNOVER® Lifecycle Manager's Development edition in one logical partition on a IBM i computer to TURNOVER® Lifecycle Manager Remote in another logical partitions on the same computer.

For example, your company might have (YOURCO) has four divisions, each of which operates separately using four logical partitions on one IBM i computer: NORTH, SOUTH, EAST, and WEST. Programming development and maintenance is all done on the NORTH system; NORTH wants to distribute changes to the SOUTH, EAST, and WEST systems.

Do the following:

- 1 Make sure TURNOVER® Lifecycle Manager's Remote edition is installed in all the logical partitions to which you want to distribute changes (SOUTH, EAST, WEST).
- 2 TURNOVER® Lifecycle Manager must have system definitions for all partitions on the NORTH system. Sign onto system NORTH. Go to the TURNOVER® Lifecycle Manager Distribution menu, and then choose option 1 to work with system definitions.
- 3 Press F6 to create a system definition for NORTH.

MM/DD/YY 12:04:47	Add a System Definition	Your Company, Inc. YOURCO North
Type choices, press Enter.		
System name	<u>NORTH</u>	
System number	<u>*DEFAULT</u>	
System description	<u>YOURCO NORTH</u>	
Machine type	<u>400</u>	
Model	<u>400</u>	
Serial number	<u>1023456</u>	Char, *LOCAL
Contact name	<u>A. User</u>	
Title	<u>I/T Manager</u>	
Address Line 1	<u>YOURCO, Inc.</u>	
Address Line 2	<u>1234 Some Street</u>	
City/State/Zip	<u>Anyplace</u>	<u>ST 11122</u>
Country/FPC	<u>USA</u>	
Phone	<u>444.555.6666</u>	
F3=Exit F10=System number F12=Cancel		

On system NORTH:

- The system name must agree with system name shown for DSPNETA command.

- The serial number can be exact or *LOCAL to retrieve from system values. To get the exact value, use the DSPSYSVAL QSRLNBR command.

4 Press Enter to save the definition.

5 On the Work with System Definitions panel, press F6 to create a system definition for the SOUTH system.

MM/DD/YY 12:04:47	Add a System Definition	Your Company, Inc. YOURCO North
Type choices, press Enter.		
System name <u>SOUTH</u>		
System number *DEFAULT		
System description . . . <u>YOURCO SOUTH</u>		
Machine type <u>400</u>		
Model <u>400</u>		
Serial number <u>1023456S</u> Char, *LOCAL		
Contact name <u>A. User</u>		
Title <u>I/T Manager</u>		
Address Line 1 <u>YOURCO, Inc.</u>		
Address Line 2 <u>1234 Some Street</u>		
City/State/Zip <u>Anyplace</u> ST 11122		
Country/FPC <u>USA</u>		
Phone <u>444.555.6666</u>		
F3=Exit F10=System number F12=Cancel		

NORTH's definition for SOUTH:

- The system name must agree with system name shown for DSPNETA command.
- The serial number must match the NORTH system, with any character added to the end. You must add a single character to the end of the serial numbers for each of the other systems, to distinguish them from the local system. This example uses S, W, and E.

6 Repeat step 5 on the NORTH system to create systems EAST and WEST.

There are now four system definitions on system NORTH: one each for systems NORTH, SOUTH, EAST, and WEST.

Highlighting indicates the system you are signed onto.

```

MM/DD/YY          Maintain System Definitions          Your Company, Inc.
13:11:41                                     YOURCO North

2=Change  4=Delete  7=Application definitions  9=Distribution defaults
12=Distribute System  13=Change DDMF definitions  16=Distributed Applications

   System      Device      System Description
___ NORTH      10  *SNADS    YOURCO LPAR System NORTH
___ SOUTH      20  *SNADS    YOURCO LPAR System SOUTH
___ EAST       30  *SNADS    YOURCO LPAR System EAST
___ WEST       40  *SNADS    YOURCO LPAR System WEST

F3=Exit  F6=Add System Definition  F12=Cancel

```

- 7 Sign on to system SOUTH, and then start TURNOVER® Lifecycle Manager. Use option 11 to go to the Distribution menu.
- 8 Using option 1 on the Work with System Definitions panel on system SOUTH, create a system definition for system SOUTH (the local system). Do this just as instructed for system NORTH in step 3. Change the description field text appropriately, and supply the system serial number without appending the special character to the end. Press Enter to save the definition.

```

MM/DD/YY          Add a System Definition          Your Company, Inc.
12:04:47                                     YOURCO South

Type choices, press Enter.

System name . . . . . SOUTH
System number . . . . . *DEFAULT
System description . . . YOURCO SOUTH
Machine type . . . . . 400
Model . . . . . 400
Serial number . . . . . 1023456   Char, *LOCAL

Contact name . . . . . A. User
Title . . . . . I/T Manager
Address Line 1 . . . . . YOURCO, Inc.
Address Line 2 . . . . . 1234 Some Street
City/State/Zip . . . . . Anyplace   ST 11122
Country/FPC . . . . . USA
Phone . . . . . 444.555.6666

F3=Exit  F10=System number  F12=Cancel

```

SOUTH's definition for itself:

- System name must agree with system name shown for DSPNETA command.
- Serial number is the system serial number, without the special character that was added to the end in the NORTH system's definition for SOUTH.

- 9 Use F6 again to define system NORTH to system SOUTH, adding a special character to the end of the serial number for system NORTH ("N").

MM/DD/YY 12:04:47	Add a System Definition	Your Company, Inc. YOURCO North
----------------------	-------------------------	------------------------------------

Type choices, press Enter.

System name NORTH
 System number *DEFAULT
 System description . . . YOURCO NORTH
 Machine type 400
 Model 400
 Serial number 1023456N Char, *LOCAL

Contact name A. User
 Title I/T Manager
 Address Line 1 YOURCO, Inc.
 Address Line 2 1234 Some Street
 City/State/Zip Anyplace ST 11122
 Country/FPC USA
 Phone 444.555.6666

F3=Exit F10=System number F12=Cancel

There are now two system definitions on system SOUTH: one for system SOUTH itself, and one for system NORTH.

This is system South:

MM/DD/YY 13:11:41	Maintain System Definitions	Your Company, Inc. YOURCO South
----------------------	-----------------------------	------------------------------------

2=Change 4=Delete 7=Application definitions 9=Distribution defaults
 12=Distribute System 13=Change DDMF definitions 16=Distributed Applications

System	Device	System Description
<u> </u> SOUTH	10 *SNADS	YOURCO LPAR System SOUTH
<u> </u> NORTH	20 *SNADS	YOURCO LPAR System NORTH

F3=Exit F6=Add System Definition F12=Cancel

10 Repeat these steps for systems EAST and WEST.

There should now be two system definitions on system EAST, and two on system WEST: one each for local systems EAST and WEST, and one on each for remote system NORTH.

This is system East:

MM/DD/YY 13:11:41	Maintain System Definitions	Your Company, Inc. YOURCO East
2=Change 4=Delete 7=Application definitions 9=Distribution defaults 12=Distribute System 13=Change DDMF definitions 16=Distributed Applications		
System	Device	System Description
— EAST	10 *SNADS	YOURCO LPAR System EAST
— NORTH	20 *SNADS	YOURCO LPAR System NORTH
F3=Exit F6=Add System Definition F12=Cancel		

This is system West:

MM/DD/YY 13:11:41	Maintain System Definitions	Your Company, Inc. YOURCO West
2=Change 4=Delete 7=Application definitions 9=Distribution defaults 12=Distribute System 13=Change DDMF definitions 16=Distributed Applications		
System	Device	System Description
— WEST	10 *SNADS	YOURCO LPAR System WEST
— NORTH	20 *SNADS	YOURCO LPAR System NORTH
F3=Exit F6=Add System Definition F12=Cancel		

11 Ensure that your TURNOVER® Lifecycle Manager distribution defaults are correct: *for all systems, on all systems.*

12 Create, run, and distribute a test form on system NORTH to be sure your setup works.

19 Configuring for direct FTP distribution

TURNOVER® Lifecycle Manager can transfer IFS objects directly to another computer during the course of a typical TURNOVER® Lifecycle Manager promotion.

To use this feature, your TURNOVER® Lifecycle Manager application must be configured to run a distribution job that connects to the target computer and transfers files using either the standard file transfer protocol (FTP) or the secure file transfer protocol (SFTP) over the Secure Shell (SSH) protocol. This capability is called *direct FTP distribution*.

With this feature, TURNOVER® Lifecycle Manager can support any platform that can run an FTP server. This includes web servers outside the corporate firewall that are accessible only with FTP, as well as non-IBM i platforms that an IBM i system cannot communicate with in any other way.

Note Do not confuse direct FTP distribution with TURNOVER® Lifecycle Manager's *FTP alternate distribution method, which uses FTP over a TCP/IP network (as opposed to standard file transmission over a *SNADS network) to send IBM i or IFS objects on a form from one IBM i system to others in your internal network.

Before you begin

This feature applies only to IFS objects, which you manage using IFS type codes (*IFSOBJ), and which you can only configure using the TURNOVER® Lifecycle Manager Client or plugins. For more information, see 'Managing IFS Objects' in the *TURNOVER® Lifecycle Manager Administrator's Guide*.

If the QCRTAUT system variable is set to *USE on your system, make sure the user profiles you are using for FTP distributions have explicit authority to the SOFTTURN library or to the location where you have loaded the primary TURNOVER® Lifecycle Manager objects.

Setting up for direct FTP distribution requires configuration at the system, application, and type code levels of TURNOVER® Lifecycle Manager, to control the commands issued at these three levels during direct FTP distribution.

Creating a TURNOVER® Lifecycle Manager system definition for the target server

TURNOVER® Lifecycle Manager connects to the server computer using access information that you provide in a TURNOVER® Lifecycle Manager *system definition*.

Access information you need to supply

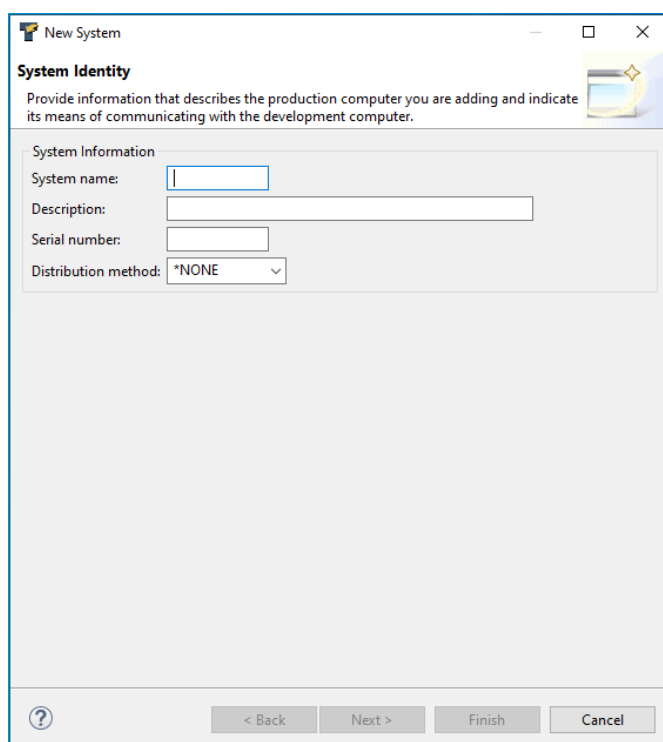
To create a TURNOVER® Lifecycle Manager system definition, you need the following information:

- the target computer's host name or IP address
- a user name and password for accessing the target computer
- commands you might need to execute once you have connected to the target computer. (For information about adding FTP commands, see [‘Defining FTP server commands’ on page 450.](#))

Creating the system definition

- 1 Start the TURNOVER® Lifecycle Manager Client.
- 2 In TURNOVER® Lifecycle Manager Explorer view, expand **Administration**.
- 3 Right-click **Distribution Systems**, and then click **New System**.

The New System wizard appears.



- 4 Specify a system name and system description (a serial number). (Does not apply for FTP distribution.)

5 Set **Distribution method** to *IFSFTP.

6 Click **Next**.

The TCP/IP Method Details page appears.

New System

Method Details

Configure the information required by the communications method you've chosen.

TCP/IP Details

Host name or IP address:

User name:

Password:

Retype password to confirm:

< Back **Next >** Finish Cancel

7 Specify a host system name or IP address for the target computer, and a user name and a password that are valid on that system.

To specify a secure FTP location, precede the host name or IP address with `sftp://`, like this:

`sftp://host.url.com`

8 Click **Next**.

The Send Defaults page appears.

New System

Send Defaults

Indicate your choices for the distribution job.

Send Options

☐ Distribute source

☒ Distribute objects

☐ Distribute application definition

☒ Automatically distribute forms

☒ Allow override from sending system

Distribution Job Scheduling

☒ Current time

☐ Specific time: : : pm

Schedule elapsed action:

Messaging Options

Submit received forms automatically:

Receive logs back:

Receive confirmations back:

< Back **Next >** Finish Cancel

- 9 Specify the items that you will be distributing to this system: select **Distribute source** or **Distribute objects**.

The other fields that apply to direct FTP distribution are **Automatically distribute forms**, **Allow override from sending system**, **Distribution Job Scheduling (Current time or Specific time)**, and **Receive confirmations back**. TURNOVER® Lifecycle Manager ignores any values you enter for the other fields.

If you want TURNOVER® Lifecycle Manager to automatically submit the distribution job, select **Automatically distribute forms**.

- 10 Click **Next**.

The Additional System Information page appears.

The screenshot shows a window titled 'New System' with a tab labeled 'Additional Information'. Below the tab is a subtitle: 'Here you can store additional information about the remote system and its TURNOVER Administrator.' The form is divided into two sections. The first section, 'Additional System Information', contains two fields: 'Model:' and 'Machine type:'. The second section, 'Contact', contains several fields: 'Full name:', 'Title:', 'Company:', 'Address line 1:', 'Address line 2:', 'City/State/Zip/Zip 4:', 'Country/Postal code:', and 'Phone number:'. At the bottom of the window, there are four buttons: a help icon (?), '< Back', 'Next >', and 'Finish'. The 'Next >' button is highlighted with a blue border.

- 11 Entries in the **Model** and **Machine type** fields are optional; you can leave them blank.
- 12 Specify the name and other contact information of the person responsible for managing or running (or both) TURNOVER® Lifecycle Manager forms on the target computer.
- 13 Click **Finish**.

Next, define the FTP server commands for the system.

Defining FTP server commands

Once you have connected to the target computer, you might need to execute various commands.

To define FTP server commands for a system definition

- The FTP Server Commands dialog box appears.



(To change the commands' execution sequence, you must remove and re-add them in the correct order.)

[illegible]

About system-level server commands

- **TURNOVER® Lifecycle Manager** always uses the system-level commands when distributing to this system from any application.
- **TURNOVER® Lifecycle Manager** executes ***START** commands, in the sequence you have entered them, when it first establishes the connection to the server.
- **TURNOVER® Lifecycle Manager** executes ***END** commands after it processes all the objects and other commands on your form, and before it ends the connection to the server.

Configuring your application distribution defaults for *IFSFTP distribution

You can set TURNOVER® Lifecycle Manager distribution default values at the system, application, and type code levels. You set up direct FTP distribution in a similar way. In *‘Creating a TURNOVER® Lifecycle Manager system definition for the target server’ on page 448*, you set distribution defaults at the system level by creating the system definition for the target computer.

Adding the target computer to the application level distribution list

To distribute objects, TURNOVER® Lifecycle Manager must know what systems an application level distributes to.

To access distribution defaults at the application level

- 1 In TURNOVER® Lifecycle Manager Explorer view, expand **Applications**.

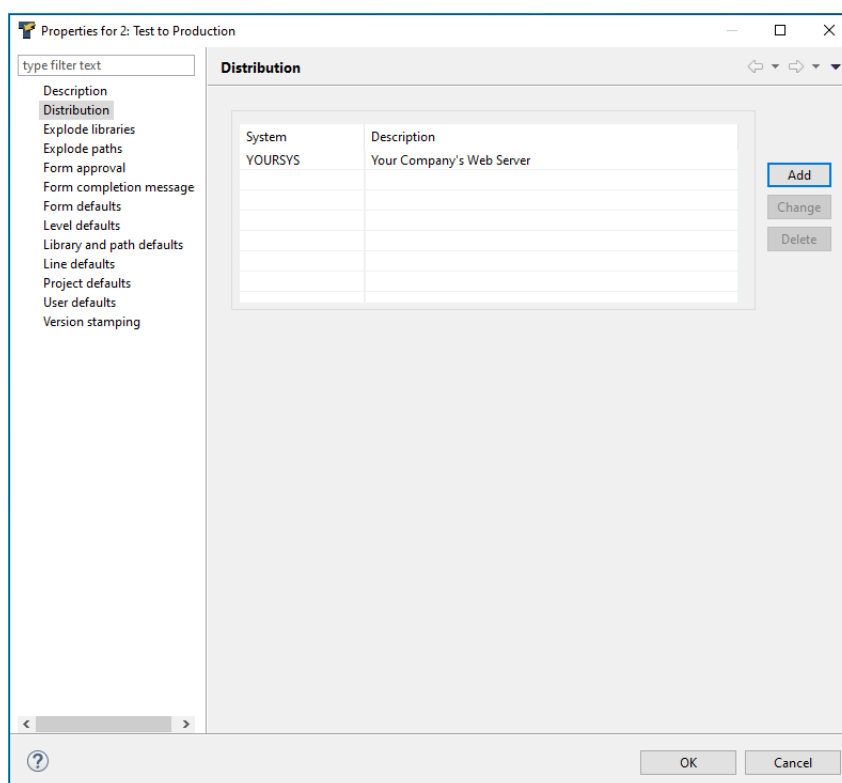
Before you can open an application definition for change, you must first check it out. This prevents others from editing it while you are working with it.

- 2 Right-click an application definition, and then click  **Check Out Application**.

TURNOVER® Lifecycle Manager opens the application definition in the graphical Application Designer.

- 3 Right-click the application level you want to work with, and then click **Level properties**. In the Properties dialog box, click **Distribution**.

The **Distribution** properties page appears.



This dialog box lists the systems that are in the distribution list for this application level.

To add a system, click **Add**.

This section describes configuring the application to distribute objects to another computer using direct FTP. Therefore, for this list you would only select systems that use the *IFSFTP method. This does not mean that your application can only distribute PC objects via FTP during this form job; other systems *can* be in the list for this application level, and non-PC objects can be distributed to other systems during the same form run (according to their object type).

To change a system, double-click it. The IFS FTP Defaults dialog box appears.

The screenshot shows a dialog box titled "YOURSYS IFS FTP Defaults". At the top, there are two input fields: "Level:" with the value "Test to Production(2)" and "System:" with the value "YOURSYS". Below these are two main sections. The first section, "Application Commands:", contains a table with three columns: "Type", "Sequence", and "Command". To the right of this table are three buttons: "Add", "Change", and "Delete". The second section, "Type Codes to Distribute:", contains a table with two columns: "Type Code" and "Target Path". To the right of this table are four buttons: "Add", "Change", "Delete", and "Commands". At the bottom of the dialog are "OK" and "Cancel" buttons.

In this dialog box, define application- and type-code specific FTP defaults for the system.

- 4 (Optional.) Specify any FTP commands that you want TURNOVER® Lifecycle Manager to apply to all objects it distributes for this application level (regardless of object type).

For example, to stop the Web server before transferring objects and restart it again afterwards, supply a *START command that stops the HTTP service and an *END command that restarts it afterwards.

See *'Defining application-specific FTP commands' on page 454.*

- 5 Specify which application object type codes you want TURNOVER® Lifecycle Manager to distribute to the selected system.

See *'Defining distributed application type codes' on page 455.*

- 6 Specify any FTP commands that you want TURNOVER® Lifecycle Manager to execute for each distributed object type.

For example, you might want to change the ownership, authority, or attributes of the target object.

See *'Defining type code-specific FTP commands' on page 456.*

Defining application-specific FTP commands

Next, define FTP commands that you want to execute on the target computer, if applicable, for all objects distributed by this application level.

You define application-level FTP commands for the application level in the Application Commands area of the IFS FTP Defaults panel.

Application Commands:

Type	Sequence	Command

Add
Change
Delete

Add commands in the sequence in which you want to execute them. (To change the commands' execution sequence, you must remove and re-add them in the correct order.)

You can define commands that run before objects are transferred (*START), or after objects are transferred (*END), or both.

Next, you will define application type codes you wanted distributed: see *'Defining distributed application type codes' on page 455*.

Example

Application Commands:

Type	Sequence	Command
*END	2	rcmd strtcpvsv server(*http) httpsv(websvr)
*START	1	rcmd strtcpvsv server(*http) httpsv(websvr)

Add
Change
Delete

Defining distributed application type codes

- 1 In the Type Codes to Distribute area of the IFS FTP Defaults dialog box, specify which of this application level's IFS type codes you want TURNOVER® Lifecycle Manager to distribute to the selected system.

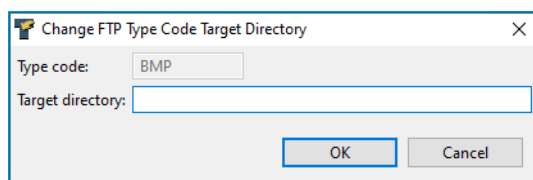
Type Codes to Distribute:

Type Code	Target Path

Add
Change
Delete
Commands

Before you can select which type codes you want to distribute, you must include some IFS type codes in your application definition.

- 2 To change a type code, click it, and then click **Change**, the Change FTP Type Code Target Directory dialog box appears.



- 3 Type a target directory using appropriate path notation (such as /images), and then click **OK**.

The type code is now configured to distribute using direct FTP.

- 4 Repeat this procedure for each type code you want to configure.

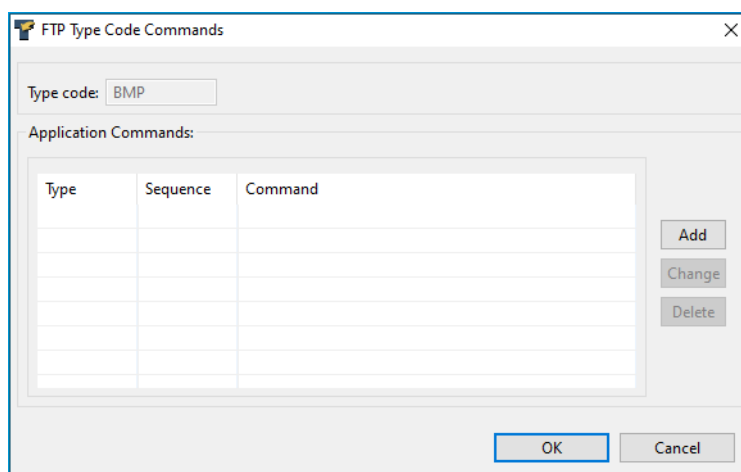
Next, see *'Defining type code-specific FTP commands' on page 456*.

Defining type code-specific FTP commands

Once you have indicated which IFS object types you want your application level to distribute using direct FTP, you can define special FTP processing that should occur before or after files of this type are transmitted. For example, you might want to change the ownership or permissions for all objects of a given type code. You can have TURNOVER® Lifecycle Manager execute the appropriate FTP command for this.

- 1 Select a type code, and then click **Commands**.

The FTP Type Code Commands dialog box appears.



- 2 Add commands in the sequence in which you want TURNOVER® Lifecycle Manager to execute them.
 - To change the commands' execution sequence, you have to remove them, and then add them again in the correct order.
 - In the commands, you can use substitution variables for the object's file name (&F) and file name with path (&P).
 - You can define commands that run before objects of this type are transferred (*START), or after objects are transferred (*END), or both.

FTP Type Code Commands

Type code:

Application Commands:

Type	Sequence	Command
*START	1	chmod 777 &P

Buttons: Add, Change, Delete, OK, Cancel

3 Click **OK**.

You have now configured your TURNOVER® Lifecycle Manager application for distributing to another computer using direct FTP. Test the new configuration by running a sample form containing objects of each type you have configured.

Testing direct FTP distribution

After a direct FTP distribution, the best way to determine whether all proceeded as planned is to connect to the server using an FTP client, and check the location and file date/time stamps of the objects in question. You can also point your web browser to the objects and view them to determine whether changed objects have made it to their designated locations.

A direct FTP distribution is like other TURNOVER® Lifecycle Manager distribution jobs; it can be automatic or manual, scheduled or immediate, and confirmed.

How direct FTP distribution works

Here is how a fairly typical promotion with automatic direct FTP distribution might proceed:

- 1 During the form run, the objects on your form are moved to their target location.
- 2 When the form job finishes its work, it submits the distribution job. Then it spools its job log file and ends.
- 3 The distribution job gathers the information for the FTP job and submits it; then it waits to hear back from the FTP job.

If the distribution job cannot submit the FTP job for some reason, or if the FTP job returns an error, it spools the DISERROR file and its own job log file, and ends abnormally.

- 4 The FTP job attempts to connect to the server, and if successful, it proceeds.
- 5 The FTP job then tries to execute any *START commands you have specified: first for the system; then the application level; then for the first type code in sequence.

Any *START or *END commands you have specified appear in the log.

- 6 If the commands are successful, the job continues and FTP commands are executed for each object line of the first type code in sequence on your form. Lines with **Add** or **Replace** action codes result in **PUT** commands; lines with **Delete** action codes result in **DELETE** commands.
- 7 After all objects for a given type code are processed, ***END** commands for that type code are processed.
- 8 Steps 5 and 6 are repeated for all remaining distributing IFS type codes on the form, according to sequence.
- 9 When all objects on the form have been distributed, the FTP job executes any ***END** commands for the application and then for the system, in that order.
- 10 The FTP job returns normally to the distribution job, which spools its job log and ends normally. Then the FTP job spools the *SVRnnnnnn* job log file and ends.
- 11 During all of this, you might watch the form status progress from **READY** to **SUBMIT** to **RUNNING** to **RAN-OK** to **DIST-PND** to **DISTRIB** to **CONFIRM**.

Finding information about direct FTP distribution jobs

When testing a direct FTP setup, you will probably use the TURNOVER® Lifecycle Manager WDSC plugins to build a form containing objects of each IFS type that is configured to distribute.

Spooled log files are produced during processing. These logs can help you understand what happened if the distribution does not proceed as you expected. They are:

Log file	Description
Form job	The form job produces a job log spool file (QPJOBLOG) that you can find in the output queue specified by your application definition.
Distribution job	The form job spawns a separate distribution job, called <i>DISnnnnnn</i> , where <i>nnnnnn</i> is a sequential number. This job always produces a job log spool file (QPJOBLOG) that can help you identify potential errors that may have interfered with your FTP distribution.
Distribution error	The distribution job produces a spool file called <i>DISERROR</i> if it was unable to begin or proceed with any distribution.
FTP job	The distribution job spawns a job called <i>SVRnnnnnn</i> , where <i>SVRnnnnnn</i> is the job number. This job runs the java program that connects to the server and executes the FTP commands you have defined, as well as the PUT commands required to transfer the objects. This job logs its activity in a spool file called <i>SVRnnnnnn</i> .

Log file	Description
	The presence of this <i>SVRnnnnnn</i> spool file means that the <i>SVRnnnnnn</i> job received control. In general, the success or failure of any subsequent processing is noted in the <i>SVRnnnnnn</i> job log. Use these messages to help you identify and correct configuration problems.
	If this log does not get created, then the <i>SVRnnnnnn</i> job never got control. This means that some aspect of your TURNOVER® Lifecycle Manager setup (for example, incorrect authority for the necessary network directories) is halting the distribution job before it can submit the <i>SVRnnnnnn</i> job, or causing an error during job submission. Your distribution job log contains messaging to help you track these things down.

You can see the various jobs associated with your form using the IBM i command `WRKUSRJOB`. From there, you can access all relevant spool files.

Common configuration errors

SVRnnnnnn job not started

The symptoms for this condition are an interactive message that the distribution job ended abnormally, the presence of a `DISERROR` spool file in your output queue that tells you to check your deployment log report, and the absence of a *SVRnnnnnn* spool file (the “deployment log report”).

Why this happens

The program that performs the FTP distribution is a Java program. Java programs require a `CLASSPATH`, which is akin to an IBM i library list. The `CLASSPATH` contains a list of paths to one or more java archive files (“.jar files”), which are required for the application to do its work.

The `CLASSPATH` for our Java application requires two .jar file paths: one for our TURNOVER .jar file, and one for an IBM .jar file that is typically installed by the IBM Toolbox for Java licensed IBM i program.

The TURNOVER .jar file is always:

```
/TurnOver/DeployFTP.jar
```

The IBM Java toolbox .jar file can be obtained from more than one source, so its path specification can vary. The value we ship for this .jar file is:

```
/QIBM/ProdData/HTTP/Public/jt400/lib/jt400.jar
```

This is what the path would be if the .jar file was installed by the licensed program. So, if the IBM .jar file was installed from a different source and stored in a location other than this default, then the program cannot submit the SVR job and this error occurs.

What to do

We store the Java CLASSPATH in a data area called TDPYFTPCP. Use the CHGDTAARA command to edit the data area and modify the path for the IBM .jar file.

Offset	Value
	*...+...1...+...2...+...3...+...4...+...5
0	'/TurnOver/DeployFTP.jar:/QIBM/ProdData/HTTP/Public'
50	'/jt400/lib/jt400.jar'
100	' '
150	' '
200	' '
250	' '

“Unknown host” error

If there is an error in the host name or IP address you specified in your system definition, the SVRnnnnnn job cannot find the target system and returns an “unknown host” error.

What to do

Correct the host name or IP address you used in your system definition, and try your test again.

“Invalid Password” error

This error occurs when the SVRnnnnnn job is able to locate the host system and start a connection, but cannot complete the connection because the password you supplied and confirmed in your target system definition is not valid for some reason.

What to do

In the TURNOVER® Lifecycle Manager Client  Administration component, open the system definition in Change mode, and go to the TCP/IP Method Details page (see [The TCP/IP Method Details page appears.' on page 449](#)). Re-type the password, confirm it, and then test it again.

“No such path or directory” error

If the SVRnnnnnn job connects successfully but cannot find a folder you specified, the log might look like this:

```
Waiting on data queue. Key = 062158
Received entry. Function = *CONNECT.
Exception: java.net.UnknownHostException: ftp.yourrsys.com
java.net.UnknownHostException: ftp.yourrsys.com
    java/lang/Throwable.<init>(Ljava/lang/String;)V+4 (Throwable.java:81)
    java/net/InetAddress.getAllByName0(Ljava/lang/String;)[Ljava/net/InetAdd
    java/net/Socket.<init>(Ljava/lang/String;I)V+1 (Socket.java:89)
    FtpBean.ftpConnect(Ljava/lang/String;Ljava/lang/String;Ljava/lang/String
    DeployFtp.connect(Ljava/lang/String;Ljava/lang/String;Ljava/lang/String;
    DeployFtp.<init>(Ljava/lang/String;Ljava/lang/String;Ljava/lang/String;)
    DeployFtp.main([Ljava/lang/String;)V+0 (DeployFtp.java:171)
Waiting on data queue. Key = 062158
Received entry. Function = *ENDSVRJOB.
Java program completed
```

This error might occur when the folder name or path specified by an FTP command associated with the system definition, application level, or type code (for example, a change directory command) is mistyped or case-sensitive.

What to do

To correct this problem, determine the correct path and fix the associated command as indicated.

Recovery after full or partial distribution

This topic describes how to restore original objects to the target server in the event of an undiscovered error or a distribution job failure.

Note Your application must make use of object archiving to build recovery forms. To verify this, in the TURNOVER® Lifecycle Manager Client Applications component, make sure that the **Archive objects** box is selected in the IFS type codes defaults in the application definition.

Recovering after a successful distribution

If during post-distribution testing you discover a problem that requires you to restore the target computer to its original state, then you can create, run and distribute a recovery form to put the old objects back into place.

Recovering after a partial distribution

If a failure occurred in the middle of a distribution job, the target site could be left in an incomplete state (some objects copied, others not). Depending on the error, you can correct the problem and either re-distribute the form, *or* create, run, and distribute a new form.

Reference information

This section describes database files and data areas related to the direct FTP distribution feature.

Files

File name	Description
TDAPPCM	Direct FTP Application Level FTP Commands file
TDAPPSV	Direct FTP Applications to Distribute file
TDLOG	Direct FTP Log file
TDSEVE	Direct FTP System Definition file
TDSRVCM	Direct FTP System Commands file
TDTYPCM	Direct FTP Type Code Commands file
TDTYPSV	Direct FTP Type Codes to Distribute file

Data areas

Data area	Description
TDPYFTPCP	Contains the Java archive file (.jar file) path specifications for the CLASSPATH parameter used by the Java application that performs direct FTP distribution. For more information about this data area, see <i>'SVRnnnnnn job not started' on page 459</i>.
TDPYFTPJQ	Defines the job queue where the <i>SVRnnnnnn</i> job is submitted. The default job queue is set to TSERVER in QGPL. If you choose to specify another job queue, then the job queue you specify must either be a multi-threaded job queue, or one that is guaranteed to always be free.

20 Distributing to virtual systems

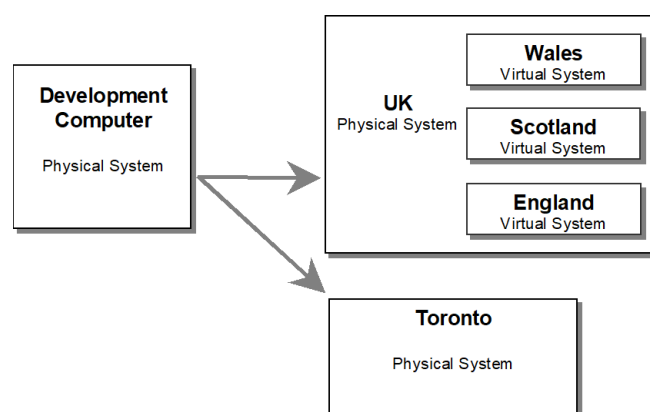
Multiple companies, or multiple divisions of a single company, sometimes do all their business data processing as independent corporate groups on a single IBM i computer.

These groups are typically separate and autonomous, and they often operate with their own sets of programs and files stored in separate libraries/partitions. Some groups have their own programmers and system administrative staff; in other cases, one staff manages the data processing activities for several groups. Software changes are scheduled and applied by each group independently. The net effect is that, although they are sharing a single physical computer and its resources, each group works as though it is operating its own computer.

TURNOVER® Lifecycle Manager defines this concept as *virtual systems*.

Example distribution scenario

The following diagram shows a common distribution scenario that includes virtual systems:



The development computer distributes its changes to a computer that is in the United Kingdom (UK) and to a computer that is in Toronto. The computer in the UK operates under the concept of virtual systems. The Wales, Scotland, and England virtual systems are all autonomous groups that operate independently and have their own sets of programs and files in separate libraries and partitions on the UK physical system.

The computer in Toronto operates as a single physical system, with no virtual systems defined.

Overview

'1: Create physical system definitions' on page 464

- '2: Create virtual system definitions' on page 465
- '3: Distribute the physical computer's system definition' on page 467
- '4: Create application definition for the physical system' on page 467
- '5: Distribute the application definition for the physical system' on page 468
- '6: Create virtual system definitions' on page 468
- '7: Create application definitions for virtual systems' on page 468
- '8: Add control records to the virtual systems file' on page 469
- '9: Install exit programs on the remote computer' on page 472
- '10: Set the authority for the distributing user' on page 475

1: Create physical system definitions

- 1 On the development computer, define a physical system for each target computer that must support this feature. Select option 11 from the TURNOVER® Lifecycle Manager main menu, and then option 1, Maintain system definitions. Press F6 to define the physical system.

This example defines the physical computer for the UK as system SLSUK:

MM/DD/YY 11:49:23	Add a System Definition	QA YOURSYS
Type choices, press Enter.		
System name	SLSUK	
System number	*DEFAULT	
System description	System Definition for SLSUK	
Machine type	400	
Model	E8A	
Serial number	123456	Char, *LOCAL
Contact name		
Title		
Address Line 1		
Address Line 2		
City/State/Zip		
Country/FPC		
Phone		
F3=Exit F10=System number F12=Cancel		

- 2 Fill in the system information on this panel, and then press Enter.

The System Send Distribution Defaults panel appears.

MM/DD/YY	System Send Distribution Defaults	QA
11:50:59		YOURSYS
System name SLSUK System Definition for SLSUK		
System number		
Target user id and address <u>TURNOVER SLSUK</u> UserId-Address		
Distribution device <u>*SNADS</u> Device, *SNADS, *NONE		
Distribute application definitions <u>N</u> Y, N		
Distribute source <u>N</u> Y, N		
Distribute objects <u>Y</u> Y, N		
Automatically distribute forms <u>Y</u> Y, N		
Distribution job schedule time <u>*CURRENT</u> *CURRENT, hhmss		
Schedule elapsed action <u>*SBMRLS</u> *NEXTDAY, *SBMHL,		
Submit received forms automatically <u>N</u> Y, N, *RMTDFTS		
Receive logs back <u>N</u> Y, N, *RMTDFTS		
Receive confirmations back <u>N</u> Y, N, *RMTDFTS		
Receive forms method <u>*AUTOSTART</u> *AUTOSTART, *PASSTHRU		
F3=Exit F12=Cancel		

- 3 Type the distribution defaults specific to this system, and then press Enter.

2: Create virtual system definitions

- 1 On the Maintain System Definitions panel, use F6 to add the first virtual system.

MM/DD/YY	Add a System Definition	QA
11:52:36		YOURSYS
Type choices, press Enter.		
System name <u>*VWALES</u>		
System number <u>*DEFAULT</u>		
System description <u>Virtual System Definition for Wales</u>		
Machine type <u>400</u>		
Model <u>E8A</u>		
Serial number <u>*VWALES</u> Char, *LOCAL		
Contact name _____		
Title _____		
Address Line 1 _____		
Address Line 2 _____		
City/State/Zip _____		
Country/FPC _____		
Phone _____		
F3=Exit F10=System number F12=Cancel		

The virtual system name and serial number must start with *V (quotes not included). Also, virtual system definitions are different from other system definitions in that the serial number is *not* the physical system's serial number. The serial number for a virtual system definition is the virtual system name.

- 2 Type the system information, and then press Enter.

The System Send Distribution Defaults panel appears.

MM/DD/YY		System Send Distribution Defaults		QA
11:53:37				YOURSYS
System name *VWALES Virtual System Definition for Wales				
System number				
Target user id and address <u>TURNOVER *VWALES</u> UserId-Address				
Distribution device <u>*NONE</u> Device, *SNADS, *NONE				
Distribute application definitions <u>N</u> Y, N				
Distribute source <u>N</u> Y, N				
Distribute objects <u>Y</u> Y, N				
Automatically distribute forms <u>Y</u> Y, N				
Distribution job schedule time <u>*CURRENT</u> *CURRENT, hhhmmss				
Schedule elapsed action <u>*SBMRLS</u> *NEXTDAY, *SBMHLD,				
Submit received forms automatically <u>N</u> Y, N, *RMTDFTS				
Receive logs back <u>N</u> Y, N, *RMTDFTS				
Receive confirmations back <u>Y</u> Y, N, *RMTDFTS				
Receive forms method <u>*AUTOSTART</u> *AUTOSTART, *PASSTHRU				
F3=Exit F12=Cancel				

In virtual system definitions, the Distribution device parameter must be set to *NONE.

- Repeat the definition process until you have defined the same number of virtual systems as resides on the physical computer. In this example, you would also add additional definitions for England and Scotland (systems *VENGL and *VSCOT).

After you have defined all the required virtual systems, the Maintain System Definitions panel looks like this:

MM/DD/YY		Maintain System Definitions		QA
11:56:00				YOURSYS
2=Change 4=Delete 7=Application definitions 9=Distribution defaults				
12=Distribute System 13=Change DDMF definitions 16=Distributed Applications				
System	Device	System Description		
___ *VENGL	*NONE	Virtual System Definition for England		
___ *VSCOT	*NONE	Virtual System Definition for Scotland		
___ *VWALES	*NONE	Virtual System Definition for Wales		
___ BOGGS	MMA *SNADS	BOGGS - 6.1		
___ SLSUK	*SNADS	System Definition for SLSUK		
F3=Exit F6=Add System Definition F12=Cancel				

System SLSUK represents the definition of the physical computer; systems *VENGL, *VSCOT, and *VWALES represent the virtual systems. In addition, note that the physical system, SLSUK, has the device defined as *SNADS. The virtual systems for England, Scotland, and Wales has the device defined as *NONE.

3: Distribute the physical computer's system definition

Next, distribute the physical system's definition to the remote computer. In this example, you are distributing the definition for system SLSUK from the development computer to the remote production computer, SLSUK itself.

From the Maintain System Definitions panel, use option 12 to distribute the system definition. (You can also access the Remote Configuration Wizard from option 7 on the Distribution menu.)

The virtual system definitions cannot be distributed using option 12 and therefore must be created on the remote production computer. *'5: Distribute the application definition for the physical system' on page 468* addresses this issue.

The system definition of the development computer must be on each production computer where distribution between the two systems will take place. Use option 12 to distribute the development computer's system definition to each production computer.

4: Create application definition for the physical system

Using option 1 on the TURNOVER® Lifecycle Manager main menu, create the application definition for the physical system (SKSUK) on your development computer.

In this example, application TO is created with two levels, level 1 and level 2. Level 2 distributes to the production computer.

MM/DD/YY	Work with Application Definition				QA
	Appl: TO	Rel:	Ver:		SYSTEM: YOURSYS
Description	LANSA UK				
Emergency	N				
Type options, press Enter.					
2=Change 3=Copy 4=Delete 5=View 6=Print 7=Rename					
20=Sbm XRef 21=Lock/unlock 22=Distribute App 23=Sbm initial build . . .					
Opt	Lev	Description	Lock	XRef	
1	LANSA	UK Level 1	N	N	
2	LANSA	UK Level 2 Distribution to UK	N	N	
Bottom					
F3=Exit F5=Refresh F6=Create level F12=Cancel F14=WRKSBMJOB					
F16=User options F21=Command line F23=More options					

Application definitions for the virtual systems are created on the remote production computers: see *'6: Create virtual system definitions' on page 468*.

5: Distribute the application definition for the physical system

Use option 22 to distribute level 2 of the application definition to the production computer. (You can also access the Remote Configuration Wizard to distribute the application definition from option 7 on the Distribution menu.)

6: Create virtual system definitions

- 1 Sign on to each production computer to define the virtual systems residing on that computer.
- 2 On the TURNOVER® Lifecycle Manager main menu, select option 11, then option 1, Maintain System Definitions.
- 3 Use F6 to define the virtual systems as they were defined on your development computer.

MM/DD/YY	Maintain System Definitions		QA
11:59:04			SLSUK
2=Change 4=Delete 7=Application definitions 9=Distribution defaults 12=Distribute System 13=Change DDMF definitions 16=Distributed Applications			
System	Device	System Description	
___ *VENGL	*NONE	Virtual System Definition for England	
___ *VSCOT	*NONE	Virtual System Definition for Scotland	
___ *VWALES	*NONE	Virtual System Definition for Wales	
___ BOGGS	MMA *SNADS	BOGGS - 6.1	
___ SLSUK	*SNADS	System Definition for SLSUK	
F3=Exit F6=Add System Definition F12=Cancel			

All the system definitions on the production computer must match the corresponding system definitions on the development computer.

7: Create application definitions for virtual systems

Assign application version numbers to the applications that will distribute to your virtual systems.

When you add the virtual system control records to file TVIRSYSF (see ['7: Create application definitions for virtual systems' on page 468](#)), the versions you enter must match the versions you use for your virtual applications.

MM/DD/YY

Work with Application Definitions

QA

YOURSYS: BOGGS

Position to . . . Application: ____ (Home) Rel: __ Ver: __

Type options (and Application), press Enter.

1=Create 2=Change 3=Copy 4=Delete 5=View 6=Print 7=Rename

14=Create missing items 19=Application relations . . .

Opt	Appl	Rel	Ver	Description	Emer.	Relations
___	___	___	___	_____	N	_____
___	TO			TURNOVER UK	N	
___	TO		10	TURNOVER Wales	N	
___	TO		20	TURNOVER Scotland	N	
___	TO		30	TURNOVER England	N	
___	WEB			Web Demo	N	
___	01M			Model 1	N	
___	02M			Model 2	N	
___	03M			Model 3	N	
___	04M			Model 4	N	
___	05M			Model 5	N	

More...

F3=Exit F5=Refresh F6=Create application definition F12=Cancel

F14=WRKSBJOB F21=Command line F23=More options

On the production computer, application definitions must be created for each virtual system. (They cannot be distributed to the production computer from the development computer.) The **Version** parameter differentiates these application definitions by associating them with the correct virtual system, which you specify in file TVIRSYSF.

8: Add control records to the virtual systems file

On the receiving (remote) computer, you must populate file TVIRSYSF (in the TURNOVER® Lifecycle Manager data library) with entries for each virtual system. You can do this by using DFU, DBU, SQL, a user program, or some other utility that enables the update of data in a file. Add the records to the file as shown here:

WORK WITH DATA IN A FILE

Mode : ENTRY

Format : TVIRSYS

File : TVIRSYSF

Physical System Name: SLSUK

Physical System #: 0

Virtual System Name: *VWALE

Virtual System #: 0

Virtual Version: 10

Reserved 1: _____

Reserved 1: _____

Reserved 1: _____

Reserved 1: _____

Reserved 1: _____

F3=Exit F5=Refresh F6=Select format

F9=Insert F10=Entry F11=Change

The virtual system name and number must match the virtual system definition created in ‘5: *Distribute the application definition for the physical system*’ on page 468. The **version** must match the version used in the application definition that you created in ‘6: *Create virtual system definitions*’ on page 468.

In this example, there are three entries in file TVIRSYSF.

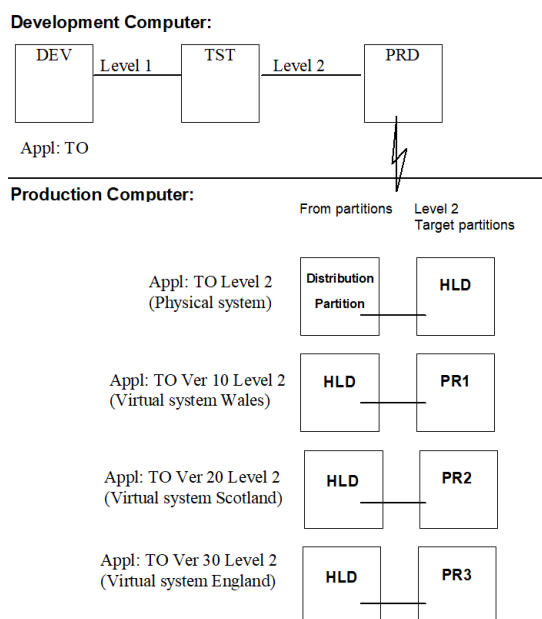
This is the entry for Scotland:

WORK WITH DATA IN A FILE		Mode :	ENTRY
Format : <u>TVIRSYS</u>		File :	TVIRSYSF
Physical System Name: <u>SLSUK</u>			
Physical System #: <u>0</u>			
Virtual System Name: <u>*VSCOT</u>			
Virtual System #: <u>0</u>			
Virtual Version: <u>20</u>			
Reserved 1: _____			
Reserved 1: _____			
Reserved 1: _____			
Reserved 1: _____			
Reserved 1: _____			
F3=Exit	F5=Refresh	F6=Select format	
F9=Insert	F10=Entry	F11=Change	

This is the entry for England:

WORK WITH DATA IN A FILE		Mode :	ENTRY
Format : <u>TVIRSYS</u>		File :	TVIRSYSF
Physical System Name: <u>SLSUK</u>			
Physical System #: <u>0</u>			
Virtual System Name: <u>*VENG</u>			
Virtual System #: <u>0</u>			
Virtual Version: <u>30</u>			
Reserved 1: _____			
Reserved 1: _____			
Reserved 1: _____			
Reserved 1: _____			
Reserved 1: _____			
F3=Exit	F5=Refresh	F6=Select format	
F9=Insert	F10=Entry	F11=Change	

Schematic of the virtual system setup in this example



Referring to the schematic, the target libraries/partitions for applications TO Ver 10, TO Ver 20, and TO Ver 30 do not necessarily have to be production libraries/partitions. They could be QA or STAGING libraries/partitions. Your applications might include additional levels (after level 2) to promote to STAGING, PRODUCTION, and so on.

In this example, application TO level 2 (which is the application definition for the physical system) has a target library/partition named HLD. From the HLD partition, the information will be copied into the virtual system libraries.

Once all the application definitions have been defined for the physical system and all the virtual systems on the production computer, the Work with Application Definitions panel on the remote system will look something like this:

MM/DD/YY		Work with Application Definitions				Your Company, Inc. YOURSYS	
Position to . . . Application: ____ Rel: ____ Ver: ____ Lev: ____							
Type options (and Application), press Enter.							
1=Create 2=Change 3=Copy 4=Delete 5=View 6=Print 7=Rename							
14=Create missing items 19=Application relations . . .							
Opt	Appl	Rel	Ver	Lev	Description	Emer	Relations
___	TO			2	LANSA Hold	N	N
___	TO		10	2	LANSA Wales	N	N
___	TO		20	2	LANSA Scotland	N	N
___	TO		30	2	LANSA England	N	N
-							
F3=Exit F5=Refresh F6=Create application definition F12=Cancel							
F14=WRKSBJOB F16=User options F21=Command line F23=More options							

The TO Ver 0 will promote to the HOLD library/partition.

This is what the library/partition defaults for our application TO level 2 would look like:

MM/DD/YY	Library and Partition Defaults				QA
12:17:00	Application: TO	Rel:	Ver:	Lev: 2	SYSTEM: YOURSYS
Type choices, press Enter.					
Data objects Target library HLDDATA					
Target partition HLD					
Target Lansa library DC@PGMLIB					
Data objects From library					
From partition					
From Lansa library					
F3=Exit F12=Cancel F19=Explode data libraries					

The **from** fields are blank because the **from** libraries/partitions default to the distribution library (TnnnnnnnS) when the form is created.

This is what the library and partition defaults for the virtual system application TO version 10 level 2 would look like on the remote production computer (SLSUK):

MM/DD/YY	Library and Partition Defaults				QA
12:17:00	Application: LANX	Rel:	Ver:	Lev:	SYSTEM: YOURSYS
Type choices, press Enter.					
Data objects Target library PR1DATA					
Target partition PR1					
Target Lansa library DC@PGMLIB					
Data objects From library HLDDATA					
From partition HLD					
From Lansa library DC@PGMLIB					
F3=Exit F12=Cancel F19=Explode data libraries					

9: Install exit programs on the remote computer

Exit programs required

Post-run exit programs (Exit 1 and 11) are required on the receiving (remote) computer. The source for the exit programs is in ACLSRC and ARPGLESRC in the TURNOVER® Lifecycle Manager product library SOFTTURN.

The programs designated as CLLE are in ACLSRC; those designated as RPGLE are in ARPGLESRC.

Program	Description
VB01R1 (RPGLE)	Post-run exit program. This program is called after the base form is run. It creates and runs the virtual system forms.
VB01C1 (CLLE)	Called by VB01R1. This CL program copies the base form to create the forms for the virtual systems. It then runs the virtual system forms. If you distribute objects only, you need to modify program VB01C1 (CLLE). The CPYFORMI command needs to pass the parameter DROPCOPRS(*NO). The default value is *YES.
VB01C2 (CLLE)	Called by VB01R1. This program sends the form confirmations back to the original sending system for the base form.
VB08R1 (RPGLE)	Called by VB01C1 to update from partition. This program sends the form confirmations back to the original sending system for the base form.
VB11R1 (RPGLE)	Post-run exit program. This is optional. If you do not want to send the form logs back to the original sending system, you do not need exit 11.

Exit programs required for Lansa/LanTurn

Post-run exit programs (Exit 1 and 11) and a pre-run exit (exit 8) are required. The source for the exit programs are in VSOURCEL52 in the Lansa/LanTurn product library

Program	Description
VB01R1 (RPGLE)	Post-run exit program
VB01C1 (CLLE)	Called by VB01R1
VB01C2 (CLLE)	Called by VB01R1
VB01R2 (RPGLE)	Called by VB01C1 to update from partition
VB11R1 (RPGLE)	Post-run exit program. (This is optional. If you do not want to send the form logs back to the original sending system, you do not need exit 11.)

Compiling the programs

On the remote computer, these programs must be compiled into the TURNOVER® Lifecycle Manager product library or into another library that is included as an *additional environment library* in your TURNOVER® Lifecycle Manager environment definition (WRKTOENV). The latter option is recommended, this way, programs will not be overlaid by future TURNOVER® Lifecycle Manager *upgrades/changes*.

Note TURNOVER® Lifecycle Manager product, data and language libraries (i.e., SOFTTURN, SOFTTURND, SOFTTURN) must be in the library list in order to compile these programs.

Before compiling program VB01R1, browse the source for the following statement:

```
FLEV ANDEQ2
```

The 2 corresponds to the level of your application from which you distribute. If you do *not* distribute from level 2 (for example, perhaps your application includes an additional QA level, and you distribute from level 3), then you must update this statement to reflect the appropriate level before compiling the program. Please be aware that you might need to modify this statement in program VB01R1 if you are distributing from more than one level of your application.

Note *For Lansa/TURNOVER® for Lansa:* Store the source and objects in a production level library on the development computer. You can use TURNOVER® Lifecycle Manager to distribute these objects. On the production computer, use the “HOLD” library to store these objects.

Configure TURNOVER® Lifecycle Manager to use the exit programs

After compiling the programs, you must configure the TURNOVER® Lifecycle Manager exits on the production computer:

- 1 On the TURNOVER® Lifecycle Manager main menu, select option 8 (Utility menu), and then select option 7 (Work with Exits).
- 2 On the Work with Exits panel, update exits 1 and 11. For Lansa/TURNOVER® *for Lansa*, also update exit 8.

MM/DD/YY		Work with Exits		QA	
13:26:52				YOURSYS	
5=Browse exit program		7=Work with sample exits		8=Help	
Exit	Description	Active	Program	Library	Library List
EXIT 1	Form Finalization Processing	Y	VB01R1	YOURLIB	*CURRENT
EXIT 2	Pre-Distribution Form Exit	N			
EXIT 3	Pre-Distribution Library Exit	N			
EXIT 4	Receive of Distribution	N			
EXIT 5	Determining Source file names	Y	*NONE	*LIBL	
EXIT 6	Object Naming Standards	Y			
EXIT 7	Project Entry Verification	Y			
EXIT 8	Form Initialization phase	N			*CURRENT
EXIT 9	Post-Checkout Exit	N			
EXIT 10	Manual check-in	N			
EXIT 11	Form Completion Processing	Y	VB11R1	YOURLIB	*CURRENT
EXIT 12	Add a line to TurnOver form	N			
EXIT 13	Pre-run Error check Exit	N			
EXIT 14	Pre-Checkout Processing	N			
EXIT 15	Add PWL Item	N			
More...					
F3=Exit	F8=IFS Exits	F12=Cancel	F21=Command line		

- 3 To update Exit 1, type the program name VB01R1 and the library where this program object is. Change the ACTIVE flag to Y. The Library List value should be set to *CURRENT as shown in the above panel. Make sure you press Enter to update the changes made.
- 4 *For Lansa/TURNOVER® for Lansa:* Update Exit 8 using program name VB08R1, and Exit 11, using program name VB11R1

If you are already using exits 1 or 11, then *your* exit program must call the virtual system programs or vice versa. The order in which you choose to call exit programs is entirely at your discretion.

10: Set the authority for the distributing user

The target User ID specified in the System Send Distribution Defaults must have the authority to add a form to the virtual applications.

- 1 Using option 3 from the main menu, ensure that the user (in this example, the user is TURNOVER) has authority. Find the user TURNOVER, type 1 next to the ID, and then press Enter.

```

MM/DD/YY           Application Authority Maintenance           QA
12:59:44

User: TURNOVER    TURNOVER System Administrator

1=Authorize User    2=Reset User to default authority

      -----SOURCE-----  ---TURNOVER FORM AUTHORITY---  SYSTEM
      Appl  Rel  Ver  Lev  Chkout  Chk-in  View  Add  Updt  Run  Distr  Purge  Dfts
-----
  1  TO      10  2    -      -      X    X    X    X    -      -      -
  1  TO      20  2    -      -      X    X    X    X    -      -      -
  1  TO      30  2    -      -      X    X    X    X    -      -      -

F3=Exit    F11=Description    F12=Cancel    F21=Authorize user to all applications
  
```

- 2 Find the virtual application definitions and ensure they have 1 next to them. The User ID TURNOVER must have view, add, update and run authority for the virtual application definitions.

Form creation for virtual systems on the production computer

When a form is received and the flag to automatically submit a form is set to Y, the form will be run automatically to promote source/objects into a holding library. A post-run exit program (Exit 1) will be called when this received form completes. This post-run exit program will read file TSYSTEMS to determine if there are any virtual systems associated with the form. For each virtual system, the exit program will create a new form, using the ADDFORM API, as long as each line on the original form has a status of RAN-OK or RAN-WRN. The form will be created as follows:

Property	Value
Form number	Next available form number
Application	Same as distributed form
Release	Same as distributed form
Version	Version retrieved from TVIRSYSF file entry
Level	Same as distributed form
Description	<i>xx*Vffffff</i> (where <i>xx*</i> = the first 31 positions of the distributed form's description; and <i>ffffff</i> = the distributed form number) For Lansa/LanTurn: <i>xx*VVffffff</i>

After the form is created for each virtual system, the exit program will copy the lines on the distributed form to the new form.

In this example, the distributed form promotes from the distribution library (*TnnnnnnnS*) to HOLD (*TnnnnnnnS* is the temporary library that TURNOVER® Lifecycle Manager normally uses as the *from library* on distributed forms; HOLD can be any library name).

The forms that were created by the exit program promote from HOLD to PROD1, PROD2, PROD3, and so on. (HOLD is the target library from the distributed form; PROD1, PROD2, PROD3, and so on can be any libraries that have been specified as target libraries for the virtual system forms.)

When each form promotes into the PROD libraries, the post-run exit (Exit 1) will send the following message to TOMSGRCV on the development computer:

```
Form fffffff ran on system *Vsssvv with status xxxxxxxx
```

(where *ffffff* is the form number of the original distributed form, retrieved from the last seven characters of the form description; **Vsssvv* = the name used to define the virtual system; and *xxxxxxxx* is the status with which the form completed)

This message sent by the post-run exit will cause the virtual systems to be confirmed on the development computer.

As with normal distributions, when the last virtual system form has been confirmed, the original form status will change to a CONFIRM status.

Exit 11 is used to send the form run logs back to the sending system. The logs are sent back to the target user specified within the distribution defaults.

Partial distributions and re-distributions

A particular form can be distributed to a subset of the virtual systems simply by deselecting one or more virtual systems from Form Distribution Defaults at the time you select the form on the development computer. However, the form must first be distributed to the physical system in order to distribute to any of the virtual systems. To distribute to additional virtual systems, after a partial distribution to one or more virtual systems, the form must be *redistributed* to the *physical* system at the same time. To do this:

- 1 On the TURNOVER® Lifecycle Manager main menu, select option 6 (Work with Forms).
- 2 Type option 11 (Distribution Status) next to the form that is to be distributed.
- 3 Type option 2 (Change) next to the *physical* system, and change the **Distributed** parameter to N.
- 4 On the TURNOVER® Lifecycle Manager main menu, select option 11 (Distribution menu).
- 5 Select option 2 (Distribute Forms).
- 6 Type option 1 (Select) next to the form that is to be distributed.
- 7 Select the *physical* system and any virtual systems to which the form is to be distributed.

21 Saving and restoring to another computer

This information is for saving and restoring TURNOVER® Lifecycle Manager between two RISC systems only.

To migrate TURNOVER® Lifecycle Manager from a CISC computer to a RISC computer, contact UNICOM Systems, Inc. Technical Support.

These instructions use the following definitions or terms:

- System A is the system from which TURNOVER® Lifecycle Manager is being removed.
- System B is the system to which TURNOVER® Lifecycle Manager is being restored.

Instructions

- 1 Contact UNICOM Systems, Inc. to get a new authorization code for the system swap.
- 2 On System B, create these user profiles: TURNOVER, TOMSGRCV, and TURNESCQ.
- 3 On System A, save the TURNOVER® Lifecycle Manager libraries. Include the source archive libraries.
- 4 On System B, sign on as QSECOFR, and then restore the TURNOVER® Lifecycle Manager libraries.
- 5 On System B, make sure that no one is using TURNOVER® Lifecycle Manager.
- 6 On System B, sign on as QSECOFR, and then add the main TURNOVER® Lifecycle Manager libraries to your library list.

Run the `SETTOAUTH` command to restore authority for TURNOVER® Lifecycle Manager objects.

- 7 Duplicate the `TURNOVER` and `STRPWM` commands from library `SOFTTURN` (substitute your language library name) into library `QGPL`.
- 8 *If you plan to distribute from System B:* Check System B's TURNOVER® Lifecycle Manager system definition to ensure that the serial number and model number information in the system definition apply to System B.
- 9 Create the `TSERVER` subsystem and its components on System B. Do the following:

On an IBM i command line, type `GO TOSETUP` to start the TURNOVER® Lifecycle Manager Setup menu.

To create the TSERVER user profile, subsystem, and autostart job, choose option 2. Press F10 to proceed.

- 10 Create and configure the TURNOVER® Lifecycle Manager autostart jobs you will need. (These usually run within the TSERVER subsystem, unless you have other requirements.) Using option 3 on the TURNOVER® Lifecycle Manager Setup Menu, do the following:

Determine which jobs to start:

- *If you plan to distribute from System B:* Set up the Form Message Receiver autostart job (TOMSGRCV).
- For escalation processing, set up the Escalation Queue Monitor autostart job (TURNESCQ).
- For dynamic update of Wisedesk trees, set up the Wisedesk Dynamic Update autostart job (WWDYNUPD).

Fill in the Add TURNOVER® Lifecycle Manager Autostart Jobs panel based on your decisions in the previous step, using *YES for the jobs you want. (You only need the Form Auto Receiver job (TURCRARE) if you will be receiving forms on System B from other computers in your network.) Press Enter to proceed. When finished, use F3 to exit the TURNOVER® Lifecycle Manager Setup Menu.

- 11 *If you plan to distribute from System B:* Make sure any directory entries that are necessary have been created. For example, if system B is now the development machine, then its IBM i system directory must contain entries for users TURNOVER and TOMSGRCV.
- 12 On System B, run the audit adjustments report (option 4 on the TURNOVER® Lifecycle Manager Reports menu) for any applications that will be used. This eliminates the “Object Changed Outside of TURNOVER® Lifecycle Manager” warning messages during form runs.

22 Distributing changes to CD or tape

You can distribute software changes on CD or tape, using TURNOVER[®] Lifecycle Manager.

Distributing to CD

TURNOVER[®] Lifecycle Manager supports two methods for distributing changes that you will write to a CD.

Save file method

- 1 Go to the Maintain system definitions (main menu option 11, option 1).
- 2 Either create a new system (F6) or find the definition to be used.
- 3 Go to Distribution Defaults for the system definition (option 9).
- 4 Enter a local directory entry in the '**Target user id and address**'.
- 5 Go to the Distribution defaults of the level of the Application where the distribution is to be done.
- 6 Add the system to the distribution list (option 1).
- 7 Create and run the form to be distributed.
- 8 Use `WRKNETF` to find out the name of the file.
- 9 Create a SAVF with the same name as the net file.
- 10 Run command `RCVNETF` with the Fromfile as the netfile, the To file/Library as the save file/Library that you created.

The network file will be sent to the user specified in the system definition. The user receiving the file must have the authority to do so. This will render a save file containing everything that is needed for distribution.

- 11 Make a CD from the save file.
- 12 Do the following, either manually or using a `LODRUN` program:
 - Restore the save file from the CD into the SOFTTURN library.

- Add SOFTTURN to the library list, and
- Call program TURCKNRF, passing it the name of the save file as the single parameter. For example:

```
CALL TURCKNRF PARM('Thhmmssjjj')
```

Distributing to tape

Using TURNOVER® Lifecycle Manager, you can distribute one or more forms to tape. To handle multiple distributions to tape, TURNOVER® Lifecycle Manager performs the following steps:

- 1 Creates the temporary library *Thhmmssjjj* (where *hhmmss* is the time and *jjj* is the last three characters of the distribution job number). This library holds the objects that need to be included on the distribution.
- 2 Creates a save file that has the same name as the distribution library.
- 3 Saves the distribution library to the save file.
- 4 Creates a data area named TURNWORK in the QTEMP library. The data area contains the name of the save file.
- 5 Saves the data area, then the save file, on tape (this occurs after you select a tape distribution method).

Using LODRUN to receive tape distributions

The LODRUN program automates the tape receive process, enabling you to receive forms on the remote computer.

You must have TURNOVER® Lifecycle Manager initialize the tape for the first form you distribute to it. (You do not need to re-initialize the tape for subsequent distributions.) This puts a LODRUN program on the tape to handle the receive process for all distributions that are stored on that same tape. To initialize the tape, respond with Y to the “Do you wish to initialize Tape on device *device*?” message. (Use N for subsequent forms you distribute to the tape.) Additional messages ask for the tape’s volume ID and density. This information is available in the upper right corner of the Display Tape Volume Information panel; use the DSPTAP command to display this panel.

23 Distribution queues

Distribution queues enable TURNOVER® Lifecycle Manager to send multiple FTP distributions simultaneously, reducing the time it takes to distribute a form to multiple systems using FTP.

Overview

Because of SNADS's inherent multi-threaded processing ability, TURNOVER® Lifecycle Manager's original distribution process was designed to be linear. SNADS processes distribution requests in the background, and then quickly returns control to TURNOVER® Lifecycle Manager, so it works well for distributing to one system or to many systems.

Unlike SNADS, however, the FTP distribution process runs completely inline, so the next system in the distribution list is not processed until the previous FTP transfer is complete. This becomes a problem if you have a large number of systems. For example, if you have 100 systems in the list and it takes 2.5 minutes to send the save file, it would take over four hours for the process to complete.

TURNOVER® Lifecycle Manager distribution queues address this problem. This feature brings the advantages of the background processing used by SNADS transmissions to FTP.

TURNOVER® Lifecycle Manager distribution queues are not tied to a particular system; they are a set of background worker jobs that you can have running that perform the actual FTP transmission of the save file. You can start as many (or as few) of these jobs as you need to meet your requirements, within the limits of the resources available. If you have 100 systems, you might use 100 queues or 10.

Configuration

- 1 Create TURNOVER® Lifecycle Manager distribution queues, so that the distributions are actually processed.

See *'Setting up TURNOVER® Lifecycle Manager distribution queues' on page 483.*

- 2 Turn on the Distribution Queues feature in the FTP distribution override settings for each system with which you want to use TURNOVER® Lifecycle Manager distribution queues.

See *'Turning on the Distribution Queues feature' on page 485.*

Setting up TURNOVER® Lifecycle Manager distribution queues

Recommendation

Create a dedicated subsystem for this process, so that you have maximum control over tuning and managing the jobs.

Setting up a dedicated subsystem

This example creates a subsystem, and then add 10 worker jobs to it. Adapt these instructions for the number of jobs and the resource usage that is appropriate for your server and network.

1 Create a memory pool.

This step is not strictly necessary; you *can* run these jobs in an existing memory pool such as *BASE or *INTERACT. However, if you want to fine tune the amount of resources that these queues can use, running the subsystem in a dedicated memory pool is the best way to do that. Use the following command:

```
CHGSHRPOOL POOL(*SHRPOOL1) SIZE(4096) ACTLVL(10) PAGING(*CALC)
TEXT('Memory Pool for TURNOVER® Lifecycle Manager Distribution Queues')
```

This command establishes a memory pool named *SHRPOOL1, allocates 4 megabytes of memory, and assigns an activity level of 10 jobs.

2 Create a subsystem description.

```
CRTSBSD SBSD(QGPL/TDSTQUEUE) POOLS((1 *SHRPOOL1)) TEXT('Subsystem for
TURNOVER® Lifecycle Manager Distribution Queues')
```

This example names the subsystem TDSTQUEUE and stores its definition in QGPL.

Do not create the subsystem in one of the TURNOVER® Lifecycle Manager libraries. If you do, you will lose it when you upgrade TURNOVER® Lifecycle Manager.

3 Add a routing entry.

Subsystems must contain a routing entry in order to process jobs. This command adds a standard routing entry.

```
ADDRTGE SBSD(QGPL/TDSTQUEUE) SEQNBR(1) CMPVAL(*ANY) PGM(QCMD)
```

4 Create a job description.

The job description is used during the next step to add the autostart jobs. You need only one job description to define the way these worker jobs will run.

```
CRTJOB JOB(QGPL/TDSTQUEUE) TEXT('JobD for TURNOVER® Lifecycle Manager  
Distribution Queue') USER(TSERVER) RTGDTA(QCMDB) RQSDTA('CALL TDSTQUE')  
INLLIBL(SOFTTURN SOFTTURND SOFTTURNE) JOBMSGQFL(*WRAP)
```

Parameter	Description
USER	Job descriptions for autostart jobs must specify a valid user. The user you specify is not critical. You can use TSERVER, which is used only for server jobs. You could create a unique user profile for this purpose if you really want to monitor what the user does.
RQSDTA	The program that runs when the autostart job starts. Specify: CALL TDSTQUE
INLLIBL	Specify all of the TURNOVER® Lifecycle Manager libraries in the TURNOVER® Lifecycle Manager environment that these jobs are servicing. Substitute the name of your TURNOVER® Lifecycle Manager library or libraries as appropriate.

If you run multiple TURNOVER® Lifecycle Manager environments, you would need one job description for each environment you need to service, and you would need to create one set of jobs for each environment. However, all of the jobs can share the same subsystem.

Add autostart jobs to the subsystem

Add the autostart jobs that will serve as the worker jobs to actually perform the FTP transfers. Run this command once for each job:

```
ADDAJE SBSD(QGPL/TDSTQUEUE) JOB(TDSTQUE001) JOB(QGPL/TDSTQUEUE)
```

For this example, run the command, press F9 to retrieve it, change the number in the JOB parameter, and run it again, f10 times.

Number the jobs so that you can identify them and know how many you have.

Create a data queue

Distributions are placed on a data queue, and the worker jobs are idling, waiting for entries on the data queue. Data queues were designed for this kind of situation, where there are multiple jobs waiting for instructions in the same place. Use this command as a guide:

```
CRTDTAQ DTAQ(SOFTTURND/TDISTQ) MAXLEN(1500) AUTORCL(*YES) TEXT('TURNOVER®  
Lifecycle Manager Distribution Queue') AUT(*CHANGE)
```

The data queue must be created in your environment data library and with the values shown. The presence of this queue in the data library helps TURNOVER® Lifecycle Manager decide at runtime whether to use distribution queues during an FTP distribution, in case the feature has been turned on without performing the accompanying setup.

Create a data area

This data area is used as an indicator that you have configured the distribution queues, so that TURNOVER® Lifecycle Manager can decide at runtime whether to attempt to use them. It must be called TDISTQ, and it must be in the TURNOVER® Lifecycle Manager data library. Use this command as a guide:

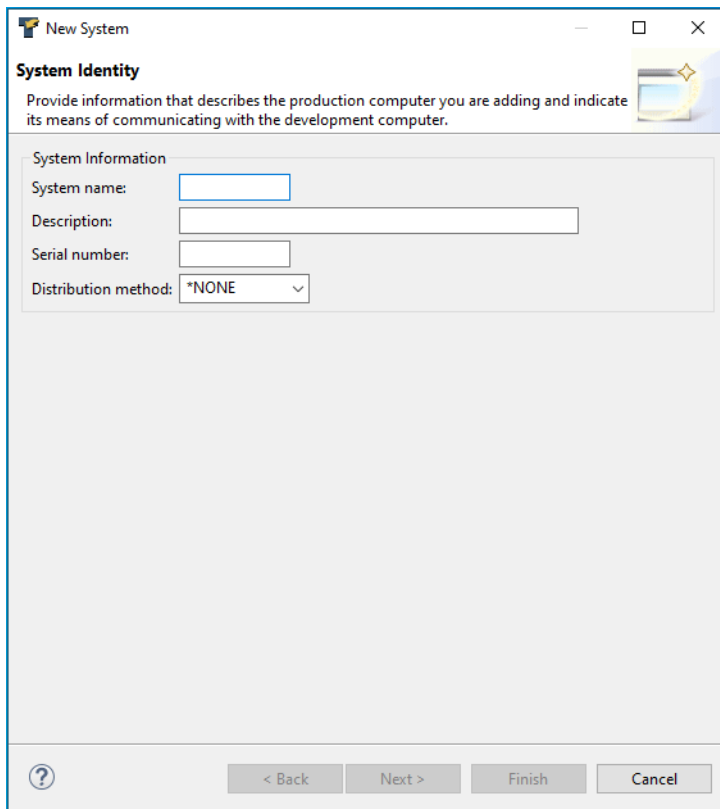
```
CRTDTAARA DTAARA(SOFTTURND/TDISTQ) TYPE(*LGL) TEXT('TURNOVER® Lifecycle  
Manager Distribution Queues')
```

Turning on the Distribution Queues feature

Once this parameter is turned on, TURNOVER® Lifecycle Manager checks at runtime to make sure that distribution queues exist.

Using the TURNOVER® Lifecycle Manager *Client*

- 1 Click  **Administration**. Right-click  **Distribution Systems**, and then click  **New System**.



The screenshot shows the 'New System' dialog box with the 'System Identity' tab selected. The dialog has a title bar with a question mark icon, a close button, and a maximize button. The main content area is titled 'System Identity' and contains a description: 'Provide information that describes the production computer you are adding and indicate its means of communicating with the development computer.' Below this is a 'System Information' section with four fields: 'System name:' (a text box), 'Description:' (a text box), 'Serial number:' (a text box), and 'Distribution method:' (a dropdown menu currently showing '*NONE'). At the bottom of the dialog are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

- 2 On the **System Identity** page, specify a system name, system description, and serial number, and specify a distribution method of *FTP.
- 3 Click **Next**.

Using the green screen interface

On the main menu, select Menu option 11 (Distribution Menu), then option 6 (Override network distribution method), and then select a system.

```

Change Distribution Method Override

System name. . . . . SLSWEB
Network distribution method . . . . *FTP          *FTP, *KNET, *CDIRECT
Remote product library . . . . . *LOCAL          *LOCAL
Remote product library iASP . . . . *SYSBAS      *LOCAL, *SYSBAS, name
Remote data library . . . . . *LOCAL            *LOCAL
Remote language library . . . . . *LOCAL          *LOCAL
Message receive job user profile. . *LOCAL        *LOCAL
      **** FTP-specific values ****
Remote system address . . . . . SLSWEB.SLS.COM

User profile for FTP . . . . . TURNOVER
Password for FTP (10 *CHAR) . . . .

Confirm password . . . . .

Mixed case password . . . . . *NO
Use Distribution Queues . . . . . *NO

F12=Cancel   F14=Use Advanced Password Level   F16=Show password

```

Managing the distribution queues

The distribution queues are controlled by the subsystem you created.

To start the distribution queues

Run this command:

```
STRSBS SBSD(QGPL/TDSTQUEUE)
```

You might want to add this command to your IPL startup program so that the subsystem is always running.

If you run the command `WRKSBSJOB`, you should see something like this:

```

Work with Subsystem Jobs                                ZEUS
                                                         MM/DD/YY 10:30:55

Subsystem . . . . . : TDSTQUEUE
Type options, press Enter.
  2=Change  3=Hold  4=End  5=Work with  6=Release  7=Display message
  8=Work with spooled files  13=Disconnect

  Opt   Job       User      Type      -----Status-----  Function
    TDSTQUE001  TSERVER  AUTO      ACTIVE      PGM-TDSTQUE
    TDSTQUE002  TSERVER  AUTO      ACTIVE      PGM-TDSTQUE
    TDSTQUE003  TSERVER  AUTO      ACTIVE      PGM-TDSTQUE
    TDSTQUE004  TSERVER  AUTO      ACTIVE      PGM-TDSTQUE
    TDSTQUE005  TSERVER  AUTO      ACTIVE      PGM-TDSTQUE
    TDSTQUE006  TSERVER  AUTO      ACTIVE      PGM-TDSTQUE
    TDSTQUE007  TSERVER  AUTO      ACTIVE      PGM-TDSTQUE
    TDSTQUE008  TSERVER  AUTO      ACTIVE      PGM-TDSTQUE
                                                         More...

Parameters or command _____
= = =>
F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F11=Display schedule data
F12=Cancel  F17=Top  F18=Bottom

```

To end the distribution queues

Run this command:

```
ENDSBS SBS (TDSTQUEUE) OPTION (*CNTRLD) DELAY (*NOLIMIT
```

The worker jobs check to see if they should end every 30 seconds, so if you end the subsystem this way, all of the jobs that are idle end within 30 seconds. Any jobs that are actively sending end when they finish with what they are currently sending.

If you end an individual job instead of the entire subsystem, you should use the *CNTRLD option with a time of 999999 to give an active job time to finish sending what it is sending.

Using multiple subsystems

If you perform most of your distributions in the evening when the system is less busy, you could create two subsystems. The first subsystem would always be running, and would have a limited number of jobs so as not to overload your server or network during business hours. You could then use a Job Schedule Entry to start and stop a second subsystem that runs only after hours. This subsystem could add more worker jobs, enabling distributions to happen more quickly.

Changes to TURNOVER® Lifecycle Manager processing

Deleting the distribution save file

This is an invisible change. In the past when the distribution job runs, it has always deleted the save file it creates at the end since it will have already sent it to all of the systems. Now, the distribution job and the worker jobs have to coordinate with each other to determine when the save file should be deleted. The last process to use the save file deletes it; typically, this will be one of the worker jobs.

Updating the form status

When the distribution job ends, it typically updates the form status from DIST-PND to either DISTRIB or PARTIAL. However, if distribution queues are in use and pending distributions are still in progress when the job ends, then the form status is updated when the final worker job has sent the save file. This ensures that the form status is changed properly to reflect any errors that may have been encountered by the worker jobs.

Name and location of FTP log spooled file

Previously, an FTP log was always produced in the distribution job for each system to which it was sent. The name of the spooled file was "FTPLOG," with the system name in the USRDTA of the spooled file. Because the FTP processing occurs within the worker jobs, those jobs produce the spooled files. If you were sending to hundreds of systems and one of them failed, you would find it very difficult to locate the right log with this new system, so these changes have been made:

- The name of the spooled file is now the target system name.
- The USRDTA contains the name of the distribution job.

With these changes in place, you can run the following command to see all the logs for the job in one place:

```
WRKSPLF SELECT(*ALL *ALL *ALL DISJOBNAME)
```

This processing has also been integrated into the Work with Distribution Status panel in the form of a new option, 4=Spooled files, to make it easy for you to retrieve information about the jobs.

Distributing message IDs

All TURNOVER® Lifecycle Manager features are supported for message IDs using normal TURNOVER® Lifecycle Manager procedures. Form builds, runs and distributions are performed in the same manner you would any other object. When distributions take place, only the message IDs on the form are distributed.

TURNOVER® Lifecycle Manager never deletes a message file; only individual message descriptions.

24 Effect of QALWOBJRST on distribution of program objects

The setting of system value QALWOBJRST can affect the distribution of program objects that adopt authority.

Problem

If system value QALWOBJRST is set to *NONE on one or more computers in your network, and you distribute programs to those computers, then TURNOVER[®] Lifecycle Manager can not restore on those systems any programs that adopt authority during the distribution process.

Symptom

If TURNOVER[®] Lifecycle Manager distributes a form to a production system where the system value QALWOBJRST is set to *NONE, then compiled program objects (such as RPG and CLP programs) will be missing from the distribution save file (*Tform#S*) on the production computer, even though the distribution job log on the development computer indicates that the objects were successfully saved into the save file.

Solutions

To resolve this situation, do one of these:

- Change the QALWOBJRST value to *ALWPGMADP to allow programs to adopt authority. This may or may not be an option for you depending on your company policies.
- Compile your programs in development so as NOT to adopt authority.
- Send only source to your production system; recompile the objects into production there.

25 Managing ASI software with TURNOVER[®] Lifecycle Manager

The TURNOVER[®] Lifecycle Manager ASI interface enables you to check out and promote ASI software components by using the TURNOVER[®] Lifecycle Manager Project-Driven Change Management System.

Overview

Source for an ASI object is maintained in multiple source files consisting of, at the lowest level, the base source member and proceeding to the highest-level, user-modified source member. For example, for any object, you might have:

MEMBERA	<i>UobjSRC</i>	ASILIB	User modifications
MEMBERA	<i>TobjSRC</i>	ASILIB	ASI temporary modifications (PTFs)
MEMBERA	<i>QobjSRC</i>	ASILIB	ASI Base member

where *obj* might be CBL, RPG, CL, and so on.

The member in TCBLSRC consists of control statements and source code that apply changes to the base member. The member in UCBLSRC (or whatever name you give it) consists of control statements and source code that apply changes to the base member after the temporary modifications in TCBLSRC have been applied.

Programmers can promote changes to members in all source files. All of the members must be available in the application level libraries to work on the program.

During promotion, TURNOVER[®] Lifecycle Manager calls the ASI `PUTCRTOBJ` command, which collates the three members together into a merged source member and compiles the object. All three source members need to be in the same library when you promote.

Installing the ASI interface

The TURNOVER[®] Lifecycle Manager ASI interface is installed when you install TURNOVER[®] Lifecycle Manager itself. Ensure that the correct type codes are in place.

How TURNOVER® Lifecycle Manager manages ASI components

Checking out ASI objects and source

When you check out source that is associated with an ASI object, TURNOVER® Lifecycle Manager searches for the user-modified source member.

- If the user-modified source member exists, TURNOVER® Lifecycle Manager copies it to the test library.
- If the user-modified source member does *not* exist, TURNOVER® Lifecycle Manager creates an empty member in the designated source checkout library.

TURNOVER® Lifecycle Manager determines where to copy source from and to by referring to the type codes in the application definition. Source file names are stored in the object type codes at each level of the application. (See *'Compiling ASI source' on page 491.*)

Compiling ASI source

When you compile a changed U source member (by using option 36), TURNOVER® Lifecycle Manager copies the T and Q source members if necessary so that the compilation can complete normally. If the T and Q source members did not already exist at that application level, TURNOVER® Lifecycle Manager deletes them after the compilation.

TURNOVER® Lifecycle Manager type codes for ASI

Type code	Type	Attribute	Sequence	Data object	Source file	Create command
CBLASI	*PGM	CBL	500	N	UCBLSRC	TURNLSLSE/TURASICMD OBJ("&LI"/"&OB") SRCMBR("&SM") SRCFL("&SL"/QCBLSRC) SECONDARYS(*YES)
CLPASI	*PGM	PGM	500	N	UCLSRC	TURNLSLSE/TURASICMD OBJ("&LI"/"&OB") SRCMBR("&SM") SL"/QCLSRC) OBJTYPE(CLP) SECONDARYS(*YES)
CMDASI	*CMD	CMD	400	N	UCMDSRC	SOFTTURNSE/TURASICMD OBJ("&LI"/"&OB") SRCMBR("&SM") SRCFL("&SL"/QCMDSRC) OBJTYPE(CMD) SECONDARYS(*YES)

Type code	Type	Attribute	Sequence	Data object	Source file	Create command
DSPASI	*FILE	DSPF	450	N	UDDSSRC	SOFTTURNE/TURASICMD OBJ("&LI"/"&OB") SRCMBR("&SM") SRCFL("&SL"/QDDSSRC) OBJTYPE(DSPF) SECONDARYS(*YES)
LFASI	*FILE	LF	425	Y	UDDSSRC	SOFTTURNE/TURASICMD OBJ("&LI"/"&OB") SRCMBR("&SM") SRCFL("&SL"/QDDSSRC) OBJTYPE(LF) SECONDARYS(*YES)
PFASI	*FILE	PF	410	Y	UDDSSRC	SOFTTURNE/TURASICMD OBJ("&LI"/"&OB") SRCMBR("&SM") SRCFL("&SL"/QDDSSRC) OBJTYPE(PF) SECONDARYS(*YES)

- If you expect to promote PTF source members, copy the above type codes to create a set for the T source files.
- If you expect to promote base source members, create a set of type codes for the Q source files. For example, you might copy type code PFAI twice to create type codes PFAST and PFASQ with source files of TDDSSRC and QDDSSRC, respectively.

Worklist support for ASI objects

All ASI objects can be managed using the worklist.

- Check out your ASI object using option 21.
- Change the source and compile using option 36.
- When you promote, TURNOVER® Lifecycle Manager uses the ASI PUTCRTOBJ command to move the objects as defined by your application.



www.softlanding.com

We welcome feedback on our documentation. Please email us at:
tech.authors@softlanding.com

www.unicomglobal.com