

Supplement #36

84 Elm Street • Peterborough, NH 03458 USA
 TEL (010)1-603-924-8818 • FAX (010)1-603-924-6348
 Website: <http://www.softlanding.com> Email: techsupport@softlanding.com

DISTRIBUTING TO VIRTUAL SYSTEMS

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OVERVIEW

Today's business environment is complex and global. It is not at all uncommon these days to find multiple companies – or multiple divisions of a single company – doing all their business data processing as independent corporate groups on a single iSeries.

These groups are typically separate and autonomous, and they often operate with their own sets of programs and files stored in separate libraries. 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 thinks and works as though it is operating its own computer.

TURNOVER® for iSeries v100 defines this concept as *virtual systems*.

Software requirements

Distribution to virtual systems is supported in TURNOVER® release 4.1 and higher.¹ You must be on a tape date of March 20, 1998 or later for this feature to be fully supported.

The following diagram shows a common distribution scenario that includes virtual systems:

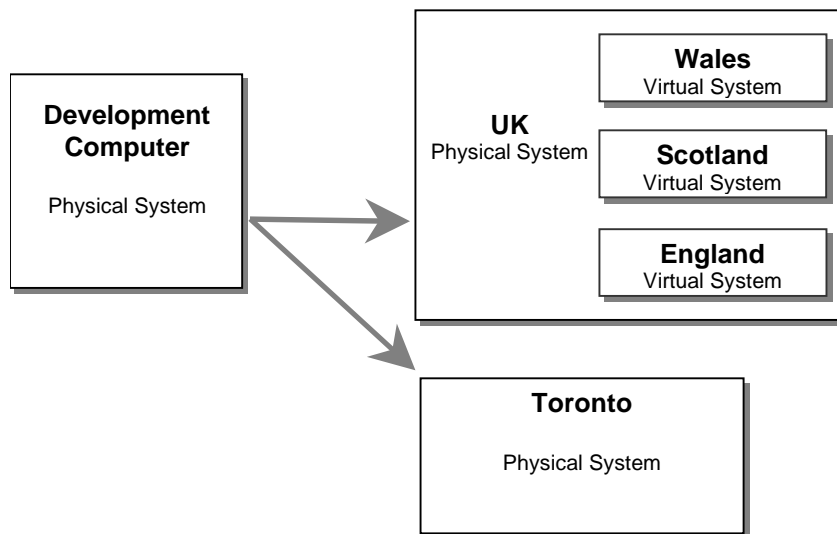


Figure 1: A Common Virtual System Distribution Scenario

The development computer distributes its changes to an iSeries that physically resides in the United Kingdom (UK) and to an iSeries that physically resides in Toronto. The iSeries 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 on the UK physical system.

The iSeries in Toronto operates as a single physical system, with no virtual systems defined.

The rest of this document outlines the steps necessary to configure TURNOVER® for iSeries v100 and the computers in your iSeries network for virtual system distributing.

¹ Be aware that Release 5.2 is the lowest version of TURNOVER® that will be supported after the year 2002.

CONFIGURING TURNOVER® FOR ISERIES V100 FOR VIRTUAL SYSTEM DISTRIBUTING

To configure TURNOVER® for iSeries v100 and your iSeries computers for distributing changes to virtual systems, you perform the following steps:

1. Create physical system definitions on the **development** computer.
2. Create virtual system definitions on the **development** computer.
3. **Distribute** the physical computer's system definition from the development computer to the remote production computers.
4. Create an application definition for the physical system on the **development** computer.
5. **Distribute** the application definition for the physical system to the remote production computers.
6. Create virtual system definitions on the **remote** production computer.
7. Create application definitions for the virtual systems on the **remote** production computers.
8. Add control records to virtual systems file TVIRSYSF.
9. Install and configure exit programs for Exits 1, 8, and 11 on the **remote** production computers. (See Step 8 for details.)
10. Ensure the target User ID used for distribution has form authority for the virtual applications on the **remote** production computers.

Each step of the procedure is described on the following pages.

Distributing to Virtual Systems

Step 1: Create physical system definitions on the development computer

On your development computer, define a physical system for each target computer that must support this feature. Select option **11** from the TURNOVER® for iSeries v100 Main Menu, then option **1** (*Maintain system definitions*). Use **F6** to define the physical system as follows:

- In this example, we will define the physical computer for the UK as system SLSUK:

```
3/16/00          Add a System Definition          QA
11:49:23          YOURSYS

Type choices, press Enter.

System name . . . . . SLSUK
System number . . . . . *DEFAULT
System description . . . System Definition for SLSUK AS/400
Machine type . . . . . 400
Model . . . . . F70
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
```

- Fill in the system information on this panel, then press **Enter**. The *System Send Distribution Defaults* panel appears:

```
3/16/00          System Send Distribution Defaults  QA
11:50:59          YOURSYS

System name . . . . . SLSUK      System Definition for SLSUK AS/400
System number . . . . .

Target user id and address . . . . . TURNOVER SLSUK      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 . . . . . Y      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
```

- Type the distribution defaults specific to this system, then press **Enter**.

Distributing to Virtual Systems

Step 2: Create virtual system definitions on the development computer

- Now define the virtual systems on the physical production computer. From the *Maintain System Definitions* panel, use **F6** to add the first virtual system. In our example, we will add the virtual system for Wales, ***VWALES**:

```
3/16/00          Add a System Definition          QA
11:52:36                                               YOURSYS

Type choices, press Enter.

System name . . . . . *VWALES
System number . . . . . *DEFAULT
System description . . . Virtual System Definition for Wales
Machine type . . . . . 400
Model . . . . . 400
Serial number . . . . . *VWALES Char, *LOCAL

Contact name . . . . . _____
Title . . . . . _____
Address Line 1 . . . . . _____
Address Line 2 . . . . . _____
City/State/Zip . . . . . _____
Country/FPC . . . . . _____
Phone . . . . . _____

F3=Exit  F10=System number  F12=Cancel
```

IMPORTANT!

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.

- Type the system information and press **Enter**.

Distributing to Virtual Systems

The *System Send Distribution Defaults* panel appears:

```

3/16/00          System Send Distribution Defaults          QA
11:53:37          YOURSYS

System name . . . . . *VWALES  Virtual System Definition for Wales
System number . . . .

Target user id and address . . . . . TURNOVER *VWALES  UserId-Add
Distribution device . . . . . *NONE Device, *SNADS, *
Distribute application definitions . . . . . N Y, N
Distribute source . . . . . N Y, N
Distribute objects . . . . . Y Y, N
Automatically distribute forms . . . . . Y Y, N
Distribution job schedule time . . . . . *CURRENT *CURRENT, hhhmmss
Schedule elapsed action . . . . . *SBMRLS *NEXTDAY, *SBMHL, . . .
Submit received forms automatically . . . . . N Y, N, *RMTDFTS
Receive logs back . . . . . N Y, N, *RMTDFTS
Receive confirmations back . . . . . Y Y, N, *RMTDFTS
Receive forms method . . . . . *AUTOSTART *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 our example, we 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:

```

3/16/00          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 Application

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      510  *SNADS      BOGGS - 5.2
SLSUK      *SNADS      System Definition for SLSUK AS/400

F3=Exit  F6=Add System Definition  F12=Cancel
  
```

Virtual system definitions for England, Scotland, and Wales that are on the UK physical computer.

Physical system definition for the physical computer in the UK.

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 have the device defined as ***NONE**.

Step 3: Distribute the physical computer's system definition from the development computer to the remote production computer

Next, distribute the physical system's definition to the remote computer. In our example, we are distributing the definition for system SLSUK from our 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. Step **6** addresses this issue.

Remember that the system definition of the development computer must reside on each production computer where distribution between the two systems will take place. If you have not done so already, use option **12** to distribute the development computer's system definition to each production computer.

Distributing to Virtual Systems

Step 4: Create application definition for the physical system on the development computer

- Using option 1 on the TURNOVER® for iSeries v100 Main Menu, create the application definition for the physical system (SKSUK) system on your development computer. In our example, application TO is created with two levels, level 1 and level 2:

```
4/28/04          Work with Application Definition          QA
                  Appl: TO   Rel:   Ver:                SYSTEM: YOURSYS
Description . . . . . TurnOver UK
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   1 TurnOver UK Level 1                       N   N      N
   2   2 TurnOver UK Level 2 Distribution to UK    N   N      N

                                Bottom

F3=Exit  F5=Refresh  F6=Create level  F12=Cancel  F14=WRKSBMJOB
F16=User options  F21=Command line  F23=More options
```

Level 2 distributes to the production computer as well as to the three virtual systems:

```
4/28/04          Application Distribution Defaults          QA
09:31:46                                               YOURSYS

Application . . . TO   Position to system name/number . . . _____
Rel . . .
Ver . . .
Lev . . .
Description . . . TurnOver UK

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

System      Device      System description                               Distribute
---  ---  ---  ---  ---
 *VENGL     *NONE     Virtual System Definition for England             N      Y
 *VSCOT     *NONE     Virtual System Definition for Scotland            N      Y
 *VWALES    *NONE     Virtual System Definition for Wales               N      Y
 SLSUK      *SNADS     System Definition for SLSUK                      N      Y

F3=Exit  F11=Show only selected  F2=System definitions
F12=Cancel  F21=Add all systems to list
```

(Application definitions for the virtual systems are created on the remote production computer(s), as described in Step 7.)

Distributing to Virtual Systems

Step 5: Distribute the application definition for the physical system to the remote production computers

- Once the application definition has been created on the development computer, you can 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.)

If you need to adjust the application definition before you distribute it, use option **5** on the Distribution Menu of the development system.

SIGN ON TO THE REMOTE PRODUCTION COMPUTER

Step 6: Create virtual system definitions on the remote production computer

- Sign on to each production computer to define the virtual systems residing on that computer.
- Select option **11** from the TURNOVER® for iSeries v100 Main Menu, then option **1** (*Maintain System Definitions*).
- Use **F6** to define the virtual systems as they were defined on your development computer:

The screenshot shows a terminal window titled "Maintain System Definitions" with the following content:

```
3/16/00          QA
11:59:04        SLSUK

2=Change  4=Delete  7=Application definitions  9=Distribution defaults
12=Distribute System  13=Change DDMF definitions  16=Distributed Application

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      510      *SNADS      BOGGS - 5.2
SLSUK      *SNADS      System Definition for SLSUK AS/400
```

Callouts in the image:

- A bracket groups the three entries for *VENGL, *VSCOT, and *VWALES, pointing to a box that says: "System definitions for England, Scotland, and Wales need to be created on the production computer."
- A line points from the entry for SLSUK to a box that says: "System definition for the development computer on the production computer."

At the bottom of the screen, it says: F3=Exit F6=Add System Definition F12=Cancel

Remember, all the system definitions on the production computer **must** match the corresponding system definitions on the development computer.

Distributing to Virtual Systems

Step 7: Create application definitions for virtual systems on the remote production computer

- Assign application version numbers to the applications that will distribute to your virtual systems.

Note: Remember, when you add the virtual system control records to file TVIRSYSF (see Step 8), the versions you enter must match the versions you use for your virtual applications.

```
3/16/00          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.	Rel
___	TO	___	___	TurnOver UK	N	N
___	TO	___	10	TurnOver Wales	N	N
___	TO	___	20	TurnOver Scotland	N	N
___	TO	___	30	TurnOver England	N	N
___	WEB	___	___	Web Demo	N	N
___	01M	___	___	Model 1	N	N
___	02M	___	___	Model 2	N	N
___	03M	___	___	Model 3	N	N
___	04M	___	___	Model 4	N	N
___	05M	___	___	Model 5	N	N

F3=Exit F5=Refresh F6=Create application definition F12=Cancel
F14=WRKSBMJOB F21=Command line F23=More options

More...

Virtual system version numbers must match these virtual application version numbers.

On the production computer, application definitions must be created for each virtual system. (As mentioned earlier, 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 (see Step 8).

Distributing to Virtual Systems

Step 8: Add control records to virtual systems file TVIRSYSF

On the *receiving* (remote) computer, you must populate file TVIRSYSF (in the TURNOVER® for iSeries v100 data library) with entries for each virtual system. You can do this using DFU, DBU, SQL, a user program, or some other utility that enables the update of data in a file. You need to add the records to the file as shown in this panel:

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>*VWALES</u>		
Virtual System #: <u>0</u>		
Virtual Version: <u>10</u>		
Reserved 1: _____		
Reserved 1: _____		
Reserved 1: _____		
Reserved 1: _____		
Reserved 1: _____		
F3=Exit	F5=Refresh	F6=Select format
F9=Insert	F10=Entry	F11=Change

IMPORTANT!

The virtual system name and number must match the virtual system definition created in Step 6. The *version* must match the version used in the application definition that you created in Step 7.

In our example, there are three entries in file TVIRSYSF. The entry for Scotland is shown below; the entry for England is shown on the next page.

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

Distributing to Virtual Systems

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

Distributing to Virtual Systems

A schematic of the virtual system setup in our example

Development Computer:



Appl: TO

Production Computer:

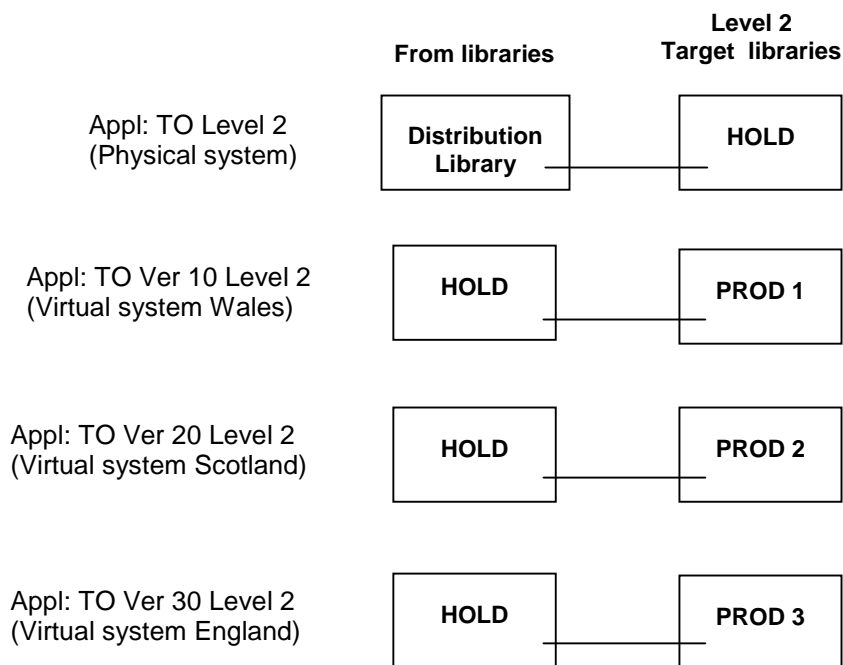


Figure 2: Sample application schematic for virtual system distribution

Referring to the schematic, the target libraries for applications TO Ver 10, TO Ver 20, and TO Ver 30 do not necessarily have to be production libraries. They could be QA or STAGING libraries. Your applications might include additional levels (after level 2) to promote to STAGING, PRODUCTION, and so on.

In our example, application TO level 2 (which is the application definition for the physical system) has target libraries named HOLD. From the HOLD library, the information will be copied into the virtual system libraries.

Distributing to Virtual Systems

Now consider our example. 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:

```

3/16/00          Work with Application Definitions          Your Company, Inc.
                                                         SLSUK
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    10  2   2   TurnOver Hold                N     N
___  TO    20  2   2   TurnOver Wales                N     N
___  TO    30  2   2   Turnover Scotland            N     N
___  TO    30  2   2   Turnover 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.

This is what the library defaults for our physical application TO level 2 would look like:

```

3/16/00          Library Defaults          Your Company, Inc.
12:19:16        Application: TO Rel:   Ver:   Lev:  2   SLSUK

Type choices, press Enter.

Data objects Target library . . . . . HOLD
Other objects Target library . . . . . HOLD
Source Target library . . . . . HOLD

Data objects From library . . . . . _____
Other objects From library . . . . . _____
Source From library . . . . . _____

Bypass copy prompt when checking out source . . . N (Y,N)

Data object name mask . . . . . _____
Other object name mask . . . . . _____

F3=Exit  F8=IFS Path defaults  F12=Cancel  F19=Explode data libraries

```

The *from* library fields are blank because the *from* libraries default to the distribution library (TnnnnnnnS) when the form is created.

Distributing to Virtual Systems

This is what the library defaults for the virtual system application TO version 10 level 2 would look like on the remote production computer (SLSUK):

```

3/16/00          Library Defaults          Your Company, Inc.
12:24:45        Application: TO  Rel:    Ver: 10 Lev: 2  SLSUK

Type choices, press Enter.

                                Field Attributes
                                R=Restrict, L=Lock

Data objects Target library . . . . . PRODLIB          L
Other objects Target library . . . . . PRODLIB          L
Source Target library . . . . . PRODLIB                L

Data objects From library . . . . . HOLD              L
Other objects From library . . . . . HOLD              L
Source From library . . . . . HOLD                    L

Bypass copy prompt when checking out source . . . N (Y,N)  L

Data object name mask . . . . . _____            L
Other object name mask . . . . . _____            L

F3=Exit  F8=IFS Path defaults  F12=Cancel  F19=Explode data libraries
  
```

Make sure the *from* libraries specify the **HOLD** library.

The line defaults for the virtual application (such as TO version 10 level 2) are important as well. The *method* normally might be **MO** (move object) on your production computers. For virtual systems, however, you must use method **CD** (create duplicate object) or method **CSCO** (copy source, compile object).

```

3/16/00          Line Defaults          Your Company, Inc.
12:25:59        Application: TO  Rel:    Ver: 10 Lev: 2  SLSUK

Type choices, press Enter.

                                Field Attributes
                                R=Restrict, L=Lock

Method . . . . . CD _____          CSCO, MO, CD, COPR, _____
                                                CSMO, CSCD, CS, *NULL

Create parameters . . . . . P           P, T, S, R, C
Reference object . . . . . REF* _____ Name, REF*
  Library . . . . . LIBNAME _____ Name
Authority . . . . . P                 P, T, S, R
Reference object . . . . . REF* _____ Name, REF*
  Library . . . . . LIBNAME _____ Name

Delete test object . . . . . N         Y, N
Delete test source . . . . . N         Y, N
Programmer . . . . . *CHECKOUT _____ *USRPRF, *FORM, *CHECKOUT
Project task reference . . . *FORM _____ Code, *FORM

F3=Exit  F8=IFS Line defaults  F12=Cancel
  
```

For a virtual system, the promotion method must be either **CD** or **CSCO**.

Delete test object and **Delete test source** must be set to **N**.

The line defaults for all of the virtual applications must be defined as *Delete test source/object* = **N**. A **pre-run exit** program (Exit 8) will change the form lines to *Delete test source/object* = **Y** if the form is the last of the group to run (all source/objects have been promoted to PROD1, PROD2, PROD3, and so on).

Step 9: Install and configure exit programs for Exits 1, 8, and 11 on the remote production computer

Install and compile the Exit programs

A **Pre-Run exit program** (Exit 8) and **Post-run exit programs** (Exit 1 and 11) are required *on the receiving* (remote) computer. The source for the exit programs are in ACLSRC and ARPGLESRC in your TURNOVER® for iSeries v100 product library SOFTTURN (or in your TURNOVER® for iSeries v100 *program_product_library* name).

The programs designated as CLLE are in ACLSRC; those designated as RPGLE are in ARPGLESRC:

- 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.

Note: If you distribute objects only, you need to modify program VB01C1 (CLLE). The **CPYFORMI** command needs to pass the parameter **DROPCOPRS(*NO)**. The default for this parameter 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) – Pre-run exit program. This program checks to see if this is the last virtual system form to run. If it is the last form to run, this program changes the *Delete test source/object* flag to **Y** to clean up the Hold library.
- VB11R1 (RPGLE) – Post-run exit program. This program sends the form logs back to the original sending system for the base form. (**Note:** 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.)

On the remote computer, these programs must be compiled into the TURNOVER® for iSeries v100 product library *or* into another library that is included as an *additional environment library* in your TURNOVER® for iSeries v100 environment definition (**WRKTOENV**). *The latter option is recommended, this way, programs will not be overlaid by future TURNOVER® for iSeries v100 upgrades/changes.*

<p><i>TURNOVER® for iSeries v100 product, data and language libraries (i.e., SOFTTURN, SOFTTURND, SOFTTURNE) must be in the library list in order to compile these programs.</i></p>

Distributing to Virtual Systems

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 may need to modify this statement in program VB01R1 if you are distributing from more than one level of your application.***

Configure TURNOVER® for iSeries v100 to use the Exit programs

After compiling the programs, you must configure the TURNOVER® for iSeries v100 exits on the production computer:

1. Select option **8 (Utility Menu)** from the TURNOVER® for iSeries v100 Main Menu.
2. Select option **7 (Work with Exits)**.
3. Update Exits 1, 8, and 11 on the **Work with Exits** panel, as follows:

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	Y	VB08R1	YOURLIB	*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			

F3=Exit F8=IFS Exits F12=Cancel F21=Command line

To update Exit 1, type the program name VB01R1 and the library where this program object resides. 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.

Follow the same procedure to update Exit 8 using program name VB08R1, and Exit 11, using program name VB11R1.

If you are already using Exits 1, 8, or 11, then *your* exit program must call our virtual system programs or vice versa. The order in which you choose to call exit programs is entirely at your discretion.

Distributing to Virtual Systems

Step 10: Ensure the User ID used for distribution has form authority for the virtual applications on the remote production computers

It is important that the target User ID specified in the *System Send Distribution Defaults* has the authority to add a form to the virtual applications. Using option **3** from the Main Menu, ensure that the user (in this example, the user is TURNOVER) has authority. Find the user TURNOVER and select it with option **1**. Press **Enter**.

```
3/16/00          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
      TO
      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
```

Find the virtual application definitions and ensure they have a '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:

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)

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® for iSeries v100 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* = 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 *xxxxxxx* = 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. If you are using Exit 11, 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. Select option **6** (*Work with Forms*) from the TURNOVER® for iSeries v100 Main Menu.
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. Select option **11** (*Distribution Menu*) from the TURNOVER® for iSeries v100 Main Menu.
5. Select option **2** (*Distribute Forms*) from the Distribution Menu.
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.

As always, if you have any questions concerning the information contained in this document, please call our Technical Support line for assistance at 1-800-545-9485.

Truly yours,

Technical Support Staff