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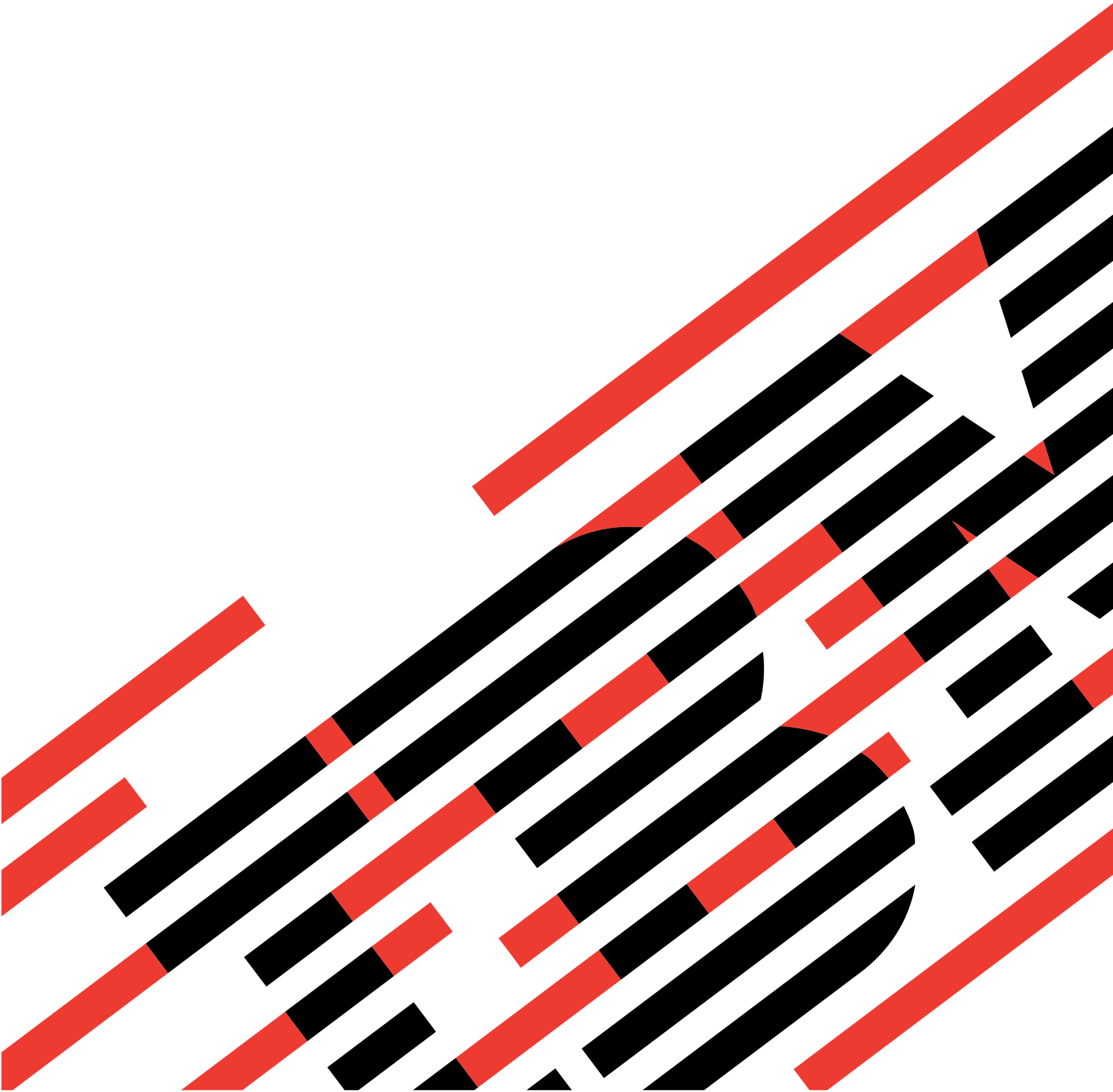
Central site distribution



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Central site distribution

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Central site distribution

Central site distribution is the process of duplicating the software of one iSeries(TM) server » or duplicating the software of a logical partition, « and distributing it to multiple iSeries servers. This mechanism is especially useful and convenient when your network is large and you want all the iSeries servers in your computing environment to be identical. The central site distribution process saves you time, effort, and expense by reducing the number of steps in the installation procedures for the target systems.

Central site distribution is most often used to distribute the software involved in a full system upgrade. This includes software such as the Operating System/400(R), program temporary fixes (PTFs), IBM(R) licensed programs, non-IBM licensed programs, and user libraries. » You can also use central site distribution to distribute the software of a logical partition to several iSeries systems that may or may not be partitioned. «

Although you can use central site distribution to distribute one or more licensed programs, the quickest and most efficient way to distribute one or more licensed programs is to use the Management Central distribution function available in iSeries Navigator. Refer to Manage software products for more information. You can also distribute one or more licensed programs using CD-ROM. » Refer to Using CD-ROM in Distributing iSeries Software for instructions about premastering a CD-ROM for distribution. «

If you plan to distribute the software of a full-system upgrade including user data to only one server, go to the Migration topic.

See “What’s new for V5R2” on page 2 for new and changed information for central site distribution and “Print this topic” on page 2 if you want to print the entire topic.

Complete the following checklists of tasks to distribute software from a central system:

“Prepare to distribute software checklist” on page 3
Find information about preparing the central system and target systems for the distribution of software from a central system. This includes preparing licensing information for keyed products and standard products that contain license information. It also includes selecting the installation profile, the installation method for the target systems, and the distribution media.

“Create distribution media checklist” on page 6
These instructions lead you to the GO LICPGM menu where you create the distribution media. After the media is created, you must verify the contents and create copies of the media.

“Install distribution media checklist” on page 8
These instructions lead you to the Software Installation manual to install the distribution media on the target systems. Then, you must complete a list of tasks that may apply to your distribution such as verifying that the user-defined installation program installed successfully.

Use the following information to understand the concepts involved in the central site distribution process or to troubleshoot the installation of the user-defined installation program:

“Central site distribution concepts” on page 9
Find out the basics about distributing software from a central system. Review the process of distributing software from a central system. Learn which distribution media is best for your computing environment. Find information about the benefits of using an installation profile and writing a user-defined installation program. Learn about compressing licensed programs and distributing secondary language files.

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“Troubleshoot installation of the user-defined installation (QLPUSER) program” on page 15
This information describes common reasons why the QLPUSER program did not install successfully and how to ensure that the error does not occur again.

Note: Read the “Code disclaimer information” on page 21 for important legal information.

What’s new for V5R2

The Central site distribution topic has been restructured for ease of use and incorporates a new medium for central site distribution.

New distribution medium

In this release, you can create a digital video disc (DVD), convert it to an image catalog, and then distribute software using the image catalog. It is fast, convenient, and may be more cost-effective than other distribution media. It is only supported for distributions of V5R2 to V5R2.

How to see what’s new or changed

To help you see where technical changes have been made, this information uses:

- The » image to mark where new or changed information begins.
- The « image to mark where new or changed information ends.

To find other information about what’s new or changed this release, see the Memo to Users.

Print this topic

To view or download the PDF version, select Central site distribution (about 30 pages).

You may want to print only the specific reference information associated with central site distribution.

- “Distribution media contents” on page 16
- “Licensed programs that do not support secondary languages” on page 19
- “Cover sheet” on page 20

Other information

You can view or print the related topic and manual:

- Install the OS/400(R) release and related software
- Software Installation manual (about 250 pages).

Saving PDF files

To save a PDF on your workstation for viewing or printing:

1. Right-click the PDF in your browser (right-click the link above).
2. Click **Save Target As...** if you are using Internet Explorer. Click **Save Link As...** if you are using Netscape Communicator.
3. Navigate to the directory in which you would like to save the PDF.
4. Click **Save**.

Downloading Adobe Acrobat Reader

If you need Adobe Acrobat Reader to view or print these PDFs, you can download a copy from the Adobe Web site .

Prepare to distribute software checklist

To distribute software from a central system, complete the steps in the following checklist. First, complete the ″Before you begin″ checklist. Then do the steps under ″Prepare to distribute software from a central system.″ Finally, complete the ″When you are finished″ checklist.

Before you begin
☐ Become familiar with the “Overview of tasks to distribute software from a central system” on page 11. This is an overview of the central site distribution process including an outline of the objects saved using option 40 (Create a distribution media) on the GO LICPGM menu.
☐ Verify that the target systems have adequate storage space to handle all distributed licensed programs. Refer to Ensure the server meets disk storage requirements to verify adequate storage space.
☐ Verify that the central and target systems will be at compatible software and hardware releases after the central site distribution. Refer to the IBM @server iSeries Handbook to determine which OS/400(R) releases can be installed on what models.
☐ Verify that the central and target systems will be at compatible OS/400 releases after the central site distribution. Refer to Release interoperability to verify this. If you have several iSeries(TM) servers in a network, they must be at compatible releases to exchange data or to save and restore objects.
☐ » Ensure that you do not plan to distribute IBM(R) WebSphere(R) Host Publisher. This product does not support save and restore functions and thus cannot be distributed. To install IBM WebSphere Host Publisher on the target system refer to the V5R2 iSeries Access for Web Installation and Usage Guide available at iSeries Access for Web. «
☐ Ensure that all program temporary fixes (PTFs) are applied to the central system. For more information about PTFs in the central site distribution process, refer to “Central site distribution of program temporary fixes (PTFs)” on page 15.
☐ Ensure the central system is stable. You may want to test the central system for a few weeks to ensure stability.

Prepare to distribute software from a central system

1. Select the installation method for the target systems.
   Choose automatic installation or manual installation as described in “Installation methods for the target systems” on page 14.
2. Select or customize an installation profile.
   You must select or customize one of these profiles:
   - Replace current release (QRPLRELLVL)
   - Install new system (QINSNEWSYS)
   - IBM replace current release (QIBMRPLRLS)
   - Change primary language (QCHGPRILNG)

   For more information refer to “Installation profiles” on page 13.
3. Select the distribution media.
   Select » image catalog, « tape, digital video disc (DVD), or CD-ROM as described in “Types of distribution media for central site distribution” on page 12.
4. **“Prepare software license information for distribution” on page 4**
   Prepare the license information of products that use OS/400 license management.

5. **Optional: “Write a user-defined installation program for the target systems” on page 5**
   Automatically restore additional libraries and other objects that you plan to save on the distribution media.
6. Consider compressing and decompressing licensed programs.
   Compress licensed programs using the Compress Object (CPROBJ) command. For information, refer to “Licensed program compression and decompression” on page 14.

When you are finished
☐ Record your selections of the installation method for the target systems, the installation profile, and the distribution media.
☐ Record a strategy for distributing licensed information and ensure that information is ready to distribute.
☐ Ensure your user-defined program works as expected.

Code example disclaimer

IBM grants you a nonexclusive copyright license to use all programming code examples from which you can generate similar function tailored to your own specific needs.

All sample code is provided by IBM for illustrative purposes only. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs.

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What to do next:
Complete the “Create distribution media checklist” on page 6

Prepare software license information for distribution

Distribute “Distribution of software license information” on page 11 for licensed programs using distribution media and central site distribution. The software license information you must distribute is the usage limit for each product. The usage limit must be distributed to ensure that the product can be used on the target systems. Keyed products require more care than standard products because they require a unique license key for each target system. You can also “Distribute software license information using iSeries Navigator or paper” on page 5.

Complete the following instructions to prepare software license information for distribution:

1. Prepare license information for standard products:

   To distribute license information for standard products, you must set the usage limit for the target systems. After you complete this task, the usage limit will automatically be included on the distribution media.
2. Prepare license keys for keyed products:
   a. Run the Add License Key (ADDLICKEY) command to add all the license keys for all the target systems to the license key repository. To learn more about the license key repository, see Add license key information.
   b. Create the license key file using the Display License Key Information (DSPLICKEY) command:
      ```
      DSPLICKEY PRDID(*ALL) LICTRM(*ALL) FEATURE(*ALL) SERIAL(*ALL) OUTPUT(*LICKEYFILE)
      LICKEYFILE(QSYS/QALZALPKEY) LICKEYMBR(QALZALPKEY)
      ```
      The license key file must be called QALZALPKEY in the QSYS library. Any other name results in a failure to install the license keys during the software upgrade.

What to do next:
Finish the Prepare to distribute software checklist (See page 3)

Distribute software license information using iSeries Navigator or paper

Complete the following tasks to distribute software license information using iSeries(TM) Navigator or paper:

- Distribute license keys using iSeries Navigator
  Use the package and send option of the Management Central distribution function available in iSeries Navigator to distribute license keys.
- Distribute license information on paper:
  1. Prepare the license information for distribution:
     a. Find the Proof of Entitlement for each product you plan to distribute.
     b. Make copies of each Proof of Entitlement.
     c. Send a copy of each Proof of Entitlement along with the distribution media to each target system.
  2. After the distribution media is installed on the target system, update the license information at the target system:
     a. Display a list of the installed products and features that use license management using the Work with License Information (WRKLICINF) command.
     b. Press F11 (Display usage information) to display the usage limit. The usage limit for a product is normally 0 if it has not been updated.
     c. Select option 5 (Display detail) to check the compliance type of the product. If the compliance type is *KEYED, continue to the next step. If the compliance type is *WARNING or *OPRACTION, set the usage limit for standard products and then continue to the next step.
     d. Type 1 (Add license key) in the option column next to the product you want to add and press Enter.
     e. Update the prompts to match the information you received from your software provider and press Enter.

        Normally, you need to update the license key and usage limit fields. In some cases, you may need to update the processor group, the expiration date, and the vendor data fields. The new usage limit is displayed on the Work with License Information display.
     f. Repeat the above steps for each product that is displayed by the WRKLICINF command.

Write a user-defined installation program for the target systems

The user-defined installation program performs tasks and sends the appropriate instructions to the operators at the target systems. It allows you to perform many installation tasks automatically and install customer-written applications at the target systems.

To write the user-defined installation program, complete the following tasks:

1. Include instructions in your program to restore objects on the target system. For a list of instructions you can include in the user-defined installation program refer to “Installation tasks for the target systems” on page 8. You can include all of the instructions in your program or only those that apply to your distribution.
2. Create and save your program in the QGPL library and call it QLPUSER. If the QLPUSER program already exists in the QGPL library, the system deletes the program during automatic installation before restoring the QGPL library. This ensures that the distribution media will control additional processing. The central system must have a separate copy of the QLPUSER program if it uses automatic installation of IBM-supplied media.
3. When you finish writing your program, perform the following tasks:
   a. Test your user-defined installation program to ensure that it works as expected.
   b. Keep a copy of your program in one of your user libraries on the central system.

c. If you have several target systems that need unique processing, create a separate program for each.

Example: User-defined installation program

The following control language (CL) program is an example of a user-defined installation program. It sends an instruction to the operator at the target system. It also restores a library that contains an application and copies the command to start the application in the QGPL library:

Note: The &DEVICE parameter in the example is the name of your media device. The &SUCCESS parameter is used as an indication of whether all licensed programs installed successfully.

```
PGM        PARM(&DEVICE &SUCCESS)
 DCL        VAR(&DEVICE) TYPE(*CHAR) LEN(10)
 DCL        VAR(&SUCCESS) TYPE(*CHAR) LEN(1)
 IF         COND(&SUCCESS *EQ '1') THEN(DO)
      SNDUSRMSG  MSG('Load the tape in ' *CAT &DEVICE *CAT +
                           'and press the Enter key.')
      RSTLIB SAVLIB(APP1) DEV(&DEVICE)
      CRTDUPOBJ OBJ(STRAPP1) FROMLIB(APP1)   +
                           OBJTYPE(*CMD) TOLIB(QGPL)
 ENDDO
 ELSE
      SNDUSRMSG  MSG('One or more licensed programs failed to +
                           install.')
ENDPGM
```

Note: Read the “Code disclaimer information” on page 21 for important legal information.

What to do next:
Finish the Prepare to distribute software checklist (See page 4)

Create distribution media checklist

If you selected » image catalog, « tape, or DVD as the distribution media, complete the following checklist to create the distribution media. First, complete the ″Before you begin″ checklist. Then, do the steps under ″Create the distribution media.″ Finally, complete the ″When you are finished″ checklist.

» If you selected CD-ROM as the distribution media, refer to Using CD-ROM in Distributing iSeries(TM) Software to create the CD-ROM. «

Before you begin
☐ If you plan to distribute “Distribution of primary and secondary language files” on page 15, ensure you know the following: • The national language version feature code for the secondary language. • The “Licensed programs that do not support secondary languages” on page 19.
☐ Print a copy of the distribution media “Cover sheet” on page 20. You will need it when you create the distribution media.
☐ Ensure that you have a dedicated central system.
☐ Ensure that you have *SAVSYS and *JOBCTL special authorities. If you do not have these authorities, you will be unable to create the distribution media.
☐ Ensure that *JRNRCV objects are not in the QSYS library.
☐ Change the QALWOBJRST (Allow Object Restore) system value to *ALL on the central system. The Allow Object Restore (QALWOBJRST) system value specifies whether objects with security-sensitive attributes can be restored.

Create the distribution media

1. Rename or delete history logs on the central system:
   a. Type `CHGMSGQ MSGQ(QHST) DLVRY(*DFT)` to turn all message logging off.
   b. Type `DSPLOG QHST` (Display History Log) to make sure that all messages are written to the history log. Press Enter after the history log is shown.
   c. Type `WRKOBJ QSYS/QHST* *FILE` (Work with Objects and Display All History Logs) to work with all of the history logs. Press Enter.
   d. Use the rename or delete option on each history log. The history logs must be deleted from QSYS or renamed to make sure the history logs will not be distributed to the target system.
2. Select option 40 (Create a distribution media) from the GO LICPGM menu and complete each task.
3. After you complete option 40, complete the following tasks to save secondary language files to the distribution media. In the name of the QSYS29*xx* library, and the language parameter of the SAVLICPGM command, *xx* represents the national language version feature code for the secondary language.
   a. Save the QSYS29*xx* library. This library contains the secondary language files.
   b. Save each licensed program specifying the language parameter and the object type parameter for each licensed program. The parameter of OBJTYPE must be *LNG. For example: SAVLICPGM LICPGM(5722WDS) DEV(TAP01) LNG(29*xx*) OBJTYPE(*LNG) ENDOPT(*LEAVE)
4. Save additional user libraries to the distribution media using the Save Library (SAVLIB) command.
5. Save user directories and other objects to the distribution media using the Save (SAV) command.
6. Save the license keys file at the end of the last distribution media.
7. » If you plan to add DVD media to an image catalog go to Scenario: Prepare to install from an image catalog. «

The User Profiles (QFILEUPR) file and the Device Configuration (QFILEIOC) file do not appear on the list of file names supplied by IBM(R). However, these files appear on the distribution media you create using option 40 (Create a distribution media).

When you are finished
☐ Type the Change Message Queue (CHGMSGQ) command to set the delivery parameter for the QHST message queue to the previous value (before you create the distribution media). This turns all message logging on again.
☐ Verify the contents of the distribution media. Use the Display Tape (DSPTAP) command to verify the contents of tape. Use the Display Optical (DSPOPT) command to verify the contents of DVD. For a complete list of files saved to the distribution media refer to “Distribution media contents” on page 16.
☐ Record a listing of licensed programs on the distribution media cover sheet. Use the DSPTAP command to display a list of licensed programs on tape. Use the Work with Optical Volumes (WRKOPTVOL) command to display a list of licensed program on DVD.
☐ Duplicate the media. Make one copy for each target system. Use the Duplicate Tape (DUPTAP) command to duplicate tape. Use the Duplicate Optical (DUPOPT) command to duplicate DVD.
☐ Make copies of the distribution media cover sheet as needed.
☐ Include a cover sheet with each copy of the distribution media. The target systems use the cover sheet to locate a specific licensed program on the distribution media.

What to do next:

Complete the “Install distribution media checklist” on page 8

Install distribution media checklist

To install the distribution media at the target system, complete the following steps. When you have finished installing the distribution media and restoring objects to the target system, complete the steps that apply to your distribution in the ″When you are finished″ checklist.

1. Install the distribution media on the target systems using the Software Installation manual:
   a. Go to chapter 3 if you plan to install the distribution media using automatic installation.
   b. Go to chapter 4 if you plan to install the distribution media using manual installation.

   After you finish the checklist for completing the installation, you are finished installing the distribution media.
2. If you did not write a user-defined installation program, you must complete the tasks in “Installation tasks for the target systems” to restore objects to the target systems.

When you are finished
☐ Verify the user-defined installation program (QLPUSER) loaded successfully (See page 9) if you wrote a user-defined installation program.
☐ Clear two files from the integrated file system (See page 9) if you distributed Infoprint(R) Designer for iSeries(TM).
☐ Change the electronic customer support data (See page 9) if you want to.

You have completed the central site distribution.

Installation tasks for the target systems

If you did not write a user-defined installation program, you must complete the following tasks to restore objects to the target system that were saved to the distribution media. You can include all of these tasks or some of these tasks in a user-defined installation program. The program then automatically performs these tasks after the distribution media is installed on the target system.

Complete the following tasks after the distribution media has been installed on the target system if you did not write a user-defined installation program; or include these tasks in your user-defined installation program. Ensure that only objects saved to the distribution media are restored and that those objects are restored in the same order they are saved.

- Restore user profiles using the Restore User Profile (RSTUSRPRF) command.
- Restore system configuration data using the Restore Configuration (RSTCFG) command.

Note: The only time restoring system configuration data is appropriate is when the central and target systems have exactly the same hardware configuration.

- Restore user libraries using the Restore Library (RSTLIB) command.
- Restore file system objects using the Restore (RST) command.
- Install new licensed programs that IBM(R) distributes independently from an OS/400(R) release.
- Restore secondary language files:
  1. Restore the QSYS29*xx* library on the target system using the Restore Library (RSTLIB) command, where *xx* represents the national language version feature code for the secondary language.
  2. Restore the licensed programs on the target system using the Restore Licensed Program (RSTLICPGM) command, specifying 29*xx* for the LNG parameter and *LNG for the RSTOBJ parameter. For example:
     RSTLICPGM LICPGM(5722WDS) DEV(TAP01) RSTOBJ(*LNG) LNG(29xx) ENDOPT(*LEAVE)
- Install applications using control language (CL) commands.

- Install user products that are packaged by the System Manager for iSeries(TM) licensed program using the Restore Licensed Program (RSTLICPGM) command.
- Restore license key information:
  1. Restore the license keys file.
  2. Run the Add License Key (ADDLICKEY) command to add all of the *LOCAL licenses from the license keys file.
  3. Delete the license keys file.

What to do next:

- If you installed the distribution media on the target system, finish the “Install distribution media checklist” on page 8.
- If you plan to write a user-defined installation program, go back to “Write a user-defined installation program for the target systems” on page 5.

Optional tasks to complete after installation

When you have completed the installation of the distribution media on the target system, perform the following tasks that apply to your distribution on the target system:

Verify that the user-defined installation program (QLPUSER) loaded successfully:

1. Select option 50 (Display log for messages) from the GO LICPGM menu.
2. Verify that the message received is `User install processing completed.`

Clear two files in the integrated file system if you distributed Infoprint(R) Designer for iSeries(TM):

- At the command line, type
  `RMVLNK '/QIBM/ProdData/AFPDesigner/session/IPDes'`
- At the command line, type
  `RMVLNK '/QIBM/ProdData/AFPDesigner/session/IPIEd'`

Change the electronic customer support data

1. Change the telephone numbers for service and marketing:
   - Type `CALL QESPHONE` and press Enter.
   - Type `CALL QTIPHONE` and press Enter.
2. Change the information in the contact database to include a person and a voice telephone number at the location of the target system:
   a. Enter the Work with Support Contact Information (WRKCNTINF) command from any command line.
   b. Select option 2 (Work with local service information) on the Work with Support Contact Information display.

Central site distribution concepts

Central site distribution is the process of duplicating the software of one iSeries(TM) server » or duplicating the software of a logical partition, « and distributing it to multiple iSeries servers. Following are the pieces that make up the central site distribution process:

“Central site distribution terminology” on page 10
Ensure that you are familiar with the terms specific to central site distribution.

“Overview of tasks to distribute software from a central system” on page 11
Become familiar with the central site distribution process. First, you must prepare to distribute software from a central system. Next, create the distribution media using option 40 (Create a

distribution media). Then, save additional objects to the media such as user libraries, directories, and secondary language files. Finally, install the media on the target systems.

“Distribution of software license information” on page 11
Learn about software license information and when the appropriate time is to distribute it.

“Types of distribution media for central site distribution” on page 12
Find information about » image catalogs, « digital video disc (DVD), tape, and CD-ROM. Each distribution media has advantages and disadvantages. Determine which media suits your computing environment.

“Installation profiles” on page 13
IBM(R) supplies four installation profiles that you can use to install the distribution media at the target systems. You can also customize these profiles to suit your specific needs.

“Benefits of using installation profiles to install distribution media” on page 13
Read about the benefits of using an installation profile to install distribution media on the target systems.

“Installation methods for the target systems” on page 14
You can install the distribution media automatically or manually at the target systems.

“Licensed program compression and decompression” on page 14
When you compress licensed programs you receive several benefits including saving storage space.

“Distribution of primary and secondary language files” on page 15
You can distribute primary and secondary language files as part of the central site distribution.

“Central site distribution of program temporary fixes (PTFs)” on page 15
The central site distribution process allows you to apply PTFs to the central system and distribute them to the target system. You only have to apply PTFs once.

Central site distribution terminology

These terms are specific to central site distribution. For more terms and concepts, you can access the iSeries Information Center glossary.

Central site distribution
The process of duplicating the software of one iSeries(TM) server » or duplicating the software of a logical partition, « and distributing it to multiple iSeries servers » and partitions. «

Central system
The iSeries server that is licensed to receive media supplied by IBM(R). In a distributed systems network, the central system is usually defined to be the focal point in a communications network for alerts, application design, and network management tasks.

The central system can also distribute licensed programs to other iSeries servers that operate independently of the central system. However, these systems depend on the central system for distributing licensed programs.

Full-system upgrade
The new version of the OS/400(R) operating system and may contain other IBM licensed programs, non-IBM licensed programs, program temporary fixes (PTFs), and customer-written applications.

Keyed products
Licensed programs that require a license key. These products have a compliance type of *KEYED.

Standard products
Licensed programs that contain licensing information which do not require a license key. These products have a compliance type of *WARNING or *OPRACTION.

Target system
The iSeries server that depends on the central system for distribution of licensed internal code, the OS/400 base operating system, and license programs. These systems are possibly unattended.

The target systems can be part of a distributed systems communications network, or they may operate independently of the central system but rely on the central system for licensed program distributions and for application development and maintenance.

Overview of tasks to distribute software from a central system

The following is an overview of tasks involved in distributing software from a central system:

1. Prepare to distribute software from a central system.
   First, you must select the type of distribution media to use, an installation profile, and an installation method for the target systems. Then, you may want to write a user-defined installation program to eliminate installation tasks for the operators at the target systems. Finally, ensure the central system and target systems are ready for distribution.
2. Create the distribution media using option 40 on the GO LICPGM menu.
   a. The following is a list of tasks completed using option 40:
      1) End all subsystems.
      2) Save the Licensed Internal Code, OS/400(R) base operating system, system configuration data, security objects, system resources manager (SRM) objects, and user profiles.
      3) Save the QGPL library. This library includes the user-defined installation program called QLPUSER.
      4) Save the QUSRSYS library.
      5) Save licensed programs you want to distribute. Select licensed programs you want to distribute from the Save Licensed Program display. The OS/400 Extended Base Support and the OS/400 Extended Base Directory Support licensed programs are pre-selected because they are required.
   b. Save additional objects to the distribution media after option 40 is complete. For example, you can save user libraries, user directories, and secondary language files. If you write a user-defined installation program, ensure that it restores these additional libraries and objects.
3. Install the distribution media on the target systems.

Do not put objects into the QGPL and QUSRSYS libraries on the central system that you do not want to distribute to the target systems.

For a detailed description of files saved to the distribution media refer to “Distribution media contents” on page 16.

Distribution of software license information

You can distribute license information for software products that use OS/400(R) license management. For these products, the license information includes message queues to receive messages, the log violations indicator, the usage limit, and software license keys. The current list of license users is not distributed from the central system to the target systems.

To display a list of software products and features that use license management, run the Work with License Information (WRKLICINF) command.

You can include all of the software license information for all of the target systems on your distribution media. The appropriate license information for each target system is automatically loaded as part of the installation process.

Setting the usage limit is different depending on the type of product being distributed. The usage limit for standard products that contain license information must be set on the central system prior to creating the distribution media. It is then automatically included on the distribution media and distributed to the target systems. For keyed products, the usage limit is part of the license key. Every keyed product on each target system requires a unique key for the product to run on the target systems. Thus, you must add all the license keys for all the target systems to the distribution media prior to creating the distribution media. For more information about software license keys refer to Software license keys.

When to distribute license information for licensed programs

The appropriate time to distribute license information for a licensed program is when you install a new license term for that program.

The **license term** is the length of time the authorized usage limit for a licensed program lasts. The usage limit can last for a version, a release, or a modification level.

For example, if the license term for product X is by version, the authorized usage limit is valid for the entire version of the product. When license information has been installed for product X, it will not be installed again until a new version of product X is distributed. This original license information is preserved at the target systems even when new release and modification levels are installed. When a new version of product X is distributed, the usage limit may need to be changed on the target systems.

Software license keys

The license keys file contains the software license keys you want to distribute.

When you run the Save System (SAVSYS) command, the system adds the file to the distribution media. The QALZALPKEY file is deleted from the target systems after the license keys are loaded.

A warning message that specifies the date that the grace period expires is sent to the message queue each day a keyed product is used. The message is sent to the QSYSOPR message queue and any other message queues that you have defined through the Change License Information (CHGLICINF) command.

Types of distribution media for central site distribution

The devices available to the central system for central site distribution are » image catalog, « tape, digital video disc (DVD), and CD-ROM.

- » **Image catalog**
  If you have ample storage and your target system is at V5R2, this option is cost-effective and convenient. First, create DVD for central site distribution; then add the DVD to an image catalog and distribute electronically. This option is particularly useful for optical media verification, unattended installations, and upgrading software within a network. «
- **Tape**
  High-speed tape is the fastest way to distribute the software involved in a full-system upgrade or » the software of a logical partition. « However, tape hardware and media is more costly than DVD hardware and media.
- **DVD**
  DVD is slower than high-speed tape, but is more cost-effective.

- **CD-ROM**

  » Refer to Using CD-ROM in Distributing iSeries(TM) Software for information about using CD-ROM as the distribution media for central site distribution. «

Installation profiles

Installation profiles contain the tasks you want to perform during the installation process. They bring many "Benefits of using installation profiles to install distribution media" to the installation process. The choices you make when creating an installation profile affect only the target systems, not the central system. You can use one of the profiles supplied by IBM(R), or you can customize the profiles supplied by IBM to better suit your needs.

IBM installation profiles

IBM provides installation profiles that fit almost every situation. The following is a list of installation profiles in order of most commonly used. This list includes profile descriptions and special considerations associated with each.

- **Replace current release (QRPLRELLVL)**
  Use this option to distribute the software involved in a full-system upgrade. This includes all the IBM licensed programs plus any non-IBM licensed programs. The system replaces licensed programs that are at the same version, release, and modification as on the media.
- **Install new system (QINSNEWSYS)**
  Use this option to distribute the software involved in a full-system upgrade to a new target system. That is, you can use central site distribution to install a new iSeries(TM) server. » Or, you can use this option to distribute the software of a logical partition. « The target systems must already have the current level of the licensed internal code installed.
- **IBM replace current release (QIBMRPLRLS)**
  Use this option to distribute the software involved in a full-system upgrade. This profile includes only IBM licensed programs. The system does not replace licensed programs that are at the same version, release, and modification as on the media.
- **Change primary language (QCHGPRILNG)**
  » If you plan to distribute the software involved in a full-system upgrade or the software of a logical partition and you want to change the primary language, use either the Replace current release profile or the IBM replace current release profile. If you plan only to change the primary language on the target system, refer to Considerations for changing your primary language. «

Customized IBM installation profiles

If you want to create your own installation profile or customize the IBM-supplied installation profiles, select option 41 (Work with installation profiles) from the GO LICPGM menu. You must have the following authorities to work with installation profiles:

- *SAVSYS special authority to the QLPAUTO file in the QUSRSYS library
- *USE (or higher) authority to the QLPAUTO file in the QUSRSYS library
- *CHANGE authority to the QLPAUTO file in the QUSRSYS library

Benefits of using installation profiles to install distribution media

Using an installation profile to install the media that contains licensed programs and application programs has the following advantages:

- Reduces or eliminates the tasks that operators at the target systems must do other than mounting distribution media
- Allows you to create customized installation profiles to control the installation at the target systems

- Provides the capability to restart after a failure, including bypassing parts of the installation that were successful
- Reduces or eliminates messages during the installation
- Allows you to install applications or further customize the system after a successful installation using a user-defined installation program

The following operator tasks are eliminated when you use an installation profile:
- Select the function to restore Licensed Internal Code
- Select the option to install the operating system
- Confirm the installation of the operating system
- Select a language feature
- Confirm a language feature
- Select installation options
- Select IPL options

Installation methods for the target systems

The methods for installing the distribution media at the target systems are automatic installation and manual installation. Use this information to help you decide which installation method to choose.

- **Automatic installation**
  Automatic installation means that the target system operators simply load distribution media as prompted. This method is the most commonly used because it allows you to use installation profiles and a user-defined installation program.

  You can use an installation profile to install media containing licensed programs, fixes (PTFs), and application programs. Installation profiles eliminate additional tasks for the target system operators and allow you to customize the installation process.

  You may want to write a user-defined installation program to distribute customer-written applications and eliminate additional tasks for the target system operators.
- **Manual installation**
  Use manual installation only if you need to add storage to the target systems.

Licensed program compression and decompression

When creating distribution media for central site distribution, you can leave all the licensed programs that have high usage decompressed. Or, you can distribute some of a licensed program in a compressed state and some of the program in a decompressed state.

Consider the following items about compressing and decompressing objects before you create the distribution media:
- You can compress both IBM(R) objects and your own user-created objects. IBM program objects can be compressed only in the restricted state.
- Programs (*PGM), service programs (*SRVPGM), and modules (*MODULE) automatically and permanently decompress the first time they are used.
- The first time a compressed panel (*PNLGRP), menu (*MENU), printer file (*FILE with attribute PRTF), or display file (*FILE with attribute DSPF) is used, it is temporarily decompressed. If such a temporarily decompressed object is used five times or for more than two consecutive days on the same initial program load (IPL), it is permanently decompressed.
- Usually, an operation on a compressed object takes a little longer than if the object were decompressed. While a very large compressed object is decompressing, the system will send the message, `"Operation in progress. Please wait."`

IBM recommends the following actions to help you reduce the amount of disk space used on the target systems. At the same time, these actions ensure that frequently used objects are decompressed:

- Compress everything you are sending to the target systems.
- Use the objects on the central system in the same manner they will be used on the target systems. Do so at least five times for panel groups, menus, printer files, and display files.
- If you are creating a premastering media, files on CD-ROMs cannot span volumes. Compress objects so that the resulting saved file fits on the CD-ROM.

For more information about compressing and decompressing objects, see Compressed objects and storage space.

Distribution of primary and secondary language files

You can distribute primary and secondary language files using central site distribution.

Primary language files

The primary language is the language that is installed on the system as the default language used to display and print information. The IBM(R) licensed program distribution media contains the primary language files. The distribution media you create at the central system copies the primary language files so you can install them at your target systems.

Secondary language files

The distribution of secondary language files is more complicated than that of primary language files. Secondary language files are saved to the distribution media as described in “Overview of tasks to distribute software from a central system” on page 11 and are restored at the target systems using the user-defined installation program.

Central site distribution of program temporary fixes (PTFs)

You can distribute PTFs as part of the software involved in a full-system upgrade or logical partition. In the central site distribution process, PTFs are distributed as follows. First, PTFs are applied to the central system. When the distribution media is created, PTFs are saved to the distribution media and distributed. Finally, when the distribution media is installed at the target systems, the Licensed Internal Code Copy A and Copy B is replaced and licensed programs are installed at the central system PTF level.

Distributing PTFs using central site distribution has advantages. One advantage is that no special PTF installation instructions are needed at the target systems. Another advantage is that the target systems will be at the same PTF and release levels as the central system.

Troubleshoot installation of the user-defined installation (QLPUSER) program

If the target system does not receive the message `User installation processing completed` after you install the distribution media, a problem may have occurred with the installation of the QLPUSER program.

Message CPI3D8B: User installation processing failed

If the target system received the `User installation processing failed` message, it indicates that the system ran the QLPUSER program in the QGPL library and that one or more errors occurred as a result.

No messages appear

If no messages appear, it indicates that one of the following instances occurred:

- The QLPUSER program did not exist in the QGPL library on the distribution media.
- The installation of the IBM(R)-supplied products failed in such a way that the QLPUSER program could not be called.

- QGPL or QUSRSYS did not install successfully. If either of these libraries did not install successfully on the target system, the QLPUSER program was not called.

Related information for central site distribution

Listed below are the iSeries(TM) manuals (in PDF format), Web sites, and Information Center topics that relate to the Central site distribution topic. You can view or print any of the PDFs.

Central site distribution

- "Distribution media contents"
- "Licensed programs that do not support secondary languages" on page 19
- "Cover sheet" on page 20

Manuals

Software Installation (about 250 pages)

Redbooks(TM)

IBM(R) @server iSeries Handbook

Web sites

» Using CD-ROM in Distributing iSeries Software «

Other information

- Compressed objects and storage space
- Install the OS/400(R) release and related software
- Manage software products

To save a PDF on your workstation for viewing or printing:

1. Right-click the PDF in your browser (right-click the link above).
2. » Click **Save Target As...** if you are using Internet Explorer. Click **Save Link As...** if you are using Netscape Communicator. «
3. Navigate to the directory in which you would like to save the PDF.
4. Click **Save**.

If you need Adobe Acrobat Reader to view or print these PDFs, you can download a copy from the Adobe Web site .

Distribution media contents

The Distribution media contents table lists the files saved to the distribution media. Use the Distribution media contents table to verify that you correctly transferred all of the files to the distribution media.

» The following table is the key for generic file names listed in the Distribution media contents table:

Key		
Symbol	**Description**	**Example**
xx	National language version (NLV) identifier	24 indicates English
yy	Two-digit number	22
PID	Product identifier	SS1
v	Version	5
r	Release	2
m	Modification	0
nn	Last optional file consisting of additional product libraries or integrated file system files	

The following table lists the files in the order they are saved to the distribution media:

Distribution media contents		
Tape file name	**Optical file name**	**Description**
57yy-SS1 Operating System/400(R)		
Not used on tape	/QCDIML	IML bootstrap file for CD-ROM installs only
QFILEIML	Not used on CD-ROM	IML bootstrap file for tape installs only
QVvRrMmL000.L29xx	/QLANGID/QVvRrMm	Version release modification indicator file (installation use) (first time saved)
	/QLANGID/Q_L29xx	Primary language indicator file (installation use) (first time saved)
	/QLANGID/Q_LVL00	Level indicator file (installation use) (first time saved)
QFILESCR	/QFILESCR	Licensed Internal Code displays
QIAM400	/QIAM400	Indicates this is an iSeries(TM)
QFILEMCD	/QFILEMCD	All licensed internal code file
QVvRrMmL00.L29xx	/QLANGID/QVvRrMm	Version release modification indicator file (installation use) (second time saved)
	/QLANGID/Q_L29xx	Primary language indicator file (installation use) (second time saved)
	/QLANGID/Q_LVL00	Level indicator file
QFILEIPL	/QFILEIPL	Install file
QFILEIN	/QFILEIN	Install file
Q57yySS1vrmM.0000	/Q57yySS1/Qvrm00M_/Q00/Q00	Software agreement file
Q57yySS1vrmM.0001	/Q57yySS1/Qvrm00M_/Q00/Q01	Install file (QSYS simple objects)
Q57yySS1vrmM.0002	/Q57yySS1/Qvrm00M_/Q00/Q02	Install file (QSYS simple objects)
:	:	:
:	:	:
Q57yySS1vrmM.0015	/Q57yySS1/Qvrm00M_/Q00/Q15	Install file (QSYS simple objects)

Distribution media contents		
Tape file name	**Optical file name**	**Description**
Q57yySS1vrmM.0016	/Q57yySS1/Qvrm00M_/Q00/Q16	Install file (QSYS simple objects)
Q57yySS1vrmxx0001	/Q57yySS1/Qvrm00xx/Q00/Q01	QSYS install file
:	:	:
:	:	:
Q57yySS1vrmxx0007	/Q57yySS1/Qvrm00xx/Q00/Q07	File
Q57yySS1vrmxx0090	/Q57yySS1/Qvrm00xx/Q00/Q90	File
Q57yySS1vrmM.0090	/Q57yySS1/Qvrm00M/Q00/Q90	Install file (QSYS Complex Objects)
QFILEUPR	/QFILEUPR	User profiles and other security information
QFILEIOC	/QFILEIOC	Configuration information
QINPREP	/QINPREP	Install file
QGPL.vrm00.xx	/QUSRLIBS/Qvrm00xx/QGPL	QGPL library file
QUSRSYS.vrm00.xx	/QUSRLIBS/Qvrm00xx/QUSRSYS	QUSRSYS library file
Example of licensed program files		
Q57yyPIDvrmM.000	/Q57yyPID/QvrmM_/Q00/Q00	Software agreements file (Not all licensed programs will have this file)
Q57yyPIDvrmM.0001	/Q57yyPID/QvrmM_/Q00/Q01	Install control file— *PGM objects
Q57yyPIDvrmM.0002	/Q57yyPID/QvrmM_/Q00/Q02	Product library file
Q57yyPIDvrmM.0003	/Q57yyPID/QvrmM_/Q00/Q03	Optional files consisting of additional product libraries or IFS files
:	:	:
:	:	:
Q57yyPIDvrmM.00nn	/Q57yyPID/QvrmM_/Q00/Qnn	Last optional file consisting of an additional product library or IFS file
Q57yyPIDvrmxx0001	/Q57yyPID/Qvrmxx/Q00/Q01	Install control file— *LNG objects
Q57yyPIDvrmxx0002	/Q57yyPID/Qvrmxx/Q00/Q02	Product library file
Q57yyPIDvrmxx0003	/Q57yyPID/Qvrmxx/Q00/Q03	Optional files consisting of additional product libraries or IFS files
:	:	:
:	:	:
Q57yyPIDvrmxx00nn	/Q57yyPID/Qvrmxx/Q00/Qnn	Last optional file consisting of an additional product library or IFS file
Example of secondary language files		
QSYS29xx	/QSYS29xx	Secondary language library for NLV 29xx
Q57yyPIDvrmxx0001	/Q57yyPID/Qvrmxx/Q00/Q01	Install control file— *LNG objects
Q57yyPIDvrmxx0002	/Q57yyPID/vrmxx/Q00/Q02	Product library file
Q57yyPIDvrmxx0003	/Q57yyPID/Qvrmxx/Q00/Q03	Optional files consisting of additional product libraries or IFS files
:	:	:
:	:	:

Distribution media contents		
Tape file name	**Optical file name**	**Description**
Q57yyPIDvrmxx00nn	/Q57yyPID/Qvrmxx/Q00/Qnn	Last optional file consisting of an additional product library or IFS file «

Licensed programs that do not support secondary languages

The following is a list of licensed programs that do not support secondary languages:

- 5722-SS1 options 6, 7, 8, 13, 18, 21, 26, 27, 38, 39, 41, » 42, and 43«
- 5722-JV1 options 3, 4, and 5
- 5716-FNT options 1 through 15
- 5716-FN1 options 1 through 5
- 5722-RD1 options 5, 11, and 12
- 5722-WDS options 35, 45, 55, and 60
- 5722-BR1 options 1 and 2
- 5722-XW1 option 1

Cover sheet

Central Site Identification _____

Target Site Identification _____

Version _____ Release _____ Modification _____

Contents of Media:

IBM(R) Licensed Internal Code

IBM OS/400(R) Licensed Program

_____

_____

_____

_____

_____

_____

Special Instructions:

This form may be copied as necessary.

Code disclaimer information

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All sample code is provided by IBM for illustrative purposes only. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs.

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