

IBM

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iSeries

Distribute software





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iSeries

Distribute software

Note

Before using this information and the product it supports, be sure to read the information in "Notices," on page 37.

Seventh Edition (August 2005)

This edition applies to version 5, release 3, modification 0 of IBM Operating System/400 (product number 5722-SS1) and to all subsequent releases and modifications until otherwise indicated in new editions. This version does not run on all reduced instruction set computer (RISC) models nor does it run on CISC models.

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Chapter 1. Distribute software

Sometimes it is desirable to duplicate some or all of a system's programs, including the operating system, onto another system. You can also duplicate some or all of a logical partition's programs onto another logical partition. To do this with a minimum of effort and maximum benefits you should do some planning and consider the options available for distributing software products. You can use iSeries™ Navigator or Central site distribution to distribute supported products.

Chapter 2, "What's new for V5R3," on page 3

Find out what's new or changed for this release.

Chapter 3, "Print this topic," on page 5

Print a PDF of all the information included in the Distribute software topic.

Chapter 4, "Plan to distribute software," on page 7

Learn what type of software you can distribute using iSeries Navigator and Central site distribution. The quantity and type of software you want to distribute will determine which distribution tool you should use.

Chapter 5, "Distribute software using iSeries Navigator," on page 9

iSeries Navigator allows you to logically group a number of programs and files on a source iSeries server or partition and distribute those objects to one or more target iSeries servers or partitions. It is the quickest and most efficient way to distribute one or more licensed programs, your own software products, fixes, user libraries, and more.

Chapter 6, "Distribute software using central site distribution," on page 11

Use Central site distribution to distribute the software involved in a full system upgrade or the software of a logical partition. This tool is especially useful and convenient when your network is large and you want all the iSeries servers or partitions in your computing environment to be identical.

Chapter 7, "Troubleshoot software distribution," on page 29

This information describes common reasons why the QLPUSER program did not install successfully and how to ensure that the error does not occur again.

Chapter 8, "Related information," on page 31

View and print information related to the Distribute software topic.

Chapter 2. What's new for V5R3

Distribute software is a new topic in the Information Center for V5R3. It houses the original topic, Central site distribution, and information about distributing software using iSeries Navigator. In this release, you can now use virtual images as distribution media for Central site distribution.

Distribute software using iSeries Navigator



Use iSeries Navigator to package and send IBM® and your own software products from one server or partition to another server or partition.

Distribute software using virtual images

You can now use virtual images (including saving directly to your virtual media) as central site distribution media and distribute the images using FTP. You can also convert the images to CD-ROM or DVD.

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.

Chapter 3. Print this topic

To view or download the PDF version of this document, select Distribute software (about 45 pages).

You may want to print only the specific reference information associated with distributing software using Central site distribution.

- “Central site distribution media contents” on page 31
- “Licensed programs that do not support secondary languages” on page 34
- “Cover sheet for central site distribution media” on page 34

Other information

You can also view or print Install, upgrade, or delete i5/OS[™] and related software

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 Reader

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

Chapter 4. Plan to distribute software

You can distribute software using iSeries Navigator or Central site distribution. You must decide which is the best tool to use to distribute your software.

When to use iSeries Navigator

iSeries Navigator allows you to logically group a number of programs and files on a source iSeries server and distribute those objects to one or more target iSeries servers. It is the quickest and most efficient way to distribute one or more licensed programs, your own software products, fixes, or user libraries.

When to use Central site distribution

Central site distribution is most often used to distribute the software involved in a full system upgrade or the software of a logical partition. This usually includes a collection of software such as the Operating System/400[®], program temporary fixes (PTFs), IBM 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 servers that may or may not be partitioned.

What to do next:

- Chapter 5, “Distribute software using iSeries Navigator,” on page 9
- Chapter 6, “Distribute software using central site distribution,” on page 11

Chapter 5. Distribute software using iSeries Navigator

iSeries Navigator allows you to logically group a number of programs and files on a source iSeries server or partition and distribute those objects to one or more target iSeries servers or partitions.

“Send IBM software products using iSeries Navigator”

Use iSeries Navigator to send IBM software products from one iSeries server or partition to another iSeries server or partition.

“Package and send your own software products using iSeries Navigator”

Use iSeries Navigator to package and send your own software products from one iSeries server or partition to another iSeries server or partition.

Send fixes

After you package and send your own software products, send your fixes.

Send IBM software products using iSeries Navigator

To send and install IBM products, complete the following tasks:

1. In your **iSeries Navigator** window, expand **Management Central**.
2. Expand **Endpoint Systems**.
3. Expand a system.
4. Expand **Configuration and Service**.
5. Expand **Software Inventory**.
6. Select either **Installed Products** or **Supported Products**.
7. From the right pane, right-click the product that you want to send and instal. Select **Send and Install**. You can send and install only products that have a status of Installed or Managed.
8. Follow the wizard’s instructions for sending and installing the product.

Detailed task help is available from the iSeries Navigator window. Just click **Help** from the menu bar and select **Help Topics**. Select **What can I do with . . . ?** to find out what you can do and where you need to be in the iSeries Navigator window to make it happen.

Package and send your own software products using iSeries Navigator

Product packaging enables you to make your application programs into a packaged product that is installed and maintained in the same manner as the IBM licensed programs. Once your application has been packaged as a product, you can manage all of the objects for that application as a single entity. We have several methods available that allow you to package your own products:

- Product and package function in iSeries Navigator
- System Manager licensed program
- Software Product APIs

Package and send a product with iSeries Navigator

One of the advantages to packaging your application with iSeries Navigator is that it is part of the i5/OS operating system; and therefore, involves no additional cost. With iSeries Navigator, you can distribute your applications and fixes in the same way that you distribute iSeries licensed programs. You can track your fixes the same way as you track IBM fixes. A product definition contains all the information that you need to send and install a product across multiple systems.

You need to create a product definition before you can package, or convert, your application into a product that your server recognizes as a product. The source system on which you create the product definition is used to manage the product. To package and distribute a product, do the following:

1. Create a product definition by following these steps:
 - a. In iSeries Navigator, expand **Management Central**.
 - b. Expand **Definitions**.
 - c. Right-click **Product** and select **New Definition**.
 - d. Follow the wizard's instructions for creating a new product definition. The source system on which you create the Management Central product definition is used to manage the product.
As part of the wizard, you can indicate that you want to prompt users to accept a license agreement when the product is installed. Add the license documents from the Add License Documents dialog. For information on how to create these license documents, see Generate online software agreements.
2. Install the product on the source system.
3. Send and install the product on other systems by following these steps:
 - a. In iSeries Navigator, expand **Management Central**.
 - b. Expand **Definitions**.
 - c. Select **Product**.
 - d. Right-click the product definition that you want to send to and install on a target system and select **Send and Install**.
 - e. Follow the wizard's instructions for installing the product definition on a target system. Clicking **Finish** causes the product to be sent and installed on the target system, and the status changes from **Installed** to **Managed**.

Note:

- Only product definitions that have a status of **Installed** or **Managed** can be sent and installed.
- Only fixes that have been applied are sent when you send and install a product.

Because the product is installed on the source system, the product is available to be managed. A status of **Managed** means that the definition can no longer be changed. To make any changes to the product for the current release requires that you generate a fix.

After you have installed the product on the source system, you can generate fixes to that product.

Detailed task help is available from the iSeries Navigator window. Click **Help** from the menu bar and select **Help Topics**. Select **What can I do with . . . ?** to find out what you can do and where you need to be in the iSeries Navigator window to make it happen.

Chapter 6. Distribute software using central site distribution

Central site distribution is the process of duplicating the software of one iSeries server or duplicating the software of a logical partition, and distributing it to multiple iSeries servers or partitions. This mechanism is especially useful and convenient when your network is large and you want all the iSeries servers or partitions 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.

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

“Central site distribution concepts”

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.

“Checklist: Prepare to distribute software using central site distribution” on page 17


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.

“Checklist: Create central site distribution media” on page 21

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 distribute the media.

“Checklist: Install central site distribution media on the target system” on page 24

These instructions lead you to the i5/OS installation instructions 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.

You can also distribute one or more licensed programs using CD-ROM. For instructions about mastering a CD-ROM for distribution, refer to Using CD-ROM in Distributing iSeries Software .

Note: Read the “Code disclaimer information” on page 27 for important legal information.

Central site distribution concepts

Central site distribution is the process of duplicating the software of one iSeries 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 12

Ensure that you are familiar with the terms specific to central site distribution.

“Overview of tasks to distribute software using central site distribution” on page 13

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.

“Central site distribution of software license information” on page 13

Learn about software license information and when the appropriate time is to distribute it.

“Types of distribution media for central site distribution” on page 14

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 for central site distribution” on page 15

IBM 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.

“Installation methods for the target systems” on page 16

You can install the distribution media automatically or manually at the target systems.

“Licensed program compression and decompression for central site distribution” on page 16

When you compress licensed programs you receive several benefits including saving storage space.

“Central site distribution of primary and secondary language files” on page 17

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 17

The central site distribution process allows you to apply fixes to the central system and distribute them to the target system. You only have to apply fixes once.

Prepare for virtual optical storage

You need to consider these requirements when using image catalogs as the distribution media for central site distribution.

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 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. 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 i5/OS 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 *OPRACION.

target system

The iSeries server that depends on the central system for distribution of Licensed Internal Code, the i5/OS operating system, and licensed 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 using central site distribution

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, i5/OS (OS/400®) 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 options 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 it can be used to restore 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 “Central site distribution media contents” on page 31.

Central site distribution of software license information

You can distribute license information for software products that use OS/400 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 (WRKLCINF) 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 types of distribution media available to the central system for central site distribution are image catalog, tape, digital video disc (DVD), and CD-ROM.

- **Image catalog**

This media requires disk space to hold all virtual images created on the central system and distributed to the target systems. If you have ample storage and your target system is at V5R1, V5R2 or V5R3, this option is cost-effective and convenient. First, prepare the central system to distribute virtual images; then create the distribution media and distribute using FTP. You can also create DVD for central site distribution and then add the DVD to an image catalog and distribute using FTP. Or you can create the virtual images, convert them to DVD or CD-ROM and distribute the physical media. Using virtual images as central site distribution media gives you flexibility and 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 Software for information about using only CD-ROM as the distribution media for central site distribution.

Installation profiles for central site distribution

Installation profiles contain the tasks you want to perform during the installation process. They bring many benefits to the automatic 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, 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. 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 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. 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. To work with installation profiles, you must have *CHANGE authority to the QALPAUTO file in the QUSRSYS library.

Benefits of using automatic installation and 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 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.

For further information on automatic installation, see *Benefits of using automatic installation and installation profiles to install distribution media*.

- **Manual installation**

Use manual installation only if you need to add disk storage to the target systems.

Licensed program compression and decompression for central site distribution

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 objects and your own user-created objects. IBM program objects can be compressed only in the restricted state. Use the Compress Object (CPROBJ) control language command to compress objects.
- 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 mastering 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.

Central site 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 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 “Checklist: Create central site distribution media” on page 21 and are restored at the target systems using the user-defined installation program as described in “Installation tasks for the target systems” on page 26.



Central site distribution of program temporary fixes (PTFs)

You can distribute fixes as part of the software involved in a full-system upgrade or logical partition. In the central site distribution process, fixes are distributed as follows. First, fixes are applied to the central system. When the distribution media is created, fixes 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 fixes 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.

Checklist: Prepare to distribute software using central site distribution

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
<input type="checkbox"/> Become familiar with the “Overview of tasks to distribute software using central site distribution” on page 13. 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.
<input type="checkbox"/> Verify that the target systems have adequate storage space to handle all distributed licensed programs. Refer to Ensuring the server meets disk storage requirements for upgrades to verify adequate storage space.
<input type="checkbox"/> 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 i5/OS releases can be installed on what models.
<input type="checkbox"/> Verify that the central and target systems will be at compatible i5/OS (OS/400) releases after the central site distribution. Refer to Release interoperability to verify this. If you have several iSeries servers in a network, they must be at compatible releases to exchange data or to save and restore objects.
<input type="checkbox"/> Ensure that you do not plan to distribute IBM WebSphere® 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 iSeries Access for Web site  .

Before you begin

- 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 17.
- 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 16.
2. If you chose the automatic installation method in step 1, select or customize one of the following installation profiles.
 - Replace current release (QRPLRELLVL)
 - Install new system (QINSNEWSYS)
 - IBM replace current release (QIBMRPLRLS)
 - Change primary language (QCHGPRILNG)You can also create your own installation profile. For more information, refer to “Installation profiles for central site distribution” on page 15.
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 14.
4. **“Prepare software license information for central site distribution”**
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 20**
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 for central site distribution” on page 16.
7. If you selected image catalog as the distribution media, go to **“Optional: Prepare the central system for virtual images” on page 20.**

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.

What to do next:

When you have completed the tasks in this checklist, go to “Checklist: Create central site distribution media” on page 21.

Prepare software license information for central site distribution

Distribute software license information 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 19.

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 (ADDLICENSE) 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 (DSPLICENSE) command:
DSPLICENSE PRDID(*ALL) LICTRM(*ALL) FEATURE(*ALL) SERIAL(*ALL) OUTPUT(*LICENSEFILE)
LICENSEFILE(QSYS/QALZALPKEY) LICENSEMBR(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:

Continue with “Distribute software license information using iSeries Navigator or paper.”

Distribute software license information using iSeries Navigator or paper

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

- Distribute license keys using iSeries Navigator

You can package and send license keys by using the Management Central distribution function available in iSeries Navigator.

- 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.

What to do next:

Continue with “Optional: Write a user-defined installation program for the target systems” on page 20 or go to step 6 on page 18 in the checklist.

Optional: 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 26. 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.
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 27 for important legal information.

What to do next:

Continue with the tasks in the checklist (step 6 on page 18).

Optional: Prepare the central system for virtual images

To prepare the central system for virtual images, complete the following tasks:

1. **Ensure that the server has enough disk space**

Ensure that the server has enough disk space to hold all the virtual images you are going to create. Refer to the Image catalog requirements listed in Prepare for virtual optical storage for information about disk space requirements for virtual images.

2. Create a virtual optical device

```
CRTDEVOPT DEVD(virtual-device-name) RSRNAME(*VRT) ONLINE(*YES) TEXT(text-description)
```

3. Vary on the virtual optical device

```
VRYCFG CFGOBJ(virtual-device-name) CFGTYPE(*DEV) STATUS(*ON)
```

4. Create an image catalog

Create an image catalog for the licensed programs that you want to distribute. The Create Image Catalog (CRTIMGCLG) command associates an image catalog with a target directory where the optical image files are loaded.

```
CRTIMGCLG IMGCLG(catalog-name) DIR(catalog-path) CRTDIR(*YES) TEXT(image-catalog-name)
```

5. Add an image catalog entry

Add a new image catalog entry with a size of 48MB to 16GB. The minimum size of the first volume must be 1489MB. If you plan to save the full operating system, add a new image catalog entry with a size of 4GB. If you plan to duplicate image catalogs to DVD, then ensure you select a virtual image size that matches the size of the DVD media you plan to write to.

If you want to save to a 4.7GB DVD, for example, use the following command to create the proper image size:

```
ADDIMGCLGE IMGCLG(catalog-name) FROMFILE(*NEW) TOFILE(file-name) SIZE(*DVD4700)  
TEXT(text-description)
```

If you want to save to CD-ROM media of 650MB or greater, use the following command to create the proper image size:

```
ADDIMGCLGE IMGCLG(catalog-name) FROMFILE(*NEW) TOFILE(file-name) SIZE(*CD650)  
TEXT(text-description)
```

Repeat this step for the number of desired images. You should add the images in the same order as you are going to install from them.

6. Load the image catalog

This step associates the virtual optical device to the image catalog. Up to 35 virtual optical devices can be active.

```
LODIMGCLG IMGCLG(catalog-name) DEV(virtual-device-name) OPTION(*LOAD)
```

7. Initialize the new volume

```
INZOPT NEWVOL(MYSAVEVOL1) DEV(virtual-device-name) TEXT('volume text')
```

Repeat this step for the number of new images you want to initialize. Use the WRKIMGCLGE (Work with Image Catalog Entries) command to select the image to be initialized or use the LODIMGCLGE (Load/Unload/Mount Image Catalog Entry) command to continue to the next volume to be initialized.

```
LODIMGCLGE IMGCLG(MYCATALOG) IMGCLGIDX(index_number) OPTION(*MOUNT)
```

When you have completed initializing the new volumes, leave the first entry in mounted status.

```
LODIMGCLGE IMGCLG(MYCATALOG) IMGCLGIDX(1) OPTION(*MOUNT)
```

What to do next:

Finish preparing to distribute software using Central site distribution by completing the final tasks in the checklist ("When you are finished" on page 18).

Checklist: Create central site distribution media

If you selected tape, DVD, or image catalog 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 Software to create the CD-ROM.

Before you begin
<input type="checkbox"/> If you plan to distribute secondary language files, ensure you know the following: <ul style="list-style-type: none"> • The national language version feature code for the secondary language. • The “Licensed programs that do not support secondary languages” on page 34.
<input type="checkbox"/> If you selected tape or DVD as the distribution media, print a copy of the distribution media “Cover sheet for central site distribution media” on page 34. You will need it when you create the distribution media.
<input type="checkbox"/> Ensure that you have a dedicated central system.
<input type="checkbox"/> 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.
<input type="checkbox"/> Ensure that *JRNRCV objects are not in the QSYS library.
<input type="checkbox"/> Change the QALWBJRST (Allow Object Restore) system value to *ALL on the central system. The Allow Object Restore (QALWBJRST) 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.

Note: If you chose image catalog as the distribution media, inquiry message OPT149F may appear during processing. The message means that the initialized volumes are full. To continue processing, select option A and press Enter. Selecting option A will create, load, mount, and initialize a new volume and processing will continue.

3. After you complete option 40, complete the following tasks to save secondary language files to the distribution media. In the name of the QSYS29xx library, and the language parameter of the SAVLICPGM command, xx represents the national language version feature code for the secondary language.
 - a. Save the QSYS29xx 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(29xx) 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. To set write protection for virtual images, see Change write-protection for virtual optical media.
8. To add DVD media to an image catalog go to Preparing to upgrade or replace software using an image catalog.
9. To convert virtual images to DVD or CD-ROM, see Create actual media from a virtual image.

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

When you are finished
<input type="checkbox"/> 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.
<input type="checkbox"/> “Duplicate and distribute tape or DVD distribution media”
<input type="checkbox"/> “Optional: Duplicate DVD media to virtual images”
<input type="checkbox"/> “Optional: Distribute virtual images” on page 24

What to do next:

When you have completed the tasks in this checklist, go to “Checklist: Install central site distribution media on the target system” on page 24

Duplicate and distribute tape or DVD distribution media

Now that you have created tape or DVD distribution media, you must verify the contents of the media, duplicate the media, and distribute the media to the target systems. Complete the following instructions to duplicate and distribute tape or DVD distribution media.

1. Verify the contents and record a listing of licensed programs on the distribution media cover sheet.
 - If using tape, type DSPTAP DEV(TAP01) OUTPUT(*PRINT)
 - If using optical, type DSPOPT VOL(volume_id) DEV(OPTxx) DATA(*DIRATR) OUPUT(*PRINT) PATH(*ALL)

For a complete list of files saved to the distribution media refer to “Central site distribution media contents” on page 31.

2. 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.
3. Make copies of the distribution media cover sheet as needed.
4. 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:

Go to “Checklist: Install central site distribution media on the target system” on page 24

Optional: Duplicate DVD media to virtual images

To duplicate DVD media on the central system, follow these steps:

1. **Create an image catalog**

The Create Image Catalog (CRTIMGCLG) command associates an image catalog with a target directory where the optical image files are loaded. Enter the following command:

```
CRTIMGCLG IMGCLG(catalog-name) DIR(catalog-path) CRTDIR(*YES) TEXT(text-description)
```

2. **Add an image catalog entry**

Add an image catalog entry for each physical media that you have. Repeat this step for each volume of media. Add the images in the same order as if you were going to install from them. Start with the first media in the list and continue until all the media are loaded.

Enter the following to add an image catalog entry to an image catalog from a physical optical media device named OPTxx:

```
ADDIMGCLGE IMGCLG(catalog-name) FROMDEV(OPTxx) TOFILE(file-name) TEXT(text-description)
```

Note: To generate a name for the TOFILE parameter, specify *GEN. To generate a text description from the media, specify *GEN.

You now have virtual images in the catalog path that you specified on the CRTIMGCLG command.

What to do next:

Go to “Optional: Distribute virtual images”

Optional: Distribute virtual images

If you have created the virtual images or duplicated the DVD media to virtual images, verify the order of the images and distribute the images to the target systems. To distribute the virtual images, complete the following tasks:

1. Verify that the images are in the correct order

```
WRKIMGCLGE IMGCLG(catalog-name)
```

If you would like to sort the images, then press PF7 to prompt for the VFYIMGCLG command. Enter *UPGRADE for the type and *YES for the sort field. The server puts the images in the correct order. By default, the volume with the lowest index is mounted; all the other volumes are loaded.

2. Distribute the virtual images using one of the following methods:

- **Distribute the virtual images using FTP**

- a. Consider securing the data you plan to distribute using Digital certificates for signing objects. When you have finished securing the data you plan to FTP to the target systems, return to this page and FTP the image catalogs and virtual images.
- b. Start an FTP session with a remote system where the image files exist:
FTP RMTSYS(*remote-system*)
- c. Set the file naming format:
NAMEFMT 1
- d. Set the remote directory.
CD '/*directory-name*'
- e. Set the local directory.
LCD '/*directory-name*'
- f. Issue the BINARY command to set the transfer type:
BINARY
- g. Issue the MGET to get the image files from the remote system:
MGET *
- h. Quit the FTP session:
QUIT

- **Distribute the image catalog and virtual images using physical media**

To save the image catalog to tape, enter the following command:

```
SAVOBJ OBJ(image-catalog-name) LIB(QUSRSYS) OBJTYPE(*IMGCLG) DEV(device-name)
```

To save the image files, enter the following command. (In the following example, the directory name is the name associated with the image catalog.)

```
SAV DEV('/QSYS.LIB/device-name.DEV') OBJ({'/directory-name'})
```

What to do next:

Go to “Checklist: Install central site distribution media on the target system”

Checklist: Install central site distribution media on the target system

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. If you plan to install virtual images on the target system, you must “Optional: Prepare the target system for virtual images” on page 25.
2. Install the distribution media on the target systems by using the steps outlined in the following appropriate information of the Install, upgrade, or delete i5/OS and related software topic:

- Upgrading or replacing software using automatic installation
 - Upgrading or replacing software using manual installation
3. Complete any tasks described in “Installation tasks for the target systems” on page 26 that were not done as part of a user-defined installation program.

Note: Software agreements do not need to be accepted again on the target system.

When you are finished
<input type="checkbox"/> “Verify that the user-defined installation program (QLPUSER) loaded successfully” on page 27 if you wrote a user-defined installation program.
<input type="checkbox"/> “Clear two files from the integrated file system” on page 27 if you distributed Infoprint® Designer for iSeries.
<input type="checkbox"/> “Change the electronic customer support data” on page 27 if you want to.

When you complete the steps in this checklist, you have completed the central site distribution.

Optional: Prepare the target system for virtual images

To prepare the target system for virtual images, complete the following tasks:

1. Create a virtual optical device

```
CRTDEVOPT DEVD(virtual-device-name) RSRNAME(*VRT) ONLINE(*YES) TEXT(text-description)
```

2. Vary on the virtual optical device

```
VRYCFG CFGOBJ(virtual-device-name) CFGTYPE(*DEV) STATUS(*ON)
```

3. Depending on how you distributed the virtual images, do either of the following tasks:

- If you distributed the virtual images from the central system using FTP, complete the following tasks. These tasks assume that the images are located in directory specified on the Create Image Catalog command in step 3a.

a. Create the image catalog

```
CRTIMGCLG IMGCLG(image-catalog-name) DIR(directory-name) TEXT(text-description)
```

b. Add the image catalog entries for each image

```
ADDIMGCLGE IMGCLG(image-catalog-name) FROMFILE(image-file-name) TOFILE(*FROMFILE)
IMGCLGIDX(*AVAIL)
```

Note: To prevent the system from generating a new name for the catalog entry, specify the exact name of the file (without the path) on the FROMFILE parameter.

- If you saved your image catalog and image files to physical media, enter the following on the target system to restore the image catalog from tape:

```
RSTOBJ OBJ(image-catalog-name) SAVLIB(QUSRSYS) OBJTYPE(*IMGCLG) DEV(device name)
```

Enter the following on the target system to restore the directory from tape:

```
RST DEV('/QSYS.LIB/device-name.DEVD') OBJ('/directory-name')
```

4. Load the image catalog

This step associates the virtual optical device to the image catalog. Only one image catalog at a time can be associated with a specific virtual optical device.

```
LODIMGCLG IMGCLG(catalog-name) DEV(virtual-device-name) OPTION(*LOAD)
```

5. Verify that the images are in the correct order.

Enter either of the following commands:

- VFYIMGCLG IMGCLG(*catalog-name*) TYPE(*UPGRADE) SORT(*YES)
- WRKIMGCLGE IMGCLG(*catalog-name*)

Then press PF7 to prompt for the VFYIMGCLG command. Enter *UPGRADE for the type and *YES for the sort field.

The server puts the images in the correct order. By default, the volume with the lowest index is mounted; all the other volumes are loaded. To see the order of the images, use the Work with Image Catalog Entries (WRKIMGCLGE) command:

```
WRKIMGCLGEIMGCLG(catalog-name)
```

What to do next:

Either continue with the steps in “Installation tasks for the target systems” or complete the final tasks in the “Checklist: Install central site distribution media on the target system” on page 24.

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 distributes independently from an i5/OS release.
- Restore secondary language files:
 1. Restore the QSYS29xx 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 29xx 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 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 (ADDLICENSE) 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, complete the tasks in “Install distribution media on the target system” on page 25.
- If you plan to write a user-defined installation program, go back to “Optional: Write a user-defined installation program for the target systems” on page 20.

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 Designer for iSeries:

- 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.

Delete your image catalog and images to free up space

To delete the catalog and all the optical images (image files), type the following:

```
DLTIMGCLG IMGCLG(mycatalog) KEEP(*NO)
```

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Chapter 7. Troubleshoot software distribution

Use the following information to understand your options when you have problems with distributing software.

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-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.

Chapter 8. Related information

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


Central site distribution

- “Central site distribution media contents”
- “Licensed programs that do not support secondary languages” on page 34
- “Cover sheet for central site distribution media” on page 34

Redbooks™

- IBM @server iSeries Handbook 
- Managing OS/400 with Operations Navigator V5R1 Volume 4: Packages and Products 

Web sites


Using CD-ROM in Distributing iSeries Software 

Other information

- Install, upgrade, or delete i5/OS and related software
- Compressed objects and storage space
- Install the i5/OS release and related software
- Virtual optical storage

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 .

Central 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

Key		
Symbol	Description	Example
v	Version	5
r	Release	2
m	Modification	0
nn	Last optional file consisting of additional product libraries or integrated file system files	
zz	Level indicator	00

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		
Not used on tape	/QCDIML	IML bootstrap file for CD-ROM installations only
QFILEIML	Not used on CD-ROM	IML bootstrap file for tape installations 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_LVLzz	Level indicator file (installation use) (first time saved)
QFILESCR	/QFILESCR	Licensed Internal Code displays
QIAM400	/QIAM400	Indicates this is an iSeries system
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_LVLzz	Level indicator file
QFILEIPL	/QFILEIPL	Installation file
QFILEIN	/QFILEIN	Installation file
Q57yySS1vrmM.0001	/Q57yySS1/QvrmzzM_/Q00/Q01	Installation file (QSYS simple objects)
Q57yySS1vrmM.0002	/Q57yySS1/QvrmzzM_/Q00/Q02	Installation file (QSYS simple objects)
:	:	:
:	:	:
Q57yySS1vrmM.0015	/Q57yySS1/QvrmzzM_/Q00/Q15	Installation file (QSYS simple objects)
Q57yySS1vrmM.0016	/Q57yySS1/QvrmzzM_/Q00/Q16	Installation file (QSYS simple objects)
Q57yySS1vrmxx0001	/Q57yySS1/Qvrmzzxx/Q00/Q01	QSYS installation file
:	:	:
:	:	:

Distribution media contents		
Tape file name	Optical file name	Description
Q57yySS1vrmxx0007	/Q57yySS1/Qvrmzzxx/Q00/Q07	File
Q57yySS1vrmxx0090	/Q57yySS1/Qvrmzzxx/Q00/Q90	File
Q57yySS1vrmM.0090	/Q57yySS1/QvrmzzM/Q00/Q90	Installation file (QSYS Complex Objects)
QFILEUPR	/QFILEUPR	User profiles and other security information
QFILEIOC	/QFILEIOC	Configuration information
QINPREP	/QINPREP	Installation file
Q57yy999vrmM.0000	/Q57yy999/QvrmzzM_/Q00/Q00	Software agreement file for Licensed Internal Code
Q57yySS1vrmM.0000	/Q57yySS1/QvrmzzM_/Q00/Q00	Software agreement file
QGPL.vrmzz.xx	/QUSRLIBS/Qvrmzzxx/QGPL	QGPL library file
QUSRSYS.vrmzz.xx	/QUSRLIBS/Qvrmzzxx/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	Installation 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 integrated file system files
:	:	:
:	:	:
Q57yyPIDvrmM.00nn	/Q57yyPID/QvrmM_/Q00/Qnn	Last optional file consisting of an additional product library or integrated file system 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 integrated file system files
:	:	:
:	:	:
Q57yyPIDvrmxx00nn	/Q57yyPID/Qvrmxx/Q00/Qnn	Last optional file consisting of an additional product library or integrated file system 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 integrated file system 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 integrated file system 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, 9, 13, 18, 21, 26, 27, 36, 37, 38, 39, 41, 42, and 43
- 5722-JV1 options 3, 4, 5, and 6
- 5769-FNT options 1 through 15
- 5769-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
- 5722-IP1 option 1
- 5733-VE1 base

Cover sheet for central site distribution media

Central Site Identification _____

Target Site Identification _____

Version _____ Release _____ Modification _____

Contents of Media:

IBM Licensed Internal Code

IBM i5/OS Licensed Program

Special Instructions:

This form may be copied as necessary.

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