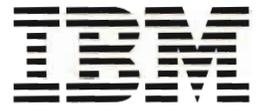
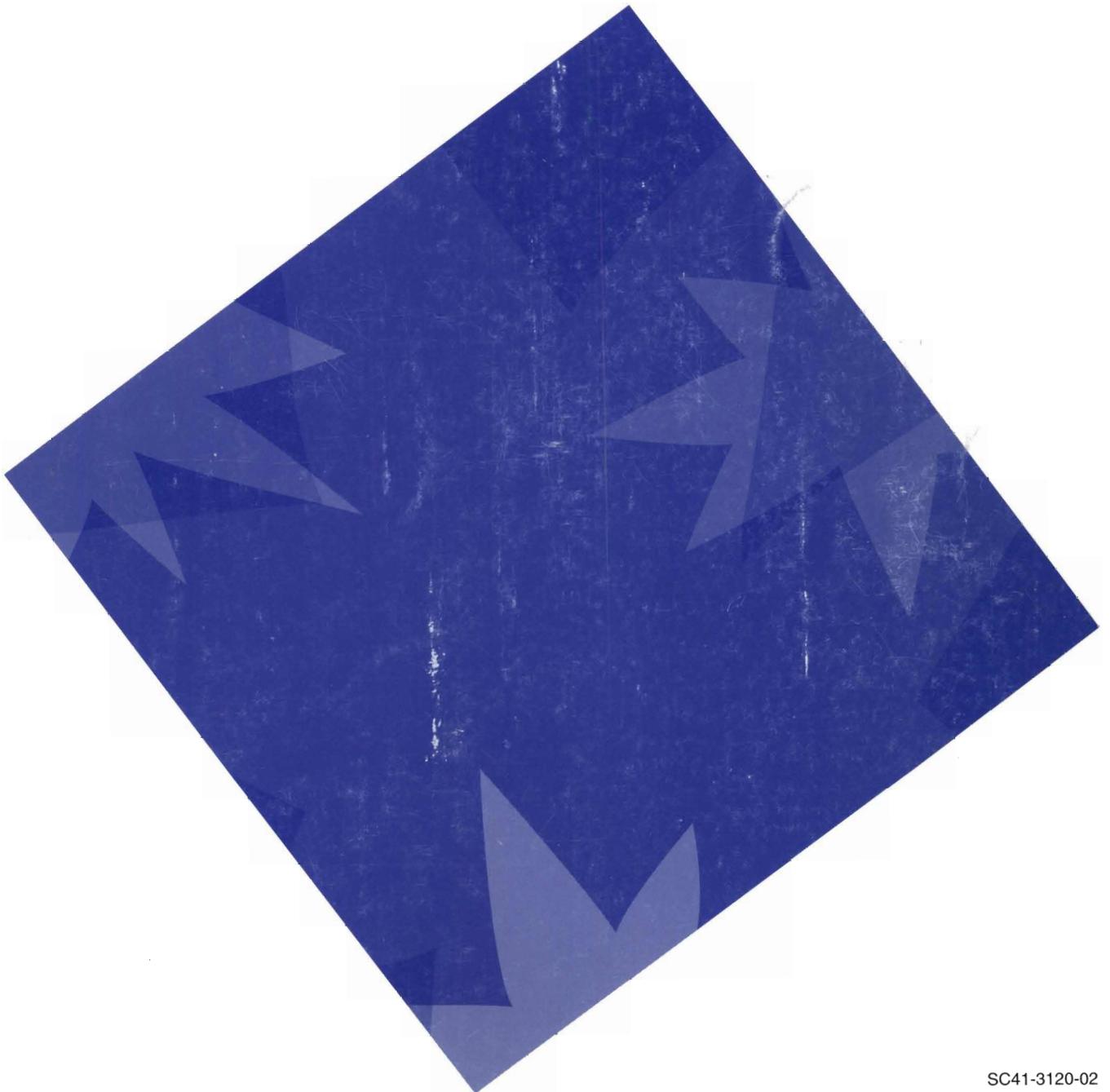


AS/400



# Software Installation

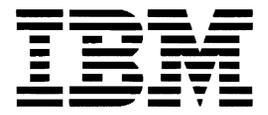
*Version 3*







AS/400



# Software Installation

*Version 3*



**Take Note!**

Before using this information and the product it supports, be sure to read the general information under "Notices" on page vii.



### Third Edition (June 1996)

This edition applies to the licensed program IBM Operating System/400 (Program 5763-SS1), Version 3 Release 2 Modification 0, and to all subsequent releases and modifications until otherwise indicated in new editions.

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## About Software Installation (SC41-3120)

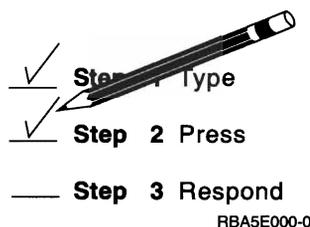
This book contains task-oriented instructions to install licensed programs on a AS/400\* system using IBM distribution tapes. Instructions for specific tasks are:

- Replacing a release using either the automatic or the manual installation process
- Installing a new AS/400 system either with or without the operating system already installed
- Installing an additional licensed program
- Installing a secondary language
- Changing the primary language using a secondary language tape

Use the information in Chapter 3, "Checklist for Planning for Your New Release" on page 3-1 to do the required planning activities before you actually begin an installation task. Information in this part can also be used to determine which of the remaining parts of the book you will need to use.

This book contains instructions and a recommended path for each installation task. If you choose options on any displays other than those recommended in this book, make a note of which option you choose. You will need this information later for recovery procedures if a failure occurs.

As you complete them, check off each step under the tasks in this book, as shown in this example:



---

## Who Should Use This Book

This licensed program installation book is for the system operator or office supervisor who is responsible for installing the licensed programs or operating system. The person with these responsibilities must have security officer authority for the system.

You should be able to operate the following devices:

- Display stations
- Tape libraries
- Tape units

For information about how to operate these devices, refer to the operator's guide for the devices.

You should also know how to do the following tasks on your AS/400 system:

- Sign on and off your display station
- Use function keys on your display station keyboard
- Use displays and menus
- Enter and use commands

Information about how to do these tasks is in the book *System Operation for New Users*, SC41-3200.

When a release is specified in this manual, the short form is used as shown in the second column.

Version 2 Release 3 Modification 0	V2R3M0
Version 3 Release 0 Modification 5	V3R0M5
Version 3 Release 1 Modification 0	V3R1M0
Version 3 Release 2 Modification 0	V3R2M0

For information about other AS/400 publications, see either of the following:

- The *Publications Reference* book, SC41-3003, in the AS/400 Softcopy Library.
- The *AS/400 Information Directory*, a unique, multimedia interface to a searchable database that contains descriptions of titles available from IBM or from selected other publishers. The *AS/400 Information Directory* is shipped with the OS/400 operating system at no charge.

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# Preparing for Software Installation



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## Chapter 1. Overview of the Installation Process

Welcome to the Software Installation book for AS/400 business computing systems. If you have installed software on your AS/400 before, you will notice changes to this book. The new organization of this book makes it easier for you to prepare for and perform your installation. We are committed to making your software installation process as easy as possible.

The process to install software can be thought of as having three phases: activities to do before installing, the installation process, and activities to do after installing. Figure 1-1 on page 1-2 shows an overview of the installation process. (Your installation process may not include all of the topics shown in the figure.)

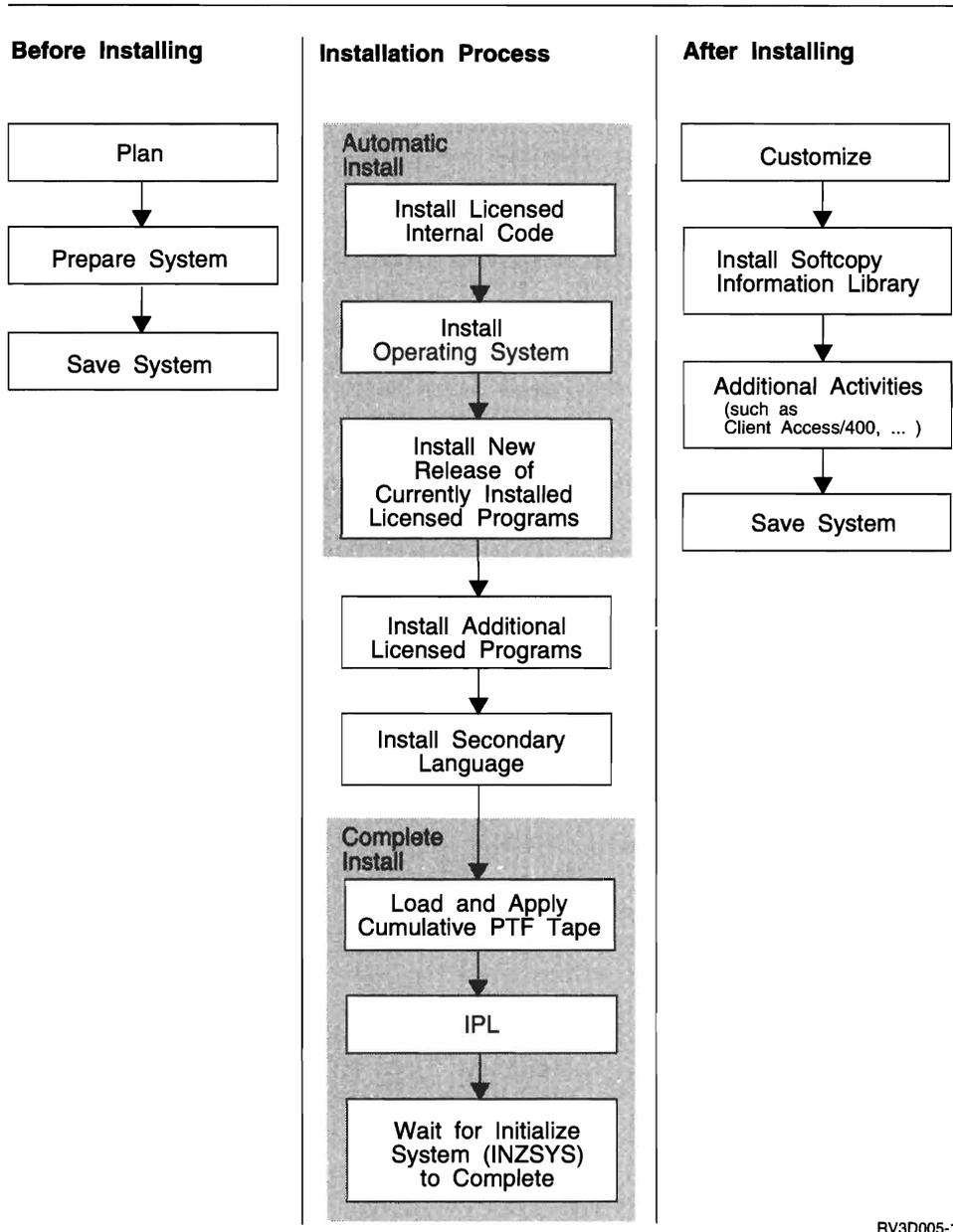
**To Do Before Installing:** You can do these activities days or even a few weeks in advance. These activities include verifying your order, checking the disk space you have available, backing up your system, and cleaning your tape device. Use Chapter 3, "Checklist for Planning for Your New Release" on page 3-1 of this book to guide you through the activities you need to do before installing your new release.

Appendix E, "Additional Installation Information," includes additional information about the installation process. Be sure to read it before you begin installing this release.

**Installation Process:** After you have completed the planning steps, Chapter 2, "Where to Begin . . ." on page 2-1 directs you to the appropriate instructions for your installation process. The installation process begins when you perform the instructions within one of the procedural chapters in this book.

**To Do After Installing:** The last step of each procedure directs you to use Chapter 11, "Checklist for Completing the Installation" on page 11-1 to complete the installation process. You may be directed to additional steps such as saving your system and performing installation activities on workstations for Client Access products. Other activities could include customizing your system, setting usage limits for user-based priced products, or loading online books. Before you begin production work on your system, be sure you have adequately protected your system from unauthorized use.

If a failure occurs during the installation process, the information in Appendix A, "Recovery Procedures" helps you to determine the cause of the problem and what to do to recover.



RV3D005-1

Figure 1-1. Overview of the Installation Process. Refer to the Chapter 3, "Checklist for Planning for Your New Release" on page 3-1 to get started with the planning process.

## Chapter 2. Where to Begin . . .

Use this section to determine which part or parts of this manual you need to use to install V3R2M0 licensed programs on your AS/400\* system.

<b>OS/400 Release That is Currently Installed</b>	<b>Should You Use this Book?</b>
V3R2M0 V3R1M0 V3R0M5 V2R3M0	<b>Yes.</b> You can use this book to replace the installed release of OS/400 and licensed programs with V3R2M0 levels.
V3R6M0	<b>No.</b> The V3R6M0 release of OS/400 only runs on AS/400 models that have PowerPC AS processors. Replacing V3R6M0 with Version 3 Release 2 is not valid and would require replacing your PowerPC technology hardware with a different technology hardware. If you want to replace V3R6M0 with another release that functions on PowerPC technology, use the book <i>Software Installation</i> , SC41-4120.
V3R0.7	<b>No,</b> you should not use this book. Version 3 Release 0 Modification 7 (V3R0.7) is an identifier for Licensed Internal Code used on AS/400 Advanced 36 systems. You need to follow special instructions in the <i>Getting SSP and OS/400 Installed and Running</i> book, SC21-8377. You should, however, take the time to read the planning information in this book. The <i>Getting SSP and OS/400 Installed and Running</i> book may direct you to here to install additional licensed programs or secondary languages.
V2R2M0 V2R1M1 V2R1M0 R03M00 (V1R3M0) R02M00 (V1R2M0) R01M02 (V1R1M2) R01M00 (V1R1M0)	<b>No.</b> Contact your software provider.

Figure 2-1. Checklist for Replacing a Release

Replacing a Release with V3R2M0	
Activity	Information Needed
Are you replacing a release with V3R2M0?	<p>Use these chapters in the following order:</p> <ul style="list-style-type: none"> <li>___ 1. Chapter 3, Checklist for Planning for Your New Release.</li> <li>___ 2. One of the chapters within the part "Replacing a Release."                             <ul style="list-style-type: none"> <li>• Chapter 4, "Replacing a Release Using Automatic Installation."</li> </ul> <p><b>Note:</b> Automatic installation is recommended, however there are some circumstances where you must use Chapter 5, Replacing a Release Using Manual Installation. Read "Choose Automatic or Manual Installation" on page 3-25 to determine if you must use manual installation.</p> <ul style="list-style-type: none"> <li>• Chapter 5, "Replacing a Release Using Manual Installation."</li> </ul> </li> <li>___ 3. You may need to complete one or both of the following:                             <ul style="list-style-type: none"> <li>• Chapter 9, Installing Additional Licensed Programs.</li> <li>• Chapter 10, Installing a Secondary Language.</li> </ul> </li> <li>___ 4. Chapter 11, Checklist for Completing the Installation.</li> </ul>

Figure 2-2 (Page 1 of 2). Checklist for Installing Software on a New System

Installing a New AS/400 System	
Activity	Information Needed
Are you installing a new AS/400 system that has the operating system already installed in your primary language?	<p>Use these chapters in the following order:</p> <ul style="list-style-type: none"> <li>___ 1. Chapter 3, Checklist for Planning for Your New Release.</li> <li>___ 2. Chapter 6, Installing a New AS/400 System with the Operating System Already Installed.                             <p><b>Note:</b> You can use the automatic installation process to install a new AS/400 system. However, you cannot change any system options during the installation process.</p> </li> <li>___ 3. You may need to complete one or both of the following:                             <ul style="list-style-type: none"> <li>• Chapter 9, Installing Additional Licensed Programs.</li> <li>• Chapter 10, Installing a Secondary Language.</li> </ul> </li> <li>___ 4. Chapter 11, Checklist for Completing the Installation.</li> </ul>
Are you installing a new AS/400 system that has the operating system already installed in a language that is not your primary language?	<p>Use the checklist below for installing a new AS/400 system without an operating system installed on page 2-3</p> <p>↓</p>

Figure 2-2 (Page 2 of 2). Checklist for Installing Software on a New System

Installing a New AS/400 System	
Activity	Information Needed
Are you installing a AS/400 system that <u>does not</u> have the operating system installed?	<p>Use these chapters in the following order:</p> <p>___ 1. Chapter 3, Checklist for Planning for Your New Release.</p> <p>___ 2. Chapter 7, Installing a New AS/400 System without the Operating System Installed.</p> <p>___ 3. You may need to complete one or both of the following:</p> <ul style="list-style-type: none"> <li>• Chapter 9, Installing Additional Licensed Programs.</li> <li>• Chapter 10, Installing a Secondary Language</li> </ul> <p>___ 4. Chapter 11, Checklist for Completing the Installation.</p>

Figure 2-3. Checklist for Installing a Cumulative PTF Package

Installing a Cumulative Program Temporary Fix (PTF) Package	
Activity	Information Needed
Are you loading and applying a cumulative PTF package to your system?	Go to the <i>AS/400 PTF Shipping Information Letter</i> that you received with the cumulative PTF tapes for instructions to install a PTF cumulative package.

Figure 2-4. Checklist for Adding Licensed Programs and Secondary Languages

Installing Additional Licensed Programs and Secondary Languages	
Activity	Information Needed
<p>Are you installing <u>only</u> additional licensed programs or optional parts of licensed programs to your existing V3R2M0 system?</p> <p>An example would be if you are adding a new licensed program or a new optional part of an licensed program that was shipped independently of the operating system.</p>	<p>Use these chapters in the following order:</p> <p>___ 1. Chapter 3, Checklist for Planning for Your New Release.</p> <p>___ 2. Chapter 9, Installing Additional Licensed Programs.</p> <p>___ 3. If you have a secondary language installed and you want to have national language support for the added licensed program, you need to use Chapter 10, Installing a Secondary Language.</p> <p>___ 4. Chapter 11, Checklist for Completing the Installation.</p>
Are you only installing a secondary language?	<p>Use these chapters in the following order:</p> <p>___ 1. Chapter 3, Checklist for Planning for Your New Release.</p> <p>___ 2. Chapter 10, Installing a Secondary Language.</p> <p>___ 3. Chapter 11, Checklist for Completing the Installation.</p>
Are you installing additional licensed programs or secondary languages to your system as part of replacing a release?	The procedures for replacing a release direct you to add additional licensed programs and secondary languages at the appropriate time. Use the checklist in Figure 2-1 on page 2-1.
Are you installing additional licensed programs or secondary languages to your system as part of installing a new system?	The procedures for installing a new system direct you to add additional licensed programs and secondary languages at the appropriate Use the appropriate checklist from Figure 2-2 on page 2-2.

Figure 2-5. Checklist for Changing the Primary Language

Changing the Primary Language	
Activity	Information Needed
Are you changing your primary language using your secondary language media?	Use these chapters in the following order: ___ 1. Chapter 3, Checklist for Planning for Your New Release. Be sure to read "Considerations When Changing a Primary Language" on page 3-27. ___ 2. Chapter 8, "Changing Your Primary Language Using a Secondary Language Media." ___ 3. Chapter 11, Checklist for Completing the Installation.
Are you changing your primary language from a DBCS primary language to an SBCS primary language or an SBCS primary language to a DBCS primary language?  Or, Are you replacing a release with V3R2M0 and also want to change your primary language?	Use these chapters in the following order: ___ Step 1. Chapter 3, Checklist for Planning for Your New Release. <b>Note:</b> Be sure to read "When to Use Manual Installation" on page 3-26 and "Considerations When Changing a Primary Language" on page 3-27. ___ Step 2. Chapter 5, "Replacing a Release Using Manual Installation." ___ Step 3. You may need to complete one or both of the following: <ul style="list-style-type: none"> <li>• Chapter 9, Installing Additional Licensed Programs.</li> <li>• Chapter 10, Installing a Secondary Language.</li> </ul> ___ Step 4. Chapter 11, Checklist for Completing the Installation.
Are you installing a new AS/400 system and want to change the primary language?  Or, Are you only changing your primary language?	Use the checklist for installing a new AS/400 system without an operating system installed on page 2-3 in Figure 2-2 on page 2-2.  <b>Note:</b> Be sure to read "Considerations When Changing a Primary Language" on page 3-27.

Figure 2-6 (Page 1 of 2). Checklist for Adding a New Disk Unit

Adding a New Disk Unit	
Activity	Information Needed
Are you adding a new disk unit to your <u>new</u> AS/400 system?	You may have ordered your system with a minimum amount of DASD. In this case, you should reinstall the operating system to improve system performance and you may need to install licensed programs.  <b>Note:</b> If you are using mirrored protection, device parity protection, or auxiliary storage pools, refer to the information on working with auxiliary storage pools in the <i>Backup and Recovery – Advanced</i> book, SC41-3305, before you begin.  Use these chapters in the following order: ___ 1. Chapter 3, Checklist for Planning for Your New Release. ___ 2. Chapter 7, Installing a New AS/400 System without the Operating System Installed. ___ 3. You may need to complete one or both of the following: <ul style="list-style-type: none"> <li>• Chapter 9, Installing Additional Licensed Programs.</li> <li>• Chapter 10, Installing a Secondary Language</li> </ul> ___ 4. Chapter 11, Checklist for Completing the Installation.

Figure 2-6 (Page 2 of 2). Checklist for Adding a New Disk Unit

Adding a New Disk Unit	
Activity	Information Needed
Are you adding a new disk unit to your <u>existing</u> AS/400 system?	<p><b>Note:</b> If you are using mirrored protection, device parity protection, or auxiliary storage pools, refer to the information on working with auxiliary storage pools in the <i>Backup and Recovery – Advanced</i> book, SC41-3305, before you begin.</p> <p>Use these chapters in the following order:</p> <ul style="list-style-type: none"> <li>___ 1. Chapter 3, Checklist for Planning for Your New Release.</li> <li>___ 2. Chapter 5, Replacing a Release Using Manual Installation.</li> <li>___ 3. You may need to complete one or both of the following:                             <ul style="list-style-type: none"> <li>• Chapter 9, Installing Additional Licensed Programs.</li> <li>• Chapter 10, Installing a Secondary Language.</li> </ul> </li> <li>___ 4. Chapter 11, Checklist for Completing the Installation.</li> </ul>

Figure 2-7. Checklist for Installing a Hardware Upgrade

Installing a Hardware Upgrade	
Activity	Information Needed
Are you installing a hardware upgrade at the same time as you are installing V3R2M0 or licensed programs?	If your system is already running V3R2M0 of OS/400, use the <i>System Upgrade Road Map (CISC to CISC)</i> , SX41-3135, as your guide. At the appropriate point in the upgrade, the <i>System Upgrade Road Map (CISC to CISC)</i> directs you to this book to install V3R2M0 of the operating system and licensed programs. You may also receive additional instructions with the upgrade package.
Are you installing a hardware upgrade to move your system to PowerPC technology?	Upgrading to a PowerPC AS processor requires a simultaneous hardware and software upgrade using the <i>AS/400 Road Map for Changing to PowerPC Technology</i> book, SA41-4150. Refer to the table of supported releases on 2-1

**Always begin by reading the planning material in Chapter 3, “Checklist for Planning for Your New Release” on page 3-1.**



## Chapter 3. Checklist for Planning for Your New Release

When you receive your new release (distribution media, manuals, and softcopy information library), read this chapter and complete the planning activities. Careful and complete early planning saves a considerable amount of time and can help to make the actual installation process run smoothly. Be sure to read all of this chapter before scheduling your installation.

The following list contains tasks that can be done days or even a few weeks before you schedule the time to install your new release on your system. Check off the tasks on the list as you complete them so you do not overlook any of them. More information about each task is included in this section, starting at the page indicated. Appendix E, "Additional Installation Information," provides useful general information.

Task	Level of Importance	When to Complete
<input type="checkbox"/> 1. Review Information (page 3-2)	Recommended	When convenient
<input type="checkbox"/> 2. Essential Installation Concepts (page 3-5)	Recommended	When convenient
<input type="checkbox"/> 3. "Create a Master Installation List" on page 3-9 (page 3-9)	Recommended	When you receive release
<input type="checkbox"/> 4. Prepare to Install Softcopy Information (page 3-15)	Recommended	When convenient
<input type="checkbox"/> 5. Check Media Integrity (page 3-18)	Recommended	4-5 days before installing
<input type="checkbox"/> 6. Permanently Apply Existing PTFs (page 3-19)	Optional	Same day
<input type="checkbox"/> 7. PTFs Needed Before Installing V3R2M0 (page 3-19)	Required	Same day
<input type="checkbox"/> 8. Evaluate Your Disk Storage Needs (page 3-21)	Recommended	1-2 days before installing
<input type="checkbox"/> 9. Choose Automatic or Manual Installation (page 3-25)	Required	When convenient
<input type="checkbox"/> 10. Planning for National Language Support (page 3-27)	Recommended	When convenient
<input type="checkbox"/> 11. Estimate Installation Time (page 3-29)	Recommended	When convenient
<input type="checkbox"/> 12. Identify Changes to IBM-Supplied Objects (page 3-30)	Recommended	1-2 days before installing
<input type="checkbox"/> 13. Verify Entries in the System Distribution Directory (page 3-30)	Recommended	Same day
<input type="checkbox"/> 14. Checking the QSECOFR User Profile (page 3-31)	Recommended	Same day
<input type="checkbox"/> 15. Checking Library List System Values (page 3-31)	Recommended	Same day
<input type="checkbox"/> 16. Gather Performance Information (page 3-32)	Optional	1-2 weeks before installing

Task	Level of Importance	When to Complete
___ 17. Order the Current Cumulative Package (page 3-33)	Recommended	1–2 weeks before installing
___ 18. Evaluate Release-Level Interoperability for Systems in a Network (page 3-34)	Recommended	When convenient
___ 19. How to Ensure Two-Phase Commit Integrity (page 3-35)	Recommended	1–2 days before installing; Verify on day of installation
___ 20. Save the System (page 3-37)	Recommended	1–2 days before installing
___ 21. Basic System Hardware Considerations (page 3-37)	Recommended	Same day

When you have completed these planning tasks you will be ready to start your installation.

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## Review Information

There are several sources for the information that you need to review to complete your software planning. This book is your first source of information. Most of the documents you need are shipped with your software release. This section describes what documents you need and why you need them, and where to locate the documents.

## Start Here Binders

Beginning in V3R2M0 a set of planning books are shipped to you in advance of your new system or your new software release. This advance shipment includes the *Start Here* binders. The *Start Here* binders help you to organize the documents you need for hardware and software installation. If you have not already done so, you should insert this book and the other documents listed in “Documents That Are Shipped with Your New Software Release”) into the *Start Here* binders.

Some countries may not ship binders with the early planning books.

## Documents That Are Shipped with Your New Software Release

The following documents are shipped along with the distribution media for your new V3R2M0 software. Insert these documents behind the *Installing Software* and *Latest News* tabs of the *Start Here* binder. Read the material that applies to your system.

- *Software Installation*

This is the book that you are reading. It contains information necessary to plan to install the new release. It also contains procedures for installing the new release.

- *Read This First*

The *Read This First* contains information that was not available for publication in the *Memorandum to Application System/400\* Users* or this book. You should read this document before you install this release.

- *Memo to Users Version 3*

This is also referred to as the *Memo to Users*, the *Memorandum to Application System/400 Users*, or the *Memo to AS/400 Users*. It describes *only* significant changes in the new release that could potentially affect your programs or system operations. This memo should be used to prepare for changes on the release and to use the new release. Be sure to read each section that pertains to licensed programs that you currently have installed or plan to install on your system.

The *Memo to Users* and *Read This First* are now available to customers using electronic customer support. You can order these documents for V3R2M0 by specifying this program temporary fix (PTF) number: SNDPTFORD SF98076

**Note:** If you have V2R3M0 installed and you plan to replace it with V3R2M0, you should order the *Memo to Users* and *Read This First* for V3R1M0. This will ensure that you are aware of changes that occurred in V3R1M0 that could also affect your programs and system operations. To order these V3R1M0 documents, specify this PTF: SNDPTFORD SF98056.

- Media Description Report

A media description report lists the contents of a set of distribution media for AS/400. Be sure to save a copy of this report. This report is the only list that tells you what licensed programs or priced features are on your distribution media. You will need this report to create a master installation list for software planning. The report also helps you identify the correct media volume to load. The report identifies the licensed programs contained on each tape volume, the program name, copyright information, the version, release, and modification level, the associated feature number, and the language feature code.

- AS/400 PTF Shipping Information Letter

This letter is shipped with the cumulative program temporary fix (PTF) package for the new release and contains instructions to install the package. It also includes a time estimate for installing the cumulative package. Installing the cumulative package can account for a significant amount of your total estimated downtime.

- Individual product documentation

You may have received additional letters to users for individual products. Such material may contain information unique for that product that could affect its installation. Be sure to check these additional sources. When you install a product for the first time, there may be additional actions or customization that you need to perform before the product is functional. Look for this type of information in the product publications.

## Obtain the Latest Preventive Service Planning Information

You need the most recent cumulative package of the *AS/400 Preventive Service Planning Information*. The IBM software support center updates this information regularly. It provides the most current information about conditions that could impede your software installation process.

There are multiple preventive service planning documents-categorized by topic. We recommend that you review at least the software installation document and the general document for V3R2M0. The general document lists topics covered in additional preventive service planning information documents that you may want to order if they apply to your system.

You can order the preventive service planning documents through electronic customer support.

- To order the general document for V3R2M0 preventive service planning, enter the following on any command line:

```
SNDPTFORD SF98vrm
```

where v is for the version, r is the release, and m is the modification level.

- To order the preventive service planning document for V3R2M0 software installation, enter the following on any command line:

```
SNDPTFORD SF98070
```

If you do not have access to electronic customer support, contact your software support provider to obtain this information. Information about displaying and printing preventive service planning documents is available in the book *System Startup and Problem Handling*, SC41-3206.

If you need to obtain PTFs for a release before you install that release, the best way to do so is to place a voice order with IBM service. This ensures that you will receive all the required requisite PTFs as well.

Appendix E, "Additional Installation Information" on page E-1 contains information about testing and setting up electronic customer support.

## Additional Information

You may also find the following books useful:

- The *New Release Planning for V3R2* book, SA41-3100, describes enhancements to products for this release.
- If you are using checksum protection, auxiliary storage pools, device parity protection, or mirrored protection, you should also obtain the book *Backup and Recovery – Advanced*, SC41-3305.
- Before you begin production work on your system, be sure you have adequately protected your system from unauthorized use. Refer to the book *Security – Basic*, SC41-3301, for information about how to plan and set up security on your system. This book was shipped to you in the set of early planning publications. If you are interested in C2 security, refer to the book *Security – Enabling for C2*, SC41-3303.

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## Essential Installation Concepts

At some point, each installation procedure in this book uses the Work with Licensed Programs (LICPGM) menu. Before you begin, you should know what to expect from the installation process and the possible effect of the support to enable AS/400 mixed release levels.

### Installation Procedures—Overview

This topic describes the results you get from the LICPGM menu for each of the following types of installation procedure:

- Install software on your new system
- Replace the software on your existing system
- Add additional licensed programs to your new or existing system
- Add to or change the national language support on your system.

If you are installing a new system, the operating system may or may not be already installed. The procedures in the “Installing a New System” section will help you to install the operating system, if necessary, and to install licensed programs. You may find that you do not use some of the optional parts of licensed programs that are installed. Often this is true with licensed programs, such as OS/400 and Client Access, that have many optional parts. Figure 3-1 on page 3-6 shows the effect of mixed release level support.

If you are replacing your existing software, you should be aware of how the installation process handles mixed release level licensed programs and new licensed programs. You should also be aware of the differences between the automatic and manual installation processes. The topic “Choose Automatic or Manual Installation” on page 3-25 describes the installation process and defines what is considered to be a new licensed program. The topic “Mixed Release Level—Overview” describes the impact that mixed release level licensed programs have when you replace a release of software.

If you are adding additional licensed programs or optional parts of licensed programs, you select items from a list. The topic “When Option 11 is Used to Add Licensed Programs” on page 3-8 describes how the installation process (Chapter 9, Installing Additional Licensed Programs) functions. Figure 3-1 on page 3-6 shows the difference between how this procedure and other installation procedures handle mixed release level licensed programs.

When you add a secondary language, you add language objects for the licensed programs that are installed on your system. When you change the primary language you replace the existing language objects, and, depending on the procedure that is used, you could also be replacing program objects. See the topic “Planning for National Language Support” on page 3-27 for more information.

### Mixed Release Level—Overview

AS/400 mixed release level support is an approach to managing software delivery. Mixed release level makes it possible for the IBM software distribution media to deliver licensed programs that are at existing release levels along with a new release of OS/400. Existing licensed programs that are enabled for mixed release level are not rebuilt and do not renew at the same time as the operating system. Such licensed programs remain at earlier release levels but are compatible and

function with V3R2M0 OS/400. However, the installation procedures you use produce varying results.

Figure 3-1 correlates this book's installation procedures with the option that is used from the Work with Licensed Programs (LICPGM) menu. Menu options 1 (Install all) and 11 (Install licensed programs) deserve some additional explanation.

**Client Access Users Take Note**

Several Client Access licensed programs did not renew at the same time as V3R2M0 OS/400. If you plan to install any Client Access licensed programs, read the following:

- "When Option 1 is Used to Replace a Release" on page 3-7
- "When Option 11 is Used to Add Licensed Programs" on page 3-8
- "Apply PTFs for Client Access/400 Products" on page 3-20

Figure 3-1 (Page 1 of 2). Result of Install Procedures on mixed release level Licensed Programs

Procedure	LICPGM Menu Option	Install option =	Result
Chapter 4, "Replacing a Release Using Automatic Installation" and Chapter 5, "Replacing a Release Using Manual Installation" on page 5-1  <b>Note:</b> You do not select option 1 in the automatic installation but the system processes licensed programs the same way as if you did.	1	1-Installed products	The result can vary. See Figure 3-3 on page 3-7 and "When Option 1 is Used to Replace a Release" on page 3-7.
Chapter 6, "Installing a New AS/400 System with the Operating System Already Installed"	1	3-New products	If you have a compatible level of a licensed program installed and that licensed program did not renew, the licensed program from the media is not installed.
Chapter 7, "Installing a New AS/400 System without the Operating System Installed"	1	2-All products	If you have a compatible level of a licensed program installed and that licensed program did not renew, the licensed program from the media is not installed.
Chapter 8, "Changing Your Primary Language Using a Secondary Language Media"	1	1-Installed products	This procedure replaces only the language objects that exist on your system.
Chapter 9, "Installing Additional Licensed Programs"	11	Does not apply	The licensed program or optional part that you select is always installed from the media. If the licensed program is already installed it is replaced. This is true even when the system and the media both have the same level of the licensed program. (When you install a level of a licensed program over the same level, any PTFs you had applied are lost.)

Figure 3-1 (Page 2 of 2). Result of Install Procedures on mixed release level Licensed Programs

Procedure	LICPGM Menu Option	Install option =	Result
Chapter 10, "Installing a Secondary Language"	21	Does not apply	This procedure adds language objects for all of the installed licensed programs.

### When Option 1 is Used to Replace a Release

When you select option 1 from the LICPGM menu you see the Install Options display. This display prompts you for an *install option*, which is shown in Figure 3-2.

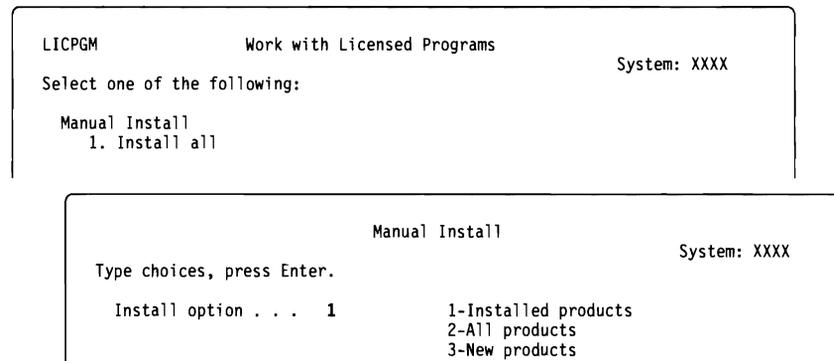


Figure 3-2. LICPGM Menu, Selecting Option 1.

The value *1=Installed products*, used when replacing a release of software, causes the installation process to install from the media only those licensed programs that already exist on your system. If the release level of the licensed program on your system is compatible with the installed operating system, the installation process could replace the licensed program. This replacement occurs if there is a more recent level on the media. Figure 3-3 compares the release level of the installed product and the level that is on the media and shows the resulting installation action when the *Install option* equals 1-Installed products. Figure 3-3 includes examples of the media that contain both licensed programs that renewed and did not renew with the new release (V3R2M0) of the operating system.

Only licensed programs with currently installed release levels that are compatible with the installed operating system (V3R2M0) are functional. Use Figure C-3 on page C-5 to determine which licensed programs can be at compatible at earlier release levels than V3R2M0 OS/400.

Figure 3-3. Result of Mixed Release Levels When Replacing Licensed Programs. This table shows the resulting level of licensed programs that are installed when you use procedures that replace a release of software.

Level of Licensed Program Currently Installed	Level of Licensed Program on the Installation Media	Installation Action
V2R3M0 Or V3R0M5	V3R1M0	Installs V3R1M0
	V3R1M1	Installs V3R1M1
	V3R2M0	Installs V3R2M0
	V3R1M1 and V3R1M0 (1)	Installs V3R1M1
	V3R2M0 and V3R1M0 (1)	Installs V3R2M0
	V3R2M0 and V3R1M1 (1)	Installs V3R2M0
V3R1M0	V3R1M0	None
	V3R1M1	Installs V3R1M1
	V3R2M0	Installs V3R2M0
	V3R1M1 and V3R1M0 (1)	Installs V3R1M1
	V3R2M0 and V3R1M0 (1)	Installs V3R2M0
	V3R2M0 and V3R1M1 (1)	Installs V3R2M0
V3R1M1	V3R1M1	None
	V3R2M0	Installs V3R2M0
	V3R1M1 and V3R1M0 (1)	None
	V3R2M0 and V3R1M1 (1)	Installs V3R2M0
V3R2M0	V3R2M0	None
	V3R2M0 and V3R1M0 (1)	
	V3R2M0 and V3R1M1 (1)	

**Note:**

<sup>1</sup> When there is more than one level of a licensed program on the installation media, the most recent level is accessed first. This means that, when you use this install option, whenever the highest level (VxRyMz) on the media is higher than what is installed on your a system, the highest level that is on the media is installed.

**When Option 11 is Used to Add Licensed Programs**

When you select option 11 (Install licensed programs) from the LICPGM menu you see a list of licensed programs and their optional parts. Typically, you use option 11 when you need to install a new licensed program or to replace a single licensed program. You select the licensed program or part that you want to install from the list. The licensed program or optional part that you select is always installed from the media. If the licensed program is already installed, it is replaced. This is true even when both the system and the media have the same level of the licensed program. (When you install a level of a licensed program over the same level that is already on your system, any PTFs you had applied to the licensed program are lost.)

You cannot use the list displayed with option 11 to determine whether or not a licensed program renewed at the same time as the operating system. (Use Figure C-3 on page C-5 to determine what levels of a licensed program are compatible with V3R2M0 OS/400.) After the installation completes, use the F11 key to view the *Installed Release* column. Compatible licensed programs that did not renew will have release levels that are earlier than the release of the installed level of OS/400 (V3R2M0).

## Create a Master Installation List

A complete list of your currently installed software is the base from which to start your software planning. This topic describes how to create a master installation list. You can use a master installation list as an aid in other installation planning tasks and as a reference while you perform the software installation procedures.

### Why You Should Create It

You should create a master installation list to prevent unpleasant surprises that can occur when the installation processes and your expectations do not concur. You can use a master installation list as an aid when you are completing other planning tasks, such as ensuring that you have adequate disk storage and estimating installation time. If your organization splits responsibility for preparation and installation activities between two or more people, you can use the master installation list as a communication aid. The person who installs the software can use the master installation list to ensure that all of the expected products install with the appropriate procedure.

You create and use the master installation list in stages. The first stage is to identify your currently installed software and national language support.

The next stage is to verify that the order you received contains the correct national language and the correct (V3R2M0) release of products.

The final stage is to compare the installed products to those that you plan to install. When you do this comparison, you identify any special installation requirements and the installation procedure for each product. You then know which products you can expect to be installed during your primary installation procedure and which products will require that you use an additional procedures. The person performing the installation can use the master installation list as a reference to ensure that all products are installed.

### Terminology Clarification

Software products have unique 7-character identifiers. (For example, 5763-SS1 identifies V3R2M0 Operating System/400.) As you create your master installation list, you will see many names for this identifier. Here are some of the names and the places where you could see them:

Resource ID	The Display Software Resources (DSPSFWRSC) command uses this name.
Licensed Program ID	The installation process uses this name. This appears on displays when you use the Work with Licensed Programs menu (LICPGM) or the related commands for saving, restoring, and deleting licensed programs.
Program Number	This is used in the Media Description Report in some countries.
Base Program	This is used in the Media Description Report in some countries.

## How to Identify National Languages

Do the following to determine the feature number for the national language version (NLV) for your system's primary language and any installed secondary languages.

- \_\_\_ **Step 1.** Type the following command on any command line:  
**GO LICPGM**  
Press the Enter key.  
The Work with Licensed Programs display is shown.
- \_\_\_ **Step 2.** Type **20** (Display secondary languages).  
Press the Enter key.
- \_\_\_ **Step 3.** The Display Installed Secondary Languages display is shown. This display shows the primary language you have installed on your system. The display also shows a list of the secondary languages, if you have any installed.  
  
Write these feature codes in the *Currently Installed* column in Figure C-1 on page C-1.
- \_\_\_ **Step 4.** Press the F3 (Exit) key.

## How to Identify Your Currently Installed Software

In this task, you record the list of IBM-supplied software that you plan to replace.

- \_\_\_ **Step 1.** Create a spooled file that contains a complete list of your existing software by typing the following command on any command line:  
**DSPSFWRSC OUTPUT(\*PRINT)**  
Press the Enter key.  
Print the spooled file by using to your normal print procedures.
- \_\_\_ **Step 2.** Identify the release level of Licensed Internal Code and OS/400 that is currently installed. The first two entries in the printout of software resources are for Licensed Internal Code and Operating System/400. Write the release values that are shown on your printout in the *Currently Installed* column of the work sheet in Figure C-1 on page C-1.
- \_\_\_ **Step 3.** Determine which optionally installable parts of OS/400 you have installed. Compare the OS/400 options on your printout with Figure C-3 on page C-5 (Your printout shows more than one entry for most options. You do not need to be concerned by this.) Record each option of OS/400 that you plan to replace in the work sheet in Figure C-2 on page C-1. Your printout includes both "no-charge" and priced features of OS/400. This is important information when you verify your order.  
  
The OS/400 libraries QGPL and QUSRSYS do not appear in the printout even though these libraries are installed.
- \_\_\_ **Step 4.** Determine which licensed programs you have installed. If your currently installed release is V2R3M0, licensed programs will have resource IDs that begin with 5738. If your currently installed release is V3R1M0, licensed programs will have resource IDs that begin with 5763. If your currently installed release is V3R0M5, you may have a combination of licensed programs whose resource IDs begin with

5738 or 5763. Record all of the licensed programs and optional parts that you plan to replace on the work sheet in Figure C-2 on page C-1.

There are two special situations that you should be sure to check:

- Determine which Client Access licensed programs and options you have installed.
  - If the currently installed release is V2R3M0 and you have 5738-PC1 installed, use the information in “Mapping PC Support to Client Access” on page C-15 to determine which Client Access licensed programs and options provide equivalent function. Record the equivalent Client Access licensed program on the work sheet in the work sheet in Figure C-2 on page C-1. Note that Client Access requires OS/400 option 12 (OS/400 - Host Servers).
  - If the currently installed release is V3R0M5 or V3R1M0, check your printout for entries having resource IDs of 5763-XA1, -XB1, -XC1, -XF1, -XG1, or -XL1. (When you order 5736-XA1, all of these licensed programs, sometimes called clients, are included.) If the software on your system was preloaded for you, you may not be using all of the options of each of these licensed programs. Consider deleting any client licensed programs or options that you do not use.

V3R2M0 Client Access licensed programs are supported at mixed release levels. When you verify your order, you will determine which client licensed programs and options will be replaced and which will remain on your system unchanged. On the work sheet in Figure C-2 on page C-1, record all of the installed client licensed programs and options that you want to remain on your system.

- IBM ships certain V3R2M0 licensed programs with all software orders at no charge to you. If you have earlier levels of these licensed programs installed, they will be replaced during your primary installation procedure. Check your printout for the following products:

	V2R3M0	V3R0M5	V3R1M0
TCP/IP Connectivity Utilities/400	5738-TC1	5763-TC1	5763-TC1
Performance Management/400	5799-MPG	5763-PM1	5763-PM1

If any of these are installed on your system, record them on the work sheet in Figure C-2 on page C-1. Procedures that replace a release of software will replace these products with the V3R2M0 equivalent. For V3R2M0, TCP/IP Connectivity Utilities/400 and Performance Management/400 are licensed programs.

- \_\_\_ **Step 5.** The remaining software products on your printout are either programming request for price quotations (PRPQs), licensed program offerings (LPOs), or are from another software provider. Generally, these products are not replaced when you use the procedures in this book. If

you need to replace any of these products, contact your software provider.

Keep your printout. You will need to refer to it when you verify your order.

## Verifying Your Order and the Release Level

You need your software distribution media, the Media Description Report, and your master installation list work sheets (Figure C-1) and Figure C-2 on page C-1) for this process.

### What to Expect in the Media Description Report

The Media Description Report contains entries for OS/400, licensed programs, and the cumulative PTF package. It does not contain an entry for Licensed Internal Code. Only priced features appear in the report.

Many licensed programs, including OS/400, include optionally installable parts with the base product for no additional charge. The no-charge options do not have separate entries in the report. Some licensed programs, including OS/400, may also have optional parts that are priced features. If you ordered priced features of licensed programs, you will see separate entries for these features in the report. Priced features have the same program ID as their base product but they have a different feature number.

The format of the report and the amount of detail included varies with the location that created the distribution media (North America, Europe, Asia). Some countries have only one entry for each licensed program or priced feature included in the order. Others, including the U.S., may have multiple entries that distinguish between the program and national language information of a licensed program. This distinction is not needed when creating your master installation list.

- **Step 1.** Verify that the media you received is for the release level you ordered. Distribution media labels indicate Version 3 Release 2 in a format that is different from what appears on displays during installation. The media labels show the version, V3, in the first line of the label. The release and modification level are shown as R02M00.  
  
For each media volume that you received, write the media identifier in the *Media Received* column of the work sheet in Figure C-1 on page C-1.
- **Step 2.** If you received secondary language media, write the release level and the national language feature code in the *Release Received* column of Figure C-1.
- **Step 3.** If you received any other media, record it in the *Other Media* column of Figure C-1. Possible examples include the Softcopy Library, PRPQs, or PC diskettes.
- **Step 4.** The media description report should have at least one entry for OS/400. Assume that you have received the no-charge optional parts of OS/400 with the base feature. If you ordered a priced feature of OS/400, you should find an additional entry in the media description

report for 5763-SS1 that has a different feature number. Verify that you received all of the priced features that you ordered.

- \_\_\_ **Step 5.** IBM ships specific licensed programs with each software order at no charge to you. You should find entries in the media description report for the following licensed programs:
- 5763-PM1
  - 5763-TC1

- \_\_\_ **Step 6.** If you ordered IBM AS/400 Client Access Family, you receive 5763-XA1 and several additional licensed programs. (The individual clients install as separate licensed programs.) You should see entries in the media description report for 5763-XA1, -XB1, -XC1, -XD1, -XF1, -XG1, and -XL1.

- \_\_\_ **Step 7.** Verify that you received all of the licensed programs and priced features that you ordered. There should be an entry in the report for each licensed program and any priced features that you ordered. Assume that you have received any no-charge optional parts of a licensed program with the base feature. If you ordered a separately priced feature of a licensed program, you should find an additional entry in media description report that has a different feature number. Check the media description report against your work sheets in Figure C-1 and Figure C-2 on page C-1. You should have received a licensed program for every one that you plan to replace.

If you did not receive a licensed program that you expected, check Figure C-3 on page C-5 to see if the licensed program changed status in V3R2M0. If the status that is shown is repackaged or removed, write the status in the *Notes* section on your work sheet.

If the status appears to be OK, the licensed program may not have been available when your order was shipped or there could be an error. Contact your software provider.

## Evaluating Your Installation Plans

To complete your planning you should understand what licensed programs get installed with the installation process that you plan to use. You need your Master Installation List work sheets and Figure C-3 for this. Figure C-3 contains the following information:

- Lists the licensed programs and optional parts that are supported by the Work with Licensed Programs menu at the time V3R2M0 became generally available. The table includes licensed programs and options that are new with V3R2M0.
- Identifies known circumstances that may affect the installation of a licensed program or option.
- Identifies licensed programs that are shipped at mixed release levels with V3R2M0 OS/400.

- \_\_\_ **Step 1.** Identify which procedure in this book is your primary installation procedure. Write the name of the procedure you plan to use as your primary installation path in the space that is provided in Figure C-1.

*Primary* installation procedures install Licensed Internal Code, Operating System/400, and licensed programs. How licensed programs are installed varies with the primary installation procedure you use.

- If you are installing a new AS/400 system, the primary installation procedures are either Chapter 6, “Installing a New AS/400 System with the Operating System Already Installed” or Chapter 7, “Installing a New AS/400 System without the Operating System Installed.” All licensed programs and options on the installation media will be installed.
- If you are replacing software on an existing system, the primary installation procedures are either Chapter 4, “Replacing a Release Using Automatic Installation” or Chapter 5, “Replacing a Release Using Manual Installation.” Only licensed programs and options that are installed on your existing system are replaced with software from the installation media.

- \_\_\_ **Step 2.** If you are replacing existing software, you should identify which of the installed licensed programs are enabled for mixed release levels with V3R2M0 OS/400.

Review the licensed program section of your master installation list work sheet (Figure C-2 on page C-1.) Use Figure C-3 on page C-5 to identify which of the licensed programs on your work sheet are not renewed at V3R2M0. Figure C-3 shows the probable level that is on the distribution media (the media could contain a higher level). If the level that is indicated in Figure C-3 is higher than the level that is currently installed, the copy on the media will replace the installed product. (Refer to Figure 3-1 on page 3-6 for examples.)

On your work sheet, indicate that these licensed programs will replace with the primary procedure (the *P* in the *Procedure* column). Any other licensed programs listed on your work sheet that are not enabled for mixed release level also will install with the primary procedure.

Check the *Status* column in Figure C-3 on page C-5 and any notes that are associated with each licensed program.

- \_\_\_ **Step 3.** *Additional* installation procedures refers to adding new licensed programs or new optional parts to an existing system using Chapter 9, “Installing Additional Licensed Programs.” If you are replacing a release of software, refer to “What Does Not Install with Either Method” on page 3-25 for a description of what the installation process considers to be a new licensed program. If you are installing a new system, you may have received additional products on separate media. Additional procedures may also include using the RSTLICPGM command to install licensed programs that are not yet installable through the LICPGM menu.

Make entries on your work sheet for any features, licensed programs, or optional parts that you are adding to the system for the first time. Indicate that these install with the additional procedure (the *A* in the *Procedure* column).

- \_\_\_ **Step 4.** *Other* installation procedures typically include tasks that you perform to complete the software upgrade. Examples of other procedures include completing the workstation-based installation for certain licensed programs, installing PRPQs and LPOs, loading the cumulative PTF package, and installing the softcopy library. Instructions for other procedures are not included in this book.

If you plan to install licensed programs that require other actions to complete, indicate this on your work sheet (the *O* in the *Procedure* column).

\_\_\_ **Step 5.** Are there any entries on your work sheet other than mixed release level licensed programs that will not be replaced that do not have a procedure identified? Consider the following:

- You may have received licensed programs as part of another order. Locate the media description report for that order.
- You may have software products that are installed but which are not listed in Figure C-3. (Only licensed programs supported by the LICPGM menu are listed.) Examples include new licensed programs that initially ship after the operating system release became available. The media description report should include these licensed programs. Other examples include PRPQs and licensed program offerings (LPOs) which have separate media description reports. These products may have additional documentation.
- You may have entries for items you received that are installed with other processes. Examples include the cumulative PTF package, the softcopy library, and media that contains software to be installed on workstations. Circle *O* in the *Description* column for entries such as these. There may be additional documentation that contains the appropriate installation procedures.
- The product is not supplied by IBM. Contact your software provider if you need to install a new level of the product.
- If you did not receive a licensed program that you expected and it is not repackaged or removed, contact your software provider. The licensed program may not have been available when your order was shipped or there could be an error.
- If you no longer need a licensed program, you should delete it from your system.

---

## Prepare to Install Softcopy Information

For several years, AS/400 system and product documentation has been available as online books on CD-ROM. These books are installed on workstations and read with one of the IBM BookManager\* READ products. In V3R2M0, online books are the default distribution method for most AS/400 information. A small amount of planning before you install softcopy information will make the task a simple process.

The InfoSeeker function was added to OS/400 in Version 3 Release 1. For users of non-programmable workstations, this function provides access to information in online book form.

## Where to Find Softcopy Information

When you ordered Version 3 Release 2, you chose the medium (CD-ROM or tape) for softcopy information. "Create a Master Installation List" on page 3-9 includes verifying that you received softcopy information tapes or CD-ROM. You receive a book with your softcopy library distribution medium that contains the details needed to complete your planning. Use these books to plan for and install the softcopy information library on your AS/400 system. After you complete installing the softcopy library, you should keep these books for future use.

**CD-ROM** *AS/400 Advanced Series Softcopy Library and Information Directory CD-ROMs* book, SK2T-2171

**Tape** *Softcopy Library Installation from Tape* book, SC41-3127

If you also ordered the Redbook Library on CD-ROM, you receive the *AS/400 Redbook Softcopy Library* book, SK2T-2849.

## Where to Install Softcopy Information

The way you plan to access softcopy information and the distribution medium you received determine where softcopy information is installed. Complete information is in the book shipped with your media.

If you received CD-ROM, you can install and use the softcopy information library on your workstations. You can also use the CD-ROM to install softcopy information to folders on the AS/400 system and access the books with InfoSeeker.

If you received tape, you can install the softcopy information library on the AS/400 system. Any authorized user can use the softcopy library. If your system uses a Client Access/400 product, you can also use a personal computer to access the softcopy library on the AS/400 system.

## When to Install Softcopy Information

If you plan to use the softcopy library exclusively from a personal computer (without the information stored in folders on the AS/400 system), you can install the softcopy library now.

For any other usage, Chapter 11, "Checklist for Completing the Installation" on page 11-1 directs you when to install the softcopy library. If you choose, you can delay installing the softcopy library until a more convenient time in your schedule.

## Planning Considerations

Before you can use the softcopy library, it must be installed on your system. The first thing you need to decide is how you want to access the softcopy library (from a personal computer or by using InfoSeeker) because this affects the installation process. If you install and use the online books from personal computers that are attached to your AS/400, you can get additional benefits over what InfoSeeker provides. For example, the IBM Library Reader for Windows and the IBM BookManager READ for Windows provide the following:

- Higher quality printing support
- More powerful searching that uses boolean operators
- Re-sizeable windows with text that reflows to fit

Before you can use the softcopy library on a personal computer, you need to do the following:

- Install one of the IBM Library Reader programs or one of the IBM BookManager READ programs on the personal computer.
- Install the softcopy library.

Next, you need to consider the information needs of your enterprise. Then, consider the storage required and the time needed for installation. *This is especially important if the softcopy library is installed as part of the installation procedures described in this book* Use the book for your distribution medium to help answer the following questions (See “Where to Find Softcopy Information” on page 3-16 for the book titles.)

- Which bookshelves should you install?

The book for your distribution medium lists all of the IBM-supplied bookshelves and the contents of each bookshelf. If you choose not to install information for all installed licensed programs, IBM recommends that you install at least the “OS/400 Commonly Used Books” bookshelf.

- How much storage space do the bookshelves require?

The book for your distribution medium lists the sizes of each bookshelf. Determine the total storage space required for the bookshelves you plan to install. If you install the softcopy library on AS/400 or if you access it from folders, you need this information to determine the total storage requirements for V3R2M0 (“Check Disk Storage Space Requirements” on page 3-22).

- How much time will it take to install the bookshelves?

The book for your distribution medium contains information about how long it takes to install bookshelves. You should estimate the time that is needed to install the bookshelves that you plan to install. This is needed in “Estimate Installation Time” on page 3-29. If you plan to install the softcopy library during the time that your system is unavailable during the software upgrade, you need to include this time in your estimated system downtime. You may wish to delay installing the bookshelves until a more convenient time.

If the primary language of your AS/400 system is not English, you receive the softcopy library in the appropriate national language version (NLV) *and* English. You can order the softcopy library in the NLV for any secondary languages installed on your AS/400 system. There may be more than one language on the distribution media for the NLV softcopy library. Secondary language bookshelves are installed separately from the primary language bookshelves.

## **Access Needed to Install and Use Softcopy Library**

Because InfoSeeker stores online books in directories (folders) as documents (to allow PC users to access them), users of InfoSeeker need to be enrolled in the system distribution directory. The user profile that installs softcopy information must be enrolled in the system distribution directory. More information about this requirement is in the *InfoSeeker – Getting Started* book.

## Additional Considerations When Installing the Softcopy Library on AS/400

If you want to keep any IBM-supplied bookshelves that are currently installed on your AS/400, you need to save them before you install the V3R2M0 bookshelves. For more information, refer to the book that came with your softcopy library media.

InfoSeeker also allows you to create your own bookshelves. If you use this function, you should know the following:

- All books, bookshelves, and indexes that are to be saved and restored together must be in the same directory.
- We recommend that you put your own bookshelves in the system directory (/QDLS/QBKBOOKS/BOOKS) so that your bookshelves can point to IBM-supplied indexes and books.
- You can add your own books to an IBM-supplied bookshelf. If you do, changes to the IBM-supplied bookshelf are not preserved the next time you install that bookshelf. Your books remain and are accessed by viewing a list of all books or by opening a bookshelf you created that contains your books.

The *InfoSeeker – Getting Started* book, SC41-3001 describes how to start using InfoSeeker. After you install V3R2M0 and your softcopy bookshelves, you can use InfoSeeker to read more detailed information in the *InfoSeeker Use* book, SC41-3002.

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## Check Media Integrity

If you have the OS/400 Example Tools Library (option 7 of OS/400) installed on your system, you can use the Check Save Tape (CHKSAVTAP) command. This command helps you check the integrity of your distribution media. Any tape may fail; the CHKSAVTAP command verifies that a tape can be read at this time on a particular device. However, this does not ensure that the same tape can be read by the same device at a later time.

For information on the CHKSAVTAP command, enter the following:

```
WRKMBRPDM QUSRTOOL/QATTINFO
```

Then display the contents of member CHKSAVTAP.

If you do not have the OS/400 Example Tools Library (option 7) installed on your current system, you need to install it before you can use this command. You should clean the tape drive before using the CHKSAVTAP command.

The purpose of the QUSRTOOL library is to provide you access to examples of various tools and programming techniques that may help you with application development and management of your system. These are not integrated system functions and are not considered part of the base Operating System/400\* licensed program. The tools and programming source code in QUSRTOOL may change from release to release. For more information, see the notes associated with 5763-SS1 Operating System/400 in Figure C-3 on page C-5.

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## Permanently Apply Existing PTFs

Temporarily applied PTFs require a considerable amount of disk storage space. You should permanently apply any temporarily applied PTFs to maximize the available disk space on your current system. Do this only for temporarily applied PTFs that you have verified on your system. Information on applying immediate PTFs temporarily or permanently is available in the *System Startup and Problem Handling* book, SC41-3206, in the chapter on working with program temporary fixes (PTFs).

### Notes:

1. If you have SystemView System Manager/400 licensed program (5738-SM1 or 5763-SM1) installed on your system, use the instructions in the *System Manager Use* book, SC41-3321, for managing PTFs on your system.
2. When you install a new release, the installation process overwrites the PTFs applied to the previous release. The PTFs for the previous release are no longer applied, but there may be associated save files that remain in library QGPL of the new release. When using Operational Assistant to call the PTF cleanup routine, PTF save files from previous releases are deleted from your system. However, for systems that have the SystemView System Manager/400 licensed program installed, the PTF save files are not deleted.

---

## PTFs Needed Before Installing V3R2M0

Occasionally, situations arise that require specific program temporary fixes (PTFs) be applied before you can start or complete software installation procedures. This topic identifies PTFs that must be applied for Licensed Internal Code and OS/400 before you start to replace your existing software with the new release.

### You May Have Additional PTFs to Apply

You may have licensed programs installed that require specific PTFs be applied before you replace your existing release of OS/400. Check the preventive service planning documents for the latest information about your installed licensed programs. See "Review Information" on page 3-2 for instructions to get the latest preventive service planning information.

## Licensed Internal Code Extension

For V3R2M0, an additional 20MB of storage must be reserved for Licensed Internal Code. You must apply a Licensed Internal Code Space Extension PTF to your current system to reserve the storage before you begin installing V3R2M0. All models of AS/400 require this PTF. If you do not apply the Licensed Internal Code Space Extension PTF before installing V3R2M0, the installation will fail with system reference code (SRC) B6xx 6167.

**Note:** All new AS/400 systems shipped with V3R2M0 installed have the storage already reserved. You do not need to apply the Licensed Internal Code Space Extension PTF to these systems.

If your current system is at:	Order and install this Licensed Internal Code Space Extension fix:
Version 2 Release 3.0	MF10575
Version 3 Release 0.5	MF10576
Version 3 Release 1.0	MF10577

**Before** you apply the Licensed Internal Code Space Extension PTF, you must ensure that adequate disk storage space is available for V3R2M0 software. The OS/400 operating system also requires more disk storage for V3R2M0. Use “Check Disk Storage Space Requirements” on page 3-22 to ensure that you have space for Licensed Internal Code, OS/400, and your licensed programs. You should perform your standard save operations before you apply the Licensed Internal Code Space Extension PTF.

**After** the Licensed Internal Code fix is applied, you must perform an IPL and save the system to have a valid source system backup.

The additional storage requirements also apply to all AS/400 systems within a network. Apply the Licensed Internal Code Space Extension PTF to the central site system before installing V3R2M0. The Licensed Internal Code Space Extension PTF must also be applied to the target site systems before the V3R2M0 software is installed.

The additional storage is reserved during the IPL that occurs after the Licensed Internal Code Space Extension PTF is applied. For most systems, the IPL completes in approximately the same amount of time as your normal IPL. However, in situations where data must be moved off a load source DASD, the amount of time to perform the first IPL may be approximately twice that of your normal IPL. A storage management VLIC log is created when the IPL completes. VLIC log 1000 1009 is created if the additional storage is reserved successfully. VLIC log 1000 100A is created if the additional storage is not reserved; the system will try to reserve the storage on all following IPLs until the storage is reserved. This allows time for you to perform a DASD upgrade.

## Apply PTFs for Client Access/400 Products

If you have Client Access for Windows 3.1 (licensed program 5763-XC1) installed, you may need to apply a PTF to ensure that you can use the update function. The update function downloads fixes to workstations. Do the following before installing the new release of OS/400:

- \_\_\_ **Step 1.** Check to see if the following PTF (or a PTF that supersedes it) is applied. If the PTF is installed, no additional action is needed. If the PTF is not applied, continue with step 2.

The 5763-XC1 V3R1M0 PTF is:

SF23392 for SBCS  
SF23675 for DBCS

- \_\_\_ **Step 2.** Apply the PTF.

- \_\_\_ **Step 3.** Make sure that each workstation using this client runs the update function to download the fixes that you applied. Refer to the Client

Access documentation if you need information on how to run the update function.

Continue with your planning for installing software. When the software upgrade is complete, be sure to install the cumulative PTF package.

---

## Evaluate Your Disk Storage Needs

You must ensure that you will have adequate disk storage before starting to install software. Any time you install software, you should ensure that your system has adequate storage before you begin. To make more efficient use of your storage you should clear your system of items you no longer require before estimating your storage needs.

## Cleaning Up Your System

Cleaning up your system before you begin to install a new release makes more storage space available for the installation process. Refer to the information on keeping your AS/400 system running smoothly in the *System Operation* book, SC41-3203, to clean up your system.

Consider the following things that you can do to clean up your system and make more disk space available:

- You can use the automatic cleanup option in Operational Assistant\* to keep your system free of unnecessary clutter.
- You should permanently apply any PTFs that are temporarily applied on your system if you have not already done so. (See “Permanently Apply Existing PTFs” on page 3-19.)
- You should delete PTF save files and cover letters that are no longer needed.
- You should delete licensed programs or optional parts that you no longer use. The master installation list you created in “Create a Master Installation List” on page 3-9 can help you identify these. Be sure to read “Notes About Deleting Licensed Programs” on page C-18 for more information. If you delete licensed programs or optional parts, they are not automatically installed again when you install this release.
- Have each user sign on and do the following:
  - Type the command WRKOBJOWN. The Work with Objects by Owner display is shown. It lists all of the objects that the user owns. Use option 4 (Delete) to delete objects that are no longer needed.
  - Type the command WRKSPLF to list all of the spooled files that are owned by the user. Delete spooled files that are no longer needed.
- Use the Display Authorized Users (DSPAUTUSR) command to list all the user profiles on the system:

```
DSPAUTUSR SEQ(*USRPRF) OUTPUT(*PRINT)
```
- Delete any user profiles that you no longer need. Do not delete any IBM-supplied user profiles (profiles that start with the letter Q). To delete user profiles, do the following:

\_\_\_ **Step 1.** Type GO SETUP. You see the Customize Your System, Users, and Devices display.

- \_\_\_ **Step 2.** Select option 10 (Work with user enrollment). You see the Work with User Enrollment display. If you see the Work with User Profiles display, press F21 and select basic assistance level.
  - \_\_\_ **Step 3.** Type a 4 (Remove) in the Opt (option) column next to any user profile that you want to remove. You see the Remove User display.
  - \_\_\_ **Step 4.** Select the correct option for objects that are owned by the user profile and press the Enter key. The system deletes the user's enrollment in the distribution directory and deletes the user profile.
- If you have not already done so, delete from OfficeVision for OS/400 the enrollment for any user who is no longer with your organization or who is no longer using OfficeVision for OS/400 functions. Also, delete old mail, calendars, documents, and folders that you no longer need. For information about how to do these things, see the *Managing OfficeVision/400* book.

## Check Disk Storage Space Requirements

Determine the amount of unused system auxiliary storage before you schedule a time to install this release. The following steps will help you determine your available storage space and the storage space required for this release. Use the master installation list that you created in "Create a Master Installation List" on page 3-9 and the information in Figure C-3 on page C-5 to do this.

- \_\_\_ **Step 1.** Determine how much auxiliary storage is currently used on your system.
  - a. Enter the command:

### WRKSYSSTS

The Work with System Status display is shown. The example below shows the intermediate assistance level for this display.

Work with System Status		XXXXXXXX	
% CPU used . . . . .	16.6	Auxiliary Storage:	
Elapsed time . . . . .	00:00:00	System . . . . .	1803 M
Jobs in system . . . . .	89	% used . . . . .	62.9586
% addresses used:		Total . . . . .	1803 M
Permanent . . . . .	2.242	Current unprotect used :	265 M
Temporary . . . . .	.653	Maximum unprotect . . . :	282 M

- b. Use the values shown for *System* and *% used* to calculate the auxiliary storage currently used. The result is the value to use in step 5.

$$\text{System} \times \% \text{ used} = \text{auxiliary storage currently used}$$

$$\text{For example: } 1803 \text{ M} \times (.629586) = 1135.1435$$

- \_\_\_ **Step 2.** Determine the minimum amount of disk storage that your your currently installed release uses. Add the values for Licensed Internal Code, OS/400 and its optional parts, and licensed programs and optional parts that you have installed. Use the values in the *Previous Release* column of Figure C-3. The sum is the smallest amount of space that your existing system could use. (Your actual storage used is probably higher.) Use this sum as the value for minimum storage for release currently installed in step 4.

\_\_\_ **Step 3.** Determine the size of V3R2M0 by doing the following:

- a. Add the values for Licensed Internal Code, OS/400 and its optional parts, and licensed programs and optional parts that you plan to replace. Use the sizes that are shown in the *V3R2M0* column of Figure C-3. If there is a range, use the larger value (decompressed size). The values that are shown for Licensed Internal Code include the additional storage that is required by the Licensed Internal Code Storage Extension PTF. Include the mixed release level licensed programs that you have installed even if they will not be updated so that your storage calculations are correct.
- b. Determine the amount of storage that is needed for these additions:
  - 1) Add the storage required for changes to the system database cross-reference in V3R2M0. This can be determined by using the information in "How to Calculate the Space Required for Cross-Reference Information" on page E-1.
  - 2) Add the storage required for any licensed programs or optional parts that you are adding to the system.
  - 3) If you plan to install softcopy information on AS/400, include the size of the bookshelves that you plan to install. "Prepare to Install Softcopy Information" on page 3-15 describes considerations for installing softcopy information.
  - 4) Include other applications, such as PRPQs, that you plan to add. Refer to the product documentation.
- c. Add the values for steps 3a, 3b1, 3b2, 3b3, and 3b4. The sum is the value to use for Size of V3R2M0 in step 4.

\_\_\_ **Step 4.** Use the following equation to determine if you have enough storage available to install this release.

$$\begin{array}{rcl} \text{Size of V3R2M0} & - & \text{minimum storage for} \\ \text{(step 3c)} & & \text{release currently} \\ & & \text{installed (step 2)} \end{array} = \text{additional storage needed}$$

This is the value to use for additional storage needed in step 5.

\_\_\_ **Step 5.** Add the following items to determine if you have enough storage available to install this release:

- Auxiliary storage currently used (step 1b)
- Additional storage needed (step 4)
- 11MB for multiprocess installation processing (see note 5a page=no).
- Decompression space (see note 5b).

The sum of these items is the storage required. Use this value in step 7 on page 3-24.

**Notes:**

- a. The system needs at least 11 megabytes of additional auxiliary storage for the multiprocess installation of most licensed programs. If the system cannot perform a multiprocess installation of licensed programs, the installation may take considerably longer to complete.

b. Including storage for decompression is optional. See "Compressed Objects and Storage Space" on page 3-24 for more information.

\_\_\_ **Step 6.** Determine the possible storage available. Use the STRSST command and select the *Work with disk units* option. Then select the *work with ASP threshold* option. The Select ASP display is shown. Use the percentage in the threshold column for ASP number one in the following equation:

$$\text{System} \times \% \text{ threshold} = \text{possible storage available}$$

Use the value for *System* from step 1b.

For example: **1803 M** x (.90) = possible storage available

\_\_\_ **Step 7.** Compare the possible storage available (step 6) with the storage required (step 5 on page 3-23). If the total amount of required storage for the installation process is more than the amount of possible storage available on your system, you need to make more disk space available.

**Note:** If you use mirrored protection, less storage space is available. Refer to the book *Backup and Recovery – Advanced*, SC41-3305, for information about planning for mirrored protection.

You should repeat these calculations if you make any changes to your system that affect the available disk storage space.

### Compressed Objects and Storage Space

IBM ships all of the licensed programs and some objects of the operating system in a compressed form which requires less storage space on your system. System jobs (QDCPOBJx, where x is a number) automatically decompress these objects during the installation process if your system has sufficient unused disk storage. If enough storage space is not available the system jobs decompress the objects when the objects are used. Decompressing objects when they are used can affect the performance of the system.

System jobs decompress objects based on the following amounts of available storage:

- Greater than 500 MB available storage

Jobs are submitted to decompress all system objects that were just installed.

- 100-500 MB available storage

Jobs are submitted to decompress only the frequently-used objects. The system identifies frequently-used objects by the object usage information (the number of days an object has been used and the last-used date). Any object that has been used at least 5 times and the last use was within the last 14 days is decompressed. The remaining low-use objects remain in compressed form.

- This does not include the decompression of objects that are shipped in the base operating system and in library QSYS. The installation process resets usage information for objects that are shipped in the base operating system and library QSYS. For all other licensed programs, the object usage information is kept during the installation process.

- A call to a system program does not update its usage information; programs are not automatically decompressed in constrained storage mode. However, high-use programs are shipped in decompressed form and are not considered compressible.

- Less than 100 MB available storage

Jobs are not submitted. The objects are decompressed as they are used.

**Note:** The QDCPOBJx system jobs may run for some time after the installation process completes. More information about compressing and decompressing objects is available in the book *CL Programming*, SC41-3721.

---

## Choose Automatic or Manual Installation

When replacing a release, you need to decide which installation procedure you will use to install the new release. If you are installing a new system, you can skip this topic.

- The *automatic installation* method replaces your existing release with minimal user interaction. (You may need to load media volumes when you use this method.) The language feature code on the distribution media is installed as the primary language on the system. The automatic installation process keeps the current environment (AS/400 or System/36 Environment), system values, and configuration. The automatic installation process is recommended for use with most AS/400 systems. Chapter 4, *Replacing a Release Using Automatic Installation* documents this method.
- The *manual installation* method interactively replaces your existing release by using the Work with Licensed Programs (LICPGM) menu. Displays that require responses appear on the console. During a manual installation you can change installation options and perform tasks such as those that are described in “When to Use Manual Installation” on page 3-26. Chapter 5, *Replacing a Release Using Manual Installation* documents this method.

## What Installs with Either Method

Both installation methods replace your currently installed level of Licensed Internal Code and OS/400. Both installation methods can replace your currently installed licensed programs if the LICPGM menu supports those licensed programs. (Figure C-3 on page C-5 shows the licensed programs and optional parts supported by the LICPGM menu at the time the V3R2M0 release initially became available.)

## What Does Not Install with Either Method

In certain conditions, some licensed programs are not installed during procedures that replace a release.

Some licensed programs do not renew at the same time as the operating system. The distribution media should contain all of the licensed programs that are currently installed on your system, including those that were not renewed. When the distribution media contains non-renewed licensed programs that are at the same level as the licensed programs that you have installed, the installed licensed programs remain unchanged.

This preserves any program temporary fixes (PTFs) that are applied to the currently installed licensed programs. See “Mixed Release Level—Overview” on page 3-5 for more information about mixed release level licensed programs.

Generally, procedures that replace an existing release do not install new licensed programs or new optional parts. **New** can have either of the following definitions:

- The licensed program or optional parts have been available, but they are considered *new* because the licensed programs are being added to your system for the first time.
- The licensed programs or optional parts have been introduced for the first time. New licensed programs can be introduced with a new release of the operating system or independently of it.

For either definition, install new licensed programs and new optional parts by using Chapter 9, “Installing Additional Licensed Programs.” The instructions for both automatic and manual installation methods direct you to Chapter 9 at the appropriate time.

**Note:** Occasionally, exceptions are made so that new licensed programs and options install if they replace an installed product that is no longer supported. Figure C-3 on page C-5 notes such exceptions.

## When to Use Manual Installation

If you are doing any of the installation procedures in the following list, you should use the manual installation process:

- Adding a disk device using checksum protection, mirrored protection, device parity protection, or user auxiliary storage pools.

**Note:** Do not install checksums when you are installing your new release. The recommended procedure is to install checksums first and then install the new release.

- Changing primary language (see “Considerations When Changing a Primary Language” on page 3-27)
- Changing the environment (AS/400 or System/36), system values, language feature code, or configuration values.
- Using tapes created with the Save System (SAVSYS) command. (The SAVSYS command creates tapes meant for recovery.)

## When to Use Automatic Installation

Use the automatic installation process when you determine that you do not need to use the manual process. During most of the automatic installation process, there is no user intervention that is required except to load a new media volume when the system prompts for one. Therefore, there is no idle system time waiting for the operator to respond to messages or choose installation options during the installation process.

---

## Planning for National Language Support

This topic briefly describes key facts you should know if you use secondary languages or if you need to change the primary language of your system.

The **primary language** is the national language that is installed on the system as the default language. The primary language is used when displaying and printing information. The primary language is also used to service the system.

**Secondary languages** are one or more additional national languages that can be installed on the system to display and print information.

**Note:** If the primary language is uppercase English (2938 or 2950), you need to type uppercase characters when you respond to system messages.

The *National Language Support* book, SC41-3101, contains more information about planning for and using national languages on your AS/400 system.

## Considerations When Changing a Primary Language

You can change the primary language of your system in these two ways:

- By using secondary language media to replace the language objects
- While replacing a release when using the manual installation process.

You cannot change your primary language to a language you currently have installed as a secondary language on your system. You must delete the secondary language before you can change it to your primary language.

If you use Chapter 8, Changing Your Primary Language Using a Secondary Language Media, the release and modification level of your system must be the same as the release and modification level of your secondary language media. You need the media that contains OS/400 and the media that contains the secondary language.

There are special considerations for changing your primary language from a single-byte character set (SBCS) to a double-byte character set (DBCS). (The considerations also apply to changing your primary language from DBCS to SBCS.) The installation process takes significantly more time than a typical software installation. The DBCS feature codes are listed in Appendix F, "National Language Version Feature Codes" on page F-1.

Make sure that your console device is configured to support the default code page of the primary language you are going to install. Change the console device to one that supports the code page of the new primary language before installing V3R2M0.

While F type keyboards are supported for many national language versions, they are not supported for Czech, Farsi, Hungarian, Russian, Polish, Slovakian, or Thai. If you change your primary language to one of these national language versions, the system console cannot have an F type keyboard. Change the system console to a device that does not have an F type keyboard before installing any of these national language versions as a primary language. If you do not, an error occurs and the installation fails.

Refer to the book *National Language Support*, SC41-3101 for more information about planning for and using national languages on your AS/400 system.

## Considerations for Secondary Languages

### IMPORTANT

If you are installing a double-byte character set (DBCS) secondary language, you must have a DBCS primary language installed on your system. You can install a single-byte character set (SBCS) secondary language on a system with a DBCS primary language.

Secondary language libraries must be at the same release level as OS/400.

The process to add a secondary language installs only one secondary language at a time. If you need to add more than one secondary language, you need to perform the procedure to install a secondary language multiple times. This book contains the following two procedures to install secondary languages:

- “Task 1. Using the Work with Licensed Programs Menu” on page 10-2 installs secondary language objects for OS/400 and installed licensed programs. Use this procedure when you are installing a secondary language after installing the new release or when you are adding additional secondary languages to the system.
- “Task 2. Using the Restore Licensed Program Command” on page 10-5 restores a secondary language for only one licensed program or optional part. Use this procedure when you want to restore a secondary language for only one licensed program. Use this procedure when you are installing secondary language objects for licensed programs that you installed with the RSTLICPGM command.

Only the secondary language objects for the installed licensed programs are installed. If you add a licensed program or an optional part after the secondary language is installed, you will not have the secondary language objects for licensed programs you add later. Install the secondary language again to get the new language objects for the added licensed program.

### Before You Replace a Release

When you plan to install a new release, consider the following:

- Plan to install the new release of any secondary languages you have currently installed on your system.

**Note:** Delete secondary languages you no longer need to save storage space. If your system was shipped from a different country, you may not need the secondary languages that are installed on the system.

If you want to delete a secondary language for all of the licensed programs installed on your system, use option 22 on the Work with Licensed Program menu. If you want to delete a secondary language for only one licensed program, use the Delete Licensed Program (DLTLICPGM) command.

- If you are changing the primary language to a language that is already installed as a secondary language, **delete the secondary language before** you install it as a primary language.
- The QSECOFR user profile cannot have a secondary language library at a previous release in its library list when you install a new release. If you have an initial program for the QSECOFR user profile, be sure it does not add a sec-

secondary language library to the system library list. (“Checking the QSECOFR User Profile” on page 3-31 ensures that you do this.)

- If you added a secondary language library (QSYS29xx) to the system values QSYSLIBL or QUSRLIBL, use the WRKSYSVAL command to remove the library from the library list before you install a new release. (“Checking Library List System Values” on page 3-31 ensures that you do this.) The *National Language Support* book also contains more information about secondary language libraries in user profiles.

---

## Estimate Installation Time

Use the “Checklist for Estimating Installation Time” on page D-6 and other information in Appendix D, “Estimating Your Total Installation Time” to estimate the time that is needed to install V3R2M0 on your system. “Tips to Make the Most of Your Installation Time” and “Conditions that Affect Installation Time” on page D-2 contain information you should read that could help reduce the installation time.

## Tips to Make the Most of Your Installation Time

The following actions will minimize the time required to install your system:

- Use the automatic installation process rather than performing a manual installation process. Refer to “Choose Automatic or Manual Installation” on page 3-25 for more information.
- Perform the licensed program installation with all subsystems ended (ENDSBS \*ALL). If you are performing an automatic installation, you are operating in the preferred environment. This environment provides maximum system resources to the installation process and eliminates certain functions required only when subsystems are active.
- Verify that you have enough auxiliary storage to perform the installation.

Check the storage requirements for each licensed program you ordered (refer to Appendix C, “Licensed Program Information”). In addition to the storage required by the licensed programs, the installation process time can be reduced if there is additional auxiliary storage available. This is used as temporary storage during the installation process. You need at least 11 megabytes of additional auxiliary storage to use the multiprocess installation process for most licensed programs. See “Additional Requirements for Multiprocess” on page D-4 for a list of licensed programs that require more than 11 megabytes of additional storage for multiprocess installation.

- If you are not using the automatic installation process, be sure to set the QSYSOPR message queue in \*BREAK mode before you start the installation process.
- Load the next installation tape when prompted by the system.

The tape files are loaded faster using the multiprocess installation process than with a single-process installation process. When an end of volume is encountered, the active install jobs continue to install the licensed programs they are currently working on. However, they do not begin installing another licensed program until you load the next tape.

---

## Identify Changes to IBM-Supplied Objects

When you replace your software with a new release, changes you made to IBM-supplied objects in libraries other than QGPL and QUSRSYS are not saved.

**Changes to IBM-Supplied Objects:** If you have made changes to IBM-supplied descriptions, your changes are not preserved. The following are examples of changes you may have made to IBM-supplied objects:

- Subsystem descriptions
- QSYSPRINT file
- QPJOBLOG printer file in QSYS library
- Job descriptions

You should copy your changes to a user library and print the information before you start the installation procedures. After the installation completes, compare this printout to the descriptions in the new release and make the changes that you require.

**Moved or Duplicated IBM-Supplied Product Libraries:** If you have moved IBM-supplied product libraries to user auxiliary storage pools (user ASPs), the installation procedures will not update the libraries. To prevent this problem, ensure that IBM-supplied product libraries are in the system ASP before you start the installation procedures. The product libraries should remain in the system ASP. PTFs are not applied to product libraries that are not in the system ASP.

If you have duplicated IBM-supplied product libraries, delete the duplicates before you start the installation procedures. The installation process fails and the new release does not install until duplicated IBM-supplied libraries are deleted.

**Duplicated IBM-supplied Objects:** If you have duplicated any IBM-supplied objects, you may want to make new duplicates after the release is installed. This allows you to take advantage of functions added in the new release. Examples of duplicated objects that you may have include the following:

- Message text descriptions
- Commands
- Command defaults

**Deleting Logical Files Created Over IBM-Supplied Physical Files in QSYS:** If you have created logical files over IBM-supplied physical files in QSYS, the logical files will be deleted during the installation process.

---

## Verify Entries in the System Distribution Directory

If you have deleted QSECOFR or QLPINSTL from the system distribution directory, you must add them before you begin the installation task.

Do the following to check system distribution directory entries:

\_\_\_ **Step 1.** Type the following command:

**DSPDIR**

Press the Enter key.

- \_\_\_ **Step 2.** The Display Directory Entries display appears. If QSECOFR and QLPINSTL are both listed, they are in the system distribution directory and no further action is necessary.

Press the Enter key.

- \_\_\_ **Step 3.** If you need to add QSECOFR to the system distribution directory, type the following command:

```
ADDIRE USRID(QSECOFR QSECOFR) USRD('Security Officer')
      USER(QSECOFR)
```

Press the Enter key. QSECOFR is now enrolled in the system distribution directory.

- \_\_\_ **Step 4.** If you need to add QLPINSTL to the system distribution directory, type the following command:

```
ADDIRE USRID(QLPINSTL QLPINSTL) USRD('Licensed Program Install')
      USER(QLPINSTALL)
```

Press the Enter key. QLPINSTL is now enrolled in the system distribution directory.

---

## Checking the QSECOFR User Profile

If you are operating in a System/36 environment and have specified a menu or program in the QSECOFR user profile to be the initial menu, you must remove it from the profile before installing licensed programs.

The QSECOFR user profile cannot have a secondary language library (QSYS29xx) at a previous release in its library list when you install a new release. If you have an initial program for the QSECOFR user program, be sure that it does not add a secondary language library to the system library list.

---

## Checking Library List System Values

If you have added licensed program or secondary language (QSYS29xx) libraries to the QSYSLIBL or QUSRLIBL system values, remove the libraries from the library lists before you install a new release. These entries in the library lists can cause errors when you install or delete software.

Do the following to check the QSYSLIBL and QUSRLIBL system values:

- \_\_\_ **Step 1.** Type the command **WRKSYSVAL** and press the Enter key.
- \_\_\_ **Step 2.** The Work with System Values display is shown. Type a **2** (Change) in the option column next to the system value to be checked and press the Enter key.
- \_\_\_ **Step 3.** The Change System Value display is shown. Look for the following types of entries:
- Licensed program libraries
- Note:** If you have OS/400 option 12 (OS/400 - Host Servers) installed, you need to check for library QIWS.
- Secondary language libraries (QSYS29xx)

If none of these libraries are shown, press F12 to return to the Work with System Values display. Repeat steps 2 and 3 so that you check both QSYSLIBL and QUSRLIBL system values.

If you need to delete licensed program or secondary language libraries from these system values, do step 4.

- \_\_\_ **Step 4.** Record the current values and delete the entry.
  - \_\_\_ **a.** Write down the library names that are shown for the system value. If you want the same values after the installation process completes, you will need to set the system values.
  - \_\_\_ **b.** Use the spacebar to delete the library from the library list.

## Gather Performance Information

Gathering performance data before installing this release gives you a base with which to compare your system's performance after the installation is complete. You can gather the information by using the Start Performance Monitor (STRPFRMON) command or the Work with Performance Collection (WRKPFRCOL) command.

If you use the STRPFRMON command or WRKPFRCOL command, you should collect two sets of data.

The first set should be an overview for a 24-hour period. Collect two 24-hour periods of data on days when the system load is normal to heavy.

```

Start Performance Monitor (STRPFRMON)

Type choices, press Enter.

Member . . . . . *GEN      Name, *GEN
Library . . . . . QPFRDATA  Name
Text 'description' . . . . . *SAME

Time interval (in minutes) . . . 15      5, 10, 15, 20, 25, 30, 35...
Stops data collection . . . . . *ELAPSED *ELAPSED, *TIME, *NOMAX
Days from current day . . . . . 0      0-9
Hour . . . . . 24      0-999
Minutes . . . . . 0      0-99
Data type . . . . . *ALL      *ALL, *SYS
Trace type . . . . . *NONE     *NONE, *ALL
Dump the trace . . . . . *YES     *YES, *NO
Job trace interval . . . . . .5     .5 - 9.9 seconds
Job types . . . . . *DFT      *NONE, *DFT, *ASJ, *BCH...
      + for more values

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

Set these fields as follows:

```

Time interval (in minutes)  15
Hour                        24
  
```

The second set of performance data should be detailed for a 1-hour period. Collect the data over several periods while the system is used interactively and in batch at moderate to heavy use. Collect the data at the same time every day.

```

                                Start Performance Monitor (STRPFRMON)

Type choices, press Enter.

Member . . . . . *GEN          Name, *GEN
Library . . . . . QPFRDATA     Name
Text 'description' . . . . . *SAME

Time interval (in minutes) . . . 5          5, 10, 15, 20, 25, 30, 35...
Stops data collection . . . . . *ELAPSED  *ELAPSED, *TIME, *NOMAX
Days from current day . . . . . 0          0-9
Hour . . . . . 1              0-999
Minutes . . . . . 0           0-99
Data type . . . . . *ALL       *ALL, *SYS
Trace type . . . . . *ALL       *NONE, *ALL
Dump the trace . . . . . *YES    *YES, *NO
Job trace interval . . . . . .5     .5 - 9.9 seconds
Job types . . . . . *DFT        *NONE, *DFT, *ASJ, *BCH...
                                + for more values

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

```

Set these fields as follows:

```

Time interval (in minutes)  5
Hour                        1
Trace type                  *all

```

**Note:** If you use Performance Management Offerings and Services (PM400\*), there is more than one method to analyze the data collected. For currently installed releases (V2R3M0, V3R0M5, V3R1M0), the Programming Request for Price Quotation (PRPQ) 5799-MPG collects performance data and sends it to IBM to be analyzed. In V3R2M0, this PRPQ becomes licensed program 5763-PM1, IBM Performance Management/400. If you install this licensed program, you will need to convert the data collected on your current system before you can analyze it using the 5763-PM1 licensed program.

---

## Order the Current Cumulative Package

If some time has passed since you received your release, you should order the most current cumulative PTF package for the new release. To order the package, type the following on any command line:

**SNDPTFORD SF99vrm**

where v is the version, r is the release, and m is the modification level. Press the Enter key.

### Cross-Reference Summaries for PTFs

Cross-reference summaries for PTFs are available through electronic customer support. The summaries allow you to analyze the PTFs and Licensed Internal Code fixes you currently have installed on your system. With this information, you can determine which Version 3 Release 2 fixes you need to order to maintain the same or higher PTF and Licensed Internal Code fix level as you update to Version 3 Release 2. These summaries are updated each working day with the latest information as new Version 3 Release 2 PTFs and Licensed Internal Code fixes are

released. Figure 3-4 on page 3-34 shows the commands for ordering these summaries through electronic customer support.

Figure 3-4. Ordering PTF Cross-Reference Summaries

If you are moving from	Enter this command
V2R3M0	SNDPTFORD SF97073
V3R0M5	SNDPTFORD SF97082
V3R1M0	SNDPTFORD SF97011

If you do not have access to electronic customer support, contact your software service provider to obtain this information. Information about displaying and printing PTF cross-reference summaries is available in the book, *System Startup and Problem Handling*, SC41-3206.

Appendix E, "Additional Installation Information" on page E-1 contains information about testing and setting up electronic customer support.

---

## Evaluate Release-Level Interoperability for Systems in a Network

If you have several AS/400 systems in a network, they must be at compatible release levels. This is necessary if objects and data are to be interchanged between systems.

**Note:** You can see the release level of installed licensed programs by using option 10 (Display licensed programs) on the Work with Licensed Programs menu. This displays the release level of licensed programs that were initially shipped with an operating system release or modification level.

Use the Display Software Resources (DSPSFWRSC) command to see the release level of licensed programs not initially shipped with an operating system release or modification level.

**Interoperability** is the ability of one system to exchange data or objects with another system. The exchange can be performed electronically or by physical media (such as tape). Either system can initiate the exchange.

An AS/400 system interoperates with another AS/400 system when exchanging data or when saving and restoring objects.

**Exchanging Data:** The source system (the system that sends the information) and the system that receives the information must be within the supported release levels. If the source system is V3R2M0, the system receiving information can be at V2R3M0, V3R0M5, or V3R1M0.

For example,

- OfficeVision/400 users on V3R2M0, V3R1M0, V3R0M5, and V2R3M0 systems can exchange mail with each other.
- A Client Access/400 user on V3R2M0 can access a V2R3M0 AS/400 host system as long as only V2R3M0-level function is used.
- A Client Access/400 user on V3R2M0 can access a V3R0M5 AS/400 host system as long as only V3R0M5-level function is used.

- A Client Access/400 user on V3R2M0 can access a V3R1M0 V3R1 AS/400 host system as long as only V3R1M0-level function is used.
- A PC Support/400 user on V2R3M0 can access a V3R0M5, V3R1M0, or V3R2M0 AS/400 host system.
- An application developer can send a source file, by using the Send Network File (SNDNETF) command, from a V3R2M0 system to a V2R3M0, V3R0M5, or V3R1M0 system.
- An application developer can send a source file, by using the SNDNETF command, from a V2R3M0 system to a V3R0M5, V3R1M0, or V3R2M0 system.

**Saving and Restoring Objects:** The system receiving the information can be one or two release levels earlier than the source system (the system that sends the information). Support for two release levels earlier is new in Version 3 Release 2. To be interoperable, objects must be saved by specifying either a specific release level or \*PRV for the value of the target release (TGTRLS) parameter.

For example,

- Objects that are saved on a V3R2M0 system can be restored on V2R3M0, V3R0M5, V3R1M0, or V3R2M0 systems. In this example, V2R3M0 and V3R0M5 are only valid if the release is explicitly specified as the value of the target release parameter.
- Objects that are saved on system that is earlier than V3R2M0 can be saved to a system that is only one release level earlier than the source system. If the source system is V3R0M5 or V3R1M0, the objects can be restored on V2R3M0 or later level systems.
- Objects that are saved on a V3R2M0 system can be restored on V3R6M0 systems if they are targeted for V3R1M0 or an earlier release when they are saved.

Licensed programs can be saved and restored similar to other objects as long as the release level is compatible with the release level of the operating system. For more information about compatible levels of licensed programs, refer to Appendix C, “Licensed Program Information” on page C-1.

For more information on saving objects to a system running a previous release, see the chapter on release-to-release support in the *Backup and Recovery – Advanced* book, SC41-3305.

Check with your software suppliers and refer to the *Memo to Users* and the *New Release Planning for V3R2* book, SA41-3100, for more information.

---

## How to Ensure Two-Phase Commit Integrity

Before you replace your software, you should either complete or cancel all pending resynchronizations of commitment control definitions. You need to perform this task only if all of the following are true:

- Your source system is running V3R1M0 or later.
- Your system is connected in a network.
- Your system runs applications that use two-phase commit support.

Two-phase commit support is used when an application updates database files on more than one system. Two-phase commit support ensures that the databases remained synchronized. If you are not sure whether your system uses two-phase commit support, perform steps 1 on page 3-36 and 2 on page 3-36.

Remember that any actions you take with respect to a pending resynchronization affect the other systems that are participating in the logical unit of work (transaction) with your system. Therefore, you or someone else will also need to handle pending resynchronizations on the connected systems before you begin your software upgrade procedure.

If you perform this procedure 1 or 2 days before installing V3R2M0 software, you should recheck for resynchronizations before starting the installation.

To work with pending resynchronizations, do the following:

\_\_\_ **Step 1.** To display all commitment definitions that may require resynchronization, type the following command:

```
WRKCMTDFN JOB(*ALL) STATUS(*RESYNC)
```

\_\_\_ **Step 2.** If you see the message (No commitment definitions are active), you can skip the rest of this procedure.

\_\_\_ **Step 3.** On the Work with Commitment Definitions display, type a 19 (Cancel Resync) in the Option column for each commitment definition. You see the Cancel Resync display.

\_\_\_ **Step 4.** If the value in the column *Resync Required* is Yes for any remote location listed, then do the following for that location:

\_\_\_ **Step a.** Attempt an action, such as restarting communications, and allow the resynchronization to complete.

\_\_\_ **Step b.** If you cannot allow the resynchronization to complete, specify option 1 (Select) to cancel resynchronization to that remote location.

You may receive message CPF83E4, which indicates that the logical unit of work is in an undecided state. You will have to make a heuristic decision to force either a commit operation or a rollback operation before you can successfully cancel resynchronization. These options are available from the Work with Commitment Definitions display.

By canceling resynchronization or by making a heuristic decision, you may cause the databases between the two systems to be in an inconsistent state. You must then take the responsibility for determining the action taken by all the other locations that participated in this Logical Unit of Work (LUW), and resynchronize the database changes.

\_\_\_ **Step 5.** Refresh the display periodically. When resynchronization for a commitment definition completes or cancels successfully, the value in the *Resync in Progress* column will be No.

**Note:** The resynchronization or canceling of resynchronization may not take place immediately. They are dependent on the state

of the other systems that are participating in the logical unit of work.

For more information on commitment control, resynchronization, and heuristic decisions, see the chapter *Commitment Control* in the book *Backup and Recovery – Advanced*, SC41-3305.

---

## Save the System

Before you install a new release on your system, you should have a current backup copy of your system. You do not need to save your system if you have a current backup copy that can be used to recover your system if a failure occurs. Be sure to keep this backup copy until you save your entire system again.

\_\_\_ **Step 1.** Complete the items in this step **before** you begin the process for saving the system for a recovery procedure.

- a. Determine the tape device for the alternate IPL. This is the device to use when saving your system.
- b. Delete or rename all of the current QHST logs to prevent them from being saved as system files. Use the instructions in the *Backup and Recovery – Basic* book, SC41-3304.

\_\_\_ **Step 2.** Save your system using the alternate IPL device. Refer to the *Backup and Recovery – Basic* book for information on saving your system.

**Note:** Tapes created with the Save System (SAVSYS) command cannot be used with the automatic installation process. (Also, tapes created with this command do not provide a complete backup.)

---

## Basic System Hardware Considerations

During software installation, you are concerned with three basic hardware items: the control panel, the console, and the installation device.

### Know How to Operate the Control Panel

Examine the control panel for your new system. Ensure that you and the operators who perform the software installation know how to use the control panel functions. The *System Startup and Problem Handling* book contains information you can review to learn how to operate the control panel.

### Verify the Console Address

The software installation process expects the console, or the workstation that is assigned as the console, to be attached at port 0 and address 0 of the first workstation controller. In most cases, your hardware should be defined in this way. You should verify that the console is attached at port 0 address 0. Refer to the *Physical Planning Reference* book for rules about attaching workstation devices.

## Prepare Installation Device and Media

Put your tapes in the same room as your system several hours before you begin the installation. This way, the media are at the same temperature and humidity as the system.

Determine which tape unit to use for the alternate IPL. The tape unit for the alternate IPL on the 9404 System Unit and the AS/400 9402 System Unit is either the tape unit in the system unit or a tape unit attached to the system unit (not the expansion unit). If you have only one tape unit, use it as the tape unit for the alternate IPL. If you do not know which tape unit to use, contact your hardware service representative.

**Note:** If you are using a 2440 tape drive with the high-speed feature to install a new release, disable the high-speed feature on the tape unit before you load the first tape. Instructions for disabling and enabling the high-speed feature are located in the book *Backup and Recovery – Basic*. If the high-speed feature is not disabled before you begin the installation process, SRC B1xx 1934 is shown. This SRC indicates that you have the wrong tape mounted.

**Preventing Media Errors:** To help prevent media errors, be sure to clean the heads on your alternate IPL tape drive before you begin the installation process. Refer to your tape drive reference guide if you need more information on how to clean the heads. If you receive a media error message during your installation process, go to Appendix A, "Recovery Procedures" on page A-1 for recovery information.

**Sharing a Tape Device:** If you have a 3480 or 3490 tape device and are sharing that tape device with another system, be sure you inform everyone when you plan to use the tape drive for an installation process. Be sure other users do not assign the tape drive while you are using it because the installation process will fail during the installation of the Licensed Internal Code.

**Loading Tapes:** The system sends messages to load the next tape volume. Do not remove a distribution tape until you receive a message to load a new tape or the instructions in this guide specifically tell you to remove and load a tape.

## Determining Installation Device Names

This topic describes the naming conventions for the device that is used for the alternate IPL. Examples in this book use TAP01 for the installation device. This is the AS/400 normal naming convention. Your system may be set up to use the System/36 naming convention. Use Figure 3-5 to select the correct device name for your system or use the name you have selected for your installation device.

Figure 3-5. Naming Conventions

Media Type	System/36 Names	AS/400 Normal Names
Cartridge	TC	TAPxx
Reel	T1	TAPxx

If you are not using the automatic installation process, the display prompts you for the name of your installation device. You could have more than one tape device that can be used for the alternate IPL. You must use your configuration list to



determine the name you have assigned to this tape device and enter that name on the Install Options display.

If you are using the automatic installation process, the system determines the name of the installation device from the installation profile on the distribution media. The installation device name will be TAPxx where xx is the number assigned to each tape unit.





---

## Replacing a Release



## Chapter 4. Replacing a Release Using Automatic Installation

The instructions in this chapter guide you in replacing Licensed Internal Code, OS/400, and licensed programs currently installed on your system with the V3R2M0 level.

### Before You Begin

Complete the planning tasks in Chapter 3, "Checklist for Planning for Your New Release" on page 3-1.

OS/400 Release That is Currently Installed	Should You Use this Book?
V3R2M0 V3R1M0 V3R0M5 V2R3M0	<b>Yes.</b> You can use this book to replace the installed release of OS/400 and licensed programs with V3R2M0 levels.
V3R6M0	<b>No.</b> The V3R6M0 release of OS/400 only runs on AS/400 models that have PowerPC AS processors. Replacing V3R6M0 with Version 3 Release 2 is not valid and would require replacing your PowerPC technology hardware with a different technology hardware. If you want to replace V3R6M0 with another release that functions on PowerPC technology, use the book <i>Software Installation</i> , SC41-4120.
V3R0.7	<b>No,</b> you should not use this book. Version 3 Release 0 Modification 7 (V3R0.7) is an identifier for Licensed Internal Code used on AS/400 Advanced 36 systems. You need to follow special instructions in the <i>Getting SSP and OS/400 Installed and Running</i> book, SC21-8377. You should, however, take the time to read the planning information in this book. The <i>Getting SSP and OS/400 Installed and Running</i> book may direct you to here to install additional licensed programs or secondary languages.
V2R2M0 V2R1M1 V2R1M0 R03M00 (V1R3M0) R02M00 (V1R2M0) R01M02 (V1R1M2) R01M00 (V1R1M0)	<b>No.</b> Contact your software provider.

### Should You Use the Automatic Process?

The automatic installation process is recommended for most AS/400 systems. However, you must use the manual process for certain situations. Before you begin this procedure, be sure to read "Choose Automatic or Manual Installation" on page 3-25 for a description of the processes and their similarities and differences.

## Task 1. Using Automatic Installation

While you perform this function, system reference codes (SRCs) are shown on the data display of the control panel. An SRC is an 11 or 11-2 in the function display and any 8 characters in the data display of the control panel. When the system attention light is on and an SRC starting with A6 is displayed, the system is waiting for you to do something (answer a question or make a tape device ready). In this book when an SRC is shown with the characters xx (A6xx 6001), it means that a variety of characters may be shown in the place where the xx appears.

To perform this procedure, you need to be familiar with the operation of the control panel on your system. Refer to the *System Startup and Problem Handling* book, SC41-3206, for information about using the control panel.

- Step 1** Before you start the installation process, ensure that the Licensed Internal Code Extension PTF is applied on your current system. Refer to "Licensed Internal Code Extension" on page 3-19.
- Step 2** Verify that your system unit is powered on. If your system unit is not powered on, go to "Starting from a Power Off Condition" on page A-13 and perform the procedure there. You are directed when to return to this procedure.
- Step 3** Load the first tape volume into the tape device for the alternate IPL.  
**Note:** You should verify that the tape unit is varied on and allocated to your system.
- Step 4** Set the mode selector on the control panel to **Normal**. For some control panels, this is the keylock switch.
- Step 5** Type the following command:  
**PWRDWSYS \*IMMED RESTART(\*YES) IPLSRC(D)**  
Press the Enter key. It could take approximately 15 minutes or more for this step. SRCs continue to appear on the data display area of the control panel.
- Step 6** If the system attention light appears and one of the SRC codes from Figure 4-1 is displayed in the Data display on the control panel, complete the instructions for that SRC code. Otherwise, continue with step 7 on page 4-3.

*Figure 4-1 (Page 1 of 2). SRC codes*

Symptom	Action
<b>A6xx 6048</b>	When this SRC is shown, continue with step 7 on page 4-3.
<b>A1xx 1933</b> <b>A12x 1933</b> (x is any character)	This SRC is shown if the tape device for the alternate IPL is not ready. Make sure the correct tape is loaded and make the tape device ready. Wait for the system attention light to go off. Then continue with step 7 on page 4-3. If the system attention light stays on for more than 5 minutes, check to see if you have the correct tape loaded in the tape device for the alternate IPL and make the tape device ready. Then continue with step 6a on page 4-3.
<b>B1xx 1803</b> <b>B1xx 1806</b> <b>B1xx 1938</b>	These SRCs are shown if the tape device for the alternate IPL was not found or was not ready. Make sure the tape device is powered on and the correct tape is loaded and ready. To make tape devices ready, you may need to open and close the tape device door. Then continue with step 6a on page 4-3.
<b>B1xx 1934</b> <b>917B B982</b>	This SRC is shown if the wrong tape is loaded. Load the correct tape and make the tape device ready. Then continue with step 6a on page 4-3.

Figure 4-1 (Page 2 of 2). SRC codes

Symptom	Action
<b>B600 6167</b>	This SRC is shown if the Licensed Internal Code Space Extension PTF is not installed. Apply the PTF, then start the installation process again. See "Licensed Internal Code Extension" on page 3-19.
<b>B900 3121</b>	The media is in SAVSYS format. The system unit mode selector (keylock) is set to the wrong mode. Change the mode selector to Manual and try the installation again using Chapter 5, "Replacing a Release Using Manual Installation" on page 5-1.
<b>2507 0001</b> <b>2642 0001</b> <b>2643 0001</b>	These SRCs are shown if a tape is not loaded in the tape device for the alternate IPL. Make sure the correct tape is loaded and then continue with step 6a on page 4-3.
<b>2644 3136</b>	This SRC is shown if the tape device is assigned to another system. Go to the other system and vary off this tape device. Make sure the correct tape is loaded and then continue with step 6a on page 4-3.
<b>Any other SRC</b>	Go to Appendix A, "Recovery Procedures" and follow the instructions there.

- a. Set the mode selector on the control panel to **Manual**.
- b. Press the power switch to delayed off and wait for the entire system to power off.
- c. Set the mode selector on the control panel to **Normal**.
- d. Press the power switch on and make the tape device ready. Then continue with step 7. If the system attention light appears and the same SRC is displayed again, go to "Licensed Internal Code Recovery" on page A-3.

**Step 7** If SRC A6xx 6048 appears in the Data display on the control panel, load the next tape volume and prepare the tape device.

**Note:** The display is blank for approximately 30 minutes. SRCs continue to appear on the data display area of the control panel.

**For Your Information**

When the installation process starts to install the operating system, some displays are shown on the display station used as the console. One of the displays shown is the IPL Step in Progress. Some of the IPL steps could take a long time depending on how much data recovery is required for your system. The last message shown on the IPL Step in Progress display should be **Start the Operating System**.

Status messages are shown during the installation process. You do not need to respond to any of these status displays. The following is an example of a status display:

```

                                Message
Message ID . . . . . : CPI2090      Type . . . . . : Information
From program . . . . . : QINLDALO    Severity . . . . . : 00

Library . . . . . : QSYS
Objects already
  restored . . . . . : XXXX
Percent restored . . . . . : XXX

Message . . . . . : Restoring programs into library.
```

# Replacing a Release Using Automatic Installation

**Step 8** Load additional tape volumes whenever you are prompted by one of the following messages. Follow the instructions on the display.

```
Message
Message ID . . . . . : CPA2055      Type . . . . . : Inquiry
From program . . . . . : QINTAPE     Severity . . . . . : 99

Message . . . . . : The next volume in the sequence is needed to
                    continue the installation process.

Cause . . . . . : The end of the tape volume has been reached.

Recovery . . . . . : Load the next tape volume on the tape device.
```

Type a **1**  
Press the Enter key.

OR  
When the following display is shown, be sure to type **G** (go) to continue. **C** cancels the installation process.

```
Display Messages
Queue . . . . . : QSYSOPR          System: XXXX
Library . . . . . : QSYS           Program . . . . . : *DSPMSG
Severity . . . . . : 95            Library . . . . . :
Delivery . . . . . : *BREAK       Delivery . . . . . :

Type reply (if required), press Enter.
Load next tape volume on device QINDEV. (C G)
Reply . . . . . G
```

Type a **G**  
Press the Enter key.

**Step 9** If you receive a message **Device QINDEV not ready**, press the Load and Online buttons of the tape device to make the device ready. Then press the Enter key to continue.

**Note:** If you are replacing V2R3M0, SRC C900 2970 is displayed on the control panel while database cross-reference conversions occur. This SRC could be displayed for an hour or more while the conversion and other database recovery functions are performed.

**Step 10** One or both of the following displays show the status of the licensed programs and language objects as they are being installed on the system. You do not need to respond to these status displays.

```
Installing Licensed Programs
System: XXXX

Licensed program install in progress
```

The following display is an example of the display that is shown during the installation process.

```

Installing Licensed Programs
System: XXXX
Licensed programs installed . . . . . : 1

Licensed
Program Description Type Language
5763SS1 OS/400 - Online Information *LNG 2924
    
```

**Note:** This display shows which licensed programs and optional parts of licensed programs are being installed. After the \*PGM objects and \*LNG objects for each licensed program or optional part have been installed, the licensed program identifier disappears from the display and the number in the licensed programs installed field changes to show how many are installed.

**Step 11** If the message **Load next tape volume on device TAP01** is shown, load the next tape volume. **C** cancels the installation process.

```

Display Messages
System: XXXX
Queue . . . . . : XXXXXXXX Program . . . . . : *DSPMSG
Library . . . . . : QSYS Library . . . . . :
Severity . . . . . : XX Delivery . . . . . : *BREAK

Type reply (if required), press Enter.
Load next tape volume on device TAP01. (C G)
Reply . . . . . G
    
```

Type a **G**  
Press the Enter key to continue with the installation process.

**Step 12** When the installation is successfully completed, the Sign On display is shown. (There is no message to indicate that automatic installation completed successfully.) Continue with "Task 2. Verifying Automatic Replacement Completion."

If you receive the message **Automatic installation not complete**, sign on using QSECOFR for your user id and go to Appendix A, "Recovery Procedures" to determine the problem.

## Task 2. Verifying Automatic Replacement Completion

**Step 1** The Sign On display is shown on the console after the installation has completed.

```

Sign On
System. . . . . : XXXX
Subsystem . . . . . : XXXX
Display . . . . . : DSP01

User. . . . . : QSECOFR
Password . . . . . :
Program/procedure . . . . . :
Menu . . . . . :
Current library . . . . . :
    
```

Type the following:  
User **QSECOFR**  
Password (if required)  
Press the Enter key.

## Replacing a Release Using Automatic Installation

- Step 2** The AS/400 Main Menu (or the menu you chose as your initial menu) is shown on the console.

```
MAIN                AS/400 Main Menu                System: XXXX
```

Type the following command:

**GO LICPGM**

Press the Enter key.

- Step 3** The Work with Licensed Programs display is shown. Use the page down or roll up key to see the second display of the Work with Licensed Programs menu.

```
LICPGM                Work with Licensed Programs                System: XXXX
Select one of the following:
Redistribution
  40. Create a distribution tape
  41. Work with installation profiles
Completion Status
  50. Display log for messages
```

Type **50**

Press the Enter key.

- Step 4** The Display Install History display is shown.

```
Display Install History
Type choices, press enter.
Start date . . . . . _____ MM/DD/YY
Start time . . . . . _____ HH:MM:SS
Output . . . . . * _____ *, *PRINT
```

Press the Enter key.

- Step 5** Look at the messages shown on the Display History Log Contents display.
- If you had a licensed program installed that was compatible with V3R2M0 OS/400 but was not renewed by IBM for V3R2M0, that licensed program may not be replaced. Refer to “Mixed Release Level–Overview” on page 3-5 for information.
  - If any of the messages on the display indicate a failure or a licensed program that is partially installed, go to Appendix A, “Recovery Procedures” to determine the problem.

Otherwise, press F3 (Exit) twice.

**Note:** If you see a message on the Display History Log Contents display that shows a licensed program included on the distribution tape is not installed, make a note which tape volume is shown for that licensed program. Then when you install it

later, you do not have to start with the first tape volume to find this licensed program.

### More...

You have completed this task. Do you need to install additional licensed programs?

**No**    **Yes**

↓    Go to Chapter 9, "Installing Additional Licensed Programs" on page 9-1 and complete the instructions there.

Do you need to install a secondary language?

**No**    **Yes**

↓    Go to Chapter 10, "Installing a Secondary Language" on page 10-1 and complete the instructions there.

You need to complete the installation process. Go to Chapter 11, "Checklist for Completing the Installation" on page 11-1 and complete the instructions there.



## Chapter 5. Replacing a Release Using Manual Installation

The instructions in this chapter replace the Licensed Internal Code, OS/400, and licensed programs currently installed on your system with the V3R2M0 level. You can also change the primary language on your system.

### Before You Begin

Complete the planning tasks in Chapter 3, "Checklist for Planning for Your New Release" on page 3-1.

OS/400 Release That is Currently Installed	Should You Use this Book?
V3R2M0 V3R1M0 V3R0M5 V2R3M0	<b>Yes.</b> You can use this book to replace the installed release of OS/400 and licensed programs with V3R2M0 levels.
V3R6M0	<b>No.</b> The V3R6M0 release of OS/400 only runs on AS/400 models that have PowerPC AS processors. Replacing V3R6M0 with Version 3 Release 2 is not valid and would require replacing your PowerPC technology hardware with a different technology hardware. If you want to replace V3R6M0 with another release that functions on PowerPC technology, use the book <i>Software Installation</i> , SC41-4120.
V3R0.7	<b>No,</b> you should not use this book. Version 3 Release 0 Modification 7 (V3R0.7) is an identifier for Licensed Internal Code used on AS/400 Advanced 36 systems. You need to follow special instructions in the <i>Getting SSP and OS/400 Installed and Running</i> book, SC21-8377. You should, however, take the time to read the planning information in this book. The <i>Getting SSP and OS/400 Installed and Running</i> book may direct you to here to install additional licensed programs or secondary languages.
V2R2M0 V2R1M1 V2R1M0 R03M00 (V1R3M0) R02M00 (V1R2M0) R01M02 (V1R1M2) R01M00 (V1R1M0)	<b>No.</b> Contact your software provider.

### Do You Have to Use the Manual Process?

The automatic installation is recommended for most AS/400 systems. However, you must use the manual process for certain situations. Before you begin this procedure, be sure to read "Choose Automatic or Manual Installation" on page 3-25 for a description of the processes and their similarities and differences.

If you are changing a primary language, you must be aware of additional considerations before you begin the installation. Be sure to read "Considerations When Changing a Primary Language" on page 3-27. You cannot change your primary language to a language you currently have installed as a secondary language on your system. You must delete the secondary language first before you can change it to your primary language.

## Task 1. Replacing the Licensed Internal Code

While you perform this function, the system continuously shows system reference codes (SRCs) on the control panel display. An SRC is an 11 or 11-2 in the function display and any 8 characters in the data display of the control panel (the AS/400 9402 System Unit does not display the function). SRCs starting with A6 on the data display with the system attention light on indicate that the system is waiting for you to do something (answer a question or make a tape device ready). When xx is shown in this guide in the SRC (A6xx 6001), it means that a variety of characters may be shown in the place where the xx appears.

To perform this procedure, you need to be familiar with the operation of the control panel on your system. Refer to the *System Startup and Problem Handling* book, SC41-3206, for information about using the control panel.

Determine the tape device to use for the alternate initial program load (IPL).

- \_\_\_ **Step 1** Before you start the installation process, ensure that the Licensed Internal Code PTF is applied on your current system. Refer to "Licensed Internal Code Extension" on page 3-19.
- \_\_\_ **Step 2** Verify that your system unit is powered on. If your system unit is not powered on, go to "Starting from a Power Off Condition" on page A-13 and perform the procedure there. You are directed when to return to this procedure.
- \_\_\_ **Step 3** Load the first tape volume into the tape device for the alternate IPL.  
**Note:** You should verify that the tape unit is varied on and allocated to your system.
- \_\_\_ **Step 4** Set the mode selector on the control panel to **Manual**. For some control panels, this is the keylock switch.
- \_\_\_ **Step 5** Type the following command:  
**PWRDWSYS \*IMMED RESTART(\*YES) IPLSRC(D)**  
Press the Enter key. This step could take approximately 15 minutes or more to complete.
- \_\_\_ **Step 6** Wait for the yellow system attention light on the control panel to light up. This takes approximately 5 to 15 minutes.  
If the system attention light appears and one of the SRCs in Figure 5-1 is displayed in the Data display on the control panel, perform the action for that SRC. Otherwise, continue with step 7 on page 5-3.

Figure 5-1 (Page 1 of 2). SRC codes

Symptom	Action
<b>A6xx 6001</b>	When this SRC is shown, continue with step 7 on page 5-3.
<b>A1xx 1933</b> <b>A12x 1933</b> <b>(x is any character)</b>	This SRC is shown if the tape device for the alternate IPL is not ready. Make sure the correct tape is loaded and make the tape device ready. Wait for the system attention light to go off. The system attention light should light up <u>again</u> . If the system attention light stays on for more than 5 minutes, check to see if you have the correct tape loaded in the tape device for the alternate IPL and make the tape device ready. Then continue with step 6a on page 5-3.

Figure 5-1 (Page 2 of 2). SRC codes

Symptom	Action
<b>B1xx 1803</b> <b>B1xx 1806</b> <b>B1xx 1938</b>	These SRCs are shown if the tape device for the alternate IPL was not found or was not ready. Make sure the tape device is powered on and the correct tape is loaded and ready. To make tape devices ready, you may need to open and close the tape device door. Then continue with step 6a on page 5-3.
<b>B1xx 1934</b> <b>917B B982</b>	This SRC is shown if the wrong tape is loaded. Load the correct tape and make the tape device ready. Then continue with step 6a on page 5-3.
<b>B600 6167</b>	This SRC is shown if the Licensed Internal Code Space Extension PTF is not installed. Apply the PTF, then start the installation process again. See "Licensed Internal Code Extension" on page 3-19.
<b>2507 0001</b> <b>2642 0001</b> <b>2643 0001</b>	These SRCs are shown if a tape is not loaded in the tape device for the alternate IPL. Make sure the correct tape is loaded and then continue with step 6a on page 5-3.
<b>2644 3136</b>	This SRC is shown if the tape device is assigned to another system. Go to the other system and vary off this tape device. Make sure the correct tape is loaded and then continue with step 6a on page 5-3.
<b>Any other SRC</b>	Go the Appendix A, "Recovery Procedures," and follow the instructions there.

- a. Make sure the tape is loaded in the tape device for the alternate IPL.
- b. Press the power switch to delayed off and wait for the entire system to power off.
- c. Press the power switch on and make the tape device ready. Wait for the system attention light to light up. If the system attention light appears and the same SRC is displayed again, go to "Licensed Internal Code Recovery" on page A-3.

**Step 7** When A6xx 6001 is displayed in the Data display on the control panel, press the Function Selection switch until 23 (Restore Licensed Internal Code) is shown in the Function display on the control panel.

**Step 8** Press the Enter button on the control panel.

**Step 9** If SRC A6xx 6048 appears in the Data display on the control panel, load the next tape volume and prepare the tape device.

**Step 10** After approximately 30 minutes, the IPL or Install the System display is shown. The Licensed Internal Code is now replaced.

Do not remove the distribution tape at this time.

**Note:** If your system configuration has changed, you could see another display at this point. When the requested information is supplied, the installations continue and the IPL or Install the System display appears. Refer to "System Password" on page E-1 for more information.

This completes Task 1. Continue with "Task 2. Replacing the Operating System."

## Task 2. Replacing the Operating System

**Step 1** The IPL or Install the System display is shown on your console.

```
IPL or Install the System

Select one of the following:

1. Perform an IPL
2. Install the operating system
3. Use Dedicated Service Tools (DST)
4. Perform automatic install of the operating system
```

Type a **2**

Press the Enter key.

**Step 2** The Confirm Install of Operating System display is shown on your console.

Press the Enter key.

**Step 3** The Select a Language Group display shows the primary language currently on the system. You may change the primary language of your system by specifying a different language feature on this display. The value you specify must match the national language version that is on the media description report. Refer to Appendix F, “National Language Version Feature Codes” on page F-1 for a list of language feature codes.

```
Select a Language Group

Note: The language feature shown is the language feature
installed on the system.

Type choice, press Enter.

Language feature . . . . . 2924
```

Verify that the displayed value is correct, or type the numbers of the feature code for the language you want.

Press the Enter key.

**Step 4** After the language feature is entered, the Confirm Language Feature Selection display is shown on your console.

Press the Enter key.

**Step 5** The next two displays could be shown if you have disk units attached to the system that are not currently part of your system configuration. If the Add All Disk Units to the System menu is not shown, go to the IPL Step in Progress display in Step 6 on page 5-5.

**Note:** Using your additional disk units improves the performance of your system by distributing the operating system across all of your disk units. This could take up to 15 minutes for each disk unit.

If you are using checksum protection, auxiliary storage pools, device parity protection, or mirrored protection on your system, you may not see the same option 1 shown on the following display. You may not be able to add disk units at this time. Refer to the appropriate section in the book *Backup and Recovery – Advanced*, SC41-3305, for more information. If you do add disk units to the

system at this time, be sure to return to step 6 on page 5-5 to continue the manual installation process.

```
                Add All Disk Units to the System

Select one of the following:

1. Add all disk units to the system auxiliary storage pool
2. Keep the current disk configuration
3. Perform disk configuration using DST
```

Type a **1**

Press the Enter key.

The following display shows the run time for the addition of the disk units. This display does not require a response.

```
                Formatting additional disk units in progress.
                Seconds running . . . . . : 0
```

**Step 6** Status displays are shown on the console. You do not need to respond to any of these status displays. The following is an example of a status display:

```
                IPL Step in Progress

IPL step . . . . . : Storage Management Recovery
```

The following list shows some of the IPL steps that are shown on the IPL Step in Progress display.

- Authority Recovery
- Journal Recovery
- Database Recovery
- Journal Synchronization
- Start the Operating System

Some of the IPL steps could take a long time depending on how much data recovery is required for your system.

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- Step 7** The Install the Operating System display is shown when the IPL for the Licensed Internal Code is complete.

```

                                Install the Operating System
Type options, press Enter.

Install
option . . . . . 1          1=Take defaults (No other
                             options are displayed)
                             2=Change install options

Date:
Year . . . . . —          00-99
Month . . . . . —         01-12
Day . . . . . —           01-31

Time:
Hour . . . . . —          00-23
Minute . . . . . —        00-59
Second . . . . . —        00-59

```

Type the following:

Install option **1**

Date: (Use the current year, month, and day.)

Time: (Use the current time, 24-hour clock.)

Press the Enter key.

Status messages are shown during the installation process. You do not need to respond to any of these status displays. The following is an example of a status display. This display is shown for a long time; it could be 2 hours or more.

```

                                Message
Message ID . . . . . : CPI2090      Type . . . . . : Information
From program . . . . : QINLDALO     Severity . . . . : 00

Library . . . . . : QSYS
Objects already
restored . . . . . : XXXX
Percent restored . . : XXX

Message . . . . . : Restoring programs into library.

```

- Step 8** Load the next tape volume whenever you are prompted by one of the following displays. Follow the instructions on the display.

```

                                Message
Message ID . . . . . : CPA2055      Type . . . . . : Inquiry
From program . . . . . : QINTAPE    Severity . . . . . : 99

Message . . . . . : The next volume in the sequence is needed to
                    continue the installation process.

Cause . . . . . : The end of the tape volume has been reached.

Recovery . . . . . : Load the next tape volume on the tape device.
    
```

Type a **1**  
Press the Enter key.

OR

```

                                Display Messages
Queue . . . . . : QSYSOPR          System:      XXXX
Library . . . . . : QSYS           Program . . . . . : *DSPMSG
Severity . . . . . : 99            Library . . . . . :
Delivery . . . . . : *BREAK

Type reply, press Enter.
Load next tape volume on device QINDEV (C G)
Reply . . . . . G
    
```

Type a **G**  
**Note:** **C** cancels processing. **G** (go) continues processing.  
Press the Enter key.

- Step 9** The display could be blank for a long time. Then a message similar to the following is displayed at the bottom of a blank display.

**Installing data base files in library QSYS.**

**Note:** If you are replacing V2R3M0, SRC C900 2970 is displayed on the control panel while database cross-reference conversions occur. This SRC could be displayed for an hour or more while the conversion and other database recovery functions are performed.

- Step 10** After the base part of the operating system has been replaced, the Sign On display is shown on your console. This completes Task 2. /  
Do not remove the distribution tape. Continue with "Task 3. Replacing the Licensed Programs."

---

## Task 3. Replacing the Licensed Programs

- Step 1** Begin this task at the Sign On display.

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```
Sign On

System. . . . . : XXXX
Subsystem . . . . : XXXX
Display . . . . . : QCONSOLE

User. . . . . : QSECOFR
Password . . . . . :
Program/procedure . . . . . :
Menu . . . . . :
Current library . . . . . :
```

Type the following:

User **QSECOFR**  
Password (if required)

Press the Enter key.

**Step 2** The IPL Options display is shown.

```
IPL Options

Type choices, press Enter.

System date . . . . . XX / XX / XX   MM / DD / YY
System time . . . . . XX : XX : XX   HH : MM : SS
Clear job queues . . . . . N         Y=Yes, N=No
Clear output queues . . . . . N      Y=Yes, N=No
Clear incomplete job logs . . . . . N Y=Yes, N=No
Start print writers . . . . . Y      Y=Yes, N=No
Start this device only. . . . . N    Y=Yes, N=No

Set major system options. . . . . N  Y=Yes, N=No
Define or change the system at IPL. . . . N Y=Yes, N=No

Last power-down operation was ABNORMAL
```

**Note:** Ignore the message on the bottom of the IPL Options display.

Type the following:

System date (Use the current date.)  
System time (Use the current time, 24-hour clock.)  
Set major system options **N**

Press the Enter key.

**Step 3** The Edit Rebuild of Access Paths display could be shown. If it is, press the Enter key to continue.

**Step 4** Additional display messages could be shown. Press the Enter key after each message to continue.

**Step 5** The AS/400 Main Menu (or the menu you chose as an initial menu) is shown on your console.

```

MAIN                               AS/400 Main Menu                               System: XXXX
  
```

Type the following command:

**CHGMSGQ QSYSOPR \*BREAK SEV(60)**

Press the Enter key.

\_\_ **Step 6** A message display could be shown.

Press the Enter key.

**Note:** Ignore the messages that are shown.

\_\_ **Step 7** Type the following command:

**ENDSBS \*ALL \*IMMED**

Press the Enter key.

\_\_ **Step 8** The message **System ended to restricted condition** is shown. Press the Enter key to continue.

\_\_ **Step 9** Type the following command:

**CHGMSGQ QSYSOPR \*BREAK SEV(95)**

Press the Enter key.

\_\_ **Step 10** A message display could be shown.

Press the Enter key.

**Note:** Ignore the messages that are shown.

\_\_ **Step 11** Set the mode selector on the control panel to **Normal**.

\_\_ **Step 12** The AS/400 Main Menu (or the menu you chose as an initial menu) is shown on your console.

```

MAIN                               AS/400 Main Menu                               System: XXXX
  
```

Type the following command:

**GO LICPGM**

Press the Enter key.

\_\_ **Step 13** The Work with Licensed Programs display is shown.

```

LICPGM                               Work with Licensed Programs                               System: XXXX
Select one of the following:
Manual Install
1. Install all
  
```

Type a **1**

Press the Enter key.

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**Step 14** The Manual Install display is shown.

```
Manual Install                                     System: XXXX
Type choices, press Enter.
Install option . . . 1          1-Installed products
                                2-All products
                                3-New products
Installation device  TAP01      Name
Automatic IPL . . . N          Y-Yes
                                N-No
```

Type the following:

Install option 1 (See note)  
Tape device TAP01 (See note)  
Automatic IPL N

Press the Enter key.

**Notes:**

- a. Option 1 (1-Installed products) installs all of the products you currently have installed on the system. If there are additional licensed programs on the distribution tape, go to "Using Option 1. Install All" on page B-1 for more information about using the other install options.
- b. TAP01 is used for the tape device in this example. If you are using a different naming convention, type the name you have assigned to the tape device.

**Step 15** One or both of the following displays show the status of the licensed programs and language objects as they are being installed on the system. You do not need to respond to these status displays.

```
Installing Licensed Programs                       System: XXXX
Licensed program install in progress
```

The following display is an example of the display that is shown during the installation process.

```
Installing Licensed Programs                       System: XXXX
Licensed programs installed . . . . . : 1
Licensed
Program Description                               Type Language
5763SS1 OS/400 - Online Information             *LNG 2924
```

**Note:** This display shows which licensed programs and optional parts of licensed programs are being installed. After the \*PGM objects and \*LNG objects for each licensed program or optional part have been installed, the licensed program iden-

tifier disappears from the display and the number in the *licensed programs installed* field changes to show how many are installed.

- \_\_\_ **Step 16** Continue loading tapes in sequence whenever messages similar to the following are shown:

```

                                Display Messages
                                System:   XXXX
Queue . . . . . : QSYSOPR           Program . . . . . : *DSPMSG
Library . . . . : QSYS              Library . . . . . :
Severity . . . . : 95                Delivery . . . . . : *BREAK

Type reply (if required), press Enter.
Load next tape volume on device TAP01 (C G)
Reply . . . . . G
```

Type a **G**

**Note:** **C** cancels processing. **G** (go) continues processing.

Press the Enter key.

- \_\_\_ **Step 17** The Work with Licensed Programs display is shown on your console when the installation process is complete. One of the following messages is shown on the bottom of the Work with Licensed Programs display:

- **Work with licensed programs function has completed.**
- **Work with licensed programs function not complete.**

For either message, continue with “Task 4. Verifying Replacement Completion.”

## Task 4. Verifying Replacement Completion

- \_\_\_ **Step 1** The Work with Licensed Programs display is shown. Use the page down or roll up key to see the second display of the Work with Licensed Programs menu.

```

LICPGM                Work with Licensed Programs                System: XXXX
Select one of the following:

Redistribution
  40. Create a distribution tape
  41. Work with installation profiles

Completion Status
  50. Display log for messages
```

Type **50**

Press the Enter key.

- \_\_\_ **Step 2** The Display Install History display is shown.

## Replacing a Release Using Manual Installation

```
Display Install History

Type choices, press enter.
Start date . . . . . _____ MM/DD/YY
Start time . . . . . _____ HH:MM:SS
Output . . . . . *_____ * , *PRINT
```

Press the Enter key.

### **Step 3** Look at the messages shown on the Display History Log Contents display.

- If you had a licensed program installed that was compatible with V3R2M0 OS/400 but was not renewed by IBM for V3R2M0, that licensed program may not be replaced. Refer to “Mixed Release Level—Overview” on page 3-5 for information.
- If any of the messages on the display indicate a failure or a licensed program partially installed, go to Appendix A, “Recovery Procedures” to determine the problem.

Otherwise, press F3 (Exit) twice.

#### **More...**

You have completed this task. Do you need to install additional licensed programs?

**No**    **Yes**

↓    Go to Chapter 9, “Installing Additional Licensed Programs” on page 9-1 and complete the instructions there.

Do you need to install a secondary language?

**No**    **Yes**

↓    Go to Chapter 10, “Installing a Secondary Language” on page 10-1 and complete the instructions there.

You need to complete the installation process. Go to Chapter 11, “Checklist for Completing the Installation” on page 11-1 and complete the instructions there.



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# Installing a New System





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## Chapter 6. Installing a New AS/400 System with the Operating System Already Installed

This chapter contains instructions to install licensed programs that are on the distribution tape. These instructions assume that V3R2M0 of the Licensed Internal Code and the operating system are installed and the system has been powered down.

If you are not sure if the operating system is already installed, contact your service representative.

### Before You Begin

Complete the planning tasks in Chapter 3, "Checklist for Planning for Your New Release" on page 3-1.

**Note:** If you have added a new disk unit to your system, you should load the operating system again to use that disk unit. This will improve the performance of your system by distributing the operating system across all of your disk units. Complete Chapter 7, "Installing a New AS/400 System without the Operating System Installed" on page 7-1 if you are adding disk units. If you are planning to use checksum protection, device parity protection, auxiliary storage pools, or mirrored protection, refer to the book *Backup and Recovery – Advanced*, SC41-3305, before you begin.

## Task 1. Doing the Initial Program Load (IPL)

- \_\_\_ **Step 1** Ensure that the system is powered down before you begin.
- \_\_\_ **Step 2** Turn the power on for the display station used as the console.
- \_\_\_ **Step 3** If the tape device for the alternate IPL has separate on and off switches, verify that the switch is in the On position.
- \_\_\_ **Step 4** Set the mode selector on the control panel to **Manual**.  
For some control panels, this is the keylock switch.
- \_\_\_ **Step 5** Press the Function Selection switch until a 02 (Select IPL) is shown in the Function display on the control panel.
- \_\_\_ **Step 6** Press the Enter button on the control panel.
- \_\_\_ **Step 7** Press the Function Selection switch until an **A** (IPL) is shown on the Data display on the control panel.
- \_\_\_ **Step 8** Press the Enter button on the control panel.
- \_\_\_ **Step 9** Turn the power on for the system by pushing the power switch. The switch returns to the center on the 9406 System Unit and the 9404 System Unit after you push it.
- \_\_\_ **Step 10** After approximately 10 minutes, the IPL or Install the System display is shown.

```
IPL or Install the System

Select one of the following:

1. Perform an IPL
2. Install the operating system
3. Work with Dedicated Service Tools (DST)
4. Perform automatic install of the operating system
```

Type a **1**  
Press the Enter key.

**Step 11** Status displays are shown on the console. You do not need to respond to any of these status displays. The following is an example of a status display:

```

                                IPL Step in Progress
IPL step . . . . . : Storage Management Recovery
    
```

The following list shows some of the IPL steps that are shown on the IPL Step in Progress display. These steps could take a long time.

- Authority Recovery
- Journal Recovery
- Database Recovery
- Journal Synchronization
- Start the Operating System

**Step 12** Several messages could be shown on the console. The following is an example of a message that could be shown:

```

                                Display Messages
Queue . . . . . : QSYSOPR          System. . . . . : XXXX
Library . . . . : QSYS             Program . . . . . : *DSPMSG
Severity . . . . : 10              Library . . . . . :
                                Delivery . . . . . : *BREAK
Press Enter to continue.
System object xxxxx created again during IPL.
    
```

To continue, press the Enter key after each message.

**Step 13** The Sign On display is shown.

```

                                Sign On
                                System. . . . . : XXX
                                Subsystem . . . . : QBASE
                                Display . . . . . : DSP01

User. . . . . : QSECOFR

Program/procedure . . . . . : _____
Menu. . . . . : _____
Current library . . . . . : _____
    
```

Type **QSECOFR** for the *User* prompt.

Press the Enter key.

**Note:** You may be required to change the password for the QSECOFR user profile. Record the new password now.

# Installing a New AS/400 System with the Operating System Already Installed

**Step 14** The IPL Options display is shown.

```
                                IPL Options
Type choices, press Enter.
System date . . . . . XX / XX / XX    MM / DD / YY
System time . . . . . XX : XX : XX    HH : MM : SS
Clear job queues. . . . . N            Y=Yes, N=No
Clear output queues . . . . . N        Y=Yes, N=No
Clear incomplete job logs . . . . . N  Y=Yes, N=No
Start print writers . . . . . Y        Y=Yes, N=No
Start this device only. . . . . N      Y=Yes, N=No

Set major system options. . . . . Y    Y=Yes, N=No
Define or change the system at IPL. . . N Y=Yes, N=No

Last power-down operation was ABNORMAL
```

**Note:** Ignore the message on the bottom of the IPL Options display.

Type the following:

- System date (Use the current date.)
- System time (Use the current time, 24-hour clock.)
- Set major system options **Y**

Press the Enter key.

**Step 15** Additional display messages could be shown.

Press the Enter key after each message to continue.

\_\_ **Step 16** The Set Major System Options display is shown.

```

Set Major System Options

Type choices, press Enter.

Enable automatic configuration . . . . . Y           Y=Yes, N=No
Device configuration naming . . . . . *NORMAL       *NORMAL, *S36,
                                                    *DEVADR
Default special environment. . . . . *NONE         *NONE, *S36
    
```

Respond to the prompts on the Set Major System Options display.

**Enable automatic configuration**

The value Y (Yes) automatically configures local devices. N (No) indicates no automatic configuration. Complete information about automatic configuration can be found in the *Local Device Configuration* book, SC41-3121.

**Device configuration naming**

Specify \*NORMAL to use a naming convention unique to the AS/400 system. The value \*S36 uses a naming convention similar to System/36. Complete information about device configuration naming, including \*DEVADR, can be found in the *Local Device Configuration* book, SC41-3121.

**Default special environment**

The default value \*NONE indicates no special environment. \*S36 sets up the System/36 environment. Refer to the *System/36 Environment Programming* book, SC41-3730. for more information about working in the System/36 environment on the AS/400 system.

Press the Enter key.

\_\_ **Step 17** The Edit Rebuild of Access Paths display could be shown. If it is, press the Enter key to continue.

\_\_ **Step 18** Several blank displays and Display Messages displays are shown. To continue, press the Enter key for each message display. Do not respond to blank displays.

The following display is an example of a message that could be shown:

```

Display Messages
Queue . . . . . : QSYSOPR           System . . . . . : XXXX
Library . . . . : QSYS             Program . . . . . : *DSPMSG
Severity . . . . : 10              Library . . . . . :
Delivery . . . . : *BREAK

Press Enter to continue.
All jobs in system lost. Job and output queues cleared.
    
```

\_\_ **Step 19** When the AS/400 Main Menu is shown on your console, Set the mode selector on the control panel of your system to **Normal**.

This completes Task 1. Continue to "Task 2. Installing the Licensed Programs."

## Task 2. Installing the Licensed Programs

\_\_ **Step 1** Begin at the AS/400 Main Menu.

```
MAIN                AS/400 Main Menu                System: XXXX
```

Type the following command:

**CHGMSGQ QSYSOPR \*BREAK SEV(60)**

Press the Enter key.

\_\_ **Step 2** A message display could be shown.

Press the Enter key.

**Note:** Ignore the messages that are shown.

\_\_ **Step 3** Type the following command:

**ENDSBS \*ALL \*IMMED**

Press the Enter key.

\_\_ **Step 4** The message **System ended to restricted condition** is shown. Press the Enter key to continue.

\_\_ **Step 5** Type the following command:

**CHGMSGQ QSYSOPR \*BREAK SEV(95)**

Press the Enter key.

\_\_ **Step 6** A message display could be shown.

Press the Enter key.

**Note:** Ignore the messages that are shown.

\_\_ **Step 7** The AS/400 Main Menu is displayed again.

```
MAIN                AS/400 Main Menu                System: XXXX
```

Check the media description report to find the correct volume for the first licensed program. Load the tape volume.

\_\_ **Step 8** Type the following command:

**GO LICPGM**

Press the Enter key.

**Step 9** The Work with Licensed Programs display is shown.

**NOTE**

If you do not want to install all of the licensed programs that are on the distribution tape, go to Chapter 9, "Installing Additional Licensed Programs" to install one or more from the list of licensed programs on the Install Licensed Programs display.

```
LICPGM          Work with Licensed Programs          System: XXXX
Select one of the following:

Manual Install
  1. Install all
```

Type a **1**

Press the Enter key.

**Step 10** The Manual Install display is shown.

```
Manual Install          System: XXXX
Type choices, press Enter.
Install option . . . 3      1-Installed products
                          2-All products
                          3-New products
Installation device  TAP01  Name
Automatic IPL . . .  N      Y-Yes
                          N-No
```

Type the following:

Install option **3** (see note)  
 Tape device **TAP01** (see note)  
 Automatic IPL **N**

Press the Enter key.

**Notes:**

- a. For more information about the install options, go to "Manual Install Options" on page B-1.
- b. TAP01 is used for the tape device in this example. If you are using a different naming convention, type the name you have assigned to the tape device.

# Installing a New AS/400 System with the Operating System Already Installed

**Step 11** One or both of the following displays show the status of the licensed programs and language objects as they are being installed on the system. You do not need to respond to these status displays.

```
Installing Licensed Programs                                System: XXXX

Licensed program install in progress
```

The following display is an example of the display that is shown during the installation process.

```
Installing Licensed Programs                                System: XXXX
Licensed programs installed . . . . . : 1

Licensed
Program Description                                     Type Language
5763SS1 OS/400 - Online Information                    *LNG 2924
```

**Note:** This display shows which licensed programs and optional parts of licensed programs are being installed. After the \*PGM objects and \*LNG objects for each licensed program or optional part have been installed, the licensed program identifier disappears from the display and the number in licensed programs installed field changes to show how many are installed.

**Step 12** Continue loading tapes in sequence whenever messages similar to the following are shown:

```
Display Messages                                          System: XXXX
Queue . . . . . : QSYSOPR                               Program . . . . . : *DSPMSG
Library . . . . . : QSYS                               Library . . . . . :
Severity . . . . . : 95                               Delivery . . . . . : *BREAK

Type reply (if required), press Enter.
Load next tape volume on device TAP01 (C G)
Reply . . . . . G
```

Type a **G**

**Note:** **C** cancels processing. **G** (go) continues processing.

Press the Enter key.

**Step 13** The Work with Licensed Programs display is shown on your console when the installation process is complete.

One of the following messages is shown on the bottom of the Work with Licensed Programs display:

- **Work with licensed programs function has completed.**  
Press F3 (Exit) to return to the AS/400 Main Menu.
- **Work with licensed programs function not complete.**  
Go to Appendix A, "Recovery Procedures" to determine the problem.

<b>More...</b>	<p>You have completed this task. Do you need to install additional licensed programs?</p> <p><b>No    Yes</b></p> <p>↓    Go to Chapter 9, "Installing Additional Licensed Programs" on page 9-1 and complete the instructions there.</p> <p>Do you need to install a secondary language?</p> <p><b>No    Yes</b></p> <p>↓    Go to Chapter 10, "Installing a Secondary Language" on page 10-1 and complete the instructions there.</p> <p>You need to complete the installation process. Go to Chapter 11, "Checklist for Completing the Installation" on page 11-1 and complete the instructions there.</p>
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## Chapter 7. Installing a New AS/400 System without the Operating System Installed

This chapter contains instructions to install the operating system and licensed programs on your new system. It explains how to change the primary language when you are installing the operating system if you need to change it at this time. Refer to the book *National Language Support*, SC41-3101, for any special considerations you may need to know about other languages.

**Note:** These instructions assume that the V3R2M0 of Licensed Internal Code is installed and the system has been powered down. If you do not know what level of Licensed Internal Code is on your system, contact your service representative.

### Before You Begin

Complete the planning tasks in Chapter 3, "Checklist for Planning for Your New Release" on page 3-1.

## Task 1. Installing the Operating System

To perform this procedure, you need to be familiar with the operation of the control panel on your system. Refer to the *System Startup and Problem Handling* book, SC41-3206, for information about using the control panel.

- \_\_\_ **Step 1** Ensure that the system is powered down before you begin.
- \_\_\_ **Step 2** Turn the power on for the display station used as the console.
- \_\_\_ **Step 3** If the tape device has separate on and off switches, verify that the switch is in the On position.
- \_\_\_ **Step 4** Set the mode selector on the control panel to **Manual**.  
For some control panels, this is the keylock switch.
- \_\_\_ **Step 5** Press the Function Selection switch until a **02** (Select IPL) is shown in the Function display on the control panel.
- \_\_\_ **Step 6** Press the Enter button on the control panel.
- \_\_\_ **Step 7** Press the Function Selection switch until an **A** (IPL) is shown on the Data display on the control panel.
- \_\_\_ **Step 8** Press the Enter button on the control panel.
- \_\_\_ **Step 9** Turn the power on for the system by pushing the power switch. The switch returns to the center on the 9406 System Unit and the 9404 System Unit after you push it.
- \_\_\_ **Step 10** Load the first tape volume.
- \_\_\_ **Step 11** The IPL or Install the System menu is shown.

```
                                IPL or Install the System

Select one of the following:

1. Perform an IPL
2. Install the operating system
3. Use Dedicated Service Tools (DST)
4. Perform automatic install of the operating system
```

Type a **2**  
Press the Enter key.

- \_\_\_ **Step 12** The Confirm Install of Operating System display is shown on your console.  
Press the Enter key.

- **Step 13** The Select a Language Group display shows the primary language currently on the system. You may change the primary language of your system by specifying a different language feature number on this display. The value you specify must match the national language version that is on the media description report. Refer to Appendix F, “National Language Version Feature Codes” on page F-1 for a list of language feature codes.

```
                Select a Language Group

Note: The language feature shown is the language feature
      installed on the system.

Type choice, press Enter.

Language feature . . . . . 2924
```

Verify that the displayed value is correct, or type the numbers of the feature code for the language you want.

Press the Enter key.

- **Step 14** After the language feature is entered, the Confirm Language Feature Selection display is shown on your console.

Press the Enter key.

- **Step 15** The next two displays could be shown if you have disk units attached to the system that are not currently part of your system configuration. If the Add All Disk Units to the System menu is not shown, go to the IPL Step in Progress display in Step 16 on page 7-4.

**Note:** Using your additional disk units improves the performance of your system by distributing the operating system across all of your disk units. This could take up to 15 minutes for each disk unit.

If you are using checksum protection, auxiliary storage pools, device parity protection, or mirrored protection on your system, you may not see the same option 1 shown on the following display. You may not be able to add disk units at this time. Refer to the appropriate section in the book *Backup and Recovery – Advanced*, SC41-3305, for more information. If you do add disk units to the system at this time, be sure to return to step 16 on page 7-4 to continue the this installation.

```
                Add All Disk Units to the System

Select one of the following:

1. Add all disk units to the system auxiliary storage pool
2. Keep the current disk configuration
3. Perform disk configuration using DST
```

Type a 1

Press the Enter key.

The following display shows the run time for the addition of the disk units. This display does not require a response.

## Installing a New AS/400 System without the Operating System Installed

```
Formatting additional disk units in progress.  
Seconds running . . . . : 0
```

**Step 16** Status displays are shown on the console. You do not need to respond to any of these status displays. The following is an example of a status display:

```
IPL Step in Progress  
IPL step . . . . . : Storage Management Recovery
```

The following list shows some of the IPL steps that are shown on the IPL Step in Progress display. These steps could take a long time.

- Authority Recovery
- Journal Recovery
- Database Recovery
- Journal Synchronization
- Start the Operating System

**Step 17** Load the next tape volume if the following display is shown:

```
Install the Operating System  
End of tape volume.  
Select one of the following:  
1. Continue installing the operating system.  
2. End the install (the system is ended abnormally).  
  
Note: The next tape volume must be loaded before continuing  
to install the operating system.
```

Type a **1**  
Press the Enter key.

**Step 18** The Install the Operating System display is shown.

```

                                Install the Operating System
Type options, press Enter.

Install
option . . . . . 1          1=Take defaults (No other
                             options are displayed)
                             2=Change install options

Date:
Year . . . . . —          00-99
Month . . . . . —         01-12
Day . . . . . —           01-31

Time:
Hour . . . . . —          00-23
Minute . . . . . —        00-59
Second . . . . . —        00-59
    
```

Type the following:

Install option **1**  
 Date (Use the current year, month, and day.)  
 Time (Use the current time, 24-hour clock.)

Press the Enter key.

**Step 19** Status messages are shown during the installation process. You do not need to respond to any of these status displays. The following is an example of a status display:

```

                                Message
Message ID . . . . . : CPI2090      Type . . . . . : Information
From program . . . . . : QINLDALO    Severity . . . . . : 00

Library . . . . . : QSYS
Objects already
restored. . . . . : XXXX
Percent restored . . . . : XXX

Message . . . . . : Restoring programs into library.
    
```

# Installing a New AS/400 System without the Operating System Installed

**Step 20** Load the next tape volume whenever one of the next two displays are shown. Follow the instructions on the display.

```
Message
Message ID . . . . . : CPA2055      Type . . . . . : Inquiry
From program . . . . . : QINTAPE     Severity . . . . . : 99

Message . . . . . : The next volume in the sequence is needed to
                    continue the installation process.

Cause . . . . . : The end of the tape volume has been reached.

Recovery . . . . . : Load the next tape volume on the tape device.
```

Type a **1**

Press the Enter key.

OR

```
Display Messages
Queue . . . . . : QSYSOPR          System . . . . . : XXXX
Library . . . . . : QSYS           Program . . . . . : *DSPMSG
Severity . . . . . : 10            Delivery . . . . . : *BREAK

Type reply, press Enter.
Load the next tape volume on device QINDEV. (C G)
Reply . . . . . 6
```

Type a **G**

**Note:** **C** cancels processing. **G** (go) continues processing.

Press the Enter key.

**Step 21** Messages similar to the following could be displayed:

```
Display Messages
Queue . . . . . : QSYSOPR          System . . . . . : XXXX
Library . . . . . : QSYS           Program . . . . . : *DSPMSG
Severity . . . . . : 10            Delivery . . . . . : *BREAK

Press Enter to continue.
System operator message queue QSYSOPR created again.
Console values lost.
```

Press the Enter key.

**Step 22** A message similar to the following is shown at the bottom of a blank display for a long time.

**Installing data base files in library QSYS.**

**Note:** If you are replacing V2R3M0, SRC C900 2970 is displayed on the control panel while database cross-reference conversions occur. This SRC could be displayed for an hour or more while the conversion and other database recovery functions are performed.

— **Step 23** The Sign On display is shown.

```
                Sign On
                System. . . . : XXX
                Subsystem . . : QBASE
                Display . . . : QCONSOLE

                User. . . . . QSECOFR

                Program/procedure . . . . . _____
                Menu. . . . . _____
                Current library . . . . . _____
```

Type **QSECOFR** for the *User* prompt.

Press the Enter key.

— **Step 24** Several blank displays and Display Messages displays could be shown. To continue, press the Enter key for each message display.

The following display is an example of a message that could be shown:

```
                Display Messages
                System: XXXX
                Queue . . . . : QSYSOPR          Program . . . . : *DSPMSG
                Library . . . : QSYS             Library . . . :
                Severity . . . : 60             Delivery . . . : *BREAK

                Press Enter to continue.
                System object QWCSCPF created again during IPL.
```

# Installing a New AS/400 System without the Operating System Installed

\_\_\_ **Step 25** The IPL Options display is shown.

```
                                IPL Options

Type choices, press Enter.

System date . . . . . XX / XX / XX    MM / DD / YY
System time . . . . . XX : XX : XX    HH : MM : SS
Clear job queues. . . . . N            Y=Yes, N=No
Clear output queues . . . . . N        Y=Yes, N=No
Clear incomplete job logs . . . . . N  Y=Yes, N=No
Start print writers . . . . . Y        Y=Yes, N=No
Start this device only. . . . . N      Y=Yes, N=No

Set major system options. . . . . Y    Y=Yes, N=No
Define or change system at IPL. . . . . N Y=Yes, N=No

Last power-down operation was ABNORMAL
```

**Note:** Ignore the message on the bottom of the IPL Options display.

Type the following:

- System date (Use the current date.)
- System time (Use the current time, 24-hour clock.)
- Set major system options **Y**

Press the Enter key.

\_\_\_ **Step 26** Additional display messages could be shown. Press the Enter key after each message to continue.

— **Step 27** The Set Major System Options display is shown.

```

Set Major System Options

Type choices, press Enter.

Enable automatic configuration . . . . . Y           Y=Yes, N=No
Device configuration naming . . . . . *NORMAL       *NORMAL, *S36
                                                    *DEVADR
Default special environment. . . . . *NONE         *NONE, *S36
    
```

Respond to the prompts on the Set Major System Options display.

**Enable automatic configuration**

The value Y (Yes) automatically configures local devices. N (No) indicates no automatic configuration. Complete information about automatic configuration can be found *Local Device Configuration* book, SC41-3121.

**Device configuration naming**

Specify \*NORMAL to use a naming convention unique to the AS/400 system. The value \*S36 uses a naming convention similar to System/36. Complete information about device configuration naming, including \*DEVADR, can be found in the *Local Device Configuration* book, SC41-3121.

**Default special environment**

The default value \*NONE indicates no special environment. \*S36 sets up the System/36 environment. Refer to the *System/36 Environment Programming* book, SC41-3730. for more information about working in the System/36 environment on the AS/400 system.

Press the Enter key.

— **Step 28** The Edit Rebuild of Access Paths display could be shown. If it is, press the Enter key to continue.

— **Step 29** Several blank displays and Display Messages displays are shown. To continue, press the Enter key for each message display. Do not respond to blank displays.

The following display is an example of a message that could be shown:

```

Display Messages

Queue . . . . . : QSYSOPR           System:  XXXX
Library . . . . :  QSYS             Program . . . . : *DSPMSG
Severity . . . . :  10              Library . . . . :
Delivery . . . . :                  *BREAK

Press Enter to continue.
Library QHLPSYS in SYSVAL QSYSLIBL not found.
    
```

— **Step 30** When the AS/400 Main Menu is shown on your console, use the control panel to set the mode to **Normal**.

You have completed this task. Continue to “Task 2. Installing the Licensed Programs.”

---

## Task 2. Installing the Licensed Programs

\_\_ **Step 1** Begin at the AS/400 Main Menu.

```
MAIN                AS/400 Main Menu                System: XXXX
```

Leave the current tape volume in the tape device.

\_\_ **Step 2** Type the following command:

**CHGMSGQ QSYSOPR \*BREAK SEV(60)**

Press the Enter key.

\_\_ **Step 3** A message display could be shown.

Press the Enter key.

**Note:** Ignore the messages that are shown.

\_\_ **Step 4** Type the following command:

**ENDSBS \*ALL \*IMMED**

Press the Enter key.

\_\_ **Step 5** The message **System ended to restricted condition** is shown. Press the Enter key to continue.

\_\_ **Step 6** Type the following command:

**CHGMSGQ QSYSOPR \*BREAK SEV(95)**

Press the Enter key.

\_\_ **Step 7** A message display could be shown.

Press the Enter key.

**Note:** Ignore the messages that are shown.

\_\_ **Step 8** The AS/400 Main Menu is displayed.

```
MAIN                AS/400 Main Menu                System: XXXX
```

Type the following command:

**GO LICPGM**

Press the Enter key.

\_\_ **Step 9** The Work with Licensed Programs display is shown.

```
LICPGM                Work with Licensed Programs                System: XXXX
Select one of the following:
Manual Install
1. Install all
```

Type a **1**

Press the Enter key.

## Step 10 The Manual Install display is shown.

```
Manual Install                                     System: XXXX
Type choices, press Enter.
Install option . . . 2          1-Installed products
                                2-All products
                                3-New products
Installation device  TAP01      Name
Automatic IPL . . .  N          Y-Yes
                                N-No
```

Type the following:

Install option **2** (see note)

Tape device **TAP01** (see note)

Automatic IPL **N**

Press the Enter key.

### Notes:

- a. For more information about the install options, go to "Manual Install Options" on page B-1.
- b. TAP01 is used for the tape device in this example. If you are using a different naming convention, type the name you have assigned to the tape device.

# Installing a New AS/400 System without the Operating System Installed

**Step 11** One or both of the following displays show the status of the licensed programs and language objects as they are being installed on the system. You do not need to respond to these status displays.

```
Installing Licensed Programs                               System: XXXX

Licensed program install in progress
```

The following display is an example of the display that is shown during the installation process.

```
Installing Licensed Programs                               System: XXXX
Licensed programs installed . . . . . : 1

Licensed
Program Description                                     Type Language
5763SS1 OS/400 - Online Information *LNG 2924
```

**Note:** This display shows which licensed programs and optional parts of licensed programs are being installed. After the \*PGM objects and \*LNG objects for each licensed program or optional part have been installed, the licensed program identifier disappears from the display and the number in the licensed programs installed field changes to show how many are installed.

**Step 12** Continue loading tapes in sequence whenever messages similar to the following are shown:

```
Display Messages                               System: XXXX
Queue . . . . . : QSYSOPR                       Program . . . . . : *DSPMSG
Library . . . . . : QSYS                         Library . . . . . :
Severity . . . . . : 95                          Delivery . . . . . : *BREAK

Type reply (if required), press Enter.
Load next tape volume on device TAP01 (C G)
Reply . . . . G
```

Type a **G**

**Note:** **C** cancels processing. **G** (go) continues processing.

Press the Enter key.

**Step 13** The Work with Licensed Programs display is shown on your console when the installation process is complete. One of the following messages is shown on the bottom of the Work with Licensed Programs display:

- **Work with licensed programs function has completed.**  
Press F3 (Exit) to return to the AS/400 Main Menu.
- **Work with licensed programs function not complete.**  
Go to Appendix A, "Recovery Procedures" to determine the problem.

<b>More...</b>	<p>You have completed this task. Do you need to install additional licensed programs?</p> <p><b>No    Yes</b></p> <p>↓    Go to Chapter 9, "Installing Additional Licensed Programs" on page 9-1 and complete the instructions there.</p> <p>Do you need to install a secondary language?</p> <p><b>No    Yes</b></p> <p>↓    Go to Chapter 10, "Installing a Secondary Language" on page 10-1 and complete the instructions there.</p> <p>You need to complete the installation process. Go to Chapter 11, "Checklist for Completing the Installation" on page 11-1 and complete the instructions there.</p>
----------------	---



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# Changing the Primary Language





## Chapter 8. Changing Your Primary Language Using a Secondary Language Media

This chapter contains the instructions to change the primary language using a secondary language tape.

### Before You Begin

Complete the planning tasks in Chapter 3, "Checklist for Planning for Your New Release" on page 3-1.

Before you use this chapter, consider the following:

- Be sure you have read the information in "Planning for National Language Support" on page 3-27. For more specific information about national language considerations, refer to the book *National Language Support*, SC41-3101.
- You need the tapes that contain Operating System/400 (5763-SS1 for V3R2M0).
- You also need the tapes that contain the secondary language you want to install.

**Note:** If the language feature code on your secondary language tape is not 57xx, do not continue with the instructions in this part. If the language feature code on your secondary language tape is 29xx, go to Chapter 7, "Installing a New AS/400 System without the Operating System Installed" and use those instructions to change your primary language.

- The release and modification level of your system must be the same as the release and modification level of your secondary language media.

### Attention!

You cannot change your primary language to a language you currently have installed as a secondary language on your system. You must delete the secondary language first before you can change it to your primary language. Go to "Using Option 22. Delete Secondary Languages" on page B-6 for more information about deleting secondary languages.

## Task 1. Changing the Primary Language

- \_\_\_ **Step 1** Begin at the AS/400 Main Menu (or the menu you chose as your initial menu).

```
MAIN                AS/400 Main Menu                System: XXXX
```

Load the first tape volume containing the operating system (5763-SS1).

**Note:** Do not load your secondary language tape at this time.

- \_\_\_ **Step 2** Set the mode selector on the control panel to **Manual**. For some control panels, this is the keylock switch.

- \_\_\_ **Step 3** Type the following command:

```
PWRDWSYS *IMMED RESTART(*YES)
```

Press the Enter key.

- \_\_\_ **Step 4** Wait for the IPL or Install the System display to be shown on your console.

```
                IPL or Install the System

Select one of the following:

1. Perform an IPL
2. Install the operating system
3. Use Dedicated Service Tools (DST)
4. Perform automatic install of the operating system
```

Type a **2**

Press the Enter key.

- \_\_\_ **Step 5** The Confirm Install of Operating System display is shown on your console.

Press the Enter key.

- Step 6** The Select a Language Group display shows the primary language currently on the system. Change the primary language of your system by specifying a different language feature on this display. The feature code on the tape label for the secondary language is 57xx. To install a primary language using secondary language tapes, you must specify the national language version as 29xx on this display. For example, if the tape label lists 5722 (Portuguese) for the secondary language, use the primary feature code for Portuguese (2922). Refer to Appendix F, “National Language Version Feature Codes” on page F-1 for a list of language feature codes.

```
                Select a Language Group

Note: The language feature shown is the language feature
      installed on the system.

Type choice, press Enter.

  Language feature . . . . . 2924
```

Type the numbers of the feature code for the language you want.  
Press the Enter key.

- Step 7** After the language feature code is entered, the Confirm Language Feature Selection display is shown on your console.  
Press the Enter key.

- Step 8** Some status displays are shown on the console. You do not need to respond to any of these status displays. The following is an example of a status display:

```
                IPL Step in Progress

IPL step . . . . . : Storage Management Recovery
```

The following list shows some of the IPL steps that are shown on the IPL Step in Progress display. These steps could take a long time.

- Authority Recovery
- Journal Recovery
- Database Recovery
- Journal Synchronization
- Start the Operating System

## Changing Your Primary Language Using a Secondary Language Media

**Step 9** If the following display is shown, load the next tape volume.

```

                                Install the Operating System

End of tape volume.

Select one of the following:

    1. Continue installing the operating system.
    2. End the install (the system is ended abnormally).

Note: The next tape volume must be loaded before continuing
to install the operating system.
```

Type a **1**

Press the Enter key.

**Step 10** The Install the Operating System display is shown when the IPL is complete.

```

                                Install the Operating System

Type options, press Enter.

Install
option . . . . . 2          1=Take defaults (No other
                             options are displayed)
                             2=Change install options

Date:
Year . . . . . —          00-99
Month . . . . . —         01-12
Day . . . . . —           01-31

Time:
Hour . . . . . —          00-23
Minute . . . . . —        00-59
Second . . . . . —        00-59
```

Type the following:

Install option **2**

Date (Use the current year, month, and day.)

Time (Use the current time, 24-hour clock.)

Press the Enter key.

\_\_\_ **Step 11** The Specify Install Options display is shown.

```
Specify Install Options

Type options, press Enter.

Restore option . . . . . 4      1=Restore programs and language
                                objects from current tape
                                2=Do not restore programs or
                                language objects
                                3=Restore only language objects
                                from current tape
                                4=Restore only language objects
                                from a different tape

Job and output
queues option . . . . . 2      1=Clear, 2=Keep
```

Type the following:

Restore option: **4**

Job and output queues option: **2**

Press the Enter key.

\_\_\_ **Step 12** Load the first volume of your secondary language tape when the following message is shown:

```
Message

Message ID . . . . . : CPA2057      Type . . . . . : Inquiry
From program . . . . . : QINTAPE      Severity . . . . . : 99

Language ID . . . . . : 2922

Message . . . . . : The tape containing language objects for the
                    system language is needed to continue the installation process.

Recovery . . . . . : Load the tape containing language objects
                    for the specified language.

Type choice, press Enter.

Reply . . . . . 1      1=Continue, 2=End installing
```

Type a **1**

Press the Enter key.

## Changing Your Primary Language Using a Secondary Language Media

The system searches through the tapes and loads the necessary language information. System messages, like the following, are shown indicating that the language is being changed. These messages do not require a response.

```
Message
Message ID . . . . . : CPI2092      Type . . . . . : Information
From program . . . . . : QINLDALO    Severity . . . . . : 00
Library . . . . . : QSYS

Objects already
restored . . . . . : XXXX
Percent restored . . . : XXX

Message . . . . . : Restoring language objects into library.
```

**Step 13** Load the next tape volume whenever you are prompted by one of the following displays. Follow the instructions on the display.

```
Message
Message ID . . . . . : CPA2055      Type . . . . . : Inquiry
From program . . . . . : QINTAPE    Severity . . . . . : 99

Message . . . . . : The next volume in the sequence is needed to
continue the installation process.

Cause . . . . . : The end of the tape volume has been reached.

Recovery . . . . . : Load the next tape volume on the tape device.
```

Type a **1**

Press the Enter key.

OR

```
Display Messages
Queue . . . . . : QSYSOPR          System: XXXX
Library . . . . . : QSYS           Program . . . . . : *DSPMSG
Severity . . . . . : 10            Library . . . . . :
Delivery . . . . . : *BREAK

Type reply, press Enter.
Load next tape volume on device QINDEV. (C G)
Reply . . . . . G
```

Type a **G**

**Note:** **C** cancels processing. **G** (go) continues processing.

Press the Enter key.

**Step 14** After the base part of the operating system has been changed, the Sign On display is shown on your console. Continue with "Task 2. Installing the Licensed Programs."

## Task 2. Installing the Licensed Programs

**Step 1** Begin at the Sign On display.

```

                                Sign On
                                System. . . . . : XXXX
                                Subsystem . . . . : XXXX
                                Display . . . . . : QCONSOLE

                                User. . . . . : QSECOFR
                                Password . . . . . :
                                Program/procedure . . . . . :
                                Menu . . . . . :
                                Current library . . . . . :
    
```

Type the following:

```

User  QSECOFR
Password (if required)
    
```

Press the Enter key.

**Step 2** Several display messages are shown. To continue, press the Enter key on each display. The following is an example of a message that could be shown:

```

                                Display Messages
                                System:  XXXX

                                Queue . . . . . : QSYSOPR          Program . . . . . : *DSPMSG
                                Library . . . . . : QSYS             Library . . . . . :
                                Severity . . . . . : 10              Delivery . . . . . : *BREAK

                                Press enter to continue.
                                System object QWCSCPF created again during IPL.
    
```

# Changing Your Primary Language Using a Secondary Language Media

**Step 3** The IPL Options display is shown.

```
IPL Options

Type choices, press Enter.

System date . . . . . XX / XX / XX   MM / DD / YY
System time . . . . . XX : XX : XX   HH : MM : SS
Clear job queues. . . . . N           Y=Yes, N=No
Clear output queues . . . . . N       Y=Yes, N=No
Clear incomplete job logs . . . . . N  Y=Yes, N=No
Start print writers . . . . . Y       Y=Yes, N=No
Start this device only. . . . . N     Y=Yes, N=No

Set major system options. . . . . N   Y=Yes, N=No
Define or change the system at IPL. . . N Y=Yes, N=No

Last power-down operation was ABNORMAL
```

**Note:** Ignore the message on the bottom of the IPL Options display.

Type the following:

- System date (Use the current date.)
- System time (Use the current time, 24-hour clock.)
- Set major system options **N**

Press the Enter key.

**Step 4** Additional display messages could be shown.

Press the Enter key after each message to continue.

**Step 5** The AS/400 Main Menu (or the menu you chose as the initial menu) is shown on your console.

```
MAIN                AS/400 Main Menu                System: XXXX
```

Type the following command:

**CHGMSGQ QSYSOPR \*BREAK SEV(60)**

Press the Enter key.

**Step 6** A message display could be shown.

Press the Enter key.

**Note:** Ignore the messages that are shown.

**Step 7** Type the following command:

**ENDSBS \*ALL \*IMMED**

Press the Enter key.

**Step 8** The message **System ended to restricted condition** is shown. Press the Enter key to continue.

\_\_ **Step 9** Type the following command:  
**CHGMSGQ QSYSOPR \*BREAK SEV(95)**  
Press the Enter key.

\_\_ **Step 10** A message display could be shown.  
Press the Enter key.  
**Note:** Ignore the messages that are shown.

\_\_ **Step 11** Set the mode selector on the control panel of your system to **Normal**.

\_\_ **Step 12** The AS/400 Main Menu (or the menu you chose as your initial menu) is shown again.

```
MAIN                AS/400 Main Menu                System: XXXX
```

Type the following command:

**GO LICPGM**

Press the Enter key.

\_\_ **Step 13** The Work with Licensed Programs display is shown.

```
LICPGM                Work with Licensed Programs                System: XXXX
Select one of the following:
Manual Install
  1. Install all
```

Type a **1**

Press the Enter key.

**Note:** Select option 1 (Install all) to change the primary language

**Step 14** The Manual Install display is shown.

```

                                Manual Install
                                System: XXXX
Type choices, press Enter.
Install option . . . 1          1-Installed products
                                2-All products
                                3-New products
Installation device  TAP01      Name
Automatic IPL . . .  N          Y-Yes
                                N-No
    
```

Type the following:

```

Install option  1 (See note)
Tape device    TAP01 (See note)
Automatic IPL  N
    
```

Press the Enter key.

**Notes:**

- a. For more information about the install options for a manual install, go to “Using Option 1. Install All” on page B-1, or press F1 (Help).
- b. TAP01 is used for the tape device in this example. If you are using a different naming convention, type the name you have assigned to the tape device.

**Step 15** One or both of the following displays show the status of the licensed programs and language objects as they are being installed on the system. You do not need to respond to these status displays.

```

                                Installing Licensed Programs
                                System: XXXX

                                Licensed program install in progress
    
```

The following display is an example of the display that is shown during the installation process:

```

                                Installing Licensed Programs
                                System: XXXX
Licensed programs installed . . . . . : 1
Licensed
Program  Description          Type  Language
5763SS1  OS/400 - Library QUSRSYS    *LNG  2922
    
```

**Step 16** Continue loading tapes in sequence whenever messages similar to the following are shown:

```
Display Messages
System: XXXX
Queue . . . . . : QSYSOPR          Program . . . . . : *DSPMSG
Library . . . . . : QSYS           Library . . . . . :
Severity . . . . . : 95            Delivery . . . . . : *BREAK

Type reply (if required), press Enter.
Load next tape volume on device TAP01 (C G)
Reply . . . . . G
```

Type a **G**

**Note:** **C** cancels processing. **G** (go) continues processing.

Press the Enter key.

**Step 17** The Work with Licensed Programs display is shown on your console when the language objects for all of the licensed programs are installed. One of the following messages is shown on the bottom of the Work with Licensed Programs display:

- **Work with licensed programs function has completed.**  
Press F3 (Exit) to return to the AS/400 Main Menu.
- **Work with licensed programs function not complete.**  
Go to Appendix A, "Recovery Procedures" to determine the problem.

**More...** You have completed this task. To complete your installation, you must go to Chapter 11, "Checklist for Completing the Installation" on page 11-1 and follow the instructions there.

## Changing Your Primary Language Using a Secondary Language Media





## **Additional Products and Languages**





## Chapter 9. Installing Additional Licensed Programs

This chapter contains instructions to install additional licensed programs or optional parts of licensed programs on your system. (Separately ordered features are installed as a licensed program.) You can use this chapter to add additional licensed programs in two ways:

- As part of software release upgrade
- Independently of a software release upgrade

### Before You Begin

Complete the planning tasks in Chapter 3, "Checklist for Planning for Your New Release" on page 3-1.

**Note:** If you install an additional licensed program independently of a software release upgrade, check the following:

- Ensure that you have a recent copy of the cumulative PTF package
- Use the Preventive Service Planning (PSP) information to determine if any prerequisite PTFs need to be installed or if any special instructions are included for installing the licensed program.

The PTFs for licensed programs are on a separate media. Use the *AS/400 PTF Shipping Information Letter* to install the cumulative PTF package after you add additional licensed programs.

If you add additional licensed programs and you have a secondary language installed on your system, you must install the secondary language after you install the licensed programs. Otherwise, the added licensed program will not have secondary language support.

The system must be in a restricted state to install the QGPL and QUSRSYS libraries and OS/400 Option 12, OS/400 - Host Servers. For other licensed programs, it is recommended that the system be in a restricted state. If you want to install other licensed programs while the system is not in a restricted state, you can skip steps 3, 4, 5, and 6 of Task 1. You may experience installation failures if the system is not in a restricted state. Your installation time may be slower if you install licensed programs while the system is not in a restricted state.

If you are selecting more than one licensed program and want to ensure that the products you select install as fast as possible, you should review the information in "Multiprocess Installation—Overview" on page D-4. Figure D-4 on page D-13 shows which licensed programs may have conditions that affect the installation time.

### Task 1. Using the Work with Licensed Programs Menu

- \_\_ **Step 1** You must be signed on the system using QSECOFR. If you are not, sign off and then sign on again using QSECOFR.

The AS/400 Main Menu (or the menu you chose as your initial menu) is shown on the console.

- \_\_ **Step 2** Load the tape volume containing the licensed program on your system tape device.

**Note:** For information to determine which tape volume to load, check the media description report.

- \_\_ **Step 3** The AS/400 Main Menu (or the menu you chose as your initial menu) is shown.

```
MAIN                AS/400 Main Menu                System: XXXX
```

Type the following command:

**CHGMSGQ QSYSOPR \*BREAK SEV(60)**

Press the Enter key.

- \_\_ **Step 4** A message display could be shown.

Press the Enter key.

**Note:** Ignore the messages that are shown.

- \_\_ **Step 5** Type the following command:

**ENDSBS \*ALL \*IMMED**

Press the Enter key.

- \_\_ **Step 6** The message **System ended to restricted condition** is shown. Press the Enter key to continue.

- \_\_ **Step 7** Type the following command:

**CHGMSGQ QSYSOPR \*BREAK SEV(95)**

Press the Enter key.

- \_\_ **Step 8** A message display could be shown.

Press the Enter key.

**Note:** Ignore the messages that are shown.

- \_\_ **Step 9** The AS/400 Main Menu (or the menu you chose as your initial menu) is displayed again.

```
MAIN                AS/400 Main Menu                System: XXXX
```

Type the following command:

**GO LICPGM**

Press the Enter key.

**Step 10** The Work with Licensed Programs display is shown.

```

LICPGM                Work with Licensed Programs                System: XXXX
Select one of the following:

Manual Install
  1. Install all

Licensed Programs
  10. Display installed licensed programs
  11. Install licensed programs
  12. Delete licensed programs
  13. Save licensed programs
    
```

Type a **11**

Press the Enter key.

**Step 11** The Install Licensed Programs display is shown.

```

                                Install Licensed Programs                System: XXXXXXXX
Type options, press Enter.
l=Install

Option  Licensed Program  Installed Status  Description
-      5763SS1             *COMPATIBLE OS/400 - Library QGPL
-      5763SS1             *COMPATIBLE OS/400 - Library QUSRSYS
-      5763SS1             *COMPATIBLE OS/400 - Extended Base Support
-      5763SS1             OS/400 - Online Information
-      5763SS1             OS/400 - S/36 and S/38 Migration
-      5763SS1             OS/400 - System/36 Environment
-      5763SS1             OS/400 - System/38 Environment
-      5763SS1             OS/400 - Example Tools Library
-      5763SS1             OS/400 - AFP Compatibility Fonts
-      5763SS1             OS/400 - *PRV CL Compiler Support
-      5763SS1             OS/400 - S/36 Migration Assistant
I      5763SS1             OS/400 - Host Servers
-      5763SS1             OS/400 - Openness Includes

F3=Exit  F11=Display release  F12=Cancel                More...
    
```

**Notes:**

- a. The libraries QGPL and QUSRSYS and Extended Base Support (option 1 of OS/400) are preselected if you are installing licensed programs as part of a new system installation. If you are adding additional (new) licensed programs, these items are already installed and would be preselected only if they are in an error state. This example shows that libraries QGPL and QUSRSYS and Extended Base Support (option 1 of OS/400) are installed at a level that is compatible with OS/400.
- b. A licensed program you want to install may not be listed on the Install Licensed Programs display. If the licensed program you want is not listed, look at the information you received with the licensed program for installation instructions.

Type a **1** in the option column next to the licensed programs to be installed.

Press the Enter key.

**Step 12** The Confirm Install of Licensed Programs display is shown on the console.

Press the Enter key to confirm your choices.

## Installing Additional Licensed Programs

**Step 13** The Confirm Install Options display is shown.

```

                                Install Options
                                System: XXXX

Type choices, press Enter.

Installation device  TAP01      Name
Objects to install .  1         1-Programs and language objects
                                2-Programs
                                3-Language objects

Automatic IPL . . .  N         Y-Yes
                                N-No

```

Type the following:

```

Tape device  TAP01 (See note)
Objects to install  1
Automatic IPL  N

```

Press the Enter key.

**Note:** TAP01 is used for the tape device in this example. If you are using a different naming convention, type the name you have assigned to the tape device.

**Step 14** One or both of the following displays show the status of the licensed programs and language objects as they are being installed on the system.

```

                                Installing Licensed Programs
                                System: XXXX

                                Licensed program install in progress

```

The following display is an example of the display that is shown during the installation process.

```

                                Installing Licensed Programs or PTFs
                                System: XXXX

Licensed programs installed . . . . . : 1

Licensed
Program  Description                               Type  Language
5763SS1  OS/400 - Host Servers                         *PGM  2924

```

**Note:** This display shows which licensed programs and optional parts of licensed programs are being installed. After the \*PGM objects and \*LNG objects for each licensed program or optional part have been installed, the licensed program identifier disappears from the display and the number in the licensed programs installed field changes to show how many are installed.

- Step 15** Continue loading tapes in sequence whenever messages similar to the following are shown. Follow the instructions on the display.

```

                                Display Messages
Queue . . . . . : QSYSOPR           System: XXXX
Library . . . . : QSYS             Program . . . . : *DSPMSG
Severity . . . . : 95              Delivery . . . . : *BREAK

Type reply (if required), press Enter.
Load next tape volume on device TAP01 (C G)
Reply . . . . G

```

Type a **G**

**Note:** **C** cancels processing. **G** (go) continues processing.

Press the Enter key.

- Step 16** The Work with Licensed Programs display is shown when the installation process is complete.

One of the following messages is shown on the bottom of the Work with Licensed Programs display:

- **Work with licensed programs function has completed.**  
Press F3 (Exit) to return to the AS/400 Main Menu.
- **Work with licensed programs function not complete.**  
Go to Appendix A, "Recovery Procedures" to determine the problem.

#### More...

You have completed this task. Do you have more licensed programs or optional parts to install, but they did not appear in the list displayed in step 11 on page 9-3?

**No**    **Yes**

↓    Go to "Task 2. Using the Restore Licensed Program Command" on page 9-6 to install these licensed programs or optional parts.

Do you need to install a secondary language?

**No**    **Yes**

↓    Go to Chapter 10, "Installing a Secondary Language" on page 10-1 and complete the instructions there.

You need to complete the installation process. Go to Chapter 11, "Checklist for Completing the Installation" on page 11-1 and complete the instructions there.

### Task 2. Using the Restore Licensed Program Command

You may have licensed programs or optional parts to install that were not in the list that is used in the previous task. New licensed programs or new optional parts of licensed programs that become available independently of an operating system release or modification level are not installed with option 11. (These products are not listed in Appendix C, "Licensed Program Information" on page C-1, either.) You must use the Restore Licensed Program (RSTLICPGM) command to install these licensed programs.

**Note:** If you do not have any licensed programs or optional parts that fit this description, you can skip this task. If you need to install a secondary language, go to Chapter 10, "Installing a Secondary Language" on page 10-1 and complete the instructions there. Otherwise, you need to complete the installation process. Go to Chapter 11, "Checklist for Completing the Installation" on page 11-1 and complete the instructions there.

\_\_\_ **Step 1** You may have received special installation instructions with these products. If you did, you should use those instructions.

\_\_\_ **Step 2** Load the media containing the licensed program or optional part on the installation device.

In the following steps, TAP01 is used for the installation device. If you are using a different naming convention, use the name you have assigned to the installation device.

\_\_\_ **Step 3** To install a new licensed program, type the command:

```
RSTLICPGM LICPGM(xxxxxxx) DEV(TAP01) OPTION(*BASE) ENDOPT(*LEAVE)
```

The characters xxxxxx are the product identifier for the licensed program you are installing. Specify a value for the ENDOPT parameter that is appropriate.

Press the Enter key.

\_\_\_ **Step 4** To install a new optional part, type the command:

```
RSTLICPGM LICPGM(xxxxxxx) DEV(TAP01) OPTION(n) ENDOPT(*LEAVE)
```

The characters xxxxxx are the product identifier for the licensed program you are installing and *n* is the option number. Specify a value for the ENDOPT parameter that is appropriate.

Press the Enter key.

\_\_\_ **Step 5** Repeat steps 3 and 4 until you have installed all of the new licensed programs and optional parts that could not be installed in Task 1.

#### More...

You have completed this task. Do you need to install a secondary language?

**No**    **Yes**



Go to Chapter 10, "Installing a Secondary Language" on page 10-1 and complete the instructions there.

You need to complete the installation process. Go to Chapter 11, "Checklist for Completing the Installation" on page 11-1 and complete the instructions there.



---

## Chapter 10. Installing a Secondary Language

This chapter contains instructions for installing a secondary language on your system.

### Before You Begin

Complete the planning tasks in Chapter 3, "Checklist for Planning for Your New Release" on page 3-1. Be sure to read the secondary language considerations in "Planning for National Language Support" on page 3-27.

#### IMPORTANT

Before you install a secondary language on your system, go to the *National Language Support* book, SC41-3101, for more information about installing and using secondary languages.

If you are installing a double-byte character set (DBCS) secondary language, you must have a DBCS primary language installed on your system. You can install a single-byte character set (SBCS) secondary language on a system with a DBCS primary language.

### Task 1. Using the Work with Licensed Programs Menu

- \_\_\_ **Step 1** You must be signed on the system using QSECOFR. If you are not, sign off and then sign on again using QSECOFR.
- \_\_\_ **Step 2** Check the media description report to find the correct volume identifier for the secondary language. Locate the media.
- \_\_\_ **Step 3** Record the national language version identifier that appears on the label of the secondary language media in the blank that is provided. You will need this information in step 9.
- \_\_\_ **Step 4** Load the tape volume on your system.
- \_\_\_ **Step 5** Type the following command on any command line:  
**CHGMSGQ QSYSOPR \*BREAK SEV(95)**  
Press the Enter key.
- \_\_\_ **Step 6** A message display could be shown.  
Press the F3 (Exit) key.  
**Note:** Ignore the messages that are shown.
- \_\_\_ **Step 7** Type the following command on any command line:  
**GO LICPGM**  
Press the Enter key.
- \_\_\_ **Step 8** The Work with Licensed Programs menu is shown.

```
LICPGM                Work with Licensed Programs                System:  XXXX
Select one of the following:
Manual Install
  1. Install all
Licensed Programs
  10. Display installed licensed programs
  11. Install licensed programs
  12. Delete licensed programs
  13. Save licensed programs
Secondary Languages
  20. Display installed secondary languages
  21. Install secondary languages
  22. Delete secondary languages
More...
```

Type a **21**

Press the Enter key.

- \_\_\_ **Step 9** The Install Secondary Languages display is shown.  
**Note:** The feature code on the tape label for the secondary language is 57xx. For example, if the tape label lists 5722 (Portuguese) for the secondary language, use the primary feature code for Portuguese (2922) to select the correct secondary language on the Install Secondary Languages display. Refer to

Appendix F, "National Language Version Feature Codes" on page F-1 for a list of language feature codes.

```

                                Install Secondary Languages
                                System:   XXXX
Primary language . . . . . : 2924
Description . . . . . : English

Type options, press Enter.
  1=Install

Option Language Description Library Installed
  1     2911 Slovenian   QSYS2911 Release
  -     2912 Croatian   QSYS2912
  -     2922 Portuguese  QSYS2922
  -     2923 Dutch Netherlands QSYS2923
  -     2925 Finnish    QSYS2925
    
```

Type a 1 in the option column next to the language you want to install.

Press the Enter key.

**Step 10** After the language feature is entered, the Confirm Install of Secondary Languages display is shown.

```

                                Confirm Install of Secondary Languages
                                System:   XXX
Press Enter to confirm your choices for 1=Install.
Press F12 to return to change your choices.

Option Language Description Library Installed
  1     2911 Slovenian   QSYS2911 Release
    
```

Press the Enter key.

## Installing a Secondary Language

\_\_\_ **Step 11** The Install Option for Secondary Languages is shown.

```
                Install Option for Secondary Languages
                System:   XXX
Type choice, press Enter.
  Installation device . . . TAP01      Name
```

Type the following:

Tape device **TAP01** (See note)

Press the Enter key.

**Note:** TAP01 is used for the tape device in this example. If you are using a different naming convention, type the name you have assigned to the tape device.

One or both of the following displays show the status of the language objects as they are being installed on the system.

```
                Installing Licensed Programs
                System: XXXX
Licensed program install in progress
```

The following display is an example of the display that is shown during the installation process.

```
                Installing Licensed Programs
                System: XXXX
Licensed
Program Description          Type Language
5763CB1 COBOL/400           *LNG   2911
```

\_\_\_ **Step 12** Continue loading tapes in sequence whenever messages similar to the following are shown.

```
                Display Messages
                System:   XXXX
Queue . . . . . : QSYSOPR      Program . . . . . : *DSPMSG
Library . . . . . : QSYS       Library . . . . . :
Severity . . . . . : 65        Delivery . . . . . : *BREAK
Type reply (if required) press Enter.
Load next tape volume on device TAP01 (C G)
Reply . . . . . G
```

Type a **G**

**Note:** **C** cancels processing. **G** (go) continues processing.

Press the Enter key.

**Step 13** The Work with Licensed Programs display is shown when the installation process is complete. One of the following messages is shown on the bottom of the Work with Licensed Programs display:

- **Work with licensed program function has completed.**  
Press F3 (Exit) to return to the AS/400 Main Menu.
- **Work with licensed program function not complete.**  
Go to Appendix A, "Recovery Procedures" to determine the problem.

**Note:** Some licensed program options do not have language objects or are not supported for secondary languages. For example, options 6, 7, and 9 of the operating system are not supported. Option 8 of the operating system does not have any language objects.

You have completed this task. Do you need to install secondary languages for licensed programs that are not in the list shown using option 10 of the Work with Licensed Programs menu?

**No      Yes**

↓      Go to "Task 2. Using the Restore Licensed Program Command" to install secondary languages for these licensed programs.

You have completed this task. To complete your installation, you must go to Chapter 11, "Checklist for Completing the Installation" on page 11-1 and follow the instructions there.

## Task 2. Using the Restore Licensed Program Command

You may have secondary languages for an individual licensed program or optional part of a licensed program. This could occur when you add a licensed program independently of the operating system, or after the current secondary language was installed. Use the Restore Licensed Program (RSTLICPGM) command to install secondary languages for individual licensed programs.

**Note:** If you do not have any secondary languages that fit this description, you can skip this task. However, you need to complete the installation process. Go to Chapter 11, "Checklist for Completing the Installation" on page 11-1 and complete the instructions there.

**Step 1** You may have received special installation instructions with independently shipped licensed programs (those that are not on the same media as the software release). If you did, you should use those instructions.

In the following steps, TAP01 is used for the installation device. If you are using a different naming convention, use the name you have assigned to the installation device.

**Step 2** Load the media volume that contains the secondary language that you want to install.

**Step 3** To install a secondary language for a licensed program, type the command:

```
RSTLICPGM LICPGM(xxxxxxx) DEV(TAP01)
          OPTION(*BASE) RSTOBJ(*LNG) LNG(29xx) ENDOPT(*LEAVE)
```

where xxxxxx is the product identifier for the licensed program and 29xx is the national language version feature code.

Press the Enter key.

## Installing a Secondary Language

- \_\_\_ **Step 4** To install secondary language for an optional part of a licensed program, type the command:

```
RSTLICPGM LICPGM(xxxxxxx) DEV(TAP01)  
  OPTION(n) RSTOBJ(*LNG) LNG(29xx) ENDOPT(*LEAVE)
```

where *xxxxxxx* is the product identifier for the licensed program, *n* is the option number, and *29xx* is the national language version feature code.

Press the Enter key.

- \_\_\_ **Step 5** Repeat steps 3 and 4 until you have installed all of the secondary languages for the licensed programs and optional parts that were independently installed.

### More...

You have completed this task. To complete your installation, you must go to Chapter 11, "Checklist for Completing the Installation" on page 11-1 and follow the instructions there.

---

## Completing the Installation





## Chapter 11. Checklist for Completing the Installation

Use this chapter to complete any of the installation process chapters in this book.

- \_\_ **Step 1** After the tape has completed rewinding, remove it from the tape drive.
- \_\_ **Step 2** If you have additional licensed programs to install, go to Chapter 9, "Installing Additional Licensed Programs" and install them now. Otherwise, continue with step 3.

- \_\_ **Step 3** If you have any Programming Request for Price Quotations (PRPQs) to install, you should install them now. Use the instructions that came with the PRPQ. Then return here and continue with the next step.

- \_\_ **Step 4** If you have an additional secondary language to install or replace, go to Chapter 10, "Installing a Secondary Language" to install or replace the secondary language. Otherwise, continue with step 5.

- \_\_ **Step 5** Install the cumulative PTF package (the package that came with your distribution tapes or a more current cumulative PTF package). Use the instructions in the *AS/400 PTF Shipping Information Letter*. Then return here and continue with the next step.

**Note:** If you do not install the cumulative PTF package at this time, you need to perform an IPL and let the initialize system process (INZSYS) complete. Refer to "INZSYS Recovery Information" on page A-12 for more information.

- \_\_ **Step 6** Look for messages in the install history log that indicate the status of the Initialize System (INZSYS) process. Use option 50 (Display log) on the Work with Licensed Programs display to look for messages.

**Note:** On some systems, the INZSYS process could take 2 or more hours to complete; on most systems, it should complete within a few minutes.

- a. Type **GO LICPGM** and press the Enter key.
- b. Type **50** on the Work with Licensed Programs display and press the Enter key.
- c. The Display Install History display is shown. Press the Enter key.

The Display History Log Contents display is shown. If you do not see either of the following messages on the display, wait a few minutes and select option 50 again. Find the message **Initialize System (INZSYS) started**. After this message is shown, wait for a period of time and look for the **Initialize System (INZSYS) processing completed successfully** message. If you do not see this message on the display, go to "INZSYS Recovery Information" on page A-12 to determine the problem.

- \_\_ **Step 7** Use the Work with License Information (WRKLICINF) command to display all products that were purchased with a usage-based charge option. Update the usage limit to match the usage level ordered for each product. Contact your software provider if you are unsure of the usage level you purchased. Update the threshold to the desired level.

- \_\_ **Step 8** Save your system using your normal save procedures. (Refer to the instructions in the Backup and Recovery – Basic book, SC41-3304.) Make sure the Initialize System (INZSYS) process is complete before you save your system.

**Note:** Before you start a save operation, use the Work with Active Jobs (WRKACTJOB) command to check the status of QDCPOBJx jobs. These jobs decompress objects. There could be more than one QDCPOBJx job. You can start your

save operation if these jobs are in an inactive state. If you put the system in a restricted state by ending subsystems, the QDCPOBJx jobs become inactive. The jobs will restart when the system is not in a restricted state. See “Compressed Objects and Storage Space” on page 3-24 for more information about decompressing objects.

**Step 9** You can skip this step if any of the following apply:

- You do not plan to install the softcopy information library as part of the installation process.
- Your softcopy information library for V3R2M0 is already installed for your primary language.
- You are completing the installation of a secondary language but you did not order the softcopy library for the NLV of your secondary language.

If you are installing the softcopy information library as part of the installation process, complete the item below that applies to you:

- If your softcopy information is on CD-ROM, use the instructions in the *AS/400 Advanced Series Softcopy Library and Information Directory CD-ROMs* book SK2T-2171. Then return here and continue with the next step.
- If your softcopy information is on tape, you can use the following command to install the bookshelves for your installed products:

**RSTSHF SHELF(\*PRODUCT) DEV(TAP01)**

- If you plan to do either of the following, use the instructions in the *Softcopy Library Installation from Tape* book, SC41-3127 instead:
  - Install bookshelves using a value other than \*PRODUCT
  - Use personal computers to access books stored on the AS/400 system

Then return here and continue with the next step.

**Step 10** Use the following references to locate the correct publication for installing a client on the workstation. If the Client Access version you are using is for:

- **Microsoft Windows 95\*\***, see:
  - Client Access for Windows 95 – Setup, SC41-3512
- **Microsoft Windows 3.1\*\***, see:
  - Client Access for Windows 3.1 Setup, SC41-3534

**Note:** The above manual replaces Client Access/400 for Windows 3.1 – Getting Started, SC41-3530. The above manual also includes the installation information that was distributed in the informal documentation shipped with the product (USLT156U).
- **DOS with Extended Memory**, see:
  - Client Access/400 for DOS Ext Memory Setup, SC41-3500
- **DOS**, see:
  - Client Access/400 for DOS Setup, SC41-3556
- **OS/2 1.3**, see:
  - Client Access/400 for OS/2 Setup, SC41-3520
- **Optimized for OS/2**, see:

Client Access/400 for Optimized OS/2 – Getting Started, SC41-3510

-  **Step 11** You may have installed licensed programs that require additional installation steps on workstations or that have programs that install on workstations through a Client Access/400 function. If you have products such as this, complete your workstation installation using the instructions for the product.

You have completed installing V3R2M0 on your system.





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# Appendices





## Appendix A. Recovery Procedures

The information in this appendix can be used to help you locate a problem, correct the problem, and then complete installing licensed programs on your system.

Error messages and system reference codes (SRCs) are used to let you know that an error occurred during the installation process. Use the error messages or SRCs to determine which part of the process failed.

### Where You Begin Recovery

First, determine the type of failure by using Figure A-1.

Figure A-1. Type of failure

When Failure Occurred	What To Do
Saving system before installation	If a problem occurs while you are saving the system, review your job log to determine what caused the failure. Correct the error and complete your system save procedure. Do not continue to replace the new release until you have a complete backup copy of your system. If you cannot complete installing the new release, you will need this backup copy to restore the system to the previous release.
Installing new release or licensed program	Use Figure A-2 to direct you to the recovery information you need to find the problem, determine what caused it, correct the problem, and then complete installing this release.  In the farthest left column, locate the installation chapter you were using when the failure occurred. In the second column, locate which task you were performing in that chapter. Locate the first task that failed during your installation and then use the information in the last column to determine your recovery starting point.
Power failure during an installation process	If you have a power failure anytime during the installation process, go to the Figure A-2 to determine where to start the installation again. You should be able to start with the task where you were at when the failure occurred. For example, if you had completed installing the operating system when the power failed, and are installing licensed programs, start with the task to install licensed programs. If you are using the automatic process, start at the beginning. The system can determine which tasks have not been completed and will resume at the appropriate task.

If a failure occurs anytime during the installation process and you determine that you cannot continue installing the new release, you can use the *Backup and Recovery – Basic* book, SC41-3304, and your backup copy of the system to get your system back to your previous release level.

## Recovery Procedures

Figure A-2 (Page 1 of 2). Where to start recovery

<b>Installation Chapter in Use</b>	<b>Task Number in Use at Time of Failure</b>	<b>Where to Start</b>
Chapter 4, "Replacing a Release Using Automatic Installation"	"Task 1. Using Automatic Installation" on page 4-2	Go to "Starting Point for Automatic Installation Recovery" on page A-3.
Chapter 5, "Replacing a Release Using Manual Installation"	"Task 1. Replacing the Licensed Internal Code" on page 5-2	Go to "Licensed Internal Code Recovery" on page A-3.
	"Task 2. Replacing the Operating System" on page 5-4	Go to "Operating System Recovery" on page A-4.
	"Task 3. Replacing the Licensed Programs" on page 5-7	Go to "Licensed Programs, PTFs, and Secondary Language Recovery" on page A-6.
Chapter 6, "Installing a New AS/400 System with the Operating System Already Installed"	"Task 1. Doing the Initial Program Load (IPL)" on page 6-2	Go to "Operating System Recovery" on page A-4.
	"Task 2. Installing the Licensed Programs" on page 6-6	Go to "Licensed Programs, PTFs, and Secondary Language Recovery" on page A-6.
Chapter 7, "Installing a New AS/400 System without the Operating System Installed"	"Task 1. Installing the Operating System" on page 7-2	Go to "Operating System Recovery" on page A-4.
	"Task 2. Installing the Licensed Programs" on page 7-10	Go to "Licensed Programs, PTFs, and Secondary Language Recovery" on page A-6.
Chapter 8, "Changing Your Primary Language Using a Secondary Language Media"	"Task 1. Changing the Primary Language" on page 8-2	Go to "Operating System Recovery" on page A-4.
	"Task 2. Installing the Licensed Programs" on page 8-7	Go to "Licensed Programs, PTFs, and Secondary Language Recovery" on page A-6.
Chapter 9, "Installing Additional Licensed Programs" on page 9-1	"Task 1. Using the Work with Licensed Programs Menu" on page 9-2	Go to "Licensed Programs, PTFs, and Secondary Language Recovery" on page A-6.
	"Task 2. Using the Restore Licensed Program Command" on page 9-6	Look at the messages for the command.

Figure A-2 (Page 2 of 2). Where to start recovery

Installation Chapter in Use	Task Number in Use at Time of Failure	Where to Start
Chapter 10, "Installing a Secondary Language" on page 10-1	"Task 1. Using the Work with Licensed Programs Menu" on page 10-2	Go to "Licensed Programs, PTFs, and Secondary Language Recovery" on page A-6.
	"Task 2. Using the Restore Licensed Program Command" on page 10-5	Look at the messages for the command.

## Starting Point for Automatic Installation Recovery

If you have used the automatic installation process in Chapter 4, "Replacing a Release Using Automatic Installation" on page 4-1, use the following table to determine where the failure occurred and then use the appropriate recovery section. After you have the problem corrected, go to "Starting the Automatic Installation Process Again" on page A-10 to start the installation process again.

### Notes:

1. To use automatic installation recovery, you must use the same version, release, and modification level distribution tapes that caused the failure.
2. If you have a failure during the automatic installation process, and sign on to do problem analysis, your system will be running under the QSYSSBSD controlling subsystem. When your system completes an IPL after the installation has completed successfully, your controlling subsystem is active again.

Figure A-3. Where to start recovery for the automatic installation process

Finding the Problem (Symptom)	Where to Start
SRCs other than B900 xxxx	Go to "Licensed Internal Code Recovery."
SRCs starting with B900 xxxx	Go to "Operating System Recovery" on page A-4.
Messages starting with CPZ20xx	Go to "Operating System Recovery" on page A-4.
Message indicating automatic installation not complete	Go to "Licensed Programs, PTFs, and Secondary Language Recovery" on page A-6.

## Licensed Internal Code Recovery

\_\_\_ Step 1. For Licensed Internal Code SRCs, go to one of the following manuals.

- If the SRC is of the form A6xx 6xxx, refer to the appendix on Licensed Internal Code SRCs in the *Backup and Recovery – Basic* book, SC41-3304.
- If any SRC other than an A6xx 6xxx is displayed, go to the starting point for problem handling in the *System Startup and Problem Handling* book, SC41-3206, and follow the instructions.

## Recovery Procedures

- \_\_\_ Step 2. Find the SRC that is shown on the control panel display and take the appropriate recovery action.

**Note:** If the SRC indicates you have a media error, clean the tape head and tape path thoroughly. Then continue with the next step. If you receive another error message indicating a media error on the same tape, get another set of tapes to complete the installation process.

- \_\_\_ Step 3. Start the installation process again.

If you were using the automatic installation process, go to “Starting the Automatic Installation Process Again” on page A-10 to start the installation process again. You must load the first tape volume in the tape drive to start the automatic recovery installation process.

If you were using the manual installation process, go to “Starting the Manual Installation Process Again” on page A-11 to start the installation process again.

---

## Operating System Recovery

- \_\_\_ Step 1. If a problem occurs when you are replacing or installing the operating system, an SRC is shown on the control panel display or an error message is shown on the console. Use Figure A-4 and Figure A-5 on page A-5 to determine the cause of the problem and take the action indicated. Then continue with step 2.

- \_\_\_ Step 2. If you were using the automatic installation process, start the process again using the instructions in “Starting the Automatic Installation Process Again” on page A-10.

- \_\_\_ Step 3. Start the manual installation again using the following steps.

- \_\_\_ Step a. Load the first volume into the installation device for the alternate IPL. Prepare the device.

- \_\_\_ Step b. Use the control panel to select function **03** and set the mode to **Manual**.

Press the Enter button on the control panel.

- \_\_\_ Step c. Go back to the beginning of the task that failed and start the task again. Begin with the step that shows the IPL or Install the System display on the console.

Figure A-4 (Page 1 of 2). Operating system problems

Symptom	Action
B900 3000 through B900 308F	<p>The SRCs in this range are displayed by the installation of the operating system process. Fill out the problem summary form in the appendix of the <i>System Startup and Problem Handling</i> book, SC41-3206.</p> <p>Go to the SRC table in the <i>System Startup and Problem Handling</i> book and take the appropriate recovery action. Then return to this manual to start the installation process again.</p>

*Figure A-4 (Page 2 of 2). Operating system problems*

Symptom	Action
B900 3100 through B900 37FF	The SRCs in this range are displayed by the start operating system process. Go to the chapter on starting point for system problem handling in the <i>System Startup and Problem Handling</i> book, SC41-3206. Take the appropriate recovery action.
Other SRCs not listed in this table.	If the SRC is not in the range of SRCs listed in this table, go to the chapter on starting point for system problem handling in the <i>System Startup and Problem Handling</i> book, SC41-3206.

The following table contains some of the termination messages that could occur during the installation of the operating system.

*Figure A-5 (Page 1 of 2). Error messages*

Message	Description
CPZ2003 CPZ2004 CPZ2010	<p><b>Cause:</b> The installation process received a tape error code.</p> <p><b>Recovery for Error Code Ex10 0019 or Ex10 001A:</b> Clean the tape head and tape path thoroughly. If you were using the automatic installation process, go to “Starting the Automatic Installation Process Again” on page A-10 to start the installation process again. If you were using the manual installation process, go to step 3 on page A-4 to start the installation process again. If you receive another error message indicating a media error on the same tape, get another set of tapes to complete the installation process.</p> <p><b>Recovery for all other error codes:</b> Information on how to recover from other error codes associated with these messages is available in the <i>Diagnostic Aids – Volume 1</i> book, LY44-3900, or contact your service representative.</p>
CPZ2022	<p><b>Cause:</b> The restore options read from the installation profile are not valid.</p> <p><b>Note:</b> If you create a distribution tape and specify *NONE for the installation profile name, the tape will contain an empty installation profile. These tapes cannot be used to perform an automatic installation.</p> <p><b>Recovery:</b> Try to install the operating system again using the manual installation process. You can also try to use the automatic installation process with a different set of tapes. If the problem occurs again during an automatic installation process, contact your next level of service.</p>
CPZ2023	<p><b>Cause:</b> The installation options read from the installation profile are not compatible with the current state of the system.</p> <p>The installation requested by the options read from the installation profile cannot be performed. For example, this condition can occur when an installation is requested that does not load program objects and the QSYS library is damaged.</p> <p><b>Recovery:</b> Try to install the operating system again using the manual installation process.</p>

Figure A-5 (Page 2 of 2). Error messages	
Message	Description
CPZ20xx	<p><b>Cause:</b> These termination messages are displayed by the installation of the operating system process. Print the display if possible; otherwise, copy all of the information.</p> <p><b>Recovery:</b> Read the instructions for the messages that are displayed on the console. Perform the recovery action described in the message to correct the problem and then try the installation process again.</p> <p><b>Note:</b> A short time after you press the Enter key, a B900 xxxx SRC is displayed. The SRC table in the <i>System Startup and Problem Handling</i> book, SC41-3206, may contain additional information.</p>

## Licensed Programs, PTFs, and Secondary Language Recovery

- \_\_\_ Step 1. Type **GO LICPGM** on any command line.
- \_\_\_ Step 2. Type **50** (Display log for messages) on the Work with Licensed Programs menu. Press the Enter key.
- \_\_\_ Step 3. The Display Install History display is shown. Press the Enter key.
- \_\_\_ Step 4. The Display History Log Contents display is shown. Look at the messages to determine the installation status of the licensed programs and PTFs. The messages show what part of the licensed program installation function failed. Areas where the failure could have occurred are:
  - Installing the IBM-supplied libraries
  - Installing the licensed programs
  - Installing PTFs
  - Installing a secondary language
  - Initialization process

If a problem occurs (such as a power failure) in one of the processes in the preceding list, you could see a status message that the process has started; for example, **Licensed program installation process started** but not the failed or completed status message.
- \_\_\_ Step 5. There should be one or more messages indicating which IBM-supplied library or licensed program failed. Be sure to look at all of the messages.
- \_\_\_ Step 6. To see the online help information, move the cursor to the message and press the Help key. Look at the online help information for the error message to get the message identifier and more information about the cause and recovery for the failure. Go to Figure A-6 on page A-8 for a list of some of the messages you could see.
- \_\_\_ Step 7. A copy of the job log has been spooled to an output queue.
 

**Note:** To locate and display the job log, enter one of the following commands:

  - For the automatic installation process, type the following command:

**WRKSPLF SELECT(QLPAUTO) ASTLVL(\*INTERMED)**

and press the Enter key.

- For the manual installation process, type the following command:

**WRKSPLF SELECT(QSECOFR) ASTLVL(\*INTERMED)**

and press the Enter key.

- For the PTF process, type the following command:

**WRKSPLF SELECT(QSYS \*ALL \*ALL SCPF) ASTLVL(\*INTERMED)**

and press the Enter key.

If the display shows More..., on the bottom of the display, page down (Roll up) until Bottom... is shown. Select option 5 (5=Display) on the last entry.

**Note:** Ignore any error messages listed in the nnnnnn/QSYS/QLPINSTALL job log. These messages are not installation error messages.

- \_\_\_ Step 8. Scan the job log for error messages. Determine the cause and recovery for each error message in the job log. Go to Figure A-6 on page A-8 for a list of some of the messages you could see.

**Note:** Be sure to scan the entire job log. There could be more than one failure. Scan the job log using the uppercase message ID.

- \_\_\_ Step 9. Select option 10 (Display installed licensed programs) on the Work with Licensed Programs display. The Installed Status column indicates which licensed programs and optional parts are installed. The Installed Status column also indicates if each licensed program is successfully installed and if it is compatible with the installed operating system. The following values are possible:

**\*COMPATIBLE** The licensed program or optional part is installed, and is at a level that is compatible with the installed level of the operating system.

**\*BACKLEVEL** The licensed program or optional part is installed, but the release level is not compatible with the installed level of the operating system.

(blank) If the column is blank, the licensed program or optional part is not installed.

**\*ERROR** An error occurred while installing the licensed program.

You can press the F11 key to see a view of the display that shows the Installed Release column. The version, release, and modification level value is shown for licensed programs that are either compatibly installed or installed at a back level. Page down (Roll up) through all of the displays to see the status of all of your licensed programs.

Check to see if the licensed program that you are installing had a different language feature code than your primary language feature code. If the feature code is different, the licensed program is flagged as **\*ERROR** or the column is blank. The language objects for the licensed program are installed in a secondary language library.

## Recovery Procedures

Obtain distribution media with the correct primary language feature code. Press the F3 key to return to the Work with Licensed Programs menu.

**Note:** The Display Installed Licensed Programs display lists installed licensed programs and optional parts that were available from IBM at the time the installed operating system became available. Installed licensed programs or optional parts that were shipped as new products independently of an operating system release or modification level **are not** shown. Use the Display Software Resources (DSPSFWRSC) command to see a list of independently shipped programs and optional parts.

- Step 10. After you determine what caused the error and complete the recommended recovery action using the previous steps, go to “Starting the Automatic Installation Process Again” on page A-10 to begin the automatic installation process again or go to “Starting the Manual Installation Process Again” on page A-11 to begin the manual installation process again.

The following table contains some of the error messages with possible causes of the errors. Look at the messages on your system to determine the exact cause and recovery.

<i>Figure A-6 (Page 1 of 2). Error messages</i>	
Message	Description
CPA3DD1 CPA3DD2 CPA3DDA	<p><b>Cause:</b> The automatic installation is using the recovery object to complete the previous automatic installation that failed. Refer to “Automatic Install Recovery Object” on page A-11 for more information about the recovery object.</p> <p><b>Recovery:</b> Use the online information for the message to determine which tape to load.</p>
CPD3710 CPD3711	<p><b>Cause:</b> There may have been prerequisite PTFs that are missing, or you may be running with the wrong IPL source (A or B).</p> <p><b>Recovery:</b> Look at the previously listed messages to find the cause and take the recommended recovery action.</p>
CPD3713	<p><b>Cause:</b> The licensed program is currently installed on your system and was not found on the distribution tape.</p> <p><b>Recovery:</b> Get another tape that has the licensed program on and start the process again or delete the licensed program from your system if you no longer need it.</p>
CPD3D82 CPF3D8F	<p><b>Cause:</b> These messages could be shown if you did not end all of the subsystems before you started the installation process.</p> <p><b>Recovery:</b> End all subsystems and start installing the licensed programs again.</p>
CPF371C CPF3731	<p><b>Cause:</b> Look at the messages previously listed in the job log to determine the failure.</p> <p><b>Recovery:</b> Take the recommended recovery action.</p> <p><b>Note:</b> If you received one of these messages, the installation process ended before you completed installing the licensed programs.</p>

<i>Figure A-6 (Page 2 of 2). Error messages</i>	
<b>Message</b>	<b>Description</b>
CPF371D CPF371E	<p><b>Cause:</b> These messages could be shown if the wrong tape is loaded. The online information of the message can help determine the cause.</p> <p><b>Recovery:</b> Load the correct tape and start the process again.</p>
CPF3D96	<p><b>Cause:</b> Errors occurred during the restoring process for a licensed program.</p> <p><b>Recovery:</b> Take the recommended recovery action explained in the online help information.</p> <p>If you receive these messages, the installation continued with the other licensed programs if the problem was not too severe. However, problems with the tape or system storage level would have caused the installation to end.</p>
CPF3D80 CPF3D81 CPF3D84 CPF3D8B CPF3D8C CPF3D90 CPF3D91	<p><b>Cause:</b> Errors occurred when restoring a licensed program or PTFs.</p> <p><b>Recovery:</b> Enter <b>DSPJOB nnnnnn/QLPINSTALL/QBCHINST</b> or <b>DSPJOB nnnnnn/QLPINSTALL/QLPINSTALL</b> where nnnnnn is the job number of the job log in the message help of the error message. Select option 4 on the Display Job display to display spooled files. Select option 5 on the Display Job Spooled Files display to determine the cause of the failure. Correct the error and start the installation process again. Ignore error messages in the nnnnnn/QSYS/QLPINSTALL job log. These messages are not installation error messages.</p>
CPF3D82 CPF3D83	<p><b>Cause:</b> There is not enough auxiliary storage to install the licensed programs you selected.</p> <p><b>Recovery:</b> Go to Appendix C, "Licensed Program Information" on page C-1 to determine the space requirements for each licensed program you want to install. Obtain additional auxiliary storage and start the installation process again.</p>
CPF3D85 CPF3D86 CPF3D8E	<p><b>Cause:</b> An object or PTF is not installed because it requires successful installation of a licensed program. That licensed program may not be installed or may be installed at the wrong release level.</p> <p><b>Recovery:</b> See the previous messages in the job log to determine if the licensed program is installed successfully. Correct any errors or install the required licensed program and start the installation process again.</p>
CPF3DD3	<p><b>Cause:</b> The tape device description could not be found or could not be used.</p> <p><b>Recovery:</b> Use the CRTDEVTAP command to create a device description for the tape device and then start the process again.</p>
CPI3D84	<p><b>Cause:</b> A licensed program included on the distribution tape was not currently installed on the system.</p> <p><b>Recovery:</b> Use the online information of the message for recovery help. Use Chapter 9, "Installing Additional Licensed Programs" on page 9-1 to install the licensed program.</p>
Media Error Messages	<p><b>Cause:</b> A media error occurred during the installation process.</p> <p><b>Recovery:</b> Clean the tape head and tape path thoroughly. If you receive another error message indicating a media error on the same tape, get another set of tapes to complete the installation process.</p>

## Starting the Automatic Installation Process Again

An automatic installation can be started again using one of the three methods in the following table.

**Note:** You must load the first tape volume in the tape device to start the automatic installation process again if you are using Method 1 or Method 2. The system keeps track of which products have installed successfully and uses information on the first tape volume to determine where to begin the recovery.

Figure A-7 (Page 1 of 2). Starting the Automatic Installation Process Again

Method	Instructions
Method 1	<p><b>When to Use Method 1:</b> This method should be used if the Licensed Internal Code needs to be installed again. It can be used for any installation failure but is not necessary if you are sure the Licensed Internal Code has been successfully installed. No messages indicate that the Licensed Internal Code has been installed successfully; however, messages do indicate that the operating system has been installed successfully. If the operating system has been installed successfully, so has the Licensed Internal Code.</p> <p>During an automatic installation process, the system keeps track of which products have been successfully installed. Any products that are successfully installed will not be installed again. The system will prompt you for the tapes that are required to complete the installation process.</p> <p><b>How to Use Method 1:</b> To start an installation process again using Method 1, use the instructions in Chapter 4, "Replacing a Release Using Automatic Installation" of this manual. Be sure to follow the instructions in the task to complete the installation procedure (operating system and licensed programs).</p>
Method 2	<p><b>When to Use Method 2:</b> If you are sure the Licensed Internal Code has been installed successfully, use method 2 to install the operating system and licensed programs again. Using Method 2 is faster than using Method 1 because the Licensed Internal Code does not need to be installed again. No messages indicate that the Licensed Internal Code has been installed successfully; however, messages do indicate that the operating system has been installed successfully. If the operating system has been installed successfully, so has the Licensed Internal Code.</p> <p>During an automatic installation process, the system keeps track of which products have been successfully installed. Any products that are successfully installed will not be installed again, including the operating system. The system prompts you for the tapes that are required to complete the installation process.</p> <p><b>How to Use Method 2:</b> Do the following steps:</p> <ul style="list-style-type: none"> <li>___ Step 1. Use the control panel to set the mode selector to <b>Manual</b> and select function <b>03</b> (Start IPL).</li> <li>___ Step 2. Press the Enter button on the control panel.</li> <li>___ Step 3. Load the first volume in the installation device.</li> <li>___ Step 4. When the IPL or Install the System display is shown, set the mode selector on the control panel to <b>Normal</b>.</li> <li>___ Step 5. Select option 4 (Perform an automatic install of the operating system) on the IPL or Install the System display.</li> <li>___ Step 6. Load additional media volumes that the system prompts you to load.</li> </ul>

Figure A-7 (Page 2 of 2). Starting the Automatic Installation Process Again

Method	Instructions
Method 3	<p><b>When to Use Method 3:</b> Use the Work with Licensed Programs display to install only the licensed programs that failed to install. Make sure the Licensed Internal Code and the operating system are successfully installed.</p> <p><b>How to Use Method 3:</b> When you use this method, determine which products failed to install and then continue with one of the following instructions:</p> <ul style="list-style-type: none"> <li>• Use option 11 (Install licensed programs) on the Work with Licensed Programs display. Refer to Chapter 9, "Installing Additional Licensed Programs" on page 9-1 to install the licensed programs from a list.</li> <li>• Use option 1 (Install all) on the Work with Licensed Programs display. Go to "Using Option 1. Install All" on page B-1 for information to install the licensed programs using option 1. Refer to the information in Figure A-8 on page A-12, methods 1 and 2, for details.</li> </ul>

### Automatic Install Recovery Object

When one or more licensed programs fail to install during an automatic installation, a recovery object is created. This recovery object is used by the system when you start the installation process again. The recovery object is used to determine which licensed programs failed to install and which tapes are required to complete the installation process. As long as the recovery object exists on the system, all subsequent automatic installations will use the recovery object to complete the previous installation until an installation process is completed successfully.

The recovery object is deleted when one of the following occur:

1. Method 1 or method 2 are used to successfully complete the automatic installation.
2. Completing any of the following options on the Work with Licensed Programs display or the Program Temporary Fix (PTF) display deletes the recovery object.
  - Install all
  - Install licensed programs
  - Install secondary language
  - Install program temporary fixes
  - Install program temporary fix package

Completing any of the options implies that when you attempt to install anything using the options in the list on the Work with Licensed Programs display, the recovery object is deleted. If the recovery object has been deleted, method 1 or method 2 can be used to install all of the licensed programs again.

## Starting the Manual Installation Process Again

Use this section to start the manual installation process again when you are recovering from an error installing licensed programs, PTFs, or secondary languages. A manual installation process can be started again using one of the following four methods. Your Licensed Internal Code and the operating system do **not** need to be installed again.

## Recovery Procedures

The following table contains specific information when and how to use each method.

*Figure A-8. Starting the Manual Installation Process Again*

Method	Instructions
Method 1	<p><b>When to Use Method 1:</b> This method should be used if several licensed programs are not installed.</p> <p><b>How to Use Method 1:</b> To start an installation process again using method 1, use option 1 (Install all) on the Work with Licensed Programs display. Refer to "Using Option 1. Install All" on page B-1 to install all of the licensed programs.</p>
Method 2	<p><b>When to Use Method 2:</b> This method should be used if one or more licensed programs are not installed and you want to install only those licensed programs or optional parts that failed.</p> <p><b>How to Use Method 2:</b> To start the installation of only those licensed programs or optional parts that failed, use the instructions in Chapter 9, "Installing Additional Licensed Programs" on page 9-1. Complete all of the instructions in that part.</p>
Method 3	<p><b>When to Use Method 3:</b> This method can be used if only one or two licensed programs had PTFs that fail to install. Consider installing PTFs for only those licensed programs that failed.</p> <p><b>How to Use Method 3:</b> To install PTFs for selected licensed programs, use the <b>GO PTF</b> menu and select option 7.</p>
Method 4	<p><b>When to Use Method 4:</b> This method should be used if several licensed programs had PTFs that fail to install. Consider installing the entire cumulative PTF package again.</p> <p><b>How to Use Method 4:</b> To install the cumulative PTF package, use the instructions in the <i>AS/400 System PTF Shipping Information Letter</i>.</p>

## INZSYS Recovery Information

Your V3R2M0 installation process is complete when the Initialize System (INZSYS) process and the licensed program portion of the installation process have completed successfully. The QUSRSYS library must install successfully before the INZSYS process is automatically started. This process is initiated during each IPL after you install the QUSRSYS library until the INZSYS process has successfully completed. The INZSYS process will not be initiated during the IPL if the system is in the restricted state. If the INZSYS process is initiated during the IPL, it runs in the SCPF system job.

**Note:** If you perform an IPL before installing a cumulative PTF package, the INZSYS process may continue to run after the IPL completes. Make sure that the INZSYS process has completed before you start to install the PTF package. Using any PTF commands before INZSYS completes causes the INZSYS to fail.

The completion time for INZSYS varies. Allow sufficient time for this process to complete.

When you select option 50 (Display log for messages) on the Work with Licensed Programs menu, you should see the message **Initialize System (INZSYS) started**. Later, you should see the message **Initialize System (INZSYS) processing completed successfully**. If you do not see the completed message, or if the message **Initialize System (INZSYS) failed** is shown, look at the job log to determine the problem. Use the information in the job log to correct the problem. Then start the conversion process again.

To start the conversion process yourself, you can either use a batch job or enter INZSYS on the command line. If you use a batch job, you can use your work station while the process is running, but the system cannot be in restricted state. Batch jobs do not run when the system is in a restricted state. If you enter INZSYS from a command line, it is recommended that the system be in restricted state; this will reduce the time needed for the INZSYS process to complete.

To set the system to restricted state, do the following:

- \_\_\_ **Step 1.** Enter the command:  
**CHGMSGQ QSYSOPR \*BREAK SEV(60)**
- \_\_\_ **Step 2.** A message display could be shown.  
Press the Enter key.  
**Note:** Ignore the messages that are shown.
- \_\_\_ **Step 3.** To put the system in a restricted state, enter the command:  
**ENDSBS \*ALL \*IMMED**  
The message **System ended to restricted condition** is shown.  
Press the Enter key to continue.

To start the conversion process again, do the following:

- \_\_\_ **Step 1.** Enter the command:  
**INZSYS**
- \_\_\_ **Step 2.** Use option 50 (Display log for messages) on the Work with Licensed Programs menu to make sure the process completes successfully.

Do not attempt to save your system until the INZSYS process has completed successfully.

---

## Starting from a Power Off Condition

You are here because your system unit power is off. Perform the following steps to power on the system and begin a normal installation. When you complete this section, you are directed to return to the appropriate step of your original installation procedures.

- \_\_\_ **Step A** Use the control panel to select function **02**.
- \_\_\_ **Step B** Set the mode selector on the control panel to the appropriate position.
  - If you were directed here from Chapter 4, Replacing a Release Using Automatic Installation, set the mode selector to **Normal**.
  - If you were directed here from Chapter 5, Replacing a Release Using Manual Installation, verify that the mode selector is set to the **Manual** position.
- \_\_\_ **Step C** Make sure the power for the display station to be used as the console is on.

## Recovery Procedures

- \_\_\_ **Step D** If the tape device used for the alternate initial program load (IPL) has separate on and off switches, verify that the switch is in the On position.
- \_\_\_ **Step E** If you have a 1/4-inch cartridge tape, load the first tape volume into the tape device for the alternate IPL. Close the door on the tape device.
- \_\_\_ **Step F** Turn the power on for the system by pushing the power switch once. The switch returns to the center on the 9406 System Unit and the 9404 System Unit after you push it.
- \_\_\_ **Step G** If you could not load your tape in step E, load the first tape volume into the tape device for the alternate IPL now. Prepare the tape device.
- \_\_\_ **Step H** You are ready to return to your original installation procedures.
- If you are performing an automatic installation, continue with Step 6 on page 4-2.
  - If you are performing a manual installation, continue with Step 6 on page 5-2.



## Appendix B. Options on Work with Licensed Programs Menu

### Introduction

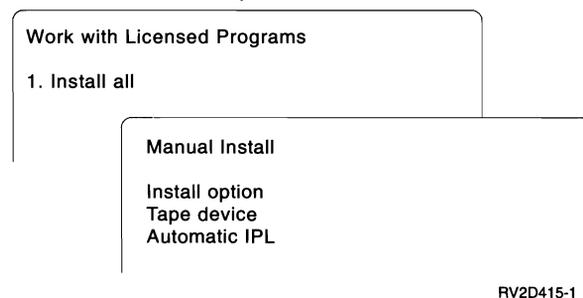
This appendix contains information about the options on the Work with Licensed Programs menu. Use this information to determine when and how you can use these options. For each display, you can use the Help key for more information about the display.

### Manual Install Options

Use the Install all option on the Work with Licensed Programs menu if you want to install licensed programs from a distribution tape.

#### Using Option 1. Install All

Selecting option 1 (Install all) on the Work with Licensed Programs menu allows you to install licensed programs and optional parts of the licensed programs from a distribution tape. Secondary languages on the distribution tape can also be installed with this option.



The Manual Install display allows you to make choices for the prompts in the following list. Use the Help key for more information about each prompt.

#### 1. Install option

This option determines what types of licensed programs and optional parts are installed from the distribution tape. You can choose to install only new releases of products that already exist on your system, install all products, or install only new products.

#### Notes:

- a. The *Install option* does not apply to the QGPL and QUSRSYS libraries. QGPL and QUSRSYS libraries always install if they are not at the new release level. For all *Install option* choices, only new objects are installed in the QGPL and QUSRSYS libraries.
- b. To complete the installation successfully, the installation media must contain all renewed products that are currently installed on your system. The installation media could contain products whose version, release, and modification level is earlier than that of the new release of the operating system. (The products did not renew at the same time as the operating system.) If the same level of an installed product exists on the installation media, the media copy is not installed. This preserves any program tempo-

## Options on Work with Licensed Programs Menu

rary fixes (PTFs) that are applied to the product that are installed on your system.

- c. New licensed programs or new optional parts of licensed programs that become available independently of an operating system release or modification level are not installed with this process. Use the Restore Licensed Program (RSTLICPGM) command to install products with these characteristics.

### 2. Installation Device

The examples in this manual use TAP01 for the name of the tape device. Go to “Determining Installation Device Names” on page 3-38 for more information about the tape device naming convention.

### 3. Automatic IPL

This option determines if the system will automatically IPL when the installation process has completed successfully.

---

## Displaying, Installing, Deleting, and Saving from a List

This section contains information about displaying, installing, deleting, and saving licensed programs from a list.

### Using Option 10. Display Installed Licensed Programs

After an installation process has completed, it is often necessary to determine if a licensed program is installed successfully on your system. To do this, select option 10 (Display installed licensed programs) on the Work with Licensed Programs menu. The Display Installed Licensed Programs display shows the licensed programs and optional parts installed on your system that were initially shipped with an operating system release or modification level.

**Note:** You may have other installed licensed programs that are not shown on this display. New licensed programs or new optional parts that are initially shipped independently of an operating system release or modification level are not shown on this display. If you installed licensed programs with this characteristic, use the Display Software Resources (DPSFWRSC) command to see a list that includes them.

The Installed Status column indicates whether or not the licensed program is successfully installed. The value \*COMPATIBLE displays for a successfully installed licensed program that is compatible with the installed release level of the operating system. The value \*BACKLEVEL displays if the licensed program is successfully installed but its version, release, or modification level is not valid with the level of currently installed operating system. The value \*ERROR displays if the licensed program is not successfully installed or is only partially installed. To determine the cause of the problem, use the recovery procedures in Appendix A, “Recovery Procedures” to install the licensed program again.

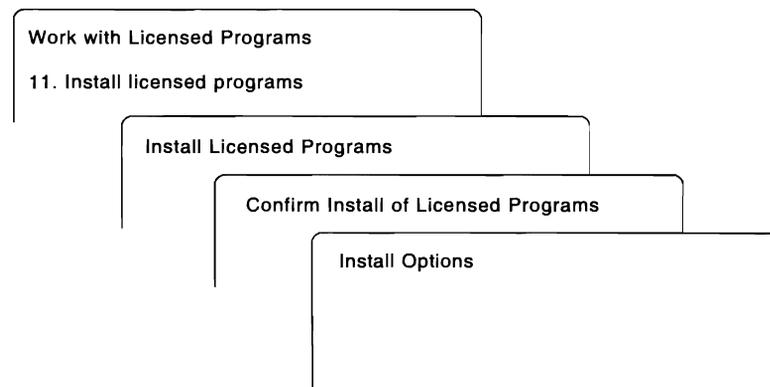
You can use the F11 key to view the Installed Release column. This column shows the release and modification level of each installed licensed program. There is also a third view that shows the number of the optional part of each licensed program.

## Using Option 11. Install Licensed Programs

When you select option 11 (Install licensed programs) on the Work with Licensed Programs display, you see a list of licensed programs and optional parts of licensed programs. These are the licensed programs and optional parts that are supported by the LICPGM installation processes at the time your currently installed operating system release or modification level became available.

You can use this list to select licensed programs and optional parts to install on your system. You can also use this list to install a licensed program that did not successfully install during a previous installation process.

**Note:** New licensed programs or new optional parts of licensed programs that become available independently of an operating system release or modification level are not installed with this process. Use the Restore Licensed Program (RSTLICPGM) command to install products with this characteristic.



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To install one or more licensed programs from the list, type a 1 in the option column next to the licensed programs and any optional parts of each licensed program that you want to install. The media description report shows a list of the licensed programs that are on the distribution tape.

The Confirm Licensed Programs to Install display shows which licensed programs you selected to install. If you do not need to make any changes, press the Enter key to confirm your choices.

Fill in the choices on the Install Options display. The choices are listed below. Use the Help key for more information about each prompt on this display.

### 1. Installation Device

The examples in this manual use TAP01 for the name of the tape device. Go to “Determining Installation Device Names” on page 3-38 for more information about the tape device naming convention.

### 2. Objects to install

This option allows you to choose to install both programs and language objects, only programs, or only language objects.

### 3. Automatic IPL

This option determines if the system will automatically IPL when the installation process has completed successfully.

## Options on Work with Licensed Programs Menu

When the licensed programs are installed, the Work with Licensed Programs menu or the Sign On display is shown again. To verify that all of the licensed programs are installed successfully, use option 50 (Display log for messages). More information about that option is available in "Using Option 50. Display Log for Messages" on page B-7. If an error occurs, you will see the message **Work with licensed program function not complete**, on the bottom of the Work with Licensed Programs display. Go to Appendix A, "Recovery Procedures" to determine the problem.

If you install a licensed program or optional part again, you must also install the PTFs for that licensed program again.

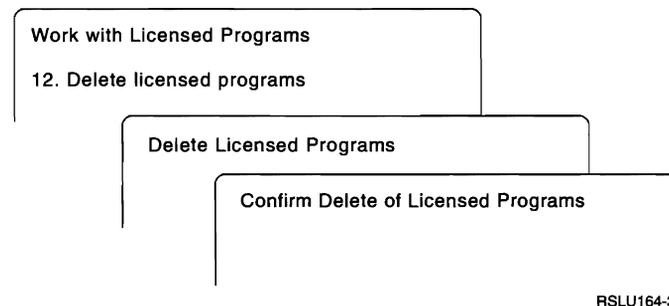
## Using Option 12. Delete Licensed Programs

Select option 12 on the Work with Licensed Programs menu to delete a licensed program or optional part of a licensed program installed on your system. When you select this option, the Delete Licensed Programs display is shown. The list displayed shows licensed programs and optional parts installed on your system. Use this list to select licensed programs or optional parts to delete.

**Note:** You may have other installed licensed programs and optional parts that do not appear in this list. Refer to the notes about deleting licensed programs on "Notes About Deleting Licensed Programs" on page C-18 for more information.

If you delete a licensed program that has optional parts, all of the optional parts for that licensed program are also deleted. If you delete only an optional part, the base program and other optional parts remain on your system. This option deletes all objects associated with the licensed program or optional part you select.

When you select this option, the Delete Licensed Programs display is shown. The list displayed shows the licensed programs and optional parts installed on your system that were shipped with an operating system release or modification level. Use this list to select licensed programs or optional parts to delete.



Type a 4 in the *Option* column on the Delete Licensed Programs display next to the licensed program or optional part of a licensed program that you want to delete from your system.

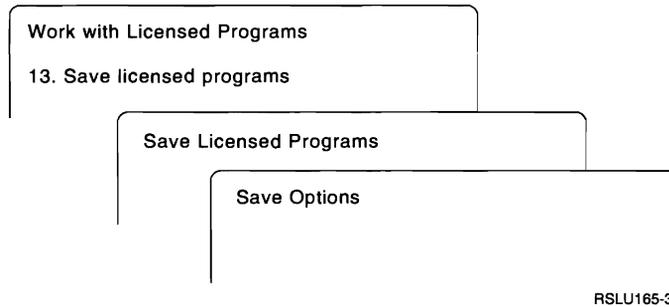
The Confirm Delete of Licensed Programs display shows you which licensed programs or optional parts you selected to delete. Press the Enter key to delete the licensed programs or optional parts.

For more information, refer to "Notes About Deleting Licensed Programs" on page C-18.

## Using Option 13. Save Licensed Programs

Select option 13 on the Work with Licensed Programs menu to save one or more licensed programs for redistribution.

The Save Licensed Programs display shows a list of the licensed programs and optional parts installed on your system that were shipped with an operating system release or modification level. Use this list to select licensed programs or optional parts to save. Type a 1 in the option column on the Save Licensed Programs display next to the licensed programs that you want to save.



Fill in the information on the Save Options display using the following information.

Use the Help key for more information for each of the prompts on the display

### 1. Tape device

The examples in this manual use TAP01 for the name of the tape device. Go to “Determining Installation Device Names” on page 3-38 for more information about the tape device naming convention.

### 2. Sequence number

Enter your choice for the sequence number to be used for the save process.

### 3. End of tape option

This option determines the positioning operation that is done automatically on the tape volume when the save operation is completed. In the case of a multiple-volume save operation, this parameter applies to the last volume only; all other volumes are rewound and unloaded when the end of the tape is reached.

### Notes:

1. Licensed programs and optional parts that are shipped independently of an operating system release or modification level are not displayed. Use the Save Licensed Program (SAVLICPGM) command to save independently shipped licensed programs and optional parts.
2. This option should **not** be used for backup and recovery. It is only for redistribution. More information about redistribution is available in the *Central Site Distribution* book, SC41-3308. Refer to the *Backup and Recovery – Basic* book, SC41-3304, for information on saving your system.

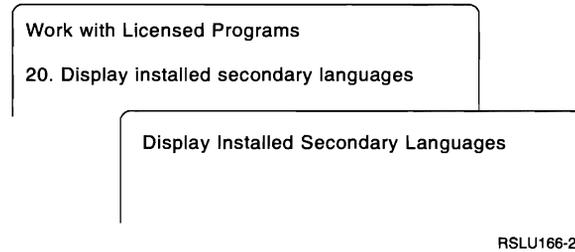
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### Secondary Languages Options

This section contains information about displaying, installing, and deleting secondary languages on your system.

#### Using Option 20. Display Secondary Languages

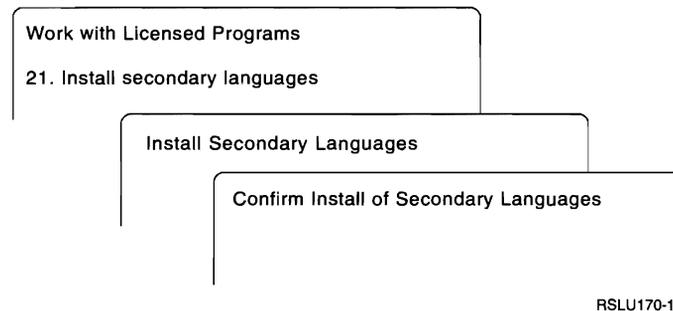
When you select option 20 on the Work with Licensed Programs menu, the Display Installed Secondary Languages display is shown.



This display shows the primary language and the description of the primary language that is installed on your system. It also shows the secondary languages, the library where each language is, and the release level of the languages that are installed on your system.

#### Using Option 21. Install Secondary Languages

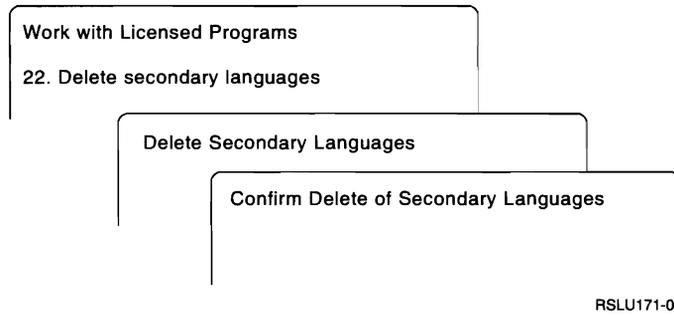
Use option 21 to selectively install a secondary language for the licensed programs installed on your system. The media description report contains the secondary language feature number and the volume identifier for the secondary language tape.



Type a 1 by the language you want to install and press the Enter key. Only one secondary language can be installed at a time. The Confirm Install of Secondary Language display shows which language you selected to install, the library where it will be installed, and the release level of the language.

#### Using Option 22. Delete Secondary Languages

Use option 22 to delete secondary languages you no longer want installed on your system.



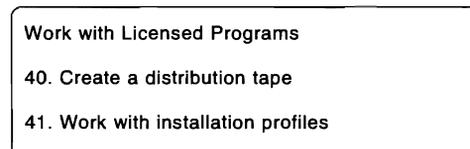
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Type a 4 to select the secondary language you want to delete and press the Enter key.

Refer to “Considerations for Secondary Languages” on page 3-28 for more information about working with secondary languages.

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## Redistribution



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For the redistribution options, refer to the *Central Site Distribution* book, SC41-3308, for complete information to create a distribution tape and installation profiles.

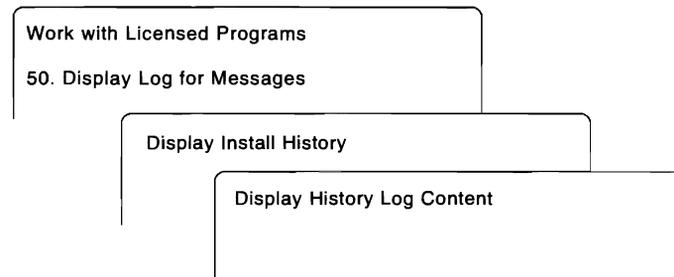
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## Completion Status

When you install licensed programs, a secondary language, or PTFs, make sure the installation process has been successfully completed to avoid problems when you begin using the system.

## Using Option 50. Display Log for Messages

Selecting option 50 shows the Display Install History display. Press the Enter key to view the installation start and completion messages on the Display History Log Contents display. This option displays specific messages shown in the history log.



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Each part of the installation process (such as licensed programs, PTFs, INZSYS) should have a completion message. If you do not see the message on the display, wait a few minutes and select option 50 again. If you still do not see a completion

## Options on Work with Licensed Programs Menu

message, use the recovery procedures in Appendix A, “Recovery Procedures” to install any licensed programs or PTFs that are not successfully installed.

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### Related Commands

Options 70 and 71 display menus of additional commands you can use.

Selecting option 70 shows the Save and Restore Commands display. This display shows a list of related command menus you can use. For more information on using these command menus, go to the *Backup and Recovery – Basic* book, SC41-3304. Use the Help key for available online information.

Selecting option 71 shows the Program Temporary Fix Commands display. You can use these commands to work with one or more individual PTFs. For more information about these commands and how to use them, go to the chapter on Working with Program Temporary Fixes (PTFs) in the *System Startup and Problem Handling* book, SC41-3206.

More information about the following commands is available in the *System Manager Use* book, SC41-3321.

Copy PTF to Save File	CPYPTFSAVF
Create Program Temporary Fix	CRTPTF
Create PTF Package	CRTPTFPKG
Hold Program Temporary Fix	HLDPTF
Order Supported Product PTFs	ORDSPTPTF
Release Program Temporary Fix	RLSPTF
Send Program Temporary Fix	SNDPTF

## Appendix C. Licensed Program Information

This appendix contains information which is useful when planning for your software installation and estimating the installation time.

- “Master Installation List–Planning Form” provides sample work sheets to aid you in your installation planning activities.
- Figure C-3 provides information about the storage requirements for licensed programs and installation-related notes. This is useful when you plan your installation, verify your order, and verify the disk capacity for the licensed programs that you plan to install.
- If you are using V2R3M0 and have PC Support/400 installed, you may find “Mapping PC Support to Client Access” on page C-15 helpful.
- This appendix also includes information to help you determine if you should delete optional parts of OS/400.

### Master Installation List–Planning Form

Use these Master Installation List work sheets with the instructions in “Create a Master Installation List” on page 3-9 and Figure C-3 on page C-5 to help you with many aspects of software installation planning.

Figure C-1. Master Installation List Work Sheet: Part 1

General Information			
	Currently Installed	Release Received	Media Received
Licensed Internal Code	_____	_____	_____
Operating System/400	_____	_____	_____
Licensed Programs	(See Figure C-2)		_____
Primary Language	_____	_____	
Secondary Languages	_____	_____	_____
	_____	_____	_____
Cumulative PTF Package		_____	_____
			Other Media
Primary Installation Procedure (P):	_____		_____
Additional Installation Procedure (A):	_____		_____
Other Installation Procedure (O):	_____		_____
	_____		_____

Figure C-2. Master Installation List Work Sheet: Part 2

Resource	Options (Parts)	Description	Procedure P A O
5763-999	–	Licensed Internal Code	<b>P</b> A O
Notes: Licensed Internal Code is installed by a primary procedure.			
5763-SS1	Base	Operating System/400	<b>P</b> A O
Notes: The base part of OS/400 is installed by a primary procedure.			

**Note:** The entries above show Licensed Internal Code and the base part of OS/400 as examples.

			P A O
Notes:			
			P A O
Notes:			
			P A O
Notes:			
			P A O
Notes:			
			P A O
Notes:			
			P A O
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			P A O
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			P A O
Notes:			
			P A O
Notes:			

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## Licensed Program Sizes

Figure C-3 on page C-5 lists licensed programs that were available from IBM at the time the V3R2M0 release of OS/400 became generally available. This table contains information about the status, release level, and size of each licensed program and any optional parts. This table also indicates the release level that is shipped for the licensed programs that did not renew at V3R2M0.

The content of each column in Figure C-3 is described below. When *NA* appears in any column, the licensed program or optional part has no applicable value for that column. For example, licensed programs that are new in V3R2M0 do not have an applicable value for the previous release.

**Licensed Program Identifier** identifies the licensed program.

**Part** The 7-character identifier that is used for the licensed program is shown in boldface type. The base part of the licensed program is always listed first. Any optionally installable parts are listed in the order in which they appear on the displays when you use the Work with Licensed Programs (LICPGM) menu.

**Note:** The installation processes do not distinguish between no-charge options that are included with a base product and priced features. Some optional parts that are listed in Figure C-3 are features that must be purchased separately.

**Description** This is the name of the licensed program or option as it appears on the displays when you use the LICPGM menu.

**Status** helps you determine when a licensed program installs and any additional actions you need to take.

– The product is reissued for V3R2M0, with little change to function.

New The licensed program or optional part is new for V3R2M0.

MRL-VxRyMz This licensed program did not renew with V3R2M0 OS/400. The licensed program is at a mixed release level. VxRyMz indicates the version, release, and modification level of the mixed release level licensed program that is shipped on the distribution media when V3R2M0 became generally available. The actual level that is shipped could be higher.

The result you get when you replace this licensed program can vary with the installation process you use and the level of the licensed program that you have installed. Be certain that you understand the information in “Mixed Release Level—Overview” on page 3-5.

Removed Support for the licensed program is removed. Removed products do not appear on the LICPGM menu displays. Removed products are included here to help you identify products that will not be replaced when you install software.

Repackaged This release of the licensed program is packaged differently than the previous release. Function from other software products (such as licensed programs, features, PRPQs) may be combined in this licensed program. Function from the previous release of this product may have been removed or moved to another licensed program.

Revised        The licensed program either contains a significant amount of new function or has significant changes to existing function.

**Earliest Level Compatible with V3R2M0 OS/400** indicates the earliest release level of a licensed program that is compatible with the V3R2M0 operating system. A licensed program with a compatible release level will function when it is installed on a system that uses the V3R2M0 operating system.

V3R2M0        The licensed program must be at the same release level as the operating system. The installed licensed program must be at least the V3R2M0 level to function with the V3R2M0 operating system.

VxRyMz        A value in the form of VxRyMz indicates the earliest level of the product that functions with the V3R2M0 operating system. That level and any intermediate levels function with the V3R2M0 operating system. For example, if V3R0M5 is shown, then any of these levels would function with the V3R2M0 operating system: V3R0M5, V3R1M0, V3R1M1, V3R2M0.

**Installation Storage Requirements** shows the largest and smallest size of the licensed program, in megabytes. Some licensed programs and some objects of the operating system are shipped in a compressed form that requires less storage space. When a range is shown for a licensed program, it indicates the compressed and decompressed sizes. If there is only one value, it is a decompressed size (either it was not compressed or the difference was minimal). When you determine storage requirements for licensed programs, use the decompressed size. See "Compressed Objects and Storage Space" on page 3-24 for information about compression and decompression.

Previous  
Releases        This is the minimum size (compressed) of the licensed program for the previous releases that can be replaced with V3R2M0.

V3R2M0        This is the size for the V3R2M0 release of the licensed program.

Figure C-3 (Page 1 of 10). Licensed program size information

Licensed Program Identifier			Earliest Level Compatible with V3R2M0 OS/400	Installation Storage Requirements in Megabytes <sup>1</sup>	
Part	Description	Status		Previous Releases	V3R2M0
<b>5763-999</b>					
–	Licensed Internal Code—On 9406 Systems	Revised	V3R2M0	94	114
–	Licensed Internal Code—On 9401, 9402, and 9404 Systems	–	V3R2M0	76	112
<b>5763-SS1</b>					
Base	Operating System/400	Revised	NA	135	198.3-348.5
Library	OS/400—Library QGPL	–	V3R2M0	–	2.1 <sup>a</sup>
Library	OS/400—Library QUSRSYS	–	V3R2M0	–	26.6 <sup>a</sup>
1	OS/400 Extended Base Support	–	V3R2M0	1	0.8-2.6
2	OS/400—Online Information	–	V3R2M0	9.5	8.3-26.5
3	OS/400—Online Education	Removed	NA	–	NA
4	OS/400—S/36 and S/38 Migration	–	V3R2M0	4.5	4.5-6.0
5	OS/400—System/36 Environment	–	V3R2M0	5.5	7.3-11.0
6	OS/400—System/38 Environment	–	V3R2M0	2	1.9-2.0
7	OS/400—Example Tools Library	Repackaged	V3R2M0	10	3.9-4.0 <sup>b</sup>
8	OS/400—AFP* Compatibility Fonts	–	V3R2M0	6.5	8.3-10.5
9	OS/400— *PRV CL Compiler Support	–	V3R2M0	4.5	16.5
10	OS/400—9406 Problem Analysis	–	V3R2M0	0.8	1.7-4.0
11	OS/400—S/36 Migration Assistant	–	V3R2M0	1	0.6-0.8
12	OS/400—Host Servers	–	V3R2M0	3	5.9-9.4
13	OS/400—Openness Includes	–	V3R2M0	21.8	32.5
14	OS/400—GDDM	–	V3R2M0	0.6	0.6
15	OS/400—Common Programming APIs Toolkit	–	V3R2M0	0.6	1.0-2.4
16	OS/400—Ultimedia System Facilities	–	V3R2M0	2.2	11.3-13.7
17	OS/400—Print Services Facility/400	–	V3R2M0	1	0.1
18	OS/400—Media and Storage Extensions	–	V3R2M0	0.1	0.1
22	OS/400—ObjectConnect	New	V3R2M0	NA	0.2-0.3
23	OptiConnect for OS/400	New	V3R2M0	NA	0.2-0.4
24	IBM OS/400 Integration of Lotus Notes	New	V3R2M0	NA	65.0-65.4
26	DB2 Symmetric Multiprocessing for OS/400	New	V3R2M0	NA	0.1
27	DB2 Multisystem for OS/400	New	V3R2M0	NA	0.1

<sup>a</sup> The size of this library does not include any user data.

<sup>b</sup> This range represents the packaged to unpackaged size for this licensed program.

Each source physical file in the QUSRTOOL library, except QATTINFO, is contained within and distributed as a save file of the same name. Before any tools can be compiled and run, you must unpackage the appropriate save files. To determine which save files need to be unpackaged, the description of each tool lists the members that make up the tool and the file in which they reside.

To convert save files in the QUSRTOOL library to source physical files, enter the following after the new release Example Tools (QUSRTOOL) library has been installed: CALL PGM(QUSRTOOL/UNPACKAGE) PARM('\*ALL' 1)

The UNPACKAGE program converts save files to source physical files; the PACKAGE program converts source physical files to save files. More information about the PACKAGE and UNPACKAGE programs can be found in file QATTINFO, member TTTINFO.

If you are redistributing the Example Tools Library option, and ran the UNPACKAGE program, it is recommended that you run the PACKAGE program before creating your distribution tape.

Figure C-3 (Page 2 of 10). Licensed program size information

Licensed Program Identifier			Earliest Level Compatible with V3R2M0 OS/400	Installation Storage Requirements in Megabytes <sup>1</sup>	
Part	Description	Status		Previous Releases	V3R2M0
Notes about 5763-SS1 (OS/400)					
<ul style="list-style-type: none"> <li>Option 1, OS/400 Extended Base Support, was repackaged in V3R1M0. The QGDDM library is now in option 14. If you need the QGDDM library for your applications, you need to install option 14. If option 1 is installed on your current system, it is installed during your primary installation path. If the QGDDM library is installed on your current system, option 14 is installed during your primary installation path.</li> <li>Support was removed for option 3, OS/400 Online Information, in V3R1M0. If you have option 3 installed, it is deleted when V3R2M0 is installed.</li> <li>For V3R2M0, all members from the source files QATT* (many are named TAA...) in the QUSRTOOL example library (Option 7, OS/400 Example Tools Library) are no longer shipped with OS/400. Refer to the <i>AS/400 Memo to Users</i> for more information about how to obtain enhanced TAATools for V3R2M0. The TAA tools provided in earlier releases of the operating system may still be used on the V3R2M0 system. However, the earlier versions of the TAA tools examples were provided on an as-is basis, and some may need software modifications to operate correctly on V3R2M0.</li> <li>If you use MI header files in your C programs, you need to install option 13, OS/400 Openness Includes.</li> <li>Before V3R1M0, certain print support function was provided as part of the base OS/400. In V3R1M0, this function became a priced feature of OS/400 (Option 17, OS/400 Print Services Facility/400). OS/400 option 17 must be specifically ordered. If you plan to use a procedure that replaces a release of software, consider the following: <ul style="list-style-type: none"> <li>If your current system is V2R3M0 or V3R0M5 and you ordered 5763-SS1 option 17, the option is installed automatically during the procedure that replaces a release.</li> <li>If your current system is V3R1M0 and you do not have option 17 currently installed, you need to use the procedure for adding additional licensed programs to install it.</li> </ul> </li> <li>Option 22, ObjectConnect, will install automatically over PRPQ 5799-FNR.</li> <li>Option 23, OptiConnect, will install automatically over PRPQ 5799-FQB.</li> </ul>					
<b>57xx-AD1</b>					
Base	Application Dictionary Services/400	Removed			
Support for all levels of the Application Dictionary Services/400 licensed program was removed in V3R1M0. If you have this product installed and you plan to use a procedure that replaces a release, the functionally equivalent product (5763-PW1 option 3) is automatically installed if it is on the installation media. The old product is deleted after the new release is installed.					
<b>5763-AF1</b>					
Base	IBM Advanced Function Printing Utilities for OS/400	–	V3R2M0	2.8	2.4-2.7
<b>5763-AP1</b>					
Base	IBM Advanced DBCS Printer Support for OS/400		V3R2M0	2.1	5.3-6.8
1	Adv DBCS Printer Support for OS/400 - IPDS	New	V3R2M0	NA	0.5
<b>5763-BA1</b>					
Base	AS/400 BASIC	MRL-V3R1M0	V3R1M0	0.8	0.6-1.7
<b>5763-BR1</b>					
Base	Backup Recovery and Media Services/400	–	V3R2M0	7.5	14.8-40.4

Figure C-3 (Page 3 of 10). Licensed program size information

Licensed Program Identifier			Earliest Level Compatible with V3R2M0 OS/400	Installation Storage Requirements in Megabytes <sup>1</sup>	
Part	Description	Status		Previous Releases	V3R2M0
<b>5763-CB1</b>					
Base	ILE COBOL for OS/400	Revised	V3R2M0	2.4	3.0-8.0
1	ILE COBOL/400 - System/36-compatible COBOL	–	V3R2M0	1.0	0.9-1.5
2	ILE COBOL/400 - System/38-compatible COBOL	–	V3R2M0	1.0	0.8-1.4
3	COBOL/400 Previous Compiler	Removed			
4	System/36-Compatible COBOL Previous Compiler	Removed			
5	ILE COBOL/400 - COBOL/400	Repackaged	V3R2M0	1.4	1.3-2.2
6	ILE COBOL/400 - *PRV ILE COBOL/400	New	V3R2M0	NA	2.2-6.3
<ul style="list-style-type: none"> <li>Option 3, COBOL/400 Previous Compiler, and option 4, System/36-Compatible COBOL Previous Compiler, are removed. Options 5 and 1, respectively, provide equivalent function and support *CUR and *PRV (V2R3M0 and V3R1M0) values for a target release.</li> <li>The V2R3M0 Base (5738-CB1) is now in Option 5, COBOL/400. If you have this product installed and you use a procedure that replaces a release, Option 5 is installed without additional actions required.</li> <li>The compiler for previous release support (V3R1M0) is now in 5763-CB1 Option 6, *PRV ILE COBOL/400. If you use a procedure that replaces a release, Option 6 requires that you install it using the procedure for additional licensed programs.</li> </ul>					
<b>5763-CD1</b>					
Base	CODE/400		MRL-V3R1M1 V3R1M1	9.0	49.0-49.1
<p>This product was repackaged in V3R1M0. The base of the 5738-CD1 product became part of 5763-PW1 and option 1 of 5738-CD1 became part of the base 5763-CD1. If you are replacing a release and have either the 5738-CD1 or the 5763-CD1 product installed, the appropriate level of the product will install automatically as part of your primary installation path.</p>					
<b>5763-CF1</b>					
Base	Point-of-Sale Communications Utility/400		MRL-V3R1M0 V3R1M0	1.7	1.4-2.5
<b>5763-CM1</b>					
Base	Communications Utilities/400	–	V3R2M0	1.5	1.5-2.6
<b>57xx-CP2</b>					
Base	CallPath/400*	Repackaged			
<p>This product was repackaged in V3R2M0 as 5763-CP3.</p>					
<b>5763-CP3</b>					
Base	CallPath for OS/400	Repackaged	V3R2M0	4.0	4.0-7.7
<p>This product was repackaged in V3R2M0. If you have 5738-CP2 or 5763-CP2 installed, this product will replace it during the procedures that replace a release.</p>					
<b>5763-CR1</b>					
Base	Cryptographic Support/400	–	V3R2M0	0.5	0.3-0.4
<b>5763-CX2</b>					
Base	ILE C/400		MRL-V3R1M0 V3R1M0	7.0	4.8-8.8
1	ILE C *PRV Compiler Support		MRL-V3R1M0 V3R1M0	2.0	3.1-8.2

Figure C-3 (Page 4 of 10). Licensed program size information

Licensed Program Identifier			Earliest Level Compatible with V3R2M0 OS/400	Installation Storage Requirements in Megabytes <sup>1</sup>	
Part	Description	Status		Previous Releases	V3R2M0
<b>5763-DB1</b>					
Base	AS/400 System/38 Utilities	MRL-V3R1M0	V3R1M0	3.5	3.2-7.1
<b>5763-DCT</b>					
Base	Language Dictionaries for OS/400	–	V3R2M0	0.1	0.7
1	Afrikaans Dictionary	–	V3R2M0	0.4	2.4
2	Dutch Modern Dictionary	–	V3R2M0	2.1	4.3
3	Brazilian Portuguese Dictionary	–	V3R2M0	1.2	3.0
4	Catalan Dictionary	–	V3R2M0	0.4	0.7
5	Danish Dictionary	–	V3R2M0	1.3	2.6
6	German Dictionary	–	V3R2M0	2.3	6.2
7	Swiss German Dictionary	–	V3R2M0	1.9	3.7
8	Spanish Dictionary	–	V3R2M0	1.0	1.9
9	French National Dictionary	–	V3R2M0	1.2	2.3
10	French Canadian Dictionary	–	V3R2M0	1.1	2.1
11	Greek Dictionary	–	V3R2M0	0.7	1.4
12	Icelandic Dictionary	–	V3R2M0	0.5	1.1
13	Italian Dictionary	–	V3R2M0	1.2	3.5
14	US Legal Dictionary	–	V3R2M0	0.1	0.1
15	US Medical Dictionary	–	V3R2M0	0.2	0.5
16	Dutch Dictionary	–	V3R2M0	2.1	4.3
17	Norwegian Dictionary	–	V3R2M0	1.6	3.1
18	Norwegian Nynorsk Dictionary	–	V3R2M0	1.0	2.1
19	Portuguese Dictionary	–	V3R2M0	1.3	2.6
20	Finnish Dictionary	–	V3R2M0	0.1	0.1
21	Swedish Dictionary	–	V3R2M0	1.3	2.5
22	UK English Dictionary	–	V3R2M0	0.7	1.3
23	US English Dictionary	–	V3R2M0	0.7	1.3
24	Russian Dictionary	New	V3R2M0	NA	6.5
<p>Language Dictionaries for OS/400 was repackaged in V3R0M5. If you have dictionaries for the 5738-DCT product installed, the corresponding options of 5763-DCT are installed when you use a procedure that replaces the release.</p> <p>Option 24 is new for V3R2M0. You must use the procedure for adding additional licensed programs to install this option.</p>					
<b>5763-DFH</b>					
Base	CICS/400	MRL-V3R1M0	V3R1M0	9.8	9.1-19.9
1	CICS/400 - Sample Applications	MRL-V3R1M0	V3R1M0	1.0	2.0-2.2
<b>57xx-DM1</b>					
Base	SystemView Information Warehouse DataHub Support/400	Removed			
<p>Support for all levels (5738-DM1, 5763-DM1) of the licensed program is removed. Delete the licensed program before installing V3R2M0.</p>					
<b>5763-DP1</b>					
Base	DataPropagator Relational Capture and Apply/400	–	V3R2M0	2.1	2.0-3.4
<b>5763-DS1</b>					
Base	AS/400 Business Graphics Utility	MRL-V3R1M0	V3R1M0	1.0	1.0-2.1

Figure C-3 (Page 5 of 10). Licensed program size information

Licensed Program Identifier			Earliest Level Compatible with V3R2M0 OS/400	Installation Storage Requirements in Megabytes <sup>1</sup>	
Part	Description	Status		Previous Releases	V3R2M0
<b>5763-ES1</b>					
Base	IBM SystemView OMEGAMON Services/400	–	V3R2M0	9.5	10.8-28.7
1	IBM AUTOMATED FACILITIES**/400	–	V3R2M0	1.4	2.0-3.8
2	IBM OMEGAVIEW**/400 for OS/2	–	V3R2M0	9.2	20.1
<b>5763-FNT</b>					
Base	Advanced Function Printing Fonts/400	MRL-V3R1M0	V3R1M0	0.1	0.1
1	AS/400 Font–Sonoran Serif <sup>c</sup>	MRL-V3R1M0	V3R1M0	4.5	4.3
2	AS/400 Font–Sonoran Serif Headliner	MRL-V3R1M0	V3R1M0	5.0	5.0
3	AS/400 Font–Sonoran Sans Serif <sup>d</sup>	MRL-V3R1M0	V3R1M0	4.5	4.1
4	AS/400 Font–Sonoran Sans Serif Headliner	MRL-V3R1M0	V3R1M0	5.0	4.9
5	AS/400 Font–Sonoran Sans Serif Condensed	MRL-V3R1M0	V3R1M0	3.0	2.9
6	AS/400 Font–Sonoran Sans Serif Expanded	MRL-V3R1M0	V3R1M0	2.5	2.3
7	AS/400 Font–Monotype Garamond**	MRL-V3R1M0	V3R1M0	3.5	3.3
8	AS/400 Font–Century Schoolbook**	MRL-V3R1M0	V3R1M0	4.0	3.6
9	AS/400 Font–Pi and Specials	MRL-V3R1M0	V3R1M0	1.0	0.7
10	AS/400 Font–ITC Souvenir**	MRL-V3R1M0	V3R1M0	4.0	3.6
11	AS/400 Font–ITC Avant Garde Gothic**	MRL-V3R1M0	V3R1M0	3.5	3.4
12	AS/400 Font–Math and Science	MRL-V3R1M0	V3R1M0	3.0	2.8
13	AS/400 Font–DATA1	MRL-V3R1M0	V3R1M0	1.0	0.2
14	AS/400 Font–APL2*	MRL-V3R1M0	V3R1M0	1.0	0.6
15	AS/400 Font–OCR A and OCR B	MRL-V3R1M0	V3R1M0	1.0	0.1
<sup>c</sup> Sonoran Serif is a functional equivalent of Monotype Times New Roman.** <sup>d</sup> Sonoran Sans Serif is a functional equivalent of Monotype Arial.**					
<b>5763-FN1</b>					
Base	Advanced Function Printing DBCS Fonts for OS/400	–	V3R2M0	0.1	0.1
1	AS/400 Font (DBCS)–Japanese	–	V3R2M0	41.0	72.9
2	AS/400 Font (DBCS)–Korean	–	V3R2M0	24	23.2
3	AS/400 Font (DBCS)–Traditional Chinese	–	V3R2M0	13	13.2
4	AS/400 Font (DBCS)–Simplified Chinese	–	V3R2M0	8.0	7.6
5	AS/400 Font (DBCS)–Thai	–	V3R2M0	3.0	3.0
<b>5763-FS1</b>					
Base	OSI File Services/400	–	V3R2M0	18.6	18.7-20.9
<b>57xx-FT1</b>					
Base	FORTRAN/400	Removed			
Support for all levels (5738-FT1, 5763-FT1) of the FORTRAN/400 licensed program is removed. Delete the licensed program before installing V3R1M0.					
<b>5763-JS1</b>					
Base	Job Scheduler for OS/400	New	V3R2M0	NA	4.5-10.3
This product is the functional replacement for the 5798-JS2 PRPQ (V3R1M0 and V3R0M5) and 5799-JS3 LPO (V2R3M0). If you are replacing a release and have the earlier product installed, this product will automatically replace it.					

Figure C-3 (Page 6 of 10). Licensed program size information

Licensed Program Identifier			Earliest Level Compatible with V3R2M0 OS/400	Installation Storage Requirements in Megabytes <sup>1</sup>	
Part	Description	Status		Previous Releases	V3R2M0
<b>5738-LM1</b>					
Base	Application Development Manager/400	Repackaged			
Support for all levels of the Application Development Manager/400 licensed program is removed. If you have this product installed and you plan to use a procedure that replaces a release, the functionally equivalent product (5763-PW1 option 2) is automatically installed if it exists on the installation media. The old product is deleted after the new release is installed.					
<b>57xx-MC1</b>					
Base	RM/COBOL-85	Removed			
Support for all levels (5738-MC1, 5763-MC1) of the RM/COBOL-85** licensed program is removed. Run time support is provided in the base OS/400.					
<b>5763-MG1</b>					
Base	Managed System Services for OS/400	–	V3R2M0	1.5	10.5-20.2
<b>5763-MQ1</b>					
All	Message Queue Manager/400	Repackaged			
This product is replaced by its functional equivalent, 5763-MQ2, for V3R2M0. If you are replacing a release and you have this product installed, it will be replaced by 5763-MQ2.					
<b>5763-MQ2</b>					
Base	MQSeries for OS/400	–	V3R2M0	5.1	7.0-13.8
1	MQSeries for OS/400 - Samples	–	V3R2M0	1.0	2.2
2	MQSeries for OS/400 - Admin Application	–	V3R2M0	1.0	0.4-0.7
This product provides equivalent function for 5763-MQ1. If you are replacing a release and you have 5763-MQ1 installed, this product will replace it.					
You should use the ENDMGDSYS and ENDMGRSRV commands to end the product before performing any save, restore, or install functions.					
<b>5763-MS1</b>					
Base	OSI Message Services/400	–	V3R2M0	1.5	1.3-2.2
<b>5763-MW1</b>					
Base	ManageWare/400	MRL-V3R1M0	V3R1M0	18.7	12.6-12.9
1	ManageWare/400 - Windows	MRL-V3R1M0	V3R1M0	4.0	4.5
<b>5763-OS1</b>					
Base	OSI Communications Subsystem/400	–	V3R2M0	10.0	9.4-17.1
<b>5738-PC1</b>					
Base	PC Support/400	Repackaged			
If you are replacing a release, the new Client Access/400 products automatically replace PC Support/400 (5738-PC1). For details of which Client Access/400 product options correlate to which PC Support/400 options, refer to "Mapping PC Support to Client Access" on page C-15.					
<b>5763-PD1</b>					
Base	Application Program Driver/400	MRL-V3R1M0	V3R1M0	11.5	14.6
<b>5763-PL1</b>					
Base	AS/400 PL/I	MRL-V3R1M0	V3R1M0	1.0	0.9-1.7
<b>5763-PM1</b>					
Base	Performance Management/400	New	V3R2M0	NA	2.7-5.0
If you have the 5799-MPG PRPQ installed and you are replacing a release, this product is automatically installed.					

Figure C-3 (Page 7 of 10). Licensed program size information

Licensed Program Identifier			Earliest Level Compatible with V3R2M0 OS/400	Installation Storage Requirements in Megabytes <sup>1</sup>	
Part	Description	Status		Previous Releases	V3R2M0
<b>5763-PS1</b>					
Base	AS/400 Pascal	MRL-V3R1M0	V3R1M0	1.5	1.5-2.8
<b>5763-PT1</b>					
Base	Performance Tools/400	–	V3R2M0	11.5	14.4-24.1
1	Performance Tools/400 - Manager Feature	–	V3R2M0	1.7	1.5-3.5
2	Performance Tools/400 - Agent Feature	–	V3R2M0	0.1	0.1-0.3
Options 1 and 2 are no longer mutually exclusive in V3R2M0. In V3R1M0, both options could not be installed on the system at the same time.					
<b>5763-PW1</b>					
Base	Application Development ToolSet/400 - SEU	–	V3R2M0	2.5	2.5-4.9
1	ADTS/400	–	V3R2M0	4.5	7.5-15.7
2	ADTS/400 - App Dev Manager	–	V3R2M0	3.0	3.7-9.5
3	ADTS/400 - AppDict Services	–	V3R2M0	14.2	9.1-15.0
5763-PW1 option 2 is the functional equivalent of the removed product 5738-LM1, Application Development Manager/400. 5763-PW1 option 3 is the functional equivalent of the removed product 5738-AD1, Application Dictionary Services/400. If you are replacing a release, the old products are deleted after the new release is installed.					
<b>5763-QU1</b>					
Base	Query/400	–	V3R2M0	1.0	1.2-2.6
<b>5763-RD1</b>					
Base	R/DARS	New	V3R2M0	NA	2.2-3.2
1	R/DARS Spooled File Archive Feature	New	V3R2M0	NA	7.3-12.9
2	R/DARS Object Archive Feature	New	V3R2M0	NA	0.5-0.7
3	R/DARS Record Archive Feature	New	V3R2M0	NA	0.4
The 5763-RD1 licensed program replaces the 5733-218 product. If you have 5733-218 installed, this licensed program will replace it when you use a procedure that replaces the release.					
<b>5763-RG1</b>					
Base	ILE RPG for OS/400	Revised	V3R2M0	2.0	2.4-5.2
1	ILE RPG IBM System/36-Compatible RPG II	–	V3R2M0	1.2	1.1-1.8
2	ILE RPG IBM System/38-Compatible RPG III	–	V3R2M0	1.0	0.9-1.4
3	RPG/400 Previous Compiler	Removed			
4	System/36-Compatible RPG II Previous Compiler	Removed			
5	ILE RPG - RPG/400	Repackaged	V3R2M0	1.1	1.1-1.9
6	ILE RPG - *PRV ILE RPG	New	V3R2M0	NA	1.3-3.1
<ul style="list-style-type: none"> <li>Option 3, RPG/400 Previous Compiler, and option 4, System/36-Compatible RPG II Previous Compiler, are removed. Options 5 and 1, respectively, provide equivalent function and support *CUR and *PRV (V2R3M0 and V3R1M0) values for a target release.</li> <li>The V2R3M0 Base (5738-RG1) is now Option 5, RPG/400. If you have this product installed and you use a replacing-a-release procedure, Option 5 is installed without additional actions required.</li> <li>The compiler for previous release support (V3R1M0) is now in 5763-RG1 Option 6, *PRV ILE RPG/400. If you use a replacing-a-release procedure, Option 6 requires that you install it using the procedure for additional licensed programs.</li> </ul>					
<b>5763-SA2</b>					
Base	Integration Services for FSIOP	New.	V3R2M0	NA	93.2-93.4
If you have 5733-SA2 installed and you use a procedure that replaces a release, 5763-SA2 will replace it.					

Figure C-3 (Page 8 of 10). Licensed program size information

Licensed Program Identifier			Earliest Level Compatible with V3R2M0 OS/400	Installation Storage Requirements in Megabytes <sup>1</sup>	
Part	Description	Status		Previous Releases	V3R2M0
<b>5763-SA3</b>					
Base	OS/400 Integration for Novell NetWare	New	V3R2M0	NA	0.7-0.9
If you have 5733-SA3 installed and you use a procedure that replaces a release, 5763-SA3 will replace it.					
<b>5763-SM1</b>					
Base	System Manager for OS/400	–	V3R2M0	0.8	13.5-16.7
<b>5763-ST1</b>					
Base	DB2 Query Manager and SQL Development Kit for OS/400	–	V3R2M0	2.2	2.7-5.9
<b>5763-SVM</b>					
Base	SystemView Base for OS/400	–	V3R2M0	NA	0.1
1	SystemView Base for OS/400- Launch window	New	V3R2M0	NA	7.1-7.2
<b>5763-SV1</b>					
Base	ADSTAR Distributed Storage Manager/400	Repackaged			
This product is available for V3R2M0 as 5763-SV2.					
<b>5763-SV2</b>					
Base	ADSTAR Distributed Storage Manager for AS/400	Repackaged	V3R2M0	5.2	8.8-17.9
5763-SV2 is the functional replacement for 5763-SV1. If you have 5763-SV1 installed and you use a procedure that replaces a release, it is replaced with 5763-SV2.					
<b>5763-TC1</b>					
Base	TCP/IP Connectivity Utilities/400	–	V3R2M0	4.6	8.6-16.7
<b>5763-UB1</b>					
Base	Ultimedia Ultimedia Business Conferencing/400	MRL-V3R1M0	V3R1M0	0.9	2.9
1	Business Conferencing/400 - Windows	MRL-V3R1M0	V3R1M0	0.1	3.1-3.3
2	Business Conferencing/400 - OS/2	MRL-V3R1M0	V3R1M0	3.3	3.1-3.9
3	Person to Person for OS/2	MRL-V3R1M0	V3R1M0	0.1	3.8
4	Person to Person for Windows	MRL-V3R1M0	V3R1M0	0.1	3.7
<b>5763-US1</b>					
Base	Client Access Ultimedia Tools/400	MRL-V3R1M0	V3R1M0	0.1	0.1
1	Ultimedia Perfect Image/400 - OS/2 SBCS	MRL-V3R1M0	V3R1M0	9.1	9.3
3	Ultimedia Perfect Image/400 - OS/2 Samples	MRL-V3R1M0	V3R1M0	27.9	27.9
4	Ultimedia Builder/400 - OS/2 SBCS	MRL-V3R1M0	V3R1M0	56.7	48.6
6	Ultimedia Builder/400 - OS/2 Samples	MRL-V3R1M0	V3R1M0	135.0	143.9
<b>5763-VG1</b>					
Base	VisualGen Host Services for OS/400	MRL-V3R1M0	V3R1M0	NA	0.8-1.1
This licensed program does not appear on the LICPGM menu in previous releases.					
<b>5763-VR1</b>					
Base	VRPG Client for OS/2	MRL-V3R1M1	V3R1M1	14.7	93.7-93.8

Figure C-3 (Page 9 of 10). Licensed program size information

Licensed Program Identifier			Earliest Level Compatible with V3R2M0 OS/400	Installation Storage Requirements in Megabytes <sup>1</sup>	
Part	Description	Status		Previous Releases	V3R2M0
<b>5763-WP1</b>					
Base	OfficeVision for OS/400	–	V3R2M0	4.5	4.7-10.2
1	OfficeVision for OS/400–Text Search	–	V3R2M0	10.0	9.6-13.1
2	OfficeVision for OS/400–Calendar	–	V3R2M0	2.5	2.5-5.4
3	OfficeVision for OS/400–Mail	–	V3R2M0	0.5	0.5-1.2
4	OfficeVision for OS/400–Editor	–	V3R2M0	2.0	2.0-3.8

**5763-XA1**

Base	Client Access/400 Family	MRL-V3R1M0	V3R1M0	0.2	0.1-0.2
1	Client Access/400 - PC Tools Folder	MRL-V3R1M0	V3R1M0	7.8	13.0-13.1

When you order this product, you also receive 5763-XB1, 5763-XC1, 5763-XD1, 5763-XF1, 5763-XG1, and 5763-XL1.

**5763-XB1**

Base	Client Access/400 DOS Ext Memory	MRL-V3R1M1	V3R1M0	0.1	0.1-0.2
1	Client Access/400 - Ext DOS SBCS	MRL-V3R1M1	V3R1M0	14.2	17.0-17.2
2	Client Access/400 - Ext DOS DBCS	MRL-V3R1M1	V3R1M0	9.6	11.1-11.2
3	Client Access/400 - Ext DOS RUMBA** SBCS	MRL-V3R1M1	V3R1M0	5.1	6.0-6.1
4	Client Access/400 - Ext DOS RUMBA DBCS	MRL-V3R1M1	V3R1M0	5.0	5.7-5.8
5	Client Access/400 - Ultimea Facilities	MRL-V3R1M1	V3R1M0	3.5	5.7-5.8

The result you get when you replace this licensed program can vary with the installation process you use and the level of this licensed program that you have installed. Be certain that you understand the information in "Mixed Release Level–Overview" on page 3-5.

**5763-XC1**

Base	Client Access/400 for Windows 3.1	MRL-V3R1M1	V3R1M0	0.1	0.1-0.2
1	Client Access/400 - Windows 3.1 SBCS	MRL-V3R1M1	V3R1M0	11.1	17.5-17.6
2	Client Access/400 - Windows 3.1 DBCS	MRL-V3R1M1	V3R1M0	5.9	14.4-14.6
3	Client Access/400 - Windows 3.1 RUMBA SBCS	MRL-V3R1M1	V3R1M0	3.1	6.6-6.7
4	Client Access/400 - Windows 3.1 RUMBA DBCS	MRL-V3R1M1	V3R1M0	3.1	6.6-6.8
5	Client Access/400 - Windows 3.1 PC5250	MRL-V3R1M1	V3R1M0	7.4	9.4-9.6
6	Client Access/400 - GraphicOps for Windows	MRL-V3R1M1	V3R1M0	0.1	7.2-7.3
7	Client Access/400 - Ultimea Facilities	MRL-V3R1M1	V3R1M0	0.1	4.7-4.8
8	Client Access/400 - Graphical Access for OS/400	MRL-V3R1M1	V3R1M0	NA	4.2-4.4
9	Client Access/400 - SysObject Access for OS/400	MRL-V3R1M1	V3R1M0	NA	6.1-6.3

The result you get when you replace this licensed program can vary with the installation process you use and the level of this licensed program that you have installed. Be certain that you understand the information in "Mixed Release Level–Overview" on page 3-5.

This product requires additional storage space to save using the Save Licensed Program (SAVLICPGM) command. See the *Backup and Recovery – Basic*, book, SC41-3304, for details.

Before you delete or replace an existing release of this product, ensure that each option does not have user-created subdirectories. If any user-created subdirectories exist, the install or delete operation may fail.

Options 8 and 9 were not on the LICPGM menu in previous releases.

**5763-XD1**

Base	Client Access/400 for Windows 95	New	V3R1M0	NA	50.1
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The result you get when you replace this licensed program can vary with the installation process you use and the level of this licensed program that you have installed.

Figure C-3 (Page 10 of 10). Licensed program size information

Licensed Program Identifier			Earliest Level Compatible with V3R2M0 OS/400		Installation Storage Requirements in Megabytes <sup>1</sup>	
Part	Description	Status		Previous Releases	V3R2M0	
<b>5763-XF1</b>						
Base	Client Access/400 for OS/2	MRL-V3R1M0	V3R1M0	0.1	0.1-0.2	
1	Client Access/400 - OS/2 SBCS	MRL-V3R1M0	V3R1M0	9.9	13.8-14.0	
2	Client Access/400 - OS/2 DBCS	MRL-V3R1M0	V3R1M0	8.9	9.1-9.3	
3	Client Access/400 - OS/2 RUMBA SBCS	MRL-V3R1M0	V3R1M0	4.6	6.0-6.1	
4	Client Access/400 - OS/2 RUMBA DBCS	MRL-V3R1M0	V3R1M0	4.5	NA	
5	Client Access/400 - OS/2 Communications Mgr	MRL-V3R1M0	V3R1M0	5.5	7.3-7.4	
6	Client Access/400 - GraphicOps for OS/2	MRL-V3R1M0	V3R1M0	14.1	11.8-11.9	
7	Client Access/400 - Ultimeia Facilities	MRL-V3R1M0	V3R1M0	7.3	5.5-5.6	
The result you get when you replace this licensed program can vary with the installation process you use and the level of this licensed program you have installed. Be certain that you understand the information in "Mixed Release Level-Overview" on page 3-5.						
Option 4 does not appear on the LICPGM menu for V3R2M0 and it may not be included on your distribution media. No function was provided in this option in previous releases. You cannot create installation diskettes for this option.						
<b>5763-XG1</b>						
Base	Client Access for Optimized OS/2	MRL-V3R1M1	V3R1M0	50.0	30.5	
1	Client Access/400 - RUMBA Optimized for OS/2	MRL-V3R1M1	V3R1M0	7.0	7.8	
2	Client Access/400 - PC5250 Optimized for OS/2	MRL-V3R1M1	V3R1M0	8.5	8.1	
3	Client Access/400 - GraphicOps OS/2 client	MRL-V3R1M1	V3R1M0	14	7.6	
4	Client Access/400 - Ultimeia Facilities	MRL-V3R1M1	V3R1M0	5.0	4.9	
5	Client Access/400 - Graphical Access for OS/400	MRL-V3R1M1	V3R1M0	NA	3.8	
The result you get when you replace this licensed program can vary with the installation process you use and the level of this licensed program that you have installed. Be certain that you understand the information in "Mixed Release Level-Overview" on page 3-5.						
This product requires additional storage space to save using the Save Licensed Program (SAVLICPGM) command. See the <i>Backup and Recovery - Basic</i> , book, SC41-3304, for details.						
Before you delete or replace an existing release of this product, ensure that each option does not have user-created subdirectories. If any user-created subdirectories exist, the install or delete operation may fail.						
Option 5 was not on the LICPGM menu in previous releases.						
<b>5763-XL1</b>						
Base	Client Access for DOS	MRL-V3R1M0	V3R1M0	0.2	0.1-0.2	
1	Client Access/400 - DOS SBCS	MRL-V3R1M0	V3R1M0	10.7	13.4-13.6	
2	Client Access/400 - DOS DBCS	MRL-V3R1M0	V3R1M0	6.3	8.2-8.4	
The result you get when you replace this licensed program can vary with the installation process you use and the level of this licensed program you have installed. Be certain that you understand the information in "Mixed Release Level-Overview" on page 3-5.						
<b>5763-XZ1</b>						
Base	LAN Server/400	-	V3R2M0	81.0	95.5-95.7	

**Notes:**

<sup>1</sup> These numbers represent the range of minimum to maximum size for this licensed program. Refer to "Compressed Objects and Storage Space" on page 3-24 for information about compressed objects.

## Mapping PC Support to Client Access

In Version 3, the PC Support/400 (5738-PC1) licensed program is repackaged. Function is now packaged in these licensed programs:

- 5763-SS1 option 12, OS/400 - Host Servers
- 5763-XA1 Client Access/400 Family - Base
- 5763-XB1 Client Access/400 for DOS with Extended Memory
- 5763-XF1 Client Access/400 for OS/2
- 5763-XL1 Client Access/400 for DOS

Figure C-4 shows how the PC Support/400 (5738-PC1) licensed program and options correspond to the Client Access/400 products. If you have PC Support/400 Version 2 (5738-PC1) installed, it is replaced by the appropriate Client Access products during the task that replaces licensed programs.

*Figure C-4. How PC Support/400 Maps to Client Access*

Option of 5738-PC1 PC Support/400	Corresponding Client Access Product		
	V3Rx Product ID and Option	Root Folder	Library
Base	5763-SS1 Option 12 (OS/400 - Host Servers)		QIWS
1	5763-XL1 Base 5763-XL1 Option 1	QIWSFLR	QISWF QIWSFS
2	5763-XL1 Base 5763-XL1 Option 2	QIWSFLRD	QIWSF QIWSFD
3	5763-XF1 Base 5763-XF1 option 1	QIWSOS2	QIWS2 QIWS2S
4	5763-XF1 Base 5763-XF1 Option 2	QIWSOS2D	QIWS2 QIWS2D
5	5763-XB1 Base 5763-XB1 Option 1	QIWSFL2	QIWSP QIWSPS
6	5763-XB1 Base 5763-XB1 Option 2	QIWSFL2D	QIWSP QIWSPD
7	5763-XA1 Base 5763-XA1 Option 1	QIWSTOOL	QIWSTL
8	5763-XB1 Base 5763-XB1 Option 3	QRUMBA	QIWSP QRUMBA
9	5763-XB1 Base 5763-XB1 Option 4	QRUMBAD	QIWSP QRUMBAD
10	5763-XF1 Base 5763-XF1 Option 3	QRUMBA2	QIWS2 QRUMBA2
11	5763-XF1 Base 5763-XF1 Option 4	QRUMBA2D	QIWS2 QRUMBA2D
12	5763-XF1 Base 5763-XF1 Option 5	QHMC400	QIWS2 QCM400

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## How to Remove Licensed Programs

The following information is provided to help you determine if you should delete an unwanted part of a licensed program. For example, some licensed programs have requirements that certain parts of OS/400 be installed. These requirements are not always apparent. You can use the procedures in this topic to delete the parts of licensed programs you have determined you do not need.

### Determining What Unused Parts of Products to Delete

Depending on your business needs, you might be able to delete some of the optional parts of the licensed programs that are shown in Figure C-5 on page C-17. (Figure C-5 shows V3R2M0 product identifiers, but the information in the table applies to deleting unwanted parts either before or after installing the new release of software.) For example, you can delete the licensed programs for any clients (DOS, DOS with Extended Memory, Windows\*\* 3.1, or OS/2) that you do not use. Deleting unneeded licensed programs or optional parts will give you more DASD for your business needs.

**Note:** Before deleting anything, read the following:

- If you do not have current OS/400 software distribution media from IBM, make sure that you save the affected licensed program. Type GO LICPGM on the AS/400 command line and take option 13. You will need extra tapes for this save operation. Saving these licensed programs to tape can take several hours. At a later time, if you need any of the licensed programs or optional parts that were deleted, you can reinstall them from these tapes using option 11 of the LICPGM menu.
- Some systems are shipped with system backup tapes. These backup tapes are not the same as software distribution media. While you can use software distribution media to reinstall individual licensed programs or optional parts, you cannot use system backup tapes.

To delete unneeded optional parts, use the information in "Procedures for Deleting Licensed Programs" on page C-19.

Use Figure C-5 on page C-17, Figure C-3 on page C-5, and the following keys to help you determine which programs or optional parts you might want to delete.

**Keys** for Figure C-5 on page C-17:

- a You cannot delete the entire OS/400 operating system. You can delete optional parts.
- b It is recommended that you do not delete this part.
- c Delete this optional part if you are not migrating from a System/36 or System/38 to this AS/400.
- d Delete this optional part if you are running only AS/400 applications.
- e This optional part is needed only by software developers.
- f Do not delete this optional part if you are using the Print Services Facility/400 (see optional part number 17 in this table).
- g Delete this part if you do not need to compile CL programs for a previous release.

- h This option is a separately orderable feature.
- i Do not delete this part if you have applications using Ultimedia System Facilities.
- j Do not delete if you are using Client Access/400 products.
- k If you are not using this specific client (DOS, DOS with Extended Memory, Windows 3.1, Windows 95. or OS/2), you can delete the complete licensed program for that client.
- l If you are using this specific client, do not delete the base option.
- m If your system has the optional parts for both SBCS (single-byte character set) and DBCS (double-byte character set) installed, depending on your national language needs, you might be able to delete the optional part you are not using.
- n There are two 5250 emulators (RUMBA\*\* and PC5250) that are available with this client. If you are not using both, delete one of them.
- o Do not delete this optional part if you require graphical user interface for system operations.
- p This optional part contains sample programs, migration tools, and debug tools. You should delete this optional part only after you download any tools that are used by your installation.
- q If you delete this optional part, you must first use the CHGSYSLIBL system command to remove QHLPSYS from the system library list.

*Figure C-5 (Page 1 of 2). Deleting Unwanted Licensed Programs and Optional Parts After the Installation Is Complete*

<b>Keys</b>	<b>Licensed Program and Optionally Installable Product Part</b>	<b>Number for Product Part</b>
a	5763-SS1OS/400	
q	OS/400 Online Information (Online help information)	2
c	OS/400 System/36 and System/38 Migration	4
d	OS/400 System/36 and System/38 Environment	5 and 6
e	OS/400 Example Tools Library	7
f	OS/400 AFP Compatibility Fonts	8
g	OS/400 *PRV CL Compiler Support	9
c	OS/400 System/36 Migration Assistant	11
b, j	OS/400 Host Servers	12
e	OS/400 Openness Includes	13
	OS/400 GDDM	14
h	OS/400 Common Programming APIs Toolkit	15
i	OS/400 Ultimedia System Facilities	16
h	OS/400 Print Services Facility/400	17
h	OS/400 Media and Storage Extensions	18
j	5763-XA1 Client Access/400 Family - Base	Base

Figure C-5 (Page 2 of 2). Deleting Unwanted Licensed Programs and Optional Parts After the Installation Is Complete

Keys	Licensed Program and Optionally Installable Product Part	Number for Product Part
p	Client Access/400 - PC Tools Folder	1
k, l	<b>5763-XB1</b> Client Access/400 for DOS with Extended Memory	Base
m	Client Access/400 - Ext DOS SBCS or DBCS	1 or 2
m	Client Access/400 - Ext DOS RUMBA SBCS or DBCS	3 or 4
i	Client Access/400 - Ultimedia Facilities	5
k, l	<b>5763-XC1</b> Client Access/400 for Windows 3.1	Base
m	Client Access/400 - Windows 3.1 SBCS or DBCS	1 or 2
m, n	Client Access/400 - Windows 3.1 RUMBA SBCS or DBCS	3 or 4
n	Client Access/400 - Windows 3.1 PC5250	5
o	Client Access/400 - GraphicOps for Windows	6
i	Client Access/400 - Ultimedia Facilities	7
k	5763-XD1 Client Access for Windows 95	Base
k, l	<b>5763-XF1</b> Client Access/400 for OS/2	Base
m	Client Access/400 - OS/2 SBCS or DBCS	1 or 2
m	Client Access/400 - OS/2 RUMBA SBCS or DBCS	3 or 4
	Client Access/400 - OS/2 Communications Mgr	5
o	Client Access/400 - GraphicOps for OS/2	6
i	Client Access/400 - Ultimedia Facilities	7
k, l	<b>5763-XG1</b> Client Access/400 Optimized for OS/2	Base
n	Client Access/400 - RUMBA Optimized for OS/2	1
n	Client Access/400 - PC5250 Optimized for OS/2	2
o	Client Access/400 - GraphicOps for OS/2	3
i	Client Access/400 - Ultimedia Facilities	4
k, l	<b>5763-XL1</b> Client Access/400 for DOS	Base
m	Client Access/400 - DOS SBCS or DBCS	1 or 2

## Notes About Deleting Licensed Programs

### Notes:

1. If you installed a new licensed program or a new optional part that became available independently of an operating system release or modification level, it may not appear in the list when you use option 12. Use the Delete Licensed Program (DLTLICPGM) command to delete independently shipped licensed programs and optional parts.
2. Do not attempt to use the DLTLIB command to remove a licensed program or optional part of a licensed program from the system. Some licensed programs copy objects into other libraries; the DLTLIB command will not delete the duplicated objects. Using the DLTLIB command to delete a licensed program or optional part could leave the licensed program in a partially installed condition.

For a list of IBM-supplied libraries, organized by licensed program, see the *Programming Reference Summary* book, SX41-3720.

3. If you are unable to delete a licensed program, it may be because the library for the licensed program is listed in one of the library lists. Use the WRKSYSVAL command to check both the system and the user library lists. When the Work with System Values display appears, type a **5** next to the QSYSLIBL and QUSRLIBL system values to display the associated libraries. If the library for the licensed program is listed on this display, press the Enter key to return to the Work with System Values display. Then, type a **2** to change the system value. When the Change System Value display appears, use the spacebar to remove that licensed program library from the library list. You will be able to delete your licensed program after your next IPL.
4. When V3R1M0 or a higher release is installed and your system is at security level 40 or 50, you cannot delete some products from a previous release level. Message CPD0176 is displayed if the system security level is 50 and a product earlier than V2R3 has exit programs that do not work at level 50. After V3R1M0 or a higher release is installed, you must change the security level to 30, delete the products, then change the security level back to 40 or 50.

## Procedures for Deleting Licensed Programs

To remove licensed programs, do the following:

- \_\_\_ **Step 1** Type GO LICPGM and press the Enter key. You are shown the Work with Licensed Programs menu.
- \_\_\_ **Step 2** Select option 12 (Delete licensed programs). You are shown the Delete Licensed Programs display.
- \_\_\_ **Step 3** Type 4 (Delete) in the Option column in front of each licensed program that you want to delete. Page down to display additional licensed programs.  
**Note:** If you select the base part of a licensed program that has optional parts, all the optional parts are also deleted. If you select only an optional part, the base and any other parts remain on your system.
- \_\_\_ **Step 4** Press the Enter key. You are shown the Confirm Delete of Licensed Programs display.
- \_\_\_ **Step 5** Press the Enter key if your selections are correct. Press F12 to make corrections.
- \_\_\_ **Step 6** You receive confirmation messages from the system when the licensed programs are deleted.
- \_\_\_ **Step 7** Press F12 to return to the Work with Licensed Programs menu.

You may have other installed licensed programs and optional parts that do not appear in this list. Refer to note 1 on page C-18 for more information.

## Procedures for Deleting PRPQs

To remove PRPQs or licensed programs that are not listed on the LICPGM menu displays, do the following:

- \_\_\_ **Step 1** Check the product's documentation for any special instructions or considerations you should be aware of before you delete the product.
  
- \_\_\_ **Step 2** Type the command:  
`DLTLICPGM LICPGM(product identifier) OPTION(*ALL)`  
Press the Enter key.
  
- \_\_\_ **Step 3** Do this for each product you need to delete.



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## Appendix D. Estimating Your Total Installation Time

It is difficult to accurately estimate the amount of the time needed to install a new release of software. Many variables combine to create a unique set of circumstances for each system. This appendix helps you estimate the time that you need to install your new release. This appendix does the following:

- Lists common ways to estimate installation time and describes the installation process
- Describes conditions that affect the performance of the installation process.
- Lists the types of products that are installed when you replace a release of software
- Provides a checklist and work sheets for determining an estimate that reflects your system and software environment.

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### Common Methods of Estimating Installation Time

The following list contains the most common methods of estimating your installation time.

- Base your estimate on the installation time of a previous release. If the system configuration and load remain similar, you can use the installation time of a previous release on this system *as the start* of your estimate. ***If you rely on only the installation time of the previous release, your estimate may not be accurate.***

This method may not be accurate if many data conversions occur during the installation process. You should check “Work Sheet 3. Conversions During Installation” on page D-20 for information about data conversions in the new release that you should include in your estimate. If you are skipping a release level, generally the time is longer; be sure to add information for conversions that occur in the release you are skipping and for the new release.

- Base your estimate on the installation time for a similar system. If your enterprise has multiple systems, you can record the actual time to install the new release on one system. You can use this to estimate the time needed to install the new release on a system with a similar configuration and load. Of course, you cannot use this method until you complete the installation on the first system.
- Estimate using a formula. You can use the information in the following sections to estimate how long it will take to install this release on your system. Keep in mind that the number at which you arrive will vary from your actual install time because of the variables that affect installation time.
- Combine one or more of the methods that are listed above.

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### Types of Products Installed

A new release consists of these parts, installed in the following order:

1. Licensed Internal Code
2. Operating system
3. Licensed programs and optional parts

## Estimating Installation Time

For installation purposes, the IBM-supplied libraries QGPL and QUSRSYS and the optional parts of the operating system are considered licensed programs.

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## Installation Processes

The system determines the installation process based on available system resources and the type of product being installed.

A **single-process installation** is when licensed programs are installed one at a time (sequentially). A **multiprocess installation** is when the system starts multiple jobs to perform the installation of two or more licensed programs at the same time.

Licensed Internal Code and the base part of the operating system are always installed using single-process installation. Licensed programs (including libraries QGPL and QUSRSYS and optional parts of the operating system) can be installed using either single-process or multiprocess installation.

If you are installing only one licensed program, the system uses single-process installation. If you are installing more than one licensed program, multiprocess is used if system resources are available. If system resources are not available, single-process is used. Single-process is used when a system's main storage or auxiliary storage is limited, and when a licensed program exceeds the requirements for multiprocess installation. For any set of licensed programs, if the system must use single-process, the installation takes longer. "Multiprocess Installation—Overview" on page D-4 describes the system requirements necessary for multiprocess installation.

### Clue

Think of multiprocess installation as meaning installing multiple licensed programs.

When replacing a release of software, your choice of the manual or automatic methods has no effect on whether the system uses single-process or multiprocess installation.

## Conditions that Affect Installation Time

The amount of time it takes to install the licensed programs depends on your system configuration and the licensed programs you are installing. That is, the larger models with more system capacity have a shorter installation time than smaller models loading the same licensed programs. The major factors that affect installation performance are:

- Tape device

The speed of the tape device you are installing from has a direct effect on the total installation time. Also, because the distribution tape is in a compressed format, the tape files can be loaded faster if your tape device has a hardware decompression feature. Otherwise, the system must use software decompression, which requires extra time.

- Number and type of disk unit I/O processors

The amount of auxiliary storage on your system affects the total installation time. This is especially true for multiprocess installations, where the amount of

disk unit I/O activity significantly increases. Generally, the more auxiliary storage units you have on your system, the faster the installation.

- Processing unit capacity

The number of installation jobs started by the system depends on the capacity of your processing unit. The number of installation jobs started is a factor in a multiprocess installation. The larger model systems can support more concurrent jobs during the installation process than smaller models. For example, a B70 can support up to 9 jobs that are being installed concurrently.

- Disk unit space available

Tape files can only be loaded into save files if enough disk unit storage is available in the system auxiliary storage pool (ASP). Multiprocess installation uses save files and requires at least 11 megabytes of available auxiliary storage on your system. If this amount is not available, the system uses the single-process installation. If there is not enough space available during the installation process, the system must wait for an installing job to finish its work and delete the save files before loading additional tape files.

Some licensed programs require more than this amount of available auxiliary storage to install using multiprocess. See “Additional Requirements for Multiprocess” on page D-4 for details.

Use the Work with System Status (WRKSYSSTS) command to determine if you have the required storage available. The auxiliary storage column lists the system storage (in megabytes) and the percentage used. Use these figures to determine if there are at least 11 megabytes available on your system.

- Main storage available in base pool

The number of install jobs started by the system depends on the amount of main storage on your system. To use multiprocess installation, there must be at least 1536 KB (kilobytes) of main storage available in the base storage pool of the system. If you have less than this amount in the base storage pool, the system uses single-process installation to install the licensed programs. For additional details of how this space is used, see the “Additional Requirements for Multiprocess” on page D-4.

To determine the size of the base pool, use the Work with System Status (WRKSYSSTS) command. The pool size listed under System Pool #2 is the size of the base pool on your system. The size of this pool is larger when all subsystems are ended (ENDSBS \*ALL) than when subsystems are active. Therefore, if you are planning to install the licensed programs with all subsystems ended, check the base pool size after ending all subsystems.

- Human interaction

During the manual installation method, you need to interact with messages and displays, and you must load the next tape when prompted by the system. During the automatic installation method, you usually only need to load the next installation tape when prompted by the system. When an end of volume is encountered during an automatic installation, the active multiprocess install jobs continue to install the licensed programs they are currently working on. However, they do not begin installing another licensed program until you load the next tape.

- User data conversions

## Estimating Installation Time

The quantity and type of user data on your system can affect the installation performance. Data conversions are changes made automatically to the internal representation of a program or a file. These changes are needed to provide more function within a licensed program. Conversions often occur during the installation process or during the save operations when you save the system after the installation is complete. Some conversions add time to the installation process or to the save operations. The type of object being converted and the number of these objects on your system affect the amount of additional time needed.

- Licensed programs to be installed

Some licensed programs take much longer to install than others. In addition, products with documents and folders take longer to install if you do not end all subsystems before you begin the installation process.

## Multiprocess Installation—Overview

The operating system determines if your system configuration has enough system capacity to use multiprocess to install licensed programs. If your system has the required resources, the licensed programs are installed concurrently by:

- Loading the licensed program installation files from tape to temporary save files.
- Using multiple batch jobs to concurrently install licensed programs from the save files. The save files are deleted during the installation process.

During installation, a status panel indicates the licensed programs that are currently being installed from save files. The display lists the licensed programs and the type of item being installed for each, as follows:

\*PGM program objects  
\*LNG language objects

If your system does not have the required resources for multiprocess, the licensed programs are installed sequentially from tape (single-process). In this case, the status panel indicates the licensed program that is currently being installed from tape.

## Additional Requirements for Multiprocess

To use the multiprocess installation process for licensed programs, the system requires the following:

1. You must select more than one licensed program to install from tape (this includes IBM-supplied libraries and operating system options). If you are only installing one new licensed program and choose option 11 (Install licensed programs), the system uses the single-process installation process to install the licensed program.
2. You must have fewer than eight save or restore sessions currently active on your system.
3. A multiprocess installation process cannot currently be in progress. If another job is currently performing a multiprocess installation process, the system uses the single-process installation process to install your licensed programs from a different tape device.

4. You must have at least 11 megabytes of available auxiliary storage on your system. If you do not, the system uses single-process to install the licensed programs.

The licensed programs that require the system to have more than 11 megabytes of additional auxiliary storage are shown the *Multiprocess Storage* column of Figure D-4 on page D-13.

5. You must have at least 1536 KB (kilobytes) of main storage available in the base storage pool of the system. The system requires 512K in the system base pool for each of the first three installing jobs. The first job that is started loads the tape files into save files. After the requirements for the first three jobs are met, each additional job requires an additional 1024K in the base pool. Therefore, the larger the base pool, the greater number of installation jobs that can be started. This results in a faster installation.

If you are using the automatic installation process, or are installing the licensed programs with all subsystems ended, you only need to verify the auxiliary storage and main storage requirements. See the *Work Management* book, SC41-3306, for procedures to change these values if they do not meet the criteria for multiprocess installation. If you do not have the required resources to enable the system to use multiprocess installation, the installation of licensed programs may take significantly longer than a multiprocess installation. The time difference between the single-process installation process and the multiprocess installation process depends on your system configuration and the licensed programs to be installed.

### How to Determine Additional Storage for Multiprocess—Scenario

Compare the list of licensed programs that you plan to install with the *Multiprocess Storage* column of Figure D-4.

Licensed programs install as two types of objects: program objects (\*PGM) and language objects (\*LNG). If any licensed program that you plan to install shows a value for either object type in Figure D-4, that object requires that the system have more auxiliary storage before the object can be installed with the multiprocess method. You can calculate the amount of additional auxiliary storage space the system needs for multiprocess installation.

- \_\_\_ **Step 1.** Determine which licensed programs or optional parts that you plan to install have values in the *Multiprocess Storage* column of Figure D-4.

**Note:** The IBM-supplied library QUSRSYS is always installed when you are replacing a release of software.

- \_\_\_ **Step 2.** Determine which two licensed programs (or optional parts) from step 1 have the highest values. Add the sizes of the two largest entries.

- \_\_\_ **Step 3.** Add 10 to the sum from step 2. The total is the amount of additional storage, in megabytes, that the system needs to use multiprocess installation for all the licensed programs that you plan to install.

For example, you are replacing your release with V3R2M0 and plan to install OS/400 with options 1, 2, and 12 and Client Access for Windows 3.1 with option 1. You would need to have 49.8 megabytes of additional auxiliary storage (26.6 + 13.2 + 10) for the system to use multiprocess installation for all these products. (QUSRSYS is automatically selected when you replace a release so you need to account for it in your calculations.)

Another example could be that you decide to add additional licensed programs to your existing V3R2M0 system. One of the products you selected, Advanced Function Printing DBCS Fonts for OS/400 (5763-FN1), is listed in the *Multiprocess Storage* column of Figure D-4. You would need 106.1 megabytes of additional auxiliary storage ( $72.9 + 23.2 + 10$ ) for the system to use multiprocess installation to install the base and options 1 through 5 of Advanced Function Printing DBCS Fonts for OS/400.

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### Checklist for Estimating Installation Time

The following information is provided to assist you in estimating the approximate installation time of this release on your system. Use the checklist below as a guide. The checklist refers you to other information or work sheets to obtain values. The checklist assumes that you are not changing the primary language of your system. The estimate you arrive at using this checklist is based on the assumption that your system must perform a single-process installation; if your system is able to use multiprocess installation, your time will be less.

**Note:** The checklist and supporting work sheets do not include the amount of time spent on tape positioning, loading of next volumes, media errors, or recovery procedures. User data is not included. The time needed for INZSYS to complete is also not included.

Do the following to estimate your total install time.

- \_\_\_ **Step 1.** Estimate the amount of time you need to save your system before you install the new release. Time for saving the system depends on how much storage you have and what percentage of the storage you are using. Use the amount of time from the last backup of your system. If you use Option 9 (Save storage), the time needed to save the system is less.
- Time: \_\_\_\_\_
- \_\_\_ **Step 2.** Use "Work Sheet 1. Licensed Internal Code and Operating System" on page D-8 to estimate the time to install the Licensed Internal Code and the base part of the operating system.
- Time: \_\_\_\_\_
- \_\_\_ **Step 3.** Consider the time required for your system to perform an IPL. If your system takes more than 20 minutes to perform an IPL, include the amount of time that exceeds 20 minutes. For example, if your system takes 45 minutes to perform an IPL, enter the difference of 25 minutes for the time ( $45 - 20 = 25$ ).
- Time: \_\_\_\_\_
- \_\_\_ **Step 4.** Use "Work Sheet 2. Licensed Programs" on page D-10 to estimate the time to install licensed programs. Be sure to include all the licensed programs and optional parts that you intend to install. This time assumes the system is single-process installing licensed programs.
- Time: \_\_\_\_\_
- \_\_\_ **Step 5.** Add time for conversions. If you are replacing V3R1M0 with V3R2M0, you can skip this step. If you are replacing V2R3M0 or

V3R0M5, use information in "Estimating Time for Conversions" on page D-19 to determine the estimated time for conversions.

Time: \_\_\_\_\_

- \_\_\_ **Step 6.** If your system uses data protection mechanisms (such as mirroring, checksums, or an implementation of a RAID-5 technique), you need to allow extra time. If you do not use these data protection mechanisms, enter zero and go to step 7.
  - a. Add the times for steps 2, 4, and 5.
  - b. Determine a multiplication factor from the information "Data Protection Mechanisms" on page D-23.
  - c. Multiply step 6a by 6b. The result is the total time for installing Licensed Internal Code, OS/400, and licensed programs on a system that uses a data protection mechanism.
  - d. To calculate the increased time that is needed by data protection mechanisms, subtract the value that is shown in step 6a from the value of step 6c. The result is the increase in time that is needed due to data protection mechanisms.

Time: \_\_\_\_\_

- \_\_\_ **Step 7.** Determine the amount of time required to install the cumulative PTF package. Use the timing information in the *AS/400 System PTF Shipping Information Letter*.

Time: \_\_\_\_\_

- \_\_\_ **Step 8.** Add time for saving your system after the install. If you use Option 9 (Save storage) after the installation, the saving system time will be less. Be aware that **data conversions can occur during the save operation** that could increase the time needed for saving your system. If you are replacing V2R3M0 or V3R0M5 with V3R2M0, see "Conversions During First Save—Replacing V2R3M0 or" on page D-23 for more information.

Time: \_\_\_\_\_

- \_\_\_ **Step 9.** Add time for any extra clean-up work and to re-customize your system. If you plan to install softcopy information bookshelves as part of your installation, include time for this activity.

Time: \_\_\_\_\_

The total of these steps is your total estimated time for installing your new release.

Total Estimated Time: \_\_\_\_\_

## Work Sheet 1. Licensed Internal Code and Operating System

This work sheet helps you estimate the time needed to install Licensed Internal Code and the base part of the operating system.

The time needed is influenced by two primary factors: the speed of the processor model and the speed of the tape device. The speed of the processor model determines how fast installation processing occurs; the speed of the tape device used for the installation determines how fast the tapes are read.

\_\_\_ **Step 1.** Locate your processor model along the bottom of the chart in Figure D-1 on page D-9.

**Note:** In Figure D-1, the horizontal axis summarizes the AS/400 product range in very broad groupings. The groupings only apply to installation performance and should not be used for any other performance characteristics.

\_\_\_ **Step 2.** Locate the zone for your tape device, based on your tape zone below.

Speed	Typical Tape Devices	Use
90 KB/sec	6346, 9346	Zone A
200-300 KB/sec	6347, 6348, 6349, and 7208-002	Zone B
781 KB/sec	9348	Zone C
3000 KB/sec	3480, 3490	Zone D

Zones that are based on tape devices of similar speeds. Determine the tape device zone you need to use. Zones for tape devices of similar speeds represent the approximate effect of available storage and system memory.

\_\_\_ **Step 3.** Determine your approximate location within the zone by considering the amount of storage and system memory available.

\_\_\_ **Step 4.** Write the time that corresponds to your location within your zone in the blank provided in step 2 of the checklist on page D-6. This is the estimated time for Licensed Internal Code and the base part of OS/400.

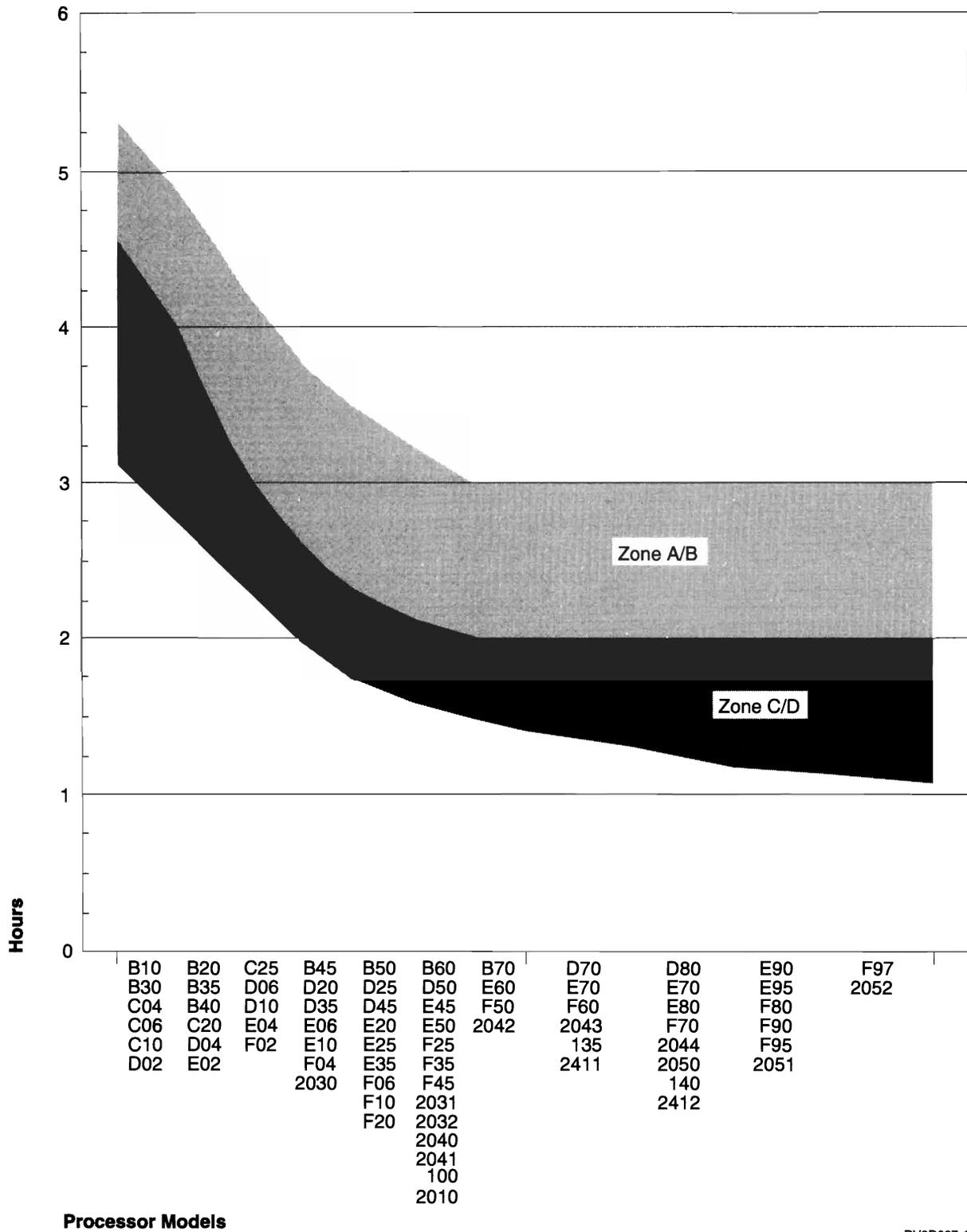


Figure D-1. Licensed Internal Code and Base Operating System Time

## Work Sheet 2. Licensed Programs

This work sheet helps you estimate the maximum amount of time that is needed to install licensed programs.

The size and complexity of a licensed program are primary factors that determine the installation time required. The time needed is also influenced by the speed of the processor, the speed of the tape device used, and which installation process the system is able to use.

**Note:** This work sheet determines an estimate for the single-process installation time for your selected licensed programs. This provides the maximum expected time for installing licensed programs. Since the system attempts to perform a multiprocessing installation whenever possible, your actual time should be somewhat less than the value you arrive at by using this work sheet. Because of the unique combination of conditions affecting installation time for your system, it is not possible to provide meaningful estimates for multiprocessing installation.

\_\_\_ **Step 1.** Determine the total base time for licensed programs that you plan to install.

a. Add the numbers shown in the *Base Value* column of Figure D-4 on page D-13 for the licensed programs and optional parts that you plan to install.

- If you are replacing a release of software, include the V3R2M0 equivalent for each of the licensed programs that you have installed. Include any optional parts of OS/400 and the IBM-supplied libraries QGPL and QUSRSYS. Do not include any mixed release level licensed programs that are already installed at the same level as the level shipped with V3R2M0 (refer to Figure C-3 on page C-5).
- Include any licensed programs and optional parts that will be new to your system.

The result is your *base time in minutes*. \_\_\_\_\_

b. Divide the *base time in minutes* by 60. The result is your *base time in hours*. \_\_\_\_\_

\_\_\_ **Step 2.** Determine the multiplication factor for licensed program times. (This accounts for variations in processor and tape device speeds.)

a. Locate your processor model along the bottom of the chart in Figure D-3.

**Note:** In Figure D-1, the horizontal axis summarizes the AS/400 product range in very broad groupings. The groupings only apply to installation performance and should not be used for any other performance characteristics.

b. Locate the zone for your tape device, based on your tape zone from Figure D-2.

c. Determine your approximate location within the zone by considering the amount of storage and system memory available.

d. Estimate the multiplication factor that corresponds to your location within your zone using the numbers on the left side of the chart. This is your *multiplication factor*. \_\_\_\_\_

\_\_\_ **Step 3.** Multiply the *base time in hours* (step 1b) by the *multiplication factor* (step 2d). The result is the estimated time for installing licensed programs using single-process installation. Write this number in the blank provided for the time in step 4 of the checklist on page D-6. \_\_\_\_\_

Speed	Typical Tape Devices	Use
90 KB/sec	6346, 9346	Zone A
200-300 KB/sec	6347, 6348, 6349, and 7208-002	Zone B
781 KB/sec	9348	Zone C
3000 KB/sec	3480, 3490	Zone D

Zones that are based on tape devices of similar speeds. Determine the tape device zone you need to use. Zones for tape devices of similar speeds represent the approximate effect of available storage and system memory.

Figure D-2. Tape device zones for use with estimating charts

# Estimating Installation Time

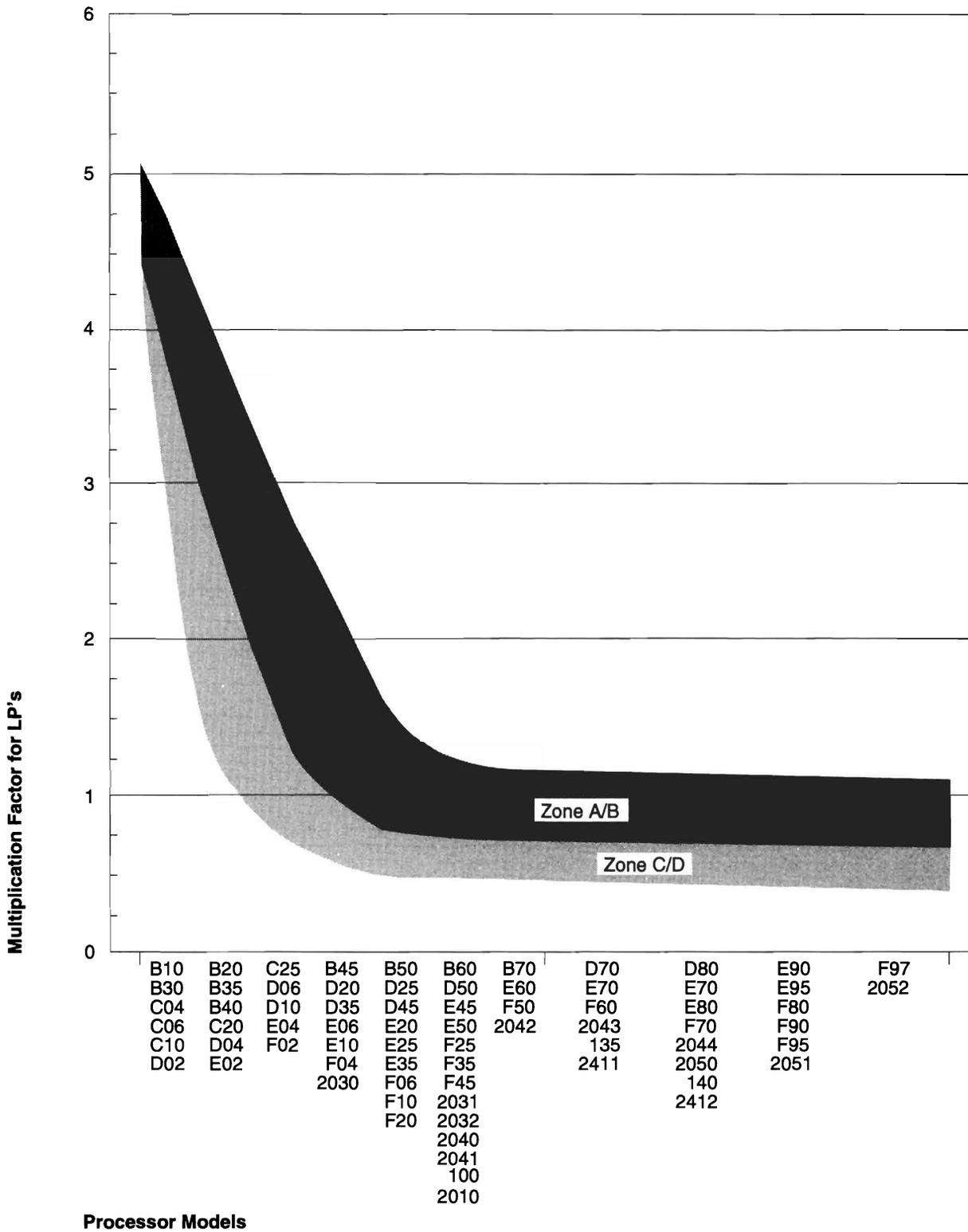


Figure D-3. Multiplication Factors for Licensed Program Base Times

## Licensed Program Times

Figure D-4 will help you estimate the maximum time that you need to install licensed programs. Figure D-4 shows the base values to use for time calculations and conditions that influence your calculations.

**Note:** The calculations for maximum installation time assume that the system uses single-process installation. For most licensed programs, the system uses multiprocess installation. Because multiprocess installation has many variables that are unique to each system, the time for multiprocess installation is virtually unpredictable using Figure D-4 and “Work Sheet 2. Licensed Programs” on page D-10. Consider the time that you arrive at using this information as your worst-case installation time.

**Base Values** are used to calculate the installation time for the licensed programs and options that you plan to install. The base value is not the installation time. Use these values with the information provided in Figure D-3 on page D-12 and “Work Sheet 2. Licensed Programs” on page D-10 so that you account for the speeds of your tape device and your processor model.

**Factors Influencing Installation Time** indicate which licensed programs or optional parts may be affected by additional factors. Characteristics of the licensed programs being installed can sometimes cause a significant impact on your installation time. Figure D-4 indicates which licensed programs and options may cause your installation to run longer.

### Multiprocess Storage

If the size of a licensed program exceeds the 11MB of auxiliary storage that the system uses for multiprocess installation, the licensed program is installed with the single-process method. Values that are shown in this column (either \*PGM or \*LNG) indicate which part of the licensed program, if any, requires additional storage for multiprocess installation. A dash indicates that the product will multiprocess install within the system's standard settings. “Multiprocess Installation—Overview” on page D-4 describes multiprocess installation.

### Documents and Folders

Licensed programs and optional parts with documents or folders can take longer to install. Yes indicates that these products have documents or folders.

Figure D-4 (Page 1 of 6). Licensed program time information

Licensed Program Identifier		Base Value <sup>1</sup>	Factors Influencing Installation Time		
Part	Description		Multiprocess Storage <sup>2</sup>		Documents and Folders <sup>3</sup>
			*PGM	*LNG	
<b>5763-999</b>					
–	Licensed Internal Code—On 9406 Systems	NA	NA	NA	NA
–	Licensed Internal Code—On 9401, 9402, and 9404 Systems	NA	NA	NA	NA
<b>5763-SS1</b>					
Base	Operating System/400	NA	NA	NA	NA
Library	OS/400—Library QGPL	5.75	–	–	–
Library	OS/400—Library QUSRSYS	12.5	26.6	–	–
1	OS/400 Extended Base Support	5.0	–	–	Yes
2	OS/400—Online Information	2.0	–	–	–

# Estimating Installation Time

Figure D-4 (Page 2 of 6). Licensed program time information

Licensed Program Identifier		Base Value <sup>1</sup>	Factors Influencing Installation Time		
Part	Description		Multiprocess Storage <sup>2</sup>		Documents and Folders <sup>3</sup>
			*PGM	*LNG	
4	OS/400-S/36 and S/38 Migration	6.5	-	-	-
5	OS/400-System/36 Environment	7.75	-	-	-
6	OS/400-System/38 Environment	2.0	-	-	-
7	OS/400-Example Tools Library	4.0	-	-	-
8	OS/400-AFP* Compatibility Fonts	8.75	-	NA	-
9	OS/400- *PRV CL Compiler Support	19.0	-	16.5	-
10	OS/400-9406 Problem Analysis	2.25	-	-	-
11	OS/400-S/36 Migration Assistant	2.0	-	-	-
12	OS/400-Host Servers	16.0	-	-	-
13	OS/400-Openness Includes	15.0	32.5	NA	-
14	OS/400-GDDM	1.25	-	-	-
15	OS/400-Common Programming APIs Toolkit	1.25	-	-	-
16	OS/400-Ultimedia System Facilities	13.5	11.1	-	Yes
17	OS/400-Print Services Facility/400	0.25	-	NA	-
18	OS/400-Media and Storage Extensions	0.25	-	-	Yes
22	OS/400-ObjectConnect	1.0	-	-	-
23	OptiConnect for OS/400	1.0	-	-	-
24	IBM OS/400 Integration of Lotus Notes	5.0	-	64.8	-
26	DB2 Symmetric Multiprocessing for OS/400	0.5	-	-	-
27	DB2 Multisystem for OS/400	0.5	-	-	-
<b>5763-AF1</b>					
Base	IBM Advanced Function Printing Utilities for OS/400	9.0	-	-	-
<b>5763-AP1</b>					
Base	IBM Advanced DBCS Printer Support for OS/400	5.0	-	-	-
1	Adv DBCS Printer Support for OS/400 - IPDS		-	-	-
<b>5763-BA1</b>					
Base	AS/400 BASIC	1.0	-	-	-
<b>5763-BR1</b>					
Base	Backup Recovery and Media Services/400	53.0	12.4	-	-
<b>5763-CB1</b>					
Base	ILE COBOL for OS/400	3.5	-	-	-
1	ILE COBOL/400 - System/36-compatible COBOL	1.75	-	-	-
2	ILE COBOL/400 - System/38-compatible COBOL	1.75	-	-	-
5	ILE COBOL/400 - COBOL/400	3.0	-	-	-
6	ILE COBOL/400 - *PRV ILE COBOL/400	1.0	-	-	-
<b>5763-CD1</b>					
Base	CODE/400	6.5	34.2	14.9	-
<b>5763-CF1</b>					
Base	Point-of-Sale Communications Utility/400	5.0	-	-	-
<b>5763-CM1</b>					
Base	Communications Utilities/400	4.25	-	-	-
<b>5763-CP3</b>					
Base	CallPath for OS/400	3.5	-	-	-
<b>5763-CR1</b>					
Base	Cryptographic Support/400	2.75	-	-	-
<b>5763-CX2</b>					
Base	ILE C/400	8.0	-	-	-
1	ILE C *PRV Compiler Support	1.5	-	-	-
<b>5763-DB1</b>					
Base	AS/400 System/38 Utilities	4.5	-	-	-

Figure D-4 (Page 3 of 6). Licensed program time information

Licensed Program Identifier		Base Value <sup>1</sup>	Factors Influencing Installation Time		
Part	Description		Multiprocess Storage <sup>2</sup>		Documents and Folders <sup>3</sup>
			*PGM	*LNG	
<b>5763-DCT</b>					
Base	Language Dictionaries for OS/400	1.0	–	–	–
1	Afrikaans Dictionary	0.5	–	NA	–
2	Dutch Modern Dictionary	0.5	–	NA	–
3	Brazilian Portuguese Dictionary	0.5	–	NA	–
4	Catalan Dictionary	0.5	–	NA	–
5	Danish Dictionary	0.5	–	NA	–
6	German Dictionary	0.5	–	NA	–
7	Swiss German Dictionary	0.5	–	NA	–
8	Spanish Dictionary	0.5	–	NA	–
9	French National Dictionary	0.5	–	NA	–
10	French Canadian Dictionary	0.5	–	NA	–
11	Greek Dictionary	0.5	–	NA	–
12	Icelandic Dictionary	0.5	–	NA	–
13	Italian Dictionary	0.5	–	NA	–
14	US Legal Dictionary	0.5	–	NA	–
15	US Medical Dictionary	0.5	–	NA	–
16	Dutch Dictionary	0.5	–	NA	–
17	Norwegian Dictionary	0.5	–	NA	–
18	Norwegian Nynorsk Dictionary	0.5	–	NA	–
19	Portuguese Dictionary	0.5	–	NA	–
20	Finnish Dictionary	0.5	–	NA	–
21	Swedish Dictionary	0.5	–	NA	–
22	UK English Dictionary	0.5	–	NA	–
23	US English Dictionary	0.5	–	NA	–
24	Russian Dictionary	0.5	–	NA	–
<b>5763-DFH</b>					
Base	CICS/400	15.0	–	–	–
1	CICS/400 - Sample Applications	1.0	–	–	–
<b>5763-DP1</b>					
Base	DataPropagator Relational Capture and Apply/400	5.0	–	–	–
<b>5763-DS1</b>					
Base	AS/400 Business Graphics Utility	1.5	–	–	–
<b>5763-ES1</b>					
Base	IBM SystemView OMEGAMON Services/400	11.5	–	–	–
1	IBM AUTOMATED FACILITIES**/400	4.5	–	–	–
2	IBM OMEGAVIEW**/400 for OS/2	5.5	19.2	–	Yes
<b>5763-FNT</b>					
Base	Advanced Function Printing Fonts/400	1.75	–	–	–
1	AS/400 Font–Sonoran Serif <sup>c</sup>	1.0	–	NA	–
2	AS/400 Font–Sonoran Serif Headliner	1.0	–	NA	–
3	AS/400 Font–Sonoran Sans Serif <sup>d</sup>	1.0	–	NA	–
4	AS/400 Font–Sonoran Sans Serif Headliner	1.0	–	NA	–
5	AS/400 Font–Sonoran Sans Serif Condensed	1.0	–	NA	–
6	AS/400 Font–Sonoran Sans Serif Expanded	1.0	–	NA	–
7	AS/400 Font–Monotype Garamond**	1.0	–	NA	–
8	AS/400 Font–Century Schoolbook**	1.0	–	NA	–
9	AS/400 Font–Pi and Specials	1.0	–	NA	–
10	AS/400 Font–ITC Souvenir**	1.0	–	NA	–
11	AS/400 Font–ITC Avant Garde Gothic**	1.0	–	NA	–
12	AS/400 Font–Math and Science	1.0	–	NA	–
13	AS/400 Font–DATA1	1.0	–	NA	–
14	AS/400 Font–APL2*	1.0	–	NA	–
15	AS/400 Font–OCR A and OCR B	1.0	–	NA	–

# Estimating Installation Time

Figure D-4 (Page 4 of 6). Licensed program time information

Licensed Program Identifier		Base Value <sup>1</sup>	Factors Influencing Installation Time		
Part	Description		Multiprocess Storage <sup>2</sup>		Documents and Folders <sup>3</sup>
			*PGM	*LNG	
<b>5763-FN1</b>					
Base	Advanced Function Printing DBCS Fonts for OS/400	1.75	-	NA	-
1	AS/400 Font (DBCS)-Japanese	6.0	72.9	NA	-
2	AS/400 Font (DBCS)-Korean	2.0	23.2	NA	-
3	AS/400 Font (DBCS)-Traditional Chinese	1.0	13.2	NA	-
4	AS/400 Font (DBCS)-Simplified Chinese	1.5	-	NA	-
5	AS/400 Font (DBCS)-Thai	1.0	-	NA	-
<b>5763-FS1</b>					
Base	OSI File Services/400	18.0	18.3	-	-
<b>5763-JS1</b>					
Base	Job Scheduler for OS/400	15.0	-	-	-
<b>5763-MG1</b>					
Base	Managed System Services for OS/400	30.0	-	-	-
<b>5763-MQ2</b>					
Base	MQSeries for OS/400	1.0	-	-	-
1	MQSeries for OS/400 - Samples	1.5	-	NA	-
2	MQSeries for OS/400 - Admin Application	2.5	-	-	-
<b>5763-MS1</b>					
Base	OSI Message Services/400	16.0	-	-	-
<b>5763-MW1</b>					
Base	ManageWare/400	16.0	-	-	Yes
1	ManageWare/400 - Windows	1.0	-	-	Yes
<b>5763-OS1</b>					
Base	OSI Communications Subsystem/400	16.0	-	-	-
<b>5763-PD1</b>					
Base	Application Program Driver/400	17.0	-	-	-
<b>5763-PL1</b>					
Base	AS/400 PL/I	2.0	-	-	-
<b>5763-PM1</b>					
Base	Performance Management/400	3.5	-	-	-
<b>5763-PS1</b>					
Base	AS/400 Pascal	2.0	-	-	-
<b>5763-PT1</b>					
Base	Performance Tools/400	8.0	12.4	-	-
1	Performance Tools/400 - Manager Feature	3.75	-	-	-
2	Performance Tools/400 - Agent Feature	1.0	-	-	-
<b>5763-PW1</b>					
Base	Application Development ToolSet/400 - SEU	3.0	-	-	-
1	ADTS/400	11.75	-	-	-
2	ADTS/400 - App Dev Manager	7.0	-	-	-
3	ADTS/400 - AppDict Services	19.0	-	-	-
<b>5763-QU1</b>					
Base	Query/400	1.75	-	-	-
<b>5763-RD1</b>					
Base	R/DARS	6.0	-	-	-
1	R/DARS Spooled File Archive Feature	8.0	-	-	-
2	R/DARS Object Archive Feature	3.0	-	-	-
3	R/DARS Record Archive Feature	2.0	-	-	-

Figure D-4 (Page 5 of 6). Licensed program time information

Licensed Program Identifier		Base Value <sup>1</sup>	Factors Influencing Installation Time		
Part	Description		Multiprocess Storage <sup>2</sup>		Documents and Folders <sup>3</sup>
			*PGM	*LNG	
<b>5763-RG1</b>					
Base	ILE RPG for OS/400	3.25	-	-	-
1	ILE RPG IBM System/36-Compatible RPG II	2.0	-	-	-
2	ILE RPG IBM System/38-Compatible RPG III	1.5	-	-	-
5	ILE RPG - RPG/400	1.75	-	-	-
6	ILE RPG - *PRV ILE RPG	1.5	-	-	-
<b>5763-SA2</b>					
Base	Integration Services for FSIOF	6.5	44.8	48.5	-
<b>5763-SA3</b>					
Base	OS/400 Integration for Novell NetWare	1.0	-	-	-
<b>5763-SM1</b>					
Base	System Manager for OS/400	11.0	-	-	Yes
<b>5763-ST1</b>					
Base	DB2 Query Manager and SQL Development Kit for OS/400	3.0	-	-	-
<b>5763-SVM</b>					
Base	SystemView Base for OS/400	0.5	-	-	-
1	SystemView Base for OS/400- Launch window	1.5	-	-	-
<b>5763-SV2</b>					
Base	ADSTAR Distributed Storage Manager for AS/400	7.5	-	-	-
<b>5763-TC1</b>					
Base	TCP/IP Connectivity Utilities/400	15.5	-	-	-
<b>5763-UB1</b>					
Base	Ultimedia Ultimedia Business Conferencing/400	11.0	-	-	Yes
1	Business Conferencing/400 - Windows	2.75	-	-	Yes
2	Business Conferencing/400 - OS/2	3.0	-	-	Yes
3	Person to Person for OS/2	2.75	-	-	Yes
4	Person to Person for Windows	2.75	-	-	Yes
<b>5763-US1</b>					
Base	Client Access Ultimedia Tools/400	1.75	-	-	Yes
1	Ultimedia Perfect Image/400 - OS/2 SBCS	2.25	-	NA	Yes
3	Ultimedia Perfect Image/400 - OS/2 Samples	3.0	27.9	NA	Yes
4	Ultimedia Builder/400 - OS/2 SBCS	6.5	48.6	NA	Yes
6	Ultimedia Builder/400 - OS/2 Samples	18.0	143.9	NA	Yes
<b>5763-VG1</b>					
Base	VisualGen Host Services for OS/400	1.0	-	-	-
<b>5763-VR1</b>					
Base	VRPG Client for OS/2	20.0	76.0	17.8	-
<b>5763-WP1</b>					
Base	OfficeVision for OS/400	9.25	-	-	Yes
1	OfficeVision for OS/400-Text Search	7.0	-	-	Yes
2	OfficeVision for OS/400-Calendar	6.75	-	-	Yes
3	OfficeVision for OS/400-Mail	2.25	-	-	Yes
4	OfficeVision for OS/400-Editor	1.5	-	NA	Yes
<b>5763-XA1</b>					
Base	Client Access/400 Family	1.25	-	-	Yes
1	Client Access/400 - PC Tools Folder	2.25	13.0	-	Yes

## Estimating Installation Time

Figure D-4 (Page 6 of 6). Licensed program time information

Licensed Program Identifier		Base Value <sup>1</sup>	Factors Influencing Installation Time		
Part	Description		Multiprocess Storage <sup>2</sup>		Documents and Folders <sup>3</sup>
			*PGM	*LNG	
<b>5763-XB1</b>					
Base	Client Access/400 DOS Ext Memory	1.25	–	–	Yes
1	Client Access/400 - Ext DOS SBCS	10.0	11.8	–	Yes
2	Client Access/400 - Ext DOS DBCS	6.5	–	–	Yes
3	Client Access/400 - Ext DOS RUMBA** SBCS	4.5	–	–	Yes
4	Client Access/400 - Ext DOS RUMBA DBCS	4.5	–	–	Yes
5	Client Access/400 - Ultimeia Facilities	2.0	–	–	Yes
<b>5763-XC1</b>					
Base	Client Access/400 for Windows 3.1	1.25	–	–	Yes
1	Client Access/400 - Windows 3.1 SBCS	23.0	13.2	–	Yes
2	Client Access/400 - Windows 3.1 DBCS	23.0	–	–	Yes
3	Client Access/400 - Windows 3.1 RUMBA SBCS	11.5	–	–	Yes
4	Client Access/400 - Windows 3.1 RUMBA DBCS	11.0	–	–	Yes
5	Client Access/400 - Windows 3.1 PC5250	15.5	–	–	Yes
6	Client Access/400 - GraphicOps for Windows	6.0	–	–	Yes
7	Client Access/400 - Ultimeia Facilities	6.5	–	–	Yes
8	Client Access/400 - Graphical Access for OS/400	4.0	–	–	Yes
9	Client Access/400 - SysObject Access for OS/400	11.0	–	–	Yes
<b>5763-XD1</b>					
Base	Client Access/400 for Windows 95	11.5	50.0	50.0	Yes
<b>5763-XF1</b>					
Base	Client Access/400 for OS/2	1.25	–	–	Yes
1	Client Access/400 - OS/2 SBCS	6.0	–	–	Yes
2	Client Access/400 - OS/2 DBCS	5.75	–	–	Yes
3	Client Access/400 - OS/2 RUMBA SBCS	4.5	–	–	Yes
5	Client Access/400 - OS/2 Communications Mgr	2.0	–	NA	Yes
6	Client Access/400 - GraphicOps for OS/2	3.0	–	–	Yes
7	Client Access/400 - Ultimeia Facilities	2.5	–	–	Yes
<b>5763-XG1</b>					
Base	Client Access for Optimized OS/2	62.0	23.4	–	Yes
1	Client Access/400 - RUMBA Optimized for OS/2	10.0	–	–	Yes
2	Client Access/400 - PC5250 Optimized for OS/2	12.0	–	–	Yes
3	Client Access/400 - GraphicOps OS/2 client	8.0	–	–	Yes
4	Client Access/400 - Ultimeia Facilities	5.0	–	–	Yes
5	Client Access/400 - Graphical Access for OS/400	4.0	–	–	Yes
<b>5763-XL1</b>					
Base	Client Access for DOS	1.25	–	–	Yes
1	Client Access/400 - DOS SBCS	8.75	–	–	Yes
2	Client Access/400 - DOS DBCS	4.75	–	–	Yes
<b>5763-XZ1</b>					
Base	LAN Server/400	7.25	11.6	84.0	Yes

### Notes:

- Do not** use only these values for your time estimate; the result will not be accurate. Use "Work Sheet 2. Licensed Programs" on page D-10 and the multiplication factors in Figure D-3 on page D-12 to calculate the single-process installation time for the licensed programs you plan to install.
- When a product has a numerical value shown in this column, use the value shown with the example within "Additional Requirements for Multiprocess" on page D-4 to determine the extra storage required to use multiprocess installation. If no value is shown, there is no additional storage requirement for multiprocess installation.
- The products indicated can take longer to install. See "Conditions that Affect Installation Time" on page D-2 for more information.

## Estimating Time for Conversions

The number and type of conversions that occur when you install the new release can have a significant affect on your installation time. *Only the conversions that add to your installation time are discussed in the following paragraphs.*

More conversions occur if you are skipping a release level. You need to consider the time for conversions in both the release you are skipping and in the new release. To estimate the time that conversions will take during your installation, you may need to gather information about specific object types on your system.

**Note:** If you are replacing V3R1M0 with V3R2M0, there are no conversions that will significantly affect your installation time.

### Conversions During Installation—Replacing V2R3M0 or V3R0M5 with V3R2M0

If you are installing the V3R2M0 operating system over V2R3M0 or V3R0M5, you should allow time in your estimate for data conversions caused by new function that was introduced in V3R1M0. “Work Sheet 3. Conversions During Installation” on page D-20 helps you estimate the affect these conversions have on your installation time.

- Enhanced SQL Catalog Support

Data conversions occur while installing database files to enable enhanced SQL catalog support. The system cross reference file is converted. Each new SQL collection is converted to use the new system cross reference file. SRC C900 2970 is displayed while this conversion occurs. The conversion time depends on the number of files on the system and the number of SQL collections.

- Directory File System

Data conversions occur while installing the operating system to support the Directory File System. The authorized user table and each user profile on the system are converted. The conversion time depends on the number of user profiles on the system. No SRC is displayed during this conversion.

### Work Sheet 3. Conversions During Installation

This work sheet helps you estimate the time that is needed for the data conversions that occur while installing V3R2M0 over V2R3M0 or V3R0M5. See "Estimating Time for Conversions" on page D-19 for a description of the conversions.

\_\_\_ **Step 1.** Determine a reference number based on the number of SQL collections on your system. To do so:

a. Enter the command:

```
DSPOBJD OBJ(QSYS/QSQJRN) OBJTYPE(*JRN) OUTPUT(*OUTFILE)
        DETAIL(*BASIC) OUTFILE(QTEMP/filename)
```

where filename is the name of the output file to be created.

b. Enter the command:

```
RUNQRY QRYFILE((QTEMP/filename)) OUTFORM(*SUMMARY)
```

The number displayed next to the COUNT field is the estimated number of SQL collections.

c. Multiply the number of SQL collections by the constant 3.5 minutes per collection.

Number of SQL collections \_\_\_\_\_ x 3.5 = \_\_\_\_\_

\_\_\_ **Step 2.** Determine a reference number based on the number of user profiles on your system. To do so:

a. Enter the command:

```
DSPOBJD OBJ(QSYS/*ALL) OBJTYPE(*USRPRF) OUTPUT(*OUTFILE)
        DETAIL(*BASIC) OUTFILE(QTEMP/filename)
```

where filename is the name of the output file to be created.

b. Enter the command:

```
RUNQRY QRYFILE((QTEMP/filename)) OUTFORM(*SUMMARY)
```

The number displayed next to the COUNT field is the number of user profiles.

c. Multiply the number of user profiles by the constant 0.1 minutes per user profile.

Number of user profiles \_\_\_\_\_ x 0.1 = \_\_\_\_\_

\_\_\_ **Step 3.** Add the results of step 1c and step 2c. Then, divide the sum by 60. The result is the **conversion reference number** in hours.

\_\_\_\_\_

\_\_\_ **Step 4.** Determine the conversion multiplication factor.

a. Locate your processor model along the bottom of the chart in Figure D-5 on page D-22.

**Note:** The horizontal axis summarizes the AS/400 product range in very broad groupings. The groupings only apply to

installation performance and should not be used for any other performance characteristics.

- b. Determine your approximate location within the zone by considering the amount of storage and system memory available.
- c. Estimate the multiplication factor that corresponds to your location within your zone using the numbers on the left side of the chart. This is your ***conversion multiplication factor***.

\_\_\_\_\_

\_\_\_ **Step 5.** Multiply the conversion reference number (step 3) by the conversion multiplication factor (step 4c).

The result is you ***total estimated time for conversions*** in hours. Write this number in the blank provided for the time in step 5 of the checklist on page D-6.

\_\_\_\_\_

# Estimating Installation Time

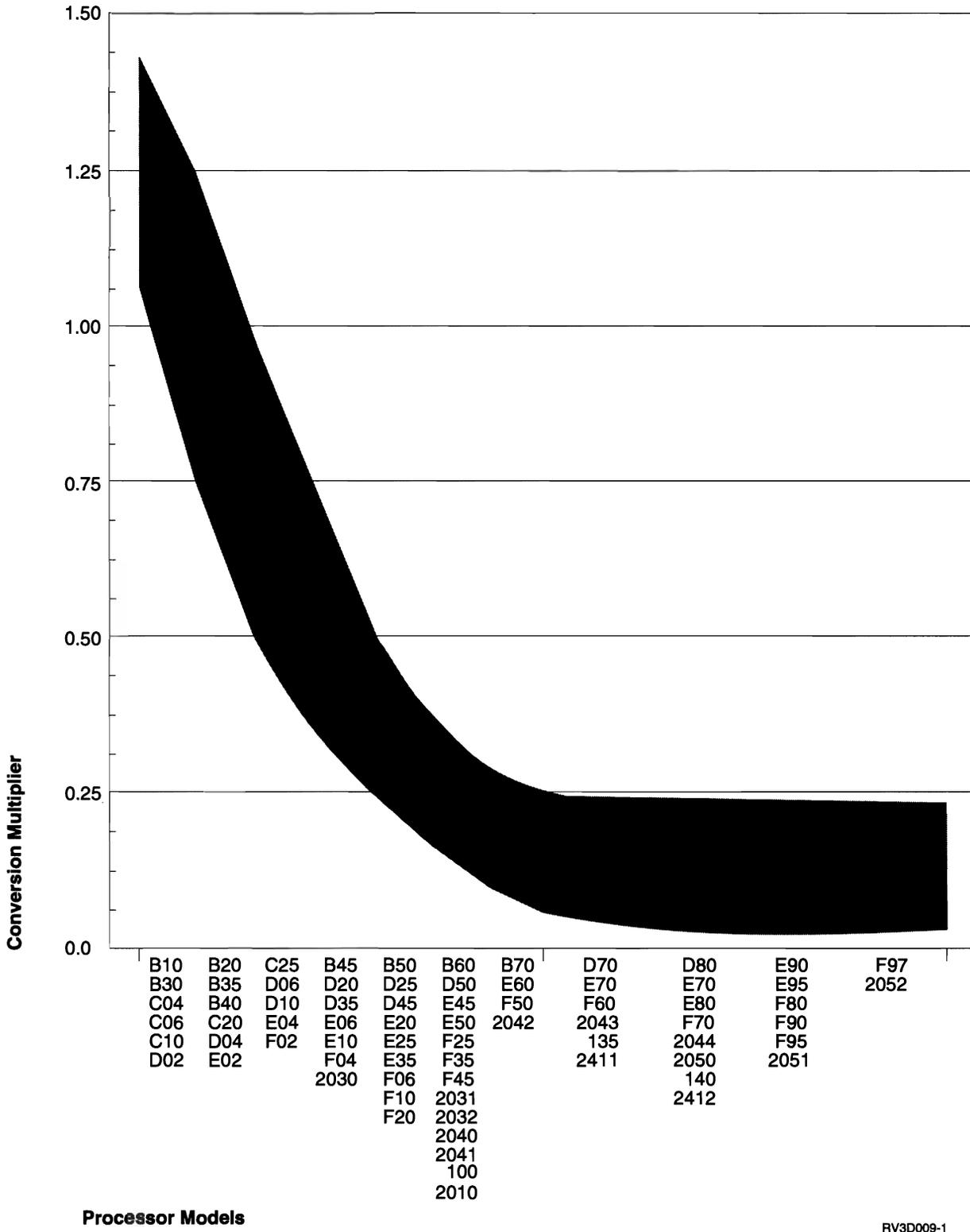


Figure D-5. Conversion Multipliers

## Conversions During First Save—Replacing V2R3M0 or

V3R0M5 with V3R2M0

Some conversions occur the first time an object is used. Frequently, this occurs when you save the system after the installation is complete. These conversions can significantly increase the time needed to save the system. (If you run applications before saving the system, some conversions will occur during the applications. Fewer conversions remain to occur during the save operations.)

New object authorities were added with V3R1M0 OS/400. If you are replacing V2R3M0 or V3R0M5 with V3R2M0, each object on the system is converted to allow for the new authorities. The private authorities in each user profile object are also converted to store the new authorities. The conversion time depends on the following:

- The number of objects on the system
- The number of user profiles
- The number of private authorities

The time these conversions add to your save operations varies widely. A system that is using security level 10 or 20 may have fewer private authorities to convert.

## Data Protection Mechanisms

If your system is using mirroring, checksums, or an implementation of a RAID-5 technique in the system auxiliary storage pool (ASP), the time to install will increase significantly. Use the following table to determine the multiplication factor to use to estimate the time it takes to install the Licensed Internal Code, operating system, and licensed programs. Mirroring, checksums, and implementations of RAID-5 techniques do not affect the duration of saves.

Figure D-6. Multiplication factors for data protection mechanism time estimates

	Typical Tape Drive	
	Fast (3480, 3490)	Medium (2440, 9348, 3422)
Mirrored	1.1	1.1
Checksums	4.4	3.0
9337 implementations of RAID-5		
Model 1xx, 1 fully populated 9337	2.2	2.2
Model 1xx, 6 fully populated 9337s	1.4	1.4
Model 2xx, 1 fully populated 9337	1.4	1.0
6502 Implementation of RAID-5 technique on Advanced Series	1.3	1.0

**Note:** If your tape device slower (not listed), there is no affect.

For example, if an install takes 1.5 hours using a 3490 tape drive, it would take approximately 1.65 hours (1.5 x 1.1) on a mirrored configuration, approximately 6.6 hours (1.5 x 4.4) on a checksums configuration, and 2 to 3.3 hours on a 9337 with implementation of a RAID-5 technique.

**Estimating Installation Time**



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## Appendix E. Additional Installation Information

This appendix contains information that may help to streamline and to prevent problems in your installation process. It is divided into a general information section and several other sections, based on the release level you currently have installed on your system.

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### Blank Displays

During the installation process, you can see some blank displays. Some of these are predictable and the instructions give an approximate amount of time when there appears to be no installation activity. Other blank displays are less predictable because of unique situations on your system. If the processor light is blinking or SRC codes are changing, the installation process is active. If the processor light goes out, the attention light turns on, and an SRC code is displayed on the control panel, go to Appendix A, "Recovery Procedures" on page A-1 and follow the instructions.

---

### System Password

Support was added to detect processor model changes on all model AS/400 systems through the use of a 16-character system password. The purpose of the system password is to identify all model changes to help maintain the quality and integrity of the AS/400 system and to ensure the protection of IBM's intellectual property including IBM Licensed Internal Code and licensed programs.

New systems are shipped from the factory with the correct system password already installed. A new system password is required for each model change or for conditions that indicate probable change of ownership. The new system password, required at the time of the first IPL, is provided by IBM. If you do not have the system password when it is needed, you must contact your marketing representative to place an AS/400 system password RPQ (Request for Price Quotation) order. The RPQ order is received by IBM manufacturing, which sends the system password to you for installation. If the correct system password is not entered, you can select a system password bypass period to allow you to obtain the correct system password from your marketing representative. If the correct system password is not available and the bypass period expires, the system will not complete the next IPL unless the correct system password is installed. While in bypass mode, the system indicates the time remaining until the bypass period expires through control console messages.

For more details on the system password, see the *New Release Planning for V3R2* book, SA41-3100, or the *System Startup and Problem Handling* book, SC41-3206.

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### How to Calculate the Space Required for Cross-Reference Information

Beginning with V3R1M0, the system provides more cross-reference information about the definitions of your database fields. If you are upgrading from an earlier version than V3R1M0 and you have many database files with many fields, this new information might have a noticeable effect on your disk space requirements.

## Additional Installation Information

If your source system is running a version earlier than V3R1M0, calculate the space that required for the increase in database cross-reference information by doing the following:

**Note:** Some of the steps in this procedure create large work files. Make sure that you are signed on with a user profile that has the storage limit set to \*NOMAX and that your system is not critically short on disk storage.

- \_\_\_ **Step 1.** Type `DSPFD QADBFDEP` and press the Enter key. You are shown the Display Spooled File display,
- \_\_\_ **Step 2.** In the *Control* field at the top of the display, type `*BOT` and press the Enter key.
- \_\_\_ **Step 3.** Locate the field that is called *Total records* on the display.
- \_\_\_ **Step 4.** Write the total number of records here: \_\_\_\_\_
- \_\_\_ **Step 5.** Press F12 (Cancel).
- \_\_\_ **Step 6.** Type `DSPFD QADBREF` and press the Enter key. You are shown the Display Spooled File display,
- \_\_\_ **Step 7.** In the *Control* field at the top of the display, type `*BOT` and press the Enter key.
- \_\_\_ **Step 8.** Locate the field that is called *Total records* on the display.
- \_\_\_ **Step 9.** Write the total number of records here: \_\_\_\_\_
- \_\_\_ **Step 10.** Press F12 (Cancel).
- \_\_\_ **Step 11.** Type `DSPOBJD QADBXFIL *FILE` and press the Enter key.
- \_\_\_ **Step 12.** On the Display Object Description display, locate the value in the *Size* column for the file. This is the size in bytes of the QADBXFIL file.
- \_\_\_ **Step 13.** Write the size in bytes here: \_\_\_\_\_
- \_\_\_ **Step 14.** Calculate the size increase for the cross-reference information:  
$$\begin{array}{r} 512000 \\ + \text{ (amount from step 4 + 40)} \\ + \text{ (amount from step 9 } \times \text{ 70)} \\ + \text{ (amount from step 13 } \times \text{ 2.7)} \end{array}$$
- \_\_\_ **Step 15.** Write the calculated amount here: \_\_\_\_\_
- \_\_\_ **Step 16.** Press F12 (Cancel).
- \_\_\_ **Step 17.** Create an output file for the DSPFD command by typing the following:  
`CRTDUPOBJ OBJ(QADSPFFD) FROMLIB(QSYS) OBJTYPE(*FILE)  
TOLIB(QGPL) NEWOBJ(DSPFFD0)`
- \_\_\_ **Step 18.** Set the size limit for the output file to \*NOMAX by typing the following:  
`CHGPF FILE(QGPL/DSPFFD0) SIZE(*NOMAX).`
- \_\_\_ **Step 19.** Submit a job to count the number of database file fields on your system. This is a long-running job. Type the following:  
`SBMJOB CMD(DSPFFD FILE(*ALL/*ALL)  
OUTPUT(*OUTFILE) SYSTEM(*LCL)  
OUTFILE(QGPL/DSPFFD0))`

\_\_\_ **Step 20.** When the job has finished, use a query tool to count the number of records in the output file that have the WHFTYP field equal to P or L. This is the number of database file fields that are defined on your system.

**Note:** You can use the Work with Submitted Jobs (WRKSBJJOB) command to determine when the job has finished.

Steps 21 through 33 provide an example of the displays to create a query by using Query/400:

\_\_\_ **Step 21.** Type WRKQRY and press the Enter key.

\_\_\_ **Step 22.** On the Work with Queries display, select option 1 (Create) and assign a name for your query:

```

Work with Queries
Type choices, press Enter.
Option . . . . . 1          1=Create, 2=Change, 3=Copy, 4=Delete
                          5=Display, 6=Print definition
                          8=Run in batch, 9=Run
Query . . . . . grow1      Name, F4 for list
Library . . . . . qgp1     Name, *LIBL, F4 for list
    
```

\_\_\_ **Step 23.** On the Define Query display, select the following options:

```

Define the Query
Query . . . . . : GROW1      Option
Library . . . . . : QGPL      CCSID .

Type options, press Enter. Press F21 to select
1=Select

Opt  Query Definition Option
  1  Specify file selections
     Define result fields
     Select and sequence fields
  1  Select records
     Select sort fields
     Select collating sequence
     Specify report column formatting
     Select report summary functions
     Define report breaks
  1  Select output type and output form
     Specify processing options
    
```

\_\_\_ **Step 24.** On the Specify File Selections display, type the name of the output file that you created in step 17 on page E-2:

```

Specify File Selections
Type choices, press Enter. Press F9 to specify an additional
file selection.
File . . . . . DSPFFDO      Name, F4 for list
Library . . . . . QGPL      Name, *LIBL, F4 for list
Member . . . . . *FIRST     Name, *FIRST, F4 for list
Format . . . . . *FIRST     Name, *FIRST, F4 for list
    
```

\_\_\_ **Step 25.** Press the Enter key to confirm your selection.

\_\_\_ **Step 26.** Complete the Select Records display as shown:

## Additional Installation Information

```

                                     Select Records
Type comparisons, press Enter. Specify OR to start each new group.
Tests: EQ, NE, LE, GE, LT, GT, RANGE, LIST, LIKE, IS, ISNOT...

AND/OR  Field          Test  Value (Field, Number, 'Characters', or ...)
        WHFTYP        EQ    'P'
OR      WHFTYP        EQ    'L'
```

- \_\_\_ **Step 27.** Press the Enter key.
- \_\_\_ **Step 28.** On the Select Output Type and Output Form display, specify the following:
  - 2 (Printer) for the *Output type* field.
  - 2 (Summary only) for the *Form of output* field.

```

                                     Select Output Type and Output Form
Type choices, press Enter.

Output type . . . . . 2      1=Display
                                     2=Printer
                                     3=Database file

Form of output . . . . . 2    1=Detail
                                     2=Summary only

Line wrapping . . . . . N    Y=Yes, N=No
Wrapping width . . . . .    Blank, 1-378
Record on one page . . . . . N  Y=Yes, N=No
```

- \_\_\_ **Step 29.** Press the Enter key.
- \_\_\_ **Step 30.** You are shown several displays to define how your printed output should look. You can accept the default values on each display by pressing the Enter key.

You return to the Define the Query display.
- \_\_\_ **Step 31.** Press F3 (Exit). You are shown the Exit this Query display.
- \_\_\_ **Step 32.** If you have many database files on your system, this may be a long-running query. Consider submitting the job to run in batch and directing the output to a printer. You can use the *Run option* field on the Exit this Query display.
- \_\_\_ **Step 33.** Your query output shows the number of database fields on your system:

```

                                     Display Report
Query . . . : QGPL/GROW1
Position to line . . . . .
Line . . . + . . . 1 . . . +
000001 FINAL TOTALS
000002 COUNT 4,860
```

- \_\_\_ **Step 34.** Write the number of fields (the count from your query) here: \_\_\_\_\_
- \_\_\_ **Step 35.** Delete the output file by typing the following:  
**DLTF FILE(QGPL/DSPFFD0)**
- \_\_\_ **Step 36.** Create an output file for the DSPFD command by typing the following:

CRTDUPOBJ OBJ(QAFDACC) FROMLIB(QSYS) OBJTYPE(\*FILE)  
TOLIB(QGPL) NEWOBJ(ACCPH0)

\_\_\_ **Step 37.** Set the size limit for the output file to \*NOMAX by typing the following:

CHGPF FILE(QGPL/ACCPH0) SIZE(\*NOMAX)

\_\_\_ **Step 38.** Submit a job to count the number of keyed database file fields on your system. This is a long-running job. Type the following:

SBMJOB CMD(DSPFD FILE(\*ALL/\*ALL) TYPE(\*ACCPH)  
FILEATR(\*LF \*PF) OUTPUT(\*OUTFILE) SYSTEM(\*LCL)  
OUTFILE(QGPL/ACCPH0))

\_\_\_ **Step 39.** Use a query tool to count the number of records in the output file that have the APACCP field equal to K. This is the number of keyed fields for database files that are defined on your system.

Use steps 21 through 33 as an example. When you are shown the Select Records display, complete it as shown:

AND/OR	Field	Test	Value (Field, Number, 'Characters', or ...)
	APACCP	EQ	'K'

This is a long-running query. Consider submitting it to batch.

\_\_\_ **Step 40.** Write the number of keyed fields here: \_\_\_\_\_

\_\_\_ **Step 41.** Calculate the size of the new cross-reference file for database fields:

(amount from step 34 × 440)  
+ (amount from step 40 × 145)

\_\_\_ **Step 42.** Write the calculated amount here: \_\_\_\_\_

\_\_\_ **Step 43.** Delete the output file by typing the following:

DLTF FILE(QGPL/ACCPH0)

\_\_\_ **Step 44.** Add the amount in step 15 on page E-2 and the amount in step 42.

\_\_\_ **Step 45.** Divide the amount in step 44 by 1 000 000 to convert the amount to megabytes.

Include this amount in step 3b on page 3-23 when you calculate your storage requirements for V3R2M0.

## Verify Electronic Customer Support

The electronic customer support function connects the AS/400 to the IBM service system. It is used for hardware and software problem analysis, reporting, and management. Electronic customer support will enable a call to the system and allow remote hardware and software problem analysis, reporting, and management.

If you are unsure whether you use electronic customer support on your system, can do the following to test if it is configured:

\_\_\_ **Step 1.** Test electronic customer support by typing the command **SNDSRVRQS** and press the Enter key. If all parameters are correct, the test should complete with the message Test request complete.

## Additional Installation Information

If you receive any other response, continue with step 2 on page E-6 and complete this procedure.

- \_\_\_ **Step 2.** The message **Error occurred while processing request** appears if a resource name that is not valid is used to identify the line for electronic customer support. If you see this message, type the command **WRKLIND** and press the Enter key. Ensure that the line description matches the resource name for the line that you are attempting to use for electronic customer support.
- \_\_\_ **Step 3.** The message **Modem command not valid** appears if no phone number is present. If you see this message, type **CALL QESPHONE** on the command line and press the Enter key. Verify that the phone numbers are correct.
- \_\_\_ **Step 4.** Enter the command **WRKCNTINF** and press the Enter key.
  - a. Select option 2 to work with local service information.
  - b. Select option 2 to change service contact information.
  - c. Verify that the contact information, including the phone numbers, is correct.
- \_\_\_ **Step 5.** Enter the command **SNDSVRQS** and press the Enter key. If you do not receive the test request complete message, contact your service representative.

---

## How to Set Up Electronic Customer Support

This procedure contains information and instructions on how to access the electronic customer support.

- \_\_\_ **Step 1.** Enter the electronic customer support information by performing the following:
  - a. Power on the modem that is connected to the electronic customer support feature line.
  - b. On the command line of the AS/400 Main Menu, type the following and press the Enter key:  
**CALL QESPHONE**

c. The Change Data Area (CHGDTAARA) display appears.

```

Change Data Area (CHGDTAARA)

Type choices, press Enter.

Data area specification:
  Data area . . . . . > QESTELE      Name, *LDA, *GDA, *PDA
  Library . . . . . > QUSRSYS       Name, *LIBL, *CURLIB
Substring specifications:
  Substring starting position . > 001      1-2000, *ALL
  Substring length . . . . . > 32        1-2000
New value . . . . . >
    
```

Bottom

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

\_\_\_ **Step 2.** Are you installing this system in the United States?

**Yes**                      **No**



Call your service representative for the IBM service support telephone numbers.

Go to step 3 of this procedure.

Does the Change Data Area (CHGDTAARA) display have the IBM service support numbers in the *New value* field?

**No**                      **Yes**



Go to step 5 on page E-8.

\_\_\_ **Step 3.** In the Change Data Area (CHGDTAARA) display, type the primary telephone number in the *New value* field.

**Note:** The United States support numbers for the *New value* field are:

East of the Mississippi River: 18005278207  
West of the Mississippi River: 18003270949

```

Change Data Area (CHGDTAARA)

Type choices, press Enter.

Data area specification:
  Data area . . . . . > QESTELE      Name, *LDA, *GDA, *PDA
  Library . . . . . > QUSRSYS       Name, *LIBL, *CURLIB
Substring specifications:
  Substring starting position . > 001      1-2000, *ALL
  Substring length . . . . . > 32        1-2000
New value . . . . . > 'SST918005278207
    
```

Bottom

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

**Notes:**

- a. Do not type spaces or separators as part of the telephone number.
- b. The first four positions of the *New value* field show the connection information:

- Modem speaker on (SS)

**Note:** For the 7857 modem, delete *SS* designation for modem speaker.

To have the modem speaker off when the *SS* command is not included, change the modem speaker value to "never on."

Refer to the modem manual for more information on changing configuration.

- Tone dialing (T) or pulse dialing (P)
- Outside line number (for example, 9).

Press the Enter key.

- \_\_\_ **Step 4.** The Change Data Area (CHGDTAARA) display appears again to allow you to enter the alternate support number.

```
Change Data Area (CHGDTAARA)
Type choices, press Enter.
Data area specification:
Data area . . . . . > QESTELE      Name, *LDA, *GDA, *PDA
Library . . . . . > QUSRSYS       Name, *LIBL, *CURLIB
Substring specifications:
Substring starting position . > 001      1-2000, *ALL
Substring length . . . . . > 32        1-2000
New value . . . . . > 'SST918003270949

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

Type the alternate support telephone number in the *New value* field and press the Enter key.

- \_\_\_ **Step 5.** Press the Exit key (PF3) as many times as necessary to return to the AS/400 Main Menu.

\_\_\_ **Step 6.** On the command line of the AS/400 Main Menu, type

**CHGMSGQ QSYSOPR \*BREAK**

and press the Enter key.

**Note:** The QSYSOPR message queue is in break mode, therefore, informational messages may appear on the display as you perform the remaining tasks.

If the Display Messages display appears, read the messages and follow the instructions. If a message needs a reply, *C* (cancel), *I* (ignore), or *R* (retry) appears at the end of the message. For more information about messages, see the "Handling Messages" section in the *System Startup and Problem Handling* book, SC41-3206.

\_\_\_ **Step 7.** On the command line of the AS/400 Main Menu,

**WRKCNTINF**

and press the Enter key.

a. The Work with Support Contact Information display appears.

```
Work with Support Contact Information System: XXXXXXXX

Select one of the following:

1. Work with question and answer (Q & A) database
2. Work with local service information
3. Work with IBM product information
4. Work with technical information exchange (TIE)
5. Work with upgrade order information
6. Work with service providers

Selection or command
===>

F3=Exit F4=Prompt F9=Retrieve F12=Cancel
(C) COPYRIGHT IBM CORP. 1980, 1996.
```

Select the *Work with Service providers* option and press the Enter key.

b. The Work with Service Providers display appears.

```
Work with Service Providers                               System: XXXXXXXX
Position to . . . . . Control point
Network ID . . . . .
Type options, press Enter.
1=Add 2=Change 3=Copy 4=Remove 5=Display
Opt   Control Point   Network ID   Description
  2   *IBMSRV          APPN          IBM Service Support
  -   USASYSPEP
F3=Exit  F5=Refresh  F12=Cancel
```

Type a 2 (Change) in the *Opt* field on the same line as \*IBMSRV information.

Press the Enter key.

c. The Change Service Provider display appears.

```
Change Service Provider                               System: XXXXXXXX
Control point . . . . . : *IBMSRV
Network ID . . . . . :
Description . . . . . : IBM Service Support
Type changes, press Enter.
Service support center telephone numbers:
Hardware service . . . . . 1-800-426-7378
Software service . . . . . 1-800-237-5511
F3=Exit  F5=Refresh  F12=Cancel Bottom
```

If you are installing this system in the United States, type the following on the Change Service Provider display:

Hardware service: 1-800-426-7378

Software service: 1-800-237-5511

If you are not installing this system in the United States, call your service representative for the service telephone numbers.

Press the Enter key.

d. The Work with Service Providers display appears again, with the message:

```
Information for service
provider *IBMSRV changed.
```

Press F12(Cancel) as many times as necessary to return to the Work with Support Contact Information display.

- e. Select the option to work with local service information on the Work with Support Contact Information display.
- f. The Work with Local Service Information display appears.

```
Work with Local Service Information          System:  XXXXXXXX
Select one of the following:
1. Display service contact information
2. Change service contact information

Selection
2

F3=Exit  F12=Cancel
```

Select the Change service contact information option.

- g. The Change Service Contact Information display appears.

```
Change Service Contact Information          System:  XXXXXXXX
Type changes, press Enter.
Company . . . . . A S JOURNEY, INC
Contact . . . . . N A VIGATOR
Contact telephone numbers:
  Primary . . . . . 1-444-1234567
  Alternative . . . . . 1-444-1234589
Fax telephone numbers:
  Primary . . . . . 1-444-1234590
  Alternative . . . . .
Mailing address:
  Street address . . . . . 999 Yellowbrick Rd.

  City/State . . . . . Big Green, KS
  Country . . . . . USA
  Zip code . . . . . 000000000000

F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel
```

Type the customer information. Page forward to the next display.

h. The following display appears:

```
System: XXXXXXXX  
  
Type changes, press Enter.  
  
National language version    2924  F4 for list  
Media for mailing PTFs . .  1     1=Automatic selection  
                               2=Half inch reel, 1600 bpi  
                               3=Half inch reel, 6250 bpi  
                               4=Half inch cartridge  
                               5=8 MM cartridge  
                               6=Quarter inch cartridge  
                               7=Quarter inch mini cartridge  
                               8=CD-ROM  
  
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel
```

i. Enter the correct information in the *National language version* and *Media for mailing PTFs information* fields.

**Note:** Press the Help key for more information about the *Media for mailing PTFs* field.

Press the Enter key.

j. The *Work with Local Service Information* display appears with the following message:

Data area QSSF created in library QUSRSYS.

**Note:** If the contact information had been created previously and you change it, the following message appears:

Support contact information updated.

k. Press F3 (Exit).

\_\_\_ **Step 8.** You have completed entering the information for the electronic customer support remote services. Go to the next step.

**Step 9.** Test the electronic customer support remote services.

This section contains instructions on how to perform the following tests:

- Connection/Registration test
- Operating System Preventive Service Planning (PSP) test

Ensure that you have entered the remote service information before you perform this procedure.

- a. On the AS/400 command line, type

**SNDSRVRQS \*TEST**

and press the Enter key.

- b. From the Send Test Request display, press the Enter key to send a test request to the IBM service support system.

Messages showing the status of the request are shown at the bottom of the display.

- c. If the test completes successfully, the AS/400 Main Menu appears with the following message:

Test request complete.

- d. Did the test complete successfully?

**Yes**

**No**

↓

Note the error message and contact your service representative.

**This ends the procedure.**

- e. To perform the operating system Preventive Service Planning (PSP) test, type the following on the AS/400 command line:

**SNDPTFORD SF98vrm**

and press the Enter key.

(where v = Version, r = Release, and m = modification)

- f. The Verify Contact Information display appears.

Press the Enter key to accept the information.

## Additional Installation Information

g. The Select Reporting Option display appears.

Select the option to send service request now and press the Enter key.

```

                                Select Reporting Option
                                System: XXX
Problem ID . . . . . : XXXXXXXXX
Current status . . . . . : READY
Problem . . . . . : Preventive service planning information
requested.

Select one of the following:

    1. Send service request now
    2. Do not send service request
    3. Report service request by voice

Selection:
    1

F3=Exit  F12=Cancel
```

Messages showing the status of the request will appear at the bottom of the display.

h. To display the PSP cover letter for V3R2M0, type the following on the AS/400 command line:

**DSPPTF 5763SS1 SF98320**

and press the Enter key.

\_\_\_ **Step 10.** You have completed the test of the electronic customer support remote services.

Press the Enter key.

The AS/400 Main Menu appears.

## Appendix F. National Language Version Feature Codes

Figure F-1 (Page 1 of 2). Feature Codes

Primary Language Feature Code	Secondary Language Feature Code	National Language
<b>Note:</b> The system prompts for the primary language and secondary language in the form 29xx. The secondary language feature code (57xx) is only used when ordering secondary languages. When you install OS/400, the system prompts for the primary language in the form 29xx. When you install the secondary language you select a feature code, in the form 29xx, from a list of national language feature code identifiers. For example, if you ordered French as a secondary language (5728), you would select 2928 from the list of feature codes when you install the secondary language.		
2911	5711	Slovenian
2912	5712	Croatian
2922	5722	Portuguese
2923	5723	Dutch Netherlands
2924	5724	English
2925	5725	Finnish
2926	5726	Danish
2928	5728	French
2929	5729	German
2931	5731	Spanish
2932	5732	Italian
2933	5733	Norwegian
2937	5737	Swedish
2938	5738	English Uppercase Support for Double-Byte Character Set (DBCS)
2939	5739	German Multinational Character Set
2940	5740	French Multinational Character Set
2942	5742	Italian Multinational Character Set
2950	5750	English Uppercase
2954	5754	Arabic
2956	5756	Turkish
2957	5757	Greek
2958	5758	Icelandic
2961	5761	Hebrew
2962	5762	Japanese Double-Byte Character Set (DBCS)
2963	5763	Belgian Dutch
2966	5766	Belgian French
2972	5772	Thai
2975	5775	Czech
2976	5776	Hungarian
2978	5778	Polish
2979	5779	Russian
2980	5780	Brazilian Portuguese
2981	5781	Canadian French
2984	5784	English Uppercase and Lowercase Support for Double-Byte Character Set (DBCS)

*Figure F-1 (Page 2 of 2). Feature Codes*

<b>Primary Language Feature Code</b>	<b>Secondary Language Feature Code</b>	<b>National Language</b>
2986	5786	Korean Double-Byte Character Set (DBCS)
2987	5787	Traditional Chinese Double-Byte Character Set (DBCS)
2989	5789	Simplified Chinese Double-Byte Character Set (DBCS) (PRC)
2994	5794	Slovakian
2996	5796	Portuguese Multinational Character Set
2998	5798	Farsi

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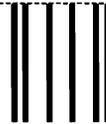
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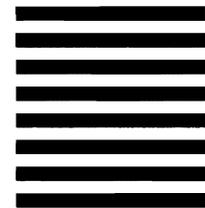
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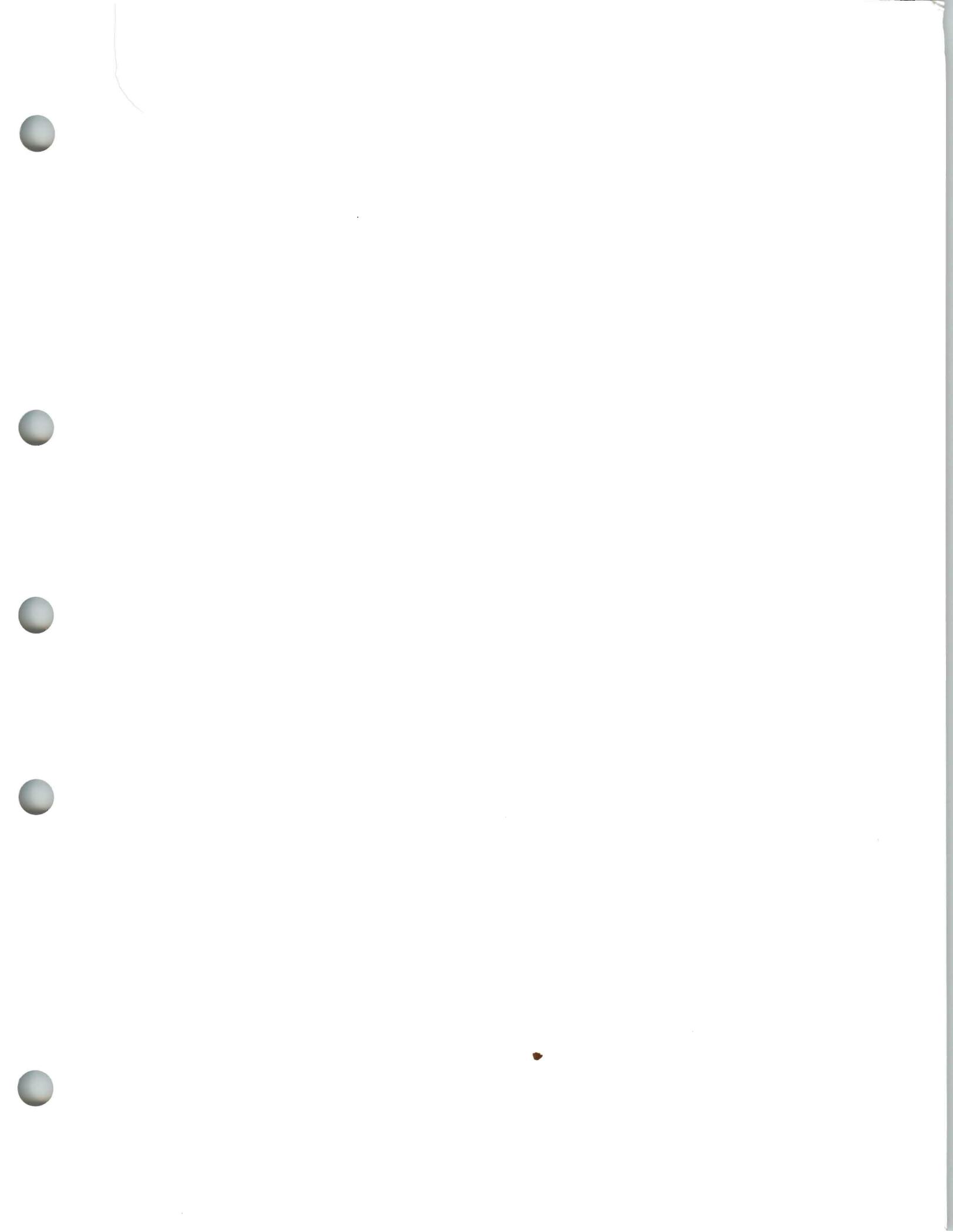


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