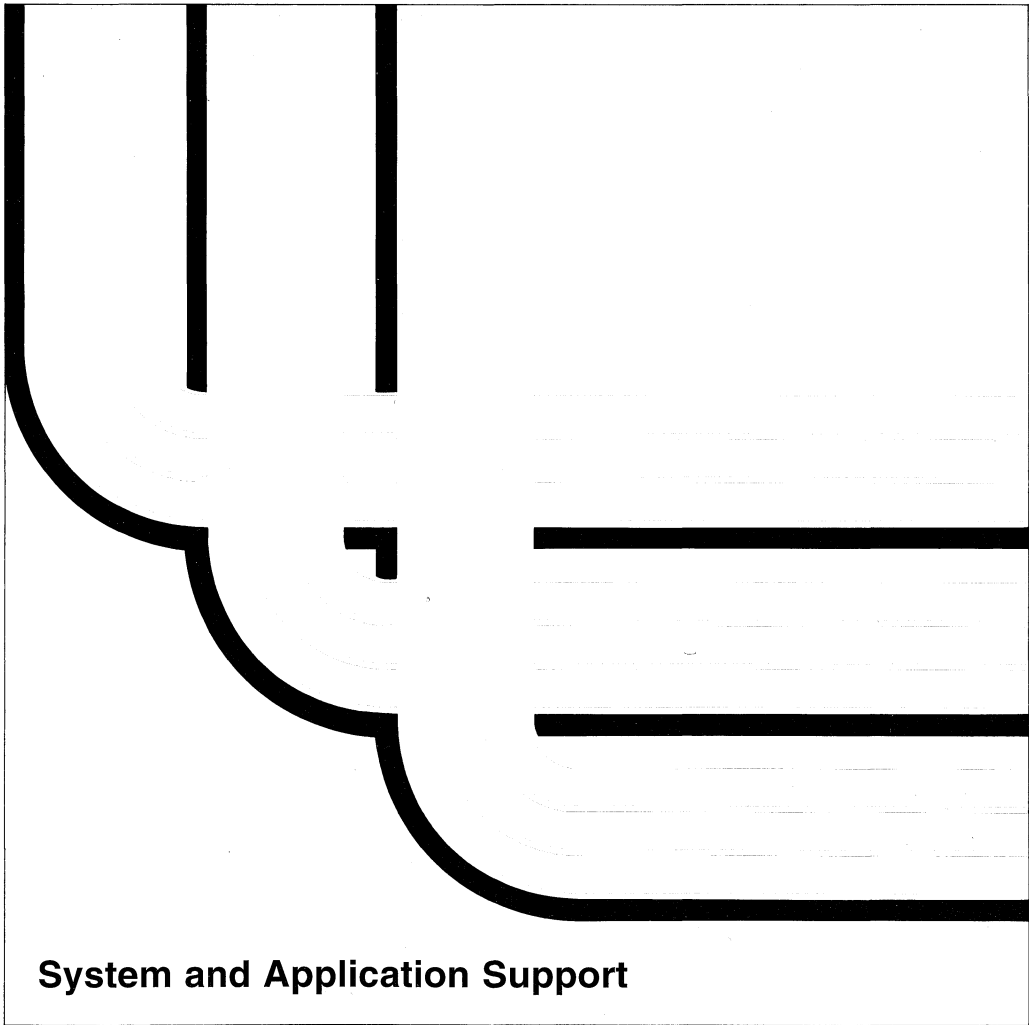


**Licensed Programs and New Release
Installation Guide**

Version 2



System and Application Support



Application System/400

SC41-9878-03

**Licensed Programs and New Release
Installation Guide**

Version 2

Take Note!

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

Fourth Edition (November 1993)

This edition applies to the licensed program IBM Operating System/400 (Program 5738-SS1), Version 2 Release 3 Modification 0, and to all subsequent releases and modifications until otherwise indicated in new editions. This major revision makes obsolete SC41-9878-02. Make sure you are using the proper edition for the level of the product.

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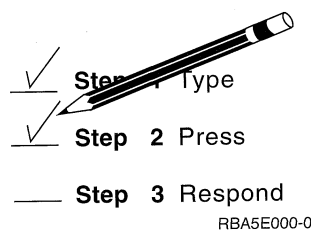
About This Guide

This guide 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 Part 1, "Planning Tasks" on page 1-1 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 guide you will need to use.

Use the checkoff steps listed in the tasks of this guide as shown in the following example:



You may need to refer to other IBM manuals for more specific information about a particular topic. The *Publications Guide*, GC41-9678, provides information on all the manuals in the AS/400 library.

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

You should be able to operate the following devices:

- Display stations
- 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 *New User's Guide*, SC41-8211.

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

Version 2 Release 1 Modification 0	V2R1.0
Version 2 Release 1 Modification 1	V2R1.1
Version 2 Release 2 Modification 0	V2R2.0
Version 2 Release 3 Modification 0	V2R3.0

Who Should Use This Guide

This licensed program installation guide 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.

Part 1. Planning Tasks

When you receive your new release (distribution tapes and manuals), read this part 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 part before scheduling your installation.

Overview of the Installation Process

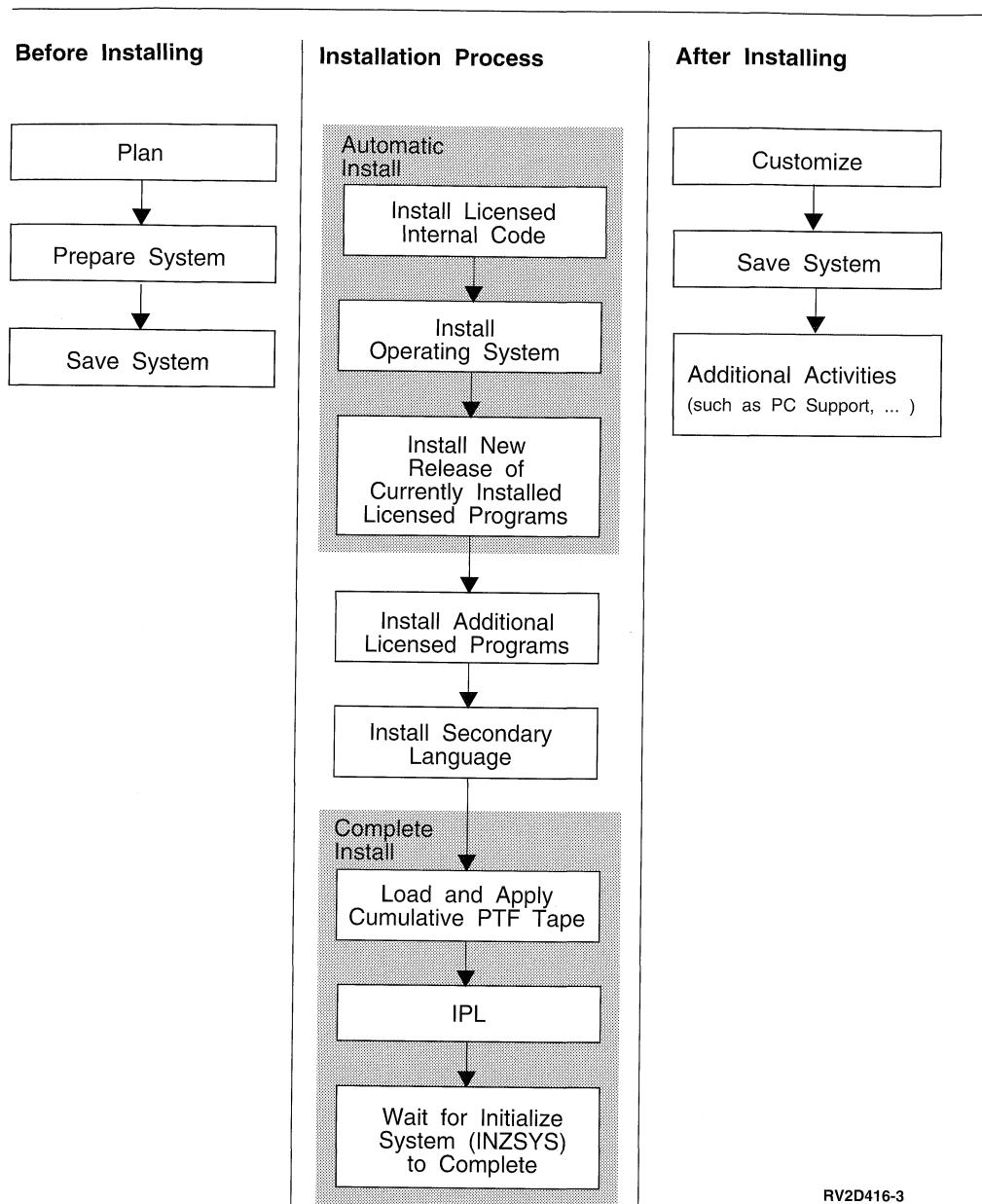
The process to install software can be thought of as having three phases: activities to do before installing, the installation process, and activities to do after installing. Figure 1-1 on page 1-2 shows an overview of the installation process. (Your installation process may not include all of the topics 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 Part 1, "Planning Tasks" of the manual to guide you through the activities you need to do before installing your new release. The "Checklist for Planning for your New Release" on page 1-3 specifically outlines necessary planning activities.

Appendix D, "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, "Where to Begin . . ." on page 1-18 directs you to the appropriate instructions for your installation process. The installation process begins when you start performing the instructions in one of the other parts in this manual.

To Do After Installing: The last task in each part directs you through steps to complete the installation process. You may be directed to additional steps such as saving your system and performing PC Support activities. Other activities could include customizing your system or setting usage limits for user-based priced products.



RV2D416-3

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

Checklist for Planning for your New Release

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 D, "Additional Installation Information," provides useful general information.

Task	Level of Importance	When to Complete
<input type="checkbox"/> 1. Review information (page 1-3)	Recommended	When convenient
<input type="checkbox"/> 2. Verify your order and the release level (page 1-6)	Recommended	When you receive release
<input type="checkbox"/> 3. Check media integrity (page 1-8)	Optional	When you receive release
<input type="checkbox"/> 4. Permanently apply PTFs (page 1-8)	Optional	When convenient
<input type="checkbox"/> 5. Check disk storage space requirements (page 1-8)	Recommended	1–2 days before installing
<input type="checkbox"/> 6. Choose automatic or manual installation (page 1-11)	Required	When convenient
<input type="checkbox"/> 7. Estimate installation time (page 1-12)	Recommended	When convenient
<input type="checkbox"/> 8. Save and delete changes to IBM-supplied objects (page 1-13)	Recommended	1–2 days before installing
<input type="checkbox"/> 9. Verify entries in the system distribution directory (page 1-13)	Recommended	Same day
<input type="checkbox"/> 10. Gather performance information (page 1-14)	Optional	1–2 weeks before installing
<input type="checkbox"/> 11. Order the current cumulative package (page 1-14)	Recommended	1–2 weeks before installing
<input type="checkbox"/> 12. Evaluate release-level interoperability for systems in a network (page 1-15)	Recommended	When convenient
<input type="checkbox"/> 13. Save the system (page 1-16)	Recommended	1–2 days before installing
<input type="checkbox"/> 14. Prepare the tape drive (page 1-17)	Recommended	Same day

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

Task 1. Review Information

This manual and the following documents contain useful information for planning your installation.

Note: If you are skipping release levels, you may need to order and read additional information, as noted below.

Are you confused about what to read first? If you are skipping a release, you should read the information about the *release you are skipping* first. Then read about your new release. For any release, this part of the manual is your roadmap. It directs you to other documents such as the *Read this First* for last-minute updates and to the *Memo to Users* for summaries of significant changes.

Documents Shipped with Your New Release: The following documents were shipped along with the distribution tapes for your new release.

- *Licensed Programs and New Release Installation Guide*, SC41-9878

This is the manual you are reading. It contains information necessary to plan to install the new release. It also contains procedures for installing the new release. You should also read Appendix D, “Additional Installation Information,” before you begin installing your new release.

- *Automatic Installation Guide*, SX41-9072

These instructions for using the automatic installation process are the same instructions found in Part 2, “Replacing a Release Using Automatic Installation,” of this manual. This has been printed in reference card size for your convenience.

- *Read This First*

The *Read This First* contains last-minute information that you should read before installing this release. The information was not available for publication in the *Memorandum to Application System/400* Users* or the *Licensed Programs and New Release Installation Guide*. This one-page document may be updated as new information that may affect your system becomes available.

- *AS/400* Memo to Users—Version 2 Release 3*

This is also referred to as the *Memo to Users*.¹ 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 you currently have installed or plan to install on your system.

If you are skipping a release level, be sure to read “More Information when Skipping a Release Level” on page 1-5; you may need to order additional information.

- *Media Description Report*

A media description report is shipped with each set of distribution media for the AS/400. Be sure to save this report; it is the only list that tells you what is on your distribution media. You will need this list to verify that your order contents and release level are correct. The report also helps you identify the correct tape cartridge or reel to load. Some licensed programs may require multiple tape volumes.

The media description report identifies the licensed programs contained on each tape volume, the program name, copyright information, the version,

¹ This document is also known as *Memorandum to Application System/400 Users* and *Memo to AS/400 Users*. The document can be ordered as a standard publication or through electronic customer support.

release, and modification level, the associated feature number, and the language feature code.

The media description report shows that the version, release, and modification level for Version 2 Release 3 Modification 0 is represented by R03M00. The product name includes V2.

- 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.

Additional Information: You should obtain the following documents for additional information.

- *New Products Planning Information for Release 3--General Availability Edition*, GA41-0007-04

This manual describes enhancements to products for this release.

- AS/400 Preventive Service Planning Information

You need the most recent cumulative package of the preventive service planning information. This document contains a list of additional preventive service planning documents which you may want to order. To place the order, type the following on any command line:

```
SNDPTFORD SF98vrm
```

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

If you do not have access to electronic customer support, contact your IBM software support center to obtain this information.

- If you are using checksum protection, auxiliary storage pools, or mirrored protection, you should also obtain the *Advanced Backup and Recovery Guide*, SC41-8079.

More Information when Skipping a Release Level

If your system is currently at Version 2 Release 1.0 or Version 2 Release 1.1, you need to be aware of some additional considerations before you install V2R3.0. Appendix D, "Additional Installation Information," contains information organized by current release level. You should read this and the following additional documents:

- *New Products Planning Information for Release 2--General Availability Edition*, GA41-0007-02.

This describes changes made between Version 2 Release 1.1 and Version 2 Release 2.0. It also includes changes made between Version 2 Release 1.0 and Version 2 Release 1.1.

- *Memo to Users*
 - *Version 2 Release 1.1*, GC41-0041
 - *Version 2 Release 2.0*, GC41-0065

Each document describes significant changes for the release that could potentially affect your programs or system operation.

Note: Some material from Chapter 1 (Things to Consider before Installing) of these documents has been included in this manual. You should read

the rest of these documents to be aware of potential impacts of each release you are skipping.

- *Read This First*
 - *Version 2 Release 1.1*
 - *Version 2 Release 2.0*

Each document describes information about the release that was unavailable for publication in the *Memorandum to Application System/400 Users* or the *Licensed Programs and New Release Installation Guide*. This one-page document may be updated as new information that may affect your system becomes available.

The *Memo to Users* and *Read This First* are now available to customers using electronic customer support. You can order them by specifying these program temporary fix (PTF) numbers:

SNDPTFORD SF98036 Version 2 Release 3.0 *Memo to Users* and *Read this First*

SNDPTFORD SF98026 Version 2 Release 2.0 *Memo to Users* and *Read this First*

SNDPTFORD SF98016 Version 2 Release 1.1 *Memo to Users* and *Read This First*

Task 2. Verify Your Order and the Release Level

Licensed programs have both program information needed to make the licensed program work and language information needed to make the system communicate with you (like messages and menus). Both program and language information for the primary language are contained on the distribution media (tape reel or cartridge).

The version, release, and modification level shown on the tape label for Version 2 distribution tapes is R03M00 for Version 2 Release 3 Modification 0. The product name on the label includes V2.

Each distribution media has a label on the outside that shows the volume sequence number.

If you are going to install a secondary language, you need a second set of media that contains only language information. Be sure to read “Secondary Language Considerations” on page D-2 for additional information about secondary languages.

To verify the contents of your distribution media, compare the media description report with what is installed on your system. Complete the following steps:

- ___ 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 **10** (Display installed licensed programs).

Press the Enter key.

The Display Installed Licensed Programs display is shown. This display lists the release level of licensed programs that you currently have installed on your system. Compare this list with the media

description report to make sure you have received all of the licensed programs shown on this display. (Step 4 addresses how to verify licensed programs that are not shown on this display.)

Note: The media description report does not list all of the OS/400* options (5738-SS1), the QGPL library, or the QUSRSYS library as they are listed on your system.

If you only have licensed program 5738-SS1 and no other licensed programs listed on the media description report, contact your marketing representative.

___ Step 3. Press the F3 (Exit) key.

___ Step 4. You may have licensed programs or optional parts of licensed programs installed on your system that were not listed in step 2 on page 1-6. To see a list of these additional installed licensed programs, type the following command:

DSPSFWRSC

Press the Enter key.

Compare the list shown on the Display Software Resources display with the media description report. Make sure you have received any other IBM licensed programs currently installed on your system that were not listed in step 2 on page 1-6. The display shown by the DSPSFWRSC command includes non-IBM software. IBM licensed programs have product identifiers that begin with 5738.

Note: Licensed programs that are new for V2R3.0 will not be displayed in this step or in step 2 on page 1-6.

___ Step 5. Press the F12 (Cancel) key.

___ Step 6. Type **20** (Display installed secondary languages).

Press the Enter key.

The Display Installed Secondary Languages display is shown. This display shows the primary language you have installed on your system. It also shows a list of the secondary languages and their installed release levels, if you have any installed. Compare this list with the secondary languages list on your media description report to make sure you have received the new release for the secondary languages you have installed on your system. If you do not have these secondary languages on the distribution tape, contact your branch office.

___ Step 7. Press the F3 (Exit) key.

If you no longer need a licensed program, you should consider deleting it from your system. See "Making More Disk Space Available" on page 1-10 for more information.

Task 3. Check Media Integrity

If you have the OS/400 Example Tools Library (5738-SS1 option 7) 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 OS/400 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 "QUSRTOOL Changes" on page D-6.

Task 4. Permanently Apply PTFs

When you install PTFs on your system, either individual PTFs or a cumulative PTF package, they are temporarily applied. These 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. Information on applying immediate PTFs temporarily or permanently is available in the *System Operator's Guide*, SC41-8082, in the chapter on working with program temporary fixes (PTFs).

If you have licensed program 5738-SM1 installed on your system, use the instructions in the *SystemView* System Manager/400 User's Guide*, SC41-8201, for managing PTFs on your system.

Task 5. 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.

___ Step 1. To see how much storage is used on your system, enter the following 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
Jobs in system	: 89	% used
% addresses used:		Total
Permanent	: 2.242	Current unprotect used : 265 M
Temporary	: .653	Maximum unprotect . . : 282 M

___ Step 2. Use Figure C-1 on page C-1 to determine the amount of disk storage used by your currently installed release and the size of V2R3.0.

- Add the values for the Licensed Internal Code, operating system, licensed programs, and optional parts of the release you have installed. This total is the value to use for release currently installed in step 3.
- Add the values for the Licensed Internal Code, operating system, licensed programs, and optional parts of V2R3.0 that you intend to install. This will be the value to use for Size of V2R3.0 in step 3.

___ Step 3. Use the following equation to find the additional storage needed:

$$\begin{array}{rcccl} \text{Size of} & & \text{release currently} & & \text{additional} \\ \text{V2R3.0} & - & \text{installed} & = & \text{storage needed} \end{array}$$

___ Step 4. Then use the following equation to determine if you have enough storage available to install this release.

$$\text{System} \times \% \text{ used} + \text{additional storage} = \text{storage required}$$

For example:

$$1803 \text{ M} \times (.629586) + \text{additional storage} = \text{storage required}$$

___ Step 5. 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. Use the percentage in the threshold column for ASP number one in the following equation:

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

For example:

$$1803 \text{ M} \times (.90) = \text{possible storage available}$$

___ Step 6. Compare the possible storage with the storage required. 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.

Be sure to allow some extra storage for the installation process. In addition to the size of storage required for licensed programs (step 4), the installation time can be reduced if there is additional auxiliary storage space available. You need at least 11 megabytes of additional auxiliary storage to use the multiprocess installation process for most licensed programs. If you do not use the multiprocess method, your installation takes considerably longer to complete. See

“Installing Licensed Programs Concurrently” on page C-11 for a list of licensed programs that require more than 11 megabytes of additional storage for multiprocess installation.

Read the sections “Additional Considerations for Storage Space,” “Making More Disk Space Available,” and “Cleaning Up Your System” on page 1-11 for other suggestions how to conserve disk space.

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

Additional Considerations for Storage Space

Additional factors which affect the amount of storage space available are the use of mirrored protection and compressed objects.

If you use mirrored protection, less storage space is available. Refer to the *Advanced Backup and Recovery Guide*, SC41-8079, for information about planning for mirrored protection.

Some of the licensed programs and some objects of the operating system are shipped in a compressed form and require less storage space on your system. If your system has more than 100 MB of unused storage, the system automatically decompresses the objects during the installation process. If not enough storage space is available, the objects are decompressed when you use them, which could affect the performance of the system. More information about compressing and decompressing objects is available in the *Programming: Control Language Programmer's Guide*, SC41-8077.

Making More Disk Space Available

The following list describes things you can do to make more disk space available.

- You should permanently apply any PTFs that are temporarily applied on your system if you have not already done so. (See “Task 4. Permanently Apply PTFs” on page 1-8.)
- You should delete licensed programs or optional parts that you no longer use.

If you plan to delete a licensed program or optional part of a licensed program, delete it before you install this release. When V2R3.0 is installed and your system is at security level 40 or 50, you cannot delete some products from a previous release level. After V2R3.0 is installed, you must change the security level to 30, delete the products, then change the security level back to 40 or 50.

For more information about deleting optional parts you do not use, go to “Using Option 12. Delete Licensed Programs” on page B-4. If you delete licensed programs or optional parts, they will not be automatically installed again when you install this release.

- Add more disk storage.

After you delete optional parts and permanently apply PTFs, use the WRKSYSSTS command again to make sure you have adequate storage space available to install this release. If you have completed these tasks several days before you begin the installation process, you should check it again when you install the release.

Cleaning Up Your System

Cleaning up your system before you begin to install a new release can reduce the amount of user information that is converted to new files in the QGPL and QUSRSYS libraries. This reduces the amount of time required for installing a new release and also makes more storage space available for the installation process. Refer to the information on keeping your AS/400 system running smoothly in the *Operator's Guide* to clean up your system. You can use the automatic cleanup option in Operational Assistant* to keep your system free of unnecessary clutter.

The following list shows some of the items that could be deleted before you begin the installation process.

- Delete PTF save files and cover letters that are no longer needed.
- Delete old calendar items.
- Save and delete unnecessary documents and folders.
- Delete unnecessary distribution lists, directory entries, nicknames, and personal directories.
- Remove unnecessary office users.

Task 6. Choose Automatic or Manual Installation

Decide which installation method you will use to install the new release. The automatic installation process is recommended and can be used for most AS/400 systems. However, 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, 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.
- 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 automatic installation process will install the new release of the licensed programs and optional parts that are currently installed on your system. New licensed programs or optional parts that are being added to your system for the first time are installed as additional licensed programs using Part 6, Installing Additional Licensed Programs. Refer to Figure 1-1 on page 1-2 and to the instructions in Part 2, "Replacing a Release Using Automatic Installation" on page 2-1.

The new licensed programs and optional parts for V2R3.0 are:

- Application Dictionary Services/400
- Application Program Driver/400
- Integrated Language Environment* C/400*
- PC Support/400* - Communications Manager/400
- PC Support/400 - RUMBA/400 (OS/2)
- PC Support/400 - DBCS (RUMBA/400 OS/2)
- SystemView* Information Warehouse* DataHub* Support/400
- SystemView Managed System Services/400
- SAA* AD/Cycle* CoOperative Development Environment/400

Planning Tasks

- SAA AD/Cycle CoOperative Development Environment/400 - Data Specifications Utility
- IBM SAA SystemView OMEGAMON Services/400
- IBM SAA SystemView OMEGAMON Services/400 - IBM AUTOMATED FACILITIES/400
- IBM SAA SystemView OMEGAMON Services/400 - IBM OMEGAVIEW/400 (for OS/2)

Note: The following optional parts of licensed programs are exceptions and are installed during the automatic installation process, as noted:

- AS/400 Application Development Tools - Others

This is installed during the automatic installation process if you already have an earlier release of AS/400 Application Development Tools installed on your system.

- SAA OfficeVision/400* - Editor

This is installed during the automatic installation process if you already have SAA OfficeVision/400 installed on your system.

The Performance Monitor/400 Programming Request for Price Quotation (PRPQ) is on your distribution media. This has been provided at no charge and is not installed with the automatic installation process. Use the instructions that came with the Performance Monitor/400 PRPQ to install it.

Task 7. Estimate Installation Time

The information in Appendix C, "Licensed Program Size and Performance Information" is provided to assist you in estimating the approximate installation time of this release on your system. Use the "Checklist for Estimating Installation Time" on page C-8. "Tips to Make the Most of your Installation Time" and "Installation Performance Considerations" on page C-11 have 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. During an automatic installation process, there is no user intervention required except to change tapes. Therefore, there is no idle system time waiting for the operator to respond to messages or choose installation options during the installation process.
- 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 Size and Performance 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 “Installing Licensed Programs Concurrently” on page C-11 for a list of licensed programs that require more than 11 megabytes of additional storage for multiprocess installation.

- Load the next installation tape when prompted by the system.

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. 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.

Task 8. Save and Delete Changes to IBM-Supplied Objects

Any changes you have made to IBM-supplied objects in libraries other than QGPL and QUSRSYS are not saved when you install a new release. One example is changes you have made to subsystem descriptions. Another example is changes you have made to the QPJOBLOG printer file in the QSYS library for values such as lines per inch or page size. You have to make these changes again when you have completed the installation process.

Also, if you have duplicated any IBM-supplied objects (such as commands), 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.

If you have duplicated IBM-supplied product libraries, you should delete them before you install your new release. The automatic installation process fails and the new release does not install until duplicated IBM-supplied libraries are deleted.

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.

Task 9. 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. To check system distribution directory entries, type the following command:

DSPDIR

Press the Enter key.

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.

- 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.

- 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.

- 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 delete it from the profile before installing licensed programs.
- If you have a secondary language installed on your system, be sure to read "Secondary Language Considerations" on page D-2 for additional information.

Task 10. 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. 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. 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*), you can use a Programming Request for Price Quotation (PRPQ) that collects performance data and send it to IBM to be analyzed. The PRPQ is 5799-MPG.

Task 11. 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.

You should receive the package within 24 hours.

Note: If you use checksum protection, you should install checksums first and then install the new release.

Cross-Reference Summaries for PTFs

Three 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, and to determine which Version 2 Release 3.0 fixes you need to order to maintain the same or higher PTF and Licensed Internal Code fix level as you update to Version 2 Release 3.0. These summaries are updated each working day with the latest information as new Version 2 Release 3.0 PTFs and Licensed Internal Code fixes are released.

To get the Version 2 Release 1.0-to-Version 2 Release 3.0 PTF Cross-Reference Summary, enter the following command:

```
SNDPTFORD SF97042
```

To get the Version 2 Release 1.1-to-Version 2 Release 3.0 PTF Cross-Reference Summary, enter the following command:

```
SNDPTFORD SF97051
```

To get the Version 2 Release 2.0-to-Version 2 Release 3.0 PTF Cross-Reference Summary, enter the following command:

```
SNDPTFORD SF97060
```

If you do not have access to electronic customer support, contact your IBM software support center to obtain this information.

Task 12. 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: The release level of licensed programs can be determined by typing **GO LICPGM** on a command line and selecting 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 system receiving the information must be within two release levels of the system that is sending the information.

For example,

- OfficeVision/400 users on V2R3.0, V2R2.0, V2R1.1, and V2R1.0 systems can exchange mail with each other.
- A PC Support/400 user on V2R3.0 can access a V2R1.0 AS/400 host system as long as only V2R1.0-level function is used.
- A PC Support/400 user on V2R3.0 can access a V2R1.0 or V2R1.1 AS/400 host system as long as only V2R1.0 or V2R1.1-level function is used.
- A PC Support/400 user on V2R1.0, V2R1.1, or V2R2.0 can access a V2R3.0 AS/400 host system.
- An application developer can send a source file, using the Send Network File (SNDNETF) command, from a V2R3.0 system to a V2R1.0, V2R1.1, or V2R2.0 system.
- An application developer can send a source file, using the SNDNETF command, from a V2R1.0 system to a V2R1.1, V2R2.0, or V2R3.0 system.

Saving and Restoring Objects: The system receiving the information can be only one release level lower than the source system (the system sending the information). To be interoperable in this case, objects must be saved using the parameter TGTRLS(*PRV).

For example,

- Objects saved on a V2R3.0 system, using TGTRLS(*PRV), can be restored on V2R2.0 or later level systems.
- Objects saved on a V2R2.0 system, using TGTRLS(*PRV), can be restored on V2R1.0, V2R1.1, or later level systems.

For more information on saving objects to a previous release system, see the chapter on release-to-release support in the *Basic Backup and Recovery Guide*, SC41-0036.

Check with your software suppliers and refer to the *New Product Planning Guide* and the *Memo to Users* for more information.

Task 13. 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. Type the following command:

DSPLOG QHST

Press the Enter key.

This displays the QHST log and brings the QHST log to a current level. You can ignore the messages.

Press the Enter key.

- c. Type the following command:

WRKOBJ QSYS/QHST* *FILE

Press the Enter key.

- d. Delete or rename all of the QHST logs to prevent them from being saved as system files.

- ___ Step 2. Save your system using the alternate IPL device and the chapter on saving and restoring objects in the *Basic Backup and Recovery Guide*, SC41-0036.

Note: Tapes created with the Save System (SAVSYS) command should not be used with the automatic installation process.

Task 14. Prepare the Tape Drive

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

“Determining Tape Device Names” on page D-1 contains information about the naming conventions used for the tape device used for the alternate IPL. All examples in this manual use TAP01.

Be sure to clean the heads on your alternate IPL tape drive before you begin the installation process to help prevent media errors. 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.

Put your tapes in the same room as your system. This way the tapes are the same temperature and humidity as the system.

Installation Questions and Answers

Q: Do I need to install the latest level cumulative PTF package before I install a new release on my system?

A: No. However, to help reduce installation time and provide more storage space during the installation process, you should permanently apply any temporarily applied PTFs before you begin the installation process. For information on how to permanently apply PTFs, go to the chapter on working with program temporary fixes (PTFs) in the *System Operator’s Guide*, SC41-8082.

Planning Tasks

Q: Can I install a later cumulative PTF package instead of the package that came with my distribution tapes?

A: Yes, you should install the most current cumulative PTF package.

Q: Can I use the automatic installation process to install a new release and add a new licensed program at the same time?

A: The automatic installation process installs your new release and replaces your current licensed programs and optional parts of licensed programs. You can add a new licensed program or optional part when the automatic process completes by using the instructions in Part 6, "Installing Additional Licensed Programs" on page 6-1. A licensed program or optional part of a licensed program that is not currently installed on your system will not be installed during the automatic installation process.

Q: Can I install checksums and auxiliary storage pools at the same time I install my new release?

A: No. Go to the chapter on disk recovery in the *Basic Backup and Recovery Guide*, SC41-0036, for more information about checksums and auxiliary storage pools.

Q: Should I begin mirroring on my system before I install a new release or wait until after the new release is installed?

A: If you have been using checksum protection, turn off checksum protection first and then begin mirroring. It is recommended to use mirroring for a week or more to make sure everything is working. Then install the new release.

Q: Is there anything I can do to help reduce media errors during the installation process?

A: Yes, you should store your tapes in the same room that your system is so the tapes are at the same temperature and humidity as the system. You should also clean your tape drive before you begin the installation process. It may be necessary to clean the tape drive before you load each new volume of your distribution tapes. If you still have a media error, order a new distribution tape from the distribution center.

Q: What should I do if my installation process fails to complete?

A: Go to Appendix A for recovery procedures.

Q: What should I do if I receive a message that the system cannot find a console?

A: Make sure the console you are using is configured correctly and the console is powered on. Refer to the *Device Configuration Guide*, SC41-8106.

Q: What should I do if the AS/400 Logo is shown on my display?

A: Enter the primary language on the bottom of the display (see page 3-9). Press the Enter key. Continue with the instructions on page 3-10.

Where to Begin . . .

Use this section to determine which part or parts of this manual you need to use to install V2R3.0 licensed programs on your AS/400* system.

Replacing a Release with V2R3.0

Are you replacing a release with V2R3.0?

Go to Part 2, “Replacing a Release Using Automatic Installation.” (You can also use the *Automatic Installation Guide*, SX41-9072.)

OR

Go to Part 3, “Replacing a Release Using Manual Installation.”

Note: Part 2 is the recommended part to use. Read “Task 6. Choose Automatic or Manual Installation” on page 1-11 to determine whether to use Part 2 or Part 3.

Installing a New AS/400 System

Are you installing a new AS/400 system that has the operating system already installed?

Go to Part 4, “Installing a New AS/400 System with the Operating System Already Installed.”

Note: 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.

Are you installing an AS/400 system that does not have the operating system installed?

Go to Part 5, “Installing a New AS/400 System without the Operating System Installed.”

Installing a Cumulative Program Temporary Fix (PTF) Package

Are you loading and applying a cumulative PTF package to your system?

Go to the *AS/400 PTF Shipping Information Letter* that you received with the cumulative PTF tapes for instructions to install a PTF cumulative package.

Installing Additional Licensed Programs

Are you installing additional licensed programs to your system?

Go to Part 6, “Installing Additional Licensed Programs.”

Changing Primary Language

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?

Go to the *National Language Support Planning Guide*, GC41-9877, for special instructions.

Are you replacing a release with V2R3.0 and also want to change your primary language?

Go to Part 3, “Replacing a Release Using Manual Installation.”

Are you installing a new AS/400 system and want to change the primary language?

Go to Part 5, “Installing a New AS/400 System without the Operating System Installed.”

Are you only changing your primary language?

Go to Part 5, “Installing a New AS/400 System without the Operating System Installed.”

Are you changing your primary language using your secondary language tape?

Go to Part 8, “Changing Your Primary Language Using a Secondary Language Tape.”

Installing a Secondary Language

Are you installing a secondary language?

Go to Part 7, "Installing a Secondary Language."

Adding New Disk Devices

Are you adding a new disk unit to your AS/400 system?

Go to Part 5, "Installing a New AS/400 System without the Operating System Installed."

Note: If you are using checksum protection, mirrored protection, or auxiliary storage pools, refer to the chapter on using disk recovery methods in the *Basic Backup and Recovery Guide*, SC41-0036, before you begin.

Installing a Hardware Upgrade

Are you installing a hardware upgrade at the same time as you are installing a new release or licensed programs?

Use the *AS/400 System Upgrade Road Map*, GX41-0009, as your guide. At the appropriate point in the upgrade, the road map directs you to this manual to install V2R3.0 of the operating system and licensed programs. You may also receive additional instructions with the upgrade package.

Recovery Information

Appendix A, "Recovery Procedures" contains recovery information that can help you determine what the problem is and what to do to recover if you have a failure during the installation process.

Part 2. Replacing a Release Using Automatic Installation

This part contains instructions to install your new release using the automatic installation process.

The following table is a list of releases for the AS/400 system. Use this table to determine if you can use these instructions to install V2R3.0 over the release you currently have installed on your system.

Release Currently Installed	Can V2R3M0 be Installed?
R01M00	No
R01M02	No
R02M00	No
R03M00	No
V2R1M0	Yes
V2R1M1	Yes
V2R2M0	Yes
V2R3M0	Yes

For example, V2R3M0 is Version 2 Release 3 Modification 0. If no V is shown, Version 1 is assumed.

If you do not know which release is currently installed on your system, go to "Task 2. Verify Your Order and the Release Level" on page 1-6 for information on finding which release you have installed.

The automatic installation process installs everything on the following list, while keeping the current environment (AS/400 or System/36), system values, and configuration.

- Licensed Internal Code
- Operating system
- Licensed programs and optional parts of licensed programs that are already installed on your system
- Language feature code on the distribution tape installed as the primary language on the system

IMPORTANT

The automatic installation process does not install any licensed program or optional part of a licensed program that is new for this release. The new licensed programs and optional parts for V2R3.0 are listed in "Task 6. Choose Automatic or Manual Installation" on page 1-11.

During the automatic installation process, you need to load a new tape only when the system prompts for one.

Note: 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, or user auxiliary storage pools. 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.

Replacing a Release Using Automatic Installation

- Changing primary language.
- 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

When you use the manual installation process, displays are shown that require a response. Go to Part 3, "Replacing a Release Using Manual Installation" for these instructions.

Before you begin

Before you begin to install any of the licensed programs, complete the planning tasks in Part 1, "Planning Tasks" on page 1-1. Use the following list to be sure you have completed the planning tasks.

- Review information about the new release, including the *Read This First, Memo to AS/400 Users*, and the Preventive Service Planning (PSP) information. See page 1-3.
- Verify your order and the release level of your system. See page 1-6.
- Permanently apply any temporarily applied PTFs. See page 1-8.
- Check the disk storage space requirements to be sure you have enough auxiliary storage available on your system to install the release. See page 1-8.
- Clean up your system to reduce installation time. See page 1-11.
- Estimate the installation time. See page 1-12.
- Be sure you have a current backup copy of your system. See page 1-16.
- Determine which tape device to use and be sure to clean your tape drive now to help prevent media errors. See page 1-17.

Task 1. Using Automatic Installation

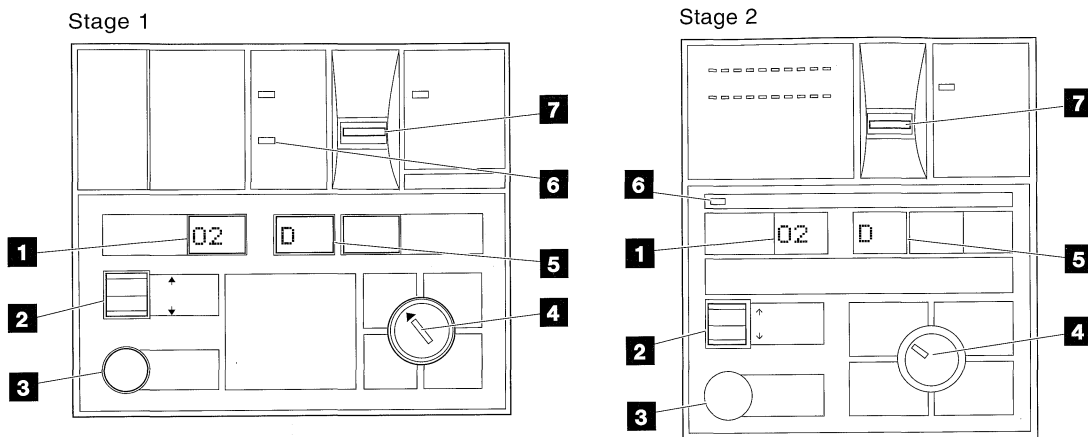
While you perform this function, system reference codes (SRCs) are shown on the data display of the control panel. When the system attention light is on and an SRC starting with A6 is displayed, the system is waiting for you to do something (answer a question or make a tape device ready).

If you have V2R1.0 installed on your system, start here. Otherwise, begin at step 1 on page 2-5.

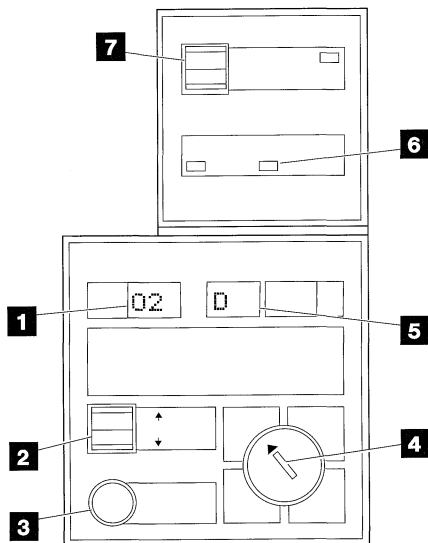
- ___ **Step A** If your system is powered on, type the following command:
 PWRDWN SYS *IMMED
 Press the Enter key and wait for the entire system to power off.
 Note: Refer to Figure 2-1 on page 2-4 to locate the parts of the control panel that are referenced in the following steps.
- ___ **Step B** Turn the keylock switch **4** on the control panel to the Manual position.
- ___ **Step C** Press the Function Selection switch **2** until a 02 (Select IPL) is shown in the Function display **1** on the control panel.
- ___ **Step D** Press the Enter button **3** on the control panel.
- ___ **Step E** Press the Function Selection switch **2** until D (Tape IPL) is shown on the Data display **5** on the control panel.
- ___ **Step F** Press the Enter button **3** on the control panel.
- ___ **Step G** Turn the keylock switch **4** on the control panel to the **Normal** position.
- ___ **Step H** Make sure the power is on for the display station to be used as the console.
- ___ **Step I** 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 J** 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 K** Turn the power on for the system by pushing the power switch **7**. The switch returns to the center on the 9406 System Unit and the 9404 System Unit after you push it.
- ___ **Step L** If you could not load your tape in step J, load the first tape volume into the tape device for the alternate IPL now. Prepare the tape device.
- ___ **Step M** Continue with Step 4 on page 2-5.

Replacing a Release Using Automatic Installation

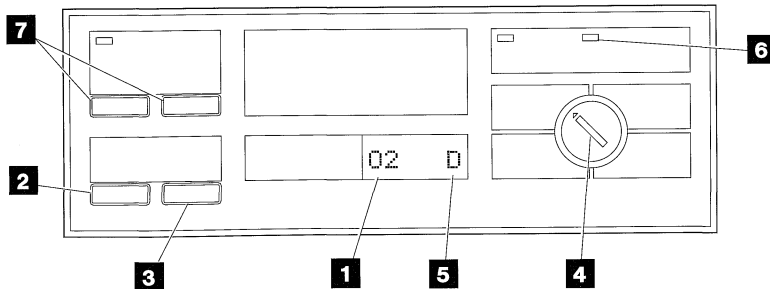
9406 Control Panel



9404 Control Panel



9402 Control Panel



RV2D412-2

Figure 2-1. Control panels of the AS/400 systems

If you have V2R1.1, V2R2.0, or V2R3.0 installed on your system, start here.

- ___ **Step 1** Load the first tape volume into the tape device for the alternate IPL.
- ___ **Step 2** Turn the keylock switch **4** on the control panel to the **Normal** position.
- ___ **Step 3** 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 4** If the system attention light **6** appears and one of the SRC codes from Figure 2-2 is displayed in the Data display **5**, complete the instructions for that SRC code. Otherwise, continue with step 5 on page 2-6.

<i>Figure 2-2. SRC codes</i>	
Symptom	Action
A6xx 6048	When this SRC is shown, continue with step 5 on page 2-6.
A1xx 1933 A12x 1933 (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 5 on page 2-6. 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 4a.
B1xx 1803 B1xx 1806 B1xx 1938	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. Then continue with step 4a.
B1xx 1934	This SRC is shown if the wrong tape is loaded. Load the correct tape and make the tape device ready. Then continue with step 4a.
B900 3121	The media is in SAVSYS format. The system unit key is in the wrong position. Move the key to the Manual position and try the installation again using Part 3, "Replacing a Release Using Manual Installation" on page 3-1.
2507 0001 2642 0001 2643 0001	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 4a.
2644 3136	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 4a.
Any other SRC	Go to Appendix A, "Recovery Procedures" and follow the instructions there.

- a. Turn the keylock switch **4** on the control panel to the Manual position.

Replacing a Release Using Automatic Installation

- b. Press the power switch **7** to delayed off and wait for the entire system to power off.
- c. Turn the keylock switch **4** on the control panel to the Normal position.
- d. Press the power switch **7** on and make the tape device ready. Then continue with step 5. If the system attention light **6** appears and the same SRC is displayed again, go to "Licensed Internal Code Recovery" on page A-3.

— **Step 5** If SRC A6xx 6048 appears in the Data display **5**, 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 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 6** Load additional tape volumes whenever one of the following messages is shown on the display requesting another tape volume.

```

                                     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 choice, press Enter.

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

- a. Type a **1**

Press the Enter key.

When you see the next display, 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

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

- b. Type a **G** (go) and press the Enter key.

- Step 7** 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.

Replacing a Release Using Automatic Installation

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 or PTFs                               System: XXXX

Licensed program or PTF 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
5738SS1  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.

When you see the next display, 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

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

Step 8 When the message **Load next tape volume on device TAP01** is shown, load the next tape volume, type a **G**, and press the Enter key to continue with the installation process.

- When the installation is complete, the Sign On display is shown. Continue with “Task 2. Verifying Installation 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 Installation Completion

The Sign On display is shown after the installation has completed.

```

                                Sign On
                                System. . . . . : XXXX
                                Subsystem . . . . : XXXX
                                Display . . . . . : DSP01
                                User. . . . .      QSECOFR
                                Password . . . . .
                                Program/procedure . . . . .
                                Menu . . . . .     _____
                                Current library . . . . . _____
    
```

Step 1 Type the following:

```

User          QSECOFR
Password      (password if required)
    
```

Step 2 Press the Enter key.

The AS/400 Main Menu (or the menu you chose as your initial menu) is shown.

```

MAIN                               AS/400 Main Menu                               System: XXXX
Select one of the following:
1. User tasks
2. Office tasks
3. General system tasks
4. Files, libraries, and folders
5. Programming
6. Communications
7. Define or change the system
8. Problem handling
9. Display a menu
10. Information Assistant options
11. PC Support tasks
90. Sign off
Selection or command
===> GO LICPGM
-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
    
```

Step 3 Type the following command:

GO LICPGM

Press the Enter key.

Replacing a Release Using Automatic Installation

- ___ **Step 4** 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

Related Commands
  70. Save and restore commands
  71. Program temporary fixes commands

Bottom

Selection or command
===> 50

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=AS/400 main menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

- ___ **Step 5** Type 50
Press the Enter key.

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

F3=Exit  F12=Cancel
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

- ___ **Step 6** Press the Enter key.
- ___ **Step 7** Look at the messages shown on the Display History Log Contents display. If any of the messages on the display indicate a failure or a licensed program partially installed, go to Appendix A, "Recovery

Replacing a Release Using Automatic Installation

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.

Task 3. Completing the Automatic Installation

If you go to another part of this guide in one of the following steps, you do not have to return here to complete your installation.

- ___ **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 Part 6, "Installing Additional Licensed Programs" and complete your installation.

Note: If you have PC Support/400 installed on your system, the new release will be downloaded to your personal computer the first time you turn it on. Make sure you have the PCSUPDT command in your STARTPCS.BAT file on your personal computer.

If you did not have PC Support/400 installed before you started the automatic installation process, and want to install it or any of the PC Support/400 options such as AS/400 PC Support PC Tools Folder, go to Part 6, "Installing Additional Licensed Programs" to install it now.

Otherwise, continue with step 3.

- ___ **Step 3** If you have a secondary language installed, go to Part 7, "Installing a Secondary Language" to replace the secondary language and complete your installation. Otherwise, continue with step 4.
- ___ **Step 4** 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 step 5.

IMPORTANT

You must install a cumulative PTF package or do an IPL to complete the installation process. An IPL is required to start the Initialize System (INZSYS) process.

- ___ **Step 5** Look for messages in the install history log that indicate the status of the Initialize System (INZSYS) process.

Note: The INZSYS process could take 2 or more hours to complete.

Use option 50 (Display log) on the Work with Licensed Programs display to look for messages.

- 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. Find the message **Initialize System (INZSYS) started**. If you do not see

Replacing a Release Using Automatic Installation

this message on the display, wait a few minutes and select option 50 again. After the **Initialize System (INZSYS) started** 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 6** Save your system using your normal save procedures. Make sure the Initialize System (INZSYS) process is complete before you save your system. Save your system using the instructions in the *Basic Backup and Recovery Guide*, SC41-0036.

You have completed installing V2R3.0 on your system.

Replacing a Release Using Automatic Installation

Part 3. Replacing a Release Using Manual Installation

This part contains information on how to install the new Licensed Internal Code, install the operating system, and install licensed programs. You can also change the primary language on your system. Refer to the *National Language Support Planning Guide*, GC41-9877 for any special considerations you may need to know about other languages.

Note: You can use the instructions in Part 2, "Replacing a Release Using Automatic Installation" on page 2-1 if you want to use the automatic installation process. If you are doing any of the procedures in the following list, continue to use the instructions in this part.

- Adding disk units using checksum protection, mirrored protection, or user auxiliary storage pools. Do not install checksums when you are installing your new release.
- Changing system options
- Changing primary language

WARNING

You cannot change your primary language from a single-byte character set (SBCS) to a double-byte character set (DBCS) using the instructions in this part. You also cannot change the primary language from DBCS to SBCS with these instructions. Go to the *National Language Support Planning Guide*, GC41-9877, for information about changing the primary language from SBCS to DBCS and from DBCS to SBCS. Also, 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-7 for more information about deleting secondary languages.

The following table is a list of releases for the AS/400 system. Use this table to determine if you can use these instructions to install V2R3.0 over the release you currently have installed on your system.

Release Currently Installed	Can V2R3M0 be Installed?
R01M00	No
R01M02	No
R02M00	No
R03M00	No
V2R1M0	Yes
V2R1M1	Yes
V2R2M0	Yes
V2R3M0	Yes

For example, V2R3M0 is Version 2 Release 3 Modification 0. If no V is shown, Version 1 is assumed.

Replacing a Release Using Manual Installation

If you do not know which release is currently installed on your system, go to “Task 2. Verify Your Order and the Release Level” on page 1-6 for information on finding which release you have installed.

Before you begin

Before you begin to install any of the licensed programs, complete the planning tasks in Part 1, “Planning Tasks” on page 1-1. Use the following list to be sure you have completed the planning tasks.

- Review information about the new release, including the *Read This First, Memo to AS/400 Users*, and the Preventive Service Planning (PSP) information. See page 1-3.
- Verify your order and the release level of your system. See page 1-6.
- Permanently apply any temporarily applied PTFs. See page 1-8.
- Check the disk storage space requirements to be sure you have enough auxiliary storage available on your system to install the release. See page 1-8.
- Clean up your system to reduce installation time. See page 1-11.
- Estimate the installation time. See page 1-12.
- Be sure you have a current backup copy of your system. See page 1-16.
- Determine which tape device to use and be sure to clean your tape drive now to help prevent media errors. See page 1-17.

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.

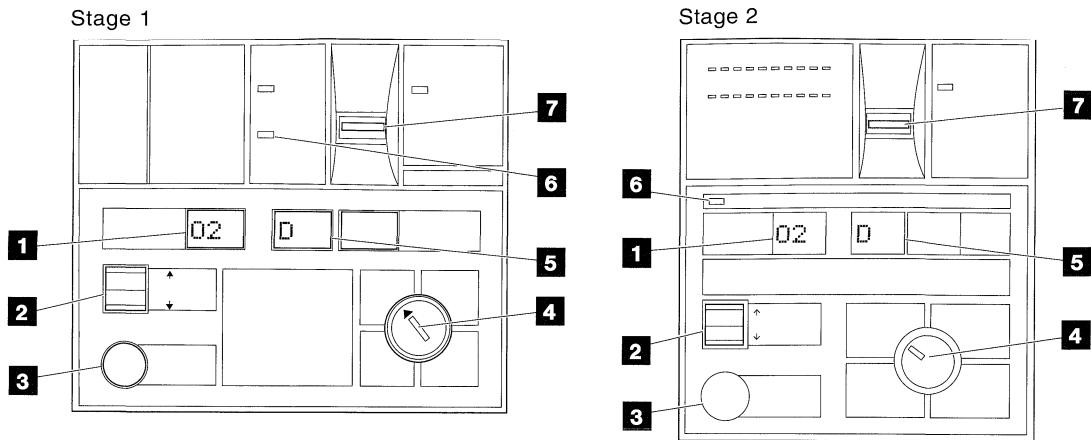
Determine the tape device to use for the alternate initial program load (IPL).

If you have V2R1.0 installed on your system, start here. Otherwise, begin at step 1 on page 3-5.

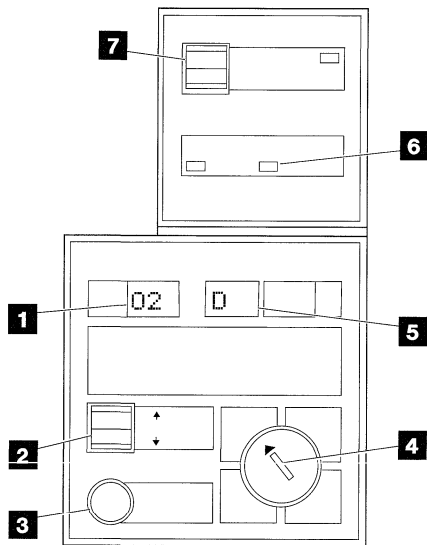
- ___ **Step A** If your system is powered on, type the following command:
PWRDWSYS *IMMED
Press the Enter key and wait for the entire system to power off.
- ___ **Step B** Turn the key so that the small black triangle of the keylock switch **4** points to the Manual position.
- ___ **Step C** Press the Function Selection switch **2** until a 02 (Select IPL) is shown in the Function display **1** on the control panel.
- ___ **Step D** Press the Enter button **3** on the control panel.
- ___ **Step E** Press the Function Selection switch **2** until D (Tape IPL) is shown on the Data display **5** on the control panel.
- ___ **Step F** Press the Enter button **3** on the control panel.
- ___ **Step G** Make sure the power is on for the display station to be used as the console.
- ___ **Step H** If the tape device for the alternate IPL has separate on and off switches, verify that the switch is in the On position.
- ___ **Step I** 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 J** Turn the power on for the system by pushing the power switch **7**. The switch returns to the center on the 9406 System Unit and the 9404 System Unit after you push it.
- ___ **Step K** If you could not load your tape in step I, load the first tape volume into the tape device for the alternate IPL now. Prepare the tape device.
- ___ **Step L** Continue with step 4 on page 3-5.

Replacing a Release Using Manual Installation

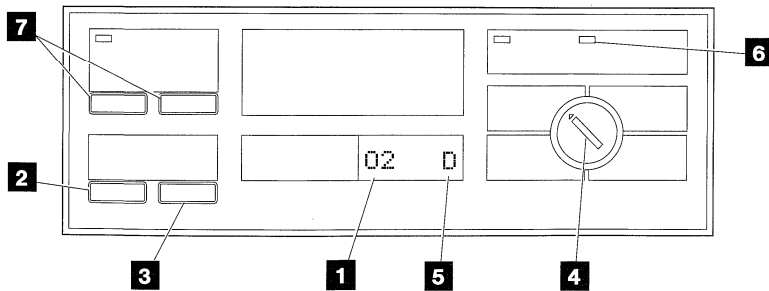
9406 Control Panel



9404 Control Panel



9402 Control Panel



RV2D412-2

Figure 3-1. Control panels of the AS/400 systems

If you have V2R1.1, V2R2.0, or V2R3.0 installed on your system, start here.

___ **Step 1** Load the first tape volume into the tape device for the alternate IPL.

___ **Step 2** Turn the keylock switch **4** on the control panel to the **Manual** position.

___ **Step 3** 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 4** Wait for the yellow system attention light **6** 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 3-2 is displayed in the Data display **5**, perform the action for that SRC. Otherwise, continue with step 5 on page 3-6.

Figure 3-2. SRC codes

Symptom	Action
A6xx 6001	When this SRC is shown, continue with step 5 on page 3-6.
A1xx 1933 A12x 1933 (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. 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 4a.
B1xx 1803 B1xx 1806 B1xx 1938	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. Then continue with step 4a.
B1xx 1934	This SRC is shown if the wrong tape is loaded. Load the correct tape and make the tape device ready. Then continue with step 4a.
2507 0001 2642 0001 2643 0001	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 4a.
2644 3136	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 4a.
Any other SRC	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 **7** to delayed off and wait for the entire system to power off.
- c. Press the power switch **7** on and make the tape device ready. Wait for the system attention light to light up. If the

Replacing a Release Using Manual Installation

system attention light **6** appears and the same SRC is displayed again, go to “Licensed Internal Code Recovery” on page A-3.

- ___ **Step 5** When A6xx 6001 is displayed in the Data display **5**, press the Function Selection switch **2** until 23 (Restore Licensed Internal Code) is shown in the Function display **1** on the control panel.
- ___ **Step 6** Press the Enter button **3** on the control panel.
- ___ **Step 7** If SRC A6xx 6048 appears in the Data display **5**, load the next tape volume and prepare the tape device.

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.

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

Task 2. Replacing the Operating System

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

Selection
 2

Licensed Internal Code - Property of IBM 9400LIC Microcode (C)
Copyright IBM Corp. 1980, 1993. All rights reserved. US
Government Users Restricted Rights - Use, duplication or
disclosure restricted by GSA ADP schedule contract with IBM
Corp.
```

— **Step 1** Type a **2**

Press the Enter key.

The Confirm Install of Operating System display is shown.

```
Confirm Install of Operating System

Press Enter to confirm your choice to install the operating system.
Press F12 to return and cancel your choice to install the
operating system.

F12=Cancel
```

— **Step 2** Press the Enter key.

Replacing a Release Using Manual Installation

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.

Select a Language Group

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

Type choice, press Enter.

Language feature **2924**

F3=Exit F12=Cancel

- **Step 3** Confirm that the displayed value is correct, or type the numbers of the feature code for the language you want. The value you specify must match the national language version that is on the media description report.

The following list shows the feature codes for the languages offered on the AS/400 system:

Figure 3-3. Language Feature Codes

Feature Code	National Language
2922	Portuguese
2923	Dutch Netherlands
2924	English
2925	Finnish
2926	Danish
2928	French
2929	German
2931	Spanish
2932	Italian
2933	Norwegian
2937	Swedish
2938	English Uppercase Support for Double-Byte Character Set (DBCS)
2939	German Multinational Character Set
2940	French Multinational Character Set
2942	Italian Multinational Character Set
2950	English Uppercase
2956	Turkish
2957	Greek
2958	Icelandic
2962	Japanese Double-Byte Character Set (DBCS)
2963	Belgian Dutch
2966	Belgian French
2980	Brazilian Portuguese
2981	Canadian French
2984	English Uppercase and Lowercase Support for Double-Byte Character Set (DBCS)
2986	Korean Double-Byte Character Set (DBCS)
2987	Traditional Chinese Double-Byte Character Set (DBCS)
2989	Simplified Chinese Double-Byte Character Set
2996	Portuguese Multinational Character Set

Step 4 Press the Enter key.

Replacing a Release Using Manual Installation

After the language feature is entered, the Confirm Language Feature Selection display is shown.

```
Confirm Language Feature Selection

Language feature . . . . .: 2924

Press Enter to confirm your choice for language feature.
Installing the system will continue.
Press F12 to return to change your choice for
language feature.
```

— **Step 5** Press the Enter key.

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 following display is not shown, go to the IPL Step in Progress display on 3-11.

Note: Select option 1 to use your additional disk units. 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, or mirrored protection on your system, refer to those sections in the *Advanced Backup and Recovery Guide*, SC41-8079, before you select this option.

```
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

Selection
  1
```

— **Step 6** Type a 1
Press the Enter key.

Replacing a Release Using Manual Installation

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
```

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.

Replacing a Release Using Manual Installation

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
```

Step 7 Type the following:

```
Install option          1
Date:                  (current year, month, day)
Year
Month
Day
Time:                  (current time, 24-hour clock)
Hour
Minute
Second
```

Step 8 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 9 Load the next tape volume whenever one of the next two displays are shown. Follow the instructions on the display. When the Sign On display is shown, continue to the following page.

```
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 choice, press Enter.
Reply . . . . . 1          1=Continue, 2=End installing
```

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

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

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

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

Step 10 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.

Replacing a Release Using Manual Installation

After the base part of the operating system has been replaced, the Sign On display is shown.

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

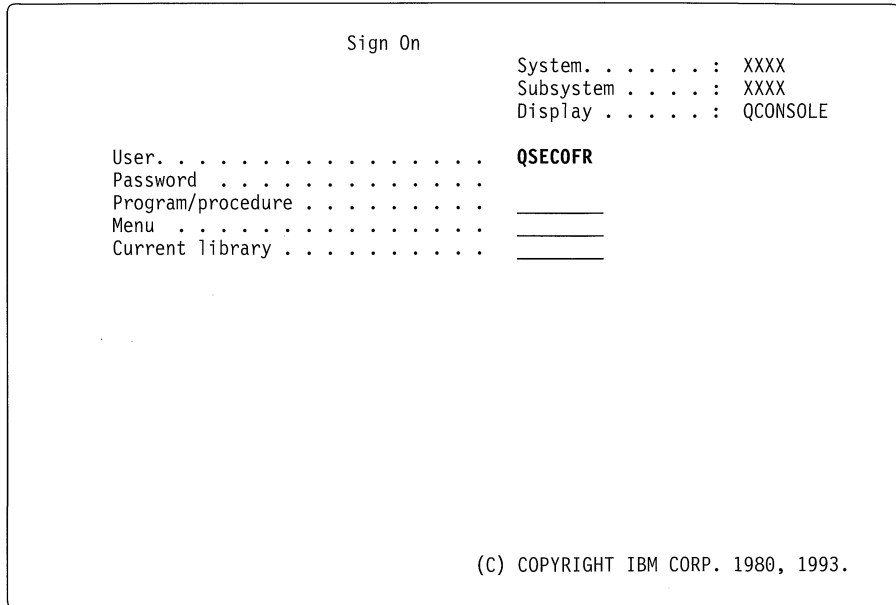
User. . . . . _____
Password . . . . . _____
Program/procedure . . . . . _____
Menu . . . . . _____
Current library . . . . . _____

(C) COPYRIGHT IBM CORP. 1980, 1993.
```

This completes Task 2. Do not remove the distribution tape. Continue with "Task 3. Replacing the Licensed Programs."

Task 3. Replacing the Licensed Programs

Begin this task at the Sign On display.



___ **Step 1** Type the following:

User	QSECOFR
Password	(password if required)

___ **Step 2** Press the Enter key.

Replacing a Release Using Manual Installation

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.

___ **Step 3** Type the following:

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

___ **Step 4** Press the Enter key.

___ **Step 5** The Edit Rebuild of Access Paths display could be shown. If it is, press the Enter key to continue.

___ **Step 6** Additional display messages could be shown. Press the Enter key after each message to continue.

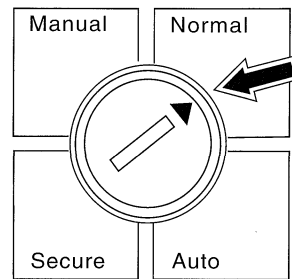
The AS/400 Main Menu (or the menu you chose as an initial menu) is shown.

```
MAIN                AS/400 Main Menu                System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks
    90. Sign off
Selection or command
====> CHGMSGQ QSYSOPR *BREAK SEV(60)
-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

- ___ **Step 7** Type the following command:
CHGMSGQ QSYSOPR *BREAK SEV(60)
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** Type the following command:
ENDSBS *ALL *IMMED
Press the Enter key.
- ___ **Step 10** The message **System ended to restricted condition** is shown.
Press the Enter key to continue.
- ___ **Step 11** Type the following command:
CHGMSGQ QSYSOPR *BREAK SEV(95)
Press the Enter key.
- ___ **Step 12** A message display could be shown.
Press the Enter key.
Note: Ignore the messages that are shown.

Replacing a Release Using Manual Installation

- **Step 13** Turn the keylock switch on the control panel of your system to the Normal position. The keylock position is shown in the following example:



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The AS/400 Main Menu (or the menu you chose as an initial menu) is shown.

```
MAIN                AS/400 Main Menu                System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
    10. Information Assistant options
    11. PC Support tasks
    90. Sign off
Selection or command
===> GO LICPGM
-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
```

- **Step 14** Type the following command:

GO LICPGM

Press the Enter key.

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
Secondary Languages
  20. Display installed secondary languages
  21. Install secondary languages
  22. Delete secondary languages
More...
Selection or command
===> 1
-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=AS/400 main menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

— **Step 15** Type a **1**

Press the Enter key.

Replacing a Release Using Manual Installation

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
Tape device . . . . TAP01      Name
Automatic IPL . . . N          Y-Yes
                                N-No
F3=Exit  F12=Cancel
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

___ **Step 16** Type the following:

```
Install option          1
Tape device             TAP01
Automatic IPL           N
```

Notes:

- 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.
- 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 17** Press the Enter key.

Replacing a Release Using Manual Installation

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 or PTFs                      System: XXXX

Licensed program or PTF 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
5738SS1  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 18 Continue loading tapes in sequence whenever messages similar to the following are shown:

```
Display Messages

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

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

Step 19 Type a **G**

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

Replacing a Release Using Manual Installation

The Work with Licensed Programs display is shown when the installation process is complete.

```
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

Selection or command
===> _____

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=AS/400 main menu
Work with licensed programs function has completed.
```

— **Step 20** 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 Installation Completion.”

Task 4. Verifying Installation Completion

Complete the following steps.

- ___ **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

Related Commands
  70. Save and restore commands
  71. Program temporary fixes command

Bottom

Selection or command
===> 50

-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=AS/400 main menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
    
```

- ___ **Step 2** Type 50
Press the Enter key.

Replacing a Release Using Manual Installation

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

F3=Exit  F12=Cancel
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

- ___ **Step 3** Press the Enter key.
- ___ **Step 4** Look at the messages shown on the Display History Log Contents display. 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.

This completes Task 4. Continue with "Task 5. Completing Part 3."

Task 5. Completing Part 3

Begin at the AS/400 Main Menu (or the menu you chose as your initial menu).

```

MAIN                               AS/400 Main Menu                               System: XXXX

Select one of the following:

    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks

    90. Sign off

Selection or command
===> _____

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
  
```

If you go to another part of this guide in one of the following steps, you do not have to return here to complete your installation.

- ___ **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 Part 6, "Installing Additional Licensed Programs" and complete your installation.

Note: If you have PC Support/400 installed on your system, the new release will be downloaded to your personal computer the first time you turn it on. Make sure you have the PCSUPDT command in your STARTPCS.BAT file on your personal computer.

If you did not have PC Support/400 installed before you started the automatic installation process, and want to install it or any of the PC Support/400 options such as AS/400 PC Support PC Tools Folder, go to Part 6, "Installing Additional Licensed Programs" to install it now.

Otherwise, continue with step 3.

- ___ **Step 3** If you have a secondary language installed, go to Part 7, "Installing a Secondary Language" to replace the secondary language and complete your installation. Otherwise, continue with step 4.
- ___ **Step 4** 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 step 5 on page 3-26.

IMPORTANT

You must install a cumulative PTF package or do an IPL to complete the installation process. An IPL is required to start the Initialize System (INZSYS) process.

- **Step 5** Look for messages in the install history log that indicate the status of the Initialize System (INZSYS) process.

Note: The INZSYS process could take 2 or more hours to complete.

Use option 50 (Display log) on the Work with Licensed Programs display to look for messages.

- 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. Find the message **Initialize System (INZSYS) started**. If you do not see this message on the display, wait a few minutes and select option 50 again. After the **Initialize System (INZSYS) started** 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 6** Save your system using your normal save procedures. Make sure the Initialize System (INZSYS) process is complete before you save your system. Save your system using the instructions in the *Basic Backup and Recovery Guide*, SC41-0036.

You have completed installing V2R3.0 on your system.

Part 4. Installing a New AS/400 System with the Operating System Already Installed

This part contains instructions to install licensed programs that are on the distribution tape. These instructions assume that V2R3.0 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.

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 Part 5, "Installing a New AS/400 System without the Operating System Installed" on page 5-1 if you are adding disk units. If you are planning to use checksums, auxiliary storage pools, or mirrored protection, refer to the chapter on using disk recovery methods in the *Advanced Backup and Recovery Guide*, SC41-8079, before you begin.

— Before you begin —

Before you begin to install any of the licensed programs, complete the planning tasks in Part 1, "Planning Tasks" on page 1-1. Use the following list to be sure you have completed the planning tasks.

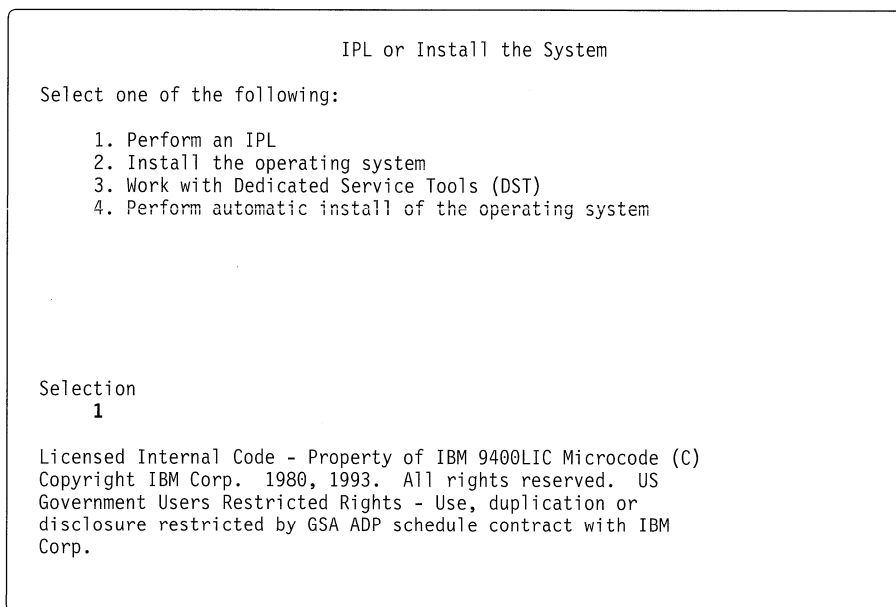
- Review information about the new release, including the *Read This First*, before you begin. See page 1-3.
- Verify your order and the release level of your system. See page 1-6.
- Determine which tape device to use. Be sure to clean the heads on your tape drive after you power on the system to help prevent media errors. See page 1-17.

Task 1. Doing the Initial Program Load (IPL)

Ensure that the system is powered down before you begin. Complete the following steps to perform an IPL on your system:

- ___ **Step 1** Turn the power on for the display station used as the system console.
- ___ **Step 2** If the tape device for the alternate IPL has separate on and off switches, verify that the switch is in the On position.
- ___ **Step 3** Turn the key so that the small black triangle of the keylock switch **4** points to the Manual position.
- ___ **Step 4** Press the Function Selection switch **2** until a 02 (Select IPL) is shown in the Function display **1** on the control panel.
- ___ **Step 5** Press the Enter button **3** on the control panel.
- ___ **Step 6** Press the Function Selection switch **2** until an A (IPL) is shown on the Data display **5** on the control panel.
- ___ **Step 7** Press the Enter button **3** on the control panel.
- ___ **Step 8** Turn the power on for the system by pushing the power switch **7**. The switch returns to the center on the 9406 System Unit and the 9404 System Unit after you push it.

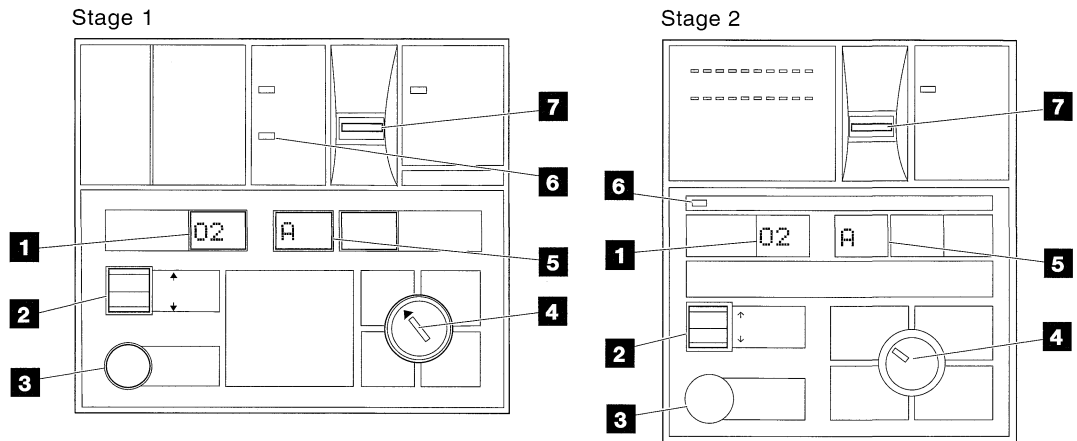
After approximately 10 minutes, the IPL or Install the System display is shown.



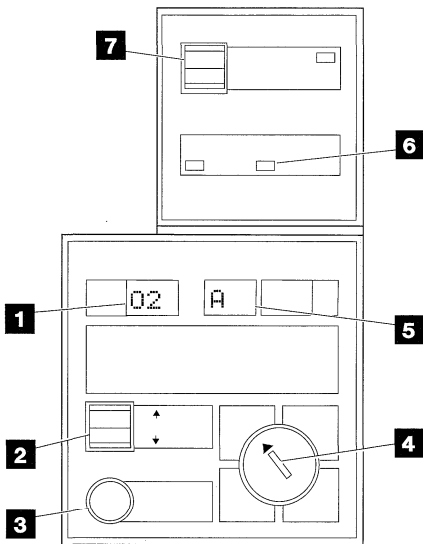
- ___ **Step 9** Type a 1
Press the Enter key.

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

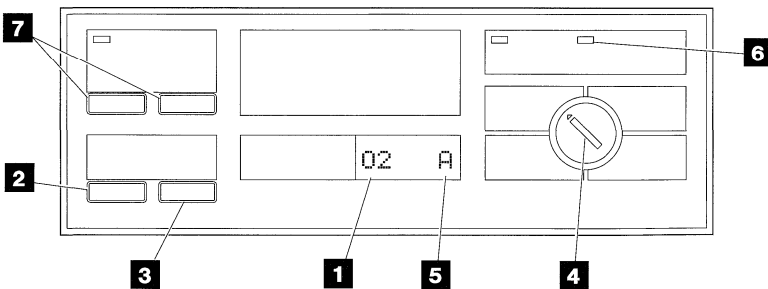
9406 Control Panel



9404 Control Panel



9402 Control Panel



RV2D411-2

Figure 4-1. The control panels of the AS/400 systems

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

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

Several messages could be shown on the console. To continue, press the Enter key after each message. 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.

F3=Exit      F10=Display all  F11=Remove a message
F12=Cancel   F13=Remove all   F16=Remove all except unanswered
Bottom
```

___ **Step 10** Press the Enter key.

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

The Sign On display is shown.

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

                                User. . . . . QSECOFR

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

__ **Step 11** Type the following:

User

QSECOFR

__ **Step 12** Press the Enter key.

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

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.

___ **Step 13** Type the following:

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

___ **Step 14** Press the Enter key.

___ **Step 15** Additional display messages could be shown. Press the Enter key after each message to continue.

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

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
```

___ **Step 16** Respond to the prompts on the Set Major System Options display using the following information:

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 *Device Configuration Guide*, SC41-8106.

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 *Device Configuration Guide*, SC41-8106.

Default special environment.

The default value *NONE indicates no special environment. *S36 sets up the System/36 environment. Refer to the *Programming: Concepts and Programmer's Guide for the System/36 Environment*, SC41-9663, for more information about working in the System/36 environment on the AS/400 system.

___ **Step 17** Press the Enter key.

___ **Step 18** The Edit Rebuild of Access Paths display could be shown. If it is, press the Enter key to continue.

___ **Step 19** 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.
```

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

The AS/400 Main Menu is shown.

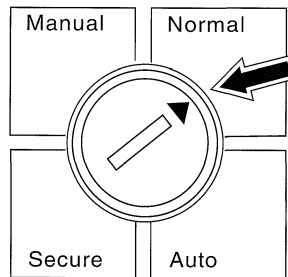
```
MAIN                      AS/400 Main Menu                      System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks

   90. Sign off

Selection or command
===> _____

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

Step 20 Turn the keylock on the control panel of your system to the Normal position. The keylock position is shown in the following example.



RSLT006-0

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

Task 2. Installing the Licensed Programs

Begin at the AS/400 Main Menu.

```

MAIN                               AS/400 Main Menu                               System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks

   90. Sign off

Selection or command
===> CHGMSGQ QSYSOPR *BREAK SEV(60)

-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
    
```

- ___ **Step 1** 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.

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

The AS/400 Main Menu is displayed again.

```
MAIN                      AS/400 Main Menu                      System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
    10. Information Assistant options
    11. PC Support tasks

    90. Sign off

Selection or command
===> GO LICPGM

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
```

___ **Step 7** 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.

NOTE

If you do not want to install all of the licensed programs that are on the distribution tape, go to Part 6, "Installing Additional Licensed Programs" to install one or more from the list of licensed programs on the Install Licensed Programs display.

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
  Secondary Languages
    20. Display installed secondary languages
    21. Install secondary languages
    22. Delete secondary languages
More...
Selection or command
===> 1
-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=AS/400 main menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

- **Step 9** Type a **1**
Press the Enter key.

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

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
Tape device . . . . TAP01      Name
Automatic IPL . . . N          Y-Yes
                                N-No
F3=Exit  F12=Cancel
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

__ **Step 10** Type the following:

Install option	3
Tape device	TAP01
Automatic IPL	N

Notes:

- For more information about the install options, go to "Using Option 1. Install All" on page B-1
- 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 11** Press the Enter key.

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

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 or PTFs                               System: XXXX

Licensed program or PTF 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
5738SS1 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
Queue . . . . . : QSYSOPR                               System: XXXX
Library . . . . : QSYS                                 Program . . . . : *DSPMSG
Severity . . . . : 95                                  Library . . . . :
Delivery . . . . : *BREAK                               Reply . . . . :

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

___ **Step 13** Type a **G**

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

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

The Work with Licensed Programs display is shown when the installation process is complete.

```
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

Selection or command
====> _____
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=AS/400 main menu
Work with licensed programs function has completed.
```

— **Step 14** 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.

This completes Task 2. Continue with “Task 3. Completing Part 4.”

Task 3. Completing Part 4

Begin at the AS/400 Main Menu.

```

MAIN                               AS/400 Main Menu                               System: XXXX

Select one of the following:

    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks

    90. Sign off

Selection or command
===> _____

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
    
```

If you go to another part of this guide in one of the following steps, you do not have to return here to complete your installation.

- ___ **Step 1** After the tape has completed rewinding, remove it from the tape drive.
- ___ **Step 2** If you have additional licensed programs on separate tapes to install, go to Part 6, "Installing Additional Licensed Programs," and complete your installation. Otherwise, continue with step 3.
- ___ **Step 3** If you have a secondary language to install, go to Part 7, "Installing a Secondary Language" to install the secondary language and complete your installation. Otherwise, continue with step 4.
- ___ **Step 4** 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 step 5.

IMPORTANT

You must install a cumulative PTF package or do an IPL to complete the installation process. An IPL is required to start the Initialize System (INZSYS) process.

- ___ **Step 5** 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.
 - a. Type **GO LICPGM** and press the Enter key.

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

- 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. Find the message **Initialize System (INZSYS) started**. If you do not see this message on the display, wait a few minutes and select option 50 again. After the **Initialize System (INZSYS) started** 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 6** Save your system using your normal save procedures. Make sure the Initialize System (INZSYS) process is complete before you save your system. Save your system using the instructions in the *Basic Backup and Recovery Guide*, SC41-0036.
- ___ **Step 7** If you have installed AS/400 PC Support on the system, go to one or more of the following manuals to complete installing PC Support.
 - *PC Support/400: DOS Installation and Administration Guide*, SC41-0006
 - *PC Support/400: DOS Installation and Administration Guide (PS/55)*, SC41-0008
 - *PC Support/400: OS/2 Installation and Administration Guide*, SC41-0007
 - *PC Support/400: OS/2 Installation and Administration Guide (PS/55)*, SC41-0009

You have completed installing V2R3.0 on your system.

Part 5. Installing a New AS/400 System without the Operating System Installed

This part 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 *National Language Support Planning Guide*, GC41-9877, for any special considerations you may need to know about other languages.

Note: These instructions assume that this release of the 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 —

Before you begin the installation task in this part, complete the planning tasks in Part 1, "Planning Tasks" on page 1-1. Use the following list to be sure you have completed the planning tasks.

- Review information about the new release, including the *Read This First*, before you begin. See page 1-3.
- Verify your order and the release level of your system. See page 1-6.
- Determine which tape device to use. Be sure to clean the heads on your tape drive after you power on the system to help prevent media errors. See page 1-17.

Task 1. Installing the Operating System

Ensure that the system is powered down before you begin. Complete the following steps to start installing your system:

- ___ **Step 1** Turn the power on for the display station used as the system console.
- ___ **Step 2** If the tape device has separate on and off switches, verify that the switch is in the On position.
- ___ **Step 3** Turn the key so that the small black triangle of the keylock switch **4** points to the Manual position.
- ___ **Step 4** Press the Function Selection switch **2** until a 02 (Select IPL) is shown in the Function display **1** on the control panel.
- ___ **Step 5** Press the Enter button **3** on the control panel.
- ___ **Step 6** Press the Function Selection switch **2** until an A (IPL) is shown on the Data display **5** on the control panel.
- ___ **Step 7** Press the Enter button **3** on the control panel.
- ___ **Step 8** Turn the power on for the system by pushing the power switch **7**. The switch returns to the center on the 9406 System Unit and the 9404 System Unit after you push it.

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

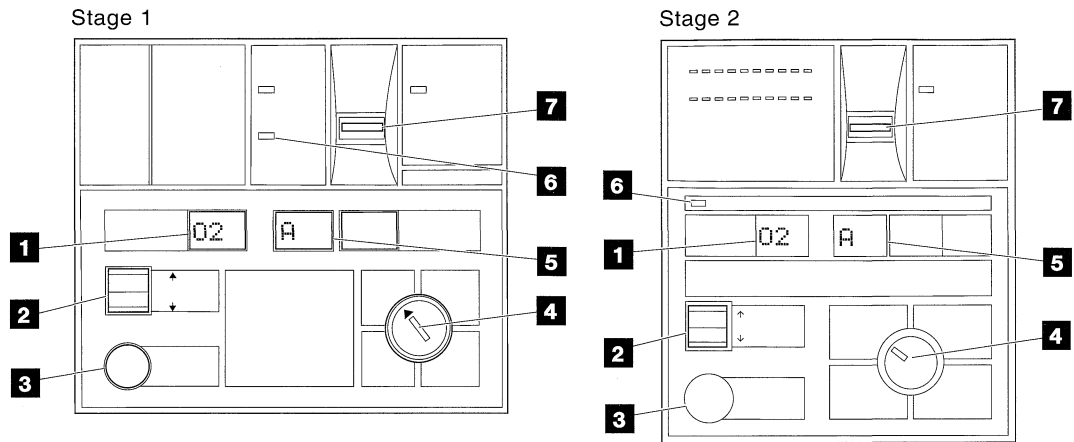
Selection
    2

Licensed Internal Code - Property of IBM 9400LIC Microcode (C)
Copyright IBM Corp. 1980, 1993. All rights reserved. US
Government Users Restricted Rights - Use, duplication or
disclosure restricted by GSA ADP schedule contract with IBM
Corp.
```

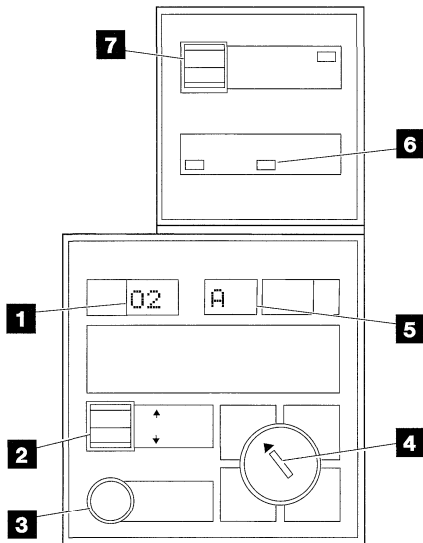
- ___ **Step 9** Load the first tape volume.
- ___ **Step 10** Type a 2
Press the Enter key.

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

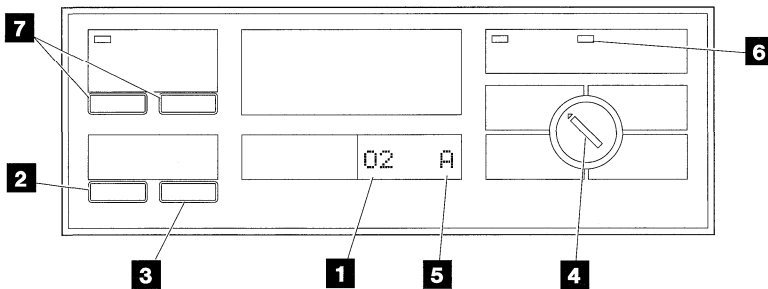
9406 Control Panel



9404 Control Panel



9402 Control Panel

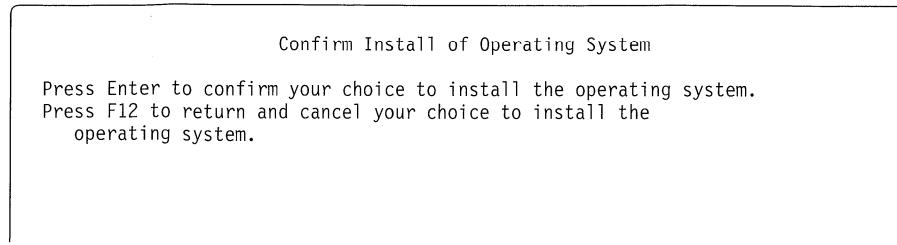


RV2D411-2

Figure 5-1. The control panels on the AS/400 systems

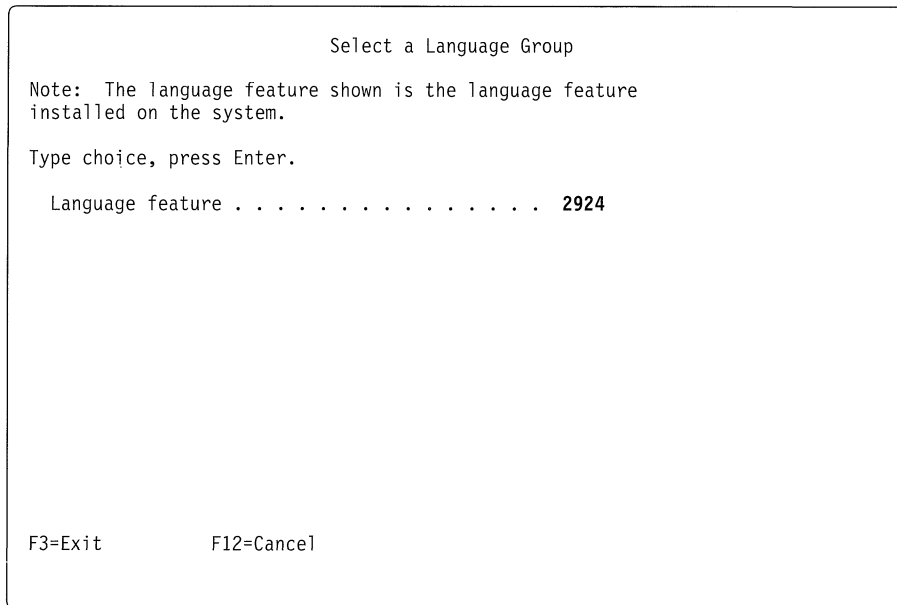
Installing a New AS/400 System without the Operating System Installed

The Confirm Install of Operating System display is shown.



— **Step 11** Press the Enter key.

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.



— **Step 12** Confirm that the displayed value is correct, or type the numbers of the feature code for the language you want. The value you specify must match the national language version that is on the media description report.

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

The following list shows the feature codes for the languages offered on the AS/400 system:

Figure 5-2. Language Feature Codes

Feature Code	National Language
2922	Portuguese
2923	Dutch Netherlands
2924	English
2925	Finnish
2926	Danish
2928	French
2929	German
2931	Spanish
2932	Italian
2933	Norwegian
2937	Swedish
2938	English Uppercase Support for Double-Byte Character Set (DBCS)
2939	German Multinational Character Set
2940	French Multinational Character Set
2942	Italian Multinational Character Set
2950	English Uppercase
2956	Turkish
2957	Greek
2958	Icelandic
2962	Japanese Double-Byte Character Set (DBCS)
2963	Belgian Dutch
2966	Belgian French
2980	Brazilian Portuguese
2981	Canadian French
2984	English Uppercase and Lowercase Support for Double-Byte Character Set (DBCS)
2986	Korean Double-Byte Character Set (DBCS)
2987	Traditional Chinese Double-Byte Character Set (DBCS)
2989	Simplified Chinese Double-Byte Character Set
2996	Portuguese Multinational Character Set

___ **Step 13** Press the Enter key.

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

After the language feature is entered, the Confirm Language Feature Selection display is shown.

```
Confirm Language Feature Selection
Language feature . . . . . : 2924
Press Enter to confirm your choice for language feature.
Installing the system will continue.
Press F12 to return to change your choice for
language feature.
```

— **Step 14** Press the Enter key.

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 following display is not shown, go to the IPL Step in Progress display on 5-7.

```
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
Selection
1
```

— **Step 15** Type a 1

Note: Select option 1 (Add all disk units to the system auxiliary storage pool) to use your additional disk units. This will improve 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, or mirrored protection on your system, refer to those chapters in the *Advanced Backup and Recovery Guide*, SC41-8079, before you select this option.

Press the Enter key.

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

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
```

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

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

__ **Step 16** 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.

Selection
 1

__ **Step 17** Type a **1**
Press the Enter key.

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

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
```

___ **Step 18** Type the following:

```
Install option                1
Date:                         (current year, month, day)
Year
Month
Day
Time:                         (current time, 24-hour clock)
Hour
Minute
Second
```

___ **Step 19** 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:

```
                                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.

```
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 choice, press Enter.

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

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

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

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

Bottom
F3=Exit          F10=Display all    F11=Remove a message
F12=Cancel       F13=Remove all     F16=Remove all except unanswered
```

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

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

Messages similar to the following could be displayed:

```
Display Messages
System. . . . . : XXXX
Program . . . . . : *DSPMSG
Library . . . . . :
Delivery . . . . . : *BREAK

Queue . . . . . : QSYSOPR
Library . . . . . : QSYS
Severity . . . . . : 10

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

F3=Exit      F10=Display all  F11=Remove a message
F12=Cancel   F13=Remove all   F16=Remove all except unanswered

Bottom
```

___ **Step 21** 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.

The Sign On display is shown.

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

User. . . . . QSECOFR

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

___ **Step 23** Type the following:

User **QSECOFR**

___ **Step 24** Press the Enter key.

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

- ___ **Step 25** 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
Queue . . . . . : QSYSOPR           System: XXXX
Library . . . . : QSYS             Program . . . . : *DSPMSG
Severity . . . . : 60              Library . . . . :
                                     Delivery . . . . : *BREAK

Press Enter to continue.
System object QWCSCPf created again during IPL.

                                     Bottom
F3=Exit      F10=Display all      F11=Remove a message
F12=Cancel   F13=Remove all       F16=Remove all except unanswered
```

- ___ **Step 26** The IPL Options display is shown.

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

```

                                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.

___ **Step 27** Type the following:

```

System date                (current date)
System time                (current time, 24-hour clock)
Set major system options   Y
```

___ **Step 28** Press the Enter key.

___ **Step 29** Additional display messages could be shown. Press the Enter key after each message to continue.

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
Default special environment . . . . . *NONE       *DEVADR
                                                *NONE, *S36
```

___ **Step 30** Respond to the prompts on the Set Major System Options display using the following information:

Enable automatic configuration.

The value Y (Yes) automatically configures local devices. N (No) indicates no automatic configuration. Complete informa-

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

tion about automatic configuration can be found in the *Device Configuration Guide*, SC41-8106.

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 *Device Configuration Guide*, SC41-8106.

Default special environment.

The default value *NONE indicates no special environment. *S36 sets up the System/36 environment. Refer to the *Programming: Concepts and Programmer's Guide for the System/36 Environment*, SC41-9663, for more information about working in the System/36 environment on the AS/400 system.

- ___ **Step 31** Press the Enter key.
- ___ **Step 32** The Edit Rebuild of Access Paths display could be shown. If it is, press the Enter key to continue.
- ___ **Step 33** 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.
```


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

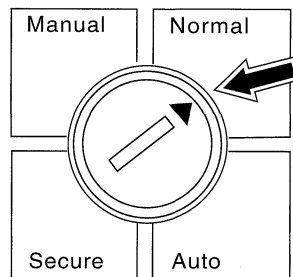
The AS/400 Main Menu is shown.

```
MAIN                               AS/400 Main Menu                               System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks

   90. Sign off

Selection or command
====> _____
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

— **Step 34** Turn the keylock switch on the control panel of your system to the Normal position. The keylock position is shown in the following example:



RSLT006-0

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

Task 2. Installing the Licensed Programs

Begin at the AS/400 Main Menu.

```
MAIN                               AS/400 Main Menu                               System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks
    90. Sign off

Selection or command
====> CHGMSGQ QSYSOPR *BREAK SEV(60)

-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

- ___ **Step 1** 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.

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

The AS/400 Main Menu is displayed again.

```
MAIN                      AS/400 Main Menu                      System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks
    90. Sign off
Selection or command
===>GO LICPGM
-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
```

— **Step 8** Type the following command:

GO LICPGM

Press the Enter key.

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
Secondary Languages
    20. Display installed secondary languages
    21. Install secondary languages
    22. Delete secondary languages
More...
Selection or command
===> 1
-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=AS/400 main menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

— **Step 9** Type a 1

Press the Enter key.

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

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
Tape device . . . . TAP01                         Name
Automatic IPL . . . N                             Y-Yes
                                                    N-No
F3=Exit F12=Cancel
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

__ **Step 10** Type the following:

```
Install option                2
Tape device                    TAP01
Automatic IPL                  N
```

Notes:

- For more information about the install options, go to "Using Option 1. Install All" on page B-1
- 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 11** Press the Enter key.

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

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 or PTFs                      System: XXXX

Licensed program or PTF 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
5738SS1  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
Queue . . . . . : QSYSOPR                      System: XXXX
Library . . . . : QSYS                          Program . . . . : *DSPMSG
Severity . . . . : 95                           Library . . . . :
Delivery . . . . :                               *BREAK

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

___ **Step 13** Type a **G**

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

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

The Work with Licensed Programs display is shown when the installation process is complete.

```
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
Selection or command                                     More...
====> _____
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=AS/400 main menu
Work with licensed programs function has completed.
```

Step 14 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.

This completes Task 2. Continue with "Task 3. Completing Part 5."

Task 3. Completing Part 5

Begin at the AS/400 Main Menu.

```
MAIN                               AS/400 Main Menu                               System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks

   90. Sign off

Selection or command
===> _____
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

If you go to another part of this guide in one of the following steps, you do not have to return here to complete your installation.

- ___ **Step 1** After the tape has completed rewinding, remove it from the tape drive.
- ___ **Step 2** If you have additional licensed programs on separate tapes to install, go to Part 6, "Installing Additional Licensed Programs," and complete your installation. Otherwise, continue with step 3.
- ___ **Step 3** If you have a secondary language to install, go to Part 7, "Installing a Secondary Language" to install the secondary language and complete your installation. Otherwise, continue with step 4.
- ___ **Step 4** 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 step 5.

IMPORTANT

You must install a cumulative PTF package or do an IPL to complete the installation process. An IPL is required to start the Initialize System (INZSYS) process.

- ___ **Step 5** 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.
 - a. Type **GO LICPGM** and press the Enter key.

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

- 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. Find the message **Initialize System (INZSYS) started**. If you do not see this message on the display, wait a few minutes and select option 50 again. After the **Initialize System (INZSYS) started** 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 6** Save your system using your normal save procedures. Make sure the Initialize System (INZSYS) process is complete before you save your system. Save your system using the instructions in the *Basic Backup and Recovery Guide*, SC41-0036.
- ___ **Step 7** If you have installed AS/400 PC Support on the system, go to one or more of the following manuals to complete installing PC Support.
 - *PC Support/400: DOS Installation and Administration Guide*, SC41-0006
 - *PC Support/400: DOS Installation and Administration Guide (PS/55)*, SC41-0008
 - *PC Support/400: OS/2 Installation and Administration Guide*, SC41-0007
 - *PC Support/400: OS/2 Installation and Administration Guide (PS/55)*, SC41-0009

You have completed installing V2R3.0 on your system.

Part 6. Installing Additional Licensed Programs

This part contains instructions to install additional licensed programs or optional parts of licensed programs on your system. The PTFs for licensed programs are on a separate tape. Use the *AS/400 PTF Shipping Information Letter* to install the PTFs after you complete this part.

Note: If you install an additional licensed program and are not installing a new release at the same time, check 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.

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. Follow the instructions in “Task 2. Completing Part 6” on page 6-9.

The system must be in a restricted state to install the QGPL and QUSRSYS libraries. 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 on page 6-2 through 6 on page 6-3 of Task 1. Your installation time may be slower if you install licensed programs while the system is not in a restricted state.

— Before you begin —

Before you begin to install any of the licensed programs, complete the planning tasks in Part 1, “Planning Tasks” on page 1-1. Use the following list to be sure you have completed the planning tasks.

- Verify entries in the system distribution directory. See page 1-13.
- Determine which tape device to use and be sure to clean your tape drive now to help prevent media errors. See page 1-17.

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.

```
MAIN                               AS/400 Main Menu                               System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks

    90. Sign off

Selection or command
====> CHGMSGQ QSYSOPR *BREAK SEV(60)

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

- ___ **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** Type the following:

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.

The AS/400 Main Menu (or the menu you chose as your initial menu) is shown.

```
MAIN                      AS/400 Main Menu                      System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks

    90. Sign off

Selection or command
====> ENDSBS *ALL *IMMED

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

___ **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.

Installing Additional Licensed Programs

The AS/400 Main Menu (or the menu you chose as your initial menu) is displayed again.

```
MAIN                      AS/400 Main Menu                      System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks
    90. Sign off
Selection or command
====> GO LICPGM
-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
```

___ **Step 9** Type the following command:

GO LICPGM

Press the Enter key.

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
Secondary Languages
    20. Display installed secondary languages
    21. Install secondary languages
    22. Delete secondary languages
More...
Selection or command
====> 11
-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=AS/400 main menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

___ **Step 10** Type a **11**

Press the Enter key.

Installing Additional Licensed Programs

The Install Licensed Programs display is shown.

```

                                Install Licensed Programs
                                System: XXXX

Type options, press Enter.
1=Install

Option   Licensed Program   Description                               Installed
                                                Release
-        5738SS1   OS/400 - Library QGPL                     V2R3M0
-        5738SS1   OS/400 - Library QUSRSYS                  V2R3M0
-        5738SS1   OS/400 - Extended Base Support           V2R3M0
-        5738SS1   OS/400 - Online Information              V2R3M0
-        5738SS1   OS/400 - Online Education               V2R3M0
-        5738SS1   OS/400 - S/36 and S/38 Migration        V2R3M0
-        5738SS1   OS/400 - System/36 Environment          V2R3M0
-        5738SS1   OS/400 - System/38 Environment          V2R3M0
-        5738SS1   OS/400 - Example Tools Library          V2R3M0
-        5738SS1   OS/400 - AFP Compatibility Fonts        V2R3M0
-        5738SS1   OS/400 - *PRV CL Compiler Support       V2R3M0
-        5738SS1   OS/400 - 9406 Problem Analysis          V2R3M0
-        5738SS1   OS/400 - S/36 Migration Assistant       V2R3M0
I        5738AD1   Application Dictionary Services/400
                                                More...

F3=Exit  F12=Cancel
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

___ **Step 11** Type a **1** in the option column next to the licensed programs to be installed.

Note: 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.

___ **Step 12** Press the Enter key.

The Confirm Install of Licensed Programs display is shown.

```

                                Confirm Install of Licensed Programs
                                System: XXXX

Press Enter to confirm your choices for 1=Install.
Press F12 to return to change your choices.

Option   Licensed Program   Description                               Installed
                                                Release
1        5738AD1   Application Dictionary Services/400
```

___ **Step 13** Press the Enter key to confirm your choices.

Installing Additional Licensed Programs

The Confirm Install Options display is shown.

```

                                Install Options
                                System: XXXX
Type choices, press Enter.
Tape device . . . .  TAP01      Name
Objects to install .  1          1-Programs and language objects
                                2-Programs
                                3-Language objects
Automatic IPL . . . .  N          Y-Yes
                                N-No
F3=Exit  F12=Cancel
```

___ **Step 14** Type the following:

Tape device	TAP01 (See note)
Objects to install	1
Automatic IPL	N

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 15** Press the Enter key.

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 or PTFs
                                System: XXXX
Licensed program or PTF install in progress
```

Installing Additional Licensed Programs

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
5738AD1 Application Dictionary Services/400 *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 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
```

— **Step 17** Type a **G**

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

Installing Additional Licensed Programs

The Work with Licensed Programs display is shown when the installation process is complete.

```
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

Selection or command                                     More...
====> _____

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=AS/400 main menu
Work with licensed programs function has completed.
```

___ **Step 18** 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.

You have completed Task 1. Continue with "Task 2. Completing Part 6" on page 6-9.

Task 2. Completing Part 6

Begin at the AS/400 Main Menu (or the menu you chose as your initial menu).

```

MAIN                               AS/400 Main Menu                               System: XXXX

Select one of the following:

    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks

    90. Sign off

Selection or command
===> _____

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.

```

If you go to another part of this guide in one of the following steps, you do not have to return here to complete your installation.

- **Step 1** After the tape has completed rewinding, remove it from the tape drive.
- **Step 2** If you have other licensed programs on separate tapes to install, return to step 9 on page 6-4 and complete this part again. Otherwise, continue with step 3.
- **Step 3** If you have a secondary language to install or replace, go to Part 7, “Installing a Secondary Language” to install or replace the secondary language and complete your installation. Otherwise, continue with step 4.
- **Step 4** 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 step 5.

IMPORTANT

You must install a cumulative PTF package or do an IPL to complete the installation process. An IPL is required to start the Initialize System (INZSYS) process.

- **Step 5** If you added an additional licensed program when you installed a new release, use option 50 (Display log) on the Work with Licensed Programs display to look for the message **Initialize System (INZSYS) processing completed successfully**.

Installing Additional Licensed Programs

Note: If you have added an additional licensed program without installing a new release, the conversion process in INZSYS is not required.

- 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. Find the message **Initialize System (INZSYS) started**. If you do not see this message on the display, wait a few minutes and select option 50 again. After the **Initialize System (INZSYS) started** 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 6** Save your system using your normal save procedures. Make sure the Initialize System (INZSYS) process is complete before you save your system. Save your system using the instructions in the *Basic Backup and Recovery Guide*, SC41-0036.

___ **Step 7** If you have installed AS/400 PC Support on the system, go to one or more of the following manuals to complete installing PC Support.

- *PC Support/400: DOS Installation and Administration Guide*, SC41-0006
- *PC Support/400: DOS Installation and Administration Guide (PS/55)*, SC41-0008
- *PC Support/400: OS/2 Installation and Administration Guide*, SC41-0007
- *PC Support/400: OS/2 Installation and Administration Guide (PS/55)*, SC41-0009

You have completed installing licensed programs and a cumulative PTF package on your system.

Part 7. Installing a Secondary Language

This part contains instructions for installing a secondary language on your system.

IMPORTANT

Before you install a secondary language on your system, go to the *National Language Support Planning Guide*, GC41-9877, 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.

Before you begin

Before you begin to install a secondary language, complete the planning tasks in Part 1, "Planning Tasks" on page 1-1. Use the following list to be sure you have completed the planning tasks.

- Find your Media Description Report. See "Documents Shipped with Your New Release" on page 1-4 for a description of the contents of this report.
- Determine which tape device to use and be sure to clean your tape drive now to help prevent media errors. See page 1-17.
- You must sign on the system as QSECOFR. Ensure that QSECOFR is enrolled in the system distribution directory. (page 1-13)

Task 1. Installing a Secondary Language

The information in the following list is unique to secondary languages:

- Only the secondary language objects for the installed licensed programs are installed. If you installed your secondary language before all of your licensed programs are 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 that licensed program.
- If you want to restore a secondary language for only one licensed program, use the Restore Licensed Program (RSTLICPGM) command.¹
- 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.

___ **Step 1** Check the media description report to find the correct volume identifier for the secondary language.

___ **Step 2** Load the tape volume on your system.

___ **Step 3** Type the following command on any command line:

CHGMSGQ QSYSOPR *BREAK SEV(95)

Press the Enter key.

___ **Step 4** A message display could be shown.

Press the F3 (Exit) key.

Note: Ignore the messages that are shown.

___ **Step 5** Type the following command on any command line:

GO LICPGM

Press the Enter key.

¹ More information on how to use this command is available in the *Programming: Control Language Reference*, SC41-0030.

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

Selection or command
===> 21

-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=AS/400 main menu
(C) COPYRIGHT IBM CORP. 1980, 1993.

```

Step 6 Type a **21**
 Press the Enter key.

Installing a Secondary Language

The Install Secondary Languages display is shown.

```

                                Install Secondary Languages
                                System:  XXXX
Primary language . . . . . : 2924
Description . . . . . : English

Type options, press Enter.
  1=Install

Option  Language  Description                Library  Installed
  1     2922     Portuguese                QSYS2922  Release
  -     2923     Dutch Netherlands        QSYS2923
  -     2925     Finnish                   QSYS2925
  -     2926     Danish                    QSYS2926
  -     2928     French                    QSYS2928
  -     2929     German                    QSYS2929
  -     2931     Spanish                   QSYS2931
  -     2932     Italian                   QSYS2932
  -     2933     Norwegian                 QSYS2933
  -     2937     Swedish                   QSYS2937
  -     2938     English Uppercase DBCS    QSYS2938
                                          More...

F3=Exit  F12=Cancel
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

Step 7 Type a 1 in the option column next to the language you want to install.

Note: The feature code on the media description report and the tape label for the secondary language will be 59xx. Use the following table to determine which language you are installing. For example, if the media description report lists 5922 (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.

Figure 7-1. Language Feature Codes

Secondary Feature Code	Primary Feature Code	National Language
5922	2922	Portuguese
5923	2923	Dutch Netherlands
5924	2924	English
5925	2925	Finnish
5926	2926	Danish
5928	2928	French
5929	2929	German
5931	2931	Spanish
5932	2932	Italian
5933	2933	Norwegian
5937	2937	Swedish
5938	2938	English Uppercase Support for Double-Byte Character Set (DBCS)
5939	2939	German Multinational Character Set
5940	2940	French Multinational Character Set
5942	2942	Italian Multinational Character Set
5950	2950	English Uppercase
5956	2956	Turkish
5957	2957	Greek
5958	2958	Icelandic
5962	2962	Japanese Double-Byte Character Set (DBCS)
5963	2963	Belgian Dutch
5966	2966	Belgian French
5980	2980	Brazilian Portuguese
5981	2981	Canadian French
5984	2984	English Uppercase and Lowercase Support for Double-Byte Character Set (DBCS)
5986	2986	Korean Double-Byte Character Set (DBCS)
5987	2987	Traditional Chinese Double-Byte Character Set (DBCS)
5989	2989	Simplified Chinese Double-Byte Character Set
5996	2996	Portuguese Multinational Character Set

___ **Step 8** Press the Enter key.

Installing a Secondary Language

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      2922 Portuguese QSYS2922 Release
```

___ **Step 9** Press the Enter key

The Install Option for Secondary Languages is shown.

```
Install Option for Secondary Languages
System: XXX
Type choice, press Enter.
Tape device . . . . . TAP01 Name
```

___ **Step 10** Type the following:

```
Tape device          TAP01
                      (See note)
```

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 11** Press the Enter key.

Installing a Secondary Language

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 or PTFs                System: XXXX

Licensed program or PTF 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
Program  Description                                Type   Language
5738CB1  SAA COBOL/400                                *LNG   2922
```

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

```
Display Messages

Queue . . . . . : QSYSOPR                        System:  XXXX
Library . . . . . : QSYS                          Program . . . . . : *DSPMSG
Severity . . . . . : 65                          Library . . . . . :
Delivery . . . . . : *BREAK

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

— **Step 13** Type a **G**

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

Press the Enter key.

Installing a Secondary Language

The Work with Licensed Programs display is shown when the installation process is complete.

```
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

Selection or command                                     More...
===> _____

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=AS/400 main menu
Work with licensed program function has completed.
```

— **Step 14** 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 Task 1. Continue with “Task 2. Completing Part 7” on page 7-9.

Task 2. Completing Part 7

Begin at the AS/400 Main Menu (or the menu you chose as your initial menu).

```

MAIN                               AS/400 Main Menu                               System: XXXX

Select one of the following:

    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks

    90. Sign off

Selection or command
====> _____

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.

```

If you go to another part of this guide in one of the following steps, you do not have to return here to complete your installation.

- ___ **Step 1** After the tape has completed rewinding, remove it from the tape drive.
- ___ **Step 2** If you have more secondary languages to install or replace, go to step 5 on page 7-2 and complete this part again. Otherwise, continue with step 3.
- ___ **Step 3** 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 step 4.

IMPORTANT

You must install a cumulative PTF package or do an IPL to complete the installation process. An IPL is required to start the Initialize System (INZSYS) process.

- ___ **Step 4** If you installed a secondary language when you installed a new release, use option 50 (Display log) on the Work with Licensed Programs display to look for the message **Initialize System (INZSYS) processing completed successfully**.

Note: If you installed a secondary language without installing a new release, the conversion process in INZSYS is not required.

- a. Type **GO LICPGM** and press the Enter key.

Installing a Secondary Language

- 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. Find the message **Initialize System (INZSYS) started**. If you do not see this message on the display, wait a few minutes and select option 50 again. After the **Initialize System (INZSYS) started** 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 5** Save your system using your normal save procedures. Make sure the Initialize System (INZSYS) process is complete before you save your system. Save your system using the instructions in the *Basic Backup and Recovery Guide*, SC41-0036.
- ___ **Step 6** If you have installed AS/400 PC Support on the system, go to one or more of the following manuals to complete installing PC Support.
 - *PC Support/400: DOS Installation and Administration Guide*, SC41-0006
 - *PC Support/400: DOS Installation and Administration Guide (PS/55)*, SC41-0008
 - *PC Support/400: OS/2 Installation and Administration Guide*, SC41-0007
 - *PC Support/400: OS/2 Installation and Administration Guide (PS/55)*, SC41-0009

You have completed installing or replacing a secondary language on your system.

Part 8. Changing Your Primary Language Using a Secondary Language Tape

WARNING

You cannot change your primary language from a single-byte character set (SBCS) to a double-byte character set (DBCS) using the instructions in this part. You also cannot change the primary language from DBCS to SBCS. Go to the *National Language Support Planning Guide*, GC41-9877, for information about changing the primary language from SBCS to DBCS and from DBCS to SBCS. Also, 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-7 for more information about deleting secondary languages.

This part contains the instructions to change your primary language using a secondary language tape. To complete this part, you are required to use the tapes that contain the operating system (5738-SS1 for V2R3.0). These tapes and the secondary language tapes are needed. For more specific information about special language considerations, refer to the *National Language Support Planning Guide*, GC41-9877.

Before you begin

Before you begin to change the primary language, complete the planning tasks in Part 1, "Planning Tasks" on page 1-1. Use the following list to be sure you have completed the planning tasks.

- The release and modification level of your system must be the same as the release and modification level of your secondary language tape. Go to "Task 2. Verify Your Order and the Release Level" on page 1-6 for information on how to determine the release level and modification of your system.
- Find your Media Description Report. See "Documents Shipped with Your New Release" on page 1-4 for a description of the contents of this report.
Note: If the language feature code on your secondary language tape is not 59xx, do not use Part 8, "Changing Your Primary Language Using a Secondary Language Tape." If the language feature code is 29xx, go to Part 5, "Installing a New AS/400 System without the Operating System Installed" and use those instructions to change your primary language.
- Determine which tape device to use and be sure to clean your tape drive now to help prevent media errors. See page 1-17.

Task 1. Changing the Primary Language

Begin at the AS/400 Main Menu (or the menu you chose as your initial menu).

```
MAIN                               AS/400 Main Menu                               System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks
    90. Sign off
Selection or command
====> PWRDWNSYS *IMMED RESTART(*YES)
-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

__ **Step 1** Load the first tape volume containing the operating system (5738-SS1).

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

__ **Step 2** Turn the key so that the small black triangle of the keylock switch **4** points to the Manual position.

__ **Step 3** Type the following command:

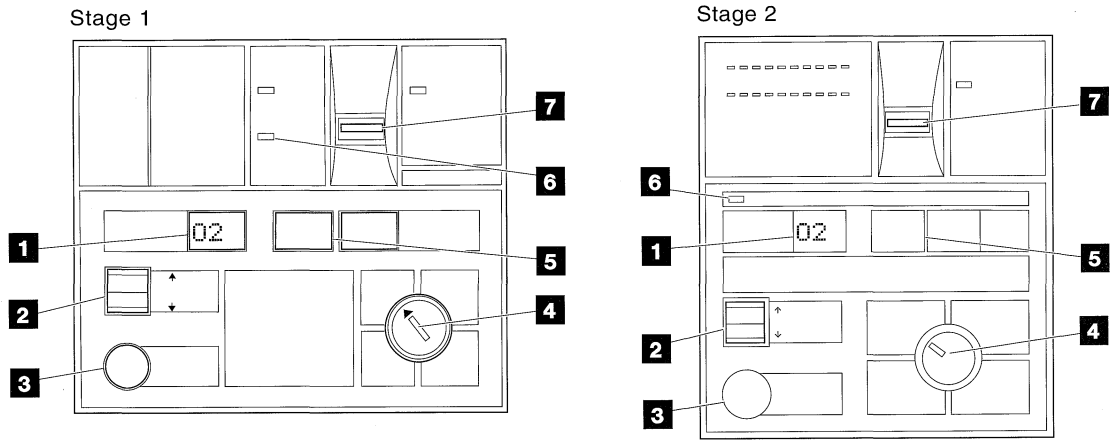
PWRDWNSYS *IMMED RESTART(*YES)

Press the Enter key and wait for the next display to appear.

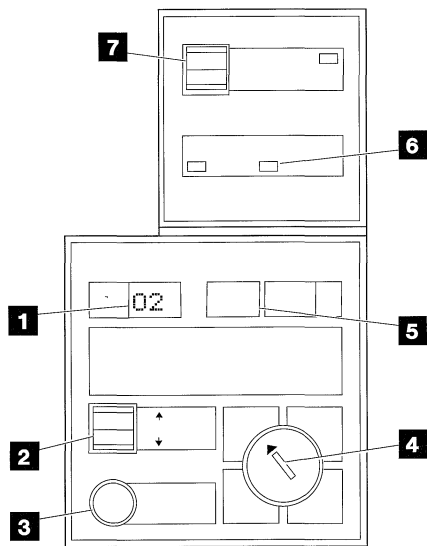
Changing Your Primary Language Using a Secondary Language Tape

The control panels of the 9406 System Unit, the 9404 System Unit, and the AS/400 9402 System Unit are shown.

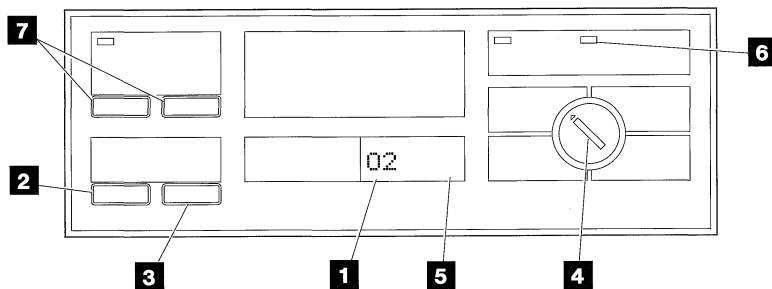
9406 Control Panel



9404 Control Panel



9402 Control Panel



RV2D413-2

Changing Your Primary Language Using a Secondary Language Tape

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

Selection
  2

Licensed Internal Code - Property of IBM 9400LIC Microcode (C)
Copyright IBM Corp. 1980, 1993. All rights reserved. US
Government Users Restricted Rights - Use, duplication or
disclosure restricted by GSA ADP schedule contract with IBM
Corp.
```

— **Step 4** Type a 2

Press the Enter key.

The Confirm Install of Operating System display is shown.

```
Confirm Install of Operating System

Press Enter to confirm your choice to install the operating system.
Press F12 to return and cancel your choice to install the
operating system.
```

— **Step 5** Press the Enter key.

Changing Your Primary Language Using a Secondary Language Tape

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.

Select a Language Group

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

Type choice, press Enter.

Language feature 2924

F3=Exit F12=Cancel

___ **Step 6** Type the numbers of the feature code for the language you want.

Note: The feature code on the media description report and the tape label for the secondary language is 59xx. Type 29xx to enter the language on the Select a Language Group display where xx are the last two digits of the language feature code. Use the table on the following page to determine which language you are installing. For example, if the media description report lists 5922 (Portuguese) for the secondary language, use the primary feature code for Portuguese (2922).

Changing Your Primary Language Using a Secondary Language Tape

The following table shows the feature codes for the languages offered on the AS/400 system.

Figure 8-1. Language Feature Codes

Secondary Feature Code	Primary Feature Code	National Language
5922	2922	Portuguese
5923	2923	Dutch Netherlands
5924	2924	English
5925	2925	Finnish
5926	2926	Danish
5928	2928	French
5929	2929	German
5931	2931	Spanish
5932	2932	Italian
5933	2933	Norwegian
5937	2937	Swedish
5938	2938	English Uppercase Support for Double-Byte Character Set (DBCS)
5939	2939	German Multinational Character Set
5940	2940	French Multinational Character Set
5942	2942	Italian Multinational Character Set
5950	2950	English Uppercase
5956	2956	Turkish
5957	2957	Greek
5958	2958	Icelandic
5962	2962	Japanese Double-Byte Character Set (DBCS)
5963	2963	Belgian Dutch
5966	2966	Belgian French
5980	2980	Brazilian Portuguese
5981	2981	Canadian French
5984	2984	English Uppercase and Lowercase Support for Double-Byte Character Set (DBCS)
5986	2986	Korean Double-Byte Character Set (DBCS)
5987	2987	Traditional Chinese Double-Byte Character Set (DBCS)
5989	2989	Simplified Chinese Double-Byte Character Set
5996	2996	Portuguese Multinational Character Set

Step 7 Press the Enter key.

Changing Your Primary Language Using a Secondary Language Tape

After the language feature is entered, the Confirm Language Feature Selection display is shown.

```
Confirm Language Feature Selection
Language feature . . . . . : 2922
Press Enter to confirm your choice for language feature.
Installing the system will continue.
Press F12 to return to change your choice for
language feature.
```

___ **Step 8** Press the Enter key.

___ **Step 9** 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 Tape

___ **Step 10** 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.

Selection
1

___ **Step 11** Type a 1
Press the Enter key.

Changing Your Primary Language Using a Secondary Language Tape

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
```

__ **Step 12** Type the following:

```

Install option           2
Date:                   (current year, month, day)
    Year
    Month
    Day
Time:                   (current time, 24 hour clock)
    Hour
    Minute
    Second
```

__ **Step 13** Press the Enter key.

Changing Your Primary Language Using a Secondary Language Tape

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
```

___ **Step 14** Type the following:

```
Restore option          4
Job and output queues option  2
```

___ **Step 15** Press the Enter key.

Changing Your Primary Language Using a Secondary Language Tape

- **Step 16** 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
```

- **Step 17** Type a 1

Press the Enter key.

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.
```

Changing Your Primary Language Using a Secondary Language Tape

- ___ **Step 18** Load the next tape volume whenever one of the next two displays are shown.

```

                                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 choice, press Enter.

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

```

- ___ **Step 19** Type a 1
Press the Enter key.

```

                                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

                                Bottom
F3=Exit          F10=Display all      F11=Remove a message
F12=Cancel       F13=Remove all      F16=Remove all except unanswered

```

- ___ **Step 20** Type a G
Note: C cancels processing. G (go) continues processing.
Press the Enter key.

Changing Your Primary Language Using a Secondary Language Tape

After the base part of the operating system has been changed, the Sign On display is shown.

```

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

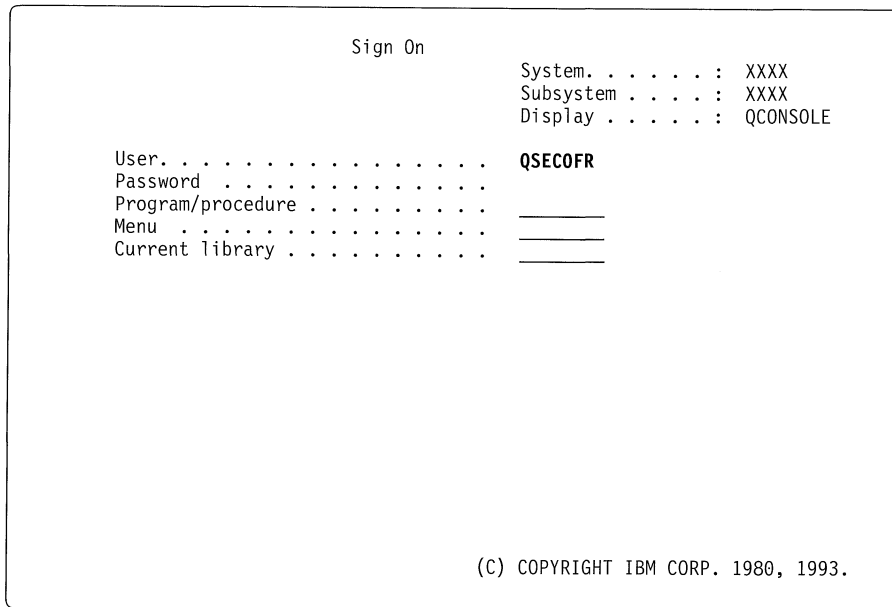
User. . . . . : _____
Password . . . . . : _____
Program/procedure . . . . . : _____
Menu . . . . . : _____
Current library . . . . . : _____

                                (C) COPYRIGHT IBM CORP. 1980, 1993.
```

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

Task 2. Installing the Licensed Programs

Begin at the Sign On display.



__ **Step 1** Type the following:

User

QSECOFR

Password

(password if required)

__ **Step 2** Press the Enter key.

Changing Your Primary Language Using a Secondary Language Tape

Step 3 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.
```

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.

Step 4 Type the following:

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

Step 5 Press the Enter key.

Note: Additional display messages could be shown. Press the Enter key after each message to continue.

Changing Your Primary Language Using a Secondary Language Tape

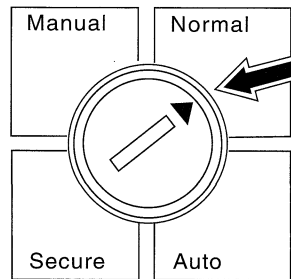
The AS/400 Main Menu (or the menu you chose as an initial menu) is shown.

```
MAIN                      AS/400 Main Menu                      System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
    10. Information Assistant options
    11. PC Support tasks
    90. Sign off
Selection or command
====> CHGMSGQ QSYSOPR *BREAK SEV(60)
-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

- ___ **Step 6** Type the following command:
CHGMSGQ QSYSOPR *BREAK SEV(60)
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** Type the following command:
ENDSBS *ALL *IMMED
Press the Enter key.
- ___ **Step 9** The message **System ended to restricted condition** is shown.
Press the Enter key to continue.
- ___ **Step 10** Type the following command:
CHGMSGQ QSYSOPR *BREAK SEV(95)
Press the Enter key.
- ___ **Step 11** A message display could be shown.
Press the Enter key.
Note: Ignore the messages that are shown.

Changing Your Primary Language Using a Secondary Language Tape

- ___ **Step 12** Turn the keylock on the control panel of your system to the Normal position. The keylock position is shown in the following example:



RSLT006-0

The AS/400 Main Menu (or the menu you chose as your initial menu) is shown again.

```
MAIN                AS/400 Main Menu                System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks
    90. Sign off
Selection or command
====> GO LICPGM
-----
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
```

- ___ **Step 13** Type the following command:

GO LICPGM

Press the Enter key.

Changing Your Primary Language Using a Secondary Language Tape

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
Secondary Languages
  20. Display installed secondary languages
  21. Install secondary languages
  22. Delete secondary languages
Selection or command                                     More...
====> 1
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=AS/400 main menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

___ **Step 14** Type a **1**

Note: Select option 1 (Install all) to change the primary language.
Press the Enter key.

Changing Your Primary Language Using a Secondary Language Tape

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
Tape device . . . . TAP01      Name
Automatic IPL . . . N          Y-Yes
                                N-No

F3=Exit  F12=Cancel
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

___ **Step 15** Type the following:

```
Install option          1
Tape device             TAP01
Automatic IPL           N
```

Notes:

- For more information about the install options, go to "Using Option 1. Install All" on page B-1
- 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 16** Press the Enter key.

Changing Your Primary Language Using a Secondary Language Tape

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 or PTFs                               System: XXXX

Licensed program or PTF 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
5738SS1 OS/400 - Library QUSRSYS                         *LNG 2922
```

— **Step 17** Continue loading tapes in sequence whenever messages similar to the following are shown:

```
Display Messages

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

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

— **Step 18** Type a **G**

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

Changing Your Primary Language Using a Secondary Language Tape

When the language objects for all of the licensed programs are installed, 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

Secondary Languages
  20. Display installed secondary languages
  21. Install secondary languages
  22. Delete secondary languages

More...

Selection or command
====> _____

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=AS/400 main menu
Work with licensed programs function has completed.
```

___ **Step 19** 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.

You have completed Task 2. Continue with "Task 3. Completing Part 8."

Task 3. Completing Part 8

Begin at the AS/400 Main Menu (or the menu you chose as your initial menu).

```
MAIN                               AS/400 Main Menu                               System: XXXX
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   10. Information Assistant options
   11. PC Support tasks
   90. Sign off
Selection or command
====> _____
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1993.
```

If you go to another part of this guide in one of the following steps, you do not have to return here to complete your installation.

- ___ **Step 1** After the tape has completed rewinding, remove it from the tape drive.
- ___ **Step 2** 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 step 3.

IMPORTANT

You must install a cumulative PTF package or do an IPL to complete the installation process. An IPL is required to start the Initialize System (INZSYS) process.

- ___ **Step 3** 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.
 - 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. Find the message **Initialize System (INZSYS) started**. If you do not see

Changing Your Primary Language Using a Secondary Language Tape

this message on the display, wait a few minutes and select option 50 again. After the **Initialize System (INZSYS) started** 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 4** Save your system using your normal save procedures. Make sure the Initialize System (INZSYS) process is complete before you save your system. Save your system using the instructions in the *Basic Backup and Recovery Guide*, SC41-0036.

You have completed changing the primary language using a secondary language tape.

Changing Your Primary Language Using a Secondary Language Tape

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.

If a failure occurs anytime during the installation process and you determine that you cannot continue installing the new release, you can use the *Basic Backup and Recovery Guide*, SC41-0036, and your backup copy of the system to get your system back to your previous release level.

If you have a power failure anytime during the installation process, go to the "Where You Begin Recovery" 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.

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

Use the following table 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.

The first column of the table identifies which installation part you were using when the failure occurred. In the second column, locate which task you were performing in that part. Locate the first task that failed during your installation and then use the information in the last column to determine your recovery starting point.

Figure A-1 (Page 1 of 2). Where to start recovery

Part	Task Number and Name	Where to Start
Part 2, "Replacing a Release Using Automatic Installation" on page 2-1	"Task 1. Using Automatic Installation" on page 2-3	Go to "Starting Point for Automatic Installation Recovery" on page A-2.
Part 3, "Replacing a Release Using Manual Installation" on page 3-1	"Task 1. Replacing the Licensed Internal Code" on page 3-3	Go to "Licensed Internal Code Recovery" on page A-3.
	"Task 2. Replacing the Operating System" on page 3-7	Go to "Operating System Recovery" on page A-3.
	"Task 3. Replacing the Licensed Programs" on page 3-15	Go to "Licensed Programs, PTFs, and Secondary Language Recovery" on page A-6.

Recovery Procedures

Figure A-1 (Page 2 of 2). Where to start recovery

Part	Task Number and Name	Where to Start
Part 4, "Installing a New AS/400 System with the Operating System Already Installed" on page 4-1	"Task 1. Doing the Initial Program Load (IPL)" on page 4-2	Go to "Operating System Recovery" on page A-3.
	"Task 2. Installing the Licensed Programs" on page 4-9	Go to "Licensed Programs, PTFs, and Secondary Language Recovery" on page A-6.
Part 5, "Installing a New AS/400 System without the Operating System Installed" on page 5-1	"Task 1. Installing the Operating System" on page 5-2	Go to "Operating System Recovery" on page A-3.
	"Task 2. Installing the Licensed Programs" on page 5-16	Go to "Licensed Programs, PTFs, and Secondary Language Recovery" on page A-6.
Part 6, "Installing Additional Licensed Programs" on page 6-1	"Task 1. Using the Work with Licensed Programs Menu" on page 6-2	Go to "Licensed Programs, PTFs, and Secondary Language Recovery" on page A-6.
Part 7, "Installing a Secondary Language" on page 7-1	"Task 1. Installing a Secondary Language" on page 7-2	Go to "Licensed Programs, PTFs, and Secondary Language Recovery" on page A-6.
Part 8, "Changing Your Primary Language Using a Secondary Language Tape" on page 8-1	"Task 1. Changing the Primary Language" on page 8-2	Go to "Operating System Recovery" on page A-3.
	"Task 2. Installing the Licensed Programs" on page 8-14	Go to "Licensed Programs, PTFs, and Secondary Language Recovery" on page A-6.

Starting Point for Automatic Installation Recovery

If you have used the automatic installation process in Part 2, "Replacing a Release Using Automatic Installation" on page 2-1, or the *Automatic Installation Guide*, SX41-9072, 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-2 (Page 1 of 2). 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" on page A-3.
SRCs starting with B900 xxxx	Go to "Operating System Recovery" on page A-3.

Figure A-2 (Page 2 of 2). Where to start recovery for the automatic installation process

Finding the Problem (Symptom)	Where to Start
Messages starting with CPZ20xx	Go to "Operating System Recovery" on page A-3.
Message indicating automatic installation not complete	Go to "Licensed Programs, PTFs, and Secondary Language Recovery" on page A-6.

Save System Recovery

If a problem occurs while you are saving the system, review your job log to determine what caused the failure. Correct the error and start your save system procedure again. Do not continue to replace the new release until you have a 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.

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 *Basic Backup and Recovery Guide*, SC41-0036.
- If any SRC other than an A6xx 6xxx is displayed, go to the starting point for problem handling in the *System Operator's Guide*, SC41-8082, and follow the instructions.

___ 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-3 on page A-4 and Figure A-4 on page A-4 to determine the cause of the problem and take the action indicated.

Recovery Procedures

- ___ 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 tape volume into the tape device for the alternate IPL. Prepare the tape device.
 - ___ Step b. Turn the keylock on the control panel of your system to the Manual position, if it is not already there.
 - ___ Step c. Press the Function Selection switch on the control panel until a 03 is shown in the Function display.
 - ___ Step d. Press the Enter button on the control panel.
 - ___ Step e. Go back to the beginning of the task and start the task again at the step where the IPL or Install the System display is shown on the console.

Figure A-3. Operating system problems

Symptom	Action
B900 3000 through B900 308F	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 Operator's Guide</i> , SC41-8082. Go to the SRC table in the <i>Operator's Guide</i> and take the appropriate recovery action. Then return to this manual to start the installation process again.
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 Operator's Guide</i> , SC41-8082. 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 Operator's Guide</i> , SC41-8082.

The following table contains some of the termination messages that could occur during the installation of the operating system.

Figure A-4 (Page 1 of 2). Error messages

Message	Description
CPI2095	Cause: The process to change the primary language on the system did not complete successfully. Recovery: Go to the <i>National Language Support Planning Guide</i> , GC41-9877, for special instructions to complete changing the primary language on your system from a double-byte character set (DBCS) to a single-byte character set (SBCS) or from an SBCS to a DBCS primary language.

Figure A-4 (Page 2 of 2). Error messages

Message	Description
<p>CPZ2003 CPZ2004 CPZ2010</p>	<p>Cause: The installation process received a tape error code.</p> <p>Recovery for Error Code Ex10 0019 or Ex10 001A: 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 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>Recovery for all other error codes: Information on how to recover from other error codes associated with these messages is available in the <i>Service: Diagnostic Aids – Volume 1</i>, LY44-0597, or contact your service representative.</p>
<p>CPZ2022</p>	<p>Cause: The restore options read from the installation profile are not valid.</p> <p>Note: 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>Recovery: 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>
<p>CPZ2023</p>	<p>Cause: 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>Recovery: Try to install the operating system again using the manual installation process.</p>
<p>CPZ20xx</p>	<p>Cause: 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>Recovery: 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>Note: A short time after you press the Enter key, a B900 xxxx SRC is displayed. The SRC table in the <i>System Operator's Guide</i>, SC41-8082, 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-5 on page A-7 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.

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 QSYS/QLPINSTALL/nnnnnn 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-5 on page A-7 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 release and modification level should show V2R3M0 if the licensed program is installed successfully. For each installed licensed program and optional part, the release and modification level is shown on the display. Page down (Roll up) through all of the displays to see the status of all of your licensed programs.

Note: The Display Installed Licensed Programs display lists licensed programs and optional parts that have been initially shipped with an operating system release or modification level. Licensed programs and optional parts that have been shipped 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.

If the character string *ERR appears in the release and modification level column, or the column is blank, an error occurred while installing that licensed program. Check to see if the licensed program that you are installing had a different language feature code than your primary language feature code. If it does, the licensed program is flagged as *ERR or the column is blank and the language objects for the licensed program are installed in a secondary language library. Obtain a distribution tape with the correct primary language feature code. Press the F3 key to return to the Work with Licensed Programs menu.

___ 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-5 (Page 1 of 3). Error messages</i>	
Message	Description
CPA3DD1 CPA3DD2 CPA3DDA	<p>Cause: 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>Recovery: Use the online information for the message to determine which tape to load.</p>

Recovery Procedures

<i>Figure A-5 (Page 2 of 3). Error messages</i>	
Message	Description
CPD3710 CPD3711	<p>Cause: There may have been prerequisite PTFs that are missing, or you may be running with the wrong IPL source (A or B).</p> <p>Recovery: Look at the previously listed messages to find the cause and take the recommended recovery action.</p>
CPD3713	<p>Cause: The licensed program is currently installed on your system and was not found on the distribution tape.</p> <p>Recovery: 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>Cause: These messages could be shown if you did not end all of the subsystems before you started the installation process.</p> <p>Recovery: End all subsystems and start installing the licensed programs again.</p>
CPF371C CPF3731	<p>Cause: Look at the messages previously listed in the job log to determine the failure.</p> <p>Recovery: Take the recommended recovery action.</p> <p>Note: If you received one of these messages, the installation process ended before you completed installing the licensed programs.</p>
CPF371D CPF371E	<p>Cause: These messages could be shown if the wrong tape is loaded. The online information of the message can help determine the cause.</p> <p>Recovery: Load the correct tape and start the process again.</p>
CPF3D96	<p>Cause: Errors occurred during the restoring process for a licensed program.</p> <p>Recovery: 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>Cause: Errors occurred when restoring a licensed program or PTFs.</p> <p>Recovery: Enter DSPJOB nnnnnn/QLPINSTALL/QBCHINST or DSPJOB nnnnnn/QLPINSTALL/QLPINSTALL 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>Cause: There is not enough auxiliary storage to install the licensed programs you selected.</p> <p>Recovery: Go to Appendix C, "Licensed Program Size and Performance 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>

Figure A-5 (Page 3 of 3). Error messages

Message	Description
CPF3D85 CPF3D86 CPF3D8E	<p>Cause: 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>Recovery: 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>Cause: The tape device description could not be found or could not be used.</p> <p>Recovery: Use the CRTDEVTAP command to create a device description for the tape device and then start the process again.</p>
CPI3D84	<p>Cause: A licensed program included on the distribution tape was not currently installed on the system.</p> <p>Recovery: Use the online information of the message for recovery help. Use Part 6, "Installing Additional Licensed Programs" on page 6-1 to install the licensed program.</p>
Media Error Messages	<p>Cause: A media error occurred during the installation process.</p> <p>Recovery: 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-6 (Page 1 of 2). Starting the Automatic Installation Process Again

Method	Instructions
Method 1	<p>When to Use Method 1: 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>How to Use Method 1: To start an installation process again using Method 1, use the instructions in Part 2, "Replacing a Release Using Automatic Installation" of this manual, or the <i>Automatic Installation Guide</i>, SX41-9072 Be sure to follow the instructions in the task to complete the part also.</p>
Method 2	<p>When to Use Method 2: 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>How to Use Method 2: Do the following steps:</p> <ul style="list-style-type: none"> ___ Step 1. Make sure the Keylock switch is in the Manual position. ___ Step 2. Press the Function Selection switch until a 03 (Start IPL) is shown in the Function display on the control panel. ___ Step 3. Press the Enter button on the control panel. ___ Step 4. Load the first tape on the tape drive you are using. ___ Step 5. When the IPL or Install the System display is shown, turn the Keylock switch to Normal. ___ Step 6. Select option 4 (Perform an automatic install of the operating system) on the IPL or Install the System display. ___ Step 7. Load additional tapes that the system prompts you to load.

Figure A-6 (Page 2 of 2). Starting the Automatic Installation Process Again

Method	Instructions
Method 3	<p>When to Use Method 3: 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. This method is faster than either of the other two because you do not have to install the Licensed Internal Code or the operating system; therefore an IPL is not required before you start the installation process.</p> <p>How to Use Method 3: 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"> • Use option 11 (Install licensed programs) on the Work with Licensed Programs display. Refer to Part 6, “Installing Additional Licensed Programs” on page 6-1 to install the licensed programs from a list. • 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.

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

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.

The following table contains specific information when and how to use each method.

Recovery Procedures

Figure A-7. Starting the Manual Installation Process Again

Method	Instructions
Method 1	<p>When to Use Method 1: This method should be used if several licensed programs are not installed.</p> <p>How to Use Method 1: 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>When to Use Method 2: 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>How to Use Method 2: To start the installation of only those licensed programs or optional parts that failed, use the instructions in Part 6, "Installing Additional Licensed Programs" on page 6-1. Complete all of the instructions in that part.</p>
Method 3	<p>When to Use Method 3: 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>How to Use Method 3: To install PTFs for selected licensed programs, use the GO PTF menu and select option 7.</p>
Method 4	<p>When to Use Method 4: 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>How to Use Method 4: 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 V2R3.0 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, make sure 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:

- ___ **1** Enter the command:
CHGMSGQ QSYSOPR *BREAK SEV(60)
- ___ **2** A message display could be shown.
Press the Enter key.
Note: Ignore the messages that are shown.
- ___ **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:

- ___ **1** Enter the command:
INZSYS
- ___ **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.

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.

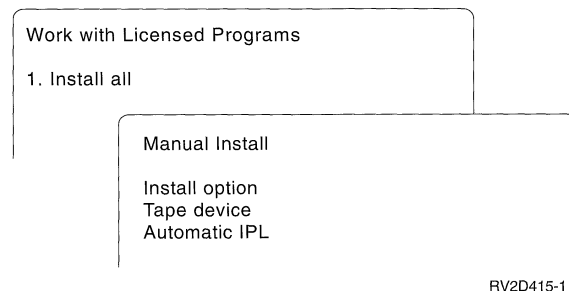
This appendix also discusses installing a secondary language, installing PTFs from a list, and creating a distribution tape using an installation profile. The Completion Status option has detailed information on how to verify that the installation process is successfully completed.

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 items of the licensed programs from a distribution tape. Secondary languages and PTFs on the distribution tape can also be installed with this option.



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The Manual Install display allows you to make choices for the fields in the following list.

1. Install option

1=Installed products

This option installs only the licensed programs and optional items of licensed programs that you have on your system even though there can be other licensed programs on the distribution tape. The tape must contain all of the installed products that are currently installed on your system to complete the installation successfully.

When you use this option, the system calculates the amount of auxiliary storage needed to perform the installation. If you do not have enough auxiliary storage to load the new release, the system issues an error message.

Options on Work with Licensed Programs Menu

2=All products

This option installs everything that is on the distribution tape. The tape should contain the licensed programs and the optional items of the licensed programs.

3=New products

This option installs only the licensed programs and the optional items of those licensed programs that are not currently on your system.

Note: The install option does not apply to the QGPL and QUSRSYS libraries. Objects that are not currently installed on the system for the QGPL and QUSRSYS libraries are installed when you use install option 1, 2, or 3.

2. Tape Device

The examples in this manual use TAP01 for the name of the tape device. Go to "Determining Tape Device Names" on page D-1 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.

Y=YES

If you are loading and applying PTFs, select Yes to perform an automatic IPL.

N=NO

If you are planning to install additional licensed programs on separate distribution tapes, you can select No and do an IPL when you install the PTFs.

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, quite often it is necessary to determine if a licensed program or language dictionary has been 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 language dictionaries installed on your system that were initially shipped with an operating system release or modification level.

Note: Licensed programs or optional parts that are initially shipped independently of an operating system release or modification level are not shown on this display. Use the Display Software Resources (DSPSWRSC) command to see a list of independently shipped licensed programs and optional parts.

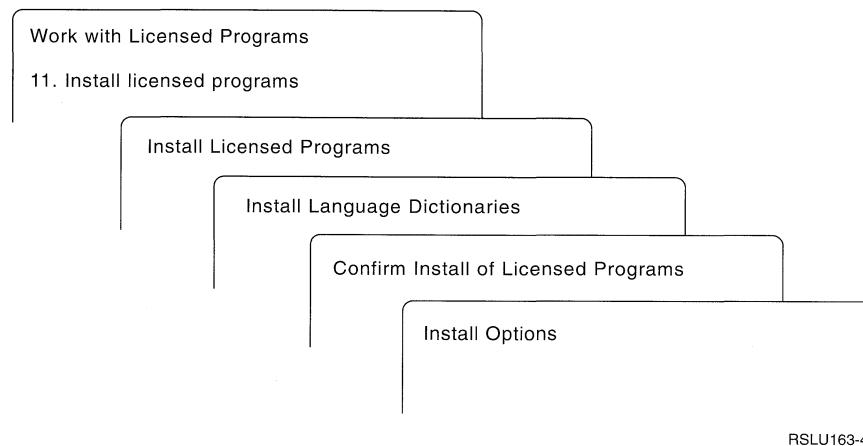
The Installed Release column shows the release and modification level that is installed. If you see *ERR in the Installed Release column, or that column is blank, that licensed program or language dictionary is not completely installed. If the previous release level is shown, there may have been an installation problem or that licensed program may not be on the distribution tape. To find out what the problem

is, use the recovery procedures in Appendix A, "Recovery Procedures" to install the licensed program or language dictionary again.

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 the licensed programs that you have installed on your system. The list displayed shows licensed programs and optional parts installed on your system that were shipped with a system release or modification level. You can use this list to add an additional licensed program or to install a licensed program that did not successfully install during a previous installation process.

Note: Licensed programs or optional parts that are not initially shipped with an operating system release or modification level are not shown. Use the Restore Licensed Program (RSTLICPGM) command to install independently shipped licensed programs and optional parts.



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.

If you select 5738-DCT, Language Dictionaries/400, the Install Language Dictionaries display is shown. Type a 1 in the option column next to the language dictionaries you want to install.

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 using the following information.

1. Tape Device

The examples in this manual use TAP01 for the name of the tape device. Go to "Determining Tape Device Names" on page D-1 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.

1=Programs and language objects

Options on Work with Licensed Programs Menu

Select 1 to install a licensed program and its language objects.

2=Programs

Select 2 if you only want to install a licensed program but do not want to install any language objects.

3=Language objects

Select 3 if you only want to install a language object. Use this option if the language objects you want to install are on a separate set of tapes or are grouped with other language files.

3. Automatic IPL

This option determines if the system will automatically IPL when the installation process has completed successfully.

Y=YES

If you are loading and applying PTFs, select Yes to perform an automatic IPL.

N=NO

If you are planning to install additional licensed programs on separate distribution tapes, you can select No and IPL the system when you install the PTFs.

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-8. 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

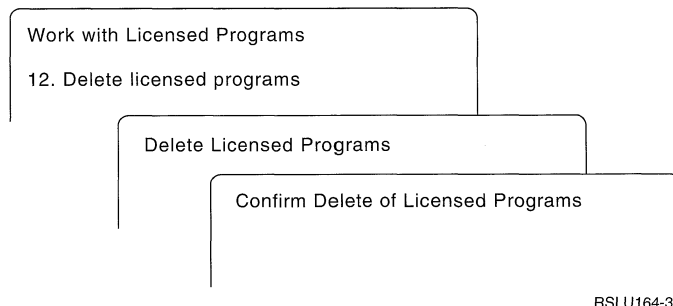
Select option 12 on the Work with Licensed Programs menu to delete a licensed program or optional part of a licensed program installed on your system. This option deletes all objects associated with the licensed program.

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.

Note: Licensed programs and optional parts that are shipped independently of an operating system release or modification level are not displayed. Use the Delete Licensed Program (DLTLICPGM) command to delete independently shipped licensed programs and optional parts.

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, SX41-0028*.



Type a 4 in the option column on the Delete Licensed Programs display next to the licensed program, optional part of a licensed program, or language dictionary that you want to delete from your system. The Confirm Delete of Licensed Programs display shows you which licensed programs, optional parts of licensed programs, or language dictionaries you selected to delete. Press the Enter key to delete the licensed programs. If you delete a licensed program that has optional parts, all of the optional parts for that licensed program are also deleted.

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 the system and user library lists. On the command line, type:

WRKSYSVAL

Press the Enter key. The Work with System Values display is shown. Type a 5 in the option column to display the libraries for the QSYSLIBL and QUSRLIBL system values. The Display System Value display is shown. If the library for the licensed program is listed, press the Enter key to return to the Work with System Values display and type a 2 in the option column. The Change System Value is displayed. Use the spacebar to remove that library from the library list.

You will be able to delete your licensed program after your next IPL.

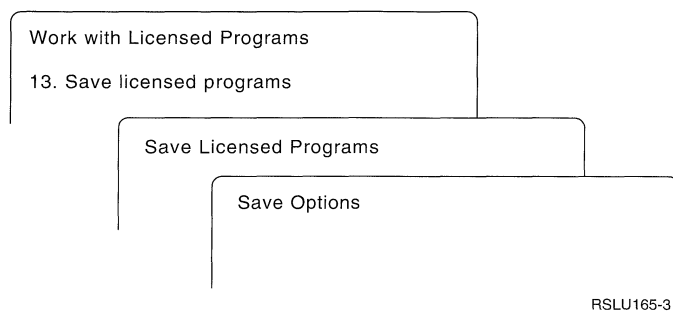
Using Option 13. Save Licensed Programs

Select option 13 on the Work with Licensed Programs menu to save one or more licensed programs. 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.

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 Guide, SC41-9993*. Refer to the *Basic Backup and Recovery Guide, SC41-0036*, for information on saving your system.

Options on Work with Licensed Programs Menu



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.

1. Tape device

The examples in this manual use TAP01 for the name of the tape device. Go to “Determining Tape Device Names” on page D-1 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. If you enter 1-9999, the system starts at the specified sequence number and begins saving the licensed programs there. If you enter *END, the system saves the file to the sequence number after the last sequence number on the tape.

3. End of tape option

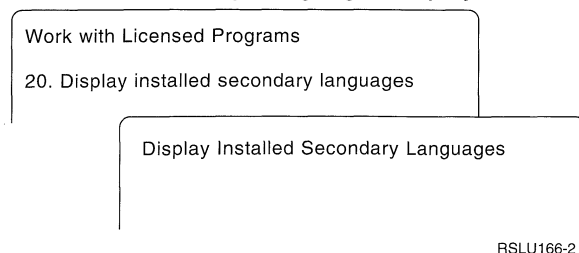
This option determines the positioning operation that is done automatically on the tape volume when the save operation is completed. In the case of a multiple-volume save operation, this parameter applies to the last volume only; all other volumes are rewound and unloaded when the end of the tape is reached. If you specify *REWIND, the tape is rewound, but not unloaded when the save operation is complete. If you specify *LEAVE, the tape should be left in its current position when the operation is complete; it is not rewound or unloaded. If you specify *UNLOAD, the tape is rewound and unloaded when the save operation is complete.

Secondary Languages Options

This section contains information about displaying, installing, and deleting secondary languages on your system.

Using Option 20. Display Secondary Languages

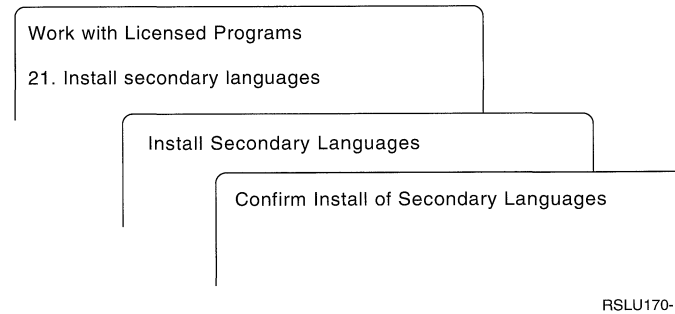
When you select option 20 on the Work with Licensed Programs menu, the Display Installed Secondary Languages display is shown.



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

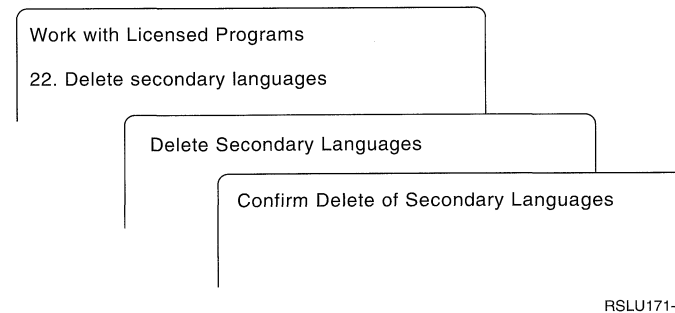
Use option 21 to selectively install a secondary language for the licensed programs installed on your system. Find the correct volume identifier for the secondary language on the media description report.



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.



Type a 4 to select the secondary language you want to delete and press the Enter key. Delete secondary languages you no longer need to save storage space. If your system has been shipped from a different country, you may not need the secondary languages that are installed on the system.

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.

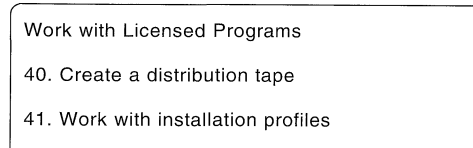
Program Temporary Fixes (PTFs) Options

The Program Temporary Fix (PTF) options have been removed from the Work with Licensed Programs menu. These options are now Option 7 and Option 8 on the PTF menu. Type

GO PTF

and press the Enter key to use these options.

Redistribution



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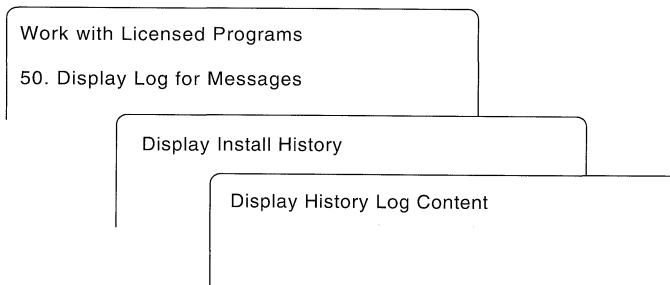
For the redistribution options, refer to the *Central Site Distribution Guide*, SC41-9993, for complete information to create a distribution tape and installation profiles.

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 not, use the recovery procedures in Appendix A, "Recovery Procedures" to install any licensed programs or PTFs that are not successfully installed.

Related Commands

Using Option 70. Save and Restore Commands

The Save and Restore Commands display shows the following list of command menus you can use.

Diskette Commands	CMDDKT
Object Management Commands	CMDOBJMGT
Restore Commands	CMDRST
Save Commands	CMDSAV
Tape Commands	CMDTAP

For more information on using these command menus, go to the *Advanced Backup and Recovery Guide*, SC41-8079. Use the Help key for available online information.

Using Option 71. Program Temporary Fix Commands

You can use the following commands to work with one or more individual PTFs.

Apply Program Temporary Fix	APYPTF
Copy Program Temporary Fix	CPYPTF
Copy PTF to Save File	CPYPTFSAVF
Create Program Temporary Fix	CRTPTF
Create PTF Package	CRTPTFPKG
Delete Program Temporary Fix	DLTPTF
Display Program Temporary Fix	DSPPTF
Hold Program Temporary Fix	HLDPTF
Load Program Temporary Fix	LODPTF
Order Supported Product PTFs	ORDSPTPTF
Release Program Temporary Fix	RLSPTF
Remove Program Temporary Fix	RMVPTF
Send Program Temporary Fix	SNDPTF
Send PTF Order	SNDPTFORD
Work with PTF	WRKPTF

The Problem Management Commands (CMDPRBMGT) menu displays other related command menus.

More information about the following commands is available in the *Systems Application Architecture* SystemView* System Manager/400 User's Guide*, SC41-8201.

CPYPTFSAVF
 CRTPTF
 CRTPTFPKG
 HLDPTF

Options on Work with Licensed Programs Menu

ORDSPTPTF
RLSPTF
SNDPTF

For more information about the other commands and how to use them, go to the chapter on Working with Program Temporary Fixes (PTFs) in the *System Operator's Guide*, SC41-8082.

Appendix C. Licensed Program Size and Performance Information

The following table contains a list of the licensed programs and options that are available for the AS/400 system. It contains the size of the licensed program in megabytes for V2R1.0, V2R1.1, V2R2.0, and V2R3.0.

Note: Some of the licensed programs and some objects of the operating system are shipped in a compressed form for this release and require less storage space on your system. The size of these licensed programs are listed in the compressed to decompressed range.

Figure C-1 (Page 1 of 6). List of licensed programs and options

Licensed Program Number and Item	Optional Part	Size in Megabytes			
		V2R1M0	V2R1M1	V2R2M0	V2R3M0
5738-999 Licensed Internal Code					
On 9406 Systems		94	94	94	94
On 9404 and 9402 Systems		76	76	76	76
5738-SS1					
Operating System/400	Base	140-175 ¹	140-175 ¹	130-185 ¹	135-190 ¹
OS/400—Library QGPL		2.0 ²	2.0 ²	2.5 ²	2.5 ²
OS/400—Library QUSRSYS		13.0 ²	13.0 ²	17.0 ²	21.0 ²
OS/400 Extended Base Support	1	6.0	6.0	6.0	6.0
OS/400 Online Information	2	9-22 ¹	9-22 ¹	8.6-25.0 ¹	9.5-27.5 ¹
OS/400 Online Education	3	5.0	5.0	5.0	5.0
OS/400 System/36 and System/38 Migration	4	6.5	6.5	4.5-6.0 ¹	4.5-6.0 ¹
OS/400 System/36 Environment	5	6.5-9.5 ¹	6.5-9.5 ¹	6.0-9.0 ¹	5.5-9.0 ¹
OS/400 System/38 Environment	6	2.0	2.0	2.0	2.0
OS/400 Example Tools Library	7	30.5	34.0	21.0-46.0 ⁵	21.0-47.0 ⁵
OS/400 AFP Compatibility Fonts	8	5.0	5.0	7.5	6.5
OS/400 *PRV CL Compiler Support	9	4.5	8.5	5.5-5.7 ¹	4.5
OS/400 9406 Problem Analysis	10	NA	NA	6.0-12.0 ¹	1.5
OS/400 S/36 Migration Assistant	11	NA	NA	1.0	1.0
5738-AD1					
Application Dictionary Services/400	Base	NA	NA	NA	10.0-17.5 ¹
5738-AF1					
Advanced Function Printing* Utilities/400	Base	3.5	3.5	2.8-4.7 ¹	2.8-4.7 ¹

Licensed Program Size and Performance Information

Figure C-1 (Page 2 of 6). List of licensed programs and options

Licensed Program Number and Item	Optional Part	Size in Megabytes			
		V2R1M0	V2R1M1	V2R2M0	V2R3M0
5738-AP1					
AS/400 Advanced DBCS Printer Support	Base	3.5	3.5	3.5	2.5
5738-BA1					
AS/400 BASIC	Base	2.0	2.0	0.8-2.0 ¹	0.8-2.0 ¹
5738-CB1					
SAA COBOL/400* Base Support	Base	2.5	2.5	1.4-2.5 ¹	1.4-2.5 ¹
COBOL/400 System/36 compatible COBOL	1	2.0	2.0	1.0-2.0 ¹	1.0-2.0 ¹
COBOL/400 System/38 compatible COBOL	2	1.5	1.5	1.0-1.5 ¹	1.0-1.5 ¹
COBOL/400 *PRV Base Support	3	1.5	1.5	1.0-1.5 ¹	1.0-2.0 ¹
COBOL/400 *PRV System/36 compatible COBOL	4	1.5	1.5	0.7-1.5 ¹	0.7-1.5 ¹
5738-CD1					
SAA AD/Cycle CoOperative Development Environment/400	Base	NA	NA	NA	9.0-10.0 ¹
Code/400 - Data Specifications Utility	1	NA	NA	NA	4.5
5738-CF1					
Point-of-Sale Communications Utility/400	Base	2.5	2.5	1.7-2.7 ¹	1.7-2.7 ¹
5738-CM1					
AS/400 Communications Utilities	Base	2.5	2.5	1.5-3.0 ¹	1.5-3.0 ¹
5738-CP2					
CallPath/400	Base	NA	NA	4.0-7.5 ¹	4.0-7.5 ¹
5738-CR1					
Cryptographic Support/400	Base	0.5	0.5	0.5	0.5
5738-CX1					
SAA C/400*	Base	5.5	6.5	4.5-6.5 ¹	3.5-6.0 ¹
C/400 *PRV Compiler Support	1	2.5	2.5	3.5-5.0 ¹	3.0-5.0 ¹
5738-CX2					
Integrated Language Environment C/400	Base	NA	NA	NA	4.0-9.0 ¹
5738-DB1					
AS/400 System/38 Utilities	Base	7.5	7.5	3.5-7.5 ¹	3.5-7.5 ¹
5738-DCT					
Language Dictionaries/400	Base	11.5	21.5	24.0	24.0

Licensed Program Size and Performance Information

Figure C-1 (Page 3 of 6). List of licensed programs and options

Licensed Program Number and Item	Optional Part	Size in Megabytes			
		V2R1M0	V2R1M1	V2R2M0	V2R3M0
5738-DFH					
CICS/400	Base	NA	NA	32.0-77.0 ¹	30.0-75.0 ¹
CICS/400 Sample Applications	1	NA	NA	1.0	1.0
5738-DM1					
DataHub Support/400	Base	NA	NA	NA	3.0-5.0 ¹
5738-DS1					
AS/400 Business Graphics Utility	Base	2.0	2.0	1.0-2.0 ¹	1.0-2.0 ¹
5738-ES1					
SAA SystemView OMEGAMON Services/400	Base	NA	NA	NA	70.0-77.0 ¹
OMEGAMON/400– AUTOMATED FACILITIES/400	1	NA	NA	NA	1.0-1.5 ¹
OMEGAMON/400– OMEGAVIEW/400 (for OS/2)	2	NA	NA	NA	0.6
5738-FNT					
Advanced Function Printing Fonts/400	Base	0	0	0	0
AS/400 Font–Sonoran Serif ³	1	4.5	4.5	4.5	4.5
AS/400 Font–Sonoran Serif Headliner	2	5.0	5.0	5.0	5.0
AS/400 Font–Sonoran Sans Serif ⁴	3	4.5	4.5	4.5	4.5
AS/400 Font–Sonoran Sans Serif Headliner	4	5.0	5.0	5.0	5.0
AS/400 Font–Sonoran Sans Serif Condensed	5	3.0	3.0	3.0	3.0
AS/400 Font–Sonoran Sans Serif Expanded	6	2.5	2.5	2.5	2.5
AS/400 Font–Monotype Garamond**	7	3.5	3.5	3.5	3.5
AS/400 Font–Century Schoolbook**	8	4.0	4.0	4.0	4.0
AS/400 Font–Pi and Specials	9	1.5	1.5	1.5	1.0
AS/400 Font–ITC Souvenir**	10	4.0	4.0	4.0	4.0
AS/400 Font–ITC Avant Garde Gothic**	11	3.5	3.5	3.5	3.5
AS/400 Font–Math and Science	12	3.0	3.0	3.0	3.0
AS/400 Font–DATA1	13	1.0	1.0	1.0	1.0
AS/400 Font–APL2**	14	1.0	1.0	1.0	1.0
AS/400 Font–OCR A and OCR B	15	1.0	1.0	1.0	1.0

Licensed Program Size and Performance Information

Figure C-1 (Page 4 of 6). List of licensed programs and options

Licensed Program Number and Item	Optional Part	Size in Megabytes			
		V2R1M0	V2R1M1	V2R2M0	V2R3M0
5738-FN1					
Advanced Function Printing DBCS Fonts/400	Base	0	0	0	0
AS/400 Font (DBCS)– Japanese	61	41.0	41.0	41.0	41.0
AS/400 Font (DBCS)– Korean	62	24.0	24.0	24.0	24.0
AS/400 Font (DBCS)– Traditional Chinese	63	13.0	13.0	13.0	13.0
AS/400 Font (DBCS)– Simplified Chinese	64	8.0	8.0	8.0	8.0
AS/400 Font (DBCS)– Thai	65	3.0	3.0	3.0	3.0
5738-FS1					
OSI File Services/400	Base	15.0	15.0	11.0-19.5 ¹	8.0-10.0 ¹
5738-FT1					
SAA FORTRAN/400* Base Support	Base	2.0	2.5	1.5-2.5 ¹	1.0-2.0 ¹
5738-LM1					
SAA Application Development Manager/400	Base	NA	NA	2.5-5.5 ¹	3.0-7.0 ¹
5738-MC1					
RM/COBOL-85** for the AS/400	Base	2.5	2.5	2.0-2.5 ¹	1.0-2.5 ¹
5738-MG1					
SystemView Managed System Services/400	Base	NA	NA	NA	1.5-3.5 ¹
5738-MS1					
Messages Services/400	Base	NA	2.0	1.5-2.0 ¹	1.5-2.5 ¹
5738-OS1					
OSI Communications Subsystem/400	Base	17.5	17.5	12.0-18.0 ¹	10.0-17.0 ¹
5738-PC1					
PC Support/400	Base	3.0	4.5	4.0-4.5 ¹	3.5-4.0 ¹
PC Support/400–PC DOS Programs	1	10.5	10.5	11.0	9.5
PC Support/400 DBCS (DOS)	2	6.5	6.5	6.5	6.0
PC Support/400 OS/2* Programs	3	7.5	7.5	7.5	7.5
PC Support/400 DBCS (OS/2)	4	6.5	6.5	7.0	7.5
PC Support/400 Extended DOS Programs	5	11.0	11.0	13.0	13.0
PC Support/400 DBCS (Extended DOS)	6	6.5	6.5	8.0	8.5

Licensed Program Size and Performance Information

Figure C-1 (Page 5 of 6). List of licensed programs and options

Licensed Program Number and Item	Optional Part	Size in Megabytes			
		V2R1M0	V2R1M1	V2R2M0	V2R3M0
PC Support/400 PC Tools Folder	7	3.0	3.0	5.0	6.0
PC Support/400 RUMBA/400 Programs	8	NA	NA	4.0	4.0
PC Support/400 DBCS (RUMBA/400)	9	NA	NA	4.2	5.0
PC Support/400 RUMBA/400 OS/2	10	NA	NA	NA	3.5
PC Support/400 DBCS (RUMBA/400 OS/2)	11	NA	NA	NA	3.5
PC Support/400 Communications Manager/400	12	NA	NA	NA	5.0
5738-PD1					
Application Program Driver/400	Base	NA	NA	NA	11.5-17.0 ¹
5738-PL1					
AS/400 PL/1	Base	2.0	2.0	1.0-2.0 ¹	1.0-2.0 ¹
5738-PS1					
AS/400 Pascal	Base	3.0	3.0	2.3-3.3 ¹	1.5-3.0 ¹
5738-PT1					
Performance Tools/400	Base	10.5	10.5	10.0-19.0 ¹	11.5-23.0 ¹
5738-PW1					
AS/400 Application Development Tools– SEU only	Base	13.0	13.0	7.0-14.5 ¹	2.5-4.5 ¹
AS/400 Application Development Tools– Others	1	NA	NA	NA	4.5-10.0 ¹
5738-QU1					
Query/400	Base	2.5	2.5	1.2-2.5 ¹	1.0-2.6 ¹
5738-RG1					
SAA RPG/400*	Base	2.5	2.5	2.0-3.5 ¹	2.0-3.5 ¹
RPG/400 System/36 Compatible RPG II	1	2.0	2.0	1.0-2.0 ¹	1.2-2.0 ¹
RPG/400 System/38 Environment RPG III	2	2.0	2.0	1.0-2.0 ¹	1.0-1.5 ¹
RPG/400 *PRV Base Support	3	1.0	1.0	0.7-1.2 ¹	0.7-1.2 ¹
RPG/400 *PRV System/36 Compatible RPG II	4	1.0	1.0	0.5-1.0 ¹	0.5-1.0 ¹
5738-SM1					
SAA SystemView System Manager/400*	Base	1.0	1.0	0.8-1.5 ¹	0.8-1.5 ¹

Licensed Program Size and Performance Information

Figure C-1 (Page 6 of 6). List of licensed programs and options

Licensed Program Number and Item	Optional Part	Size in Megabytes			
		V2R1M0	V2R1M1	V2R2M0	V2R3M0
5738-ST1					
SAA Structured Query Language/400*	Base	1.0	1.0	2.2-4.5 ¹	2.2-4.6 ¹
5738-TC1					
TCP/IP Connectivity Utilities/400	Base	15.0	15.0	12.3-14.5 ¹	12.3-16.5 ¹
5738-WP1					
SAA OfficeVision/400	Base	17.0	17.0	6.0-14.0 ¹	4.5-10.0 ¹
OfficeVision/400–Text Search	1	NA	5.0	10.7-13.2 ¹	10.0-13.2 ¹
OfficeVision/400–Calendar	2	NA	NA	2.5-4.8 ¹	2.5-4.8 ¹
OfficeVision/400–Mail	3	NA	NA	0.5-1.0 ¹	0.5-1.0 ¹
OfficeVision/400–Editor	4	NA	NA	NA	2.0-4.0 ¹

Notes:

- 1 These numbers represent the range of minimum to maximum size for this licensed program. Refer to “Task 5. Check Disk Storage Space Requirements” on page 1-8 for information about compressed objects.
- 2 The size of this library does not include any user data.
- 3 Sonoran Serif is a functional equivalent of Monotype Times New Roman.**
- 4 Sonoran Sans Serif is a functional equivalent of Monotype Arial.**
- 5 This range represents the packaged to unpackaged size that is for this licensed program. Refer to information about packaged licensed programs in “QUSRTOOL Changes” on page D-6.

Estimating Your Total Installation Time

The following information is provided to assist you in estimating approximate installation time of this release on your system. The systems used for the timing information were a Model B10 with a 6347 tape drive, a Model D02 with a 6347 tape drive, and a Model D35 with a 9348 tape drive.

Figure C-2 lists the time it takes to install the Licensed Internal Code and the operating system, and a specific set of licensed programs. The licensed programs used for the estimates in Figure C-2 are listed following the table.

Figure C-2. Install time estimates

	Installation Time (in hours)		
	B10	D02	D35
Licensed Internal Code and operating system	2.9	1.9	1.2
Licensed Programs Multiprocess time	4.1	2.3	1.1
Licensed Programs Single-process time	5.6	3.2	2.1

Licensed Program Size and Performance Information

Refer to "Installing Licensed Programs Concurrently" on page C-11 to determine whether the installation process is multiprocess or single-process.

The following licensed programs were used for the licensed programs timings in Figure C-2 on page C-6.

- IBM-supplied user libraries QGPL and QUSRSYS
- OS/400 options 1 through 11
- AS/400 Application Development Tools base support and option 1
- Query/400
- PC Support/400 - base support, option 1, and option 3
- SAA RPG/400 - base support, option 1, and option 2
- SAA OfficeVision/400 - base support, options 2, 3, and 4
- Language Dictionaries/400
- Performance Tools/400
- COBOL/400 - base support, option 1, and option 2
- AS/400 Communications Utilities
- SAA Structured Query Language/400
- AS/400 System/38 Utilities

Figure C-3 lists the individual time it takes to install those licensed programs and optional parts that require a considerable amount of time for the installation process. If you do not find a licensed program or optional part listed in the table, the installation time for that product is:

- 3 minutes or less on a Model D35
- 6 minutes or less on a Model D02
- 10 minutes or less on a Model B10.

Figure C-3 (Page 1 of 2). Estimates for licensed programs that take more time to install

Licensed Program Number and Item	Optional Part	Time to Install (in Minutes)		
		Model B10	Model D02	Model D35
5738-SS1				
OS/400 Library QUSRSYS		13	10	6
OS/400 Extended Base Support	1	15	10	5
OS/400 Online Education	3	13	7	5
OS/400 System/36 and System/38 Migration	4	12	7	4
OS/400 System/36 Environment	5	14	7	5
OS/400 Example Tools Library	7	33	21	14
OS/400 *PRV CL Compiler Support	9	29	17	11
5738-AD1				
Application Dictionary Services/400	Base	24	14	10
5738-AF1				
Advanced Function Printing Utilities/400	Base	16	10	7
5738-CD1				
SAA AD/Cycle CoOperative Development Environment/400	Base	12	8	5
5738-CF1				
Point-of-Sale Communications Utility/400	Base	14	8	4
5738-CM1				
AS/400 Communications Utilities	Base	10	6	4

Licensed Program Size and Performance Information

Figure C-3 (Page 2 of 2). Estimates for licensed programs that take more time to install

Licensed Program Number and Item	Optional Part	Time to Install (in Minutes)		
		Model B10	Model D02	Model D35
5738-DFH				
CICS/400	Base	18	13	9
5738-ES1				
SAA SystemView OMEGAMON Services/400	Base	26	14	8
IBM OMEGAVIEW/400 (for OS/2)	2	10	6	5
5738-FN1				
AFP DBCS Fonts - Japanese	1	11	8	3
5738-FS1				
OSI File Services/400	Base	28	17	7
5738-LM1				
Application Development Manager/400	Base	15	9	6
5738-MS1				
OSI Message Services/400	Base	9	5	4
5738-OS1				
OSI Communications Subsystem/400	Base	42	31	20
5738-PC1				
PC Support/400	Base	12	6	4
PC Support/400 PC DOS Programs	1	19	10	7
PC Support/400 DBCS (DOS)	2	12	6	4
PC Support/400 OS/2 Programs	3	14	7	4
PC Support/400 DBCS (OS/2)	4	13	6	4
PC Support/400 Extended DOS Programs	5	21	11	7
PC Support/400 DBCS (Extended DOS)	6	15	7	5
5738-PD1				
Application Program Driver/400	Base	35	22	16
5738-PT1				
Performance Tools/400	Base	19	12	7
5738-TC1				
TCP/IP Connectivity Utilities/400	Base	13	8	4
5738-WP1				
SAA OfficeVision/400	Base	25	17	10
OfficeVision/400 Text Search	1	12	6	4

Checklist for Estimating Installation Time

Note: The timing information in Figure C-2 on page C-6 and Figure C-3 on page C-7 does not include the amount of time spent on user data conversions, tape positioning, loading of next volumes, media errors, or recovery procedures.

Do the following to estimate your total install time.

- ___ Step 1. Choose the times in either table (Figure C-2 on page C-6 or Figure C-3 on page C-7) that are comparable to your system. Be

Licensed Program Size and Performance Information

sure to use the total for all your licensed programs, Licensed Internal Code, and the operating system.

Time: _____

- ___ Step 2. Add time for conversions. Use information in “Estimating Conversion Time” to determine the estimated time for conversions. **If you are skipping a release**, you need additional time; be sure to read the sections of “Estimating Conversion Time” which apply to you.

Time: _____

- ___ Step 3. If your system uses mirroring, checksums, or 9337 high-availability models, you need to allow extra time. Use information in “Mirroring, Checksums, and 9337 High Availability Models” on page C-11.

Time: _____

- ___ Step 4. 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 5. Add the amount of time you estimate for saving your system prior to installing 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 6. 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.

Time: _____

- ___ Step 7. Add time for any extra clean-up work and to re-customize your system.

Time: _____

The total of these steps is your total estimated time for installing your new release.

Total Estimated Time: _____

Estimating Conversion Time

The number of conversions that occur when you install the new release can have a significant impact on your installation time. If you are skipping release levels, you will have more conversions. Use the information below to estimate the time you need to allow for conversions.

Replacing V2R2.0 with V2R3.0

Data conversions occur when installing the QUSRSYS library and the OfficeVision/400 licensed program. The amount of time required to complete conversions varies widely. It could take only a few minutes on a system with a couple of users, or several hours on a system with many users and many lists and docu-

ments. These conversions should complete in the same amount of time or less than similar conversions that occurred when V2R2.0 was installed.

The conversion that takes place during the installation of the QUSRSYS library is affected by:

- The number of documents and folders on the system
- The model of the system

The conversion that occurs during the installation of OfficeVision/400 is affected by:

- The number of users enrolled in OfficeVision/400
- The model of the system

Replacing V2R1.1 with V2R3.0

Data conversions occur when installing the QUSRSYS library and the OfficeVision/400 licensed program. The amount of time required to complete conversions varies widely. It could take only a few minutes on a system with a couple of users, or several hours on a system with many users and many lists and documents.

The conversion that takes place during the installation of the QUSRSYS library is affected by:

- The number of documents and folders on the system
- The number of distribution lists and the number of entries in them
- The number of entries in the system directory
- The model of the system

The conversion that occurs during the installation of OfficeVision/400 is affected by:

- The number of users enrolled in OfficeVision/400
- The number of calendars and the number of items on each calendar
- The model of the system

Replacing V2R1.0 with V2R3.0

In addition to the conversions described in “Replacing V2R1.1 with V2R3.0,” a database format conversion takes place.

Database File Conversion: After the new release is installed, a format conversion takes place the first time a database file is opened or the file attributes are displayed. The conversion causes the record format size to increase by 21 bytes per field in the format. This conversion can occur when you do your backup after installing the new release; the time can double for this first save. Other jobs attempting to use the file may fail with allocation errors until the format conversion completes. You can prevent this affect by loading and applying the following PTF: SF11796

Once you have applied the PTF, you need to convert all the files on your system.

- To convert all files on the system, run the following command using a user profile with *ALLOBJ authority:

```
DSPFFD FILE(*ALL/*ALL) OUTPUT(*OUTFILE) OUTFILE(QTEMP/OUT)
```
- On a large system, you may want to break the libraries into groups and run multiple jobs against the groups of libraries. Use a user profile with *ALLOBJ authority. You should run jobs for the most highly used libraries first.

DSPFFD FILE(library-name/*ALL) OUTPUT(*OUTFILE) OUTFILE(QTEMP/OUT)

Mirroring, Checksums, and 9337 High Availability Models

If you are using mirroring, checksums, or 9337 high availability models on your system 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 9337 high availability models do not impact the duration of saves.

Figure C-4. Multiplication factors for time estimates

Tape drive	Mirrored	Checksums	9337 High Availability Models	
			Single disk unit	6-disk unit
3480/3490	1.1	2.8	2.2	1.4
2440, 9348, 3422	1.1	2.8	2.2	1.4

Note: If your tape device is not listed, there is no impact.

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 4.2 hours (1.5 x 2.8) on a checksums configuration, and 2 to 3.3 hours on a 9337 high availability model configuration.

Installation Performance Considerations

Installing Licensed Programs Concurrently

The installation process is made up of 3 major parts: installing the Licensed Internal Code, installing the operating system, and installing the licensed programs. The licensed programs can be installed interactively using the Work with Licensed Programs display or automatically using the Automatic Installation process. When licensed programs are installed, the system can install multiple licensed programs at the same time. This is referred to as the multiprocess installation process because multiple jobs are started in the system to perform the installation. The multiprocess installation process is used to install the IBM-supplied libraries QGPL and QUSRSYS, all of the optional parts of the operating system and the licensed programs on the distribution tape. The multiprocess installation process is not used to install the Licensed Internal Code or the operating system. 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 to install licensed programs from the save files. The save files are deleted during the installation process.

During the installation of the licensed programs, 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:

- *PGM - program objects

Licensed Program Size and Performance Information

- *LNG - language objects

The operating system determines if your system configuration has enough system capacity to use the multiprocess installation process. If your system does not have the required resources, the licensed programs are installed sequentially from tape. This is referred to as a single-process installation process. In this case, the status panel indicates the licensed program that is currently being installed from tape.

To use the multiprocess installation process for licensed programs, the system requires the following:

1. More than one licensed program is installed 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 less 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. There are at least 11 megabytes of available auxiliary storage on your system. 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 percent used. Use these figures to determine if there are at least 11 megabytes available on your system. If not, the system uses a single-process to install the licensed programs.

Figure C-5 shows the licensed programs and optional parts that require more than 11 megabytes of additional auxiliary storage to be installed using the multiprocess installation.

Figure C-5. Size required for multiprocess installation of larger licensed programs

Licensed Program Number and Item		Part	Megabytes ¹
5738-SS1	OS/400 Online Information	2	86
5738-SS1	OS/400 Examples Tools Library	7	112
5738-AD1	Application Dictionary Services/400	Base	55
5738-DCT	Language Dictionaries/400	Base	70
5738-DFH	CICS/400	Base	194
5738-ES1	SAA SystemView OMEGAMON Services/400	Base	2402
5738-OS1	OSI Communications Subsystem/400	Base	41
5738-PD1	Application Program Driver/400	Base	43
5738-PT1	Performance Tools/400	Base	43
7538-TC1	TCP/IP Connectivity Utilities/400	Base	33
5738-WP1	OfficeVision/400 - Text Search	1	30

¹ If you install any of these licensed programs, you need to use the size of the largest program that you are installing. This largest size is the amount of additional auxiliary storage space you need to use the multiprocess installation process. For example, if you are installing all 5738-SS1 options and OfficeVision (5738-WP1), you would need to have 112 megabytes of additional auxiliary storage (the largest of 86, 112, and 30 from this table) to use the multiprocess installation.

5. You must have at least 1536 KB (kilobytes) of main storage available in the base storage pool of the system. 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. If you have less than 1536 KB of main storage in the base storage pool, the system uses a single-process installation process to install the licensed programs.

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 Guide* for procedures to change these values if they do not meet the criteria for multiprocess. If you do not have the required resources to use the multiprocess installation process, 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.

Factors that Influence Multiprocess Performance

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 multiprocess installation performance are:

- Tape device

The speed of the tape device you are installing from has a direct affect on the total install time. Using the multiprocess installation process, tape files are loaded into save files. 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 and it takes longer to load the tape files.

- Number of disk unit I/O processors

Since the multiprocess installation process significantly increases the amount of disk unit I/O activity, the amount of auxiliary storage is a factor in the total installation time. Generally, the more auxiliary storage units you have on your system, the faster the installation time.

- Processing unit capacity

The number of installation jobs started by the system depends on your processing unit capacity. 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). 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.

Licensed Program Size and Performance Information

- 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. The system requires 512K in the system base pool for each installing job. It requires an additional 512K in the base pool to load the tape files into save files. Therefore, the larger the base pool, the more installation jobs can be started resulting in a faster install time.

- Licensed programs to be installed

Some licensed programs take much longer to install than others. In addition, the following options will take longer to install if you did not end all subsystems before you began the installation process.

OS/400 (5738-SS1) Option 1

OfficeVision/400 (5738-WP1)

OfficeVision/400 Options 2, 3, and 4

PC/Support (5738-PC1)

PC/Support (5738-PC1) Options 1 through 12

SAA CoOperative Development Environment/400 (5738-CD1)

SAA CoOperative Development Environment/400 (5738-CD1) Option 1

IBM OMEGAMON/400 - OMEGAVIEW/400 for OS/2 (5378-ES1) Option 2

Appendix D. 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 upon the release level you currently have installed on your system.

General Information

This section contains information that may be useful to know before you install the new release. This information applies for any of the releases over which V2R3 can be installed.

Determining Tape Device Names

This guide uses TAP01 for the device name which is the AS/400 normal naming convention. Your system may be set up to use the System/36 naming convention. Use the following table to select the correct device name for your system or use the name you have selected for your tape device.

Figure D-1. 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 tape 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 tape device from the installation profile on the distribution tape. The tape device name will be TAPxx where xx is the number assigned to each tape unit.

Sharing a 3480 or 3490 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.

2440 Tape Drive with High-Speed Feature

If you are using a 2440 tape drive with the high speed feature to install a new release, go to the *Basic Backup and Recovery Guide*, SC41-0036, for instructions for disabling and enabling the high speed feature on the tape unit before you load the first tape. If the high speed feature is not disabled before you begin the installation process, SRC B1xx 1934 is shown on the control panel indicating you have a media error.

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.

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.

Changing Your Primary Language

If you are considering changing the primary language on your system from a single-byte character set (SBCS) language to a double-byte character set (DBCS) language or from a DBCS language to an SBCS language, you must follow some special instructions on how to make this change. These instructions are in the *National Language Support Planning Guide*, GC41-9877. (The DBCS feature codes are 2938, 2962, 2984, 2986, 2987, and 2989.)

If you are considering changing the primary language on your system to a language that is currently installed on your system as a secondary language, you must delete the secondary language first before you can change it to your primary language.

Secondary Language Considerations

Secondary language libraries must be at the same release level as the OS/400* licensed program. 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 secondary language library to the system library list.

If you have added a secondary language library (QSYS29xx) to the QSYSLIBL or QUSRLIBL system value, use the WRKSYSVAL command to remove the library from the library list before you install a new release. On the command line, type:

WRKSYSVAL

Press the Enter key. The Work with System Values display is shown. Type a **5** in the option column to display the libraries for the QSYSLIBL and QUSRLIBL system values. The Display System Value display is shown. If the library for the licensed program is listed, press the Enter key to return to the Work with System Values display and type a **2** in the option column. The Change System Value is displayed. Use the spacebar to remove that library from the library list.

You will be able to install or delete your secondary language after your next IPL.

More information about secondary language libraries in user profiles is available in the *National Language Support Planning Guide*, GC41-9877.

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.

After the new release is installed, the system requires a single entry of the system password at the time of a system model change. If the correct system password is not entered, you can select a temporary system password bypass to allow time to obtain the correct system password. To get the correct password, contact your marketing representative and place an RPQ order. If the correct system password is not available and the system password bypass time ends, the system does not complete the next IPL until the correct system password is obtained and entered. While in bypass mode, the system indicates, through informational console messages, the time remaining until the bypass time ends.

For more details on the system password, see the *New Products Planning Information for Release 3*, GA41-0007, or the *System Operator's Guide*, SC41-8082.

Performance Impacts

Information on the performance impacts of Version 2 Release 3.0 is available in the September-October 1993 issue of *AS/400 Magazine*. This document replaces the *AS/400 Newsletter* and is now published bimonthly. This document is mailed to United States AS/400 customers, beginning shortly after their AS/400 system is installed. The *AS/400 Magazine* is available to countries outside the United States through one of the four AS/400 World Trade Product Managers. Each individual country is responsible for its own distribution. If you need this information and have not received your copy, contact your sales representative.

For information on the performance impacts of Version 2 Release 2.0, see the Fall 1992 edition of the *AS/400 Newsletter*. The Spring 1993 newsletter contains information on the performance impacts of the *OS/400 V2R2 Hardware Update*.

Automatic Decompression of Licensed Programs

All of the licensed programs are shipped in a compressed form. They are automatically decompressed during the installation process if sufficient disk storage exists on your system. The algorithm that determines which objects are automatically decompressed after the installation process has changed.

Greater than 500 MB available storage

No change. The jobs are submitted to decompress all system objects just installed.

100-500 MB available storage

Frequently-used objects are automatically decompressed. Object usage information (the number of days an object has been used and the last-used date) is used to identify frequently used objects. Any object that had been used at least 5 times and the last use was within the last 14 days is decompressed. The remaining low-use objects are left in compressed form.

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Notes:

1. This does not include decompression of objects shipped in the base operating system. Usage information for those objects is reset during the installation process. This includes objects in library QSYS. For all other licensed programs, the object usage information is retained during the installation process.
2. 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

No change. The jobs are not submitted and the objects are decompressed as they are used.

Previous Release PTF Save Files Automatically Deleted

When using Operational Assistant to call the PTF cleanup routine, PTF save files from previous releases are deleted from your system. If the SAA SystemView System Manager/400 licensed program is installed on your system, the PTF save files are not deleted.

Simplified Installation of Licensed Internal Code Fixes

If you are running on the B side, you are no longer required to perform an IPL on the A side to temporarily apply Licensed Internal Code fixes. The system now does a double IPL. First, an IPL is done on the A side, then on the B side. This is done when Licensed Internal Code fixes are set to be temporarily applied and a normal IPL on the B side has been started. In this case, an IPL on the B side takes longer because more is being done.

QOPS Library

When installing V2R3, library QOPS must not be in the library list. If QOPS is in the library list, delete it from the list before you begin installing V2R3.

You should order the latest preventive service information (PSP) package for your current release for more information about the QOPS library.

Installing V2R3 over Any Supported Release

This section contains information about changes for V2R3 that you should be aware of before installing the new release.

Products with User-Based Charge Options

You must set usage limits after you install a Version 2 Release 3.0 product that was ordered with user-based charge option, and before you save the system. The charge for products ordered with this type of charge option is based on the number of authorized users. You must set the usage limit to match the usage level ordered from IBM. Usage limits are contained within the purchase invoice. Contact your marketing representative if you are unsure of the usage level you purchased.

Use the Work with License Information (WRKLICINF) command to:

- Display a list of the products you have installed that were purchased with a user-based charge option.
- Set the usage limits for the products you have installed.

Changes to Subsystem Job Logs

In V2R3.0, the format of the job logs has changed. Job logs for subsystems prior to V2R3.0 are saved in the old format and are named JOBLOGO.

If you have programs that interrogate the job log, consider using the List Job Log Messages (QMHLJOB) application program interface (API). The QMHLJOB API can obtain all the job log information from any active job on the system.

When Installing V2R3 over V2R1.1 or V2R1.0

This information applies only if you currently have V2R1.1 or V2R1.0 installed on your system. You should be aware of these topics before you install V2R3 over your current system.

Performance Tools/400 Conversions

If you have performance database files and you are installing V2R3.0 over V2R1.1 or V2R1.0, you must convert the files. The conversion must be performed before the files can be used. Information about converting the files is in the *Performance Tools/400 Guide*, SC41-8084.

9406 Problem Analysis - OS/400 Option 10

In Version 2 Release 2.0, a new option 10, 9406 Problem Analysis, was added to the OS/400 operating system. This option contains problem analysis programs and displays that apply only to the 9406 System Unit. If you have a 9406 System Unit, this option is automatically installed with the new release. This new option cannot be deleted on a 9406 System Unit. If you have a 9404 or 9402 System Unit, the option is not automatically installed.

If you are creating distribution tapes to be installed on other 9406 System Units, you must have option 10, 9406 Problem Analysis, on the tape.

DLTLICPGM, RSTLICPGM, and SAVLICPGM Command Changes

The default for the Delete Licensed Program (DLTLICPGM) command now also deletes secondary language objects for IBM products. Also, the DLTLICPGM command can no longer delete any Version 1 Release 2.0 or earlier IBM products. These changes are also true for option 12, Delete licensed programs, on the Work with Licensed Programs menu.

The Restore Licensed Program (RSTLICPGM) command cannot restore IBM products saved before Version 2 Release 2.0. Also, the default for the LNG parameter has changed from *SAVVOL to *PRIMARY. This means that the language feature of the operating system is restored for the specified product. These changes are also true for option 11, Install licensed programs, on the Work with Licensed Programs menu.

The Save Licensed Program (SAVLICPGM) command can no longer save any IBM products from previous releases. This change is also true for option 13, Save licensed programs, on the Work with Licensed Programs menu. The list of licensed

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programs displayed when option 13 is selected no longer shows installed products from previous releases. Also, the SAVLICPGM command now can save secondary language objects for IBM products. Previously these objects were not saved.

Save and Restore Changes

The Save System (SAVSYS) and Save Security Data (SAVSECDTA) commands no longer save any portion of mail. The job log contains message CPI3896, which states that mail is no longer saved by the SAVSYS or SAVSECDTA commands. The MAIL parameter on the SAVSECDTA command has been removed in Version 2 Release 3.0. When using the Display Tape (DSPTAP) command to display the contents of tapes created by these commands, you will no longer see *MAIL objects.

All mail is now saved using the Save Document Library Object (SAVDLO) command. The *MAIL objects now appear when displaying the results of a SAVDLO command that included mail. There is one *MAIL entry for each distribution that was saved, so more *MAIL entries are displayed. Previously, there was one *MAIL entry for each user that was enrolled in the system directory.

The system no longer generates multiple files for saves of more than 32,000 Document Library Objects (DLOs). Previously, a save of more than 32,000 objects resulted in multiple files on the media. When performing a restore, you no longer have to be aware of multiple files on the media.

QUSRTOOL Changes

There are several changes to the QUSRTOOL library.

In previous releases, the QUSRTOOL library consisted of source physical files. To reduce the time to install the library and the amount of storage used by the library, all source physical files, except QATTINFO, are now distributed as save files. Each source physical file is now contained within a save file of the same name.

Two programs convert save files to source physical files (UNPACKAGE program) and source physical files to save files (PACKAGE program). Before any tools can be compiled and run, you must unpackage the appropriate save files. To determine which save files need to be unpackaged, each tool write-up lists the members that make up the tool and the file in which they reside. More information about the PACKAGE and UNPACKAGE programs can be found in file QATTINFO, member TTTINFO.

If you are redistributing this option, Example Tools Library, and have executed the UNPACKAGE program, it is recommended that you run the PACKAGE program before creating your distribution tape.

To convert save files in the QUSRTOOL library to source physical files, enter the following after V2R3M0 Example Tools (QUSRTOOL) has been installed:

```
CALL PGM(QUSRTOOL/UNPACKAGE) PARM('*ALL' 1)
```


Installing V2R3 over V2R1.0

This information applies only if you currently have V2R1.0 installed on your system. You should be aware of this topic before you install V2R3 over your current system.

QBATCH Subsystem Moved from QGPL to QSYS

The IBM-supplied QBATCH subsystem previously resided in the QGPL library. In V2R1.1, the QBATCH subsystem was moved to the QSYS library. The new QBATCH in QSYS contains a new job queue entry for Text Search. The old IBM-supplied QBATCH subsystem in QGPL is not deleted. However, the new QBATCH subsystem in QSYS is used by default.

Additional Installation Information

Glossary

This glossary includes terms and definitions from:

- The *American National Dictionary for Information Systems*, ANSI X3.172-1990, copyright 1990 by the American National Standards Institute (ANSI). Copies may be purchased from the American National Standards Institute, 1430 Broadway, New York, New York 10018. Definitions are identified by the symbol (A) after the definition.
- The *Information Technology Vocabulary*, developed by Subcommittee 1, Joint Technical Committee 1, of the International Organization for Standardization and the International Electrotechnical Committee (ISO/IEC JTC1/SC1). Definitions of published parts of this vocabulary are identified by the symbol (I) after the definition; definitions taken from draft international standards, committee drafts, and working papers being developed by ISO/IEC JTC1/SC1 are identified by the symbol (T) after the definition, indicating that final agreement has not yet been reached among the participating National Bodies of SC1.

application. A particular business task, such as inventory control or accounts receivable.

ASP. See *auxiliary storage pool (ASP)*.

automatic configuration. A function that names and creates the descriptions of network devices and controllers attached to a preexisting line. The objects are also varied on at a user's request.

auxiliary storage. All addressable disk storage other than main storage. Contrast with *main storage*.

auxiliary storage pool (ASP). One or more storage units defined from the disk units or disk unit subsystems that make up auxiliary storage. ASPs provide a means of isolating certain objects on specific disk units to prevent the loss of data due to disk media failures on other disk units.

back up. To save some or all of the objects on a system to tape or diskette, for safe keeping.

base pool. A storage area that contains all unassigned main storage on the system and whose minimum size is specified in the system value QBASPOOL. The system-recognized identifier is *BASE.

batch. Pertaining to a group of jobs to be run on a computer sequentially with the same program with little or no operator action. Contrast with *interactive*.

batch job. A predefined group of processing actions submitted to the system to be performed with little or no interaction between the user and the system. Contrast with *interactive job*.

character. Any letter, number, or other symbol in the data character set that is part of the organization, control, or representation of data.

character set. A group of characters used for a specific reason; for example, the set of characters the display station can display, the set of characters a printer can print, or a particular set of graphic characters in a code page; for example, the 256 EBCDIC characters.

checksum protection. A function that protects data stored in an auxiliary storage pool from being lost because of the failure of a single disk. When checksum protection is in effect and a disk failure occurs, the system automatically reconstructs the data when the system program is loaded after the device is repaired.

command. A statement used to request a function of the system. A command consists of the command name abbreviation, which identifies the requested function, and its parameters.

command line. The blank line on a display where commands, option numbers, or selections can be entered.

compact. To replace repetitive bits in a file or folder with control bits so that the file or folder takes up less space when saved.

compatibility. Ability to work in the system or ability to work with other devices or programs.

compatible. Pertaining to the characteristics that make devices, programs, products, or systems work together.

configuration. The physical and logical arrangement of devices and programs that make up a data processing system. See also *device configuration*.

configuration list. A list of local or remote locations, network addresses, or pass-through device descriptions used by some types of communications descriptions. The system-recognized identifier for the object type is *CFGL.

console. A display station from which an operator can control and observe the system operation. For example, an operator can install the operating system,

do an attended IPL, or sign on the system after using the End System (ENDSYS) command.

control panel. A panel located on the processing unit on the front of the rack that contains lights and switches to operate or service the system.

cumulative PTF package. A tape containing the program temporary fixes (PTFs) for an AS/400 system that have been accumulated from the start of the current release. PTFs requiring special handling are not included in a cumulative PTF package.

current library. The library that is specified to be the first user library searched for objects requested by a user. The name for the current library can be specified on the Sign-On display or in a user profile. When you specify an object name (such as the name of a file or program) on a command, but do not specify a library name, the system searches the libraries in the system part of the library list, then searches the current library before searching the user part of the library list. The current library is also the library that the system uses when you create a new object, if you do not specify a library name.

current release. The latest available release of the system that replaced the Licensed Internal Code, operating system, or both.

cursor. A movable symbol, often a blinking or solid block of light, that tells the display station user where to type, or identifies a choice to select.

data area. A system object used to communicate data, such as CL variable values between the programs within a job and between jobs. The system-recognized identifier for the data area is *DTAARA.

data character set. See *character set*.

database. All the data files stored in the system.

DBCS. See *double-byte character set (DBCS)*.

dedicated service tools (DST). The part of the service function used to service the system when the operating system is not working.

default. A value that is automatically supplied or assumed by the system or program when no value is specified by the user.

device configuration. The physical placement of display stations, printers, and so forth; and the configuration descriptions that describe the physical configuration to the system and describe how the configuration will be used by the system.

device description. An object that contains information describing a particular device or logical unit (LU)

that is attached to the system. A device description is a description of the logical connection between two LUs (local and remote locations). The system-recognized identifier for the object type is *DEVDD.

device name. The symbolic name of an individual device.

disk. A direct-access storage medium with magnetically recorded data.

disk unit. A physical enclosure containing one or more disk drives.

diskette. A thin, flexible magnetic disk permanently stored in a semirigid protective jacket.

display screen. The part of the display device, which is similar to a television (TV) picture tube, used to display information entered or received at a display station.

display station. A device that includes a keyboard from which an operator can send information to the system and a display screen on which an operator can see the information sent to or the information received from the system.

double-byte character set (DBCS). A set of characters in which each character is represented by 2 bytes. Languages such as Japanese, Chinese, and Korean, which contain more symbols than can be represented by 256 code points, require double-byte character sets. Because each character requires 2 bytes, the typing, displaying, and printing of DBCS characters requires hardware and programs that support DBCS. Four double-byte character sets are supported by the system: Japanese, Korean, Simplified Chinese, and Traditional Chinese. Contrast with *single-byte character set (SBCS)*.

DST. See *dedicated service tools (DST)*.

field. A group of related bytes (such as name or amount) that is treated as a unit in a record.

file. A generic term for the object type that refers to a database file, a device file, or a save file. The system-recognized identifier for the object type is *FILE.

font. An assortment of characters of a given size and type style.

function. Any instruction or set of related instructions that perform a specific operation.

general-purpose library. The library shipped with the system that contains IBM-provided objects required for many system functions and user-created objects that are not explicitly placed in a different library when they are created. Named QGPL.

hardware. Physical equipment, rather than programs, procedures, rules, and associated information.

history log. A summary of the system activities, such as system and job information, device status, system operator messages, and a record of program temporary fix (PTF) activity on the system. The history log is identified by the name QHST, and the system-recognized identifier for the object type is *MSGQ.

IBM Operating System/400 Version 2 (OS/400). Pertaining to the IBM licensed program that can be used as the operating system for the AS/400 system.

IBM PC Support/400 Version 2. The IBM licensed program that provides system functions to an attached personal computer.

identifier. A sequence of bits or characters that identifies a user, program, device, or system to another user, program, device, or system.

initial program. A user-profile program that runs when the user signs on and after the command processor program QCMD is started. QCMD calls the first program.

initial program load (IPL). The process that loads the system programs from the system auxiliary storage, checks the system hardware, and prepares the system for user operations.

initialize. To set the addresses, switches, or the contents of storage to zero, or to the starting value set by the manufacturer.

installation profile. An object that can be tailored and used to control the automatic installation of a system.

interactive. Pertaining to the dialog-like exchange of information between people and a computer. Contrast with *batch*.

interactive job. A job started for a person who signs on to a work station. Contrast with *batch job*.

IPL. See *initial program load (IPL)*.

job log. A record of requests submitted to the system by a job, the messages related to the requests, and the actions performed by the system on the job. The job log is maintained by the system program.

keylock switch. A switch on the control panel that can be set to one of four different positions to establish the power-on and power-off modes allowed for the system.

label. The name of a file on a diskette or tape.

library. A system object that serves as a directory to other objects. A library groups related objects, and

allows the user to find objects by name. The system-recognized identifier for the object type is *LIB.

Licensed Internal Code. The layered architecture below the machine interface (MI) and above the machine, consisting of the model-independent and the model-unique Licensed Internal Code. The Licensed Internal Code is a proprietary system design that carries out many functions, including, but not limited to storage management, pointers and addressing, program management functions, exception and event management, data functions, I/O managers, and security. See also *model-unique Licensed Internal Code*.

licensed program (LP). A separately orderable program, supplied by IBM, that performs functions related to processing user data. Examples of licensed programs are PC Support/400, SAA COBOL/400, AS/400 Application Development Tools, SAA OfficeVision/400, and so on.

load. To move data or programs into storage.

local. Pertaining to a device or system that is connected directly to your system or a file that is read directly from your system, without the use of a communications line. Contrast with *remote*.

main storage. All addressable storage where programs are run. Synonymous with *memory*. See also *control storage*. Contrast with *auxiliary storage*.

memory. In PC Support/400, program-addressable storage from which instructions and other data can be loaded directly into registers for subsequent processing. See also *main storage*.

menu. A displayed list of items from which a user can make a selection. The system-recognized identifier for the object type is *MENU.

message. A communication sent from a person or program to another person or program.

message help. More information about a message, such as the message type, severity, and date and time sent.

message queue. A list on which messages are placed when they are sent to a user ID or device description. The system-recognized identifier for the object type is *MSGQ.

migration. The process of moving data and source from one computer system to another without converting the data.

mirrored pair. Two units that contain the same data and are referred to by the system as one logical unit.

mirrored protection. A function that protects data by duplicating all disk data in an auxiliary storage pool (ASP) to another disk unit (mirrored unit) in the same ASP. If a disk failure occurs, the system keeps running, using the operational mirrored unit of the mirrored pair until the disk unit is repaired or replaced. See also *mirrored pair* and *mirrored unit*.

mirrored unit. One half (one of the units) of a mirrored pair of units.

mirroring. The process of writing the same data to two disk units within the same auxiliary storage pool at the same time. The two disk units become a mirrored pair, allowing the system to continue when one of the mirrored units fails. See also *mirrored pair* and *mirrored unit*.

MNCS. See *multinational character set (MNCS)*.

model-unique Licensed Internal Code (MULIC). The Licensed Internal Code shipped with the system hardware that provides support for that model. See also *Licensed Internal Code*.

modification level. A distribution of all temporary fixes issued since the previous modification level. A change in modification level does not add new functions or change the programming support category of the release to which it applies. A new release is shipped with a modification level of 0. When the release is shipped with the service changes incorporated, the modification level is incremented by 1. See also *release* and *version*.

MULIC. See *model-unique Licensed Internal Code (MULIC)*.

multinational character set (MNCS). A set of graphic characters that support the languages within a specific language group.

multiprocess installation. The process of installing two or more licensed programs at the same time.

national language version (NLV). (1) For the primary language, the running code and textual data for each licensed program ordered. (2) For the secondary language, the textual data for all licensed programs.

NLV. See *national language version (NLV)*.

object. A named storage space that consists of a set of characteristics that describe itself and, in some cases, data. An object is anything that exists in and occupies space in storage and on which operations can be performed. Some examples of objects are programs, files, libraries, and folders.

online information. Information on the display screen that explains displays, messages, and programs. See also *textual data*.

operating system. A collection of system programs that control the overall operation of a computer system.

OS/400. See *IBM Operating System/400 Version 2 (OS/400)*.

output. Information or data received from a computer that is shown on a display, printed on the printer, or stored on disk, diskette, or tape.

page down. To move to the information below the information currently shown on the display. Contrast with *page up*.

page up. To move to the information above the information currently shown on the display. Contrast with *page down*.

PC Support. See *IBM PC Support/400 Version 2*.

performance. That part of the system that is evident in elapsed time. Performance is largely determined by three factors: throughput, response time, and availability.

pool. A division of main or auxiliary storage. See also *base pool* and *storage pool*.

previous release. The last required release of the system (such as Release 1.0) prior to the current release (such as Release 2.0), including any modification levels (such as Release 1.0 Modification Level 1 or Modification Level 2) that were not required.

primary language. The national language installed on the system as the default language used to display and print information. The primary language is also used to service the system. Contrast with *secondary language*.

processing. The action of performing operations and calculations on data.

profile. Data that describes the characteristics of a user, program, device, or remote location.

program temporary fix (PTF). A temporary solution to or bypass of a problem diagnosed by IBM as resulting from a defect in a current unaltered release of a licensed program.

prompt. A reminder or a displayed request for information or user action. The user must respond to allow the program to proceed.

PTF. See *program temporary fix*.

QGPL. See *general-purpose library*.

QSYS. See *system library*.

queue. A list of messages, jobs, files, or requests waiting to be read, processed, printed, or distributed in a predetermined order.

rack. A free-standing framework that holds the devices and card enclosure.

rack configuration list. A list of all of the equipment within the rack and the logic cards within the card enclosure.

record. A group of related data, words, or fields treated as a unit, such as one name, address, and telephone number.

recovery. The process of rebuilding databases after a system failure.

reference code. The four-character name of a status or error condition.

release. A distribution of a new product or new function and authorized program analysis report (APAR) fixes for an existing product. Normally, programming support for the prior release is discontinued after some specified period of time following availability of a new release. The first version of a product is announced as Release 1 Modification Level 0. See also *modification level* and *version*.

remote. Pertaining to a device, system, or file that is connected to another device, system, or file through a communications line. Contrast with *local*.

resource. Any part of the system required by a job or task, including main storage, devices, the processing unit, programs, files, libraries, and folders.

restore. To copy data from tape, diskette, or a save file to auxiliary storage. Contrast with *save*.

save. To copy specific objects, libraries, or data by transferring them from main storage or auxiliary storage to a media such as tape, diskette, or a save file. Contrast with *restore*.

SBCS. See *single-byte character set (SBCS)*.

secondary language. One or more additional national languages that can be installed on the system to display and print information. Contrast with *primary language*.

security officer. A person assigned to control all of the security authorizations provided with the system. A security officer can, for example, remove password or resource security; or add, change, or remove security information about any system user.

sequence. To arrange in order.

single-byte character set (SBCS). A character set in which each character is represented by a one-byte code. Contrast with *double-byte character set (DBCS)*.

single-process installation. The process of installing licensed programs one at a time.

SRC. See *system reference code (SRC)*.

storage pool. A logical division of storage reserved for processing a job or group of jobs.

store. To put or keep data in a storage device.

subsystem. An operating environment, defined by a subsystem description, where the system coordinates processing and resources.

system distribution directory. A list of user IDs and identifying information, such as network addresses, used to send distributions.

system library. The library shipped with the system that contains objects, such as authorization lists and device descriptions created by a user, and the system commands and other system objects required to run the system. The system identifier is QSYS.

system object. A machine object classification. Any of the machine objects shipped with the system or any of the operating system objects created by the system.

system reference code (SRC). The characters that identify the name of the unit that detected the condition and the reference code that describes the condition.

system resources. Those items controlled by the system, such as programs, devices, and storage areas that are assigned for use in jobs.

system time. The elapsed time from the point where the system was started to the current time. If the system time is changed to the local time when the system is started, the current system time is the local time of day.

system unit. A part of a computer that contains the processing unit, and may contain devices such as disk units and tape units.

system value. Control information for the operation of certain parts of the system. A user can change the system value to define his working environment. System date and library list are examples of system values.

System/36 environment. A function of the operating system that processes most of the System/36 operator control language (OCL) statements and procedure statements to run System/36 application programs and

allows the user to process the control language (CL) commands. Contrast with *System/38 environment*.

System/38 environment. A function of the operating system that processes most of the System/38 control language (CL) statements and programs to run System/38 application programs. Contrast with *System/36 environment*.

tape cartridge. A case containing a reel of magnetic tape that can be put into a tape unit without stringing the tape between reels.

tape drive. A device used to move the tape and read and write information on magnetic tapes.

tape reel. A round device on which magnetic tape is wound.

tape unit. The physical enclosure containing the tape drive.

tape volume. A single reel of magnetic tape.

textual data. The collective term for menus, displays, lists, prompts, options, online help information, and messages. See also *online information*.

threshold. A level set in the system at which a message is sent or an error-handling program is called. For example, in a user auxiliary storage pool, the user can set the threshold level in the system values, and the system notifies the system operator when that level is reached.

user-based pricing. A pricing option that provides the capability for the customer to pay for the licensed program on the basis of the number of users.

user ID. See *user identification (user ID)*.

user identification (user ID). The name used to associate the user profile with a user when a user signs on the system.

user profile. An object with a unique name that contains the user's password, the list of special authorities assigned to a user, and the objects the user owns. The system-recognized identifier for the object type is *USRPRF.

version. (1) A separate IBM licensed program, based on an existing IBM licensed program, that usually has significant new code or new function. Each version has its own license, terms, conditions, product type number, monthly charge, documentation, test allowance (if applicable), and programming support category. The numbering of versions starts with Version 2. See also *modification level* and *release*. (2) In the Application Development Manager/400 product, a separate program or release, new or based on an existing application, that contains significant new code or function.

volume. A storage medium that is put on or taken off the system as a unit, for example, magnetic tape or diskette.

work station. A device used to transmit information to or receive information from a computer, for example, a display station or printer.

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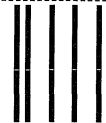
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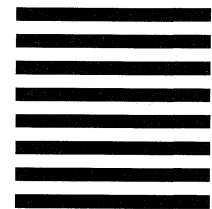
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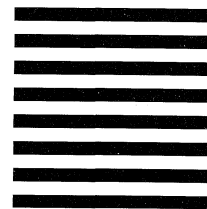
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