

AS/400e



AS/400e 940x RISC-to-RISC Road Map

Version 4

AS/400e



AS/400e 940x RISC-to-RISC Road Map

Version 4

Note

Before using this information and the product it supports, be sure to read the information in Appendix H, "Notices" on page 65.

Fifth Edition (May 2000)

This edition replaces SA41-5155-03. This edition applies only to reduced instruction set computer (RISC) systems.

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AS/400e 940x RISC-to-RISC Road Map, SA41–5155–04

Use this book as a guide for planning and conducting an upgrade or data migration, from one AS/400 reduced instruction set computer (RISC), to another RISC model.

You can also use the RISC-to-RISC Road Map Web site as a guide for planning and conducting an upgrade or data migration, from one reduced instruction set computer (RISC), to another RISC model:

http://www.as400.ibm.com/tstudio/tech_ref/rrmap/

See “Prerequisite and Related Information” on page ix for a list of other required and recommended publications.

Who Should Read This Book

This road map is for anyone who is considering an AS/400 upgrade or is involved in migrating data from one AS/400 RISC model to another RISC model. This audience includes:

- **Customers**
- Hardware services personnel
- Software services personnel
- Business partners
- Marketing representatives

Everyone involved in the model upgrade or data migration needs to know all of the information in this book.

Each customer should have a **Customer Account Team Leader**, this team leader can be a Hardware Service Representative, Software Service Representative, Business Partner, or Marketing Representative. The Availability Center usually assigns a Customer Account Team Leader.

Conventions and Terminology Used in This Book

This road map identifies activities, programs, tools, and references that you can use to upgrade the model.

As you read this book, you should be aware of the following terms:

- The terms *source system* and *target system* are used throughout this manual. The source system is the system you are upgrading from. The target system is the system you are upgrading to.
- The term *Marketing Representative* can mean either an **IBM Marketing Representative**, a **Business Partner**, or a **Services Specialist**.
- The term 1xx includes Model 150 or 170.
- The term 2xx includes Model 250 or 270.
- The term 4xx includes Model 400, 40S, or 436.
- The term 5xx includes Model 50x, 50S, 510, or 530.
- The term Sxx includes Model S10, S20, S30, S40, SB1, SB2, or SB3.

- The term 6xx includes Model 600, 620, 640, or 650.
- The term 7xx includes Model 720, 730, or 740.
- The term 8xx includes Model 820, 830, or 840.
- The term AS/400e as used in this document refers to the new generation of AS/400 systems and servers positioned for e-business: e-systems and e-servers, for example Model 170.
- The term AS/400 as used in this document refers to:
 - AS/400 system- Models 40x, 5x0, 150 and 6x0.
 - AS/400 server- Models 40S, 5xS, Sxx, 170, 2xx, 7xx and 8xx..
- The term System Products Division (SPD) *book-type* adapter cards includes all adapter cards that are not Peripheral Component Interconnect (PCI) adapter cards.

In this publication, the version, release, and modification levels are shown in a shortened form:

V3R7M0	Version 3 Release 7 Modification 0
V4R1M0	Version 4 Release 1 Modification 0
V4R2M0	Version 4 Release 2 Modification 0
V4R3M0	Version 4 Release 3 Modification 0
V4R4M0	Version 4 Release 4 Modification 0
V4R5M0	Version 4 Release 5 Modification 0
V3R7	Version 3 Release 7 Modification (any)
V4R1	Version 4 Release 1 Modification (any)
V4R2	Version 4 Release 2 Modification (any)
V4R3	Version 4 Release 3 Modification (any)
V4R4	Version 4 Release 4 Modification (any)
V4R5	Version 4 Release 5 Modification (any)
Version 4	Any version 4 release, such as, V4R1M0, V4R2M0 or V4R3M0.
Version 3	Any version 3 release, such as, V3R7M0.

Attention:

Is used in this book to indicate that a step, or process may cause loss of data.

Namely: Installing incorrect versions of the operating system.

CAUTION:

Is used in this book to indicate possible damage to the system.

Namely: Static damage to component.

DANGER

Is used in this book to indicate possible damage to the users and equipment.

Namely: Electrical shock.

In any position that contains numerals, an x = any supported value, for example SFxxxxx, or VxRxMx.

Examples of displays might contain only pertinent information to a topic. So, some display examples do not show all text and lines, especially blank lines.

AS/400 Operations Navigator

AS/400 Operations Navigator is a powerful graphical interface for Windows clients. With AS/400 Operations Navigator, you can manage and administer your AS/400 systems from your Windows desktop.

You can use Operations Navigator to manage communications, printing, database, security, and other system operations. Operations Navigator includes Management Central for managing multiple AS/400 systems centrally.

Figure 1 shows an example of the Operations Navigator display:

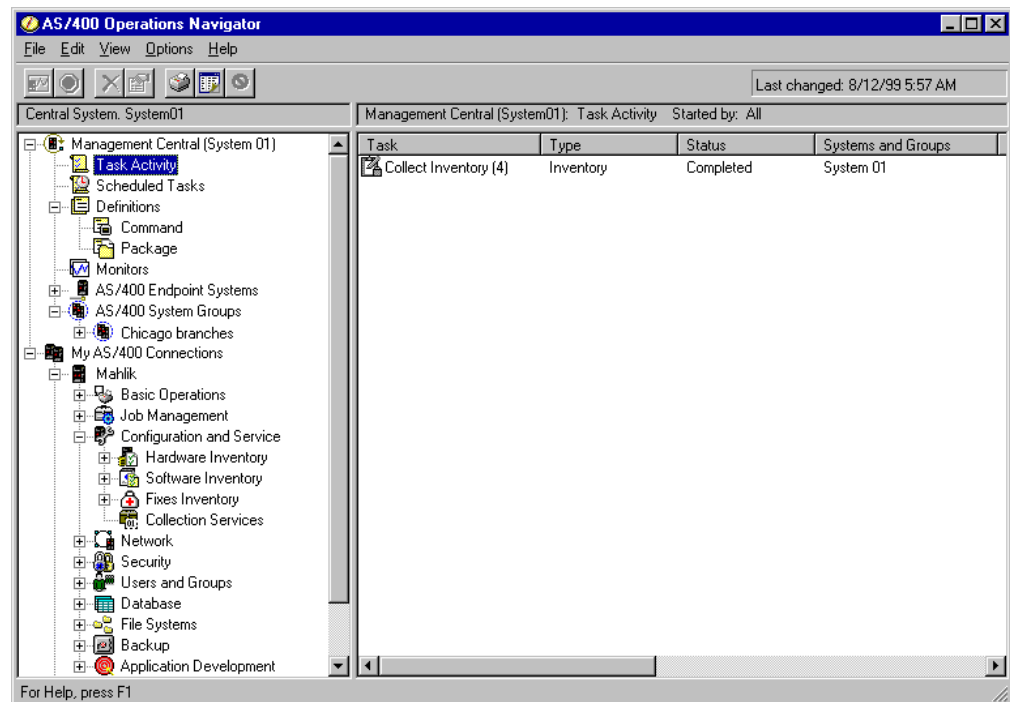


Figure 1. AS/400 Operations Navigator Display

This new interface has been designed to make you more productive and is the only user interface to new, advanced features of OS/400. Therefore, IBM recommends that you use AS/400 Operations Navigator, which has online help to guide you. While this interface is being developed, you may still need to use an emulator such as PC5250 to do some of your tasks.

Installing Operations Navigator

To use AS/400 Operations Navigator, you must have Client Access installed on your Windows PC. For help in connecting your Windows PC to your AS/400 system, consult *Client Access Express for Windows - Setup*, SC41-5507-01.

AS/400 Operations Navigator is a separately installable component of Client Access that contains many subcomponents. If you are installing for the first time and you use the **Typical** installation option, the following options are installed by default:

- Operations Navigator base support
- Basic operations (messages, printer output, and printers)

To select the subcomponents that you want to install, select the **Custom** installation option. (After Operations Navigator has been installed, you can add subcomponents by using Client Access Selective Setup.)

After you install Client Access, double-click the **AS400 Operations Navigator** icon on your desktop to access Operations Navigator and create an AS/400 connection.

Information Available on the World Wide Web

You can use the associated uniform resource locator (URL) address to access the following items on the World Wide Web:

- **AS/400 Information Center**

<http://www.as400.com/infocenter>
<http://publib.boulder.ibm.com/pubs/html/as400/infocenter.htm>

You can use the *AS/400 Information Center* as a starting point for your AS/400 information needs. It contains browsable information on important topics such as Java, program temporary fixes (PTFs), and Internet security. It also contains hypertext links to related topics, including Internet links to Web sites such as the *AS/400 Technical Studio*, the *AS/400 Softcopy Library*, and the *AS/400 Homepage*.

- **AS/400 On line Library**

<http://publib.boulder.ibm.com/html/as400/onlinelib.htm>

- **AS/400 Homepage**

<http://www.as400.ibm.com/>

To obtain information for various AS/400 topics, including news and events, hardware, software, education, certification, reference library, configuration, case studies, and order status, access *AS/400 Homepage*.

- **AS/400 Technical Studio**

<http://www.as400.ibm.com/tstudio/>

You can use the *AS/400 Technical Studio* to obtain information about technical workshops, tools, and technical information to help make your AS/400 run at its peak.

- **AS/400 Year 2000 Support**

<http://www.as400.ibm.com/developer/year2000/index.html>

- **AS/400 Internet program temporary fix (PTF) Downloads**

<http://as400service.ibm.com>

This Web site allows worldwide customers to order or download AS/400 PTFs over the Internet. You need to register at this site. Do the following to go to the AS/400 Internet PTF Facility:

1. Click **Fixes, Downloads and Updates**
 2. Click **Internet PTF Downloads (iPTF)**
- **Site Preparation Web site**
<http://www.as400.ibm.com/tstudio/planning/plngstrt.htm>

This site is essential in setting up the space, power, and environment for a new AS/400 or for an upgrade to a current AS/400.

Prerequisite and Related Information

Use the AS/400 Information Center as your starting point for looking up AS/400 technical information. You can access the Information Center from the AS/400e Information Center CD-ROM (English version: SK3T-2027) or from one of these Web sites:

V4R5

<http://www.as400.ibm.com/infocenter>

V4R3 or V4R4

<http://publib.boulder.ibm.com/pubs/html/as400/infocenter.htm>

The AS/400 Information Center contains advisors and important topics such as CL commands, system application programming interfaces (APIs), logical partitioning, clustering, Java, TCP/IP, Web serving, and secured networks. It also contains Internet links to Web sites such as the AS/400 On-line Library, AS/400 redbooks, and the AS/400 Technical Studio.

For more in depth information about working with PTFs, see the book *Basic System Operation, Administration, and Problem Handling*, SC41-5206-04.

Your RISC-to-RISC upgrade or data migration **requires** the following publications:

- This book. The online version of this book is at the following Web site:
http://www.as400.ibm.com/tstudio/tech_ref/rmap/index.htm
- Preventive Service Planning (PSP) information. This provides information about problems you may encounter as you install V4R5 or upgrade your system. You can download PSP information from the following Web site:
www.as400service.ibm.com/supporthome.nsf/Document/10000031

The PSP identifier for information that pertains to system upgrades and data migrations is SF98163. Alternatively, you can obtain PSP information from your software service provider.

Information within this PSP describes known high-impact and pervasive problems. Review this PSP information before you upgrade your system or migrate your data between systems. To receive this PSP information by using ECS, type the following command on an iSeries command line:

```
SNDPTFORD SF98163
```

- *AS/400 Memorandum to Users*. This book describes the changes in Version 4 Release 5 Modification 0 (V4R5M0) that could affect your programs or system operations. This information also helps you to prepare for changes on your

current system and to use the new release. You can view or print the PDF version of the Memo to Users from the home page of the Information Center.

- *AS/400 Information Center*, SK3T-2027-03 is required for logical partition information along with many other topics.
- *Software Installation*, SC41-5120-04 is required for the software upgrade.
- Physical Planning Reference at the following Web site:
<http://www.as400.ibm.com/tstudio/planning/plngstrt.htm>
- AS/400 Technical Studio has information covering many topics which you may find valuable. You can access AS/400 Technical Studio at the following Web site:
<http://www.as400.ibm.com/tstudio/index.htm>
- *Basic System Operation, Administration, and Problem Handling*, SC41-5206-04
- *Backup and Recovery*, SC41-5304-04 is no longer shipped with a new system and should be ordered prior to an upgrade.
The Backup and Recovery book is available in the *AS/400 Information Center*, SK3T-2027-03 and is shipped with your order.
- The *Performance Capabilities Reference*. This reference contains information for customers who plan to upgrade their systems and software. This reference also provides highly technical information about system performance useful for performance benchmarking, capacity planning, and planning for system performance. You can view or print the PDF version of this reference at the following Web site:
<http://www.ibm.com/servers/eserver/series/perfmgmt/resource.htm>

For additional information related to upgrades or data migration, see the following:

- The Migration Web site at
<http://www.ibm.com/eserver/series/migration>
- The Upgrade Planning Web site at
<http://www-1.ibm.com/servers/eserver/series/support/planning/nav.html>

For information about other AS/400 publications (except Advanced 36), see the following:

- Prior to V4R4, the *Publications Reference*, SC41-5003, in the *AS/400 Softcopy Library*.
- The *AS/400 Information Directory* is a unique, multimedia interface to a searchable database. It contains descriptions of titles available from IBM or from other selected publishers. It comes with the OS/400 operating system at no extra charge.
- The *AS/400 On line Library* is available on the World Wide Web. See "Information Available on the World Wide Web" on page viii.

An upgrade might require the use the following publications:

- *Operations Console Setup*, SC41-5508-01
- *BEST/1 Capacity Planning Tool*, SC41-5341-00
- *LPS: OnDemand for AS/400*, GC41-5079-01
- *OptiConnect for OS/400*, SC41-5414-02

For information about other AS/400 publications (except Advanced 36), see The AS/400 Softcopy Library.

How to send your comments

Your feedback is important in helping to provide the most accurate and high-quality information. If you have any comments about this book or any other AS/400 documentation, fill out the readers' comment form at the back of this book.

- If you prefer to send comments by mail, use the readers' comment form with the address that is printed on the back. If you are mailing a readers' comment form from a country other than the United States, you can give the form to the local IBM branch office or IBM representative for postage-paid mailing.
- If you prefer to send comments by FAX, use either of the following numbers:
 - United States, Canada, and Puerto Rico: 1-800-937-3430
 - Other countries: 1-507-253-5192
- If you prefer to send comments electronically, use one of these e-mail addresses:
 - Comments on books:
RCHCLERK@us.ibm.com
 - Comments on the AS/400 Information Center:
RCHINFOC@us.ibm.com

Be sure to include the following:

- The name of the book.
- The publication number of the book.
- The page number or topic to which your comment applies.

Chapter 1. Overview of RISC-to-RISC Upgrades and Data Migrations

The road map lists important considerations and activities that are critical to the successful model upgrade of a system. Although this road map is not designed to be an all inclusive how-to source for activities relating to upgrading your system, it covers the essentials by guiding you to the proper source. Follow all the steps in the order presented and notify your IBM® representative for assistance if you run into difficulties.

This information does not specifically cover hardware feature upgrades for the following features:

- Feature conversion 5065 to 5074
- Feature conversion 5066 to 5079
- Feature conversion 5075 to 5074

If you are performing one of these hardware feature upgrades in a partitioned environment, see the Logical Partitioning web site at the following address:

<http://www-1.ibm.com/servers/eserver/series/1par/>

This road map also covers how to perform a model to model data migration. A data migration can be performed from almost any model AS/400® to any model AS/400. The source model must be at the same release as the new model AS/400 to correctly complete the data migration.

What Is In this Road Map

This road map covers the following upgrades:

Notes:

1. The source system might need a hardware upgrade before the customer starts Program Temporary Fixes (PTFs) and prior to installing V4R4 or V4R5 software. This is to get the source system compatible with the target system. 7xx models require V4R3 or later and 8xx models require V4R5.
2. SSP is not supported in V4R5.

• Model 170 to Model 170

There are no upgrades into or out of a model 170. The Data Migration section of this book covers the procedure used to perform a data move from the source system to the new model AS/400.

• Model 270 to Model 270

There are no upgrades into or out of a model 270. The Data Migration section of this book covers the procedure used to perform a data move from the source system to the new model AS/400.

• Models 5xx to Models 7xx

• Models 6xx to Models 7xx

• Models 7xx to Models 7xx

• Models 5xx or 5xx to Models 8xx

There are no model upgrades into a model 8xx from a model 5xx, SB1, SB2, or SB3. However, some hardware may be moved from the 5xx into a migration I

expansion unit (I/O and disk unit). The Data Migration section of this book covers the procedure used to perform a data move from the source system to the new model AS/400.

- **Models 6xx to Models 8xx**
- **Models 7xx to Models 8xx**
- **Models 8xx to Models 8xx**

Appendix C, "Possible AS/400 RISC-to-RISC Upgrades" on page 45 has detailed tables that indicate which upgrades are permitted.

For servers not having an upgrade path, use the data migration section of this book. This would include scenarios such as, an AS/400 model 540 to an AS/400 model 270.

This information does not specifically cover hardware feature upgrades for the following features:

- Feature conversion 5065 to 5074
- Feature conversion 5066 to 5079
- Feature conversion 5075 to 5074

If you are performing one of these hardware feature upgrades in a partitioned environment, see the Logical Partitioning web site at the following address:

<http://www-1.ibm.com/servers/eserver/series/lpar/>

Why Upgrade from One AS/400 System to Another?

You might ask yourself why IBM is doing this and why upgrade your system now? Most customers need to increase performance and add capacity.

What is An Upgrade?

In this book, an upgrade is any improvement made to the software or the hardware of an AS/400 model that retains the serial number of the AS/400 model. This includes moving the compatible hardware, the Licensed Internal Code, operating system, and the licensed programs to a new target system for better performance and reliability.

A data migration is the process of moving only the data from one model AS/400 to a new model AS/400.

Hardware Investment for Upgrading

You may choose to upgrade your existing AS/400 RISC system processor, or replace it with a new, AS/400 model. In either case, you may keep most of the current system. The process of either an upgrade of your existing system or moving parts from an existing system to a new system, are called **miscellaneous equipment specification (MES)**. A MES is the process steps of an upgrade. The type of MES depends on several factors:

- Your current processor model
- Costs
- Your system availability requirements

The information in this book will help to determine the right path to an upgrade. This is based on the current model and the goals of the process.

How Long Will the Upgrade Take?

The upgrade process includes planning, ordering, shipping, installing and testing the system. The following table shows **approximately** how long an upgrade might take.

Note: You should plan at least one additional hour of down time to load the operating system for systems not preloaded.

Order Planning - 5 to 15 Days	Installation Planning and Preparation - 10 to 30 days		Phase II Installation - Weekend (1 to 3 days)
		Phase I Installation - 5 to 20 Days	
See "Prerequisite and Related Information" on page ix for required publications.	See "Prerequisite and Related Information" on page ix for required publications.	Save System	Upgrade Hardware
System Requirements	Solution Assurance	Upgrade Software	Verify System
Performance	Hardware and Software Preparation	Check History and Clean Up Messages	Save System
Determine Services Needed	Physical Planning (Site Preparation)	Save System	
Place Order			

What is A Data Migration?

A data migration is the process of moving the OS/400[®] and the data from one model AS/400 to a new model AS/400.

The source system must be at the same release level as the target server. This includes OS/400, all objects, and all licensed programs.

For customers ordering a new RISC AS/400 server with V4R4 or V4R5 to replace an existing RISC AS/400 model ("source") and needing to migrate their data from the "source" model to the new server, a new feature code Feature Code (F/C) #0205, is now available. This new feature code should be ordered against the new RISC AS/400 server. It is valid on orders for all new servers except the Models 150 and SB1.

For Feature Code #0205, the customer must have purchased a new server with enough hardware and disk unit to hold all of the data from the "source" model as well as any new data including any required IBM software (OS/400 and so forth). Additionally, the RISC-to-RISC Data Migration process requires that the "source" model must be at the same version/release of OS/400 and Licensed Program Products (LPPs) as that of the "new" server which has been ordered/received.

Customers with Version 3 (V3R7) on their "source" model must upgrade to Version 4. It is recommended that they purchase Software Subscription for AS/400. They must then order and upgrade to match the new server (V4R4 or V4R5) in order to proceed with their data migration. V3R7 cannot be directly upgraded to V4R4 or V4R5 therefore, to do this the source system will need to be upgraded to V4R2 or V4R3 before upgrading to V4R4 or V4R5. Customers with Version 4 must obtain new server release of OS/400 licenses of the LPPs, either through new orders or via Software Subscription for AS/400.

A License Addendum will be provided to allow the customer to install and use the copy of OS/400 (received with the newly ordered server) on their source model for up to 70 days. This Addendum authorizes the customers to use the new Version and Release on the source system for the sole purpose of migrating their data. The previous Version and Release must be reinstalled after the migration is completed. The V4R4 or V4R5 licenses of OS/400 and the LPPs will only allow the products to be run on one system at a time. Model 150 customers who are not at the new server release of OS/400 must purchase the BasePak Upgrade (5649-EP5 for V4R4) in addition to any upgrades for installed Optional Products in order to proceed with their data migration. Feature Code #0205 provides for minimal pre loading of the new server, inclusion of a special License Addendum, and an insert which points to the AS/400 Technical Studio Web site (which provides the RISC-to-RISC Road Map):

http://www.as400.ibm.com/tstudio/tech_ref/rrmap/

This Road Map provides the steps on how to do the RISC-to-RISC data migration. For subsequent releases of OS/400, the Road Map will be included with the shipment of the new server. Feature Code #0205 differs from Feature Code #0203. Feature Code #0203 SHOULD NOT be ordered for AS/400 RISC-to-RISC data migrations as it is designed exclusively for AS/400 CISC-to-RISC data migrations.

How Long Will the Data Migration Take?

The data migration process includes planning, ordering, shipping, installing and testing the system. The following table shows **approximately** how long a data migration might take.

Note: You should plan at least one additional hour of down time to upgrade the operating system for source systems not at the new server release level.

Order Planning - 5 to 15 Days	Installation Planning and Preparation - 10 to 30 days	Phase II Installation - Weekend (1 to 3 days)
See "Prerequisite and Related Information" on page ix for required publications.	See "Prerequisite and Related Information" on page ix for required publications.	Migrate Data
System Requirements	Solution Assurance	Verify System
Performance	Physical Planning (Site Preparation)	Check History and Clean Up Messages
Determine Services Needed	Software Preparation (Upgrade Source System Software)	Save System
Place Order	Save System	

Books to Use for Software Release Upgrades

The following table lists software release considerations, and which book to use for upgrading the operating system and licensed programs.

OS/400 Release Currently Installed	Book To Use For Upgrade and Software Installation
V4R5 V4R4 V4R3 V4R2 V4R1 V3R7 V3R7 and V4R1*	<p>If you have one of these releases installed on your system, your system already runs on the RISC architecture. Use this book (<i>AS/400e 940x RISC-to-RISC Road Map</i>, SA41-5155-04) for the upgrade. Use the book <i>Software Installation</i>, SC41-5120-04, to replace the installed operating system and licensed programs. Use the book <i>Backup and Recovery</i>, SC41-5304-04, for the save and restore requirements of these procedures.</p> <p>Note: * You cannot upgrade directly from V3R7 to V4R4 or V4R5. You must first upgrade V3R7 to V4R2 or V4R3.</p> <p>Note: * You cannot upgrade directly from V4R1 to V4R5. You must first upgrade V4R1 to V4R3 or V4R4.</p> <p>Note: V4R4 introduced logical partitions. Go to the Information Center for help with setting up, upgrades to and maintaining logical partitions.</p> <p>See the Software Installation book for other software requirements and limitations prior to the OS/400 upgrade.</p> <p>The Backup and Recovery book is now located in the <i>AS/400 Information Center</i>, SK3T-2027-03.</p>

Chapter 2. Planning Your Order for Upgrading or Data Migration

Review this chapter as you identify a solution and again after a decision is made to verify the accuracy and completeness of the order.

Determining Your Upgrade Needs

To help determine the upgrade needs, please consider the following:

- What problems does this upgrade need to address?
- What additional applications or growth do you expect or plan for in the future?
- What new technology do you want as part of the upgrade?
- What are the requirements are for the following:
 - Capacity
 - Capability
 - Performance
 - Availability
- What are your expectations for the following:
 - Impact on business operations
 - Cost
 - Performance
- What are the financial considerations to keep in mind? For example:
 - Government discounts
 - Capital planning cycles
 - Tax implications
 - Budget

Performance Tools for Capacity Planning and Performance Analysis

| The Performance Capabilities Reference provides information on iSeries
| performance, capacity planning, and tips to obtain best performance. You can view
| or print the PDF version of this reference at the following Web site:

| <http://www.ibm.com/servers/eserver/series/perfmgmt/resource.htm>

The licensed program Performance Tools/400 (Program 57xx-PT1) and QSIZE400 on the AS/400 configurator can be used for capacity planning and performance analysis.

The BEST**/1 Capacity Planning function of the Performance Tools licensed program provides the capability to analyze how a different AS/400 configuration will perform with your current work load. The program temporary fixes (PTFs) are now available that include capacity planning information for the PowerPC processor models of the system. You can use Performance Tools to help you determine the proper configuration of the processor main storage, and disk resources that will meet your performance requirements.

Performance Tools are the best source of information for determining what configuration meets your performance requirements. You should order the PTF that updates your version of Performance Tools with the PowerPC AS processor models.

Note: If you do not have Performance Tools on your system, you should obtain modeling information in another way, such as by using consulting services. Modeling the characteristics of your target configuration helps ensure that the configuration meets your needs.

The latest PTFs for AS/400 BEST/1 Capacity Planner are required. You can order or download these PTFs from the following Web site:

<http://as400service.ibm.com>

You need to register at this site. Do the following to go to the AS/400 Internet PTF Facility:

1. Click **Fixes, Downloads and Updates**
2. Click **Internet PTF Downloads (iPTF)**

How to Gather Configuration Information

You and your marketing representative use the Enhanced Upgrade Order Process (EUOP) and the AS/400 configuration program (CPAS400 and e.Config). This process compares your current configuration with your desired configuration and creates the MES order automatically. This simplifies the work that you and the marketing representative have to do and ensures a correct MES order. See Appendix B, "Enhanced Upgrade Order Process (EUOP)" on page 43 for more information on how to use the Enhanced Upgrade Order Process.

How to Gather Performance Information

Gathering performance data before installing a release gives you a base with which to compare your system's performance after the installation is complete. Performance data is also useful when determining the correct hardware configuration for your upgrade.

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

See the Software Installation book for more information on performance monitoring.

Note: If you plan to install the Version 4 licensed program 5769-PM1, you must convert the data collected on your current pre-Version 4 system before you can analyze it with the 5769-PM1 licensed program.

Prerequisites Before Placing an Order

This section will cover the prerequisites of placing an order to upgrade the system. These include software-related items, hardware considerations, system configuration considerations, and available services that everyone should know before placing an order.

Version 4 Software Items

See the table on supported releases for software upgrades in the book *Software Installation*, SC41-5120-04, to find what versions may be upgraded from and to. For example, you must be at V4R1 to upgrade to V4R4 and at V4R2 to upgrade to V4R5.

The "Preparation Program Temporary Fixes Required Before Installing V4R5M0 Software" section in the *Software Installation* book describes how to apply PTFs.

Other Software Related Items

- Determine whether there are any additional software charges that are associated with the processor group change. Two passes must be run on the AS/400 configuration program to determine these changes.
- Determine whether there are any additional usage changes because of the user-based pricing that is associated with the software products on the system.
- Verify with the software service representative, or the business partner, that any third party software that you use was tested on the software release level ordered.
- Contact the software service representative for any software considerations and restrictions that might apply to the model upgrade.

Notes:

1. If you have tape management software, ensure that it uses support that is available on your target system. Do the following:
 - a. Type `DSPOBJD OBJ(QSYS/QUSTAPEX) OBJTYPE(*PGM)`
 - b. If you receive the message `Object QUSTAPEX in library QSYS type *PGM not found`, you do not have this potential problem with tape management software.
 - c. If you see the Display Object Description display for the QUSTAPEX program, press F12 (Cancel). Contact the vendor who supplies your tape management software to determine how the vendor will provide equivalent support for your target release.
You may need to order an OS/400 feature called MSE (Media and Storage Extensions).
2. For other software related questions, see AS/400 Technical Studio and the book *Software Installation*, SC41-5120-04.

Attention:

For V4R4, OS/400 option 24 (OS/400 Lotus® Notes™ Enhanced Integration) is no longer supported. It is deleted when V4R4 is installed. A migration of the data must occur prior to installing V4R4 to Lotus Domino™ for OS/400. For detailed instructions refer to the following URL:

<http://www.as400.ibm.com/techstudio>

Hardware Considerations

- Determine the prerequisite engineering changes and program temporary fixes (PTFs) that are needed to upgrade the system.
- Determine the attached input-output devices, and the operating system.
- Verify with the original equipment manufacturer vendor that any non-IBM devices are compatible with the model upgrade and the new software release.

Note: The customer should request written confirmation of this compatibility from the original equipment manufacturer vendor.

- The target system may have different power requirements than the source system. Appropriate planning and preparation by the customer is very important. Determine whether you need additional space and power requirements for any additional system units or system racks. For more information, see the AS/400 Technical Studio.
- Verify that the target system has a tape drive compatible with the tape format used to save information on the source system.
- Ensure that your marketing representative or IBM business partner is aware of the number of ports on your current twin-ax workstation controllers and the number of ports you will need on your new model. This will help to ensure that the proper model and features get ordered for your upgrade.

Installing from an Alternate Installation Device

Version 4 releases include support for alternate installation devices on buses other than bus 1 (the system bus). If you use an alternate installation device, you need to ensure that the device is set up and enabled. You also need to have the CD-ROM for Licensed Internal Code as well as your tape media. The Appendix of the *Software Installation* book describes the alternate installation device function and identifies situations in which older tape devices may require its use. The appendix also describes how to set up, enable, or disable an alternate installation device.

Note:

alternate IPL device

This may be a CD-ROM unit or tape unit, attached to the system bus 1 (the system bus)

alternate installation device

Tape unit attached to a bus other than the system bus 1

Performing the IPL using the alternate installation method is really just a special kind of IPL type D. Such an installation involves two pieces of media: the alternate IPL load source (code), usually on a CD-ROM, and the alternate installation media (currently must be a tape). The alternate IPL load source is used to start the IPL type D. The alternate installation media contains the Licensed Internal Code that will be installed on the system. The alternate IPL load source will always be read through a device on bus 1 of the system. The alternate installation media is placed in a device on any bus, except bus 1.

System Configuration Considerations

- Change the auxiliary storage pool (ASP) configuration either **before** or **after** the upgrade, but never during the upgrade.
- If you use mirroring, make sure to specify the correct level.

- A current system configuration list should be available for the hardware service representative. The configuration list provides details of your current system configuration.

To print the System Configuration List, do the following:

1. On the AS/400 Main menu command line, type STRSST. Then, press the Enter key.
2. On the STRSST display, select *Start a service tool* option. Press the Enter key.
3. On the Start a Service Tool display, select Hardware service manager. Press the Enter key.
4. From the Hardware Service Manager display, press F6 (print configuration).
5. To return to the AS/400 Main menu, Press F3 (Exit) twice, and then press the Enter key.
6. Keep the printed list - the service representative will need it.

Services and Other Assistance

- Determine whether you need on-site support or services. Appendix A, “AS/400 Global Services” on page 39, has information about the following:
 - IBM Global Services
 - AS/400 Data Migration Services
 - V4R5 Planning and Migration Services
 - LPAR Planning and Implementation Services
 - Other AS/400 support family services
 - AS/400 solution services

- Determine the responsibilities for all upgrade activities. These responsibilities include:
 - Outline the model upgrade activities and the person responsible for each activity, as described in Table 4 on page 19.
 - Develop an installation plan, a schedule of activities, and a checklist. See the SA Advisor in the Expert menu Application on HONE.

Your IBM Representative may visit the Solutions Assurance Web site:

<http://w3.ibm.com/support/assure>

Your IBM representative can use marketing tools to get more information about these changes:

On a Virtual Machine (VM) system type:

```
TOOLS SENDTO LEXVMIC1 TOOLS SAPRDOC GET SA95008 SCRIPT *
TOOLS SENDTO LEXVMIC1 TOOLS SAPRDOC GET SA95008 LIST3820 *
```

- Order any optional hardware and software publications by using PUBORDER or the System Library Subscription Service (SLSS).
- Determine whether you have any education needs.

Model-specific Considerations for Placing an Order

There are unique model-specific considerations when upgrading from one RISC model to another RISC model. Before placing an order, everyone involved in the upgrade process should review these upgrade considerations:

Note: IBM refreshed some of the AS/400 input and output adapter lines in V4R1. The Peripheral Component Interconnect (PCI) is now an industry standard.

Version 3 software users may have some System Product Division (SPD) hardware that is not supported by these PCI changes. Your IBM representative can use marketing tools to get more information about these changes:

On a VM system type:

```
TOOLS SENDTO USDIST MKTTOOLS MKTTOOLS GET PCIALT PACKAGE
```

- The prerequisite for migrating SPD *book-type* adapter cards is a Model S20, S30, S40, SB1, 620, 640, 650, 720, 730, or 740.
- There is concurrent disk unit maintenance.
- You must upgrade any 266 MB expansion unit to 1063 MB.
- You can use the alternate IPL device (see “Installing from an Alternate Installation Device” on page 10) function for any installation or recovery that requires replacing Licensed Internal Code or other licensed programs. Some models **might require** an alternate installation device. You can use this device for installing distribution tapes that were created by a central site, or for recovery, using a SAVSYS tape.

Note: In Models S10, S20, 600, 620 and 720, the input-output processor (IOP) to which certain older tape devices connect, require an expansion unit in order to use the devices. The following tape devices are affected: 2440, 3422, 3430, 3480, 9347, 7208-002, and some models of 3490. Other 7208 models and 3490 models Exx, C11, and C22 are supported without an expansion unit. Models 3490 C1A and C2A can be converted to Small Computer Systems Interface (SCSI) format, which is supported without an expansion unit. If you use older tape devices as alternate installation devices, on Models S10, S20, 600,620 and 720, you need the expansion unit. You need to set up the devices as alternate installation devices.

- Models Sxx and 6xx have a new internal-external SCSI input-output adapter.
- You cannot upgrade an AS/400 Advanced Series to an AS/400 Advanced Server. You cannot update an AS/400 Advanced Server to an AS/400 Advanced Series.
- Be aware that upgrades to an AS/400 may require wiring changes to the building. For more information, see the AS/400 Technical Studio.

The customer should work with the marketing representative to schedule a system assurance meeting to review all of the following activities.

Note: This meeting should include the customer, IBM marketing representative, hardware service representative, software service representative, and any non-IBM software service representative.

- Review memory considerations as follows:
 - Net-priced main storage feature exchanges are not available when upgrading to another AS/400 PowerPC AS model. In addition, you cannot exchange AS/400 memory cards for credit toward the purchase of newer or larger AS/400 memory cards. To reduce the necessity for future memory exchanges, the customer should order sufficient memory card sizes for future growth requirements.
 - Main storage for AS/400 400[®], 500, and 530 is not compatible with each other.
 - Main storage for AS/400 40S, 50S, and 53S, are not compatible with each other.
 - You must plug in main storage cards in equally-sized pairs for the Model 500 Feature Processor 2142. Therefore, it might not be possible to reuse all of the main storage cards from the previous feature processor (2140 or 2141).

- You must plug in main storage cards in equally-sized pairs for the AS/400 510 and 530 and the AS/400 50S and 53S.
- Ensure that you know how to accomplish RAID protection on a migrated internal disk unit. You must have an attachment to a Feature Code for a high availability DASD controller (for example, 6502, 6512, 6532, 2726, or 2740).

Note: In order to avoid additional charges for the IBM service representative's time, perform ASP management after completion of the hardware upgrade.

- Be prepared to delete the old device description and create a new one, if the type of console changes.
- Review and confirm the hardware and software order.
- Some systems have a mix of unsupported disk unit devices. If the system has such a mix, consider one of the following:
 - Purchase additional supported disk unit devices in order to enable the removal of all unsupported devices before the model upgrade.
 - Purchase *AS/400 Data Migration Services*.

Upgrading from a 4xx, 5xx, Sxx, or 6xx to a 7xx

Many installed AS/400 models 4xx, 5xx, 6xx, and Sxx (except SB1) can be upgraded.

All system units and expansion units have locations for features including processors, main storage, power, expansion units, disk units, tape drives, CD-ROM drive, and IOPs. Some restrictions may apply to certain combinations of features. The configurator contains the rules and performance considerations for placement of these features. It should be used to ensure a valid configuration. The use of performance tools may also help in optimizing a configuration to match a specific set of requirements.

Note: When ordering a model upgrade from a mixed-mode server (S20, S30, S40) to AS/400e™ 7xx servers, an Interactive Specify code must be on the model Sxx inventory record prior to ordering the model upgrade. The configurator will generate a Record Purpose Only (RPO) order to add a zero priced Interactive Specify code to the installed mixed-mode server prior to the upgrade. This is a required step.

Sxx Interactive Specifies that the configurator will add:

- Model S20
 - #1490 Interactive Specify
 - #1492 Interactive Specify
- Model S30
 - #1492 Interactive Specify
 - #1493 Interactive Specify
 - #1494 Interactive Specify
- Model S40
 - #1495 Interactive Specify
 - #1496 Interactive Specify

Dedicated Server for Domino

The Dedicated Server for Domino supports the following 170 processors:

- 2407 based on the 2292 model 170 processor
- 2408 based on the 2385 model 170 processor
- 2409 based on the 2388 model 170 processor

The Dedicated Server for Domino supports the following 270 processors:

- 2422 based on the 2250 model 270-2
- 2423 based on the 2252 model 270-3
- 2424 based on the 2253 model 270-4

The Dedicated Server for Domino supports the following 8xx processors:

- 2425 based on the 2396 model 820-2
- 2426 based on the 2397 model 820-3
- 2427 based on the 2402 model 830-2
- 2428 based on the 2403 model 830-3

MES upgrades to the Dedicated Server for Domino will not be allowed. Dedicated Server for Domino models may optionally be preloaded with Domino for AS/400 software and license. Dedicated Server for Domino server is a prerequisite for a Domino for AS/400 Quarterly Maintenance Update (QMU) version 5.01x.

Dedicated Server for Domino will give favored performance to workloads running Domino and non-favored performance to workloads not running Domino. Interactive jobs will also be restricted.

For more information refer to the topic "Domino for AS/400 Server" in the AS/400 Information Center.

Migrating from a 5xx to an 8xx

When migrating SPD expansion units from a model 5xx or from any unsupported path to an 8xx server, the order must have a migration expansion unit included.

IBM does not provide a pre-planned or pre-programmed upgrade from a Model 5xx to a Model 8xx. The user who wants to move I/O to 8xx hardware will have to analyze their current configuration and determine what will and will not move and plan the sequence of actions to make it happen. Here are some general considerations:

- SPD I/O expansion unit can not be directly attached to an 8xx. A migration expansion unit with SPD capability is required. If you have a Model 830 or 840 and do not have a migration expansion unit yet, a migration expansion unit (migration expansion unit II), FC #5077 (and perhaps an FC #5057 expansion unit), should be ordered. IBM does not offer an option to order a migration expansion unit (migration expansion unit I) which could attach to a 820.
- SPD IOPs can not be inserted into an 8xx except via SPD slots in a migration expansion unit or in SPD I/O expansion unit attached via a migration expansion unit.
- Not all I/O is supported by V4R5 on an 8xx. There were several older disk units, tape drives, IOPs, and so forth, which were no longer supported as of V4R1.

- The I/O expansion unit, on a model 500 or 510 only has a 266 Mbps Optical bus Adapter which is too slow for the migration expansion unit to support. Using the S40388 RPQ, the expansion unit can be converted to a faster I/O expansion unit with a 1063 Mbps Optical Bus Adapter.
- In V4R5, the only type of PC console that an 8xx system supports is Operations Console.
- Planning assistance from IBM Global Services or from an IBM Business Partner may be very helpful if this is an unfamiliar area to the customer.

Upgrading from a 6xx or 7xx to an 8xx

Many installed AS/400 models 6xx and 7xx, except SBx, can be upgraded to the 8xx servers. See “Upgrading to a New 7xx or 8xx Model” on page 46 for information on supported upgrades to new AS/400 models.

8xx models require V4R5 versions of OS/400.

All system units and expansion units have locations for features including processors, main storage, power, expansion units, disk units, tape drives, CD-ROM drive, and IOPs. Some restrictions may apply to certain combinations of features. The configurator contains the rules and performance considerations for placement of these features. It should be used to ensure a valid configuration. The use of performance tools may also help in optimizing a configuration to match a specific set of requirements.

Placing the Upgrade Order

After you have identified what is necessary for the upgrade, continue with the following sections:

Who is Responsible for Ordering the Upgrade?

The following tables show a check-off sequence for tasks during the ordering process.

Note: IBM Services personnel may perform the customer activities for a fee.

Table 1. Tasks and Responsibilities for Ordering

Checkoff	Tasks and Responsibilities for Ordering	Person Responsible
	Understand objectives and needs	Marketing Representative
	Know existing system. Print system configuration list.	Marketing Representative, Customer
	Use the AS/400 Configurator	Marketing Representative, Business Partner
	Determine prerequisites	Marketing Representative, Business Partner, Software Service Representative
	Determine current running release	Marketing Representative, Business Partner, Customer
	Determine release-level requirements before model upgrade	Marketing Representative, Business Partner
	Determine responsibilities	Customer Account Team Leader
	Determine documentation and education needs	Marketing Representative, Business Partner
	Determine physical needs	Customer, Business Partner

Table 1. Tasks and Responsibilities for Ordering (continued)

Checkoff	Tasks and Responsibilities for Ordering	Person Responsible
	Determine special needs (for example, mirroring)	Marketing Representative, Business Partner, Customer
	Determine upgrade path	Marketing Representative, Business Partner, Customer

Table 2. Tasks and Responsibilities for Ordering Software

Checkoff	Tasks and Responsibilities for Ordering	Person Responsible
	Order software release	Customer, who may need assistance from a Marketing Representative or Business Partner
	Order program temporary fixes (PTFs)	Customer, who may need assistance from a Marketing Representative or Business Partner
	Order publications	Customer, Marketing Representative, Business Partner

Table 3. Tasks and Responsibilities for Ordering Hardware

Checkoff	Tasks and Responsibilities for Ordering	Person Responsible
	Order engineering changes	Marketing Representative, Business Partner
	Run the AS/400 configurator to place the order	Marketing Representative, Business Partner
	Order publications	Marketing Representative, Business Partner

Contact your local IBM representative or authorized dealer to place the order or for further assistance.

How to Get Help with the Order

Ordering assistance is available from IBM. When you type GO ORDER on the command line and press the Enter key, the Request Order Assistance display appears.

Note: If you need assistance when trying to place an order, you can also use the Request Order Assistance (RQSORDAST) command to request assistance from IBM.

Use the Request Order Assistance display as follows:

- Type in your telephone number and your name.
- Verify the accuracy of other contact information.
- Press the Enter key.
- Type a short description of your needs.
- Press F10 (send) to send the file to IBM.

Sending the Order to IBM

The RQSORDAST command can send a list which contains your current AS/400 system configuration, with your order. IBM uses this list to assess your ordering needs.

Sending the Order to a Software Service Provider Other Than IBM

You can send your order request to IBM or to a provider other than IBM. When you send your order request to a provider other than IBM, you can use the RQSORDAST command to communicate with the provider. The provider can send you a response electronically. You can use the WRKORDRQS command to view the response and manage the order request. The provider will fill your order or forward your request to IBM.

Chapter 3. Procedure for an Upgrade (RISC-to-RISC)

Who is Responsible for Upgrading the System

The following table establishes a check-off list for task responsibilities in preparation for and during the upgrade. The list is arranged in the sequence the tasks should be done.

IBM Services can be provided for additional cost to assist customers.

For customer install systems and servers such as, model 170s, follow the instructions that came with the system.

Table 4. Tasks and Responsibilities for the Upgrade Path

Checkoff	Task	Person Responsible
	Consider needs for installation	Customer, Business Partner, Software Service Representative, Hardware Service Representative
	Establish tentative installation date	Customer and their authorized representative
	Read preventive service planning (PSP) information	Customer
	Save the system, full save	Customer
	Install Target Software Release and appropriate PTFs	Customer
	Verify that all applications are running	Customer
	Tune performance	Customer
	Complete physical planning	Customer
	Save the system, full save	Customer
	Contact customer Hardware Service Representative and schedule the upgrade after the order arrives	Customer
	Verify the following: <ul style="list-style-type: none">• that prerequisite Engineering Changes are installed• that the customer has installed all required PTFs• the correct operating system level• that the customer has backed up the system, including all customer data	Hardware Service Representative
	Inventory parts received from IBM as part of the upgrade	Hardware Service Representative
	Run Work with Hardware Products (WRKHDWPRD) command option 4	Hardware Service Representative
	Upgrade hardware using parts shipped from IBM and the CUII	Hardware Service Representative
	Save the system, just a system save	Customer
	Run WRKHDWPRD command option 5 if OS/400 is on the target system at the completion of the upgrade	Customer
	Configure extra devices (DASD, for example)	Customer
	Tune performance	Customer

Table 4. Tasks and Responsibilities for the Upgrade Path (continued)

Checkoff	Task	Person Responsible
	Perform Redundant Array of Independent Disks (RAID) and mirroring steps	Customer
	Save the system, full save	Customer
	Hold post-installation meeting	Customer Account Team Leader
	Ensure IBM systems are accurate and updated	Marketing Representative

What to Do When the Hardware Arrives

When the hardware arrives, the customer should notify the hardware service representative and schedule a time for the upgrade.

Notes:

1. For customer install systems follow the instructions that came with your server to get set up. If you are replacing an existing system without an upgrade path covered in Appendix C, "Possible AS/400 RISC-to-RISC Upgrades" on page 45, use the data migration section of this book.
2. The customer must have at least 64MB of memory or, arrange to have additional memory installed before the upgrade can proceed. See the *Software Installation* book for more information on prerequisites prior to an upgrade.

Check the load source size as follows:

1. Use STRSST (or DST) to do the following:
 - a. Select "Work with Disk Units" option.
 - b. Select "Display Disk Configuration" option.
 - c. Select "Display Disk Configuration Capacity" option.
 - d. Locate the line displayed for Unit 1. This line shows the protected and unprotected capacity of the loadsource disk unit. One of the displayed fields is zero, and one has a size.
2. Write down the size of the loadsource disk unit here- _____. This information will be used later in the upgrade.

Preparing the Current System

Approximately two weeks before the hardware service representative arrives, the customer should do the following:

- 1. Acquire the preventive service planning information (see Appendix G, "Obtain the Latest Preventive Service Planning Information" on page 63) from electronic customer support (see Appendix F, "How to Verify and Set Up Electronic Customer Support" on page 55) if available, or from the software service representative.
- 2. See Appendix E, "Considerations and Solutions" on page 51 for information pertaining to logical partitions. There are some specific steps to perform for upgrading a server with a primary and secondary partitions installed.
- 3. For considerations when upgrading to **5769-RD1 OnDemand**, see Appendix E, "Considerations and Solutions" on page 51 for information for OnDemand.

- ___ 4. For considerations when upgrading an AS/400 with **OptiConnect** installed, see Appendix E, "Considerations and Solutions" on page 51 for information for OptiConnect.
- ___ 5. For considerations when upgrading an AS/400 with **AS/400 Integrated Netfinity® Server** installed, see Appendix E, "Considerations and Solutions" on page 51 for information for Integrated Netfinity Server.
- ___ 6. Review and perform all items that pertain to your upgrade situation from the book *Software Installation*, SC41-5120-04.
Attention: Do not install the program temporary fix (PTF) that reserves space for the Version 4 Licensed Internal Code until you ensure that you have adequate disk space in the system ASP.
- ___ 7. Document currently installed machine and LPAR partitions.

Without LPAR	With LPAR
Skip this step.	<p>All hardware must be assigned to a primary or secondary system partition before upgrading. Where possible, plan the upgrade activity in the following stages:</p> <p>a. Stage 1</p> <p>Load correct level software and PTFs on source system, and ensure this is contained in customer's save media. Work with Source system to assign hardware resources to a partition and clear non-reporting hardware. Work with Target system to load customer's level of saved Licensed Internal Code onto new target loadsource. This prevents down-leveling during the upgrade.</p> <p>b. Stage 2</p> <p>Perform the model upgrade and Load source migration. Do not make any hardware changes, such as adding SPD I/O or disk unit expansion units, that could change the "bus address distance" between existing SPD hardware. The "bus distance" is important in maintaining the LPAR configuration. Note that the SPD hardware bus addresses are +4 after moving to the target system (1 maps to 4, 2 maps to 5, and so on). Clear non-reporting hardware resources.</p> <p>c. Stage 3</p> <p>Add additional features and expansion units after LPAR configuration has been re-established.</p> <p><i>Contact your next level of support if you have questions.</i></p>

- ___ 8. Display the current value of system value QALWOBJRST and record it here _____.
DSPSYSVAL SYSVAL(QALWBJRST)
- ___ 9. Set the Allow Object Restore (QALWBJRST) system value to *All before you install a new release of OS/400, install new licensed programs, or

apply program temporary fixes (PTFs). This value specifies whether objects with security-sensitive attributes can be restored.

Note: These activities might fail if the value of QALWOBJRST is not set to *ALL.

You can use the following command:

```
CHGSYSVAL SYSVAL(QALWOBJRST) VALUE(*ALL)
```

To ensure system security, return the QALWOBJRST value to the previous setting after completing the system activity.

- ___ 10. Before proceeding to the next step, ensure that you are in possession of a current system backup. To do this, follow the procedure for saving the entire system (using option 21) by referring to any of the following:

- The chapter on saving your AS/400 system in the book *Backup and Recovery*, SC41-5304-04
- The Backup, Recovery, and Availability topic under System Administration, Availability, and Maintenance in the Information Center:

<http://www.as400.ibm.com/infocenter>

To find the procedure for saving the entire system (using option 21) in the Information Center, do the following:

- a. Click **System Administration, Availability, and Maintenance**
- b. Click **Backup, Recovery, and Availability**
- c. Click **Backing up your system**
- d. Click **Saving your system with the GO SAVE command**
- e. Click **Saving your whole system with GO SAVE: Option 21**

- ___ 11. Replace the Licensed Internal Code and software by using the CD-ROM media provided.

Use the instructions from the “Replacing a Release Using Automatic Installation” or “Replacing a Release Using Manual Installation” chapters in the *Software Installation* book to replace the Licensed Internal Code, operating system, and licensed programs.

- ___ 12. If you have any Programming Request for Price Quotations (PRPQ) to install, do them now. Use the instructions that came with the PRPQ. Each PRPQ can have separate instructions.

- ___ 13. Save the entire system. Use option 21 on the *Save* menu. For more information about saving the entire system using option 21, refer to any of the following:

- The chapter on saving your AS/400 system in the book *Backup and Recovery*, SC41-5304-04
- The Backup, Recovery, and Availability topic under System Administration, Availability, and Maintenance in the Information Center:

<http://www.as400.ibm.com/infocenter>

To find the procedure for saving the entire system (using option 21) in the Information Center, do the following:

- a. Click **System Administration, Availability, and Maintenance**
- b. Click **Backup, Recovery, and Availability**
- c. Click **Backing up your system**

- d. Click **Saving your system with the GO SAVE command**
- e. Click **Saving your whole system with GO SAVE: Option 21**

Note: Make sure that the system is saved on a tape unit that is compatible with the tape unit used for an alternate IPL device on the target system.

- ___ 14. Delete any unused device configuration descriptions.

Table 5. Clear non-reporting resources on each LPAR Partition.

No LPAR	LPAR Primary	LPAR Secondary
This is recommended for good system performance but, no action required, skip to the next numbered task. Use the Hardware Service Manager service option to remove non-reporting resources that no longer are associated with existing hardware.	Use the Hardware Service Manager service option to remove non-reporting resources that no longer are associated with existing hardware. Attention: Ensure all I/O resources are assigned to a partition.	Use the same procedure as described for the LPAR Primary for each Secondary Partition that is configured.

- ___ 15. Save the entire system on each partition. Use option 21 on the Save menu. For more information about saving the entire system using option 21, refer to any of the following:

- The chapter on saving your AS/400 system in the book *Backup and Recovery*, SC41-5304-04
- The Backup, Recovery, and Availability topic under System Administration, Availability, and Maintenance in the Information Center:

<http://www.as400.ibm.com/infocenter>

To find the procedure for saving the entire system (using option 21) in the Information Center, do the following:

- a. Click **System Administration, Availability, and Maintenance**
- b. Click **Backup, Recovery, and Availability**
- c. Click **Backing up your system**
- d. Click **Saving your system with the GO SAVE command**
- e. Click **Saving your whole system with GO SAVE: Option 21**

Note: Make sure that you save the system and data on a tape unit that is compatible with the tape unit on the target system.

- ___ 16. Resume normal system operations and processing.
- ___ 17. **To verify that all your applications are running properly, use the system with the new software release for 2 or more weeks before installing the hardware.**

Before the hardware upgrade is to take place, the customer should do the following:

- ___ 1. Ensure that the currently installed machine and LPAR partitions are documented.

No LPAR or LPAR Primary Partition	Secondary LPAR Partitions
-----------------------------------	---------------------------

<p>Before proceeding with the MES Installation, where possible, use (A), (B) or (C) to document the installed AS/400. Use an appropriate method:</p> <p>(A) - If your country supports the WRKORDINF command and if the installed AS/400 is capable of using Electronic Customer Support (ECS), use this method:</p> <p>On the command line, type "WRKORDINF", then press Enter.</p> <p>On the next screen, enter Option 1 in the Option field next to QMANnnnn</p> <p>Note: nnnnn is the serial number of the machine, press enter. Write "ECS" on the top of the RMER form.</p> <p>(B) - Use this method if the installed AS/400 is not ECS capable, or you cannot use 'A' for another reason: On the command line type "DSPSFWRSC *PRINT", press enter. Retrieve hard copy listing from the system printer. Attach the listing to the RMER. If no RMER form is present, then ignore this step.</p> <p>(C) - If you did not receive an RMER form, then this task can be ignored. Go to the next numbered task. If you have an RMER form, you should also print the configuration of the currently installed machine before any upgrade activity is begun. Use HSM under SST, where possible, to print information you may need to report later, such as component serial numbers.</p>	<p>Use the same procedure as described for the primary partition for each secondary partition that is configured.</p>
--	---

___ 2. Print Disk Configuration Status of the installed system.

No LPAR or LPAR Primary Partition	Secondary LPAR Partitions
-----------------------------------	---------------------------

<p>Find disk configuration information using the System Service Tools (SST).</p> <ol style="list-style-type: none"> Ensure you sign on to the system with the user profile (such as QSRV). Enter the command, STRSST, to start SST. Select option to Work with Disk Units. Select option to Display Disk Configuration. At the Display Disk Configuration Status display, print the entire disk configuration by using the print screen function. Ensure all the disk configuration information is printed. <p>Note: If you have trouble getting your printed output, systems with OS/400 installed can use AS/400 Operational Assistant.</p> <ol style="list-style-type: none"> Enter the command GO ASSIST, to get to the AS/400 Operational Assistant Menu. Select the option to Work with Printer Output. 	<p>Use the same procedure as described for the primary partition for each secondary partition that is configured. Record the S/N of the load source disk unit for each partition on the system.</p>
---	---

___ 3. Print Parity Set Configuration and Status of the Installed system.

No LPAR or LPAR Primary Partition	Secondary LPAR Partitions
<ol style="list-style-type: none"> Enter the command, STRSST, to start SST. Select option to Work with Disk Units. Select Display Disk Configuration. Select Display Device Parity Status. At the Display Disk Parity Set Status display, print the entire Parity Set configurations using the print screen function. <p>DASD MES Notes:</p> <p>Attention: Parity Sets can only be moved when the protection status shows Active. ASP management tasks, such as re-configuring RAID arrays or significant protection changes, are generally billable to the customer.</p> <p>Ensure this is discussed before the upgrade.</p>	<p>Use the same procedure as described for the Primary Partition for each Secondary Partition that is configured.</p>

- ___ 4. **For upgrades into the 8xx servers, skip this step.** Otherwise, remove any disk unit features from the system configuration that cannot be moved to the new server. Refer the AS/400 Technical Studio to identify these features.
- ___ 5. Save the entire system on each partition just before the hardware upgrade is to be started. Use option 21 on the Save menu. For more information about saving the entire system using option 21, refer to any of the following:
- The chapter on saving your AS/400 system in the book *Backup and Recovery*, SC41-5304-04

- The Backup, Recovery, and Availability topic under System Administration, Availability, and Maintenance in the Information Center:

<http://www.as400.ibm.com/infocenter>

To find the procedure for saving the entire system (using option 21) in the Information Center, do the following:

- Click **System Administration, Availability, and Maintenance**
- Click **Backup, Recovery, and Availability**
- Click **Backing up your system**
- Click **Saving your system with the GO SAVE command**
- Click **Saving your whole system with GO SAVE: Option 21**

Note: Make sure that you save the system and data on a tape unit that is compatible with the (tape unit) on the target system.

6. Enter the command `WRKDSKSTS OUTPUT(*PRINT)` to get “disk configuration and protection” information. Use this printout to help analyze the disk unit configuration and protection.

If you want a different configuration after the upgrade, use this printout to plan for the desired configuration. Before you power down the system to perform the hardware upgrade, you must logically remove any disk unit that you will move during the upgrade.

7. Use the Retrieve Configuration Source (RTVCFGSRC) command for the existing line, controller, and device descriptions. The configuration source is needed if any configuration objects must be manually changed or re-created. The RTVCFGSRC command builds a source file member for specified configuration objects. This source file can be converted later to a control language program. Keep updated records of all hardware and configuration objects. Before and after every upgrade, you can generate a report of your hardware and configuration objects. (From each partition) type the following commands:

```
DSPHDWRSC TYPE(*LWS) OUTPUT(*PRINT)
DSPHDWRSC TYPE(*STG) OUTPUT(*PRINT)
DSPHDWRSC TYPE(*CMN) OUTPUT(*PRINT)
DSPHDWRSC TYPE(*PRC) OUTPUT(*PRINT)
```

Make certain that the printouts are marked as to which partition they represent.

8. Run the `WRKHDPWD` command, option 4 to display and verify the information. Use F17 to print the information for the service representative.
9. Print the LPAR configuration

No LPAR	LPAR Primary Partition	LPAR Secondary Partition
No action Required, skip to the next numbered step.	On the Primary Partition, Use the Work with Logical Partition utility under SST to Print the Logical Partition Configuration.	No action required on Secondary Partitions.

10. Print the status of all PTFs on the system (each system partition if LPAR) after installing the V4R5 software and before the hardware upgrade. Type the following command:

```
DSPPTF LICPGM(*ALL) OUTPUT(*PRINT)
```


The hardware service representative should do the following:

- ___ 1. Verify that the physical planning items were completed:
 - High Speed Link cable plan
 - Floor plan, system layout
 - Cable labelling
- ___ 2. Verify that the customer has installed the latest V4R5 cumulative PTF package and specific software release PTFs on all partitions.
- ___ 3. Verify that prerequisite hardware changes are installed or are available to install on all system components and input or output devices.
- ___ 4. Run the WRKHDWPRD command, option 4 to display and verify the information from the customer.
- ___ 5. Set the IPL System Action for each Secondary Partition

No LPAR	LPAR Primary Partition	LPAR Secondary Partition
No action Required, skip to the next numbered step.	Under the Primary Partition, Use the Work with System Partitions utility to select each Secondary Partition and set each IPL System Action to HOLD.	No action required.

- ___ 6. As appropriate, confirm the schedule with the customer, business partner, marketing representative, and systems engineer.

Ensure that you have the following completed before the hardware service representative arrives:

- The latest full system backup (Save option 21) tapes on hand and labeled.
- Latest system configuration list on hand
- Latest device descriptions printout on hand
- Latest controller descriptions printout on hand
- Latest PTF level printout on hand
- Latest complete and accurate label location chart or work sheet on hand
- High Speed Link cable diagram on hand
- Site and system layout diagram on hand

Installing the Hardware for the RISC-to-RISC Upgrade

The hardware service representative should do the following:

- ___ 1. Verify that the customer performed a full system backup (Save option 21).
- ___ 2. Make sure that the customer has the following information before proceeding with the model upgrade:
 - Latest full system backup (Save option 21) tapes
 - Latest system configuration list
 - Latest device descriptions printout
 - Latest controller descriptions printout
 - Latest PTF level printout
 - Latest complete and accurate label location chart or work sheet
 - High Speed Link cable diagram
 - Site and system layout diagram

- Verify the availability of all required parts and media for the Licensed Internal Code
- ___ 3. On the target system, verify the availability of a compatible **alternate IPL device** (CD-ROM or tape unit attached to the system bus 1). If the system uses an **alternate installation device** (CD-ROM, DVD, or tape unit attached to a bus other than the system bus 1) for installation or restore operations, ensure the availability of the location information for that device.

Note: If a tape unit is attached to a bus other than the system bus 1, record the following information about the tape unit location:

- Type and model
- System bus
- System card

This information is necessary to set up and enable the tape unit as an alternate installation device. For more information about alternate installation devices, go to the *Software Installation* book.

When all of the above items are in place, the hardware service representative should do the following procedures:

- ___ 1. Perform the model upgrade using the Customized Universal Installation Instructions (CUII) that came with the upgrade.
- ___ 2. Follow the *Return Material Equipment Report (RMER)* shipped with the hardware upgrade for instructions on what to do with the parts.
- ___ 3. Perform any contracted relocation or rearrangement services prior to returning the system to the customer for their use.
- ___ 4. Perform normal clean-up and housekeeping tasks. This includes proper reporting of time and activities, including any fee-based services delivered.

After the hardware is installed, the customer should do the following:

In the next few steps the customer will be required to use the information from the service representative to finish the resource management on the new server. The goal of these steps is to ensure the server is set up and running to the customer's needs.

- ___ 1. Ensure that you received the source system's label locations print out from the hardware service representative. (Refer to step 8 on page 26). This is used to get the hardware resources correctly assigned to resource names.
- ___ 2. Continue the initial program load (IPL) by selecting option 1 from the *IPL or Install the System* screen.

Notes:

- a. You might see a *disk unit format optimize* warning message. IBM suggests that you handle this disk optimization and protection later. See step 17 on page 32.
- b. If the *Add All Disk Units to the System ASP* screen appears, IBM recommends that you wait and add the disk units at step 19 on page 32.

Note:

Changing the QIPLTYPE system value may result in receiving the system reference code (SRC) A900 2000.

SRC A900 2000

You might see the SRC A900 2000 on the control panel display of the system unit. Or, you might receive message CPF0975 Console did not vary on on the console display. This SRC and message appear if there is no device description for the console display. They might also appear if the QIPLTYPE system value is set to 2.

This SRC and message are normal during the upgrade procedure. The SRC will disappear when you perform a normal IPL later in the upgrade procedure.

If no workstation on your system is operational when you receive SRC A900 2000, continue with the "SRC A900 2000 Recovery" on page 52 section in Appendix E, "Considerations and Solutions" on page 51.

Note: The *Basic System Operation, Administration, and Problem Handling* book describes other displays that you might see during a manual IPL.

- ___ 3. Sign on to the system as the security officer using the QSECOFR user profile.
- ___ 4. At the *IPL Options* screen verify the date and time. Verify that the following items are set as follows. If any of these items are not correct, change them now as shown in the example below.
Start print writers = N
Start to system to restricted state = Y
Define or change system at IPL = Y
- ___ 5. After the IPL competes, use the Work with Configuration Status (WRKCFGSTS) *LIN *ALL command to ensure that all communications lines are varied off.
- ___ 6. Vary off all devices, except the display station in use as the console. Use the WRKCFGSTS *DEV command to display a list of devices. Note that the console is assigned to the QCTL controller.
- ___ 7. Use the WRKCFGSTS *CTL *ALL command to ensure that all controllers are varied off.
- ___ 8. **The service representative should have given you a Label Location work sheet to assist you with the upgrade process. On it, the service representative should have indicated controllers (and devices) that are in different locations than they were on your source system. You must correct resource names to be able to access the devices on your system.**
- ___ 9. Run the WRKHDWPRD command to determine whether devices are in different locations than they were on the source system.
 - a. On the command line, type WRKHDWPRD and press the Enter key.
 - b. On the *Work with hardware products* display, select the *Change description label locations* option. Press the Enter key.
 - c. Read the information on the *Using Change Label Locations* display and press the Enter key.
 - d. Compare the label information on the display with the source system's label locations. The source system's label locations should have been written down before the hardware upgrade took place (see step 8 on page 26). Label information matches if the *Label* column on the display matches what the source system had. Label information does not match if any one of the following is true:

- The display has label information, but the source system did not have label information in that location.
- The source system label information does not match the information found in the *Label* column on the display.
- *NONE appears in the *Label* column on the display, and there is label information for the source system.

Note: When *NONE appears in the *Label* column for a controller or device that was added or upgraded, select option 2. Then select the correct label description from the list provided. If any problems arise from this, call your service provider.

- *INCORRECT or *INVALID appears in the *Label* column.
This means that the type and model number of the hardware resource information does not match the type and model of the configuration description that is currently associated with that resource. The system cannot vary on the configuration description.
- *INCORRECT — where the physical location is also '**'.
This identifies a controller or device description that no longer has a valid resource on the system.

- e. Do you have any locations that do not match the label information on the system?

Note: It is normal for the resource names to change during the upgrade process. Do not use the resource name information from other displays to match the labels.

YES - Go to step 9f.

NO - The system label information is the same as the (physical) label. Go to step 10 on page 31.

- f. On the Change Description Label Locations display, type 2 in the *Opt* column for each location that requires a label change. Press the Enter key.

Note: You may make more than one selection at a time, but if More... appears on the bottom of the display, do not press the Enter key. Page forward to select the remaining labels.

- g. The *Change Description Label* display appears.

A list of possible label names is shown. To select the label name (on the display) that matches the label that was on the source system, perform the following:

- Type 1 in the *Opt* column for each location that you want to change.
- Press the Enter key.

Note: If you cannot find the label (on the display) that matches the label on the source system, contact your hardware service representative.

- h. If you chose to change more than one item, the *Change Description Label* display appears for the next label. A message at the bottom of the display indicates whether the previous change was successful.
- i. For all the labels that need a change, repeat the previous three steps.

- j. After you change the last label, the *Change Description Label Locations* display appears with the updated information. A message at the bottom of the display indicates whether the last change was successful. If *More...* appears on the bottom of the display, scroll forward to view more information.
- k. Press the F17 key on the *Change Description Label* display to request a printout of the new information for your records.

Note: The printout will be in the default output queue for your workstation. You can print it later when you vary on your printer devices and start printer writers.

- l. Verify that the labels on the printout match the labels in the *Label* column on your source system. If you find any errors, go back to step 9f on page 30 and repeat the steps.

Attention: Do not exchange cards for problem analysis purposes. Card and device serial numbers are tied to the system configuration.

- ___ 10. The *Change Description Label Locations* display appears. Determine whether the new target system has more storage or communications lines than the source had. If so, use the *Work Management* book to check the work management objects and tune the system performance.
- ___ 11. Perform a normal IPL. SRC A900 2000 should not appear on the control panel when the IPL completes.
- ___ 12. Save the entire system just after the hardware upgrade is done. Use option 21 on the *Save* menu. For more information about saving the entire system using option 21, refer to any of the following:
 - The chapter on saving your AS/400 system in the book *Backup and Recovery*, SC41-5304-04
 - The Backup, Recovery, and Availability topic under System Administration, Availability, and Maintenance in the Information Center:
<http://www.as400.ibm.com/infocenter>

To find the procedure for saving the entire system (using option 21) in the Information Center, do the following:

- a. Click **System Administration, Availability, and Maintenance**
- b. Click **Backup, Recovery, and Availability**
- c. Click **Backing up your system**
- d. Click **Saving your system with the GO SAVE command**
- e. Click **Saving your whole system with GO SAVE: Option 21**
- ___ 13. Resume normal operations and verify that all your applications run properly.
- ___ 14. Generate reports of the hardware and configuration objects (for each partition) by issuing the following commands:


```
DSPHDWRSC TYPE(*LWS) OUTPUT(*PRINT)
DSPHDWRSC TYPE(*STG) OUTPUT(*PRINT)
DSPHDWRSC TYPE(*CMN) OUTPUT(*PRINT)
DSPHDWRSC TYPE(*PRC) OUTPUT(*PRINT)
DSPPTF LICPGM(*ALL) OUTPUT(*PRINT)
```
- ___ 15. Print a new system configuration list using *Start a service tool* option.
 - a. Do the following on the *AS/400 Main menu* command line:
Type *Start System Service Tools (STRSST)*.
Press the Enter key.

- b. On the *STRSST* display, select *Start a service tool* option. Press the Enter key.
- c. On the *Start a Service Tool* display, select *Hardware service manager*. Press the Enter key.
- d. From the *Hardware Service Manager* display, press F6 (print configuration).
- e. To return to the *AS/400 Main menu*, Press F3 (Exit) twice and then press the Enter key.
- f. Keep the list for future reference.

___ 16. For LPAR systems:

No LPAR	LPAR Primary Partition	LPAR Secondary Partition
No action Required, skip to the next numbered step.	Go to the Information Center (CD-ROM or On-Line) and follow the procedures on how to restore an LPAR system after an upgrade.	After the primary is configured properly, follow the steps to recover the secondary partition configurations. After recovering the original secondary partitions, more secondary partitions may be added.

- ___ 17. If you receive the *disk unit format* warning screen during the first IPL (IPL started at step 2 on page 28), then the disk unit format might need to be optimized. For more information, go to the *Backup and Recovery* book.
- ___ 18. If you want to start device parity on any non-configured units, do it now. For more information, go to the *Backup and Recovery* book.
- ___ 19. If you need to add non-configured disk units to an auxiliary storage pool (ASP)...
 - a. That has mirrored pairs, do it now. Mirroring is automatically started.
 - b. That has no mirrored pairs and you want to start mirroring those units, then do it now.
 - c. Then, add the disk units to the ASP now.

You use the *Work with Disk Units* option from the AS/400 dedicated service tools display to add the nonconfigured disk units to an auxiliary storage pool (ASP). For more information, go to the *Backup and Recovery* book.
- ___ 20. If any disk unit management was done (for example, steps 18 and 19 above), repeat steps 14 on page 31 and 15 on page 31.

Chapter 4. AS/400 940x RISC-to-RISC Road Map - Data Migration

Prerequisite for Data Migration (RISC-to-RISC)

The source system must be at the same release level as the target server. This includes OS/400, all objects, and all licensed programs. For customers ordering a new RISC AS/400 server to replace an existing RISC AS/400 model ("source") and needing to migrate their data from the "source" model to the new server, a new feature code Feature Code (F/C) #0205, is now available. This new feature code should be ordered against the new RISC AS/400 server. It is valid on orders for all new servers except the Models 150 and SB1. For Feature Code #0205, the customer must have purchased a new server with enough hardware and disk space to hold all of the data from the "source" model as well as any new data including any required IBM software (OS/400 and so forth). Additionally, the RISC-to-RISC Data Migration process requires that the "source" model must be at the same version and release of OS/400 and Licensed Program Products (LPPs) as that of the "new" server which has been ordered and received.

- Customers with Version 4 must obtain licenses for the LPPs, either through new orders or via Software Subscription for AS/400. A License Addendum will be provided to allow the customer to install and use the copy of the new OS/400 release with the newly ordered server-on their source model for up to 70 days. This Addendum authorizes the customers to use the new Version and Release on the source system for the sole purpose of migrating their data. The previous Version and Release must be reinstalled after the migration is completed. The licenses of OS/400 and the LPPs will only allow the products to be run on one system at a time.
- Model 150 customers who are not at the target release must purchase the BasePak Upgrade (5649-EP5) in addition to any upgrades for installed Optional Products in order to proceed with their data migration.

Feature Code #0205 provides for minimal preloading of the new server, inclusion of a special License Addendum, and an insert which points to the AS/400 Technical Studio Web site:

http://www.as400.ibm.com/tstudio/tech_ref/rrmap/

This Web site provides the RISC-to-RISC Road Map. The Road Map provides the steps on how to do the RISC-to-RISC data migration. For subsequent releases of OS/400, the Road Map will be included with the shipment of the new server. Feature Code #0205 differs from #0203. Feature Code #0203 SHOULD NOT be ordered for AS/400 RISC-to-RISC data migrations as it is designed exclusively for AS/400 CISC-to-RISC data migrations.

Before the server arrives, the customer should do the following:

1. Verify that the source system is at the same release level as the target server. This includes OS/400, all objects, and all licensed programs.
2. Acquire the preventive service planning information (see Appendix G, "Obtain the Latest Preventive Service Planning Information" on page 63) from electronic

customer support, if available. You can also acquire this information from the software service representative. The PSPs contain updates to the documents you will be using.

When the new server arrives, do the following:

1. Inventory and check your order, ensure that what you have received matches the container shipping list.
2. If Operations Console was ordered, you must use the book *Operations Console Setup*, SC41-5508-01, to set up your PC for Operations Console. It is recommended that you place the EZ-Setup CD-ROM inside the Operations Console Setup book until needed in step 12. This book should be included with your order if Operations Console (Feature Code #0367) was ordered with the system.

Before the data migration is to take place, do the following on the source system:

1. If the source system is not already at the same release as the new server, use the book *Software Installation*, SC41-5120-04, for upgrading the source system to the release level of the new server.

Note: You must restore the source system to the old release level after the data migration is completed, as per the license agreement.

2. Delete any unused device configuration descriptions on the source system. This will save you steps later.
3. Print a new system configuration list using *Start a service tool* option.
4. Do the following on the *AS/400 Main menu* command line:

Start System Service Tools by typing:
STRSST

Press the Enter key.

5. On the *STRSST* display, select *Start a service tool* option. Press the Enter key.
6. On the *Start a Service Tool* display, select *Hardware service manager*. Press the Enter key.
7. From the *Hardware Service Manager* display, press F6 (print configuration).
8. To return to the *AS/400 Main menu*, press F3 (Exit) twice, and then press the Enter key.
9. Keep the list for future reference.
10. Save the entire system just before the data migration is started. To do this, follow the procedure for saving the entire system (using option 21 on the Save menu) by referring to any of the following:
 - The chapter on saving your AS/400 system in the book *Backup and Recovery*, SC41-5304-04
 - The Backup, Recovery, and Availability topic under System Administration, Availability, and Maintenance in the Information Center:
<http://www.as400.ibm.com/infocenter>

To find the procedure for saving the entire system (using option 21) in the Information Center, do the following:

- a. Click **System Administration, Availability, and Maintenance**

- b. Click **Backup, Recovery, and Availability**
- c. Click **Backing up your system**
- d. Click **Saving your system with the GO SAVE command**
- e. Click **Saving your whole system with GO SAVE: Option 21**

Notes:

- a. Make sure that the system is saved on a tape unit that is compatible with the tape unit used for an alternate IPL device on the target system.
- b. You will need to change the default setting on the "Specify Command Defaults" menu to:
 Vary off network servers . . . *ALL
 Page down to:
 Unmount file systems Y
 Print system information Y
11. Backup any items missed by the save system, option 21.
12. Save spooled files. For information about saving spooled files, see the Backup, Recovery, and Availability topic under System Administration, Availability, and Maintenance in the Information Center:
<http://www.as400.ibm.com/infocenter>

To find the procedure for saving spooled files in the Information Center, do the following:

- a. Click **System Administration, Availability, and Maintenance**
- b. Click **Backup, Recovery, and Availability**
- c. Click **Backing up your system**
- d. Click **Manually saving parts of your system**
- e. Click **Saving user data**
- f. Click **Saving spooled files**
13. How to Move Freed Database Files, follow the instructions in "How to Move Files That Have Been Saved with Storage Free Specified" on page 53.
14. Print the system information spooled files that were generated during the option 21 save.

Before the data migration is to take place, do the following on the new server:

1. Set up the new server.
2. Set up a PC as Operations Console using the book *Operations Console Setup*, SC41-5508-01 (if selected in server order).
3. Connect cables, power, console, and so forth.
4. On the new server, verify the availability of a compatible **alternate IPL device** (tape unit attached to the system bus 1). If the system uses an **alternate installation device** for install or restore operations, ensure the availability of the location information for that device.

Note: If a tape unit is attached to a bus other than the system bus 1, record the following information about the tape unit location:

- Type and model _____
- System bus _____

This information is necessary to set up and enable the tape unit as an alternate installation device. For information about using an alternate installation device, see the *Backup and Recovery* book.

RISC-to-RISC Data Migration

1. **Verify the following information before proceeding with the data migration:**
 - Verify that the latest OS/400 cumulative PTF package and specific software release PTFs were installed on the source system.
 - Save tapes from the source system
 - Latest system configuration list from hardware service manager
 - Latest device descriptions printout of the source system
 - Latest controller descriptions printout of the source system
 - Latest PTF level printout from the source system
 - PC setup for Operations Console using EZ-Setup CD-ROM and the Operations Console Setup book, if the Operations Console was ordered with the new server
 - Latest complete and accurate label location chart or work sheet from the source system
 - Verify that the *Physical Planning* items were completed. Correct power, uninterruptible power supply, cabling, and required space for the new server
2. Using the *Backup and Recovery* book, chapter 4, checklist 17, perform a recovery after a complete system loss. Follow all the steps to task 10, but before you perform task 10 you must do steps 3 through 9:
3. Run the WRKHDWPRD command to determine whether devices are in different locations than they were on the source system.
4. On the command line, type WRKHDWPRD and press the Enter key.
5. On the *Work with hardware products* display, select the *Change description label locations* option. Press the Enter key.
6. Read the information on the *Using Change Label Locations* display and press the Enter key. This identifies a controller or device description that no longer has a valid resource on the system. The *Change Description Label Locations* display appears. Determine whether the new target system has communications lines or storage than the source had. If so, use the *Basic System Operation, Administration, and Problem Handling* book to check the work management objects and tune the system performance.
7. Do you have any locations that do not match the label information on the system? If so, change them to be correct.
8. Use the *Software Installation* book, chapter 10, to install any new LPPs or PTFs.
9. Return to Checklist 17 of the *Backup and Recovery* book and continue with Task 10.
10. Change the QAUTOCFG, QIPLTYPE, and QPFRADJ system values to the desired values. For more details, refer to the book *Basic System Operation, Administration, and Problem Handling*, SC41-5206-03.
11. Verify that all objects were restored from the source system. Use the *Backup and Recovery* book to fix any discrepancies.
12. If any changes were made following the recovery process on checklist 17, save the entire system. Use Option 21 on the *Save* menu. For more information about saving the entire system using option 21, refer to any of the following:

- The chapter on saving your AS/400 system in the book *Backup and Recovery*, SC41-5304-04
- The Backup, Recovery, and Availability topic under System Administration, Availability, and Maintenance in the Information Center:
<http://www.as400.ibm.com/infocenter>

To find the procedure for saving the entire system (using option 21) in the Information Center, do the following:

- a. Click **System Administration, Availability, and Maintenance**
 - b. Click **Backup, Recovery, and Availability**
 - c. Click **Backing up your system**
 - d. Click **Saving your system with the GO SAVE command**
 - e. Click **Saving your whole system with GO SAVE: Option 21**
13. Resume normal operations and verify that all your applications run properly.
 14. Generate reports of the hardware and configuration objects by issuing the following command:
PRTSYSINF
 15. Print the spooled file that was generated by the above command. Print a new system configuration list using *Start a service tool* option.
 16. Do the following on the *AS/400 Main menu* command line:
Start System Service Tools by typing:
STRSST

Press the Enter key.
 17. On the *STRSST* display, select *Start a service tool* option. Press the Enter key.
 18. On the *Start a Service Tool* display, select *Hardware service manager*. Press the Enter key.
 19. From the *Hardware Service Manager* display, press F6 (print configuration).
 20. To return to the *AS/400 Main menu*, Press F3 (Exit) twice, and then press the Enter key.
 21. Keep the list for future reference.

Appendix A. AS/400 Global Services

The following appendix describes on-site support or services that are available.

AS/400 Data Migration Services

IBM has a fee-based service called *AS/400 Data Migration Services*, which moves customer data migrated from existing disk units to new or replacement disk units. You can do this without the need for a save and restore with tape. This procedure decreases the overall time that is needed to perform an upgrade.

Selected hardware service representatives have been trained to deliver this service. Only an *AS/400 Data Migration Services* trained hardware service representative should attempt this procedure. This representative can assess the appropriateness of this activity.

If you would like more information about *AS/400 Data Migration Services*, contact your IBM AS/400 hardware service representative. Your IBM AS/400 hardware service representative can perform the procedure or put you in contact with the closest trained hardware service representative.

LPAR Planning and Implementation Services

It will assist a customer in planning and installing AS/400 logical partitioning on a new or existing n-way server (6xx, 5xx, 7xx, 8xx, or later models). This service will provide a planning session with the customer to ensure that all known customer requirements are fully discussed with a final hardware and software configuration and installation schedule provided. The services specialist can also perform onsite implementation services to install, configure, and optionally manage the new LPAR configuration.

For more information, contact your local IBM representative or business partner or see the following Web site:

<http://www.as400.ibm.com/lpar>

AS/400 V4R5 Planning and Migration Services

It will assist a customer in planning and migrating to the new AS/400 V4R5 server line. This service will provide a planning session with the customer to ensure that all known customer requirements are fully discussed with a final hardware and software configuration and installation plan provided. The services specialist can also perform onsite services to upgrade the server to V4R5, convert the CEC and IO using a new migration expansion unit (if required) and provide additional migration services.

AS/400 System Migration Services

IBM has a fee-based service offering called *AS/400 System Migration Services*, which maximizes productivity when a customer installs a new AS/400e. *AS/400 System Migration Services* can move the customer's data from one system and restore it to a new system by using tape. The new system may be the same release level or a different release level. Selected hardware service representatives have

been trained to deliver this service. Only an AS/400 System Migration Services-trained hardware service representative should attempt this procedure. This representative can assess whether this activity is appropriate. If you would like more information about the AS/400 System Migration Services offering, contact your IBM AS/400 hardware service representative. Your IBM AS/400 hardware service representative can perform the procedure or put you in contact with the closest AS/400 System Migration Services-trained service representative.

Related Support Services

The AS/400 support family includes the following services:

- AS/400 Performance Edge provides traditional IBM maintenance coverage and the following electronic support at no additional charge:
 - AS/400 Forum
 - PM/400
- AS/400 Support Line, a hotline for AS/400 and AS/400 usage support
- AS/400 Customer Technical Advocate (an assigned technical specialist)
- AS/400 Consult Line (allows telephone access to private consultants)
- PM/400 for performance-monitoring, trend analysis and management reports
- AS/400 Alert (gives automatic notification of critical software and hardware code fixes)
- AS/400 VitalSign, (provides comprehensive systems administration assessment)
- AS/400 SiteManager (provides system and environment-monitoring, and alert system)
- AS/400 House Call (gives on-site assistance with AS/400 tasks such as installation)
- AS/400 Security Review Services (provides system security, environment -monitoring, and system alert)
- AS/400 Consulting Solutions (provides customized services)

For V4R5, there are new terms and conditions. For more information, see the V4R5 *Announcement Letter*.

Notes:

1. Contact your marketing representative for information about the services that are available in your area.
2. For information about IBM Global Services, see the following Web site:
<http://www.ibm.com/services>

From U.S.A., you can also find information about IBM Global Services at this Web site:

<http://www.as.ibm.com>

AS/400 Solution Services

See: <http://www.as400.ibm.com>

Installation Services

With Installation Services, IBM takes over the responsibility of planning and installing the AS/400 hardware and software. This service includes the following:

- IBM Smooth Start Services for AS/400

- A project manager for installation
- On-site education for both the system operation and the recovery management
- System software loading and enabling
- Installation of Customer Set Up (CSU) or non-IBM equipment
- Comprehensive site planning

Performance Examinations

The IBM AS/400 Performance Examination (PERFEX) provides an in-depth analysis of applications by IBM Performance Consultants at the customer's location. This service includes the following:

- High quality graphical and chart representation
- Performance recommendations and conclusions
- A detailed, written summary
- Performance education

Consulting Services

Consulting services provide customized consultation on any AS/400 topic that is important to the customer. This personalized assistance, from IBM consultants is one of the most popular services at IBM. The topics include the following:

- Capacity planning
- Performance analysis
- Application planning to implementation
- Application design review
- Application design
- AS/400 Communications network consulting
- AS/400 unattended operations for communications applications
- Security audit
- Multi-vendor integration services
- Client Access/400
- AS/400 recovery readiness audit
- Multiple implementations

Midrange Enhanced Software Service (MRESS)

The purpose of MRESS is to increase the technical staff of the customers who want a direct link to an IBM Software Service Representative. The representative supports AS/400 system software, makes PTF recommendations, and notifies the customer about problems that might affect system operation. MRESS includes the following:

- Software problem resolution
- PTF consultation
- Pro-active account support

Appendix B. Enhanced Upgrade Order Process (EUOP)

The Enhanced Upgrade Order Process (EUOP) is available only for systems that can be upgraded. This means that the system must be running V4R1 or more recent release of the OS/400 licensed program if you plan to upgrade to V4R5M0. To use EUOP, electronic customer support must be operating on the system.

Figure 2 provides an overview of the EUOP:

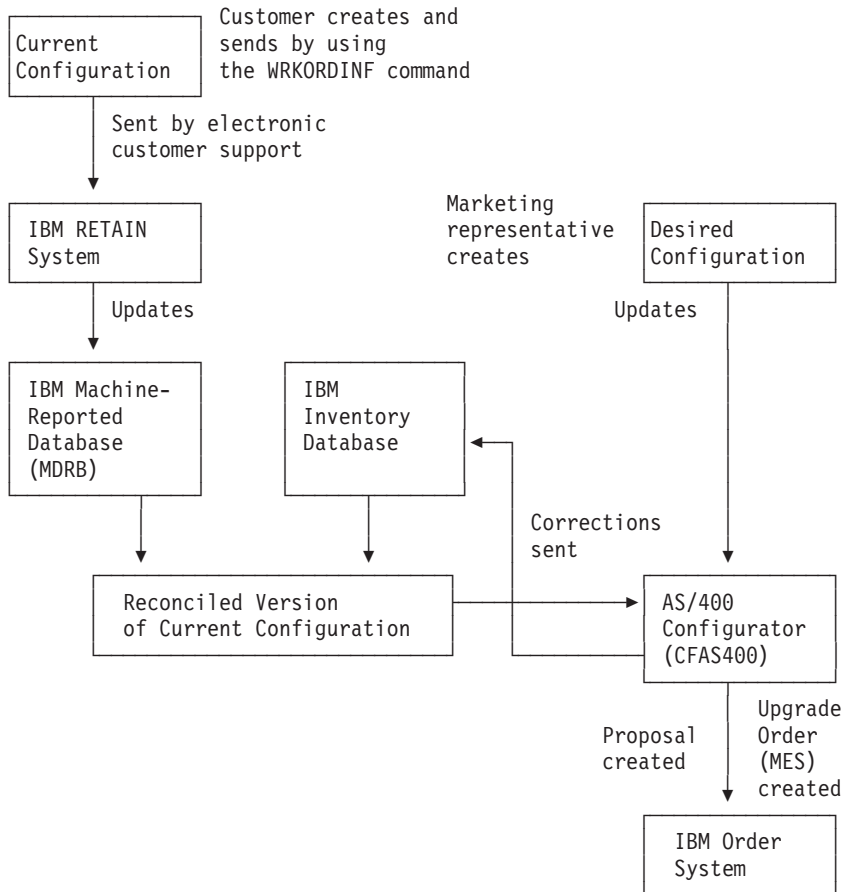


Figure 2. Enhanced Order Upgrade Process-Overview

The EUOP uses two sources of information:

- The customer uses the Order menu on the AS/400e system to send a current record of the hardware configuration to IBM. Electronic customer support is used to send the configuration to the IBM RETAIN[®] system. (See “How to Use the Enhanced Upgrade Order Process” on page 44.)
- The marketing representative uses the AS/400 configurator to define your desired configuration. The latest configurators are PCAS400 and e.Config.

The AS/400 configurator compares the current configuration and the desired configuration to a proposed order. When the customer approves the order, it is transmitted from the configurator to the order system at IBM. The configurator

also generates updates for the IBM inventory database so that the records at IBM match the customers actual hardware configuration.

How to Use the Enhanced Upgrade Order Process

To use the EUOP functions on the system, do the following:

1. Update the contact information. (the person who is working on the order)
 - a. Type WRKCNTINF and press the Enter key. The *Work with Support Contact Information* menu appears.
 - b. Select option 5 (*Work with upgrade order information*). The *Work with Upgrade Order Information* display appears.
 - c. Select option 2 (*Change upgrade contact information*).
 - d. Enter or correct the information on the *Change Upgrade Contact Information* display.

Note: Insert the IBM representative's name, mailing address, e-mail address, and phone number to allow for proper customer support.
 - e. Press the Enter key. The *Work with Upgrade Order Information* display reappears.
 - f. Press F12 (Cancel).
2. Create a record of the current hardware configuration:
 - a. Type G0 ORDER and press the Enter key. The *Order Options* display appears.
 - b. Select option 4 (*Work with order information*). The system creates a file that contains your current hardware configuration.
 - c. The message *Order information data incomplete* might appear. If so, position the cursor on the message and press help (F1). Follow the instructions on the *Additional Message Information* display.
 - d. On the *Work with Order Information Files* display, type 1 (Send to IBM) in the *Opt* column next to the configuration file to be send. The system starts the electronic customer support function and sends the file to the IBM RETAIN system.

Appendix C. Possible AS/400 RISC-to-RISC Upgrades

Contact your local IBM representative or authorized dealer to place the order or for further assistance.

Dedicated Server for Domino

The Dedicated Server for Domino supports the following 170 processors:

- 2407 based on the 2292 model 170 processor
- 2408 based on the 2385 model 170 processor
- 2409 based on the 2388 model 170 processor

The Dedicated Server for Domino supports the following 270 processors:

- 2422 based on the 2250 model 270-2
- 2423 based on the 2252 model 270-3
- 2424 based on the 2253 model 270-4

The Dedicated Server for Domino supports the following 8xx processors:

- 2425 based on the 2396 model 820-2
- 2426 based on the 2397 model 820-3
- 2427 based on the 2402 model 830-2
- 2428 based on the 2403 model 830-3

MES upgrades to the Dedicated Server for Domino will not be allowed. Dedicated Server for Domino models may optionally be preloaded with Domino for AS/400 software and license. Preloads within U.S.A. and Canada can be versions of Domino using 56-bit or 128-bit encryption. Dedicated Server for Domino server is a prerequisite for a Domino for AS/400 Quarterly Maintenance Update (QMU) version 5.01x.

Dedicated Server for Domino will give favored performance to workloads running Domino and non-favored performance to workloads not running Domino. Interactive jobs will also be restricted.

For more information, refer to the "Domino for AS/400 Server" topic in the AS/400 Information Center.

Upgrading Your Existing Model (MES)

There are no upgrade paths into or out of model 150,170, 250, and 270 AS/400s. There are upgrades within model 170, 250, and 270 AS/400s.

Use the Migration procedure in Chapter 4 to migrate existing data from an AS/400 to one of the above models.

Upgrading to a New 7xx or 8xx Model

To determine if there is an upgrade path from your current model AS/400 to a new model AS/400e, see the following references:

- For upgrade paths and new systems, see this Web site:
<http://www.as400.ibm.com/tstudio/upgrdpth/index.htm>
- For AS/400 packaged offering selection tool, see this Web site:
<http://www.as400.ibm.com/configure/>
- For AS/400 Technical Support, see this Web site:
<http://as400service.ibm.com/>

Appendix D. Migrating Systems with the System Support Program (SSP) Operating Systems

This appendix describes items to consider when you migrate a system that has an Adv36 only operating system.

Attention:

8xx models and V4R5 do not support SSP.

The Adv36 documentation, refers to migrating data from an Adv36 (the source system) to an AS/400 Model 236 or Model 436 (the target system). In the migration that this appendix describes, the source system is an AS/400 Model 236 or Model 436 that has **SSP** as its only operating system. The target system is one of the AS/400 7xx RISC models in Appendix C, "Possible AS/400 RISC-to-RISC Upgrades" on page 45.

If tables in Appendix C, "Possible AS/400 RISC-to-RISC Upgrades" on page 45 do not include your migration, refer to the following for additional information about the migration that applies to you:

- The *Advanced 36 Read This First* document
- The *Memorandum to IBM SSP Release 7.5 Users*
- "Installation Tasks and Checklists" appendix in the *AS/400 Advanced 36 Planning and Reference Handbook*, SA21-9656-01

As you read the Adv36 documentation, you might also notice that the books sometimes refer to a specific release, for example, V3R7. Consider those references applicable to all subsequent releases and modifications until otherwise indicated in new releases.

Migrating from a Model 236

This migration requires target system initialization:

- ___ 1. Print a copy of the original configuration record from your source system. Information in that record might be helpful when you install the release 7.5 programming support as part of installing an AS/400 Adv36 machine on your target system.

For information about printing the original configuration record, see *Changing Your System Configuration-SSP*, SC21-8295-03.

- ___ 2. Save the following information from your source system:
 - The Licensed Internal Code
 - The SSP
 - The licensed program products (LPPs)
 - All the user libraries, folders, and files
 - Other Adv36 files that might exist, such as:
 - The Password Security file
 - The Resource Security file
 - The Network Resource Directory

- The Extended Character files
- The Adv36 configuration files

When the upgrade completes, you will only need to restore the user libraries, folders and files, plus the other SSP files on your target system. If the upgrade is unsuccessful, to recover you will need to restore all the saved data.

Note: The Transition Aid Feature provides an easy way to move the user environment from your source to your target system. IBM recommends that you use this feature for your libraries, folders, files, and other SSP files.

For information about saving the data and the Transition Aid Feature, see *Operating Your Computer-SSP Operating System*, SC21-8297-01.

- ___ 3. Contact your hardware service representative for the hardware portion of the upgrade. Your hardware service representative will do the following:
 - a. Move the disk units from the source to target system.
 - b. Install the Licensed Internal Code.

When the hardware service representative installs the Licensed Internal Code, the representative should select the Install Licensed Internal Code and initialize the system option from the Install Licensed Internal Code (LIC) display.
- ___ 4. Refer to the book *Software Installation*, SC41-5120-04, for instructions about how to install the IBM Operating System/400[®] Version 3 (OS/400) operating system.

Note: When you install the OS/400 operating system, remember to install the licensed programs.

- ___ 5. For instructions about how to create the Adv36 machine, refer to steps 1 through 8 in "Path E: Installing an SSP on an AS/400 System" in the "Installation Tasks and Checklists" appendix in the *AS/400 Advanced 36 Planning and Reference Handbook*, SA21-9656-01.
- ___ 6. Restore the saved libraries, folders, and files to the Adv36 machine. Refer to the *Operating Your Computer-SSP Operating System*, for information about restoring the saved libraries, folders, and files.

Note: If you do not use the Transition Aid Feature to restore your user environment, restore the user libraries, folders, and files, and then the other SSP files, in that order.

- ___ 7. Refer to the *Getting SSP and OS/400 Installed and Running*, SC21-8377-01, for information about how to save the data from your target system.

Migrating from a Model 436

The migration from a Model 436 to a Model 7xx depends on the release of Licensed Internal Code you have installed on your current system.

If you do not know which release of the Licensed Internal Code you have installed, type DSPSYS on the command line and press the Enter key. The Display System Status display appears. You can find the version and release of the licensed internal code under the "Release" heading. The following are some examples of what you might see.

Value of

Licensed Internal Code, version, release, and modification level

430 Version 4 Release 3 Modification 0 (V4R3M0)

440 Version 4 Release 4 Modification 0 (V4R4M0)

7.5 SSP release 7.5

Use dedicated service tools (DST) to determine the release of the Licensed Internal Code by completing the following steps:

- ___ 1. At the display station that is your console, press the System Request key. On the System Request line at the bottom on your display, type DST (in capital letters) and press Enter.
- ___ 2. If the (use dedicated service tools (DST)) sign on screen appears, skip to the next step.

If the DST display does not appear on the console, sign on to DST. If you do not know the DST user and DST password, try the system-supplied value of 22222222 for both the user and password.

If you have a problem, contact your service representative for assistance.

- ___ 3. The Use Dedicated Service Tools (DST) display appears.
Select the option to Start a Service Tool.
- ___ 4. The Start a Service Tool display appears.
Select the option for the Hardware service manager.
- ___ 5. The Hardware Service Manager display appears.
The Release (such as, V3R7M0) appears on this display.
- ___ 6. Press F3 two times.
The Exit Dedicated Service Tools display appears.
- ___ 7. Select the option to Exit Dedicated Service Tools.

If V3R7M0 Licensed Internal Code is installed, follow the preceding instructions for migrating from a Model 236.

If V4R1M0 Licensed Internal Code is installed, use the following instructions.

- Refer to the “Installing a New Release of the Licensed Internal Code” appendix in the book *Changing Your System Configuration-SSP*, SC21-8295-03, for instructions about how to install the most recent release of the Licensed Internal Code.
- Refer to “Path D: Adding OS/400 to an AS/400 Advanced 36 Model 436 that has only SSP 7.5 installed” in the *Getting SSP and OS/400 Installed and Running*, SC21-8377-01, book for instructions about how to add OS/400.

Note: Do **not** complete steps 3 and 4 in Task 3 of the *Getting SSP and OS/400 Installed and Running* book. Those steps do not apply to Task 3.

- After you install the most recent release of OS/400 and create the Advanced 36 machine, follow the directions for migrating a Model 4xx to a model 7xx.

If either V4R1 or V4R2 Licensed Internal Code is installed, use the following instructions.

- Refer to step 4 in the “Installing a New Release of the Licensed Internal Code” appendix in the *Changing Your System Configuration-SSP*, SC21-8295-03, for instructions about how to install the most recent release of the Licensed Internal Code.

- Refer to “Path D: Adding OS/400 to an AS/400 Advanced 36 Model 436 that has only SSP 7.5 installed” in the *Getting SSP and OS/400 Installed and Running*, SC21-8377-01 book for instructions.

Note: Do **not** complete steps 3 and 4 in Task 3 of the *Getting SSP and OS/400 Installed and Running* book. Those steps do not apply to Task 3.

- After you install the most recent release of OS/400 and create the Advanced 36 machine, follow the directions for migrating a Model 4xx to Model 6xx or 7xx.

If the most recent release (V4R4) of the Licensed Internal Code is installed, use the following instructions.

- Refer to “Path D: Adding OS/400 to an AS/400 Advanced 36 Model 436 that has only SSP 7.5 installed” in the *Getting SSP and OS/400 Installed and Running*, SC21-8377-01, book for instructions about how to add OS/400.

Note: Do **not** complete steps 3 and 4 in Task 3 of the *Getting SSP and OS/400 Installed and Running* book. Those steps do not apply to Task 3.

- After you install the most recent release of OS/400 and create the Advanced 36 machine, follow the directions for migrating a Model 4xx to a Model 7xx.

Appendix E. Considerations and Solutions

See the AS/400 Homepage, AS/400 Information Center, or AS/400 Technical Studio for further information regarding your concerns.

<http://www.as400.ibm.com>

<http://www.as400.ibm.com/infocntr/>

<http://www.as400.ibm.com/tstudio/>

IBM HTTP Server for AS/400

When migrating your AS/400 system from V3R7 to V4R2, some existing common gateway interface, CGI programs may not function correctly. The CGI interface in V4R2 was changed to improve performance.

What was the change?

The AS/400 runtime environment now allows the IBM HTTP Server for AS/400 to put into effect byte streams for CGI standard in and standard out.

Why was the change made?

Customer requirements caused this change to remove the line length limitations on, (standard in and standard out).

What problems were detected or flagged?

1. Programs that call QtmhRdStdin multiple times to read the standard in data are incorrect, and this does not work.
2. All programs that read from (standard in), (QtmhRdSdtin) need to check the Content-Length environment variable to determine the number of bytes to read. Programs that do not use the Content-Length environment variable and read more than the Content-Length will not work.

Why was the change made?

Customer requirements to remove the 250 byte limit on standard in and standard out, motivated the change.

When was the change made?

The change is available via the following PTFs:

- V4R1 - 5769SS1 SF46810
- 5769TC1 SF47332
- V4R2 - 5769TC1 SF46558

What should the customer do?

The customer should use the Web Programming Guide to ensure that the programs meet standard guidelines.

Operations Console

See the book *Operations Console Setup*, SC41-5508-01. Also, see the cabling poster.

OptiConnect

See the book *OptiConnect for OS/400*, SC41-5414-02, for information pertaining to an upgrade.

Integrated Netfinity Server

See the book *Getting Started with Integrated Netfinity Server*, SC41-5123-01, for information on Integrated Netfinity Server.

Clustering and Logical Partitions

IBM representatives can get further information about clustering and logical partitions from the AS/400 Information Center at:

<http://publib.boulder.ibm.com/html/as400/infocenter.html>

or

<http://infocntr/>

Follow the link to Clustering and Logical Partitions.

Lotus Notes Enhanced Integration

For V4R4M0, OS/400 option 24 (OS/400 Lotus Notes Enhanced Integration) is no longer supported, and is deleted when upgrading to V4R4M0. A migration of the data in (OS/400 Lotus Notes Enhanced Integration) must be accomplished before the upgrade. IBM recommends migrating the data to Lotus Domino for AS/400. For detailed migration instructions see the following URL:

<http://www.as400.ibm.com/techstudio>

OnDemand

Consideration when upgrading to 5769-RD1 OnDemand:

- If your target release is Version 4 Release 2 (or a later release) and your source system has either of the following features installed:
 - 5716-RD1 Option 1 - OnDemand output queue archival feature
 - 5716-RD1 Option 2 - OnDemand object archival feature

And you plan to use either of the following features on your target system:

- 5769-RD1 Option 1 - OnDemand output queue archival feature
- 5769-RD1 Option 2 - OnDemand object archival feature

Then:

- For OnDemand migration and upgrade information, see the book *LPS: OnDemand for AS/400*, GC41-5079-01.

SRC A900 2000 Recovery

Attention: Use this procedure only if no workstation on your system is operational:

1. Find your copy of the Basic System Operation, Administration, and Problem Handling book. It describes the procedures for working with the control panel on your processor unit. Use it for more information on how to perform the remaining tasks.
2. Use the system control panel to place your system in manual mode.
3. Use the system control panel to force power down on your system.
4. Perform an IPL on your system.
5. Sign on as QSECOFR.
6. On the IPL or Install the System display, select option 1 (perform an IPL).
7. On the IPL Options display, specify Y for the Define or change the system at IPL prompt.
8. On the Define or Change the System at IPL display, select 3 (System value commands).
9. On the System Value Commands display, select 3 (Work with System Values).
10. On the Work with System Values display, type QIPLTYPE in the Position to field.
11. In the Option column for the QIPLTYPE system value, type 2 (Change).
12. On the Change System Value display for the QIPLTYPE system value, type 2 (Attended IPL, console in debug mode).
13. Press the Enter key. You see the Work with System Values display.
14. Press F3 twice to return to the Define or Change Your System display.
15. Press F3 (Exit and continue IPL) to continue your IPL.

How to Move Files That Have Been Saved with Storage Free Specified

If you have saved database files and specified STG(*FREE), you must take special steps to transfer the descriptive information about those files to your RISC target system. (All customers must do this, whether or not you have the Media and Storage Extensions product installed.) When you save a database file and specify STG(*FREE), the system saves the contents of the file. The system then deletes the contents from the system copy of the file, so that the contents exist only on the save media. The file description information, including a list of members, remains on the system as a type of archival record. To create usable object descriptions for your RISC target system, use the procedures that follow. If your source system does not have adequate auxiliary storage to restore the contents of archival files, you might need to make arrangements to use another system to restore your files and save them again. Make sure that the system has a tape unit that is compatible with the tape unit that you will have on your upgraded system.

How to Move Freed Database Files without New Members

Use the procedure below only if both of the following conditions are true:

1. The database file on the source system was previously saved with STG(*FREE).
2. No new members were added to the file after it was saved on the source system.

If both conditions were true, move freed database files without new members as follows:

1. For a physical file, use the
RSTOBJ

command or the

RSTLIB

command to restore the file. For a logical file, use the

RSTOBJ

command or the

RSTLIB

command to restore the based-on physical files.

2. If you need to save the files separately to make space available on your system, use the

SAVOBJ or SAVLIB

command. Do not specify STG(*FREE). Make sure that you mark the save tapes. You can then delete the files or save them again on different tapes with STG(*FREE).

3. After you have restored the files to your target system, you can save them again with STG(*FREE). The object description remains on your upgraded system as an archival record.

If you have a file that has some members with contents and other members that were saved with STG(*FREE), you must create a version of the file that has a complete set of members with contents. You do this by restoring the members that were saved with STG(*FREE). When the complete database file is on the system, follow the procedure outlined in to move the file to your target system.

Appendix F. How to Verify and Set Up Electronic Customer Support

This topic contains information and instructions on how to access the electronic customer support and IBM Remote Marketing Support.

- **Electronic Customer Support**

The electronic customer support connects the AS/400 to the IBM service system. Electronic customer support will enable a call to the system and allow remote hardware and software problem analysis, reporting, and management.

- **IBM Remote Marketing Support**

The remote marketing support function uses an IBM support system (for example, IBMLink) to access the IBM information network. Remote marketing support functions include question and answer support, IBM product information access, and a technical information exchange.

Note: If you decide **not** to use electronic customer support, return to the instructions for your upgrade method.

Verifying Configuration

If you are unsure whether you use electronic customer support on your system, you can do the following to test whether it is configured:

- ___ 1. Test electronic customer support by typing the command **SNDSRVRQS *TEST** and press the Enter key. If all parameters are correct, the test should complete with the message Test request complete.
 - If you do not receive a response in approximately five minutes, use the *System Request* key and select the option to end the previous request. Then continue with step 6.
 - If you receive any other response, continue with step 2 and complete this procedure.
- ___ 2. The message Error occurred while processing request appears for several error conditions. A common condition that generates this error is when a resource name that is not valid is used to identify the line for electronic customer support. If you see this message, type the command **WRKLIND** and press the Enter key. Ensure that the line description matches the resource name for the line that you are attempting to use for electronic customer support.
- ___ 3. The message Modem command not valid appears if no phone number is present. If you see this message, type **CALL QESPHONE** on the command line and press the Enter key. Verify that the phone numbers are correct.
- ___ 4. Enter the command **WRKCNTINF** and press the Enter key.
 - a. Select option 2 to work with local service information.
 - b. Select option 2 to change service contact information.
 - c. Verify that the contact information, including the phone numbers, is correct.
- ___ 5. Enter the command **SNDSRVRQS *TEST** and press the Enter key. If you do not receive the Test request complete message, contact your service representative.
- ___ 6. Ensure that the following connections are in place:

Setting Up Electronic Customer Support

- Verify that the communications cable is connected to the modem and to AS/400.
 - Verify that the telephone line is connected to both the modem and the telephone jack.
- ___ 7. Power on the modem that is connected to the electronic customer support line. The default location for the modem varies with your processor model. The following list shows the location of the card to which the modem connects:
- Models 400 and 40S, use location 5/B.
 - Models 500, 510, and 50S, use location 4/B.
 - Model 53x, use location 2/B.
- Note:** If you connect the modem at a different card location, you also need to change the system configuration to reflect the new location.
- ___ 8. Continue with "Setting Up".

Setting Up

This procedure contains information and instructions on how to access the electronic customer support. Do the following to set up access for these functions:

- ___ 1. Enter the electronic customer support information by performing the following:
- a. Power on the modem that is connected to the electronic customer support feature line.
 - b. On the command line of the AS/400 Main Menu, type the following and press the Enter key:
CALL QESPHONE
 - c. The Change Data Area (CHGDTAARA) display appears.

```
Change Data Area (CHGDTAARA)
Type choices, press Enter.
Data area specification:
Data area . . . . . > QESTELE      Name, *LDA, *GDA, *PDA
Library . . . . . > QUSRSYS      Name, *LIBL, *CURLIB
Substring specifications:
Substring starting position . > 001      1-2000, *ALL
Substring length . . . . . > 32      1-2000
New value . . . . . > ' _____ '
```

- ___ 2. Are you installing this system in the United States?
- Yes** **No**
- ↓ Call your service representative for the IBM service support telephone numbers.
- Go to step 3 of this procedure.
- Does the Change Data Area (CHGDTAARA) display have the IBM service support numbers in the *New value* field?
- No** **Yes**
- ↓ Go to step 5 on page 57.

Setting Up Electronic Customer Support

3. In the Change Data Area (CHGDTAARA) display, type the **primary** telephone number in the *New value* field.

Note: The United States support numbers for the *New value* field are:

East of the Mississippi River: 18005278207
West of the Mississippi River: 18003270949

```
Change Data Area (CHGDTAARA)

Type choices, press Enter.

Data area specification:
  Data area . . . . . > QESTELE      Name, *LDA, *GDA, *PDA
  Library . . . . . > QUSRSYS      Name, *LIBL, *CURLIB
Substring specifications:
  Substring starting position . > 001      1-2000, *ALL
  Substring length . . . . . > 32      1-2000
New value . . . . . > 'SST918005278207'
```

- Do not type spaces or separators as part of the telephone number.
- The first four positions of the *New value* field show the connection information:
 - Modem speaker on (SS)
Note: For the 7857 modem, delete SS designation for modem speaker.
To have the modem speaker off when the SS command is not included, change the modem speaker value to “never on.”
Refer to the modem manual for more information on changing configuration.
 - Tone dialing (T) or pulse dialing (P)
 - Outside line number (for example, 9).

Press the Enter key.

4. The Change Data Area (CHGDTAARA) display appears again to allow you to enter the alternate support number.

```
Change Data Area (CHGDTAARA)

Type choices, press Enter.

Data area specification:
  Data area . . . . . > QESTELE      Name, *LDA, *GDA, *PDA
  Library . . . . . > QUSRSYS      Name, *LIBL, *CURLIB
Substring specifications:
  Substring starting position . > 051      1-2000, *ALL
  Substring length . . . . . > 32      1-2000
New value . . . . . > 'SST918003270949'
```

Type the **alternate** support telephone number in the *New value* field and press the Enter key.

5. Press the Exit key (PF3) as many times as necessary to return to the *AS/400 Main Menu*.
6. On the command line of the *AS/400 Main Menu*, type
CHGMSGQ QSYSOPR *BREAK

Setting Up Electronic Customer Support

and press the Enter key.

Note: The QSYSOPR message queue is in break mode; therefore, informational messages may appear on the display as you perform the remaining tasks.

If the *Display Messages* display appears, read the messages and follow the instructions. If a message needs a reply, *C* (cancel), *I* (ignore), or *R* (retry) appears at the end of the message. For more information about messages, see the "Handling Messages" section in the *Basic System Operation, Administration, and Problem Handling, SC41-5206-04* book.

7. On the command line of the AS/400 Main Menu, type **WRKCNTINF** and press the Enter key.

- a. The *Work with Support Contact Information* display appears.

```
Work with Support Contact Information                System:  XXXXXXXX

Select one of the following:

1. Work with question and answer (Q & A) database
2. Work with local service information
3. Work with IBM product information
4. Work with technical information exchange (TIE)
5. Work with upgrade order information
6. Work with service providers
```

Select option 6 (*Work with Service providers*) and press the Enter key.

- b. The *Work with Service Providers* display appears.

```
Work with Service Providers                        System:  XXXXXXXX

Position to . . . . . _____ Control point
Network ID . . . . . _____

Type options, press Enter.
1=Add  2=Change  3=Copy  4=Remove  5=Display

Opt      Control Point      Network ID      Description
-----
 2      *IBMSRV                _____      IBM Service Support
-      USASYSPEP              APPN           System PEP
```

Type a 2 (Change) in the *Opt* field on the same line as ***IBMSRV** information.

Press the Enter key.

- c. The *Change Service Provider* display appears.

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```
Change Service Provider                               System:  XXXXXXXX
Control point . . . . . : *IBMSRV
Network ID . . . . . :
Description . . . . . : IBM Service Support

Type changes, press Enter.

Service support center telephone numbers:
Hardware service . . . . . 1-800-426-7378
Software service . . . . . 1-800-237-5511
```

If you are installing this system in the United States, type the following on the *Change Service Provider* display:

Hardware service: 1-800-426-7378
Software service: 1-800-237-5511

If you are not installing this system in the United States, call your service representative for the service telephone numbers.

Press the Enter key.

- d. The *Work with Service Providers* display appears again, with the message:
Information for service
provider *IBMSRV changed.

Press F12(Cancel) as many times as necessary to return to the *Work with Support Contact Information* display.

8. Select the option to work with local service information on the *Work with Support Contact Information* display.

- a. The *Work with Local Service Information* display appears.

```
Work with Local Service Information                 System:  XXXXXXXX
Select one of the following:
1. Display service contact information
2. Change service contact information

Selection
2

F3=Exit  F12=Cancel
```

Select the *Change service contact information* option.

- b. The *Change Service Contact Information* display appears.

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```

Change Service Contact Information
System: XXXXXXXX

Type changes, press Enter.

Company . . . . . A S JOURNEY, INC
Contact . . . . . N A VIGATOR
Contact telephone numbers:
  Primary . . . . . 1-444-1234567
  Alternative . . . . . 1-444-1234589
Fax telephone numbers:
  Primary . . . . . 1-444-1234590
  Alternative . . . . . _____
Mailing address:
  Street address . . . . . 999 Yellowbrick Rd.
  _____
  _____
  City/State . . . . . Big Green, KS
  Country . . . . . USA
  Zip code . . . . . 000000000000

F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel

```

Type the customer information. Page forward to the next display.

- c. The following display appears:

```

System: XXXXXXXX

Type changes, press Enter.

National language version 2924  F4 for list
Media for mailing PTFs . . 1    1=Automatic selection
                               2=Half inch reel, 1600 bpi
                               3=Half inch reel, 6250 bpi
                               4=Half inch cartridge
                               5=8 MM cartridge
                               6=Quarter inch cartridge
                               7=Quarter inch mini cartridge
                               8=CD-ROM

F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel

```

- d. Enter the correct information in the *National language version* and *Media for mailing PTFs information* fields.

Note: Press the Help key for more information about the *Media for mailing PTFs* field.

Press the Enter key.

- e. The *Work with Local Service Information* display appears with the following message:

Data area QSSF created in library QUSRSYS.

Note: If the contact information had been created previously and you change it, the following message appears: Support contact information updated..

- f. Press F3 (Exit).

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- ___ 9. You have completed entering the information for the electronic customer support remote services. Go to the next step.
- ___ 10. Test the electronic customer support remote services.

This section contains instructions on how to perform the following tests:

- Connection/Registration test
- Operating System Preventive Service Planning (PSP) test

Ensure that you have entered the remote service information (WRKCNTINF command) before you perform this procedure.

- a. On the AS/400 command line, type **SNDSVRQS *TEST** and press the Enter key.

- b. From the *Send Test Request* display, press the Enter key to send a test request to the IBM service support system.

Messages showing the status of the request are shown at the bottom of the display.

- c. If the test completes successfully, the *AS/400 Main Menu* appears with the following message:

Test request complete.

- d. Did the test complete successfully?

Yes No

↓ Note the error message and contact your service representative.

This ends the procedure.

- e. To perform the operating system Preventive Service Planning (PSP) test, type the following on the AS/400 command line:

SNDPTFORD SF98vrm

and press the Enter key.

(where v = Version, r = Release, and m = modification)

- f. The *Verify Contact Information* display appears.

Press the Enter key to accept the information.

- g. The *Select Reporting Option* display appears.

Select the option to send service request now and press the Enter key.

Select Reporting Option System: XXX

Problem ID : XXXXXXXXX
Current status : READY
Problem : Preventive service planning information requested.

Select one of the following:

- 1. Send service request now
- 2. Do not send service request
- 3. Report service request by voice

Selection:
1

F3=Exit F12=Cancel

Setting Up Electronic Customer Support

Messages showing the status of the request will appear at the bottom of the display.

- h. To display the PSP cover letter, do the following on the AS/400 command line:

For **V3R7**, type DSPPTF 5716SS1 SF98370 and press the Enter key.

For **V4R1M0**, type DSPPTF 5769SS1 SF98410 and press the Enter key.

For **V4R2M0**, type DSPPTF 5769SS1 SF98420 and press the Enter key.

For **V4R3M0**, type DSPPTF 5769SS1 SF98430 and press the Enter key.

For **V4R4M0**, type DSPPTF 5769SS1 SF98440 and press the Enter key.

For **V4R5M0**, type DSPPTF 5769SS1 SF98450 and press the Enter key.

- ___ 11. You completed the electronic customer support remote services test.

Press the Enter key.

The *AS/400 Main Menu* appears.

Appendix G. Obtain the Latest Preventive Service Planning Information

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

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

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

PSP Document	Command to Order, program temporary fix (PTF)
General document for the release	Send Program Temporary Fix Order (SNDPTFORD) SF98xxx
V3R7 software installation	SNDPTFORD SF98080
V4R1 software installation	SNDPTFORD SF98010
V4R1 (System Upgrade Road Map RISC to RISC)	SNDPTFORD SF98156
V4R2 software installation	SNDPTFORD SF98020
V4R2 (System Upgrade Road Map RISC to RISC)	SNDPTFORD SF98154
V4R3 software installation	SNDPTFORD SF98030
V4R3 (System Upgrade Road Map RISC to RISC)	SNDPTFORD SF98159
V4R4 software installation	SNDPTFORD SF98040
V4R4 (System Upgrade Road Map RISC to RISC)	SNDPTFORD SF98161
V4R5 software installation	SNDPTFORD SF98050
V4R5 (System Upgrade Road Map RISC to RISC)	SNDPTFORD SF98163

For all customers, PTFs are available for download from the following Web site:
<http://as400service.ibm.com>

You need to register at this site. Do the following to go to the AS/400 Internet PTF Facility:

1. Click **Fixes, Downloads and Updates**.
2. Click **Internet PTF Downloads (iPTF)**.

If you do not have access to electronic customer support, contact your software support provider to obtain this information. This ensures that you will receive the required PTF as well. Information about displaying and printing preventive service planning documents is available in the book *Basic System Operation, Administration, and Problem Handling*, SC41-5206-04.

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