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iSeries

iSeries 940x RISC-to-RISC Road Map

Version 5

SA41-5155-05

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Version 5

SA41-5155-05

Note

Before using this information and the product it supports, be sure to read the information in "Appendix D. Notices" on page 45.

Sixth Edition (May 2001)

This edition replaces SA41-5155-04. This edition applies only to reduced instruction set computer (RISC) systems.

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iSeries 940x RISC-to-RISC Road Map, SA41–5155–05

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

For information on supported releases, see http://as400service.ibm.com/supporthome.nsf/document/17623433

See "Prerequisite and related information" on page vii for a list of other required and recommended publications.

Who Should Read This Book

This road map is for anyone who is considering an upgrade for an iSeries server or is involved in migrating data from one 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.

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- The term 8xx includes Model 820, 830, or 840.
- The term iSeries or iSeries 400 as used in this document refers to the new generation of (previously AS/400) systems and servers positioned for e-business: e-systems and e-servers, for example Model 170.
- The term iSeries server as used in this document refers to:
  - iSeries system- Models 40x, 5x0, 150 and 6x0.
  - iSeries 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:

V4R4M0	Version 4 Release 4 Modification 0
V4R5M0	Version 4 Release 5 Modification 0
V5R1M0	Version 5 Release 1 Modification 0
V4R4	Version 4 Release 4 Modification (any)
V4R5	Version 4 Release 5 Modification (any)
V5R1	Version 5 Release 1 Modification (any)
Version 5	Any version 5 release, such as, V5R1M0.
Version 4	Any version 4 release, such as, V4R1M0, V4R2M0 or V4R3M0.

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.

Prerequisite and related information

Use the iSeries Information Center as your starting point for looking up iSeries and AS/400e technical information. You can access the Information Center two ways:

- From the following Web site:

  `http://www.ibm.com/eserver/iseries/infocenter`
- From CD-ROMs that ship with your Operating System/400 order:

  iSeries Information Center, SK3T-4091-00. This package also includes the PDF versions of iSeries manuals, *iSeries Information Center: Supplemental Manuals*, SK3T-4092-00, which replaces the Softcopy Library CD-ROM.

The iSeries Information Center contains advisors and important topics such as CL commands, system application programming interfaces (APIs), logical partitions, clustering, Java, TCP/IP, Web serving, and secured networks. It also includes links to related IBM Redbooks and Internet links to other IBM Web sites such as the Technical Studio and the IBM home page.

With every new hardware order, you receive the following CD-ROM information:

- *iSeries 400 Installation and Service Library*, SK3T-4096-00. This CD-ROM contains PDF manuals needed for installation and system maintenance of an IBM @server iSeries 400 server.
- *iSeries 400 Setup and Operations CD-ROM*, SK3T-4098-00. This CD-ROM contains IBM iSeries Client Access Express for Windows and the EZ-Setup wizard. Client Access Express offers a powerful set of client and server capabilities for connecting PCs to iSeries servers. The EZ-Setup wizard automates many of the iSeries setup tasks.

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

- This book. The online version of this book is on the iSeries Information Center

  `http://www.ibm.com/eserver/iseries/infocenter`

  under the **System Planning and Installation** topic.
- *iSeries Information Center*, SK3T-4091-00 is required for logical partition information along with many other topics.
- *Software Installation*, SC41-5120-05 is required for the software upgrade. A PDF version of this manual is available from the iSeries Information Center under **System planning and installation -> Hardware and software -> Software and licensed programs -> Install software**
- Physical Planning in the iSeries Information Center under **Getting Started with iSeries -> Planning ->Physical planning for your new system.**

  `http://www.ibm.com/eserver/iseries/infocenter`
- Getting started with iSeries topic under System planning and installation in the Information Center.
- The Backup and Recovery manual is available in PDF format from the iSeries Information Center (under **Systems Management -> Backup, recovery, and availability -> Manuals and Redbooks**) and is shipped with your order.
- *iSeries Model 270, 8xx, SB2, and SB3 System Installation and Upgrade*, SY44-5966-01.
- *iSeries 400 Model 830, 840, SB2 and SB3 Problem Analysis, Repair and Parts, SY44-5969.*
- *iSeries 400 Model 270 and 820 Problem Analysis, Repair and Parts, SY44-5967.*
- *Operations Console Setup*, SC41-5508-02.

For information about Logical Partitioning, see the LPAR web site at:
`www.as400.ibm.com/LPAR`

For information about working with PTFs, see the Managing fixes topic in the Information Center under **System planning and installation -> Getting started with iSeries -> Managing system operations**.

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.
- *iSeries Information Center: Supplemental Manuals*, SK3T-4092-00.

An upgrade might require the use the following publications:

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

Operations Navigator

IBM Operations Navigator is a powerful graphical interface for managing your iSeries 400 servers. Operations Navigator functionality includes system navigation, configuration, planning capabilities, and online help to guide you through your tasks. Operations Navigator makes operation and administration of the server easier and more productive and is the only user interface to the new, advanced features of the OS/400 operating system. It also includes Management Central for managing multiple servers from a central server.

For more information on Operations Navigator, see the iSeries Information Center.

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 iSeries 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 iSeries Information Center:
    RCHINFOC@us.ibm.com

Be sure to include the following:

- The name of the book or iSeries Information Center topic.
- The publication number of a book.
- The page number or topic of a book 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 road map also covers how to perform a model to model data migration. A data migration can be performed from almost any iSeries 400 model to any model. The source model must be at the same release as the new model to correctly complete the data migration. Data migration involves a new system with a new serial number.

For an overview of the RISC-to-RISC upgrades and data migration, refer to "Upgrade process flow" on page 2 and the "Data migration process flow" on page 4.

What is in this Road Map?

This road map covers the following RISC-to-RISC upgrades:

Note: The current system may require hardware upgrades or configuration changes to satisfy capacity and compatibility requirements of new software and hardware.

- **IBM AS/400 Model 170 to IBM AS/400 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 iSeries model.
- **IBM @server iSeries Model 270 to IBM @server iSeries 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 iSeries model.
- **IBM AS/400 Models 5xx to IBM AS/400 Models 7xx**
- **IBM AS/400 Models 6xx to IBM AS/400 Models 7xx**
- **IBM AS/400 Models 7xx to IBM AS/400 Models 7xx**
- **IBM AS/400 Models Sxx or IBM AS/400 Models 5xx to IBM @server iSeries Models 8xx**

  There are no model upgrades into a Model 8xx from a Model 5xx, 6xx, Sxx, or SBx. 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 iSeries 400 model.
- **IBM AS/400 Models 6xx to IBM @server iSeries Models 8xx**
- **IBM AS/400 Models 7xx to IBM @server iSeries Models 8xx**
- **IBM @server iSeries Models 8xx to IBM @server iSeries Models 8xx**

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Contact your local IBM representative or authorized dealer for additional information on permitted upgrades.

For servers that do not have an upgrade path, use the data migration section of this book. This would include scenarios such as an AS/400® Model 540 to an iSeries 400 Model 270.

Why Upgrade from one AS/400 or iSeries 400 Server to Another iSeries 400 Server?

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

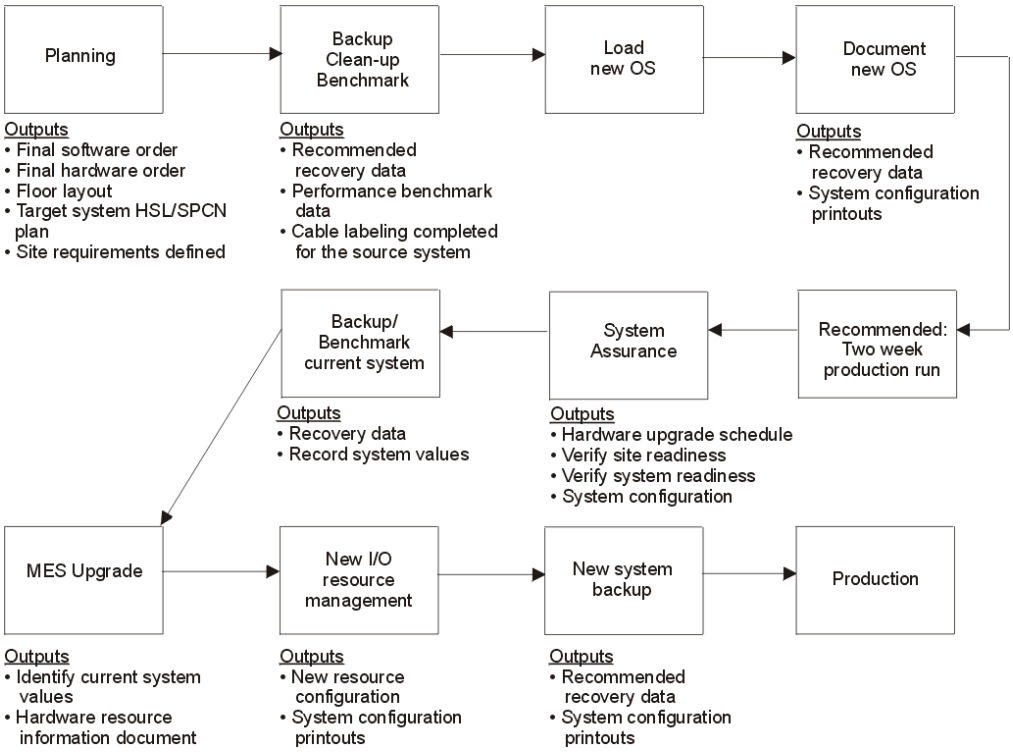
What is an Upgrade?

In this book, an upgrade is any improvement made to the software or the hardware of an iSeries 400 or AS/400 model that retains the serial number of the iSeries 400 or 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 iSeries 400 or AS/400 model to a new iSeries 400 model, with a new serial number.

Upgrade process flow

The following flow chart describes each step of an MES upgrade and lists the required outputs for each stage.



Hardware Investment for Upgrading

You may choose to upgrade your existing RISC system processor, or replace it with a new iSeries 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)**. MES denotes 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 vii for required publications.	See "Prerequisite and related information" on page vii 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 iSeries 400 or AS/400 to a new model iSeries 400 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 iSeries 400 server with V4R4 or V4R5 to replace an existing RISC iSeries 400 or 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 iSeries 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.

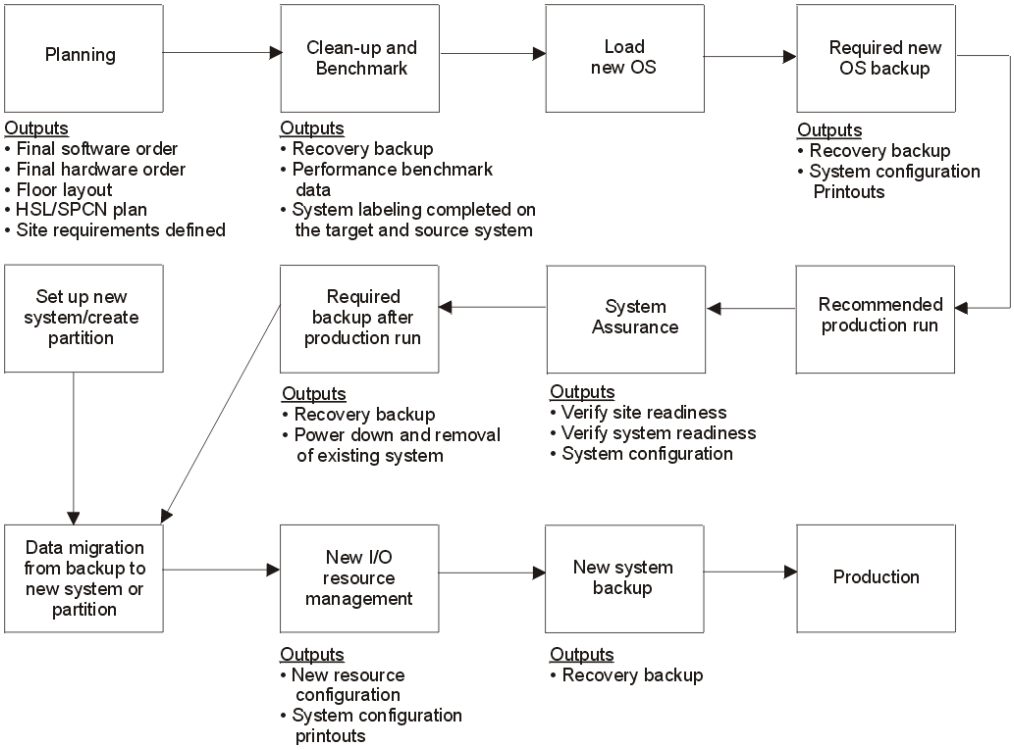
Customers with Version 3 (V3R7) on their ″source″ model must upgrade to Version 4. It is recommended that they purchase Software Subscription for AS/400. They must then order and upgrade to match the new server (V4R4 or V4R5) in order to proceed with their data migration. V3R7 cannot be directly upgraded 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.

Feature Code #0205 differs from Feature Code #0203. Feature Code #0203 SHOULD NOT be ordered for iSeries 400 or AS/400 RISC-to-RISC data migrations as it is designed exclusively for AS/400 CISC-to-RISC data migrations.

Data migration process flow

The following flow chart describes each step of a data migration and lists the required outputs for each stage.



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 vii for required publications.	See "Prerequisite and related information" on page vii 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
V5R1 V4R5 V4R4	If you have one of these releases installed on your system, your system already runs on the RISC architecture. Use this manual, *iSeries 940x RISC-to-RISC Road Map*, SA41-5155-05, for the upgrade. Use the manual *Software Installation*, SC41-5120-05, to replace the installed operating system and licensed programs. A PDF version of this manual is available from the iSeries Information Center under **System planning and installation -> Hardware and software -> Software and licensed programs -> Install software**. Use the manual *Backup and Recovery, SC41-5304-05*, for the save and restore requirements of these procedures. A PDF version of this manual is available from the Information Center under **Systems Management -> Backup, recovery, and availability -> Manuals and Redbooks**. **Note:** V4R4 introduced logical partitions. Go to the iSeries Information Center for help with setting up, upgrades to, and maintaining logical partitions. See the Software Installation manual for other software requirements and limitations prior to the OS/400 upgrade.

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. After you finish reviewing this chapter, you should have the following:

- Final software order
- Final hardware order
- Floor layout
- High-speed link (HSL) and system power control network (SPCN) plan
- Cable labelling of source system
- Site requirements defined

Refer to the "Upgrade process flow" on page 2 or "Data migration process flow" on page 4, depending on your situation, to identify where Planning is in the overall process.

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 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 licensed program Performance Tools/400 (Program 57xx-PT1) and QSIZE400 on the iSeries 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 or iSeries 400

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configuration will perform with your current workload. 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 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 MRPD (Machine Reported Product Data) and the IBM Configurator for e-business. 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.

Machine Reported Product Data (MRPD)

The hardware and software inventory of a system can be transmitted to IBM and stored in databases there. Once the information has been captured, it can be accessed by the marketing representative to establish a starting point for a system upgrade. The data may also be used for problem determination by hardware and software support centers.

The data can be sent to IBM with these tools:

- Manually, with the WRKORDINF command. The WRKORDINF command sends the information once through the Electronic Customer Support line.
- Automatically, with Service Agent and Management Central. Service Agent can be customized to automatically transmit the data regularly on a monthly basis.

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.

To gather performance information before you install a release, see the `Prepare for software installation` topic in the Information Center under **System planning and installation -> Hardware and software -> Software and licensed programs**.

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.

You may also need information about logical partitioning. Refer to the web site:
`www.as400.ibm.com/LPAR`

Version 4 Software Items

See the table on supported releases for software upgrades in the book *Software Installation*, SC41-5120-05, to find what versions may be upgraded from and to. For example, you must be at V4R4 to upgrade to V4R5 or V5R1.

The "Preparing 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 iSeries 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 Technical Studio and the book *Software Installation*, SC41-5120-05.

Hardware Considerations

- Ensure that a PC has been properly configured as an Operations Console.
- 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 Technical Studio at `http://www.iseries.ibm.com/tstudio/planning/plngstrt.htm`.
- 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 twinaxial 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.
- Ensure that you label the cables of your current system before the upgrade. To do this, see the Physical Planning guide in the iSeries Information Center under **Getting Started with iSeries -> Planning ->Physical planning for your new system.**

  `http://www.ibm.com/eserver/iseries/infocenter`

System Configuration Considerations

- When implementing changes to the auxiliary storage pool (ASP) configuration, do it 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 OS/400 Main Menu command line, type `STRSST`. Then, press the Enter key.
  2. Type `QSECOFR` on the System Service Tool Sign on display and press Enter.
  3. On the STRSST display, select *Start a service tool* option. Press the Enter key.
  4. On the Start a Service Tool display, select Hardware service manager. Press the Enter key.
  5. From the Hardware Service Manager display, press F6 (print configuration).
  6. To return to the OS/400 Main Menu, Press F3 (Exit) twice, and then press the Enter key.
  7. 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 35 has information about the following:
  - IBM Global Services
  - iSeries 400 and AS/400 Data Migration Services
  - LPAR Planning and Implementation Services
  - iSeries Planning and Migration Services
  - AS/400 System Migration Services

  - Related support services
  - iSeries 400 and 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 17.
  - 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:
    - Only your IBM representative can access MKTTOOLS at this Web site:

      `http://w3-1.ibm.com/sales/systems/ibmsm.nsf`
    - Or on a Virtual Machine (VM) system, the representative types:

      ```
      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:

- The prerequisite for migrating SPD *book-type* adapter cards is an Model S20, S30, S40, SB1, 620, 640, 650, 720, 730, or 740.
- There is concurrent disk unit maintenance.
- You can use the alternate IPL device 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. The Appendix about alternate installation devices of the *Software Installation* manual 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. A PDF version of this manual is available from the iSeries Information Center under **System planning and installation -> Hardware and software -> Software and licensed programs -> Install software**

  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.

- Be aware that upgrades to an AS/400 or iSeries server may require wiring changes to a building. For more information, see Technical Studio at http://www.iseries.ibm.com/tstudio/planning/plngstrt.htm.

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 or iSeries 400 memory cards for credit toward the purchase of newer or larger AS/400 or iSeries 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 Models 400®, 500, and 530 is not compatible with each other.
  - Main storage for AS/400 Models 40S, 50S, and 53S is 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 Models 510 and 530 and the AS/400 Models 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 to an AS/400 Model 7xx.

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/400 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 Specify codes that the configurator will add:

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

Migrating from a 5xx to an 8xx

When migrating SPD expansion units from an AS/400 Model 5xx or from any unsupported path to an iSeries Model 8xx, 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 an 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 or V5R1 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.
- Since 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 SB1, can be upgraded to an iSeries 400 Model 8xx. 8xx models require V4R5 or later versions of OS/400 depending on the hardware function required.

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 is used by your marketing representative or business partner. It 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
	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 iSeries 400 or 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 iSeries 400 or 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)

After you finish reviewing this chapter, you should have performed the upgrade tasks and obtained the outputs outlined in the "Upgrade process flow" on page 2 (except for the planning tasks and outputs already covered in "Chapter 2. Planning Your Order for Upgrading or Data Migration" on page 7).

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 170, 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
	Record performance and evaluate	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
	System Assurance Verify the following: • Prerequisite Engineering Changes are installed • Customer has installed all required PTFs • Correct operating system level • 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

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

Checkoff	Task	Person Responsible
	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
	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 system assurance checkpoint prior to the hardware installation (MES 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 while preserving the original serial number, 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. For more information on prerequisites prior to an upgrade, see the manual *Software Installation*, SC41-5120-05. A PDF version of this manual is available from the iSeries Information Center under **System planning and installation -> Hardware and software -> Software and licensed programs -> Install software**.

Preparing the Current System

In this section, you will be asked to save your system several times. IBM strongly recommends that you save your system when instructed to do so. Saving your system allows you to have recovery data in case of disaster.

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

__ 1. Acquire the preventive service planning information (see "Appendix C. Obtain the Latest Preventive Service Planning Information" on page 43) from electronic customer support, if available, or from the software service representative.

__ 2. For information pertaining to logical partitions, see the Logical Partitions topic under Systems Management in the iSeries Information Center. There are some specific steps to perform for upgrading a server with primary and secondary partitions installed.

__ 3. For considerations when upgrading to **5769-RD1 OnDemand**, see "Appendix B. Considerations and Solutions" on page 39 for information on OnDemand.

__ 4. For considerations when upgrading an AS/400 or iSeries 400 server with **OptiConnect** installed, see the book *OptiConnect for OS/400*, SC41-5414-02.

__ 5. For considerations when upgrading an AS/400 or iSeries 400 server with **Integrated Netfinity® Server** installed, see the book *Getting Started with Integrated Netfinity Server*, SC41-5123-01.

__ 6. Refer to "How to Gather Performance Information" on page 8 in order to record the performance of your system.

This is where you load the new operating system.

__ 7. See the manual *Software Installation*, SC41-5120-05 to install software (for example, Licensed Internal Code, operating system, PTFs, etc.). Install software for the required and desired partitions. A PDF version of this manual is available from the iSeries Information Center under **System planning and installation -> Hardware and software -> Software and licensed programs -> Install software**.

Important: If you are using logical partitions, update all your partitions to V5R1, if needed.

__ 8. Delete any unused device configuration descriptions (delete unused line, line descriptions, and non-reporting resources).

Important: To delete line and device and descriptions, use the `WRKLIND` and `WRKDEVD` commands and verify that all the descriptions listed are in use. If you are sure one is not, you should delete it. If you are not sure, you should leave it.

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

No LPAR	LPAR Primary	LPAR Secondary
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.

__ 9. Before proceeding with the next step, make that sure during step 7, you obtained or performed the following:

a. OS/400 is current (You determined whether you needed to replace software and replaced Licensed Internal Code, operating system, and licensed programs if needed.)

b. PTFs are current

c. Saved your current system (recommended as recovery data in case of disaster)

__ 10. If you do not have a current system backup that allows you to recover in case of disaster, save the entire system on each partition. Make sure that you save the system and data on a tape unit that is compatible with the tape unit on the target system. To save the 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 iSeries server in the manual *Backup and Recovery, SC41-5304-05*. A PDF version of this manual is available from

the Information Center under **Systems Management -> Backup, recovery, and availability -> Manuals and Redbooks**.

- The `Backup, recovery, and availability` topic under `Systems Management` in the Information Center:

  `http://www.ibm.com/eserver/iseries/infocenter`

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

  a. Click **Systems Management**
  b. Click **Backup, recovery, and availability**
  c. Click **Backing up your server**
  d. Click **Saving your server with the GO SAVE command**
  e. Click **Saving your whole server with GO SAVE: Option 21**

__ 11. Resume normal system operations and processing.

__ 12. **To verify that all your applications are running properly, use the system with the new software release until you feel comfortable with the new production environment. For example, many customers use the system for 2 weeks or longer.**

Preparing for System Assurance prior to hardware upgrade

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
Before proceeding with the MES Installation, where possible, use (A) or (B) to document the installed iSeries server. Use an appropriate method: (A) - If your country supports the WRKORDINF command and if the installed iSeries server is capable of using Electronic Customer Support (ECS), use this method: On the command line, type ″WRKORDINF″, then press Enter. On the next screen, enter Option 1 in the Option field next to QMAnnnnn **Note: nnnnn** is the serial number of the machine, press enter. Write ″ECS″ on the top of the RMER form. (B) - Use this method if the installed iSeries server 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.	Use the same procedure as described for the primary partition for each secondary partition that is configured.

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

No LPAR or LPAR Primary Partition	Secondary LPAR Partitions
Find disk configuration information using the System Service Tools (SST). a. Ensure you sign on to the system with the user profile (such as QSRV). b. Enter the command, STRSST, to start SST. c. Select option to Work with Disk Units. d. Select option to Display Disk Configuration. e. 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. **Note:** If you have trouble getting your printed output, systems with OS/400 installed can use AS/400 Operational Assistant. a. Enter the command GO ASSIST, to get to the AS/400 Operational Assistant Menu. b. Select the option to Work with Printer Output.	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.

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

No LPAR or LPAR Primary Partition	Secondary LPAR Partitions
a. Enter the command, STRSST, to start SST. b. Type QSECOFR on the System Service Tool Sign on display and press Enter. c. Select option to Work with Disk Units. d. Select Display Disk Configuration. e. Select Display Device Parity Status. f. At the Display Disk Parity Set Status display, print the entire Parity Set configurations using the print screen function. DASD MES Notes: **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. Ensure this is discussed before the upgrade.	Use the same procedure as described for the Primary Partition for each Secondary Partition that is configured.

__ 4. If you do not have a current system backup that allows you to recover in case of disaster, save the entire system on each partition just before the hardware upgrade is to be started. Make sure that you save the system and data on a tape unit that is compatible with the tape unit on the target

system. To save the 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 iSeries 400 server in the manual *Backup and Recovery, SC41-5304-05*. A PDF version of this manual is available from the Information Center under **Systems Management -> Backup, recovery, and availability -> Manuals and Redbooks**.
- The `Backup, recovery, and availability` topic under `Systems Management` in the Information Center:

  `http://www.ibm.com/eserver/iseries/infocenter`

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

  a. Click **Systems Management**
  b. Click **Backup, recovery, and availability**
  c. Click **Backing up your server**
  d. Click **Saving your server with the GO SAVE command**
  e. Click **Saving your whole server with GO SAVE: Option 21**

__ 5. 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.

__ 6. 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.

__ 7. Run the WRKHDWPRD command, option 4 to display and verify the information. Use F17 to print the information for the service representative.

__ 8. 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.

__ 9. Print the status of all PTFs on the system (each system partition if LPAR) after installing the V5R1 software and before the hardware upgrade. Type the following command:

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

System Assurance Checkpoint

The customer needs to ensure that the following is completed before the hardware service representative arrives:

1. Verify that the physical planning items were completed:
   - High Speed Link cable diagram
   - Floor plan, system layout diagram
   - Cable labelling

   To complete the items, see the Physical Planning in the iSeries Information Center under **Getting Started with iSeries -> Planning ->Physical planning for your new system.**

   ```
   http://www.ibm.com/eserver/iseries/infocenter
   ```
2. Ensure that you have installed the latest V5R1 cumulative PTF package and specific software release PTFs on all partitions. Refer to step 7 on page 19.
3. Verify that you have the latest full system backup (Save option 21) tapes on hand and labeled. Refer to step 4 on page 21.
4. 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* manual. A PDF version of this manual is available from the iSeries Information Center under **System planning and installation -> Hardware and software -> Software and licensed programs -> Install software**.
5. Ensure that the console device is available and ready. For information about setting up and configuring Operations Console, see the manual *Operations Console Setup*, SC41-5508-02. A PDF version of this manual is available from the iSeries Information Center under **Client Access Express -> Manuals and Redbooks**.
6. Verify that you have the following printouts on hand (refer to step 1 on page 20 through step 9):
   - Latest system configuration list
   - 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 worksheet on hand

7. Verify that prerequisite hardware changes are installed or are available to install on all system components and input or output devices.
8. Document the IPL status for all your partitions. Then, 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.

9. As appropriate, confirm the schedule for the hardware upgrade.
10. If you do not have a current system backup that allows you to recover in case of disaster, save the entire system on each partition just before the hardware upgrade is to be started. Make sure that you save the system and data on a tape unit that is compatible with the tape unit on the target system. To save the 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 iSeries server in the manual *Backup and Recovery, SC41-5304-05*. A PDF version of this manual is available from the Information Center under **Systems Management -> Backup, recovery, and availability -> Manuals and Redbooks**.
    - The `Backup, recovery, and availability` topic under `Systems Management` in the Information Center:

      `http://www.ibm.com/eserver/iseries/infocenter`

      To find the procedure for saving the entire system (using option 21) in the Information Center, do the following:
      a. Click **Systems Management**
      b. Click **Backup, recovery, and availability**
      c. Click **Backing up your server**
      d. Click **Saving your server with the GO SAVE command**
      e. Click **Saving your whole server with GO SAVE: Option 21**

Installing the Hardware for the RISC-to-RISC Upgrade

The hardware service representative should do the following:

1. Participate in the system assurance checkpoint (refer to "System Assurance Checkpoint" on page 23).
2. Perform the model upgrade.
3. Prepare any parts that need to be sent to IBM.
4. Perform any contracted relocation or rearrangement services prior to returning the system to the customer for their use.
5. Perform normal cleanup and housekeeping tasks. This includes proper reporting of time and activities, including any fee-based services delivered.
6. Provide the customer with critical resource documentation.

Managing your new system I/O resources

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. You will be asked to save your system. IBM strongly recommends that you save your system when instructed to do so. Saving your system allows you to have recovery data in case of disaster.

__ 1. Ensure that you received the source system's label locations printout from the hardware service representative (refer to step 7 on page 22). 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 8 on page 30.

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 3 on page 29.

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 "SRC A900 2000 Recovery" on page 40.

Note: The System reference codes and primary partitions topic, located in the Information Center under **System planning and installation -> Getting started with iSeries -> Managing system operations -> Starting and stopping the iSeries**, describes other SRCs 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 completes, 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. Use the label location worksheet 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 7 on page 22). 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 on page 27.

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

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 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 that is the case, check the work management objects. To do this, see the Work management topic under Systems Management in the Information Center.

Performing a new system backup

__ 1. Perform a normal IPL:

No LPAR	LPAR Primary Partition	LPAR Secondary Partition
Perform the following: a. Make sure that the system is set to B and Normal (N) mode before performing the power down and subsequent IPL of the system. b. Once the system is set to B and Normal mode, follow these steps: 1) Type PWRDWNSYS on the command line and prompt on the command (Press **F4**). 2) Make sure that you select these options for the PWRDWNSYS command: • For **How to end**, *CNTRLD • For **Delay time, if *CNTRLD**, 3600 (use the default value, in seconds, or the value that you consider appropriate given your software and system settings) • For **Restart after power down**, *YES • **For IPL Source**, *PANEL	Perform the steps in the No LPAR column after verifying that all secondary partitions are powered down. For information about powering down a system, see the Powering down a system with logical partitions topic in the Information Center under **Systems Management -> Logical partitions -> Managing logical partitions -> Restarting and powering down a system with logical partitions**.	Perform the steps in the No LPAR column (set partitions to B Normal mode, and then power down and perform an IPL on the partitions), using appropriate LPAR service tool steps, only after successfully performing a normal IPL of the primary partition. For instructions on setting the IPL mode, powering down, and performing an IPL on secondary partitions, see the Restarting and powering down a system with logical partitions topic in the Information Center under **Systems Management -> Logical partitions -> Managing logical partitions**.

SRC A900 2000 should not appear on the control panel when the IPL completes. If SRC A900 2000 does appear and you are using Operations Console, you must perform an IPL in Manual mode (M) on the system to arrive at the Dedicated Service Tools (DST). Then, in DST, set the console mode system value to Operations Console, and continue the IPL to sign on.

To set the system to manual mode, do the following:

- For systems without logical partitions, see the Changing operating modes and IPL types topic in the Information Center under **System hardware -> Restarting the system (IPL) -> IPL type**.
- For systems with logical partitions, see the Changing operating mode for a logical partition topic in the Information Center under **Systems Management -> Logical partitions -> Managing logical partitions -> Restarting and powering down a system with logical partitions**.

To set the console mode to Operations Console at DST, do the following starting at the DST main menu:

a. Select **Work with DST environment**.
b. Select **System devices**.
c. Select **Console mode**.
d. Depending on your Operations Console configuration, select *either* **Operations Console (LAN)** or **Operations Console (Direct)**.
e. Exit Dedicated Service Tools.

A normal IPL after this process should clear SRC A900 2000.

__ 2. If you want to start device parity on any non-configured units, do it now. For more information, see the manual *Backup and Recovery, SC41-5304-05*. A PDF version of this manual is available from the Information Center under **Systems Management -> Backup, recovery, and availability -> Manuals and Redbooks**.

__ 3. Perform disk unit management (for example, manage disk protection and disk configuration). To do this, you can use the *Work with Disk Units* option from the Dedicated Service Tools display. For more information, see the manual *Backup and Recovery*, SC41-5304-05. A PDF version of this manual is available from the Information Center under **Systems Management -> Backup, recovery, and availability -> Manuals and Redbooks**.

__ 4. 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 iSeries server in the manual *Backup and Recovery, SC41-5304-05*. A PDF version of this manual is available from the Information Center under **Systems Management -> Backup, recovery, and availability -> Manuals and Redbooks**.
- The Backup, recovery, and availability topic under Systems Management in the Information Center:

  http://www.ibm.com/eserver/iseries/infocenter

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

  a. Click **Systems Management**
  b. Click **Backup, recovery, and availability**
  c. Click **Backing up your server**
  d. Click **Saving your server with the GO SAVE command**
  e. Click **Saving your whole server with GO SAVE: Option 21**

__ 5. 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)
```

__ 6. Print a new system configuration list using *Start a service tool* option.

a. Do the following on the OS/400 Main menu command line:

   Type Start System Service Tools (STRSST).

   Press the Enter key.

b. Type QSECOFR on the System Service Tool Sign on display and press Enter.

c. Select *Start a service tool* option. Press the Enter key.

d. On the *Start a Service Tool* display, select *Hardware service manager*. Press the Enter key.

e. From the *Hardware Service Manager* display, press F6 (print configuration).

f. To return to the *AS/400 Main menu*, press F3 (Exit) twice. Then, press the Enter key.

g. Keep the list for future reference.

__ 7. 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 online) 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.

__ 8. If you receive the *disk unit format* warning screen during the first IPL (IPL started at step 2 on page 25), then the disk unit format might need to be optimized. For more information, see the manual *Backup and Recovery, SC41-5304-05*. A PDF version of this manual is available from the Information Center under **Systems Management -> Backup, recovery, and availability -> Manuals and Redbooks**.

__ 9. Resume normal operations and verify that all your applications run properly. IBM recommends that you tune the system performance. There are billable services available that can do this for you. You can find information about performance tuning in the Work Management manual. A PDF version of this manual is available from the iSeries Information Center under **Systems Management -> Work management-> Work Management Manuals**.

Chapter 4. Procedure for a Data Migration (RISC-to-RISC)

This chapter guides you through a data migration (RISC to RISC) that moves data from one iSeries model server to another. It requires two servers with unique serial numbers. To migrate data from one iSeries 400 server to an upgraded model that retains the original serial number, refer to "Chapter 3. Procedure for an Upgrade (RISC-to-RISC)" on page 17.

Prerequisites for data migration (RISC to RISC)

This procedure assumes that:

- The target system is set up and is running, with only SLIC and the base OS installed (FC 0205) and that the DASD has been configured for ASP 1. For help with DASD configuration, you may wish to investigate the IBM billable service DASD management.
- You have completed a clean-up of the source system, and obtained current performance benchmarks.

  Note: Failure to obtain performance benchmarks may make it extremely difficult to provide support for your iSeries system after moving to the new model. IBM strongly recommends that you maintain performance benchmarks of your system before and after a migration.
- Completed a recovery backup of your source system, at the previous release level.

Preparing the source system for the migration

This procedure assumes that you have:

- _ Loaded the new OS/400 version on your source system, and brought all existing objects and licensed programs to the new release level. Complete the procedure "Preparing the Current System" on page 18 through step 14.
- _ Set the system values, and print the current configuration.
- _ Completed a recovery backup of the source system at the new release level, and printed your latest system configuration information, including:
  - 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
- _ Run your source system at the new release level for two weeks, and completed a recovery backup. (Recommended)
- _ Have set up your new system, and/or created the new partition, including Operations Console setup (if selected in system order).
- _ Done your disk unit management (for example, manage disk protection and disk configuration). To do this, you can use the *Work with Disk Units* option from the `Dedicated Service Tools` display. For more information, see the manual *Backup and Recovery*, SC41-5304-05. A PDF version of this manual is available from the Information Center under **Systems Management -> Backup, recovery, and availability -> Manuals and Redbooks**.

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- _ Verified 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.

Data migration (RISC-to-RISC)

__ 1. Using the Backup and Recovery book, Chapter 4, checklist 20 steps 1 through 9, perform a recovery after a complete system loss. Include the following additions before the IPL. The Backup and Recovery manual, SC41-5304-05, is available in PDF format from the Information Center under Systems Management -> Backup, recovery, and availability -> Manuals and Redbooks.

__ 2. Rename or replace the hardware descriptions on the target system.
   a. On the command line, type `WRKHDWPRD` and press the **Enter** key.
   b. Select the **Change description label locations** option. Press the **Enter** key.
   c. If a controller or device no longer has a valid resource on the system, the **Using Change Description Label Locations** display appears, allowing you to make corrections.
   d. Determine whether the new target system has different communications lines or storage than the source system. If so, check the work management objects. For more information, see the Work management topic under Systems Management in the Information Center.

__ 3. Install any new LPPs or PTFs. For more information, refer to the *Software Installation* book.

__ 4. 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.

   Verify that all objects were restored from the source system. Use the *Backup and Recovery* book to fix any discrepancies.

__ 5. Perform an IPL.

__ 6. Print a copy of your system configuration information:
   - _ Generate reports of the hardware and configuration objects by issuing the following command:

     `PRTSYSINF`
   - _ Print the spooled file that was generated by the above command.
   - _ Print a new system configuration list using *Start a service tool* option. To do this complete the following steps on the *AS/400 Main menu* command line:
     a. Start System Service Tools by entering:

        `STRSST`
     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. Your system configuration should print. Keep the list for future reference.

f. Return to the *AS/400 Main menu*, Press F3 (Exit) twice, and then press the Enter key.

__ 7. 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 iSeries server in the manual *Backup and Recovery*, SC41-5304-05.
- The `Backup, recovery, and availability` topic under `Systems Management` in the Information Center:

  `http://www.ibm.com/eserver/iseries/infocenter`

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

  a. Click **Systems Management**
  b. Click **Backup, recovery, and availability**
  c. Click **Backing up your server**
  d. Click **Saving your server with the GO SAVE command**
  e. Click **Saving your whole server with GO SAVE: Option 21**

__ 8. Resume normal operations and verify that all your applications run properly.

__ 9. IBM recommends that you tune the system performance. There are billable services available that can do this for you. You can find information about performance tuning in the Work Management manual. A PDF version of this manual is available from the iSeries Information Center under **Systems Management -> Work management-> Work Management Manuals**.

Appendix A. AS/400 Global Services

The following appendix describes on-site support or services that are available. For more information refer to the web site: http://www.as400.ibm.com/services

iSeries and 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 iSeries 400 and AS/400 hardware service representative. Your IBM iSeries 400 and 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 iSeries 400 and AS/400 logical partitioning on a new or existing n-way server (Models 6xx, Sxx, 7xx, 8xx, or later). 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 on-site 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`

iSeries Planning and Migration Services

It will assist a customer in planning and migrating to the iSeries 400 V4R5 or later 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 on-site services to upgrade the server to V5R1, convert the CEC and IO using a new migration expansion unit (if required) and provide additional migration services.

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 iSeries server. 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

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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 iSeries 400 and AS/400 hardware service representative. Your IBM iSeries 400 and 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

For related support services, see the AS/400 Technical Support Web site at `http://www.as400service.ibm.com`.

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`

AS/400 Solution Services

See: http://www-1.ibm.com/services/its/us/as400.html

Installation Services

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

- IBM Smooth Start Services for iSeries 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 iSeries 400 and 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 iSeries 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 iSeries 400 and 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. Considerations and Solutions

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

`http://www.as400.ibm.com`

`http://www.as400.ibm.com/infocenter`

`http://www.ibm.com/eserver/iseries/infocenter`

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.

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Operations Console

For information about setting up and configuring Operations Console, see the manual *Operations Console Setup*, SC41-5508-02. A PDF version of this manual is available from the iSeries Information Center under **Client Access Express -> Manuals and Redbooks**. If you are setting up a new iSeries server, see the cabling instructions in the cabling poster.

OptiConnect

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

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 iSeries Information Center

http://www.ibm.com/eserver/iseries/infocenter

Follow the link to Planning and then 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 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, perform again the specific instructions for saving your system. These instructions are outlined in the upgrade or migration procedure that sent you here.

Appendix C. Obtain the Latest Preventive Service Planning Information

You need the most recent cumulative package of the *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
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
V5R1 software installation	SNDPTFORD SF98060
V5R1 (System Upgrade Road Map RISC to RISC)	SNDPTFORD SF98165

For all customers, PTFs can be downloaded from the following Web site:
`http://as400service.ibm.com`

You need to register at this site. To download a PTF, 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 Ordering fixes topic under **System planning and installation -> Getting started with iSeries -> Managing system operations -> Managing fixes -> Ordering preventive service packs (PSPs)** in the Information Center.

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