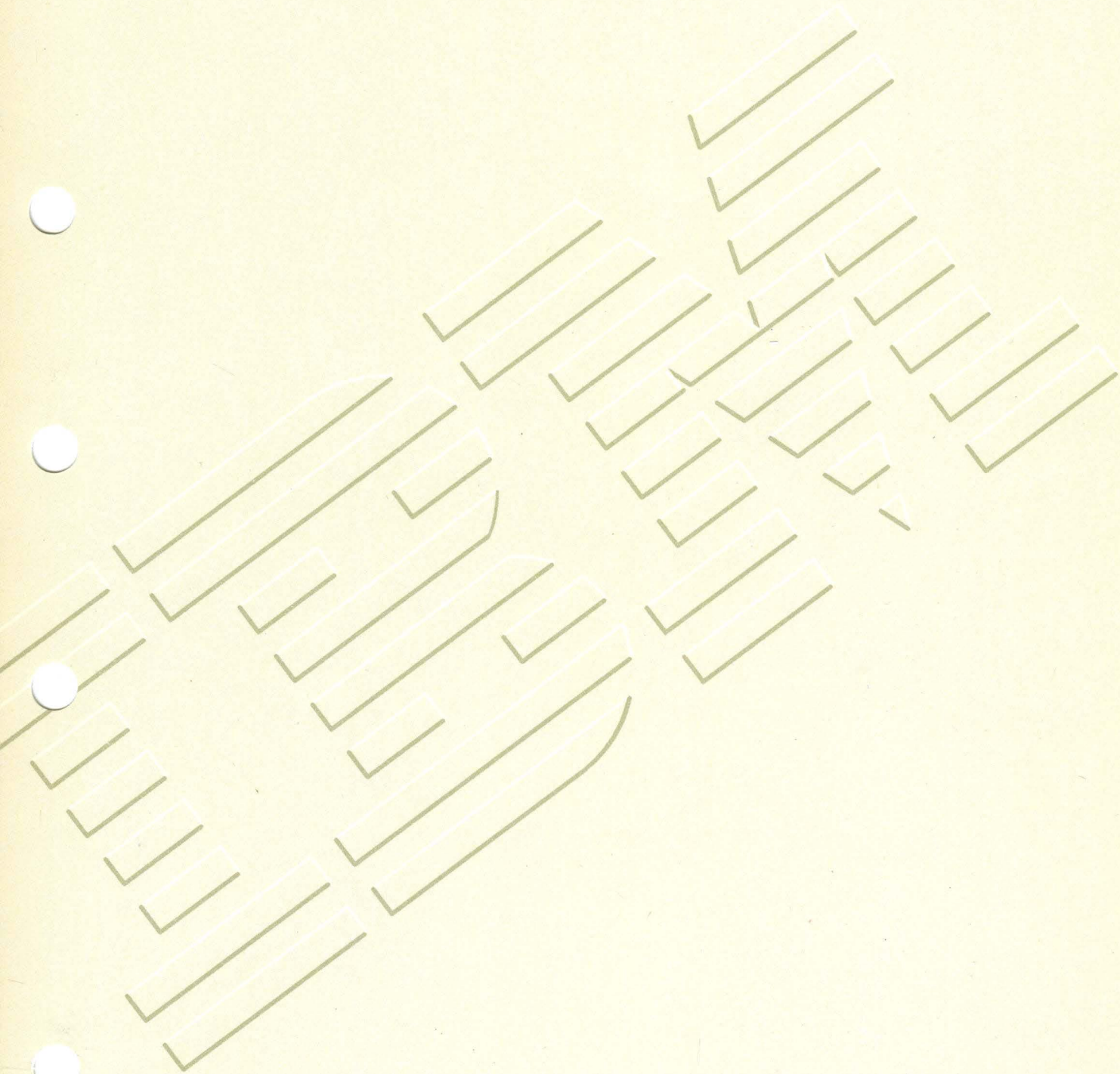
IBM

AS/400™

GA21-9897-0

System Upgrade Planning Guide — 9406



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First Edition (June 1988)

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This equipment could cause interference to radio and television receivers when used in and around residential districts.

Please handle the equipment properly according to the instruction manual.

DANGER

An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the products that attach to the system. It is the customer's responsibility to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.

1. **When installing the system, before installing signal cables, ensure that the power cords for all devices are unplugged.**
2. **When adding any additional devices to the system, ensure that the power cords for those devices are unplugged before the signal cables are connected. If possible, disconnect all power cords from the existing system before you add a device.**

DANGER

During an electrical storm, do not connect cables or station protectors for communications lines, display stations, printers, or telephones.

DANGER

Use one hand, when possible, to connect or disconnect signal cables to prevent a possible shock from touching two surfaces with different electrical grounds.

About This Guide

Who Should Use This Guide

This planning guide is for the system manager or for the person responsible for upgrading the system. Upgrading the system means adding new rack hardware, work stations, or licensed programs.

What You Should Know

You should read or have access to these 9406 System Unit planning guides when using this upgrade planning guide to plan the upgrade.

Planning Guide – 9406, GA21-9913
Data Communications Planning Guide, GA21-9902

Although the planning guide was used to plan the first time you installed your AS/400 system, it contains information useful for planning the upgrade. If you are adding data communications, the data communications planning guide also contains information useful for planning the upgrade.

How This Guide Is Organized

Chapter 1 provides an overview of the planning activities needed to plan the upgrade.

Chapters 2 and 3 help you gather information about the AS/400 system needed by your marketing representative to write proposals and place orders for system hardware and licensed programs.

Chapter 4 contains information for planning to install the ordered system hardware.

Chapter 5 has information for planning to install data communications.

Chapter 6 helps you plan for device configuration.

Chapter 7 provides information to ensure all the last minute planning is complete.

Appendix A contains a blank List of Contacts form like the one filled out and kept in the *Planning Guide – 9406*. You may use this form to update your telephone numbers, if necessary.

Appendix B contains a blank System Information Form, Form A1, like the one filled out and kept in your *Planning Guide – 9406*. You may use this form to update your A1 form, if necessary.

The last part of this manual contains a glossary. Use the glossary to find the meaning of an unfamiliar term.

The information in this guide is task-oriented. Read and understand all the instructions for a task before you begin.

Related Printed Information

For information about the other manuals in the AS/400 library, refer to the *Information Directory*, GC21-9678, which identifies the publications shipped with the product and the publications that can be ordered.

Also refer to these publications as needed:

- *Communications: User's Guide*, SC21-9601. This manual provides the system operator, application programmer, system programmer, or system administrator with: communications information that is common among the AS/400 communications support; communication configuration information, such as defining lines, controllers, and devices; information about defining and using display station pass-through; and information about the 3270 remote attachment.
- *5250 Planning and Site Preparation Guide*, GA21-9337. This manual provides information about twinaxial cabling.
- *5299 Planning, Installation, and Problem Analysis Guide*, GA27-3749. This manual provides information about the IBM 5299 Terminal Multiconnector Model 3.
- *Cabling System Planning Guide*, GA27-3361. This manual provides information about the IBM Cabling System.
- *Form Design Guide for Printers*, GA24-3488. This manual provides information about creating forms for your printer.
- *IBM Token-Ring Network Introduction and Planning Guide*, GA27-3677. This manual helps you understand communications support involving a local area network.
- *Attaching Work Station and Communications Cables*, SA21-9957. This manual provides information about labeling communications cables.

Contents

Chapter 1. Planning to Upgrade

Planning to upgrade the system is an important planning responsibility designed to ensure the upgrade is ordered and installed with little disruption to the daily operations of your business.

This chapter provides an overview of the activities needed to plan for an upgrade. The chapter also lists who is responsible for each activity and who to call if you have questions.

The following task overview shows the planning tasks in this chapter.

TASK OVERVIEW

Task 1.1 Understanding the Purpose of System Planning

Planning to upgrade the system is as important as planning to install the system for the first time. A good plan ensures equipment and materials are on hand and ready to use when the ordered items arrive.

The planning should be done by someone in your organization familiar with the company's policies, business practices, and applications. In addition, this person should be familiar with:

- How the system is used by the business
- Desired change in system capacity, performance, or function
- Requirements for future growth
- AS/400[1] 9406 System Unit publications

This same person should be selected to serve as the overall planning coordinator for the system upgrade responsibility.

If You Need Help

You can call your marketing representative for help with planning. The marketing representative is your primary contact and is responsible for helping ensure you complete the planning tasks.

[1] AS/400 is a trademark of the International Business Machines Corporation.

Task 1.2 Understanding What You Are Responsible For

Upgrading the system is a responsibility shared between you, your marketing representative, and your service representative. Both representatives are available to assist you.

The responsibility is divided into the following key parts.

Marketing Representative

Your marketing representative is responsible for:

- Learning about your upgrade requirements
- Writing upgrade proposals
- Processing orders

Service Representative

Your service representative is responsible for installing rack hardware, such as tape units, disk units, and logic cards.

Customer

You are responsible for:

- Identifying new system requirements
- Providing information about the system
- Planning for installing the upgrade
- Preparing the site
- Setting up work station hardware and modems (except for the electronic customer support modem)
- Adding new licensed programs
- Configuring the system for new devices, communications, and work stations
- Completing labels for cables

A List of Contacts form has been provided in Appendix A of this guide where you can write names, addresses, and telephone numbers. This same information may have been recorded on the original form provided in the *Planning Guide – 9406*.

At this time, check the *Planning Guide – 9406* for this information to see if names, addresses, and telephone numbers were recorded. If so, these should be verified, changed if necessary, and kept current during your planning activities.

Chapter 2. Providing Information for the Proposal

An upgrade proposal is a way for your marketing representative to answer questions you might have about improving system performance, increasing storage, or adding new applications. Proposals are an exchange of ideas, designed to fit individual business data processing needs. A proposal can range in formality from a telephone call from your marketing representative to a personal visit.

Your marketing representative is trained to write upgrade proposals and access the latest information about new product offerings, their performance, and their price.

This chapter helps you gather information about your system needed by the marketing representative to write the upgrade proposal. The chapter also discusses working with your marketing representative on the upgrade proposal.

The following task overview shows individual tasks in this chapter.

TASK OVERVIEW

Task 2.1 Providing System Information

Before an upgrade solution can be proposed, the marketing representative needs to know something about your system, such as the kind of data processing problems you are having and the kind of system improvements you want. Also needed is information about your system stored online and recorded on the planning forms.

The following information is helpful to your marketing representative when preparing the upgrade proposal:

- Data processing symptoms (such as poor system performance)
- New system requirements (if known)
- Planning forms (showing current hardware and licensed programs on the system)
- Information stored in the system

Providing a List of Data Processing Problems

As the person responsible for system operation, you need to ensure data processing problems can be solved by upgrading the system. To ensure a system upgrade is needed:

- Be aware of system performance (such as slow response time)
- Keep an accurate record of problems with:
  - Program applications
  - Hardware
  - Communications
- Record system messages indicating problems
- List operator complaints

Once you have gathered the information, review it with other data processing professionals to determine any new system requirements.

Providing a List of New System Requirements

A new system requirement is a statement or a list of additional data processing needs given to and used by your marketing representative to write the proposal. One example might be a list of requirements asking IBM for better system performance and more display stations and printers.

Spend some time discussing these requirements with the people working on the system. Also, consider any future expansion of the business requiring additional hardware, user applications, and so on.

You might also consider discussing the data processing symptoms and system requirements with a programmer, service representative, or both. They might recommend changing the system software or writing new applications to change system performance.

Providing Planning Form A1

Before your system was originally installed, someone working with the marketing representative should have completed one or more of the planning forms. The most important form is the System Information Form, identified as Form A1, and found in *Planning Guide – 9406*.

An extra blank Form A1 is included in Appendix B of this guide, if needed. The original Form A1, completed before you installed your system for the first time, contains a partial description of the hardware and licensed programs making up the system. The following example shows this form and the type of information needed by the marketing representative:

A1 **System Information Form (Part 1)**

Rack Power Specify Code ____

Rack	Description	Device Type	Model Number	Serial Number	Location
A	1.6 meter rack	9309	2	XXXXXXXXXXXX	Accounting
A	System unit	9406	B40	XXXXXXXXXXXX	——
A	Tape unit controller	9346	001	XXXXXXXXXXXX	——
A	Diskette unit	9331	001	XXXXXXXXXXXX	——
A	Disk unit	9332	400	XXXXXXXXXXXX	——
A	Disk unit	9332	400	XXXXXXXXXXXX	——
A	Disk unit	9332	400	XXXXXXXXXXXX	——
A	Disk unit	9332	400	XXXXXXXXXXXX	——
B	1.6 meter rack	9309	2	XXXXXXXXXXXX	Accounting
B	Disk unit	9332	400	XXXXXXXXXXXX	——
B	Disk unit	9332	400	XXXXXXXXXXXX	——
B	Disk unit	9332	400	XXXXXXXXXXXX	——
B	I/O card unit	5010/5030	——	XXXXXXXXXXXX	——

Example

Main storage size (4–96MB) 16 MB

Disk storage size (400MB–27.36GB) 1.7 GB

Total number of work stations supported 40

Licensed programs

- Operating System/400 (5728-SS1)
- Communications Utilities (5728-CM1)
- Office (5728-WP1)
- Query (5728-QU1)
- RPG/400 (5728-RG1)

Cabling Devices	Quantity	Notes
5208 Link Protocol Converter	——	
5209 Link Protocol Converter	——	
ROLMbridge 5250 Link Protocol Converter	——	
5299-3 Terminal Multiconnector	——	

Note: You may copy as necessary.

RSLC154-16

The marketing representative uses this form, in addition to the other system information, to evaluate which new hardware or licensed programs can be added to the system. Keeping an accurate record of system hardware and licensed programs on Form A1 can speed up the entire ordering process.

Providing the Rack Configuration List

Stored in the system is an inventory, or complete list, of all the hardware installed in the rack, including logic cards and cables. The inventory for all other hardware, such as work stations and modems, is (or should have been) recorded on Form A1. The rack configuration list might be needed by your marketing representative to write the proposal and place the order. The rack configuration list is created from information in the system when you select a menu option to print the list.

When you have determined your marketing representative will need the rack configuration list, use the following procedure to display and print the list.

Displaying and Printing the Rack Configuration List

STEP 1: Sign on the system (if not already signed on).

STEP 2: Type WRKHDWPRD and press the Enter key.

WRKHDWPRD is the Work with Hardware Products command. The Work with Hardware Products menu is shown.

```
                        Work with Hardware Products

Select one of the following:

     1. Work with rack configuration
     2. Copy rack configuration
     3. Replace rack configuration









Selection _

F3=Exit
                                                (C) COPYRIGHT IBM CORP. 1988
```

STEP 3: Select option 1 (Work with rack configuration) and press the Enter key. The rack configuration list is shown.

```
                    Work with Rack Configuration

System ID: 9396-0630305-19870903-090125

Type options, press Enter.
2=Change   4=Delete

                          Type/     Resource    ---Location----
Opt  Description          Feature   Name        Rack  EIA  Slot
     1.6M Rack            9309-002              A
     1 Unit Filler Panel                        A     32
     Diskette Unit        9331-002  DKT01       A     28
     Reel Tape Unit       9347-001  TAP01       A     25
     Main Card Enclosure  9396-6X0              A     9
     Bus Adapter          2505      SP01        A     9    4
     Processor Card       2502      MP01        A     9    5
     Mag Stge Device Ctl  6110      SI01        A     9    7
     Twinaxial WSC        6040      CTL01       A     9    8
     Twinaxial WSC        6040      CTL02       A     9    9
     Comm Processor       6130      CC01        A     9   10
     Two-Line Adapter     6031      LIN01       A     9   11
                                                                More...
F3=Exit   F12=Previous   F6=Add  F17=Print   F24=More keys
                                                (C) COPYRIGHT IBM CORP. 1988
```

Use the page keys to see the entire list.

STEP 4: Press F17 to print the rack configuration list. The Specify Printer display is shown.

```
                          Select Printer

Type choice, press Enter.

Printer . . . . . *Print                    *Print=default, name

F3=Exit    F12=Previous
```

STEP 5: Type the printer ID (or leave the default value) and press the Enter key to print the rack configuration list.

STEP 6: Press F3 to exit the display.

Task 2.2 Working with Your Marketing Representative

The amount of time you spend working with your marketing representative depends on the size of the upgrade. A simple upgrade, such as adding a storage card, may only require you to make one phone call. A complex upgrade, such as adding another rack or communications line, may require your marketing representative to work with you in person.

What to Do

Call and give your marketing representative the following information:

- Your name and why you are calling
- Your IBM account number (you will be asked for it)
- Description of your data processing problems (if any)
- New system requirements (if known)

If you are planning a simple upgrade, your marketing representative may ask only a few questions about the information recorded on Form A1 and printed on the rack configuration list.

If you are planning a more complex upgrade, your marketing representative might need more time to study your system information, experiment with different upgrade configurations, and compare product performance and price before getting back to you with a solution. If this is your situation, you might be asked to mail the rack configuration list and a copy of Form A1 to the marketing representative.

What the Marketing Representative Will Do

The marketing representative will next:

1. Contact you and present one or more proposals designed to meet your particular data processing needs
2. Rework the proposal, if needed
3. Take your order if no changes are needed
4. Place the order and supply you with an approximate delivery date

Chapter 3. Preparing and Placing Orders

This chapter provides information on preparing and placing orders for system hardware and licensed programs, including computer supplies and publications. The chapter also provides information on how to work with the order after it has been placed. The last task in the chapter provides a list of general planning activities that should be reviewed before completing the planning tasks in Chapters 4 through 7.

The following task overview shows the planning tasks in this chapter.

TASK OVERVIEW

Task 3.1 Placing the Upgrade Order

Once the marketing representative has reached an agreement with you on the proposal, the order (when accepted by IBM) is reviewed with you. Price and approximate delivery of the order are also discussed to ensure you are satisfied with the order. The order is then forwarded by your marketing representative to an administrative office where the order is checked to ensure accuracy and is scheduled for processing.

Processing and shipment of the order will vary, depending on such things as:

- Size of the order
- Item ordered (such as system rack or work station)
- Changes to the order (if any)

IBM order programs track the order and report (on request) the status of your order and the shipment schedule.

Task 3.2 Placing an Order for Additional Licensed Programs

Periodically, your business will receive from IBM information announcing new releases for licensed programs that you are currently using on your AS/400 system. New and additional licensed programs may be purchased by contacting your marketing representative.

Task 3.3 Placing the Supplies Order

After you have placed the system order, you should have some idea of what additional supplies are needed. This can be done by reviewing a copy of the order. For example, if you ordered a printer, it requires printer ribbon and paper. Other supplies are optional, such as diskette holders, office supplies, and binders.

IBM offers a variety of office supplies and accessories for your system. Supplies and limited accessories can be ordered by telephone through the IBM Direct Catalog. The toll-free number to IBM Direct should be listed on your List of Contacts. If the number is not listed there, call your marketing representative.

Your marketing representative can supply you with the IBM Direct Catalog or add the name of your business to the catalog mailing list.

When designing forms for special applications such as billing, invoice, and payroll, you need to use the *Form Design Guide for Printers*.

Task 3.4 Placing the Publications Order

If you are adding new hardware, licensed programs, or applications, you should review what additional publications, if any, are needed.

Some publications come with the product, while others must be ordered. For more information on ordering additional manuals, see the *Information Directory*.

Task 3.5 Working with a Placed Upgrade Order

After placing the upgrade order, you will receive a confirmation letter or acknowledgement stating your order has been received and is being processed. The confirmation letter shows a list of the ordered items. Review the list to ensure it is correct. If an error is found, call your marketing representative and report the error.

In addition to your normal filing procedures, make a copy of the order and file it with the *System Upgrade Planning Guide – 9406* for later use. You will use the information to complete other planning forms and verify the content of the order when received.

You can call to check an order, change an order, or add another order any time during normal working hours.

Checking an Order

Orders are tracked on the IBM ordering and administration system by order number (found on your copy of the order). The IBM representative enters your account number and order number to identify your order. Please make note of these before calling.

Changing the Order

Orders can usually be changed if you call the marketing representative soon after placing the order. Depending on the status of your order, the marketing representative can determine whether the order can be stopped in time to change it. If not, you may need to cancel the order and place a new order.

Canceling an order and placing a new order might add additional time to the ordering process and delay shipping. If you are changing the order only by adding an item, you can place an additional order and not cancel the first.

Placing an Additional Order

If you wish to add an item to the first order but are unable to (because the first had been processed), you can work with your marketing representative on a second order in much the same way you did on the first order.

If you were able to stop the first order in time to change it, be aware that the order may be considered a new order and placed at the end of the list for orders to be processed.

Task 3.6 Reviewing the General Planning Activities

This task should be completed before completing any of the remaining chapters in this guide.

If it has been some time since your original AS/400 system has been installed, you may want to review some of the tasks in the *Planning Guide – 9406*, including:

- Developing an Education Plan
- Completing the System Information Form
- Planning a System Maintenance Program

  Note: Adding new hardware to your system might make parts of an existing system maintenance agreement you have with IBM or another organization not valid.

- Developing a Recovery and Availability Plan

If you have not already done so, change the System Information Form (Form A1) to reflect your original system and the new items you have ordered for the upgrade. Use this same form to determine which chapters (4 through 6) you need to go to next in this guide.

For example, if you are planning to add a data communications line only, skip Chapter 4, "Planning for the Hardware" and go to Chapter 5, "Planning for Data Communications."

Chapter 4. Planning for the Hardware

This chapter contains information for planning to install system hardware. System hardware includes racks, rack devices (such as tape and disk units), logic cards, work stations, and work station attachments.

Information covering placement, physical and electrical specifications, and planning to install the hardware is available in the *Planning Guide – 9406*. You should use that guide in addition to this *System Upgrade Planning Guide – 9406* when planning to add system hardware.

The following task overview shows the individual planning tasks in this chapter.

TASK OVERVIEW

Task 4.1 Planning for Racks

Complete this task if you are planning to add one or more racks.

When reviewing the *Planning Guide – 9406*, pay particular attention to the rack and system weight restrictions. Equally important is a careful review of the electrical requirements by an electrician for each rack.

The electrician or person qualified to estimate additional power will need an updated copy of Form A1 and the *Planning Guide – 9406*. You should ask the electrician to ensure the wall receptacle (where the power cord will be plugged) matches the plug type ordered for the rack. Charts in Appendix C of the *Planning Guide – 9406* specify power, plug, receptacle, and power cord specifications.

What to Do

STEP 1: The following tasks in the *Planning Guide – 9406* should be completed:

- Selecting Where to Place Your System (Rack)
- Reviewing Rack and Device Plan Views
- Reviewing Power, Plug, Receptacle, and Power Cord Specifications (Rack)
- Planning for Electrical Power

STEP 2: Call your electrician, if necessary. Form A1 and the *Planning Guide – 9406* contain information needed by your electrician to determine the new electrical requirements for the rack.

STEP 3: You will need to complete "Task 7.1 Planning to Turn Off the System" on page 7-2.

STEP 4: After the ordered items have been installed, the service representative will need to change the information in the rack configuration file to show the new rack added.

STEP 5: You have completed this task. Decide which task to complete next.

Task 4.2 Planning for Rack Devices

Complete this task if you are planning to add one or more of the following rack devices:

- Disk unit
- Diskette unit
- Tape unit
- Cartridge tape unit
- Card expansion unit
- Non-IBM devices

Planning for IBM Rack Devices

The rack (where you plan to install a new device) has power outlets for new rack devices. No special electrical planning is required for new devices added to the rack.

The placement of the new device in the rack is determined by your service representative using installation instructions.

Planning for Non-IBM Rack Devices

For non-IBM rack devices, you need to review with the manufacturer of those devices what hardware planning is required, such as setting device address switches, determining where the device will be installed in the rack, and so on.

What to Do

Note: Device configuration is unnecessary for rack devices if you are presently using automatic configuration. For more information, see Chapter 6, "Planning for Device Configuration" in this guide.

STEP 1: Ensure the original planning Form A1 has been changed to show the new items being added. You should be able to list the following new information on Form A1, using the order form:

- Device type
- Machine number
- Feature code

You can fill in the serial number of each new device later, after it arrives, and just before it is installed.

STEP 2: You will need to complete "Task 6.1 Planning for Local Device Configuration" on page 6-2 and "Task 7.1 Planning to Turn Off the System" on page 7-2 in this guide.

Note: Near the end of the upgrade task, the service representative will need to change the information in the rack configuration file to show the new rack devices added.

STEP 3: You have completed this task. Decide which task to complete next.

Task 4.3 Planning for Logic Cards

Complete this task if your order includes one or more logic cards. The type of logic cards that can be installed on 9406 System Unit are:

- Main storage cards
- Twinaxial work station controller card

  Note: The twinaxial work station controller card is shipped in two parts. One part is the 6040 card and the other part is the twinaxial work station attachment. The twinaxial work station attachment is installed by the service representative after the 6040 card is installed.

- Magnetic storage device controller card
- Magnetic tape attachment cards
- Communications controller and adapter cards

An installation guide (assembled and shipped with each upgrade) is used by your service representative to install logic cards.

What to Do

STEP 1: On Form A1, you do not need to identify the new logic cards added. New logic cards are automatically sensed by the system and stored in the system when you start it. The new cards show up on the rack configuration list, when displayed or printed.

However, you should update Form A1 to show the new:

- Main storage size
- Disk storage size
- A second twinaxial work station adapter
- Communications line protocol

STEP 2: You will need to complete "Task 6.1 Planning for Local Device Configuration" on page 6-2 and "Task 6.2 Planning for Remote Device Configuration" on page 6-4 in this guide.

STEP 3: You have completed this task. Decide which task to complete next.

Task 4.4 Planning for Work Stations

Complete this task if you are adding display stations and printers.

Display stations and printers can be added to an operating AS/400 system without turning off the system. These new devices (when powered on) are automatically configured by the system if automatic configuration was selected when your system was initially installed.

What to Do

STEP 1: Ensure Form A1 was changed to include additional work stations. On Form A1, record the:

- Type (display station or printer)
- Machine number
- Model number
- Place

STEP 2: Review the following chapters in the *Planning Guide – 9406*.

- Planning a Place for Your System
- Planning to Install Your System
- Planning for Device Configuration

Step 3: You have completed this task. Decide which task to complete next.

Note: Many of the same planning considerations and tasks for local work stations apply to remote work stations. If you are adding a remote work station communications controller such as the 5294 or 5394, see the *Planning Guide – 9406* for information on how to plan for remote communications.

Task 4.5 Planning for Work Station Cables and Attachments

If you are planning to attach display stations, printers, and cable attachments to your system, you need to review your cabling requirements.

Several cabling systems are available on the AS/400 system. You might have one or more of the following cabling systems.

- Telephone twisted-pair cabling
- IBM Cabling System
- Twinaxial cabling

Look on the original Form A1 to determine which cabling system you have or are adding. The information is on Part 2 of the form. Once you know which cabling system you have, go to the appropriate topic in this task.

Cabling for Telephone Twisted Pair

Telephone twisted-pair cabling is a cabling system that allows a work station to be attached to a wall plug. A wall plug attachment allows you to move a device without rewiring for each device moved. You can use the same telephone wiring cable that is typically already installed for your telephone system.

If your business has this cabling system installed where you will be setting up display stations and printers, you need only to order the telephone twisted-pair cables.

If your business is planning to add telephone twisted-pair cabling to a new building, then you will need to plan for the cabling system.

What to Do

STEP 1: Call your marketing representative and ask for the *IBM 5299 Planning, Installation, and Problem Analysis Guide* if you do not have it.

STEP 2: Order the telephone twisted-pair cables (if only cables are needed) or the cabling system as required.

STEP 3: If you are planning to install the entire cabling system, assign this planning responsibility to someone qualified to install cabling. This person will need the *Planning Guide – 9406*.

STEP 4: You have completed this task if only adding telephone twisted-pair cabling. Decide which task to complete next.

Cabling for the IBM Cabling System

The IBM Cabling System allows a work station to be attached to a wall plug. The wall plug allows you to move work stations without rewiring for each device moved.

If your business has this cabling system installed where you will be setting up work stations, you need only to order the cables.

If your business is planning to add the IBM Cabling System to a new building, then you will need to plan for the cabling system.

What to Do

STEP 1: Call your marketing representative and ask for the *IBM Planning and Installation Guide* if you do not have it.

STEP 2: Order the IBM Cabling System cables (if only cables are needed) or the cabling system as required.

STEP 3: If you are planning to install the entire cabling system, assign this planning responsibility to someone qualified to install cabling. This person will need the *Planning Guide – 9406*.

STEP 4: You have completed this task if only adding the IBM Cabling System. Decide which task to complete next.

Cabling for the Twinaxial System

The twinaxial system allows you to move some, though not all, work stations without re-cabling for some devices moved. An example of re-cabling is moving a display station to a room where no twinaxial cable has been installed.

What to Do

STEP 1: Assign this planning responsibility to someone qualified to install twinaxial cables. See the *Planning Guide – 9406* and the *5250 Planning and Site Preparation Guide* for more information.

STEP 2: While using the planning guide to plan for twinaxial cables, ensure the planner does the following:

1. Changes the floor plan (if you have one) and local work station diagrams (forms C1 through C3 from the *Planning Guide – 9406*).
2. Determines the cable lengths you need between each work station.
3. Determines where (if any) and how the following work station attachments are connected to the system.
   - Protocol converters
   - Multipoint wiring concentrator
   - ROLMbridge connector
4. Orders the cables you will need for the work stations. See the *Planning Guide – 9406* for more information.
5. Labels the cables.

Note: The cables (if not now labeled) should be labeled before the new work stations are set up and attached to the system.

STEP 3: You have completed this task if only adding twinaxial cabling. Decide which task to complete next.

Chapter 5. Planning for Data Communications

This chapter contains information for planning to add data communications. The type of data communications available on the AS/400 system are:

- Synchronous data link control (SDLC)
- Binary synchronous communications (BSC)
- Asynchronous communications
- X.25 communications network
- IBM Token-Ring Network

Information covering ordering data communications (including modem specifications and common carrier types) and installing data communications is available in the *Planning Guide – 9406* and the *Data Communications Planning Guide.*

Use these guides with this guide *System Upgrade Planning Guide – 9406* to plan for data communications.

The following task overview shows the three individual planning tasks in this chapter. If you are adding communications to establish a line between your system and a support system, complete "Task 5.1 Planning for Electronic Customer Support" on page 5-2. If you are adding communications to establish a line between your system and another system or work station controller, complete "Task 5.2 Planning for a Data Communications Line" on page 5-3. The last task is for planning to add personal computers to the AS/400 system.

TASK OVERVIEW

"Task 5.1 Planning for Electronic Customer Support."
"Task 5.2 Planning for a Data Communications Line."
"Task 5.3 Planning for IBM Token-Ring Network Work Stations."

Task 5.1 Planning for Electronic Customer Support

Complete this task if you are adding a communications line between your system and a support system. Electronic customer support allows you to hook up to a remote support system using a standard EIA data communications line. Electronic customer support is available in most, though not all, countries where AS/400 systems are installed. Your marketing representative can provide you with this information.

What to Do

STEP 1: Review Chapter 4 in the *Planning Guide – 9406*.

STEP 2: Do the following:

1. Complete Form F11, Electronic Customer Support
2. Call a common carrier and order a telephone line
3. Call a modem supplier and order a modem (if one was not shipped with the original order)
4. Order the following hardware for system support (if not shipped with the original order):
   - Communications controller cards
   - Multi-protocol communications adapter card
   - EIA-232/V.24 Enhanced Cable

STEP 3: After the system support hardware has been installed, you will need to:

1. Get the procedures for establishing communications with the market support system. These procedures are in a Welcome Packet and available from your marketing representative. The Welcome Packet contains the information you need to sign on, establish communications with the support system, send and receive files, and sign off.
2. Change the line configuration for the new support line. See the *Communications User's Guide* for information on how to complete this task.

STEP 4: You have completed this task. Decide which task to complete next.

Task 5.2 Planning for a Data Communications Line

Complete this task if you are adding a communications line other than system support.

What to Do

STEP 1: Review the *Data Communications Planning Guide* and complete the following tasks in the same guide:

1. Call a common carrier and order a telephone line.
2. Order a modem for each additional line.
3. Order communications hardware (includes logic cards and cable).

   Note: Your marketing representative will know what to order by reviewing your rack configuration list.

4. Complete the configuration forms used during device configuration. Each completed configuration form (for each line configured) includes information about lines, controllers, and devices.

STEP 2: Before the new line is installed, you will need to:

1. Label the communications cable, using the *Communications User's Guide*.
2. Call your service representative to attach the communications line.
3. Configure each new communications line, using the *Communications User's Guide*.
4. Write operating procedures for establishing communications with the remote site.

STEP 3: You have completed this task. Decide which task to complete next.

Task 5.3 Planning for IBM Token-Ring Network Work Stations

Complete this task if you are adding IBM Token-Ring Network work stations to your AS/400 system. Personal computers can be used as work stations on the AS/400 system. An IBM Token-Ring Network adapter can be used to connect a personal computer to the system. You need one of the following cabling systems to use the IBM Token-Ring Network:

- IBM Cabling System
- Telephone twisted-pair cabling

What to Do

STEP 1: Call your marketing representative and ask for the *IBM Token-Ring Local Area Network Introduction and Planning Guide* that you need to help with this task.

STEP 2: Add the information to the floor plan (if you have one) and the planning form (Form F5) in the *Data Communications Planning Guide*.

STEP 3: When you receive the order, go to the *Attaching Cables* guide for instructions to add the feature.

STEP 4: You have completed this task. Go to the next chapter.

Chapter 6. Planning for Device Configuration

This chapter and the *Planning Guide – 9406* will help you plan for device configuration. Device configuration is the process of specifying to the system the devices that make up the hardware, such as disk units, displays stations, printers, communications work station controllers, and so on.

For each local or remote device added to the system, a description about that device is needed by the system. These descriptions are created during device configuration using completed planning forms.

The following task overview shows the individual planning tasks in this chapter.

TASK OVERVIEW

"Task 6.1 Planning for Local Device Configuration."
"Task 6.2 Planning for Remote Device Configuration."

Task 6.1 Planning for Local Device Configuration

Complete this task if you are adding one of the following local devices:

- Disk unit
- Diskette unit
- Tape unit
- Twinaxial work station controller
- Display station
- Printer

For AS/400 device configuration, you can select automatic device configuration or manual device configuration to configure the system for new devices.

Both methods for configuring new devices are covered in the *Planning Guide – 9406*. If you are unsure which method was chosen when you initially installed your system, select automatic configuration. Automatic configuration will define the new devices to the system for you.

To verify which configuration method was selected for your system, review your original planning forms (C through F) in the *Planning Guide – 9406*. If these have been completed, then you should skip "Planning for Automatic Device Configuration" and go to "Planning for Local Device Configuration" on page 6-3 in this task.

Planning for Automatic Device Configuration

When the system is turned on, automatic configuration defines the attached local devices to the system for you. The actual configuration takes place if the devices (plugged into an electrical outlet) are turned on and set up before you start the system, or will take place when the device is powered on at a later time.

Planning for Local Device Configuration

Planning for local device configuration involves completing new planning forms that will be used later during device configuration. During device configuration, you will enter the device options you specified, such as device type, name, and so on.

What to Do

STEP 1: Get the appropriate planning form(s) from Appendix F in the *Planning Guide – 9406*. For example, if you are planning to install and configure a diskette unit, get planning Form E1.

- Forms C1 through C6 are for the local work station controller and local work stations.
- Form E1 is for diskette unit and tape unit.

STEP 2: For information on how to change these forms to show new hardware added to the system, see the information on planning for device configuration in the *Planning Guide – 9406*.

STEP 3: File the completed forms in the planning guide.

STEP 4: Are you planning to add remote devices?

- If you are adding remote devices, go to "Task 6.2 Planning for Remote Device Configuration" on page 6-4 in this chapter.
- If not, you have completed this task. Decide which task to complete next.

Task 6.2 Planning for Remote Device Configuration

Complete this task if you are planning for remote device configuration. The remote work station controllers you can plan for are:

- 5294
- 5394
- 5251 Model 12

Remote work station communications planning is done for work stations that attach to a remote work station controller, such as a 5294. The 5294 is linked to your system through a data communications line.

Planning for remote device configuration involves communications lines, remote work station controllers, and remote display stations and printers. It also involves completing new planning forms that will be used later during remote device configuration.

What to Do

STEP 1: Get the correct planning form(s) from Appendix F in the *Planning Guide – 9406*.

- Form C4 for the 5294
- Form C5 for the 5394
- Form C6 for the 5251 Model 12

STEP 2: Complete "Task 6.4 Gathering Remote Configuration Information" in the *Planning Guide – 9406*.

STEP 3: When you have completed the task in the *Planning Guide – 9406*, you should have the following for each new communications line.

1. One completed planning form (either C4 or C5)
2. Information for the remote site:
   - Information about your system, such as:
     - Host site name
     - Telephone number
     - Mailing address
   - Work station controller address (address assigned to the remote work station controller)
   - A copy of the completed planning form(s) for each line to a remote site
3. A common carrier for the communications line
4. How to establish communications
   - Telephone number for establishing connection
   - Procedure for connecting the line
   - What programs need to be running
   - Procedures for disconnecting the line

STEP 4: You have completed this task. Go to the next chapter in this guide.

Chapter 7. Planning Considerations for Order Delivery

This chapter provides information to ensure all the last minute planning is complete.

When ordered items are being installed, you will need to decide when and for how long to turn off the system. You might need to consider using another system for a brief time until the upgrade has been completed. In addition, when the ordered items arrive, ensure the order is complete and ready to install.

The following task overview shows the individual planning tasks in this chapter.

TASK OVERVIEW

Task 7.1 Planning to Turn Off the System

Complete this task if you are adding a rack, rack devices, or data communications and cannot afford to be without your system for any length of time during the upgrade. If you are adding only adding work stations, you will not need to turn off the system. Go to "Task 7.3 Previewing the Installation" on page 7-4 in this chapter.

Scheduling Consideration

You need to schedule the upgrade and determine the length of time your system will be inoperative. The length of time will vary depending on what new items are being added to the system.

What to Do

STEP 1: Call your service representative and ask for an estimate for how long your system will be inoperative. Remember the time given is an estimate and will vary depending on the individual upgrade situation. If the estimated length of time is more than you can afford to be without your system, you should discuss the data processing alternatives with your service representative.

STEP 2: Also consider the time needed for reloading the licensed programs (if necessary) and configuring the system for new devices and data communications lines. Your system operator, programmer, or service representative might help provide this additional time.

STEP 3: Add up the estimated time totals. If the time estimated is longer than your business can afford to be without an operating system, you need to consider using your recovery and availability plan. Go to "Task 7.2 Using the Recovery and Availability Plan" on page 7-3 in this chapter. If the time estimated is satisfactory, go to "Task 7.3 Previewing the Installation" on page 7-4 in this chapter.

Task 7.2 Using the Recovery and Availability Plan

Complete this task if you are unfamiliar with the system recovery and availability plan (described in the *Planning Guide – 9406*) and need to continue processing data during the upgrade.

You can make arrangements with another company or department in your business that has a system like yours to do data processing during the time your system is turned off.

What to Do

STEP 1: Select an approximate date for the upgrade.

When all the ordered items arrive, select the final date and time for the upgrade. Review the date and time with those people involved (such as your marketing representative) to avoid schedule conflicts.

STEP 2: Consider the following additional planning steps if you decided to use another system during the upgrade:

- Decide how you want to transport the data and programs to the other system.
- Write instructions for the other system operator on how to process the work.
- Make an agreement on when (what time of the day) to run your programs.
- Consider security (placement of printer and printed output).
- Inform your personnel of the planned upgrade and the need for temporary work disruption.

STEP 3: You have completed this task. Go to "Task 7.3 Previewing the Installation" on page 7-4.

Task 7.3 Previewing the Installation

Complete this task to ensure your business will avoid any last minute surprises.

This task briefly explains what happens before and during the system upgrade, what your service representative may need to do, and what you are expected to do. This task also provides a checklist to complete before calling your service representative.

Receiving the New Hardware

When the hardware arrives, have it delivered, while still crated or boxed, to the room where it will be installed. However, if the hardware is a rack, IBM recommends the rack be unpacked in the receiving area (because of the height of the shipping carton) for countries other than the United States and Canada.

CAUTION:
Your IBM equipment is heavy. NEVER ATTEMPT TO LIFT OR MOVE any system equipment by yourself.

Unpacking the Ordered Items

Once the items have been delivered, you are ready to unpack.

What to Do

STEP 1: Open and unpack the box.

DANGER

> **Some devices might be shipped in containers that are banded with straps. Safety glasses should be worn when removing the straps from the shipping container.**

STEP 2: Consider if you want to keep the the instructions for unpacking and packing each device. If so, store these in an envelope or binder near the planning guide.

Should you decide to move your system, the packing material can be reused to protect the equipment from damage during relocation.

Verifying the Ordered Items

Once the order has been unpacked, compare the unpacked items to the order placed with the supplier. If the ordered items and the shipped items do not match, answer the following questions before calling your marketing representative.

1. Was the original order placed as one order?
2. Did your business office order from different suppliers?
3. Is part of the order still in the delivery area?

Your marketing representative will advise you to wait or go ahead with the planned upgrade.

Before Installing the Ordered Items

Deciding If to Call

You should call your service representative when one or more of the following situations is true for your business. You are planning to have installed on your system one or more of the following:

- Logic card
- Rack
- Rack device, such as:
  - Disk unit
  - Tape unit
  - Diskette unit
- Electronic customer support
- Data communications line

You may install the following items:

- Display stations
- Printers
- Modems

Although installing these devices is your responsibility, it can be done by your representative for a fee. Also, some maintenance contracts include free installation services for the new hardware. Check your maintenance contract for these details.

Deciding When to Call

Call your service representative when you have completed the following checklist and are confident all planning is complete:

STEP 1: Review the following tasks in the *Planning Guide – 9406*, then return here to the next step.

- Preparing the work station cables
- Reviewing cable installation considerations
- Labeling the cables
- Arranging for delivery of ordered items
- Planning to have the ordered items installed
- Reviewing considerations for moving the system
- Reviewing unpacking considerations

STEP 2: In the planning guide and using this guide, you should have:

- Prepared the work station cables, read the cable installation considerations, and labeled the cables (if you are adding work stations to the system).
- Made arrangements for hardware delivery and movement within the business, if you are installing a rack, rack devices, or work stations.
- Understood what is unpacked and by whom.

Task 7.4 Completing the Checklist

The upgrade planning checklist provides a convenient way for you to review the tasks you need to complete before your ordered items arrive. Which tasks you complete depends on what you are adding to the system and your individual upgrade situation.

- ☐ Understand the purpose of system planning (Task 1.1)
- ☐ Understand what you are responsible for (Task 1.2)
- ☐ Provide system information (Task 2.1)
- ☐ Place the upgrade order (Task 3.1)
- ☐ Place an order for additional licensed programs (Task 3.2)
- ☐ Place the supplies order (Task 3.3)
- ☐ Place the publications order (Task 3.4)
- ☐ Review the general planning activities (Task 3.6)
- ☐ Plan for the hardware (Tasks 4.1 through 4.6)

  Rack
  Rack devices
  Logic cards
  Work stations
  Work station cables and attachments

- ☐ Plan for data communications (Tasks 5.1 through 5.3)

  Electronic customer support
  Additional data communications
  IBM Token-Ring Network

- ☐ Plan for device configuration (Tasks 6.1 and 6.2)
- ☐ Plan for order delivery (Tasks 7.1 through 7.3)

Appendix A. List of Contacts

This is a list of contacts that you will need, or may need, to work with as you plan for your system. Work with your marketing representative to list this information and keep it current.

Contact	Name	Phone Number or Electronic Support
Marketing representative		
Systems Engineer *or* technical support contact		
Marketing Assistance Program		
IBM National Service Division (for equipment service)		toll-free
(for programs service)		toll-free
IBM DIRECT (United States only) (for supplies, class enrollment, and educational information)		toll-free
IBM Marketing Support Center (free for a period of time after installation of new systems shipped from IBM) *or* National Marketing Technical Support Center		electronic support (in some countries)
Customer Center (for local seminar/training information)		
Guided Learning Center (for local seminar/training information)		
Common Carrier (if you have data communications, this is usually a telephone company)		

Contact	Name	Phone Number or Electronic Support
Electrician		
Cable Manufacturer		
Personal Computer contacts		
Applications Assistance		

Appendix B. System Information Form A1

Form A1 has four parts and is used to record new items added to your system. Form A1, if used to record new items, should be kept with the *Planning Guide – 9406*.

A1 System Information Form (Part 1)

Rack Power Specify Code ______

Rack	Description	Device Type	Model Number	Serial Number	Location

Main storage size (4-96MB) ______

Disk storage size (400MB-27.36GB) ______

Total number of work stations supported ______

Licensed programs

Cabling Devices	Quantity	Notes
5208 Link Protocol Converter		
5209 Link Protocol Converter		
ROLMbridge 5250 Link Protocol Converter		
5299-3 Terminal Multiconnector		

Note: You may copy as necessary.

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A1

System Information Form (Part 2)
LOCAL Work Stations

(✓) Display Station	Printer	Machine Number	Model Number	Serial Number	Location	(✓) No Cable-Through Capability	Cabling Type	Cable Length	Input Voltage
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
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☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								

Note: You may copy as necessary.

RSLX028-8

A1

System Information Form (Part 3)
REMOTE Work Stations

Display Station (✓)	Printer	Machine Number	Model Number	Serial Number	Location	(✓) No Cable-Through Capability	Cabling Type	Cable Length	Input Voltage
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
☐	☐								
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☐	☐								
☐	☐								
☐	☐								

Note: You may copy as necessary.

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A1 System Information Form (Part 4)

Communications and the 5251–12; 5294–1, K01, S01; and 5394–1, 2 Remote Work Station Controllers

Line Type	Connection Type	Controller Type	Quantity	Modem	Physical Interface	Line Speed

Other Data Communications

Line Type	Connection Type	Controller Type	Device Type or Quantity	Modem	Physical Interface	Line Speed

Note: You may copy as necessary.

RSLX067-2

Glossary

batch. Pertaining to a group of jobs to be run on a computer sequentially with the same program with little or no operator action. Contrast with *interactive.*

binary synchronous communications (BSC). A data communications line protocol that uses a standard set of transmission control characters and control character sequences to send binary-coded data over a communications line. Contrast with *synchronous data link control (SDLC).*

command. A statement used to request a function of the system. A command consists of the command name, which identifies the requested function, and parameters.

command line. The blank line on a display where commands, option numbers, or selections can be entered.

common carrier. In data communications, any government-regulated company that provides communications services to the general public. Examples are: the government-regulated telephone and telegraph companies in the United States, the General Post Office in the United Kingdom, the Bundespost in Germany, and Nippon Telephone and Telegraph Public Corporation (NTT) in Japan.

communications adapter. A part that electrically or physically connects a computer or device to a data communications network.

communications line. The physical link (such as a wire or a telephone circuit) that connects one or more work stations to a communications control unit, or connects one control unit to another. Contrast with *data link.*

compatibility. Ability to work in the system or ability to work with other devices or programs.

compatible. Pertaining to the characteristics that make devices, programs, products, or systems work together.

configuration. The arrangement of devices and programs that make up a data processing system. See also *system configuration.*

configure. (1) To describe the interconnected arrangement of the devices, programs, communications, and optional features installed on a system. (2) To describe setting up auxiliary storage pools and check sum protection.

confirmation of delivery. The automatic notification to the sender of a message, memo, or document when the message, memo, or document is received. Confirmation of delivery must be requested by the sender.

console. A display station from which an operator can control and observe the system operation.

control station. The controlling or primary computer on a multipoint line. The control station controls the sending and receiving of data.

control storage. Storage in the computer that contains the programs used to control input and output operations and the use of main storage. Contrast with *main storage.*

controller. A device that coordinates and controls the operation of one or more input/output devices (such as work stations) and synchronizes the operation of such devices with the operation of the system as a whole.

cursor. A movable symbol, often a blinking or solid block of light, that tells the user where to type, or identifies a choice to select.

data base. The collection of all data files stored in the system.

data link. The physical connection (communications lines, modems, controllers, work stations, and other communications equipment), and the rules (protocols) for sending and receiving data between two or more locations in a data network. Contrast with *communications line.*

default. A value automatically supplied or assumed by the system or program.

device name. The symbolic name of an individual device.

disk. (1) A storage media made of one or more flat, circular sheets with magnetic surfaces on which information can be stored. (2) A direct-access storage medium with magnetically recorded data.

disk operating system. An operating system for computer systems that uses disks and diskettes for auxiliary storage of programs and data.

display station. A device that includes a keyboard from which an operator can send information to the system and a display screen on which an operator can see the information sent to or the information received from the system.

display station pass-through. A communications function that allows a user to sign on to one system (either an AS/400 system, System/38, or System/36) from another system (either an AS/400 system, System/38, or

System/36) and use that system's programs and data. Sometimes called pass-through.

emulation. Imitation of one system by another.

external procedure. A procedure that is not contained within a block. Contrast with *internal procedure.*

file. A generic term for the object type that refers to a data base file, a device file, or a set of related records treated as a unit. The system-recognized identifier for the object type is *FILE.

fixed disk. A nonremovable storage medium used for storage of data on a personal computer.

folder. A directory for documents. A folder is used to group related documents and to find documents by name. The system-recognized identifier for the object type is *FLR. Compare with *library.*

generic. Relating to, or characteristic of, a whole group or class.

host system. The primary or controlling computer in a communications network. See also *control station.*

initial program load (IPL). The process that loads the system programs from the system auxiliary storage, checks the system hardware, and prepares the system for user operations.

interactive. Pertaining to the exchange of information between people and a computer. Contrast with *batch.*

internal procedure. A procedure that is contained within a block. Contrast with *external procedure.*

IPL. See *initial program load (IPL).*

keyword functions. The result of processing DDS keywords in a record format specified on an operation. See also *operation.*

library. (1) An object on disk that serves as a directory to other objects. A library groups related objects, and allows the user to find objects by name. Compare with *folder.* (2) The set of publications for a system.

licensed program. An IBM-written program that performs functions related to processing user data.

line. The physical path in data transmission.

line description. The description of a communications line to the system. The system-recognized identifier is *LIND.

line number. The number that precedes a line of information in a printout or on a display. This number can be up to five digits long, from 00001 through 99999. See also *sequence number.*

link protocol. The rules for sending and receiving data at the link level.

link protocol converter. A device that changes one type of link-level protocol information to another type of link-level protocol information for processing.

local. Pertaining to a device, system, or file that is connected directly or read directly from your system, without the use of a communications line. Contrast with *remote.*

local area network (LAN). The physical connection that allows transfer of information among devices located on the same premises.

local work station. A work station that is connected directly to system without need for data transmission facilities. Contrast with *remote work station.*

logic. The systematized interconnection of digital switching functions, circuits, or devices.

magnetic tape unit. A device for reading or writing data from or on magnetic tape.

main storage. The part of the processing unit where programs are run. Contrast with *control storage.*

medium. The disk, tape, or diskette used to store information in a save or restore operation.

megabyte. A unit of measure for storage capacity; 1 megabyte = 1 048 576 bytes.

microcode. An instruction or group of instructions located in storage or device controllers that controls the operation of a device or controller. Microcode cannot be called by the control program or an application program.

modem. A device (modulator-demodulator) that converts data from the computer to a signal that can be sent over a communications line, and converts the communications signal to data for the computer.

multipoint. In data communications, pertains to a network that allows two or more stations to communicate with a single system on one line.

multipoint line. A line or circuit connecting several stations. Contrast with *point-to-point line.*

network. A collection of data processing products connected by communications lines for exchanging information between stations.

nonswitched line. A connection between computers or devices that does not have to be made by dialing.

object. A named unit that consists of a set of characteristics that describe the object and, in some cases, data. An object is anything that exists in and occupies space in storage and on which operations can be performed, such as programs, files, libraries, and folders.

offline. Pertaining to the operation of a functional unit that is not under the continual control of the system. Contrast with *online*.

online. Pertaining to the operation of a functional unit that is under the continual control of the system. Contrast with *offline*.

online information. Information, read on the display screen, that explains displays, messages, and programs.

operating system. A collection of system programs that control the overall operation of a computer system.

operation. The result of processing statements in a high-level language. See also *keyword functions*.

parameter. (1) A value supplied to a command or program that either is used as input or controls the actions of the command or program. (2) (COBOL) A variable or a constant that is used to pass values between calling and called programs.

pass-through. See *display station pass-through*.

point-to-point [adj]. Pertaining to data transmission between two locations without use of any intermediate terminal or computer.

point-to-point line. A communications line that connects a single remote station to a computer. Contrast with *multipoint line*.

port. (1) System hardware where the I/O devices are attached. (2) An access point (for example, a logical unit) for data entry or exit. (3) A functional unit of a node through which data can enter or leave a data network. (4) In data communication, that part of a data processor that is dedicated to a single data channel for the purpose of receiving data from or transmitting data to one or more external, remote devices.

power down. An AS/400 command to turn the power off and bring an orderly end to system operation.

primary system. The system that controls the data link in a communications session.

printer ID. The identification code assigned to printers.

processing. The action of performing operations and calculations on data.

processing unit. The part of the system that performs instructions and contains main storage.

program temporary fix (PTF). A temporary solution to, or bypass of, a defect in a current release of a licensed program.

protocol. A set of rules controlling the communication and transfer of data between two or more devices in a communications system.

public data network. A communication common carrier network that provides data communication services over switched or nonswitched lines.

query. A request to select and copy from a file or files one or more records based on defined conditions. For example, a request for a list of all customers in a customer master file, whose balance is greater than $1,000.

rack configuration list. A list of all of the equipment within the rack.

record. A collection of related data or words, treated as a unit; such as one name, address, and telephone number.

remote. Pertaining to a device, system, or file that is connected to another device, system, or file through a communications line. Contrast with *local*.

remote device. A device whose controller is connected to an AS/400 system by a communications line.

remote work station. A work station that is connected to the system by data communications. Contrast with *local work station*.

resource. Any part of the system required by a job or task, including main storage, devices, the processing unit, programs, files, libraries, and folders.

restore. To copy data from tape, diskette, or a save file to auxiliary storage. Contrast with *save*.

save. To copy specific objects or libraries by transferring them from main or auxiliary storage to magnetic media such as tape, diskettes, or a save file. Contrast with *restore*.

SDLC. See *synchronous data link control (SDLC)*.

secure. Controlling who can use and to what extent an object can be used by controlling the authority given to the user.

sequence number. (1) The number of a record that identifies the record within the source member. (2) A field in a journal entry that contains a number assigned by the system. This number is initially 1 and is increased by 1 until the journal is changed or the sequence number is reset by the user.

synchronous data link control (SDLC). (1) A form of communications line control that uses commands to

control the transfer of data over a communications line. (2) A communications discipline conforming to subsets of the Advanced Data Communication Control Procedures (ADCCP) of the American National Standards Institute (ANSI) and High-Level Data Link Control (HDLC) of the International Standards Organization (ISO), for transferring synchronous, code-transparent, serial-by-bit information over a communications line. Transmission exchanges may be duplex or half-duplex over switched or nonswitched lines. The configuration of the connection may be point-to-point, multipoint, or loop. Compare with *binary synchronous communications (BSC)*.

system configuration. A process that specifies the machines, devices, and programs that form a particular data processing system.

system security. A system function that restricts the use of files, libraries, folders, and devices to certain users.

system time. The elapsed time from the point where the system was started to the current time. If the system time is changed to the local time when the system is started, the current system time is the local time of day.

system unit. A part of a computer that contains the processing unit, and may contain devices such as disk units and tape units.

system value. Control information for the operation of certain parts of the system. A user can change the system value to define his working environment. System date and library list are examples of system values.

tape cartridge. A case containing a reel of magnetic tape that can be put into a tape unit without stringing the tape between reels.

tape file. A device file created by the user to support a tape device.

tape reel. A round device on which magnetic tape is wound.

telecommunications [n]. Communications by electronic means using common carriers.

turnaround time. The time required to reverse the direction from sending to receiving or from receiving to sending on a communications line.

twinaxial cable. A cable made of two twisted wires inside a shield.

uninterruptible power supply. A source of power from a battery installed between the commercial power and the system that keeps the system running, if a commercial power failure occurs, until it can complete an orderly end to system processing.

user ID. See *user identification (user ID)*.

user identification (user ID). (1) The name used to associate the user profile with a user when a user signs on the system. See also *user profile name*. (2) The first part of a two-part network name used in the system distribution directory and in the office applications to uniquely identify a user. The network name is usually the same as the user profile name, but does not need to be.

user profile name. The name or code that the system associates with a user when he or she signs on the system. Also known as user ID.

vary off. To make a device, controller, or line unavailable for its normal, intended use.

vary on. To make a device, controller, or line available for its normal, intended use.

work station. A device used to transmit information to or receive information from a computer; for example, a display station or printer.

work station address. (1) A number used in a configuration file to identify a work station attached to a computer port. (2) The address to which the switches on a work station are set, or the internal address assumed by the system, if no address is specified.

work station controller. An I/O controller card in the card enclosure that provides the direct connection of local work stations to the system.

X.21. In data communications, a specification of the CCITT that defines the connection of data terminal equipment to an X.21 (public data) network.

X.25. In data communications, a specification of the CCITT that defines the interface to an X.25 (packet-switching) network.

3180 display station. Display station that uses the 5250 data stream.

3270 display emulation. The function of the operating system 3270 device emulation that converts 3270 DSC data streams intended for a 3278 display station into data streams that can be recognized by a display station attached to the AS/400 system.

5250 display station. Any display station from the IBM 5250 Information Display System or the 5290 Display System; or the 3180 display station. A 3270 display station is not a 5250 display station.

5290 display station. Any display station from the 5290 Display System.

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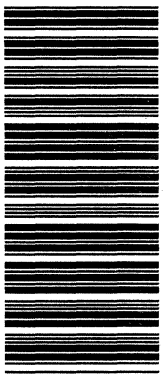

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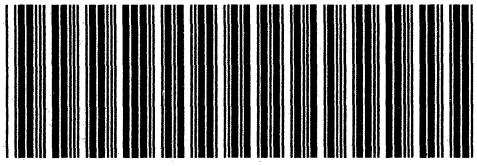

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