

# AS/400 CISC System Builder

**Version 1 Release 2 - Version 3 Release 6**

The AS/400 authoritative source for all  
CISC models

Facts and rules for legacy  
AS/400 features

Product numbers, feature codes,  
and prerequisites at a glance





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## Preface

This *AS/400 CISC System Builder* offers you a comprehensive guide to the AS/400 CISC hardware and associated software marketed by IBM representatives since its announcement in 1988. This redpaper document is a comprehensive guide for configuration and installation support for CISC systems. It offers detailed information on the AS/400 system announced prior to June 1995.

Processor architectures are differentiated between CISC and RISC technologies. CISC processors are those models announced prior to June 1995. CISC models include the 9404 B, C, D, E, F processors, the 9406 B, D, E, F processors, and the Model 20S, 30S, 300, 310, and 320 families of processors. RISC processors are those announced June 1995 and later. They include the 9401 Model 150, the 9402 236 and 436 systems, the 9406 4xx, 5xx, 6xx, 7xx, 8xx, Sx0, 170, 270, SB1, and all later processors. Detailed information on CISC models is described in this redpaper. In the parent document, *AS/400e System Builder*, SG24-2155-05, RISC information is represented.

This *AS/400 CISC System Builder* is divided into these major sections: Models 6xx, 9401 Pxx, 9404 Models B, C, D, E and F, 9402 Models 236 and 436, 9402 20S and 436 Packages, 9404 Models B, C, D, E, and F, 9406 Models B, C, D, E, and F, External Storage Devices, a table of feature code and CCIN numbers, and the software supporting the CISC systems.

Within each model chapter, the features are separated into categories as Processors, Power and Packaging, Main Storage, Workstation Controllers, Communications, LANS and ATM, Disk Units, Internal Tape and Diskette Units, and Magnetic Media Controllers. Features are listed in numerical sequence within each category. Duplicate feature descriptions may not be repeated in every section.

Each chargeable feature is included in the *AS/400e System Builder*, as well as some non-chargeable features. The features that are listed in this book may not be available in all countries.

To access the *AS/400e System Builder*, SG24-2155, on RISC models, enter the search parameter SG24-2155 on the Web site: <http://www.redbooks.ibm.com>

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## The Production of this Redpaper

This publication is the result of several past residencies at the ITSO in Rochester, Minnesota. Many experts contributed to the production of each of the Builders as the foundation of this redpaper.

In the interest of maintaining the size of the RISC-based Builder, the CISC information was separated into this redpaper when the May 2000 edition of the *AS/400e System Builder* was produced. The CISC processors have been out-of-support for quite some time.

If you have suggestions or comments on the content, layout, and usefulness of this book, we welcome your input. We are eager to do whatever is necessary to continue to improve this publication so that it is as useful as possible for those who need it most.



Susan Powers, Senior I/T Specialist  
ITSO, Rochester, MN

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## Comments Welcome

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## Chapter 1. 9401 and 9402 Models

The 9401 P02, P12, P22, P03, and 10S, and 9402 2FS systems with applicable features and software are described in this chapter.

### 1.1 9401 P02 Overview

	Minimum	Maximum
Relative System Performance (RAMP-C) See Note	2.5	2.5
Main Storage (MB)	8	16
Disk Storage (GB)	1.03	2.06
Twinaxial Devices	1	7
Communications Lines	1	1
Optional External Tapes	1	1
<b>Note:</b> The Relative System Performance ratios are estimated based on AS/400 environment RAMP-C workload. A measurement of 1.0 is set as the base to represent the performance of a 9404 B10 with 16MB of main storage and 945MB of disk. The ratios shown are estimated at maximum configurations running at 70% utilization. Relative system performance ratios may not be realized in all environments.		

#### 1.1.1 9401 P02 Optional Features

	Feature	Maximum
#0031	<b>Low Speed Modem (2400 bps)</b>	1
#0032	<b>High Speed Modem (9600 bps)</b>	1
#0061	<b>Soft Cover Carrying Case</b>	1
#2853	<b>System to Device Cable (0.66M)</b> For 3450 and 7207 Tape Units	1
#2855	<b>System to Device Cable (1.2M)</b> For 3450 Tape Unit	1
#3117	<b>8MB Main Storage</b> Provides an additional 8 MB of Main Storage, which attaches to the main processor card to take the system to its maximum capacity of 16 MB.	1
#6601	<b>1.03GB Disk Unit</b> Provides an additional 1.03 GB of disk storage, which when added to the base 1.03 GB disk, takes the system to its maximum capacity of 2.06 GB.	1

### 1.1.2 Tape Drives

The following table shows the two external tape units supported by the 9401 P02.

	Tape Unit	Maximum
<b>3450 001</b>	<b>1.2 GB ¼-inch Cartridge Tape</b> Provides full interchange of data with ¼-inch cartridge tapes on other models of the AS/400 system using the appropriate media and density.	1
<b>7207 012</b>	<b>1.2 GB ¼-inch Cartridge Tape</b> Provides full interchange of data with ¼-inch cartridge tapes on other models of the AS/400 system using the appropriate media and density.	1

## 1.2 9401 P12 and P22 Overview

The 9401 P12 includes a P02 with 8 MB of Main Storage, 1.03 GB of disk, and a 3450 ¼-inch Cartridge Tape and attachment cable.

The 9401 P22 includes a P02 with 16 MB of Main Storage, 2.06 GB of disk, and a 3450 ¼-inch Cartridge Tape and attachment cable.

Refer to 1.1, “9401 P02 Overview” on page 1, for information on the P02.

## 1.3 9401 P03 and 10S Overview

Model	P03								10S
Package	T01 (#0101)	T02 (#0102)	T03 (#0108)	T11 (#0124)	T12 (#0144)	L01 (#0103)	L02 (#0104)	L03 (#0109)	S01 (#0105)
Relative System Performance (CPW) (See Note 1)	7.3	9.6	16.8	9.6	7.3	7.3	9.6	16.8	5.5/17.1*
Relative System Performance (RAMP-C) (See Note 2)	2.5	3.3	3.9	3.3	2.5	2.5	3.3	3.9	1.9/5.9*
Main Storage (MB)	8-24	8-40	8-56	8-40	8-24	8-24	8-40	8-56	8-56
Disk Storage (MB)	1.03-299	1.96-3.93	1.96-3.93	1.03-2.99	1.96-3.93	1.03-2.99	1.96-3.93	1.96-3.93	1.96-3.93
Communication Lines	1	2	2	2	1	2†	2†	2†	2†
LAN Adapters	-	-	-	-	-	1	1	1	1
Maximum Workstations (One minimum)									
Twinaxial	7	14	14	14	7	-	-	-	-
LAN Attached	-	-	-	-	-	16	16	16	16
840MB ¼-inch Mini Cartridge Tape									
Internal	1	1	1	1	1	1	1	1	1
External	1	1	1	1	1	1	1	1	1
3450 ¼-inch Cartridge	1	1	1	1	1	1	1	1	1



<b>Note 1:</b>	Commercial Processing Workload (CPW) is used to measure the performance of all AS/400 processors announced from September 1996 onward. The CPW value is measured on maximum configurations. The type and number of disk devices, the number of workstation controllers, the amount of memory, the system model, other factors, and the application being run determine what performance is achievable.
<b>Note 2:</b>	Relative System Performance ratios are estimated based on AS/400 environment RAMP-C workload. A measurement of 1.0 is set as the base to represent the performance of a 9404 B10 with 16 MB of Main Storage and 945 MB of disk storage. The ratios shown are estimated at maximum configurations running at 70% utilization. Relative system performance ratios may not be realized in all environments.
*	First figure = Interactive Environment; Second figure = Client/Server Environment
†	On LAN and Server Packages, one line must be used to provide system console support.

A tape is included in each package. Either one of the 840 MB QIC Mini-tapes is selected by feature. If no tape feature is specified, a 3450-001 ½-inch Cartridge is shipped. This applies in EMEA only.

Some of the preceding packages are not announced in all countries. This particularly applies to the T11, T12, and 10S/S01 packages.

### 1.3.1 AS/400 Advanced Entry 9401 P03, 10S, and 9402 2FS Optional Features

	Features	Maximum
#0031	<b>Low Speed Modem</b> Offers a 2400 bps external modem for ECS attachment or other communications.	1
#0032	<b>High Speed Modem</b> Offers a 9600 bps external modem for ECS attachment or other communications.	1
#0059	<b>Transition Data Link</b> Offers a twinaxial cable data path between IBM Systems. Available on T01, T02, T03, T11, and T12 packages only.	1
#0061	<b>Soft Cover Carrying Case</b> Used for hand carrying the 9401. Includes a section for carrying a ThinkPad.	-
#0062	<b>Hard Cover Carrying Case</b> Provides more protection than #0061 and should be used when checking in the 9401 as luggage. It does not include a section for carrying a ThinkPad.	-
#0106	<b>Performance Enhancement for T01</b> Upgrades a T01 or T12 processor to a T02, also giving an additional communications line and up to 14 twinaxial addresses. Requires FULIC feature #9054 if an 840 MB QIC Mini is installed.	-
#0107	<b>Performance Enhancement for L01</b> Upgrades an L01 Processor to a L02. Requires FULIC feature #9504 if an 840 MB QIC Mini is installed.	-
#0111	<b>T01 Performance Enhancement II</b> Upgrades a T01 or T12 processor to a T03, also giving an additional communications line and up to 14 twinaxial addresses. Requires FULIC feature #9054 if an 840 MB QIC Mini is installed.*	-
#0112	<b>L01 Performance Enhancement II</b> Upgrades an L01 processor to an L03. Requires FULIC feature #9504 if an 840 MB QIC Mini is installed.*	-
#0113	<b>T02 Performance Enhancement</b> Upgrades a T02 or T11 processor to a T03. Requires FULIC feature #9504 in an 840 MB QIC Mini is installed.*	-
#0118	<b>L02 Performance Enhancement</b> Upgrades an L02 processor to an L03. Requires FULIC feature #9504 if an 840 MB QIC Mini is installed.*	-
#3117	<b>8 MB Main Storage</b> Plugs onto processor card on P03 packages T01, T02, T11, T12, L01, and L02 only.	2
#3118	<b>16 MB Main Storage</b> Plugs onto processor card on P03 packages T01, T02, T11, T12, L01, and L02 only.	2

#3159	<b>8 MB Main Storage</b> Plugs onto processor card on P03 packages T03 and L03 only.	2
#3160	<b>16 MB Main Storage</b> Plugs onto processor card on P03 packages T03 and L03 and on 10S only. On T03 and L03, these memory features are supported only if at least two of them are #3160.	3
#6335	<b>840 MB ¼-inch Cartridge Mini Tape Unit (Internal)</b> Can be used for save/restore, alternate IPL and data interchange with other AS/400 models.	1
#6365	<b>840 MB ¼-inch Cartridge Mini Tape Unit (External)</b> Can be used for save/restore, alternate IPL and data interchange with other AS/400 models.	1
#6606	<b>Additional 1.96 GB Disk Unit</b> Cannot be installed on a 9401 with #6335.	1
#6652	<b>Additional 1.03 GB Disk Unit</b> Cannot be installed on a 9401 with #6335.	1
#9174	<b>Base Ethernet Adapter</b> Available on 10S or LAN Packages. This feature also requires Ethernet Cable feature #9025.	1
#9175	<b>Base Token Ring Adapter</b> Available on 10S or LAN Packages. This feature also requires Token Ring Cable feature #9024.	1
UPS	<b>Uninterruptible Power Supply</b> Provided instead of internal battery backup to minimize impact from power fluctuations and outages. A number of different models of the 9910 UPS are available. Specific models vary by country.	1
<b>Note:</b> * Existing feature memory needs replacing with this upgrade.		

### 1.3.2 AS/400 Advanced Entry 9401 P03, 10S, and 9402 2FS Software V3R2

The following table shows the AS/400 software products that are most commonly ordered. It is not intended to be a definitive list of all the AS/400 software products available.

Product Name	Product Identifier	AS/400 Equivalent Product Identifier
Enhanced BasePack/400 for Advanced Entry-- Refresh	5604-753	5763-SS1 (Subset) 5763-QU1 5763-XA1 (Subset) 5763-PW1
Application Development Toolset for IBM AS/40 Advanced Entry (Base Set)	5604-677	5763-PW1
Appl. Devel. Toolset Client Server for IBM AS/400 Advanced Entry	5604-678	5763-CL3
RPG/400 for IBM AS/400 Advanced Entry	5604-679	5763-RG1
OfficeVision for IBM AS/400 Advanced Entry	5604-680	5763-WP1
Language Dictionaries for IBM AS/400 Advanced Entry	5604-681	5763-DCT
SQL/400 for IBM AS/400 Advanced Entry	5604-682	5763-ST1
Performance Tools for IBM AS/400 Advanced Entry	5604-683	5763-PT1
COBOL for IBM AS/400 Advanced Entry	5604-684	5763-CB1
Communications Utilities for IBM AS/400 Advanced Entry	5604-685	5763-CM1
Point Of Sale for IBM AS/400 Advanced Entry	5604-686	5763-CF1
LANPack/400 for Advanced Entry File Server (Plus all of 5604-753 BasePack)	5604-740	5763-XZ1 5763-APK
ADTS Full Set for Advanced Entry	5604-741	5763-PW1
ADTS Base Set plus Application Dictionary Services Feature Application development Manager Feature		
ILE C/400 for Advanced Entry	5604-742	5763-CX2
Application Program Driver/400 for Advanced Entry	5604-743	5763-PD1
Advanced Function Print Utilities for Advanced Entry	5604-745	5763-AF1

<b>Note 1:</b>	These products are available under IBM Conditions of Use terms, for use on 9401 P03 and 10S, and 9402 2FS Advanced Entry Systems in EMEA only.
<b>Note 2:</b>	5604-753 Enhanced BasePack/400 Advanced Entry—Refresh is available to existing 9401 P03 and 10S, and 9402 2FS customers to upgrade from V3R1 to V3R2.
<b>Note 3:</b>	9401 P03 and 10S are delivered with BasePack (OS/400, Client Access and Query) preloaded. No separate product identifier is required for these products.
<b>Note 4:</b>	9402 2FS is delivered with BasePack (OS/400, Client Access/400 and Query/400) and LANPack (LANServer/400 plus ten LAN Requestors) preloaded. No separate product identifier is required for these products.



## Chapter 2. 9402 Advanced 36 Models

The 9402 Y10, 236, and 436 models are described in this chapter. The 436 models are RISC and are included in this chapter since they are closely related to the 236 models.

### 2.1 9402 Y10 Overview

	9402 Y10
Main Storage (MB)	1-2
Disk Storage (MB)	160-760
Diskette Unit	1
Tape (¼-inch Cartridge)	0-1
Communications Lines	0-3
LAN Adapters	0-1

### 2.2 9402 Y10 Diagram

Main Memory 1 — 2 MB		
5.25 inch Diskette Drive		
Base Workstation Controller [Workstation Expansion]		
Base Disk: 160MB	Disk Slot 2: [160MB/200MB]	
Disk Slot 3: [160MB/200MB]	Disk Slot 4: [160MB/200MB]	
120MB Cartridge Tape Drive		
Battery Backup		
Basic Communications Adapter		
[Processor Expansion Feature]	[LAN]	
	[Expanded Comms Adapter]	1 V.35 Interface or 2 EIA Interfaces

[ ] Items in brackets are optional

## 2.3 9402 Y10 Optional Features

	Features	Maximum
#1102	<b>Battery Power Unit</b> Provides a minimum of five minutes backup power	1
#2585	<b>2 MB Main Storage</b> Replaces 1MB memory to increase Main Memory to maximum of 2 MB	1
#2531	<b>Additional 160 MB DASD</b> Up to three additional 160MB drives can be ordered, giving a maximum total capacity of 640MB	3
#2532	<b>Additional 200 MB DASD</b> Up to three additional 200MB drives can be ordered, giving a maximum total capacity of 760MB	3
#2602	<b>Processor Expansion</b> Expansion board IOP. Prerequisite for #2627, #2630, #2634 and #2645	1
#2675	<b>Cartridge Tape Unit (120 MB)</b> A ¼-inch tape cartridge that may be used for save/restore and data exchange. Operates in dedicated system mode. Required for upgrade to C06.	1
#2616	<b>Basic Communications Adapter</b> Provides a single EIA Line for SDLC, BSC or ASYNC communications, operating up to 9600 bps.	1
#2627	<b>Expanded Communications Adapter</b> Provides base support for SDLC, BSC, ASYNC, or X.25 communications and for attachment of #2630 or #2645. Prerequisite: Processor Expansion Feature (#2602)	1
#2630	<b>EIA Line Interface</b> Attaches to Expanded Communications Adapter (#2627) to provide a single line for SDLC, BSC, ASYNC or X.25. Line speeds up to 19,200 bps using SDLC, up to 9600 bps using BSC, or ASYNC, up to 9600 bps in full duplex mode is supported for X.25. Mutually exclusive with V.35 interface (#2645). Prerequisite: #2627 Expanded Communications Adapter and #2602 Processor Expansion Feature.	2
#2634	<b>16/4 Mbps Token Ring Network Adapter</b> Provides a single attachment to IBM Token Ring Network at either 4 Mbps or 16 Mbps, which the user can change by means of a hardware switch. Prerequisite: #2602 Processor Expansion Feature	1
#2645	<b>V.35 High Speed Line Interface</b> Attaches to Expanded Communications Adapter to provide a single SDLC line operating up to 64,000 bps in half-duplex mode. Mutually exclusive with #2630 EIA line interface. Prerequisite: #2627 Expanded Communications Adapter and #2602 Processor Expansion Feature	1

## 2.4 9402 Y10 Model Operating System Software and Program Products

Program Number	Program Name
5727-SS6	System Support Program (SSP)
#9087	SSP for 9402 Model Y10
#6233	SSP - Release 5.1 Value-Added Software Package
#6234	SSP - Release 6.0 Value-Added Software Package
#6333	SSP - Tape Support
#6326	SSP - Communications Feature
#6327	SSP - 3270 Emulations Feature
#6328	SSP - Multiple Sessions Remote Job Entry
#6329	SSP - Communication and System Management
#6330	SSP - Distributed Data Management
#6332	SSP - Display Station Pass-Through
#6334	SSP - Advanced Peer-to-Peer Networking*
#6496	SSP - Interactive Communication Facility: Base Support
#6498	SSP - Interactive Communication Facility: Upline Support
#6497	SSP - Interactive Communication Facility: Finance Support
#6499	SSP - Software Distribution
5727-AP6	Advanced Printer Function (APF/36)
5727-AS6	Assembler and Macroprocessor
5727-BA6	Basic
5727-BG6	Business Graphics Utility (BGU/36)
5727-CB6	COBOL
5727-DS6	Development Support Utility (DSU)
5727-EP6	3278 Device Emulation through a PC
5727-F06	Fortran IV
5727-LC6	LAN Communications
5727-RG6	RPG II
5727-QU6	Query/36
5727-UT6	Utilities (SEU, SDA, DFU, WSU)
5727-WP6	Display Write/36
5727-WP7	Display Write/36 Dictionaries (UK/US Language #6067)
5727-WP8	Personal Services/36
5727-WS6	PC Support/36 (1-15 users)
#6142	Expansion Feature (16-30 users)
#6470	Expansion Feature II (31-100 users)
#6181	Work Station Feature (IBM TR attached PCs workstation support)
5799-BXT	Programmer and Productivity Aid (POP)

## 2.5 9402 Models 236 and 436 Overview

Processor Feature	236	436 SSP Only			436 SSP and OS/400		
	#2100	#2102	#2104	#2106	#2102	#2104	#2106
Relative System Performance (RAMP-C) (See Note 1)	1.0	1.0	1.3	2.4	4.8	6.1	8.7
Relative System Performance (CPW V3R6) (See Note 2)	†	†	†	†	14.4	18.3	24.5
Relative System Performance (CPW V3R7/V4R1/V4R2/V4R3; See Note 2)	†	†	†	†	16.3	20.6	27.4
Main Storage (MB)	32-96	32-224	32-224	32-256	64-224	64-224	64-256
Disk Storage (GB)							
SSP (See Note 3)	1.03-4.1	1.03-4.12			-		
V3R6	2	-			1.96-236		
V3R7 or higher	-	-			1.96-50.3		
Maximum Feature Card Slots	6	6			6		
Communication Lines	1-8	1-8			1-20		
LAN Adapters (See Note 4)	0-2	0-2			0-2		
ATM Adapters	0	0			0-1		
Maximum Workstation Controllers	2	4			7		
Twinaxial	2	4			7		
ASCII	0	0			6		
LocalTalk	0	0			0		
Maximum Workstations (1 minimum)							
Twinaxial	80	160			280		
ASCII	0	0			108		
LocalTalk	0	0			0		
¼-inch/8mm Cartridge Tape (Internal)	1	1			1-4		
½-inch Tape							
9348	0-2	0-2			0-4		
34xx/35xx	0	0			0-2		
8mm Cartridge Tape (External)	0	0			0-4		
Tape Libraries	0	0			0-2		
Optical Libraries	0	0			0-4		
Diskette Drives (5 ¼-inch or 8-inch)	0-1	0-1			0-2		
Fax Adapters	0	0			0-6		
Cryptographic Processors	0	0			0-1		
System I/O Buses	1	1			1		

<b>Note 1:</b>	The relative system performance for SSP is estimated based on running the System/36 version of RAMP-C with a maximum configured Model 236 equaling 1.0. For OS/400, the relative system performance ratios are estimated based on AS/400 environment RAMP-C workload, with a 9404 Model B10 with 16 MB of Main Storage and 945 MB of disk equaling 1.0. The ratios shown were estimated at maximum configurations running at 70% utilization. Relative system performance ratios may not be realized in all environments. The SSP relative performance ratings cannot be compared to the OS/400 relative performance ratings.
<b>Note 2:</b>	CPW is the Commercial Processing Workload that is used to measure the performance of AS/400 processors. The CPW value is measured on maximum configurations. The type and number of disk devices, the number of workstation controllers, the amount of memory, the system model, other factors, and the application being run determine what performance is achievable. From the September 1996 announcement, all new AS/400 processors have CPW performance measurements only.
<b>Note 3:</b>	Additional DASD may be configured on the 436 with SSP only to support RAID and mirroring.
<b>Note 4:</b>	The Model 436 supports three LAN adapters if running Firewall for AS/400 (5769-FW1).
†	Commercial Processing Workload (CPW) figures are not available for systems running only SSP.



## 2.6 9402 Model 236 and 436 System Unit with #7117 Integrated Expansion Unit

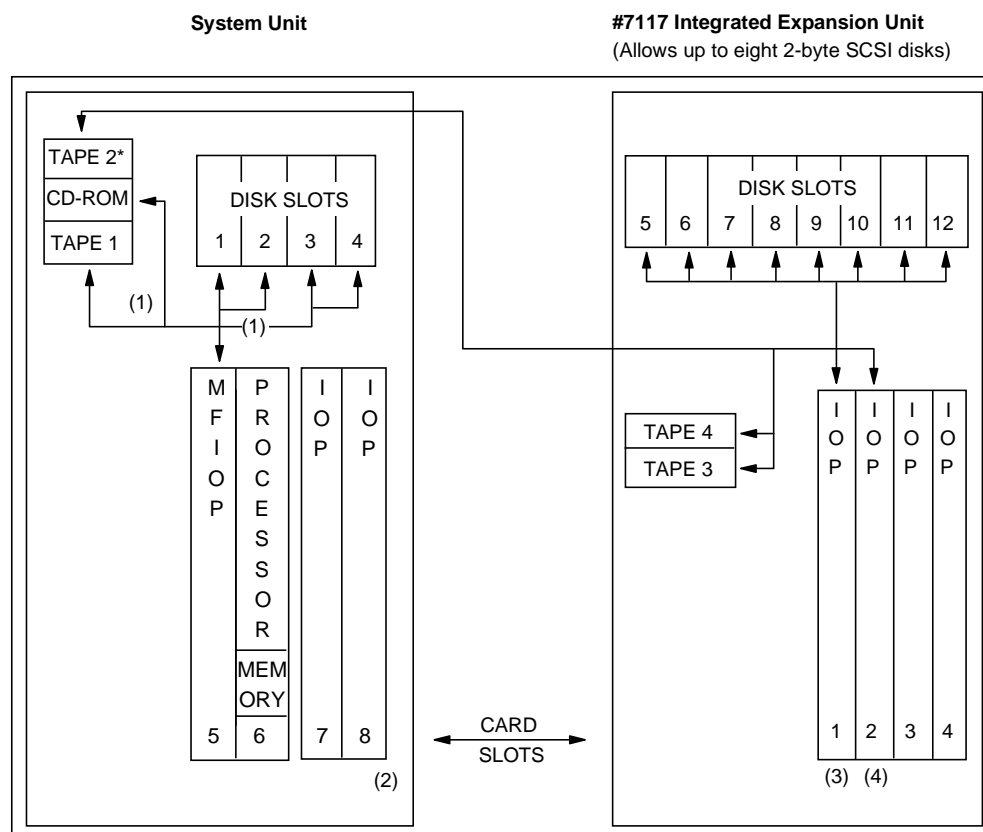


Diagram as viewed from the rear of Models 236 and 436

### Notes:

1. Power Feature #5135/#9135 is required when the processor is #2106; if #7117/#9117 is not installed and there are three or four disk units; if #7117/#9117 is installed and there are three or four disks but no #6522 or #6523; if there are 11 or 12 disk units; and if there are four internal tape units. It is also required for certain high-power combinations of feature cards (when more than one of the following cards is in a #7108/#9108: #2617, #2618, #2620, #2628, #2663, #2666, or if an Integrated PC Server (formerly FSIOP) is in a #7108/#9108).
2. The #7108/#9108 Expansion Card Cage provides two feature I/O card slots.
3. Feature I/O card slot 1 is occupied by the disk controller if disks are installed in the #7117/#9117 Integrated Expansion Unit.
4. Feature I/O card slot 2 is occupied by #2624 if tape drives are installed in the #7117/#9117 Integrated Expansion Unit.
5. Main storage cards are installed on the processor and require one slot each. The Model 236 has two slots available in addition to the base 32 MB. The Model 436 #2102 and #2104 have three slots available in addition to the base 32 MB. The Model 436 #2106 has four available slots.

## 2.7 9402 Advanced 36 Model 236

PROCESSOR		#2100 System Unit	#7117 Expansion Unit
#2100	<b>1.0 RSP (RAMP-C, SSP) Model 236 Processor. Base Memory 32 MB</b>	1	-
POWER AND PACKAGING		#2100 System Unit	#7117 Expansion Unit
#0097	<b>Package A - Entry</b>	1	-
#0098	<b>Package B - Growth</b>	1	-
#0099	<b>Package C - Large</b>	1	1
#5135 #9135	<b>Expansion Unit Feature Power</b> Supports third and fourth disk units in the System Unit with #9319. The #9135 is the standard power feature for package #0099. Card slots used: None	1	-
#7108 #9108	<b>Expansion Card Cage</b> This feature provides two feature I/O card slots in the system unit. The #9108 is the standard expansion feature for package #0098 and #0099. Card slots used: None	1	-
#7117 #9117	<b>Integrated Expansion Unit</b> This unit can be added to the Model 236. It provides space for adding four additional Feature Card Slots. The #9117 is the standard expansion unit for package #0099.	1	-
#9000	<b>Panel Keylock Feature</b> Provides a keylock to secure the door covering the system panel. Included in all packages. Card slots used: None	1	-
#9242	<b>Base 175W Power Supply</b>	1	-
#9244	<b>320W Power Supply</b> This feature is required to support the #7117/#9117 Integrated Expansion Unit.	1	-
#9319	<b>Standard Disk Unit Package</b> Provides four positions in the system unit for two-byte SCSI disk units. No one-byte SCSI disk units are supported. Included in all packages. Card Slots used: None	1	-
UPS	<b>Uninterruptible Power Supply</b> Provided instead of internal battery backup to minimize impact from power fluctuations and outages. A number of different models of the 9910 UPS are available. Specific models vary by country.	1	-
MAIN STORAGE		#2100 System Unit	#7117 Expansion Unit
#3172 #4172	<b>32 MB Main Storage</b> Provides an additional 32 MB of memory. The #4172 is the plant install feature.	2	-
#9272	<b>32 MB Base Main Storage</b> Provides base 32 MB of memory and cannot be removed. Package #0099 contains two #9172.	2	-
WORKSTATION CONTROLLERS		#2100 System Unit	#7117 Expansion Unit
#6050 #9050	<b>Enhanced Twinaxial Workstation Controller</b> One eight-port workstation attachment is provided to support 40 5250-type displays or printers. The #9050 is the standard WSC feature for package #0099. Requires one I/O card slot.	2	1

#9172	<b>Standard MFIOPTwinaxial Workstation Controller</b> Provides the MFIOPT that includes a two-port twinaxial workstation controller for attaching up to 14 5250-type devices. The number can be increased to 40 by adding #9480.	1	-
#9480	<b>Eight-Port Twinaxial Expansion</b> This base system specify provides eight twinaxial ports with a 6m attachment cable providing support for up to 40 5250-type devices.	1	-
<b>COMMUNICATIONS</b>		<b>#2100 System Unit</b>	<b>#7117 Expansion Unit</b>
#2609 #8609 #9609	<b>EIA 232/V.24 Two-Line Adapter</b> Connects to MFIOPT and #2623/#9623 to support two communications lines using ASYNC, BSC, SDLC or X.25 protocol. Requires no I/O card slots. Two cables must be specified: #9023 EIA 232/V.24 20-ft (6m) enhanced cable #9835 EIA 232/V.24 50-ft (15m) enhanced cable #9022 EIA 232/V.24 20-ft (6m) cable #9836 EIA 232/V.24 50-ft (15m) cable  #9609 is the standard two-line adapter feature on the #0098 and #0099 packages. The #8609 may be substituted for a net price to replace the base one-line V.24 adapter on the MFIOPT on the #0097 package.	8	8
#2610	<b>X.21 Two-Line Adapter</b> Connects to MFIOPT and #2623 to support two communications lines using X.21 or X.25 networks. Requires no I/O card slots. Two cables must be specified: #9021 X.21 20-ft (6m) cable #9839 X.21 50-ft (15m) cable	8	8
#2613	<b>V.35 One-Line Adapter</b> Connects to MFIOPT and #2623 supporting one V.35 line using either BSC, SDLC, or X.25 protocols. Requires no I/O card slots. One cable must be specified: #9020 V.35 20-ft (6m) cable #9838 V.35 50-ft (15m) cable	1	1
#2623 #9623	<b>Six-Line Communications Controller</b> This controller provides basic control and common circuits for up to six lines. The #9623 is the standard communications controller feature for package #0099. Requires one I/O card slot.	1	1
#9612	<b>EIA 232/V.24 One-Line Adapter</b> This adapter connects to the MFIOPT to support one communications line using ASYNC, BSC, SDLC or X.25 protocol. Requires no I/O card slots. One cable must be specified: #9023 EIA 232/V.24 20-ft (6m) enhanced cable #9835 EIA 232/V.24 50-ft (15m) enhanced cable	1	-
<b>LANS</b>		<b>#2100 System Unit</b>	<b>#7117 Expansion Unit</b>
#2626	<b>16/4 Mbps Token Ring Adapter/A</b> Provides a single attachment to either a 16 or 4 Mbps Token Ring network. Requires one I/O card slot.	2	2
<b>DISK UNITS</b>		<b>#2100 System Unit</b>	<b>#7117 Expansion Unit</b>
#4652 #6652 #9652	<b>1.03 GB Two-Byte SCSI Disk Unit</b> This feature provides a 3 1/2-inch single disk unit with 1.03 GB capacity for additional disk storage in the System Unit. Requires #9319 Standard Disk Unit Package. Occupies one disk unit position in the #9319. The #4652 is the plant-installed version of #6652, and #9652 is the standard package feature. Card Slots used: None	4	-

#6606	<b>1.96 GB Additional Two-Byte SCSI Disk Unit</b> This feature provides a 3 ½-inch single disk unit with 1.96 GB capacity for additional disk storage in the System Unit. Requires #9319 Standard Disk Unit Package. Occupies one disk unit position in the #9319.	3	-
<b>INTERNAL TAPE UNIT AND DISKETTE UNIT</b>		<b>#2100 System Unit</b>	<b>#7117 Expansion Unit</b>
#6135	<b>5 ¼-Inch Diskette Drive (excluding Japan)</b> External 5¼-inch Diskette Drive	1	-
#9380	<b>2.5 GB ¼-Inch Cartridge Tape Unit</b> This is included in the base system unit and provides save/restore compatibility with all supported AS/400 ¼-inch Cartridge Units. Maximum: One	1	-
<b>MAGNETIC MEDIA CONTROLLERS</b>		<b>#2100 System Unit</b>	<b>#7117 Expansion Unit</b>
#2621	<b>Removable Media Device Attachment</b> Required to support up to two 9348 Model 002 ½-inch reel tape units and provides the hardware data compression feature. Card Slots used: One Maximum: One	1	1
#6146	<b>Diskette Adapter</b> This feature provides support for one of the following external diskette types: 9331-011 8-inch Diskette Unit 9331-012 5 ¼-inch Diskette Unit #6135 5 ¼-inch Diskette Unit (excluding Japan)  The #6146 attaches through the MFIO. If both adapter slots on the MFIO are occupied by communications adapters, one must be removed for the #6146. The removed adapter should be placed in either #2623 or #9623. Card Slots used: None Maximum: One	1	1

## 2.8 9402 Advanced System Model 436

For details on Model 436 packages, see Chapter 4, “AS/400 9402 Model Packages” on page 47.

<b>PROCESSORS</b>		<b>System Unit</b>	<b>#7117 Expansion Unit</b>
#2102	<b>1.0 RSP (RAMP-C, SSP), 4.8 RSP (RAMP-C, OS/400), 14.4 RSP (CPW,V3R6), 16.3 RSP (CPW, V3R7, V4R1, V4R2, and V4R3) Processor. Base Memory 32 MB</b> 64 MB required to run OS/400.	1	-
#2104	<b>1.3 RSP (RAMP-C, SSP), 6.1 RSP (RAMP-C, OS/400), 18.3 RSP (CPW, V3R6) 20.6 RSP (CPW, V3R7, V4R1, V4R2, and V4R3) Processor. Base Memory 32 MB</b> 64 MB required to run OS/400.	1	-
#2106	<b>2.4 RSP (RAMP-C, SSP), 8.7 RSP (RAMP-C, OS/400), 24.5 RSP (CPW, V3R6) 27.4 RSP (CPW, V3R7, V4R1, V4R2, and V4R3) Processor. Base Memory 64 MB.</b>	1	-
<b>POWER AND PACKAGING</b>		<b>System Unit</b>	<b>#7117 Expansion Unit</b>
#0114	<b>Package A - Entry</b>	1	-
#0115	<b>Package B - Growth</b>	1	-
#0116	<b>Package C - Large</b>	1	-

#5135 #9135	<b>Feature Power Supply</b> Feature Power Supply (#9135/#5135) is required in the following circumstances: <ul style="list-style-type: none"> <li>• If Processor #2106 is selected.</li> <li>• If the #9117/#7117 Expansion Unit is selected and there are three or four disks installed.</li> <li>• If the #9117/#7117 Expansion Unit is selected and there are three or four disks installed, but no #6522/#6523 disk controllers.</li> <li>• If there are five Internal Tape or CD-ROM units.</li> <li>• If the #9117/#7117 Expansion Unit is selected and there are 11 or 12 disk units.</li> <li>• If there is more than one of the #2618 FDDI Adapter, #2620 Full Cryptographic Processor, #2628 Limited Cryptographic Processor, #2666 High Speed Communications Adapter, or #2663 I/O Attachment Processor in the #9108/#7108 Expansion Card Cage.</li> <li>• If there is a #6516 to #6519 or #6526 to #6529 Integrated PC Server (formerly known as FS1OP) in the #9108/#7108 Expansion Card Cage.</li> <li>• If there is more than one #2617 Ethernet Adapter in the #9108/#7108 Expansion Card Cage.</li> </ul> The #9135/#5135 Feature Power Supply replaces #9242 Base 175W Power Supply. The #0115 9402 Model 436 Growth and #0116 Large packages include a Feature Power Supply as standard. In this case, it is denoted by #9135. Card slots used: None Maximum: One	1	-
#7108 #9108	<b>Expansion Card Cage</b> This feature provides two feature I/O card slots in the system unit. The #5135/#9135 Expansion Unit Feature Power may be required in high power feature combinations. See the #5135/#9135 above. The #9108 is the standard Expansion Card Cage for the #0115 Growth package and #0116 Large package. Card Slots used: None Maximum: One	1	-
#7117 #9117	<b>Integrated Expansion Unit</b> This unit can be added to the Model 436. It provides space for adding: <ul style="list-style-type: none"> <li>Four additional Feature Cards</li> <li>Up to two internal tape units (¼ inch or 8mm)</li> <li>Up to eight two-byte SCSI disk units</li> </ul> The #9117 is the standard Expansion Unit for #0116 Large package. Maximum: One	1	-
#9000	<b>Panel Keylock Feature</b> Provides a keylock to secure the door covering the system panel. Included in all packages. Card slots used: None Maximum: One	1	-
#9116	<b>Two Book Cage High Performance Card Enabler</b> This feature provides a special backplane and cabling which is required for the following high performance cards when installed in a #7108/#9108: <ul style="list-style-type: none"> <li>• #2620 Cryptographic Processor</li> <li>• #2628 Cryptographic Processor - Limited</li> <li>• #2629 LAN/WAN/Workstation IOP</li> <li>• #2810 LAN/WAN IOP</li> <li>• #6501 Tape/Disk Device Controller</li> <li>• #6534 Magnetic Media Controller</li> <li>• #6616 Integrated PC Server</li> <li>• #6516/7/8/9 Integrated PC Server</li> <li>• #6526/7/8/9 Integrated PC Server</li> <li>• #2663 I/O Attachment Processor</li> </ul> Card slots used: None Maximum: One	1	-
#9242	<b>Base Power Supply</b> Base 175-watt power supply for systems without feature #5135/#9135.	1	-
#9244	<b>320-watt Power Supply</b> Base 320-watt power supply for the #7117 or #9117.	1	-

#9319	<b>Standard Disk Unit Package</b> Provides four positions in the system unit for two-byte SCSI disk units. No one-byte SCSI disk units are supported. Included in all packages. Card Slots used: None Maximum: One	1	-
UPS	<b>Uninterruptible Power Supply</b> Provided instead of internal battery backup to minimize impact from power fluctuations and outages. A number of different models of the 9910 UPS are available. Specific models vary by country.		
<b>MAIN STORAGE</b>		<b>System Unit</b>	<b>#7117 Expansion Unit</b>
#3110 #8210 #9110	<b>64 MB Main Storage</b> Plugs directly onto the CPU. The #2102 and #2104 processors support two additional memory features. The #2106 supports four memory features in total. Memory cards must be installed in pairs on the #2106 processor.	2/4	-
#3172 #4172	<b>32 MB Main Storage</b> Plugs directly onto the CPU. Supported for upgrades to Model 436 only. The #2102 and #2104 processors support two additional memory features. The #2106 supports four memory features in total. Memory cards must be installed in pairs on the #2106 processor.	2/4	-
#3182 #9182	<b>32 MB Main Storage</b> Plugs directly onto the CPU. Supported for upgrades to Model 436 only. The #2102 and #2104 processors support two additional memory features. The #2106 supports four memory features in total. Memory cards must be installed in pairs on the #2106 processor.	2/4	-
<b>WORKSTATION CONTROLLERS</b>		<b>System Unit</b>	<b>#7117 Expansion Unit</b>
#6050 #9050	<b>Enhanced Twinaxial Workstation Controller</b> One eight-port workstation attachment is provided to support 40 5250-type displays or printers. One #9050 is included with #0116 Large package. Requires one I/O card slot.	2	4
#6141	<b>ASCII Workstation Controller</b> This six-port workstation controller and workstation adapter supports up to six ASCII devices. Requires one I/O card slot and OS/400.	2	4
#6142	<b>ASCII 12-Port Workstation Attachment</b> The attachment plugs into the ASCII Workstation Controller #6141 providing an additional 12 ports. 18 ASCII devices can now be supported. One #6142 can be attached per #6141 or #9171. Requires no I/O card slot and OS/400.	2	4
#6148 #9480	<b>Eight-Port Twinaxial Expansion</b> This replaces the two twinaxial ports on the base system with a 6m attachment cable providing eight twinaxial ports supporting up to 40 5250-type devices. The #9480 is included in all packages.	1	-
#9172	<b>MFIO/Twinaxial Workstation Controller</b> Provides the MFIO that includes a two-port twinaxial workstation controller for attaching up to 14 5250-type devices. This number can be increased to 40 by adding #6148/#9480.	1	-
<b>COMMUNICATIONS</b>		<b>System Unit</b>	<b>#7117 Expansion Unit</b>
#2605	<b>ISDN Basic Rate Adapter</b> Connects to MFIO and #2623 to support one communications line connecting to an ISDN network. Each adapter supports two 64 Kbps B channels and one 16 Kbps D channel. ISDN lines are full duplex. Requires no I/O card slots and OS/400.  <b>Note:</b> This adapter cannot be attached to the #2623 that also attaches V.24, X.21, or V.35 adapters.	2	2

#2609/ #9609	<b>EIA 232/V.24 Two-Line Adapter</b> Connects to MFIOF and #2623 to support two communications lines using ASYNC, BSC, SDLC, or X.25 protocol. Requires no I/O card slots. Two cables must be specified: #9023 EIA 232/V.24 enhanced cable 20-ft (6m) #9835 EIA 232/V.24 enhanced cable 50-ft (15m) #9022 EIA 232/V.24 cable 20-ft (6m) #9836 EIA 232/V.24 cable 50-ft (15m)  One #9609 is included with Growth Package (#0115) and the Large Package (#0116).	10	10
#2610	<b>X.21 Two-Line Adapter</b> Connects to MFIOF and #2623 to support two communications lines using X.21 or X.25 networks. Requires no I/O card slots Two cables must be specified: #9021 X.21 cable 20-ft (6m) #9839 X.21 cable 50-ft (15m)	10	10
#2612 #9612	<b>EIA 232/V.24 One-Line Adapter</b> This adapter connects to the MFIOF and Six-Line Communications Controller (#2623) to support one communications line using ASYNC, BSC, SDLC or X.25 protocol. One #9612 is included with the #0114 Entry Package. Requires no I/O card slot. One cable must be specified. See cable features for the #2609.	8	12
#2613	<b>V.35 One-Line Adapter</b> Connects to MFIOF and #2623 supporting one V.35 line using either BSC, SDLC, or X.25 protocols. Requires no I/O card slots. One cable must be specified: #9020 V.35 cable 20-ft (6m) #9838 V.35 cable 50-ft (15m)	4	4
#2614	<b>X.21 One-Line Adapter</b> Connects to MFIOF and the #2623 to attach one communications line to an X.21 or X.25 network. Requires no I/O card slots. One cable must be specified. See cable features for the #2610.	8	12
#2620	<b>Full Cryptographic Processor</b> This feature provides full cryptographic support for encrypting and decrypting data. This feature consists of an I/O processor card and cable to attach an optional 4754-001. Distribution of this feature is restricted by US Government export regulations. In countries outside the USA and Canada, it may be marketed only to financial institutions and subsidiaries of US companies. Requires one I/O card slot and OS/400. May require #5135/#9135 Power Supply. See the #5135/#9135.	1	1
#2623 #9623	<b>Six-Line Communications Controller</b> This controller provides basic control and common circuits for up to six lines. Requires one I/O card slot. One #9623 is included with the #0116 Large Package.	2	4
#2628	<b>Limited Cryptographic Processor</b> Provides same functions as #2620 except for Data Encryption Standard based data scrambling. Instead it uses Commercial Data Masking Facility for data scrambling. Supports attachment of optional 4754-L01. Does not require US Customs clearance. Requires one I/O card slot and OS/400. May require #5135/#9135 Power Supply.	1	1
#2664	<b>Integrated Fax Adapter</b> Provides the AS/400 system with two ports capable of transmission and receipt of facsimile data to or from a Group 3 capable Fax, another AS/400 system with an integrated Fax adapter, or PCs with an appropriately programmed Fax adapter. Requires OS/400.	2	4

#2666	<b>High-Speed Communications Adapter</b> Provides the AS/400 with one communications port capable of high speed communication over public or private Frame Relay networks or point-to-point non-switched SDLC lines. Speeds up to 2.048 Mbps are possible. Requires one I/O card slot and OS/400. One of the following cables must be specified: #9879 6m V.35 cable #9880 24m V.35 cable * #9882 6m V.36/EIA 449 cable #9883 24m V.36/EIA 449 cable ** #9884 45m V.36/EIA 449 cable ** #9885 6m X.21 cable  * Line speeds up to 64 Kbps only ** Use of these longer cables require that the attaching Data Communications Equipment (DCE) support the V.36 transmitter signal element timing Data Terminal Equipment (DTE) source signal.  <b>Note:</b> The #2666 is classified as a communications line for purpose of maximum communications lines per model. May require #5135/#9135 Power Supply.	2	2
<b>LANs/ATM</b>		<b>System Unit</b>	<b>#7117 Expansion Unit</b>
#2617	<b>Ethernet/IEEE 802.3 Adapter/HP</b> Provides a single attachment to one Carrier Sense Multiple Access/Collision Detect Local Area Network. The customer must procure the Attachment Unit Interface (AUI) cable, which connects between the adapter and the Ethernet/IEEE 802.3 transceiver. Requires one I/O card slot and OS/400. May require #5135/#9135 Power Supply.	2	2
#2618	<b>Fiber Distributed Data Interface Adapter</b> Provides one interface to connect an AS/400 system to an FDDI LAN, which complies with ANSI X3T9.5 and ISO 9314 standards. Requires one I/O card slot and OS/400. Cables: Requires FDDI jumper cables, which must be ordered separately. May require #5135/#9135 Power Supply.	1	1
#2619	<b>16/4 Mbps Token Ring Adapter/HP</b> Provides a single attachment to a 16 Mbps or 4 Mbps IBM Token Ring Network. It consists of an adapter card, Internal Code, which supplies IEEE 802.5 Media Access Control and Logical Link Control functions, and an external 2.5m cable. Requires one I/O card slot and OS/400.	2	2
#2626	<b>16/4 Mbps Token Ring Adapter/A</b> Provides a single attachment to either a 16 or 4 Mbps Token Ring network. Requires one I/O card slot.	2	2
#2663	<b>I/O Attachment Processor</b> Provides the communication hardware base for the AS/400 Wireless LAN Adapter (#2668). The #2663 and #2668 are integrated in a single hardware package to operate as a unit. Prerequisite for feature #2668. Also requires OS/400. Shares one I/O card slot with #2668. May require #5135/#9135 Power Supply.	2	2
#2665	<b>Shielded Twisted-Pair Distributed Data Interface Adapter</b> Provides one interface to connect an AS/400 to an FDDI LAN which is constructed of IBM Cabling System Type 1, 2, 6, or 9 shielded twisted pair wiring. Requires one I/O card slot and OS/400. Cables: The SDDI adapter requires FDDI copper jumper cables, which must be ordered separately.	1	1



#2668	<b>Wireless LAN Adapter:</b> Provides wireless connectivity from AS/400 systems to workstations or other systems connected to a wireless LAN network. The #2668 comes with an antenna and a cable for connecting the antenna to the adapter. One of the following antenna cables must be specified: #9814 20-ft antenna cable #9815 50-ft antenna cable  One of the following antenna must be specified: #9890 Omni-directional antenna #9891 Hemispherical antenna #9892 Directional antenna  Prerequisite #2663 and OS/400.	2	2
#2819	<b>PCI 34 Mbps Coax E3 ATM IOA</b> Provides attachment into an Asynchronous Transfer Mode (ATM) network using Coax cabling and the E3 interface. The #2819 is typically used where 34 Mbps speed is required over distances of less than 1000 meters. Technical specifications and industry standards supported are available at the ATM Forum Web site: <a href="http://www.atmforum.com">http://www.atmforum.com</a> Card slots required: One (with #2810) Prerequisite: #2810	1	1
#6149	<b>16/4 Mbps Token Ring IOA</b> Provides a single attachment to a 16 Mbps or a 4 Mbps Token Ring Network. It consists of an IOA card, internal code which supplies IEEE 802.5 Media Access Control (MAC) and IEEE 802.2 Logical Link Control (LLC) and an external 8-ft (2.4m) Token Ring cable. Alternatively a twisted pair cable for attachment to the RJ45 connector on the IOA can be ordered separately. The #6149 can operate in full or half-duplex mode. Requires OS/400 V3R7 in #6616. Card slots required: None Prerequisite: One #2629 or #6616 slot Maximum: Two	-	-
#6181	<b>Ethernet/IEEE 802.3 IOA</b> Provides a single attachment to one Carrier Sense Multiple Access/Collision Detect Local Area Network. Consists of an adapter card and internal code which supplies Ethernet Version 2 and IEEE 802.3 Media Access Control (MAC) plus 802.2 Logical Link Control (LLC) functions. Has an RJ45 connector and a 15 pin D-shall connector for attachment of customer supplied cabling. AUI Ethernet or RJ45 twisted pair cable must be ordered separately. The #6181 can operate in full or half-duplex mode. Requires OS/400 V3R7 in #6616. Card slots required: None Prerequisite: One #2629 or #6616 slot Maximum: Two	-	-
#6516 #6517 #6518 #6519 #6526 #6527 #6528 #6529	<b>Integrated PC Server (formerly known as FSIOP)</b> The Integrated PC Server connects to the AS/400 system to provide high performance file serving to PCs attached through Token Ring or Ethernet networks. The IOP consists of an INTEL 80486 66 MHZ processor and onboard Main Storage (16 to 64 MB). Requires OS/400. The following initial order configurations can be field upgraded using #6509 and #6520: 16 MB One-Port Integrated PC Server 32 MB One-Port Integrated PC Server 48 MB One-Port Integrated PC Server 64 MB One-Port Integrated PC Server 16 MB Two-Port Integrated PC Server 32 MB Two-Port Integrated PC Server 48 MB Two-Port Integrated PC Server 64 MB Two-Port Integrated PC Server The following cables need to be specified depending on the network attaching into a Integrated PC Server Port: #9024 Token Ring Cable (2.44m) #9025 Ethernet Cable (3m AUI)  The Integrated PC Server requires two contiguous card slots. Requires #5135/#9135 Power Supply if installed in #7108/#9108.	1 1 1 1 1 1 1 1 1	2 2 2 2 1 1 1 1 1
#6509	<b>Additional 16 MB for Integrated PC Server</b> The #6509 is used for expanding the memory of an installed Integrated PC Server. One to three #6509s may be installed per Integrated PC Server up to a maximum of 64 MB.	6	6

#6250	<b>Upgrade One-Port Integrated PC Server to Two-Port Integrated PC Server</b> #6520 cannot be used with a two-port Integrated PC Server.	1	1
#6616	<b>Integrated PC Server</b>	1	2
<b>DISK UNITS</b>		<b>System Unit</b>	<b>#7117 Expansion Unit</b>
#6605 #9605	<b>1.03 GB Two-Byte Disk Unit</b> This feature provides a 3 ½-inch disk unit with 1.03 GB capacity for additional DASD storage in the System Unit or #7117 Expansion Unit. The #6605 requires the #9319 Standard Disk Unit Package if installed in the System Unit. Occupies one disk unit position in either the #9319 or #7117 Expansion Unit. The #0114 Entry Package includes one #9605 as standard.	3	8
#6606	<b>1.96 GB Additional Two-Byte SCSI Disk Unit</b> This feature provides a 3 ½-inch single disk unit with 1.96 GB capacity for additional DASD storage in the System Unit or #7117 Expansion Unit. Requires #9319 Standard Disk Unit Package if installed in the System Unit. Occupies one disk unit position in either the #9319 or #7117 Expansion Unit.	3	8
#6607 #7607	<b>4.19 GB Additional Two-Byte SCSI Disk Unit</b> This feature provides a 3 ½-inch single disk unit with 4.19 GB capacity for additional DASD storage in the System Unit or #7117 Expansion Unit. Requires #9319 Standard Disk Unit Package if installed in the System Unit. Occupies one disk unit position in either the #9319 or #7117 Expansion Unit. The #7607 is replacement base disk that can be ordered only when upgrading a 236 to a 436 #2102.	4	8
#6652 #4652	<b>1.03 GB Additional Two-Byte SCSI Disk Unit</b> This feature provides a 3 ½-inch single disk unit with 1.03 GB capacity for additional DASD storage in System Unit or #7117 Expansion Unit. Requires the #9319 Standard Disk Unit Package. Occupies one disk unit position in either #9319 or #7117 Expansion Unit. The #4652 is the plant-installed version of the #6652.	3	8
#9606	<b>1.96 GB Standard Two-Byte SCSI Disk Unit</b> This feature provides a 3 ½-inch single disk unit with 1.96 GB capacity as a base disk unit. Growth Package (#0115) contains one #9606 as standard. The #0116 Large Package includes two #9606s.	2	-
<b>INTERNAL TAPE UNITS, DISKETTE UNIT AND CD-ROM</b>		<b>System Unit</b>	<b>#7117 Expansion Unit</b>
#6135	<b>5 ¼-Inch Diskette Drive (excluding Japan)</b> External 5 ¼-inch Diskette Drive. Prerequisite: #6146 Maximum: One	1	1
#6335	<b>840 MB ¼-Inch Cartridge Mini Tape Unit</b> Using the QIC-3040-MC recording format, tape cartridge capacity is 840MB. With hardware data compression, maximum capacity is up to 1.6 GB. Sustained data transfer rate is 300 Kbps. Requires OS/400. Maximum: Three	1	2
#6380 #9380	<b>2.5 GB ¼-Inch Cartridge Tape Unit</b> It provides full interchange of data with all standard and optional ¼-inch cartridge tape units provided on the AS/400 system, using the proper media and density. The packages include a #9380 as standard. Maximum: Four	2	2
#6390	<b>7 GB 8mm Cartridge Tape Unit</b> 8mm Helical Scan tape drive which can be used for save and restore, program distribution, and Alternate IPL. Has a sustained data rate of 500 KB per second. Requires OS/400. Maximum: Three	1	2
#9520	<b>Base CD-ROM</b> Used for program distribution.	1	-

MAGNETIC MEDIA CONTROLLERS		System Unit	#7117 Expansion Unit
#2621	<b>Removable Media Device Attachment</b> Required to support up to two 9348, 7208, 3995, or 9427 devices and provides the hardware data compression feature. If #2621 is to support a 3995, it must be dedicated to it. Card Slots used: One Maximum: Six	2	4
#2624	<b>Storage Device Controller</b> Required to support an internal tape unit in the #7117 Expansion Unit or a second internal tape unit in a system with no #7117 Expansion Unit. This feature can concurrently support a #6146 diskette adapter to attach a second external diskette unit. Requires OS/400. Card Slots used: One Maximum: One	1	1
#2644	<b>3490 Magnetic Tape Attachment Card/HP</b> Provides attachment for all 34xx Tape subsystem models, except 3490-Exx. May also require a #9980 serpentine cable. Requires OS/400. Card Slots used: One Maximum: One	1	1
#6146	<b>Diskette Adapter</b> This feature provides support for one of the following external diskette types: 9331-011 8-inch Diskette Unit 9331-012 5 ¼-inch Diskette Unit #6135 5 ¼-inch Diskette Drive  It can attach to either the MFIOF or the #2624. Card Slots used: None Maximum: Two	2	1
#6501	<b>Tape/Disk Device Controller</b> This feature allows attachment of up to two 3490/35xx tape units. Requires OS/400. Card Slots used: One Maximum: Two	1	1
#6522	<b>High Performance Controller 2 MB Cache (RAID/Mirrored/Unprotected)</b> Provides RAID-5 protection and a 2 MB write-cache for up to eight disk units installed in the #7117 Expansion Unit. A minimum of four disk units are needed for a valid RAID-5 configuration and disk units not supported in the RAID-5 array can still be attached. Mutually exclusive with the #6523. The #7117 is a prerequisite. Card Slots used: One Maximum: One	-	1
#6523	<b>Disk Unit Controller No Cache (Mirrored/Unprotected)</b> Provides attachment for up to eight disk units installed in the #7117 Expansion Unit. Mutually exclusive with #6522. The #7117 is a prerequisite. Card Slots used: One Maximum: One	-	1
#9980	<b>Serpentine Cable</b> Required for attaching all #2644 supported devices (except 3490-Cxx when attached through "internal cables").	1	1

## 2.9 9402 Model 236 to 436 Upgrade

The 9402 Model 236 (#2100 Processor) can be upgraded to the Model 436. Additional processor upgrades are available within the 436 Processors. Both the Model 236 and 436 can upgrade to Model 600 and 620 (Chapter 8, "Upgrades to 940x 6XX Models" on page 85, and Chapter 2, "9402 Advanced 36 Models" on page 7).

The following table shows what ships as a minimum with each processor upgrade.

From Model/ Processor	RSP RAMP SSP	To Model/ Processor	RSP RAMP-C SSP	SSP Perf Increase	New Processor Card	CD ROM	32 MB on Processor Memory	Add'l 32 MB Mem.	2 GB Disk
236/#2100	1.0	436/#2102	1.0	0%					
236/#2100	1.0	436/#2104	1.3	30%					
236/#2100	1.0	436/#2106	2.4	140%					
436/#2102	1.0	436/#2104	1.3	30%					
436/#2102	1.0	436/#2106	2.4	140%					
436/#2104	1.3	436/#2106	2.4	85%					

<b>Note 1:</b>	The relative system performance for SSP is estimated based on running the System/36 version of RAMP-C with a maximum configured Model 236 equaling 1.0. The SSP relative performance ratings cannot be compared to the OS/400 relative performance ratings. Relative system performance ratios may not be realized in all environments.
<b>Note 2:</b>	The upgraded Model 436 can run OS/400 as well as SSP.
<b>Note 3:</b>	The 32 MB of memory included with the #2102 and #2104 processors will replace memory on the removed processor board. The included memory will not result in additional system memory.

Refer to *The AS/400 Advanced 36 Planning and Reference Handbook*, SA21-9656, for guidance on upgrading the AS/400 Advanced 36.

When a 9402 Model 236 or Model 436 is to be upgraded, use CFAS400 or the PC-based Portable Configurator PCAS400 to configure the upgrade. Ordering such an upgrade is complex.

## 2.10 AS/400 Advanced 36 Software Release 7.1

Product Name	Product Identifier	Stack Feature
System Program Order (also known as Software Stack)	5692-AFH	-
System Support Program (SSP) Data Encryption Subroutine	5727-SSP	#1700 #1814
Assembler and Macroprocessor	5727-ASM	#1701
BASIC	5727-BAS	#1702
Business Graphics Utility (BGU/36)	5727-BGU	#1703
COBOL	5727-CBL	#1704
DisplayWrite/36 Dictionaries (English)	5727-DCT	#1817
3278 Device Emulation through a PC	5727-DEM	#1706
Development Support Utility (DSU)	5727-DSU	#1705
DisplayWrite/36	5727-DWT	#1712
FORTRAN IV	5727-FOR	#1707
LAN Communications	5727-LAN	#1708
PC Support/36	5727-PCS	#1715
BasePac/36	5727-PK1	#1716
OfficePac/36	5727-PK2	#1717
Personal Services/36	5727-PSV	#1714
Query/36	5727-QRY	#1709
RPG II	5727-RPG	#1710
Utilities (SEU, SDA, DFU, WSU)	5727-UTL	#1711
Response Time Measurement PRPQ	5799-QFP	#1720
DSNX-ND (Distributed System Node Executive) PRPQ	5799-QFQ	#1719
X.25 Synchronous Autodial PRPQ	5799-QFR	#1718
IPDS Advanced Function Printing PRPQ	5799-QHK	#1721
DOS Client Access for SSP	5799-FRR	-

<b>Note 1:</b>	Release 7.1 supports 9402-236 only.	
<b>Note 2:</b>	All AS/400 Advanced 36 software products ordered is supplied together in a "stack", which has the product identifier 5692-AFH.	
<b>Note 3:</b>	"Stack Feature" means the Licensed Program Component Supply Feature Code for 5692-AFH shown beside the product name.	
<b>Note 4:</b>	A typical order for AS/400: 5692-AFH                      #1700 SSP or plus                      #1716 BasePac #17xx Licensed Programs/PRPQs #18xx Additional Features of Licensed Programs #29xx Primary Language #340x Media Feature	
<b>Note 5:</b>	5727-PK1 BasePac/36 consists of:    System Support Program PC Support/36 Query/36 RPG II Utilities 5727-PK2 OfficePac/36 consists of:    DisplayWrite/36 DisplayWrite/36 Dictionaries Personal Services/36	

## 2.11 AS/400 Advanced 36 Software Release 7.5

Product Name	WDFM	Product Identifier	Stack Feature
System Program Order (also known as Software Stack) V3R6/V3R7	2/2000	5755-AS4	-
System Support Program (SSP) Data Encryption Subroutine	2/2000	5716-SSP	#2300 #2414
Assembler and Macroprocessor	2/2000	5716-ASM	#2301
BASIC	2/2000	5716-BAS	#2302
Business Graphics Utility (BGU/36)	2/2000	5716-BGU	#2303
COBOL	2/2000	5716-CBL	#2304
DisplayWrite/36 Dictionaries (English)	2/2000	5716-DCN	#2417 to #2429
3278 Device Emulation through a PC	2/2000	5716-DEM	#2306
Development Support Utility (DSU)	2/2000	5716-DSU	#2305
DisplayWrite/36	2/2000	5716-DWT	#2312
FORTRAN IV	2/2000	5716-FOR	#2307
PC Support/36	2/2000	5716-PCS	#2315
BasePac/36	2/2000	5716-PK1	#2316
OfficePac/36	2/2000	5716-PK2	#2317
Personal Services/36	2/2000	5716-PSV	#2314
Query/36	2/2000	5716-QRY	#2309
RPG II	2/2000	5716-RPG	#2310
Utilities (SEU, SDA, DFU, WSU)	2/2000	5716-UTL	#2311
Response Time Measurement PRPQ	2/2000	5799-FQQ	#2320
DSNX-ND (Distributed System Node Executive) PRPQ	2/2000	5799-FQR	#2319
X.25 Synchronous Autodial PRPQ	2/2000	5799-QFR	#2318
IPDS Advanced Function Printing PRPQ	2/2000	5799-FQP	#2321
DOS Client Access for SSP	2/2000	5799-FRR	-

<b>Note 1:</b>	Release 7.5 supports 9402-436 and other AS/400 RISC models																					
<b>Note 2:</b>	All AS/400 Advanced 36 software products ordered will be supplied together in a “stack”, which has the product identifier 5755-AS4, the same number as V3R6/V3R7.																					
<b>Note 3:</b>	“Stack Feature” means the Licensed Program Component Supply Feature Code for 5755-AS4 or 5755-AS5 shown beside the product name.																					
<b>Note 4:</b>	<div>A typical order for AS/400 Advanced 36 programs will be constructed as follows:</div> <table><tr><td>5755-AS4</td><td></td><td>#2300 SSP</td></tr><tr><td>or</td><td>or</td><td>#2314 BasePac</td></tr><tr><td>5755-AS5</td><td>plus</td><td>#23xx Licensed Programs/PRPQs</td></tr><tr><td></td><td></td><td>#24xx Additional Features of Licensed Programs</td></tr><tr><td></td><td></td><td>#29xx Primary Language</td></tr><tr><td></td><td></td><td>#3410 CD-ROM Media</td></tr><tr><td></td><td></td><td>#PRL1 Preload Required</td></tr></table>	5755-AS4		#2300 SSP	or	or	#2314 BasePac	5755-AS5	plus	#23xx Licensed Programs/PRPQs			#24xx Additional Features of Licensed Programs			#29xx Primary Language			#3410 CD-ROM Media			#PRL1 Preload Required
5755-AS4		#2300 SSP																				
or	or	#2314 BasePac																				
5755-AS5	plus	#23xx Licensed Programs/PRPQs																				
		#24xx Additional Features of Licensed Programs																				
		#29xx Primary Language																				
		#3410 CD-ROM Media																				
		#PRL1 Preload Required																				

<b>Note 5:</b>	<p>5716-PK1 BasePac/36 consists of:</p> <ul style="list-style-type: none"> <li>System Support Program (including LAN Communications and IPDS</li> <li>PC Support/36 Advanced Function Print Utility)</li> <li>Query/36</li> <li>RPG II</li> <li>Utilities</li> </ul> <p><b>Note:</b> PC Support/36 and IPDS AFP Utility are not included when a DBCS Language feature is specified.</p> <p>5716-PK2 OfficePac/36 consists of:</p> <ul style="list-style-type: none"> <li>DisplayWrite/36</li> <li>DisplayWrite/36 Dictionaries</li> <li>Personal Services/36</li> </ul>
<b>Note 6:</b>	<p>A "✓" in the WDFM column indicates that a product is about to be, or is already, withdrawn from marketing for all applicable releases.</p> <p>A date in the WDFM column indicates a date in the future when the product will be withdrawn from marketing.</p>





## Chapter 3. 9402 C, D, E, F, and Model 200 Overview

The 9402 C, D, E, F, and Model 200 with applicable features and software are described in this chapter.

### 3.1 9402 C and D Models

	9402 C04	9402 C06	9402 D02	9402 D04	9402 D06
Relative System Performance (CPW) (See Note 1)	3.1	3.6	3.8	4.4	5.5
Relative System Performance (RAMP-C) (See Note 2)	1.1	1.3	1.3	1.5	1.9
Main Storage (MB)	8-12	8-16	8-16	8-16	8-20
Disk Storage (MB)	640-1280	640-1280	800-1200	800-1600	800-1600
Maximum Feature Card Slots	3	3	1	3	3
Communication Lines	1-5	1-5	0-3	1-8	1-8
LAN Adapters	0-1	0-1	0-1	0-1	0-1
Maximum Workstation Controllers	1	2	1	2	2
Twinaxial	1	2	1	2	2
ASCII	1	2	1	2	2
LocalTalk	0	0	1	1	1
Maximum Workstations (1 minimum)					
Twinaxial	14	54	14	28	54
ASCII	6	24	12	12	24
LocalTalk	0	0	31	31	31
¼-inch Cartridge Tape	1	1	1	1	1
½-inch Reel Tape	0-1	0-1	0	0-1	0-1
½-inch Cartridge Tape	0	0	0	0	0
8mm Cartridge Tape	0	0	0	0-2	0-2
Tape Libraries	0	0	0	0-1	0-1
Optical Libraries	0	0	0	0-1	0-1
Diskette Drives (5 ¼-inch or 8-inch)	0-1	0-1	0-1	0-1	0-1
Fax Adapters	0	0	0	0-2	0-3
Cryptographic Processors	0	0	0	0-1	0-1
System I/O Buses	1	1	1	1	1

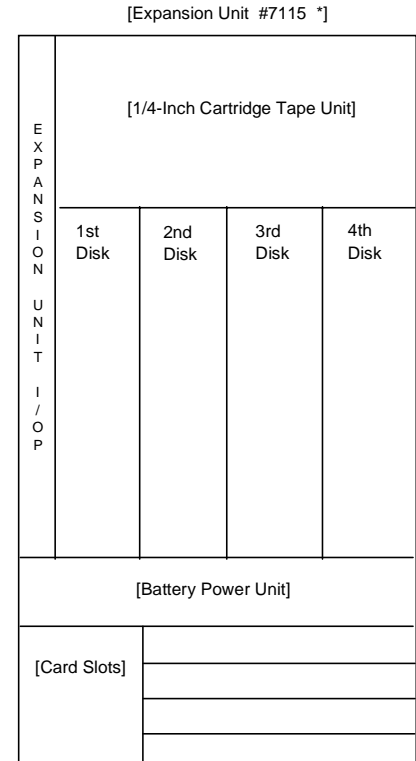
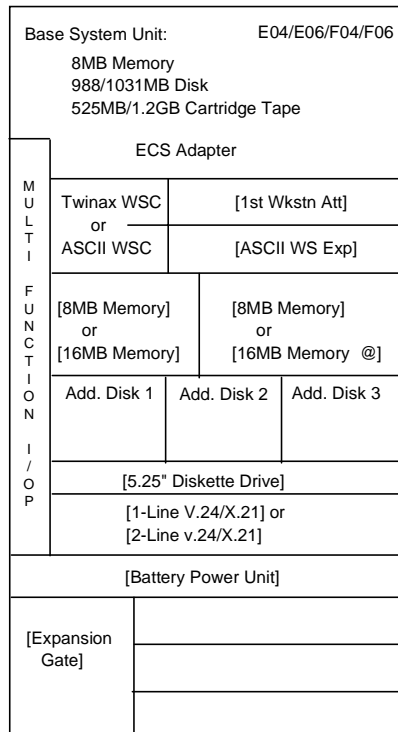
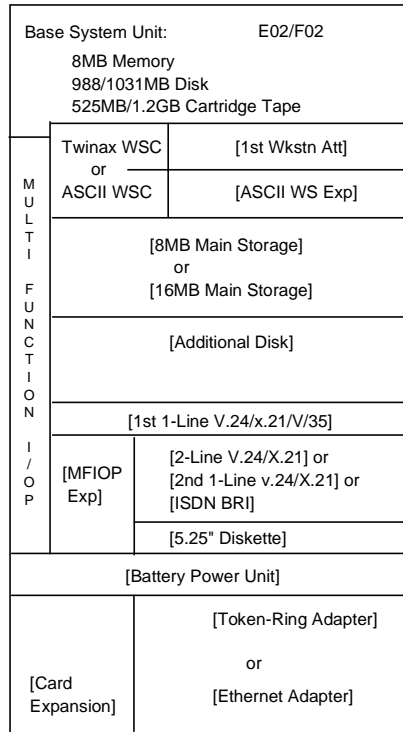
<b>Note 1:</b>	Commercial Processing Workload (CPW) is used to measure the performance of all AS/400 processors announced from September 1996 onward. The CPW value is measured on maximum configurations. The type and number of disk devices, the number of workstation controllers, the amount of memory, the system model, other factors, and the application being run determine what performance is achievable.
<b>Note 2:</b>	The Relative System Performance ratios are estimated based on AS/400 environment RAMP-C workload, with a 9404 B10 with 16 MB of Main Storage and 945 MB of disk equalling 1.0. The ratios shown were estimated at maximum configurations running at 70% utilization. Relative system performance ratios may not be realized in all environments.

### 3.2 9402 E and F Models

	E02	E04	E06	F02	F04	F06
Relative System Performance (CPW) (See Note 1)	4.5	5.5	7.3	5.5	7.3	9.6
Relative System Performance (RAMP-C) (See Note 2)	1.5	1.9	2.6	1.9	2.5	3.3
Main Storage (MB)	8-24	8-24	8-40	8-24	8-24	8-40
Disk Storage (MB)	988-2019	988-4081	988-4081	1031-2062	1031-4124	1031-8248
Maximum Feature Card Slots	1	3	7	1	3	7
Communication Lines	0-3	1-8	1-14	0-8	1-8	1-14
LAN Adapters	0-1	0-1	0-2	0-1	0-1	0-2
Maximum Workstation Controllers	1	3	4	2	4	6
Twinaxial	1	2	2	2	2	3
ASCII	1	3	4	2	4	6
Local Talk	1	1	2	2	2	3
Maximum Workstations (1 minimum)						
Twinaxial	14	42	68	28	68	108
ASCII	12	48	66	18	66	102
LocalTalk	31	31	62	31	62	93
¼-inch Cartridge Tape	1	1	1-2	1	1	1-2
½-inch Reel Tape	0	0-1	0-2	0-1	0-1	0-2
½-inch Cartridge Tape	0	0	0	0	0	0
8mm Cartridge Tape	0	0-2	0-4	0-2	0-2	0-4
Tape Libraries	0	0-1	0-2	0-1	0-1	0-2
Optical Libraries	0	0-1	0-2	0-1	0-1	0-2
Diskette Drives (5¼-inch or 8-inch)	0-1	0-1	0-1	0-1	0-1	0-1
Fax Adapters	0	0-2	0-3	0-1	0-2	0-3
Cryptographic Processors	0	0-1	0-1	0-1	0-1	0-1
System I/O Buses	1	1	2	1	1	2

<b>Note 1:</b>	Commercial Processing Workload (CPW) is used to measure the performance of all AS/400 processors announced from September 1996 onward. The CPW value is measured on maximum configurations. The type and number of disk devices, the number of workstation controllers, the amount of memory, the system model, other factors, and the application being run determine what performance is achievable.
<b>Note 2:</b>	The Relative System Performance ratios are estimated based on AS/400 environment RAMP-C workload, with a 9404 B10 with 16 MB of Main Storage and 945 MB of disk equalling 1.0. The ratios shown were estimated at maximum configurations running at 70% utilization. Relative system performance ratios may not be realized in all environments.

### 3.3 9402 E02, E04, E06, F02, F04, and F06 Model Diagrams



\* Only available on the E06/F06 models

### 3.4 9402 C and D Models Optional Features and Devices

POWER AND PACKAGING		C06	D02	D04	D06	C04
#1102	Battery Power Unit	1	1	1	1	1
#3116	MFIOP Expansion	-	1	-	-	-
#7105	Expansion gate Provides three card slots for any of the following features (if supported): #2617, #2618, #2619, #2620, #2621, #2623, #2625, #2626, #2628, #2636, #2647, #2665, #6050, #6140, #6141, #6150, FSIOP.	1	-	1	1	1
#7106	Card expansion Provides one card slot for the features shown in the 9402 E/F section: except those ones that are not supported on the D02 (#2621, #2647, #2663, #2664, #2666 and FSIOP).	-	1	-	-	-
MAIN STORAGE		C06	D02	D04	D06	C04
#3117	8 MB Main Storage	-	1	-	-	-
#4104	4 MB Main Storage Uses one card slot of prerequisite #7105 Expansion Gate	-	-	1	1	1
#4114	4 MB Main Storage Expansion Plugs into the #4104 4 MB Main Storage Card	1	-	1	2	-
WORKSTATION CONTROLLERS		C06	D02	D04	D06	C04
#6050	Enhanced Twinax Workstation Controller	-	-	1	1	-
#6054 #8054	Workstation Adapter for Apple Macintosh (LocalTalk)	-	1	1	1	-
#6140	Twinaxial Workstation Controller	1	-	1	1	-
#6141	ASCII Workstation Controller	1	-	1	1	-
#6142	ASCII 12-port Workstation Attachment	1	-	-	1	-
#6143	First Workstation Attachment	-	1	-	-	-
#6144	ASCII Workstation Expansion	-	1	-	-	-
COMMUNICATIONS		C06	D02	D04	D06	C04
#2605	ISDN Basic Rate Interface Adapter	-	1	1	1	-
#2620	Full Cryptographic Processor	-	-	1	1	-
#2623	Six-Line Communications Controller (SLCC)	-	-	1	1	-
#2628	Limited Cryptographic Processor	-	1	1	1	-
#2654 #2657	EIA 232/V.24 Two-Line Adapter (Enhanced Cable) #2654 provides 20-ft (6m) enhanced cable #2657 provides 50-ft (15m) enhanced cable	-	1	3	3	-
#2655 #2658	EIA 232/V.24 Two-Line Adapter #2655 provides 20-ft (6m) cable #2658 provides 50-ft (15m) cable	-	1	3	3	-
#2656 #2659	X.21 Two-Line Adapter #2656 provides 20-ft (6m) cable #2659 provides 50-ft (15m) cable	-	1	3	3	-

#2664	<b>Integrated Fax Adapter</b> Requires V3R0.5 or later.	-	-	2	3	-
#2666	<b>High Speed Communications Adapter</b> Prerequisites are the #7105, #7106, #7107 or #7115.	-	-	1	1	-
#6150	<b>Three Line Communications Controller (TLCC)</b> Provides basic control and common circuits for up to three communication lines. Supports ASYNC, BSC, SDLC and X.25. Maximum aggregate data rate for TLCC is 192Kbps. Prerequisite is one slot of the #7105/#7115	1	-	1	1	1
#6151 #6171	<b>X.21 One-Line Adapter</b> Connects through MFIOP or TLCC	4	2	1	1	4
#6152	<b>EIA 232/V.24 One-Line Adapter</b> Provides adapter and cable to support one communications line using either ASYNC, BSC, SDLC or X.25 protocol. Line speeds up to 19.2 Kbps are supported. Attaches through MFIOP or TLCC. Requires either the EIA 232-D cable (#9022) or V.24 cable (#9023).	4	-	-	-	4
#6153 #6173	<b>V.35 One-Line Adapter</b> Attaches through MFIOP or TLCC.	1	1	1	1	1
#6154 #6174 #6155 #6175	<b>EIA 232/V.24 One-Line Adapter</b> Attaches through MFIOP or TLCC.	-	2	1	1	-
<b>LANs</b>		<b>C06</b>	<b>D02</b>	<b>D04</b>	<b>D06</b>	<b>C04</b>
#2617	<b>Ethernet/IEEE 802.3 Adapter/HP</b>	-	-	1	1	-
#2618	<b>Fibre Distributed Data Interface Adapter</b>	-	-	1	1	-
#2619	<b>16/4 Mbps Token Ring Adapter/HP</b>	-	-	1	1	-
#2625	<b>Ethernet/IEEE 802.3 CSMA/CD LAN Adapter</b>	1	1	1	1	1
#2626	<b>16/4 Mbps Token Ring Adapter/A</b>	-	-	1	1	-
#2636	<b>16/4 Mbps Token Ring Network Adapter</b>	1	1	1	1	1
#2663	<b>I/O Attachment Processor</b>	-	-	1	1	-
#2665	<b>Shielded Twisted-Pair Distributed Data Interface Adapter</b>	-	-	1	1	-
#2668	<b>Wireless LAN Adapter</b> One of the following antenna cables must be specified: #9814 20ft antenna cable #9815 50ft antenna cable One of the following antenna must be specified: #9890 Omni-directional antenna #9891 Hemispherical antenna #9892 Directional antenna	-	-	1	1	-
#6516	<b>Integrated PC Server (formerly known as FSIOP)</b> 16 MB One-Port Integrated PC Server	-	-	1	1	-
#6517	32 MB One-Port Integrated PC Server	-	-	1	1	-
#6518	48 MB One-Port Integrated PC Server	-	-	1	1	-
#6519	64 MB One-Port Integrated PC Server The following cables need to be specified depending on the network attaching into a Integrated PC Server Port: #9024 Token Ring Cable (2.44m) #9025 Ethernet Cable (3m AUI)	-	-	-1	1	-
#6509	<b>Additional 16 MB for Integrated PC Server</b>	-	-	-3	3	-

DISK UNITS		C06	D02	D04	D06	C04
#6101	Additional 400 MB Disk Unit	-	1	-	-	-
#6102	Additional 320 MB Disk Unit	2	-	2	2	2
#6103	Additional 400 MB Disk Unit	-	-	2	2	-
#9102	Base 320 MB Disk Unit	2	-	-	-	2
#9103	Base 400 MB Disk Unit	-	2	2	2	-
INTERNAL TAPE AND DISKETTE UNITS		C06	D02	D04	D06	C04
#6133	<b>Diskette Unit (5 ¼-Inch)</b> For migration and data interchange with 5 ¼-inch diskettes on 5363, 5364, 9404 and 9331 Models 2 and 12.	1	-	1	1	1
#6139	<b>Diskette Unit (5 ¼-Inch)</b>	-	1	-	-	-
#6342 #8342	<b>525 MB ¼-Inch Cartridge Tape Unit</b>	1	1	1	1	1
#9341	<b>120 MB ¼-Inch Cartridge Tape Unit</b> Provides full interchange of data with appropriate ¼-inch cartridge tape units provided on the AS/400 system using the proper media and density.	-	1	1	1	-
RPQ 843859	<b>840 MB ¼-Inch Cartridge Mini Tape Unit</b>	-	-	1	1	-
MAGNETIC MEDIA CONTROLLERS		C06	D02	D04	D06	C04
#2621	<b>Removable Media Device Attachment</b> Provides attachment for 9348-002 and 7208, and includes the hardware compress or decompress function. Mutually exclusive with the #2647. Requires one slot of prerequisite expansion feature (#7105 or #7106).	-	-	1	1	-
#2647	<b>9348-002 Magnetic Tape Unit Attachment</b> Provides attachment of 9348-002 ½-inch tape device. Maximum one per system. Requires one slot of prerequisite expansion gate (#7105 or #7106).	1	-	1	1	1

### 3.5 9402 E and F Models Optional Features and Devices

POWER AND PACKAGING		E04	E06 SYS UNIT	E06 EXP UNIT	F02	F04	F06 SYS UNIT	F06 EXP UNIT	E02
#1102	<b>Battery Power Unit</b> Provides a minimum of five minutes backup power. Requires no card slots.	1	1	1	1	1	1	1	1
#3116	<b>MFIO Expansion</b> Adds storage capacity to MFIO required to support two communications ports, diskette unit (#6139), single 400MB disk unit (#6101) or ISDN Basic Rate Adapter (#2605). Requires no card slots.	-	-	-	1	-	-	-	1
#7106	<b>Card expansion</b> Provides one card slot for one of the following features: #2617 #2618 #2619 #2620 #2621 #2623 #2625 #2626 #2628 #2636 #2663 #2664 #2665 #2666 #6050 #6141 FSIOP Requires no card slots.	-	-	-	1	-	-	-	-1
#7107	<b>Expansion gate</b> Provides three card slots for any of the features listed above in the #7106 section. Requires no card slots. The #7107 is a prerequisite for #7115.	1	1	-	-	1	1	-	-
#7115	<b>Expansion Unit</b> Provides four additional disk slots and four additional card slots. Requires no card slots. Prerequisite: #7107	-	1	-	-	-	1	-	-
#7125 #9125	<b>1.03GB Disk Unit Enabler</b> Prerequisite for disks #6601, #6701, and #9601. The #9125 is the plant-installed version. Requires no card slots.	1	1	-	1	1	1	-	1
MAIN STORAGE		E04	E06 SYS UNIT	E06 EXP UNIT	F02	F04	F06 SYS UNIT	F06 EXP UNIT	E02
#3117	<b>8 MB Main Storage</b>	2	2	-	1	2	2	-	1
#3118	<b>16 MB Main Storage</b>	1	2	-	1	1	2	-	1
WORKSTATION CONTROLLERS		E04	E06 SYS UNIT	E06 EXP UNIT	F02	F04	F06 SYS UNIT	F06 EXP UNIT	E02
#6050	<b>Enhanced Twinaxial Workstation Controller</b> Supports a maximum of 40 devices except on the F02, where it supports a maximum of 14.	1	1	1	1	1	2	2	-
#6054 #8054	<b>Workstation Adapter for Apple Macintosh (LocalTalk)</b> The #6054 is not supported on the E02. V2R3 or later is required.	1	2	2	1	2	3	3	-
#6140	<b>Twinaxial Workstation Controller</b> Provides eight ports to support a maximum of 40 Twinaxial Devices. On the F02, only 14 devices are supported. Requires one I/O card slot.	1	1	1	1	1	2	2	-
#6141	<b>ASCII Workstation Controller</b>	2	3	3	1	3	3	4	-

#6142	<b>ASCII 12-port Workstation Attachment</b>	2	3	3	1	3	3	4	-
#6143	<b>First Workstation Attachment</b> Provides the logic to attach a VGA type monitor (for example, 8503 monochrome, 8513 or 8518 color) and IBM Personal Printers emulating an IBM 5256 printer. Uses no card slots.	-	-	-	1	-	-	-	1
#6144	<b>ASCII Workstation Expansion</b> Provides support for additional six ports on base ASCII workstation controller making a total of 12 maximum. Uses no card slots.	1	1	-	1	1	1	-	1
#6145	<b>First Workstation Attachment</b> Provides the logic printer to attach a VGA type monitor (for example, 8503 monochrome, 8513 or 8518 color) and IBM Personal Printers emulating an IBM 5256 printer. Uses no card slots.	1	1	-	-	1	1	-	-
<b>COMMUNICATIONS</b>		<b>E04</b>	<b>E06 SYS UNIT</b>	<b>E06 EXP UNIT</b>	<b>F02</b>	<b>F04</b>	<b>F06 SYS UNIT</b>	<b>F06 EXP UNIT</b>	<b>E02</b>
#2605	<b>ISDN Basic Rate Interface Adapter</b>	2	2	2	2	2	2	2	1
#2620	<b>Full Cryptographic Processor</b> Requires V2R3 or later.	1	1	1	1	1	1	1	-
#2623	<b>Six-Line Communications Controller (SLCC)</b> Prerequisites are the #7105 #7106, #7107, or #7115. Maximum: 1	1	1	1	1	1	1	1	-
#2628	<b>Limited Cryptographic Processor</b> Requires V2R3.	1	1	1	1	1	1	1	-
#2654 #2657	<b>EIA 232/V.24 Two-Line Adapter (Enhanced Cable)</b> This feature consists of an adapter and two enhanced cables used to support two communications lines using ASYNC, BSC, SDLC and X.25 protocols.  #2654 provides 20-ft (6m) enhanced cable #2657 provides 50-ft (15m) enhanced cable  Line speeds of up to 19.2 Kbps are supported. Up to three can be connected to the Six-Line Communications Controller.	3	3	3	3	3	3	3	1
#2655 #2658	<b>EIA 232/V.24 Two-Line Adapter</b> This feature consists of an adapter and two cables used to support two communications lines using ASYNC, BSC, SDLC and X.25 protocols.  #2655 provides 20-ft (6m) cable #2658 provides 50-ft (15m) cable  SDLC and X.25 protocols. Line speeds of up to 19.2 Kbps are supported. Up to three can be connected to the Six-Line Communications Controller.	3	3	3	3	3	3	3	1



#2656 #2659	<b>X.21 Two-Line Adapter</b> This feature consists of an adapter and two cables used to connect two communications lines to an X.21 or X.25 network.  #2656 provides 20-ft (6m) cable #2659 provides 50-ft (15m) cable  Up to three can be connected to the Six-Line Communications Controller.	3	3	3	3	3	3	3	1
#2664	<b>Integrated Fax Adapter</b> Requires V3R0.5 or later.	2	3	3	1	2	3	3	-
#2666	<b>High Speed Communications Adapter</b> Prerequisites are the #7105, #7106, #7107, or #7115.	1	1	1	1	1	1	1	-
#6151 #6171	<b>X.21 One-Line Adapter</b> Provides adapter and cable to support one communication line on X.21 or X.25. This feature is required for X.21 Short Hold mode ports.  #6151 provides 20-ft (6m) cable #6171 provides 50-ft (15m) cable  Line speeds up to 64 Kbps are supported. Two lines at speeds up to 19.2 Kbps or one line at speeds over 19.2 Kbps. Attaches using MFIOP. Does not require any card slots. Maximum: Two	2	2	-	2	2	2	-	2
#6153 #6173	<b>V.35 One-Line Adapter</b> Provides adapter and cable to support one communications line.  #6153 provides 20-ft (6m) cable #6173 provides 50-ft (15m) cable  Line speeds up to 48 Kbps or greater using BSC, SDLC, and X.25 are supported. Attaches through MFIOP or #2623.	2	2	2	2	2	2	2	1
#6154 #6174 #6155 #6175	<b>EIA 232/V.24 One-Line Adapter</b> Provides adapter and cable to support one communications line using either ASYNC, BSC, SDLC or X.25 protocol.  #6154 provides 20-ft (6m) enhanced cable #6155 provides 50-ft (15m) cable #6174 provides 20-ft (6m) enhanced cable #6175 provides 50-ft (15m) cable  Line speeds up to 19.2 Kbps are supported. Attaches to MFIOP. Maximum: Two	2	2	-	2	2	2	-	2
<b>LANS</b>		<b>E04</b>	<b>E06 SYS UNIT</b>	<b>E06 EXP UNIT</b>	<b>F02</b>	<b>F04</b>	<b>F06 SYS UNIT</b>	<b>F06 EXP UNIT</b>	<b>E02</b>
#2617	<b>Ethernet/IEEE 802.3 Adapter/HP</b>	1	2	2	1	1	2	2	-
#2618	<b>Fiber Distributed Data Interface Adapter</b>	1	2	2	1	1	2	2	-
#2619	<b>16/4 Mbps Token Ring Adapter/HP</b>	1	2	2	1	1	2	2	-

#2625	<b>Ethernet/IEEE 802.3 Adapter</b> Provides attachment to Ethernet CSMA/CD LAN. Requires one I/O card slot.	1	2	2	1	1	2	2	1
#2626	<b>16/4 Mbps Token Ring Adapter/A</b>	1	2	2	1	1	2	2	1
#2636	<b>16/4 Mbps Token Ring Network Adapter</b> Provides a single attachment to a 16 or 4 Mbps IBM Token Ring Network. Requires one I/O card slot.	1	2	2	1	1	2	2	1
#2663	<b>I/O Attachment Processor</b>	1	2	2	1	1	2	2	-
#2665	<b>Shielded Twisted-Pair Distributed Data Interface Adapter</b>	1	2	2	1	1	2	2	-
#2668	<b>Wireless LAN Adapter</b>	1	2	2	-	1	2	2	-
#6516	<b>Integrated PC Server (formerly known as FSIOP)</b> 16 MB One-Port Integrated PC Server 32 MB One-Port Integrated PC Server 48 MB One-Port Integrated PC Server 64 MB One-Port Integrated PC Server 16 MB Two-Port Integrated PC Server 32 MB Two-Port Integrated PC Server 48 MB Two-Port Integrated PC Server 64 MB Two-Port Integrated PC Server The following cables need to be specified depending on the network attaching into a Integrated PC Server Port:  #9024 Token Ring Cable (2.44m) #9025 Ethernet Cable (3m AUI)	1	2	2	-	1	2	2	-
#6517		1	2	2	-	1	2	2	-
#6518		1	2	2	-	1	2	2	-
#6519		1	2	2	-	1	2	2	-
#6526		-	1	1	-	-	1	1	-
#6527		-	1	1	-	-	1	1	-
#6528		-	1	1	-	-	1	1	-
#6529		-	1	1	-	-	1	1	-
#6509	<b>Additional 16 MB for Integrated PC Server</b>	3	6	6	-	3	6	6	-
#6520	<b>Upgrade One-Port to Two-Port Integrated PC Server</b>	-	1	1	-	-	1	1	-
<b>DISK UNITS</b>		<b>E04</b>	<b>E06 SYS UNIT</b>	<b>E06 EXP UNIT</b>	<b>F02</b>	<b>F04</b>	<b>F06 SYS UNIT</b>	<b>F06 EXP UNIT</b>	<b>E02</b>
#6103	<b>Additional 400 MB Disk Unit</b>	3	3	4	1	3	3	4	1
#6104	<b>Additional 988 MB Disk Unit</b>	3	3	4	1	3	3	4	1
#6126	<b>Base DASD Replacement (988 MB)</b>	1	1	-	1	1	1	-	1
#6601	<b>Additional 1.03 GB Disk Unit</b> Requires #7125 and V2R3.	3	3	4	1	3	3	4	1
#6701	<b>Base DASD Replacement (1.03 GB)</b> Requires #7125 and V2R3.	1	1	-	1	1	1	-	1
#9104	<b>Base 988 MB Disk Unit</b>	1	1	-	1	1	1	-	1
#9601	<b>Base 1.03 GB Disk Unit</b> Requires V2R3.	-	-	-	1	1	1	-	-
<b>INTERNAL TAPE AND DISKETTE UNITS</b>		<b>E04</b>	<b>E06 SYS UNIT</b>	<b>E06 EXP UNIT</b>	<b>F02</b>	<b>F04</b>	<b>F06 SYS UNIT</b>	<b>F06 EXP UNIT</b>	<b>E02</b>
#6139	<b>Diskette Unit (5 ¼-Inch)</b> For migration and data interchange with 5 ¼-inch diskettes on 5363, 5364, 9404 and 9331 Models 2 and 12.	1	1	-	1	1	1	-	1

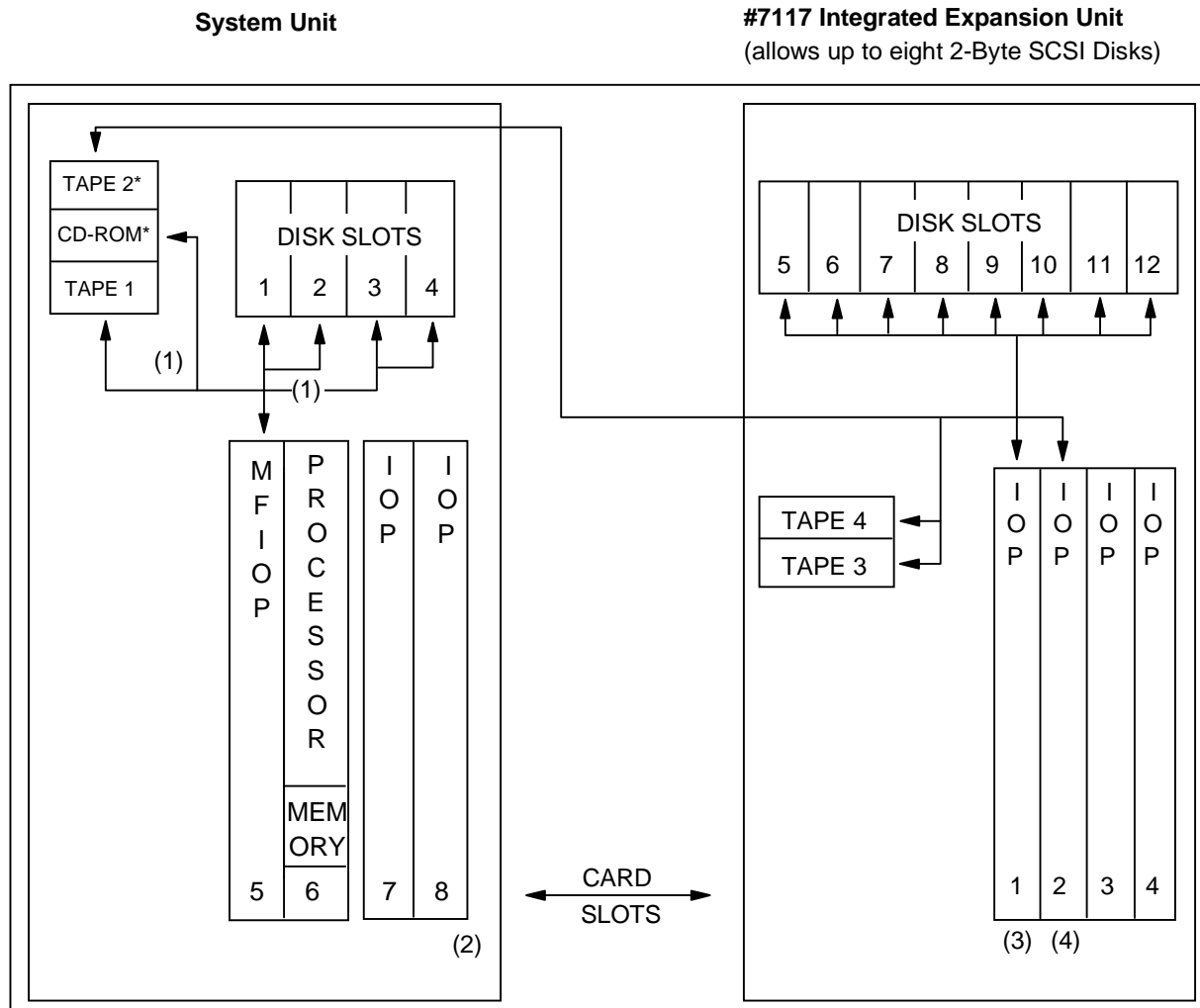
#6342 #8342 #9342	<b>525 MB ¼-Inch Cartridge Tape Unit</b> Provides full interchange of data with appropriate ¼-inch cartridge tape units provided on the AS/400 system, using the proper media and density.	1	1	-	1	1	1	-	1
#5343 #6343 #7343 #8343 #9343	<b>1.2 GB ¼-Inch Cartridge Tape Unit</b> Provides full interchange of data with appropriate ¼-inch cartridge tape units provided on the AS/400 system, using the proper media and density.	1	1	-	1	1	1	-	1
#6344 #7344 #8344	<b>2.5 GB ¼-Inch Cartridge Tape Unit</b> Provides full interchange of data with appropriate ¼-inch cartridge tape units provided on the AS/400 system, using the proper media and density.	1	1	-	1	1	1	-	1
RPQ 843859	<b>840 MB ¼-Inch Cartridge Mini Tape Unit</b> Provides same functionality as #6335 or #1262 on 9406 3xx Models. Requires prerequisite External Tape Attachment RPQ 843857 and #2621. V3R1 is also required.	1	1	-	1	1	1	-	-
<b>MAGNETIC MEDIA CONTROLLERS</b>		<b>E04</b>	<b>E06 SYS UNIT</b>	<b>E06 EXP UNIT</b>	<b>F02</b>	<b>F04</b>	<b>F06 SYS UNIT</b>	<b>F06 EXP UNIT</b>	<b>E02</b>
#2621	<b>Removable Media Device Attachment</b> Maximum: Two per system. One card slot is required in the #7106, #7107, or #7115 Expansion Feature.	2	2	2	1	2	2	2	-

### 3.6 9402 200 Models Overview

Processor Feature	200		
	#2030	#2031	#2032
Relative System Performance (CPW-CISC) (See Note 1)	7.3	11.6	16.8
Relative System Performance (RAMP-C) (See Note 2)			
Main Storage (MB)	2.5 8-24	4.0 8-56	6.2 16-128
Disk Storage (GB)			
(V3R1/R6)		1.03-23.6	
(V3R2/R7, V4R1/R2/R3)		1.03-50.3	
Maximum Feature Card Slots		6	
Communications Lines		1-20	
LAN Adapters		0-2	
ATM Adapters		0	
Maximum Workstation Controllers		7	
Twinaxial		7	
ASCII		7	
LocalTalk		7	
Maximum Workstations			
Twinaxial		280	
ASCII		126	
LocalTalk		217	
¼-inch/8mm Cartridge Tape (Internal)		0-4	
½-inch Tape			
9348		0-4	
34xx/35xx		0-2	
8mm Cartridge Tape (External)		0-4	
Tape Libraries		0-2	
Optical Libraries		0-4	
Diskette Drives (5 ¼-inch or 8-inch)		0-2	
Fax Adapters		0-6	
Cryptographic Processors		0-1	
System I/O Buses		1	

<b>Note 1:</b>	Commercial Processing Workload (CPW) is used to measure the performance of all AS/400 processors announced from September 1996 onward. The CPW value is measured on maximum configurations. The type and number of disk devices, the number of workstation controllers, the amount of memory, the system model, other factors, and the application being run determine what performance is achievable.
<b>Note 2:</b>	The Relative System Performance (RAMP-C) ratios are estimated based on the AS/400 environment RAMP-C workload, with a 9404 B10 with 16 MB of Main Storage and 945 MB of disk equalling 1.0. The ratios shown were estimated at maximum configurations running at 70% utilization. Relative system performance ratios may not be realized in all environments.

### 3.7 9402 Model 200 System Unit with #7117 Expansion Unit



\* CD-ROM is not available on Model 200. The second tape is driven by MFIOP on Model 200.

*Diagram as viewed from the rear of Model 200*

**Notes:**

1. Power Feature #5135 is required if the #7117 is not installed and there are three or four two-byte disk units; if the #7117 is installed and there are three or four disks but no #6502, #6522, #6523, or #6530; if there are two internal tapes but no #2624; if there are four internal tapes; or if there are 11 or 12 disk units. It is also a prerequisite for the Migrated Disk Unit Package (#9320). Also it is required for certain high-powered combinations of feature cards (when more than one of the following cards is in a #7108: #2617 with the #7174/#9174 on the MFIOP, #2618, #2620, #2628, #2663, #2666, or if an Integrated PC Server is in a #7108).
2. Expansion Card Cage (#7108) provides two feature I/O card slots.
3. Feature I/O card slot 1 is occupied by the disk controller if disks are installed in the Integrated Expansion Unit (#7117).
4. Feature I/O card slot 2 is occupied by #2624 if tape drives are installed in the Integrated Expansion Unit (#7117).
5. The base 9402 Model 200 does not include a tape drive as standard.
6. Main Storage cards are installed on the processor and require one slot each. The Model 200 #2030 has one slot available in addition to the base 8 MB. Model 200 #2031 has three slots available in addition to the base 8 MB. Model 200 #2032 has four slots available with a base of 16 MB.

### 3.8 9402 Advanced System Model 200 Features and Devices

PROCESSORS		#2030 System Unit	#2031 System Unit	#2032 System Unit	#7117 Expansion Unit
#2030	2.5 RSP RAMP-C, 7.3 RSP CPW Processor. Base Memory 8MB	1	-	-	-
#2031	4.0 RSP RAMP-C, 11.6 RSP CPW Processor. Base Memory 8MB	-	1	-	-
#2032	6.2 RSP RAMP-C, 16.8 RSP CPW Processor. Base Memory 16MB	-	-	1	-
POWER AND PACKAGING		#2030 System Unit	#2031 System Unit	#2032 System Unit	#7117 Expansion Unit
#5135	<b>Feature Power Supply</b> Feature Power Supply (#5135) is required if certain combinations of high powered features are installed. The #5135 Feature Power Supply replaces the #9242 Base 175-watt power supply. Card slots used: None Maximum: One	1	1	1	-
#7000	<b>Panel Keylock Feature</b>	1	1	1	-
#7108	<b>Expansion Card Cage</b>	1	1	1	-
#7117	<b>Integrated Expansion Unit</b>	1	1	1	-
#7126 #9126	<b>Mixed Disk Unit Enabler</b> Allows the Migrated Disk Package #9320 to support both one-byte and two-byte units. The #9126 is included on all upgrades to Model 200 with the #9320. The #7126 is ordered if the #9320 is installed and additional two-byte disk units are installed in the system unit.	1	1	1	-

#9116	<b>Two Book Cage High Performance Card Enabler</b> This feature provides a special backplane and cabling which is required for the following high performance cards when installed in a #7108:  #2620 Cryptographic Processor #2628 Cryptographic Processor -Limited #2629 LAN/WAN/Workstation IOP #2810 LAN/WAN IOP #6501 Tape/Disk Device Controller #6534 Magnetic Media Controller #6616 Integrated PC Server #6516/7/8/9 Integrated PC Server #6526/7/8/9 Integrated PC Server #2663 I/O Attachment Processor  Card slots used: None Maximum: One	1	1	1	-
#9242	<b>Base Power Supply</b>	1	1	1	-
#9244	<b>320 Watt Power Supply</b>	1	1	1	-
#9319	<b>Standard Disk Unit Package</b>	1	1	1	-
#9320	<b>Migrated Disk Unit Package</b>	1	1	1	-
UPS	<b>Uninterruptible Power Supply</b> Provided instead of internal battery backup to minimize impact from power fluctuations and outages. A number of different models of the 9910 UPS are available. Specific models vary by country.				
MAIN STORAGE		#2030 System Unit	#2031 System Unit	#2032 System Unit	#7117 Expansion Unit
#3117 #4117	<b>8 MB Main Storage</b> Available on processor #2030 and #2031. The #4117 is the plant-installed version. Plugs directly into the CPU. May be used with the #3118/#4118.	1	2	-	-
#3118 #4118	<b>16 MB Main Storage</b> Available on processor #2030 and #2031. The #4118 is the plant-installed version. Plugs directly into the CPU. May be used with the #3117/#4117.	1	3	-	-
#3172 #4172	<b>32 MB Main Storage</b> Available on the #2032 processor. The #4172 is the plant-installed version. Plugs directly into the CPU. Cannot be used with the #9160.	-	-	3	-
#8172	<b>32 MB Base Main Storage</b> Available on the #2032 processor. Replaces the base 16 MB memory feature #9160. Plugs directly into the CPU. May be used with the #3172/#4172.	-	-	1	-
#9160	<b>16 MB Base Main Storage</b> Available on the #2032 processor. Plugs directly into the CPU. Mutually exclusive with the #3172/#4172 and #8172.	-	-	1	-

WORKSTATION CONTROLLERS		#2030 System Unit	#2031 System Unit	#2032 System Unit	#7117 Expansion Unit
#6050	Enhanced Twinaxial Workstation Controller	2	2	2	4
#6054	Workstation Adapter for Apple Macintosh (LocalTalk) See the Communications section	2	2	2	4
#6140	Twinaxial Workstation Controller	2	2	2	4
#6141	ASCII Workstation Controller	2	2	2	4
#6142	ASCII 12-Port Workstation Attachment	2	2	2	4
#6148	Eight-Port Twinaxial Expansion	1	1	1	-
#8054	Workstation Adapter for Apple Macintosh (LocalTalk) See the Communications and LAN section	1	1	1	-
#9171	MFIOP/ASCII Workstation Controller	1	1	1	-
#9172	MFIOP/Twinaxial Workstation Controller	1	1	1	-
#9173	MFIOP/LocalTalk	1	1	1	-
#9176	MFIOP	1	1	1	-
#9177	MFIOP/LAN Controller Requires V3R1.	1	1	1	-
COMMUNICATIONS		#2030 System Unit	#2031 System Unit	#2032 System Unit	#7117 Expansion Unit
#2605	ISDN Basic Rate Adapter	2	2	2	2
#2609	EIA 232/V.24 Two-Line Adapter	10	10	10	10
#2610	X.21 Two-Line Adapter	10	10	10	10
#2612	EIA 232/V.24 One-Line Adapter	14	14	14	20
#2613	V.35 One-Line Adapter	4	4	4	4
#2614	X.21 One-Line Adapter	14	14	14	20
#2620	Full Cryptographic Processor	1	1	1	1
#2623	Six-Line Communications Controller	2	2	2	6
#2628	Limited Cryptographic Processor	1	1	1	1
#2664	Integrated Fax Adapter	2	2	2	6
#2666	High-Speed Communications Adapter One of the following cables must be specified:  #9879 6m V.35 cable #9880 24m V.35 cable * #9882 6m V.36/EIA 449 cable #9883 24m V.36/EIA 449 cable ** #9884 45m V.36/EIA 449 cable ** #9885 6m X.21 cable  * Line speeds up to 64 Kbps only ** Use of these longer cables require that the attaching Data Communications Equipment (DCE) support the V.36 transmitter signal element timing Data Terminal Equipment (DTE) source signal.	2	2	2	2



#6054 #8054	Workstation Adapter for Apple Macintosh (LocalTalk)  #6054 attaches to the #2623 #8054 attaches to the MFIOF	2	2	2	6
LANS		#2030 System Unit	#2031 System Unit	#2032 System Unit	#7117 Expansion Unit
#2617	Ethernet/IEEE 802.3 Adapter/HP	2	2	2	2
#2618	Fiber Distributed Data Interface Adapter	1	1	1	1
#2619	16/4 Mbps Token Ring Adapter/HP	2	2	2	2
#2626	16/4 Mbps Token Ring Adapter/A	2	2	2	2
#2663	I/O Attachment Processor	2	2	2	2
#2665	Shielded Twisted-Pair Distributed Data Interface Adapter	1	1	1	1
#2668	Wireless LAN Adapter Prerequisite #2663	2	2	2	2
#6516 #6517 #6518 #6519 #6526 #6527 #6528 #6529	<b>Integrated PC Server (formerly known as FSIOP)</b>				
	16MB One-Port Integrated PC Server	1	1	1	2
	32MB One-Port Integrated PC Server				
	48MB One-Port Integrated PC Server	1	1	1	2
	64MB One-Port Integrated PC Server				
	16MB Two-Port Integrated PC Server	1	1	1	2
	32MB Two-Port Integrated PC Server				
	48MB Two-Port Integrated PC Server	1	1	1	2
	64MB Two-Port Integrated PC Server				
	The following cables need to be specified depending on the network attaching into a Integrated PC Server Port:	1	1	1	1
#6509		1	1	1	1
	#9024 Token Ring Cable (2.44m)	1	1	1	1
	#9025 Ethernet Cable (3m AUI)				
		1	1	1	1
#6520	The Integrated PC Server requires two contiguous card slots Requires #5135 Power Supply if installed in #7108.				
	<b>Additional 16 MB for Integrated PC Server</b>	6	6	6	6
#6520	<b>Upgrade One-Port Integrated PC Server to Two-Port Integrated PC Server</b>	1	1	1	1

#6616	<b>Integrated PC Server</b> Contains a 166 MHz Pentium Processor, two Main Storage slots, and two LAN IOA slots for higher performance serving to LAN attached PCs. The two main storage slots can each contain one of the following features, giving a maximum of 256 MB. At least one main storage feature is required:  #2861 32 MB Integrated PC Server Memory #2862 128 MB Integrated PC Server Memory  Either one or two of the following LAN IOAs are supported:  #6149 16/4 Mbps Token Ring IOA #6181 Ethernet/IEEE 802.3 IOA Requires V3R2 with stack feature #1978. Card slots required: Two contiguous slots	1	1	1	2
DISK UNITS		#2030 System Unit	#2031 System Unit	#2032 System Unit	#7117 Expansion Unit
#1105	<b>320 MB Single Disk Unit Conversion Kit</b> Requires the #9320 Migrated Disk Unit Package.	4	4	4	-
#1107	<b>400 MB Single Disk Unit Conversion Kit</b> Requires the #9320 Migrated Disk Unit Package.	4	4	4	-
#1109	<b>988 MB Single Disk Unit Conversion Kit</b> Requires the #9320 Migrated Disk Unit Package.	4	4	4	-
#1602	<b>1.03 GB Single Disk Unit Conversion Kit</b> Requires the #9320 Migrated Disk Unit Package.	4	4	4	-
#1603	<b>1.96 GB Single Disk Unit Conversion Kit</b> Requires the #9320 Migrated Disk Unit Package.	4	4	4	-
#6109	<b>988 MB Additional One-Byte SCSI Disk Unit</b> Requires the #9320 Migrated Disk Unit Package.	4	4	4	-
#6602	<b>1.03 GB Additional One-Byte SCSI Disk Unit</b> Requires the #9320 Migrated Disk Unit Package.	4	4	4	-
#6603	<b>1.96 GB Additional One-Byte SCSI Disk Unit</b> Requires the #9320 Migrated Disk Unit Package.	4	4	4	-
#6605 #4605 #9605	<b>1.03 GB Additional Two-Byte Disk Unit</b> The #4605 is the plant-installed version of the #6605. The #9605 is the base disk.	4	4	4	8
#6606 #4606 #8606	<b>1.96 GB Additional Two-Byte SCSI Disk Unit</b> The #4606 is the plant install version of the #6606. The #8606 is the base disk.	4	4	4	8

#6607	<b>4.19 GB Additional Two-Byte SCSI Disk Unit</b> This feature provides a 3 ½-inch single disk unit with 4.19 GB capacity for additional disk storage in the System Unit or #7117 Expansion Unit. Occupies one disk unit position. Prerequisite: #9319 (Standard Disk Unit Package) or #7126/#9126 (Mixed Disk Unit Enabler) if installed in the #9320 (Migrated Disk Unit Package) in the System Unit. Requires V3R2.	3	3	3	8
#6652 #4652 #9652	<b>1.03 GB Additional Two-Byte SCSI Disk Unit</b> The #4652 is the plant-installed version of the #6652. The #9652 is the base disk.	4	4	4	8
<b>INTERNAL TAPE UNITS</b>		<b>#2030 System Unit</b>	<b>#2031 System Unit</b>	<b>#2032 System Unit</b>	<b>#7117 Expansion Unit</b>
#1378	<b>525 MB ¼-Inch Cartridge Tape Unit Conversion Kit</b>	2	2	2	2
#1379	<b>1.2 GB ¼-Inch Cartridge Tape Unit Conversion Kit</b>	2	2	2	2
#1380	<b>2.5 GB ¼-Inch Cartridge Tape Unit Conversion Kit</b>	2	2	2	2
#6335	<b>840 MB ¼-Inch Cartridge Mini Tape Unit</b>	2	2	2	2
#6380	<b>2.5 GB ¼-Inch Cartridge Tape Unit</b>	2	2	2	2
#6390	<b>7 GB 8mm Cartridge Tape Unit</b>	2	2	2	2
<b>MAGNETIC MEDIA CONTROLLERS</b>		<b>#2030 System Unit</b>	<b>#2031 System Unit</b>	<b>#2032 System Unit</b>	<b>#7117 Expansion Unit</b>
#2621	<b>Removable Media Device Attachment</b>	2	2	2	4
#2624	<b>Storage Device Controller</b>	1	1	1	1
#2644	<b>3490 Magnetic Tape Attachment Card/HP</b>	1	1	1	1
#6146	<b>Diskette Adapter</b>	2	2	2	1
#6501	<b>Tape/Disk Device Controller</b>	1	1	1	1
#6522 #6502	<b>High Performance Controller 2 MB Cache (RAID/Mirrored/Unprotected)</b>	-	-	-	1
#6523 #6530	<b>Disk Unit Controller No Cache (Mirrored/Unprotected)</b>	-	-	-	1
#9980	<b>Serpentine Cable</b>	1	1	1	1

### 3.9 General 9402 Communications Considerations

The following table shows the limits of communication lines per AS/400 processor and the number of high speed lines that are supported.

Model	Lines per Model	High Speed Lines per Model	LAN Adapters
C04/C06	5	1	1
D02/E02	3	2	1
F02	8	2	1
D04/D06	8	4	1
E04/F04	8	4	1
E06/F06/20S	14	4	2
200	20	6	2
236	8	1	2
436 (SSP only)	8	1	2
436 (SSP and OS/400)	20	6	2

**Note:**

- Each ISDN line is counted as two high speed lines.
- For D02/E02/F02, ISDN and X.21 adapters may co-reside, but not operate concurrently.

## Chapter 4. AS/400 9402 Model Packages

Packaged models are those which incorporate software as part of the processor order. This chapter describes the 9402 package models. The 436 models are included even though they are RISC models due to their common association with other 9402 systems.

### 4.1 9402 Model 20S Based Packages Summary

Package Name (See Note 1)	Twinax Server 2FS	LAN Server 2FS	Starter Server 2SS	Growth Server 2SG
Relative System Performance (CPW) (See Note 2)				
Client/Server Environment	17.1	17.1	17.1	17.1
Interactive Environment	5.5	5.5	5.5	5.5
Relative System Performance (RAMP-C) (See Note 3)				
Client/Server Environment	5.9	5.9	5.9	5.9
Interactive Environment	1.9	1.9	1.9	1.9
Main Disk Storage (MB)	16-128	16-128	16-128	16-128
Disk Storage (GB)	1.96-7.84	1.96-7.84	1.96-7.84	1.96-7.84
Standard Tape	¼-inch Cartridge	¼-inch Cartridge	¼-inch Cartridge	¼-inch Cartridge
Twinaxial Devices	7	0	0	0
LAN Adapters	1-2	1-2	1	1
Communication Lines (See Note 4)	1-3	1-2	1-2	1-2
Software	OS/400 Query for AS/400 Client Access for AS/400 Novell Network Support  LAN Server for AS/400 (includes 10 LAN Requestors)		OS/400 Query for AS/400 Client Access for AS/400 DB2 for OS/400 Query Manager and SQL Development Kit Novell Network Support ADSM for AS/400 (includes 10 clients) LAN Server for AS/400 (includes 1 LAN Requestor)	

<b>Note 1:</b>	The 2FS packages are announced only in EMEA. The 2SS and 2SG packages are announced only in AP. None of these packages can be upgraded to any other AS/400 model. There are limited additional features that can be configured in these packages. Use the configurator to validate any additional hardware configuration.
<b>Note 2:</b>	Commercial Processing Workload (CPW) is used to measure the performance of all AS/400 processors announced from September 1996 onward. The CPW value is measured on maximum configurations. The type and number of disk devices, the number of workstation controllers, the amount of memory, the system model, other factors, and the application being run determine what performance is achievable.
<b>Note 3:</b>	The Relative System Performance ratios are estimated based on AS/400 environment RAMP-C workload, with 9404 B10 with 16 MB of Main Storage and 945 MB of disk equaling 1.0. The ratios shown were estimated at maximum configurations running at 70% utilization. Relative System Performance ratios may not be realized in all environments.
<b>Note 4:</b>	When Client Access console is used, one communications line is reserved for this.

#### 4.1.1 9402 Model 20S Based Package Features

Entry Server 2FS			Starter Server 2SS			Growth Server 2SG		
9402	System Unit	1	9402	System Unit	1	9402	System Unit	1
0130	Packaged Configuration	1	0131	Packaged Configuration	1	0132	Packaged Configuration	1
2010	5.9/1.9 RSP RAMP-C Processor	1	2010	5.9/1.9 RSP RAMP-C Processor	1	2010	5.9/1.9 RSP RAMP-C Processor	1
2961	240 Volt Power Cord <sup>1</sup>	1	29xx	240 Volt Power Cord <sup>1</sup>	1	29xx	240 Volt Power Cord <sup>1</sup>	1
5000	Preloaded Software <sup>1</sup>	1	296x	Preloaded Software <sup>1</sup>	1	296x	Preloaded Software <sup>1</sup>	1
5135	Feature Power Supply	1	5135	Feature Power Supply	1	5135	Feature Power Supply	1
5517	Alt-IPL Specify for QIC-2500	1	5517	Alt-IPL Specify for QIC-2500	1	5517	Alt-IPL Specify for QIC-2500	1
5520	Complete System Specify	1	5520	Complete System Specify	1	5520	Complete System Specify	1
6380	2.5GB ¼-inch Cartridge Tape Unit	1	6380	2.5GB ¼-inch Cartridge Tape Unit	1	6380	2.5GB ¼-inch Cartridge Tape Unit	1
7000	Panel Keylock Feature	1	7000	Panel Keylock Feature	1	6606	1.96GB Additional Disk	
8606	Optional 1.96GB Disk Unit	1	8606	Optional 1.96GB Disk Unit	1	7000	Panel Keylock Feature	1
8717	Base 32MB 1-port Integrated PC Server (formerly knows as FSIOP)	1	8717	Base 32MB 1-port Integrated PC Server (formerly knows as FSIOP)	1	8606	Optional 1.96GB Disk Unit	1
9203	EIA 232/V.24 Enhanced Cable	1	9203	EIA 232/V.24 Enhanced Cable	1	8172	32MB Base Memory	
9025	Ethernet Cable	1	9024	Token Ring Cable	1	8718	Base 32MB 1-port Integrated PC Server (formerly knows as FSIOP)	1
9026	Client Access Console Cable	1	9025	Ethernet Cable	1	9023	EIA 232/V.24 Enhanced Cable	1
9108	Standard Expansion Gate	1	9026	Client Access Console Cable	1	9024	Token Ring Cable	1
9160	Base 16MB Main Storage	1	9108	Standard Expansion Gate	1	9025	Ethernet Cable	1
9176	Standard MFIOP	1	9160	Base 16MB Main Storage	1	9026	Client Access Console Cable	1
9319	Standard DASD Package	1	9176	Standard MFIOP	1	9108	Standard Expansion Gate	1
9609	EIA/V.24 Two Line Adapter	1	9319	Standard DASD Package	1	9160	Base 16MB Main Storage	1
			9609	EIA/V.24 Two Line Adapter	1	9176	Standard MFIOP	1
						9319	Standard DASD Package	1
						9609	EIA/V.24 Two Line Adapter	1
Allowable substitutions: In place of #9160: 8172 32MB Memory In place of #2961: 2960 120V Power Cord In place of #9176: 9172 MFIOP/Twinaxial Will drop 9026 Will change 9609 to 9612 In place of #9025: 9024 Token Ring Cable In place of #8717: 8718 Base 48MB 1-port or 8719 Base 64MB 1-port or 8727 Base 32MB 2-port or 8728 Base 48MB 2-port or 8729 Base 64MB 2-port Integrated PC Server In place of #9026: 9027 25m Client Access Console Cable								
Note 1: Country Specific			Note 2: Country Specific			Note 3: Country Specific		

## 4.2 9402 Model 436 Packages Summary

Package Name (See Note 1)	Entry #0114	Growth #0115	Large #0116
Relative System Performance (CPW V3R6) (See Note 2)	14.4-24.5	14.4-24.5	14.4-24.5
Relative System Performance (CPW V3R7, V4R1, V4R2, or V4R3) (See Note 2)	16.3-27.4	16.3-27.4	16.3-27.4
Relative System Performance (RAMP-C OS/400) (See Note 3)	4.8-8.7	4.8-8.7	4.8-8.7
Relative System Performance (RAMP-C SSP) (See Note 4)	1.0-2.4	1.0-2.4	1.0-2.4
Main Storage (MB)	32-256	32-256	64-256
Disk Storage (GB) (See Note 5)	1.03-23.6	1.96-23.6	3.93-23.6
Standard Tape	¼-inch Cartridge	¼-inch Cartridge	¼-inch Cartridge
Twinaxial Devices	40-280	40-280	80-280
LAN Adapters (See Note 6)	0-2	0-2	0-2
Communication Lines	1-20	2-20	2-20
Software	SSP 7.5 RPG II Utilities Query/36 PC Support/36 IPDS Advanced Function Printing Utilities		

<b>Note 1:</b>	Some of the hardware on the Model 436 is not supported by SSP and requires OS/400 to support it. See the 9402 Model 436 section for more details. Additional hardware can be configured if supported as required.
<b>Note 2:</b>	Commercial Processing Workload (CPW) is used to measure the performance of all AS/400 processors announced from September 1996 onward. The CPW value is measured on maximum configurations. The type and number of disk devices, the number of workstation controllers, the amount of memory, the system model, other factors, and the application being run determine what performance is achievable.
<b>Note 3:</b>	The Relative System Performance ratios are estimated based on AS/400 environment RAMP-C workload, with a 9494 B10 with 16 MB of Main Storage and 945 MB of disk equaling 1.0. The ratios shown were estimated at maximum configurations running at 70% utilization. Relative System Performance ratios may not be realized in all environments.
<b>Note 4:</b>	The Relative System Performance is estimated based on running the System/36 version of RAMP-C in SSP with maximum configured Model 236 equaling 1.0. The SSP relative performance ratings cannot be compared to the OS/400 relative performance ratings. Customer results may vary.
<b>Note 5:</b>	As of February 1997 with V3R7, the maximum disk capacity is 50.3 GB.
<b>Note 6:</b>	The Model 436 supports three LAN adapters if running Firewall for AS/400 (5769-FW1).

## 4.2.1 Model 436 Based Package Features

Entry Package			Growth Package			Large Package		
9402	System Unit	1	9402	System Unit	1	9402	System Unit	1
0114	Package A -Entry	1	0115	Package B-Growth	1	0114	Package C-Large	1
2102	Base Model 436 Processor	1	2102	Base Model 436 Processor	1	2102	Base Model 436 Processor	1
29xx	Language <sup>1</sup>	1	29xx	Language <sup>1</sup>	1	29xx	Language1	1
296x	Power Cord <sup>1</sup>	1	296x	Power Cord <sup>1</sup>	1	296x	Power Cord1	1
5000	Software Preload <sup>1</sup>	1	5000	Software Preload <sup>1</sup>	1	5000	Software Preload1	1
5517	Alternate IPL for QIV-2500	1	5517	Alternate IPL for QIV-2500	1	5517	Alternate IPL for QIV-2500	1
5520	Complete System Specify	1	5520	Complete System Specify	1	5520	Complete System Specify	1
9000	Panel Keylock	1	9000	Panel Keylock	1	9000	Panel Keylock	1
9023	EIA/V.24 Enhanced Cable	1	9023	EIA/V.24 Enhanced Cable	2	9023	EIA/V.24 Enhanced Cable	2
			9108	Expansion Gate	1	9050	Enhanced Twinaxial WSC	1
						9108	Expansion Gate	1
						9117	Integrated Package Expansion	1
			9135	Expansion Unit Feature Power	1	9135	Expansion Unit Feature Power	1
9172	Base MFIOP Twinaxial WSC	1	9172	Base MFIOP Twinaxial WSC	1	9172	Base MFIOP Twinaxial WSC	1
9242	Base 175W Power Supply	1				9242	300 W Power Supply	1
							32 MB Main Storage	1
9319	Base Disk Unit Package	1	9319	Base Disk Unit Package	1	9319	Base Disk Unit Package	1
9480	2.5 GB ¼-inch Cartridge Tape	1	9480	2.5 GB ¼-inch Cartridge Tape	1	9480	2.5 GB ¼-inch Cartridge Tape	1
9480	8-port Twinaxial Expansion	1	9480	8-port Twinaxial Expansion	1	9480	8-port Twinaxial Expansion	1
9520	CD-ROM	1	9520	CD-ROM	1	9520	CD-ROM	1
9605	Base 1.03 GB Disk Unit	1	9606	Base 1.96 GB Disk Unit	1	9606	Base 1.98 GB Disk Unit	1
			9609	Base EIA 232/V.24 Two-Line	1	9609	Base EIA 232/V.24 Two-Line	1
9612	Base EIA 232/V.24 One-Line	1				9623	Six-Line Comm Controller	1
Allowable Substitutions: In place of #2102: 2104 Feature Processor or 2106 Feature Processor (2106 requires 5135 in place of 9242 and two 9282 added) In place of #5000: 0203 Side by Side Install In place of #9605: 8606 Optional 1.96 GB Disk Unit In place of #9242: 5135 Expansion Unit Power In place of #9612: 8609 EIA 232/V.24 Two-Line Adapter (requires two of 9023) 5716-PK1, BasePac/36 is included with all 436 Packages			Allowable Substitutions: In place of #2102: 2104 Feature Processor or 2106 Feature Processor (2106 requires two 9282 added) In place of #5000: 0203 Side by Side Install 5716-PK1, BasePac/36 is included with all 436 Packages			Allowable Substitutions: In place of #2102: 2104 Feature Processor or 2106 Feature Processor (2106 requires 8210 and 9110 in place of 9282) In place of #5000: 0203 Side by Side Install In place of #8210 9282 32 MB Main Storage (allowed on processors 2102 or 2104) 5716-PK1, BasePac/36 is included with all 436 Packages		
Note 1: Country Specific			Note 1: Country Specific			Note 1: Country Specific		
Note: All these packages can have optional hardware added up to the supported configuration limits.								



## Chapter 5. 9404 B, C, D, E, and F Models Overview

This chapter describes the B, C, D, E, and F models for the AS/400 9404 family, applicable features, and software.

### 5.1 9404 B and C Models

Processor Feature	9404 B10	9404 B20	9404 C10	9404 C20	9404 C25
Relative System Performance (CPW) (See Note 1)	2.9	5.1	3.9	5.3	6.1
Relative System Performance (RAMP-C) (See Note 2)	1.0	1.7	1.3	1.8	2.2
Main Storage (MB)	4-16	4-28	8-20	8-32	8-40
Disk Storage (MB)	630-2400	630-4800	640-2400	640-4800	640-6400
Maximum Feature Card Slots	4	9	4	9	9
Communication Lines	1-8	1-14	1-8	1-14	1-14
LAN Adapters	0-1	0-2	0-1	0-2	0-2
Workstation Controllers					
Twinaxial	1	2	1	2	2
ASCII	2	4	2	4	4
Maximum Workstations (1 minimum)					
Twinaxial	40	80	40	80	80
ASCII	36	72	36	72	72
½-Inch Cartridge Tape	1	1-2	1	1-2	1-2
¼-Inch Reel Tape	0-1	0-1	0-1	0-1	0-1
¼-Inch Cartridge Tape	0-1	0-1	0-1	0-1	0-1
8mm Cartridge Tape	0-2	0-2	0-2	0-4	0-4
Tape Libraries	0-1	0-2	0-1	0-2	0-2
Optical Libraries	0	0	0	0	0
Diskette Drives (5 ¼-Inch or 8-Inch)	0-1	0-2	0-1	0-2	0-2
Fax Adapters	0	0	0	0	0
Cryptographic Processors	0	0	0	0	0
System I/O Buses	1	1-2	1	1-2	1-2

<b>Note 1:</b>	Commercial Processing Workload (CPW) is used to measure the performance of all AS/400 processors announced from September 1996 onward. The CPW value is measured on maximum configurations. The type and number of disk devices, the number of workstation controllers, the amount of memory, the system model, other factors, and the application being run determine what performance is achievable.
<b>Note 2:</b>	The Relative System Performance ratios are estimated based on AS/400 environment RAMP-C workload, with a 9404 B10 with 16 MB of Main Storage and 945 MB of disk equalling 1.0. The ratios shown are estimates at maximum configurations running at 70% utilization. Relative System Performance ratios may not be realized in all environments.

## 5.2 9404 D and E Models

	9404 D10	9404 D20	9404 D25	9404 E10	9404 E20	9404 E25
Relative System Performance (CPW) (See Note 1)	5.3	6.8	9.7	7.6	9.7	11.8
Relative System Performance (RAMP-C ) (See Note 2)	1.9	2.4	3.4	2.6	3.5	4.2
Main Storage (MB)	8-32	8-40	16-64	8-40	8-72	16-80
Disk Storage (MB)	800-9504	800-9504	800-15808	988-19670	988-19670	988-19670
Maximum Feature Card Slots	9	9	9	9	9	9
Communication Lines	1-14	1-14	1-14	1-14	1-20	1-26
LAN Adapters	0-2	0-2	0-2	0-2	0-2	0-3
Maximum Workstation Controllers						
Twinaxial	2	2	4	4	4	6
ASCII	4	4	6	9	9	9
LocalTalk	2	2	4	4	4	6
Maximum Workstations (1 minimum)						
Twinaxial	80	80	160	160	160	240
ASCII	72	72	108	162	162	162
LocalTalk	62	62	124	124	124	186
½-Inch Cartridge Tape	1-2	1-2	1-2	1-2	1-2	1-2
¼-Inch Reel Tape	0-4	0-4	0-4	0-4	0-4	0-4
¼-Inch Cartridge Tape	0-1	0-1	0-1	0-1	0-1	0-1
8mm Cartridge Tape	0-4	0-4	0-4	0-4	0-4	0-4
Tape Libraries	0-2	0-2	0-2	0-2	0-2	0-2
Optical Libraries	0-2	0-2	0-2	0-2	0-2	0-2
Diskette Drives (5 ¼-Inch or 8-Inch)	0-2	0-2	0-2	0-2	0-2	0-2
Fax Adapters	0-8	0-8	0-8	0-8	0-8	0-8
Cryptographic Processors	0-1	0-1	0-1	0-1	0-1	0-1
System I/O Buses	1-2	1-2	1-2	1-2	1-2	1-2

<b>Note 1:</b>	Commercial Processing Workload (CPW) is used to measure the performance of all AS/400 processors announced from September 1996 onward. The CPW value is measured on maximum configurations. The type and number of disk devices, the number of workstation controllers, the amount of memory, the system model, other factors, and the application being run determine what performance is achievable.
<b>Note 2:</b>	The Relative System Performance ratios are estimated based on AS/400 environment RAMP-C workload, with a 9404 B10 with 16 MB of Main Storage and 945 MB of disk equalling 1.0. The ratios shown are estimates at maximum configurations running at 70% utilization. Relative System Performance ratios may not be realized in all environments.

## 5.3 9404 F Models

	9404 F10	9404 F20	9404 F25
Relative System Performance (CPW) (See Note 1)	9.6	11.6	13.7
Relative System Performance (RAMP-C) (See Note 2)	3.4	4.2	4.8
Main Storage (MB)	8-72	16-80	16-80
Disk Storage (GB)	1.03-20.62	1.03-20.62	1.03-20.62
Maximum Feature Card Slots	9	9	9
Communication Lines	1-14	1-20	1-26
LAN Adapters	0-2	0-4	0-4
Maximum Workstation Controllers			
Twinaxial	9	9	9
ASCII	9	9	9
LocalTalk	9	9	9
Maximum Workstations (1 minimum)			
Twinaxial	360	360	360
ASCII	162	162	162
LocalTalk	279	279	279
½-Inch Cartridge Tape	1-2	1-2	1-2
¼-Inch Reel Tape	0-4	0-4	0-4
¼-Inch Cartridge Tape	0-2	0-2	0-2
8mm Cartridge Tape	0-4	0-4	0-4
Tape Libraries	0-2	0-2	0-2
Optical Libraries	0-2	0-4	0-4
Diskette Drives (5 ¼-Inch or 8-Inch)	0-2	0-2	0-2
Fax Adapters	0-8	0-8	0-8
Cryptographic Processors	0-1	0-1	0-1
System I/O Buses	1-2	1-2	1-2

<b>Note 1:</b>	Commercial Processing Workload (CPW) is used to measure the performance of all AS/400 processors announced from September 1996 onward. The CPW value is measured on maximum configurations. The type and number of disk devices, the number of workstation controllers, the amount of memory, the system model, other factors, and the application being run determine what performance is achievable.
<b>Note 2:</b>	The Relative System Performance ratios are estimated based on AS/400 environment RAMP-C workload with a 9404 Model B10 with 16 MB of Main Storage and 945 MB of disk equalling 1.0. The ratios shown are estimates at maximum configurations running at 70% utilization. Relative system performance ratios may not be realized in all environments.

## 5.4 9404 Models Optional Features and Devices

### 5.4.1 9404 B and C Models Optional Features and Devices

	POWER AND PACKAGING	B10 System Unit	B20 System Unit	B20 Exp Unit	C10 System Unit	C20 System Unit	C20 Exp Unit	C25 System Unit	C25 Exp Unit
#1101	<b>Battery Power Unit</b>	1	1	1	1	1	1	1	1
#5133	<b>Feature Power Supply</b>	1	1	1	1	1	1	1	1
#7100	<b>Expansion Unit</b> Provides space for adding four disk units, a ¼-inch tape drive, a diskette unit and five card slots. Uses no card slots.	-	1	-	-	1	-	1	-
#7201 #9201	<b>Dual Disk Install - System Unit</b>	1	1	-	1	1	-	1	-

#7202 #9202	Dual Disk Install - Expansion Unit	-	-	1	-	-	1	-	1
<b>MAIN STORAGE</b>		<b>B10 System Unit</b>	<b>B20 System Unit</b>	<b>B20 Exp Unit</b>	<b>C10 System Unit</b>	<b>C20 System Unit</b>	<b>C20 Exp Unit</b>	<b>C25 System Unit</b>	<b>C25 Exp Unit</b>
#3108	8 MB Main Storage	-	-	-	-	-	-	2	-
#4104	4 MB Main Storage	1	2	-	1	2	-	2	-
#4114	4 MB Storage Expansion	2	4	-	2	4	-	4	-
<b>WORKSTATION CONTROLLERS</b>		<b>B20 System Unit</b>	<b>B20 Exp Unit</b>	<b>C10 System Unit</b>	<b>C20 System Unit</b>	<b>C20 Exp Unit</b>	<b>C25 System Unit</b>	<b>C25 Exp Unit</b>	<b>B20 System Unit</b>
#6050	Enhanced Twinaxial Workstation Controller	1	1	1	1	1	1	1	1
#6140 #9140	Twinaxial Workstation Controller	1	1	1	1	1	1	1	1
#6141 #9141	ASCII Workstation Controller	2	2	2	2	2	2	2	2
#6142	ASCII 12-Port Workstation Attachment	2	2	2	2	2	2	2	2
<b>COMMUNICATIONS</b>		<b>B20 System Unit</b>	<b>B20 Exp Unit</b>	<b>C10 System Unit</b>	<b>C20 System Unit</b>	<b>C20 Exp Unit</b>	<b>C25 System Unit</b>	<b>C25 Exp Unit</b>	<b>B20 System Unit</b>
#6150	<b>Three Line Communications Controller (TLCC)</b> Provides basic control and common circuits for up to three communications lines. Supports ASYNC, BSC, SDLC and X.25 protocols. Maximum aggregate data rate 192 Kbps. Maximum: Four. Two in the System Unit and four with an Expansion Unit.	2	2	4	2	2	4	2	4
#6151	<b>X.21 One-Line Adapter</b> Provides adapter and cable to support one communication line on X.21 and X.25 circuits. Line speeds up to 64 Kbps are supported using SDLC or X.25 protocols. Prerequisite: Can attach to either TLCC #6150 or to the Multifunction I/O Processor. Maximum: three on TLCC #6150, one on Multifunction I/O Processor.	7	7	12	7	7	12	7	12
#6152	<b>EIA 232/V.24 One-Line Adapter</b> One adapter is provided as standard, with modem for use with ECS. Provides adapter and cable to support one communication line using either ASYNC, BSC, SDLC or X.25 protocols. Line speeds up to 19.2 Kbps are supported. Prerequisite: Can attach to either TLCC #6150 or to the Multifunction I/O processor. Requires either EIA 232/V.24 Enhanced Cable #9023 or EIA 232/V.24 Cable #9022. Maximum: Three on TLCC #6150, two on Multifunction I/O processor.	8	8	9	8	8	9	8	9

#6153	<b>V.35 One-Line Adapter</b> Provides adapter and cable to support one communication line. Line speeds up to 64 Kbps using Binary Synchronous, SDLC or X.25 protocols are supported. For optimal performance, using high-speed line one V.35 adapter per TLCC is recommended. Prerequisite: TLCC #6150. Maximum: Three per TLCC #6150.	2	2	2	2	2	2	2	2
<b>LANS</b>		<b>B20 System Unit</b>	<b>B20 Exp Unit</b>	<b>C10 System Unit</b>	<b>C20 System Unit</b>	<b>C20 Exp Unit</b>	<b>C25 System Unit</b>	<b>C25 Exp Unit</b>	<b>B20 System Unit</b>
#2625	<b>Ethernet/IEEE 802.3 CSMA/CD LAN Adapter</b>	1	1	1	1	1	1	1	1
#2636	<b>16/4 Mbps Token Ring Network Adapter</b>	1	1	1	1	1	1	1	1
#6160	<b>4 Mbps IBM Token Ring Network Adapter</b>	1	1	1	1	1	1	1	1
<b>DISK UNITS</b>		<b>B20 System Unit</b>	<b>B20 Exp Unit</b>	<b>C10 System Unit</b>	<b>C20 System Unit</b>	<b>C20 Exp Unit</b>	<b>C25 System Unit</b>	<b>C25 Exp Unit</b>	<b>B20 System Unit</b>
#6100	<b>315 MB Disk Unit</b> Requires #5133, when in third disk slot position of System Unit or Expansion Unit. Only three disks can be installed in the Expansion Unit if #6346 is also installed in Expansion Unit.	1	1	4	2	2	4	2	4
#6105	<b>320 MB Disk Unit</b> Requires #5133 when in third disk slot position of System Unit or Expansion Unit. Only three disks can be installed in the Expansion Unit if #6346 is also installed in Expansion Unit.	1	1	4	2	2	4	2	4
#6106	<b>640 MB Dual Disk Unit</b> This can only be installed only in the first disk position in the System Unit.	1	1	-	1	1	-	1	-
#6108	<b>640 MB Dual Disk Unit</b> Requires #7201 if installed in a System Unit of #7202 if installed in an Expansion Unit.	2	2	4	2	2	4	2	4
<b>INTERNAL TAPE AND DISKETTE UNITS</b>		<b>B20 System Unit</b>	<b>B20 Exp Unit</b>	<b>C10 System Unit</b>	<b>C20 System Unit</b>	<b>C20 Exp Unit</b>	<b>C25 System Unit</b>	<b>C25 Exp Unit</b>	<b>B20 System Unit</b>
#6131	<b>Diskette Unit (5¼-inch)</b>	1	1	1	1	1	1	1	1
#6132	<b>Diskette Unit (8-inch)</b>	1	1	1	1	1	1	1	1
#6346	<b>120MB ¼-inch Cartridge Tape</b>	-	-	1	-	-	1	-	1
#6347 #8347	<b>525MB ¼-inch Cartridge Tape</b>	1	1	1	1	1	1	1	1

MAGNETIC MEDIA CONTROLLER		B20 System Unit	B20 Exp Unit	C10 System Unit	C20 System Unit	C20 Exp Unit	C25 System Unit	C25 Exp Unit	B20 System Unit
#2600	<b>Magnetic Storage Device Controller (MSDC)</b> Always required when disk unit features #6100, #6105, and #6108 are in the third disk unit position, and Dual Disk install prerequisite feature #7201 for the System Unit and #7202 for the Expansion Unit are specified. Card Slots used: One	1	1	1	1	1	1	1	1
#2621	<b>Removable Media Device Controller.</b> Maximum is one for 9404 B20.	1	1	1	1	1	1	1	1
#2622	<b>3490 Magnetic Tape Attachment.</b> Maximum is one per system.	1	1	1	1	1	1	1	1
#2644	<b>3490 Magnetic Tape Attachment Card/HP</b>	1	1	1	1	1	1	1	1
#2647	<b>9348 Model 002 Magnetic Tape Unit Attachment</b> This feature provides attachment of up to two 9348 Model 002 tape units. It is not supported as Alternate IPL on 9404 Models. Card Slots used: One	1	1	1	1	1	1	1	1
#9980	<b>Serpentine Cable</b>	1	1	1	1	1	1	1	1

## 5.4.2 9404 D Models Optional Features and Devices

POWER AND PACKAGING		D10 System Unit	D10 Exp Unit	D20 System Unit	D20 Exp Unit	D25 System Unit	D25 Exp Unit	D25 Storage Exp
#1101	<b>Battery Power Unit</b>	1	1	1	1	1	1	
#5133	<b>Feature Power Supply</b>	1	1	1	1	1	1	
#7110 #7100	<b>Expansion Unit</b> This unit provides space for adding three disk units, a ¼-inch tape drive, a diskette drive and five card slots. The #7100 is only supported on D Models when they have upgraded from B or C Models.	1	-	1	-	1	-	-
#7201 #9201	<b>Dual Disk Install - System Unit</b> This feature is a prerequisite for dual disks (#6108, #6109, #6121 or #6123) installed in the System Unit. The #9201 is the plant installed version. Uses no card slots.	1	-	1	-	-	-	-
#7202 #9202	<b>Dual Disk Install - Expansion Unit</b> This feature is a prerequisite for dual disks (#6108, #6109, #6121 or #6123) installed in Expansion Unit #7100. The #9202 is the plant installed version. When #7202 is installed the fourth disk position cannot be used. Uses no card slots.	-	1	-	1	-	-	-
#7203	<b>Storage Expansion Unit</b>	-	-	-	-	-	-	-
MAIN STORAGE		D10 System Unit	D10 Exp Unit	D20 System Unit	D20 Exp Unit	D25 System Unit	D25 Exp Unit	D25 Storage Exp
#3108	<b>8 MB Main Storage</b> Card slots used: One	-	-	2	-	-	-	-
#3120	<b>8 MB Main Storage</b> Card slots used: One	-	-	-	-	2	-	-
#3121	<b>8 MB Main Storage Expansion</b> Plugs into #3120.	-	-	-	-	2	-	-
#3122	<b>32 MB Main Storage</b> Card Slots used: One	-	-	-	-	1	-	-
#4104	<b>4 MB Main Storage</b> Card slots used: One	2	-	2	-	-	-	-
#4114	<b>4 MB Main Storage Expansion</b> One or two #4114s can be plugged on to each #3108 or #4104.	4	-	4	-	-	-	-
WORKSTATION CONTROLLERS		D10 System Unit	D10 Exp Unit	D20 System Unit	D20 Exp Unit	D25 System Unit	D25 Exp Unit	D25 Storage Exp
#6050 #9050	<b>Enhanced Twinax Workstation Controller</b>	1	1	1	1	2	2	-

#6053 #8054 #9054	Workstation Adapter for Apple Macintosh (Local Talk)	1	1	1	1	2	2	-
#6140 #9141	Twinaxial Workstation Controller	1	1	1	1	2	2	-
#6141 #9141	ASCII Workstation Controller	2	2	2	2	3	3	-
#6142	ASCII 12-Port Workstation Attachment	2	2	2	2	3	3	-
COMMUNICATIONS		D10 System Unit	D10 Exp Unit	D20 System Unit	D20 Exp Unit	D25 System Unit	D25 Exp Unit	D25 Storage Exp
#2605	ISDN Basic Rate Interface Adapter	4	5	4	5	4	5	-
#2620	Full Cryptographic Processor Requires V2R3 or later.	1	1	1	1	1	1	-
#2623	Six-Line Communications Controller (SLCC)	2	3	2	3	2	3	-
#2628	Limited Cryptographic Processor Requires V2R3 or later.	1	1	1	1	1	1	-
#2654 #2657	EIA 232/V.24 Two-Line Adapter (Enhanced Cable)  #2654 provides 20ft (6m) enhanced cable #2657 provides 50ft (15m) enhanced cable	6	6	6	6	6	6	-
#2655 #2658	EIA 232/V.24 Two-Line Adapter  #2655 provides 20ft (6m) cable #2658 provides 50ft (15m) cable	6	6	6	6	6	6	-
#2656 #2659	X.21 Two-Line Adapter  #2656 provides 20ft (6m) cable #2659 provides 50ft (15m) cable	6	6	6	6	6	6	-
#2664	Integrated Fax Adapter Maximum: Eight	4	5	4	5	4	5	-
#2666	High Speed Communications Adapter	2	2	2	2	2	2	-
#6151 #6171	X.21 One-Line Adapter	1	-	1	-	1	-	-
#6153 #6173	V.35 One-Line Adapter	4	4	4	4	4	4	-
#6154 #6155 #6174 #6175	EIA 232/V.24 One-Line Adapter	1	-	1	-	1	-	-

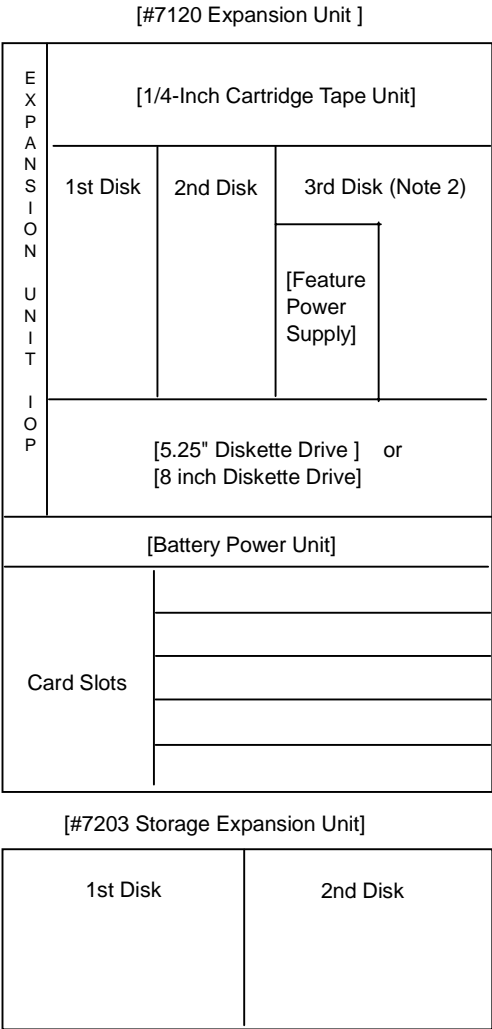
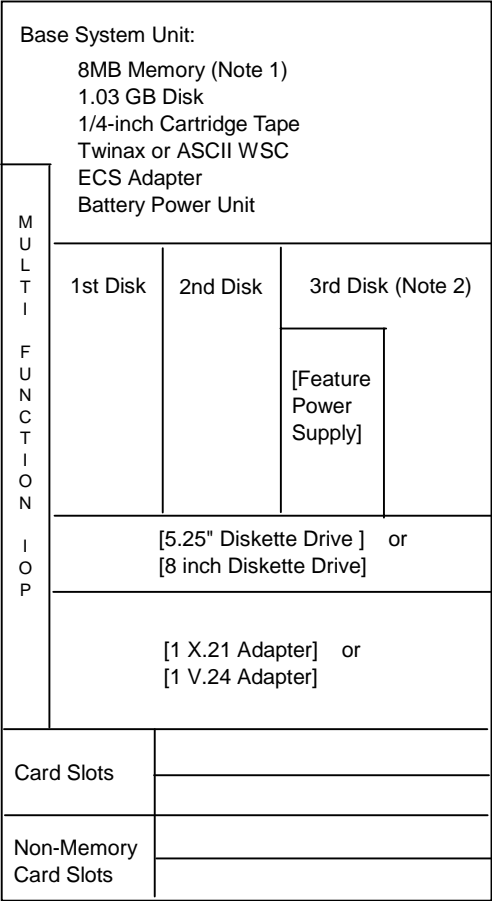


LANS		D10 System Unit	D10 Exp Unit	D20 System Unit	D20 Exp Unit	D25 System Unit	D25 Exp Unit	D25 Storage Exp
#2617	Ethernet/IEEE 802.3 Adapter/HP	1	1	1	1	1	1	-
#2618	Fiber Distributed Data Interface Adapter	1	1	1	1	1	1	-
#2619	16/4 Mbps Token Ring Adapter/HP	1	1	1	1	1	1	-
#2625	Ethernet LAN Adapter	1	1	1	1	1	1	-
#2626	16/4 Mbps Token Ring Network Adapter/A	1	1	1	1	1	1	-
#2636	16/4 Mbps Token Ring Network Adapter	1	1	1	1	1	1	-
#2663	I/O Attachment Processor	1	1	1	1	1	1	-
#2665	Shielded Twisted-Pair Distributed Data Interface Adapter	1	1	1	1	1	1	-
#2668	Wireless LAN Adapter	1	1	1	1	1	1	-
#6516	<b>Integrated PC Server</b> (formerly known as FSIOP) 16 MB One-Port IPCS	2	2	2	2	2	2	-
#6517	32 MB One-Port IPCS	2	2	2	2	2	2	-
#6518	48 MB One-Port IPCS	2	2	2	2	2	2	-
#6519	64 MB One-Port IPCS	2	2	2	2	2	2	-
#6526	16 MB Two-Port IPCS	1	1	1	1	1	1	-
#6527	32 MB Two-Port IPCS	1	1	1	1	1	1	-
#6528	48 MB Two-Port IPCS	1	1	1	1	1	1	-
#6529	64 MB Two-Port IPCS	1	1	1	1	1	1	-
The following cables need to be specified depending on the network attaching into a Integrated PC Server Port: #9024 Token Ring Cable (2.44m) #9025 Ethernet Cable (3m AUI)								
#6509	<b>Additional 16 MB for Integrated PC Server</b>	6	6	6	6	6	6	-
#6520	<b>Upgrade One-Port Integrated PC Server to Two-Port Integrated PC Server</b>	1	1	1	1	1	1	-
DISK UNITS		D10 System Unit	D10 Exp Unit	D20 System Unit	D20 Exp Unit	D25 System Unit	D25 Exp Unit	D25 Storage Exp
#6100	315 MB Disk Unit	2	3	2	3	2	3	-
#6105	320 MB Disk Unit	2	3	2	3	2	3	-
#6106	640 MB Dual Disk	1	-	1	-	1	-	-
#6107	<b>400 MB Disk Unit</b> Attaches to MFIOP. Adding the second optional disk unit to the D10, D20, D25 System Unit or Expansion Unit requires #5133 and #2624.	2	3	2	3	2	3	2
#6108	640 MB Dual Disk Unit	2	3	2	3	2	3	-

#6109	<b>988 MB Disk Unit</b> Adding the second optional disk unit to the System Unit or Expansion Unit requires #5133, #2624 and #7201 or #7202. Requires V2R2.	1	3	1	3	2	3	1
#6120	<b>800 MB Dual Disk Unit</b> This feature provides the installation of a 800 MB dual disk unit for those D Models having been upgraded from B Models with a 315 MB disk in the first position. The 800 MB dual disk occupies the first slot and the 315 MB disk unit can be re-installed in an available slot in either System Unit or Expansion Unit.	1	-	1	-	1	-	-
#6121	<b>800MB Dual Disk Unit</b> Adding the second optional disk unit to a System Unit or the third optional disk unit to an Expansion Unit requires #5133 and #2624.	2	3	2	3	2	3	2
#6123	<b>1976MB Dual Disk Unit</b> Adding the second optional disk unit to the System Unit or Expansion Unit requires #5133, #2624 and #7201 or #7202. Requires V2R2.	1	3	1	3	2	3	2
#6124	<b>Base DASD Replacement (1976 MB)</b>	-	-	-	-	1	-	-
#6125	<b>Base DASD Replacement (988 MB)</b>	1	-	1	-	1	-	-
#9100	<b>315 MB Disk Unit</b>	2	2	2	2	2	2	-
#9106	<b>Base 640 MB Dual Disk Unit</b>	1	-	1	-	1	-	-
#9120	<b>Base 800 MB Dual Disk Unit</b>	1	-	1	-	1	-	-
<b>INTERNAL TAPE AND DISKETTE UNITS</b>		<b>D10 System Unit</b>	<b>D10 Exp Unit</b>	<b>D20 System Unit</b>	<b>D20 Exp Unit</b>	<b>D25 System Unit</b>	<b>D25 Exp Unit</b>	<b>D25 Storage Exp</b>
#6131	<b>Diskette Unit (5 ¼-inch)</b> For migration and data interchange with 5 ¼-inch diskettes on 5363, 5364, 9402 and 9331 Models 2 and 12.	1	1	1	1	-	-	-
#6132	<b>Diskette Unit (8-inch)</b> For migration and data interchange with ¼-inch diskettes on 5360, 5362, 5381, 5382 and 9331 Models 1 and 11.	1	1	1	1	-	-	-
#6137	<b>Diskette Unit (5 ¼-inch)</b>	-	-	-	-	1	1	-
#6138	<b>Diskette Unit (8-inch)</b>	-	-	-	-	1	1	-
#6346	<b>120 MB ¼-Inch Cartridge Tape</b> Provides full interchange with ¼-inch cartridge tape units provided with the AS/400, using the proper media and density.	-	1	-	1	-	1	-
#6347 #8347 #9347	<b>525 MB ¼-Inch Cartridge Tape</b>	1	1	1	1	1	1	-

#6348 #7348	1.2 GB ¼-inch Cartridge Tape	-	-	-	-	1	1	-
#6349 #7349	2.5 GB ¼-inch Cartridge Tape	-	-	-	-	1	1	-
RPQ 843859	840 mb ¼-inch Cartridge Mini Tape Unit	1	1	1	1	1	1	-
<b>MAGNETIC MEDIA CONTROLLERS</b>		<b>D10 System Unit</b>	<b>D10 Exp Unit</b>	<b>D20 System Unit</b>	<b>D20 Exp Unit</b>	<b>D25 System Unit</b>	<b>D25 Exp Unit</b>	<b>D25 Storage Exp</b>
#2621	Removable Media Device Attachment	1	1	1	1	1	1	-
#2622	3490 Magnetic Tape Attachment Maximum one per system	1	1	1	1	1	1	-
#2624	Storage Device Controller	1	1	1	1	1	1	-
#2644	3490 Magnetic Tape Attachment Card/HP	1	1	1	1	1	1	-
#6501	Tape/Disk Device Controller	1	1	1	1	1	1	-
#9980	Serpentine Cable	1	1	1	1	1	1	-
<b>Note: 1</b>		Maximum number of #2622 plus #2644 plus #6501 must not exceed two on any of these systems.						

5.5 9404 E and F Model Diagrams



- [ ] Optional Feature
1. Base Memory on E25, F20 and F25 is 16 MB.
  2. The Storage Device Controller is a prerequisite for the third disk in the System Unit and the third disk in the Expansion Unit.

### 5.5.1 9404 E Models Optional Features and Devices

POWER AND PACKAGING		E10 System Unit	E10 Exp Unit	E20 System Unit	E20 Exp Unit	E25 System Unit	E25 Exp Unit	E25 Storage Unit
#1101 #9101	<b>Battery Power Unit</b> The #9101 is standard battery power unit that comes with new E Model System Units and Expansion Units.	1	1	1	1	1	1	-
#5133	<b>Feature Power Supply</b>	1	1	1	1	1	1	-
#7120	<b>Expansion Unit</b>	1	-	1	-	1	-	-
#7203	<b>Storage Expansion Unit</b>	-	1	-	1	1	1	-
MAIN STORAGE		E10 System Unit	E10 Exp Unit	E20 System Unit	E20 Exp Unit	E25 System Unit	E25 Exp Unit	E25 Storage Unit
#3120	<b>8 MB Main Storage</b>	2	-	2	-	2	-	-
#3121	<b>8 MB Main Storage Expansion Feature</b>	2	-	2	-	2	-	-
#3122	<b>32 MB Main Storage</b>	2	-	2	-	2	-	-
WORKSTATION CONTROLLERS		E10 System Unit	E10 Exp Unit	E20 System Unit	E20 Exp Unit	E25 System Unit	E25 Exp Unit	E25 Storage Unit
#6050 #9050	<b>Enhanced Twinaxial Workstation Controller</b>	4	4	4	4	5	5	-
#6054 #8054 #9054	<b>Workstation Adapter for Apple Macintosh (Local Talk)</b>	4	4	4	4	5	5	-
#6050 #9050	<b>Enhanced Twinaxial Workstation Controller</b>	4	4	4	4	5	5	-
#6054 #8054 #9054	<b>Workstation Adapter for Apple Macintosh (Local Talk)</b>	4	4	4	4	5	5	-
#6140 #9140	<b>Twinaxial Workstation Controller</b>	4	4	4	4	5	5	-
#6141 #9141	<b>ASCII Workstation Controller</b>	5	5	5	5	5	5	-
#6142	<b>ASCII 12-port Workstation Controller</b>	5	5	5	5	5	5	-
COMMUNICATIONS		E10 System Unit	E10 Exp Unit	E20 System Unit	E20 Exp Unit	E25 System Unit	E25 Exp Unit	E25 Storage Unit
#2605	<b>ISDN Basic Rate Interface Adapter</b>	4	5	4	5	4	5	-
#2620	<b>Full Cryptographic Processor</b> Requires V2R3	1	1	1	1	1	1	-
#2623	<b>Six-Line Communication Controller (SLCC)</b>	4	5	4	5	4	5	-
#2628	<b>Limited Cryptographic Processor</b> Requires V2R3 or later.	1	1	1	1	1	1	-

#2654 #2657	<b>EIA 232/V.24 Two-Line Adapter (Enhanced Cable)</b> #2654 provides 20ft (6m) enhanced cable #2657 provides 50ft (15m) enhanced cable	6	6	9	9	12	12	-
#2655 #2658	<b>EIA 232/V.24 Two-Line Adapter</b> #2655 provides 20ft (6m) cable #2658 provides 50ft (15m) cable	6	6	9	9	12	12	-
#2656 #2659	<b>X.21 Two-Line Adapter</b> #2656 provides 20ft (6m) cable #2659 provides 50ft (15m) cable	6	6	9	9	12	12	-
#2664	<b>Integrated Fax Adapter</b> Maximum: Eight	4	5	4	5	4	5	-
#2666	<b>High Speed Communications Adapter</b>	2	2	2	2	2	2	-
#6151 #6171	<b>X.21 One-Line Adapter</b>	1	-	1	-	1	-	-
#6153 #6173	<b>V.35 One-Line Adapter</b>	4	4	4	4	4	4	-
#6154 #6155 #6174 #6175	<b>EIA 232/V.24 One-Line Adapter</b>	1	-	1	-	1	-	-
<b>LANS</b>		<b>E10 System Unit</b>	<b>E10 Exp Unit</b>	<b>E20 System Unit</b>	<b>E20 Exp Unit</b>	<b>E25 System Unit</b>	<b>E25 Exp Unit</b>	<b>E25 Storage Unit</b>
#2617	<b>Ethernet/IEEE 802.3 Adapter/HP</b>	2	2	2	2	2	2	-
#2618	<b>Fiber Distributed Data Interface Adapter</b>	1	1	1	1	1	1	-
#2619	<b>16/4 Mbps Token Ring Adapter/HP</b>	2	2	2	2	2	2	-
#2625	<b>Ethernet LAN Adapter</b>	2	2	2	2	2	2	-
#2626	<b>16/4 Mbps Token Ring Network Adapter/A2</b>	2	2	2	2	2	2	-
#2636	<b>16/4 Mbps Token Ring Network Adapter</b>	2	2	2	2	2	2	-
#2663	<b>I/O Attachment Processor</b> Prerequisite for #2668	1	1	1	1	1	1	-
#2665	<b>Shielded Twisted-Pair Distributed Data Interface Adapter</b>	1	1	1	1	1	1	-
#2668	<b>Wireless LAN Adapter</b>	2	2	2	2	2	2	-

	<b>Integrated PC Server (formerly known as FSIOP)</b>							
#6516	16 MB One-Port Integrated PC Server	2	2	2	2	2	2	-
#6517	32 MB One-Port Integrated PC Server	2	2	2	2	2	2	-
#6518	48 MB One-Port Integrated PC Server	2	2	2	2	2	2	-
#6519	64 MB One-Port Integrated PC Server	2	2	2	2	2	2	-
#6526	16 MB Two-Port Integrated PC Server	1	1	1	1	1	1	-
#6527	32 MB Two-Port Integrated PC Server	1	1	1	1	1	1	-
#6528	48 MB Two-Port Integrated PC Server	1	1	1	1	1	1	-
#6529	64 MB Two-Port Integrated PC Server	1	1	1	1	1	1	-
	The following cables need to be specified depending on the network attaching into a Integrated PC Server Port: #9024 Token Ring Cable (2.44m) #9025 Ethernet Cable (3m AUI)							
#6509	<b>Additional 16 MB for Integrated PC Server</b>	6	6	6	6	6	6	-
#6520	<b>Upgrade One-Port Integrated PC Server to Two-Port Integrated PC Server</b>	1	1	1	1	1	1	-
DISK UNITS		E10 System Unit	E10 Exp Unit	E20 System Unit	E20 Exp Unit	E25 System Unit	E25 Exp Unit	E25 Storage Unit
#6100	315 MB Disk Unit	2	3	2	3	2	3	-
#6105	320 MB Disk Unit	2	3	2	3	2	3	-
#6106	640 MB Dual Disk	1	-	1	-	1	-	-
#6107	400 MB Disk Unit	2	3	2	3	2	3	2
#6108	640 MB Dual Disk Unit	2	3	2	3	2	3	-
#6109	988 MB Disk Unit	2	3	2	3	2	3	2
#6120	800 MB Dual Disk Unit	1	-	1	-	1	-	-
#6121	800 MB Dual Disk Unit	2	3	2	3	2	3	2
#6123	1976 MB Dual Disk Unit	2	3	2	3	2	3	2
#6124 #8123	Base DASD Replacement (1976 MB)	1	-	1	-	1	-	-
#6125	Base DASD Replacement (988 MB)	1	-	1	-	1	-	-
#6602	1.03 GB Disk Unit	2	3	2	3	2	3	2
#6603	1.96 GB Disk Unit	2	3	2	3	2	3	2
#6612	2.06 GB Dual Disk Unit	2	3	2	3	2	3	2
#6613	3934 MB Dual Disk Unit	2	3	2	3	2	3	2
#7613	Base DASD Replacement (3934 MB)	1	-	1	-	1	-	-
#8613	Base 3934 MB Dual Disk Unit	1	-	1	-	1	-	-
#9100	315 MB Disk Unit	2	2	2	2	2	2	-
#9106	Base 640 MB Dual Disk Unit	1	-	1	-	1	-	-
#9109	Base 988 MB Disk Unit	1	-	1	-	1	-	-
#9120	Base 800 MB Dual Disk Unit	1	-	1	-	1	-	-

INTERNAL TAPE AND CASSETTE UNITS		E10 System Unit	E10 Exp Unit	E20 System Unit	E20 Exp Unit	E25 System Unit	E25 Exp Unit	E25 Storage Unit
#6137	Diskette Unit (5 ¼-inch)	1	1	1	1	1	1	-
#6138	Diskette Unit (8-inch)	1	1	1	1	1	1	-
#6347 #7347 #8347 #9347	525 MB ¼-Inch Cartridge Tape Unit	1	1	1	1	1	1	-
#6348 #7348 #8348	1.2 GB ¼-inch Cartridge Tape Unit	1	1	1	1	1	1	-
#6349 #7349	2.5 GB ¼-inch Cartridge Tape Unit	1	1	1	1	1	1	-
RPQ 843859	840 MB ¼-inch Cartridge Mini Tape Unit	1	1	1	1	1	1	-
MAGNETIC MEDIA CONTROLLERS		E10 System Unit	E10 Exp Unit	E20 System Unit	E20 Exp Unit	E25 System Unit	E25 Exp Unit	E25 Storage Unit
#2621	Removable Media Device Attachment Maximum is two per system.	2	2	2	2	2	2	-
#2622	3490 Magnetic Tape Attachment Maximum is one per system	1	1	1	1	1	1	-
#2624	Storage Device Controller	1	1	1	1	1	1	-
#2644	3490 Magnetic Tape Attachment Card/HP	1	1	1	1	1	1	-
#6501	Tape/Disk Device Controller	1	1	1	1	1	1	-
#9980	Serpentine Cable	1	1	1	1	1	1	-
<b>Note 1:</b> Maximum number of #2622 plus #2644 plus #6501 must not exceed two on any of these systems.								



## 5.5.2 9404 F Models Optional Features and Devices

POWER AND PACKAGING		F10 System Unit	F10 Exp Unit	F20 System Unit	F20 Exp Unit	F25 System Unit	F25 Exp Unit	Fxx Storage Exp
#1101 #9101	<b>Battery Power Unit</b> Provides a minimum of five minutes backup power. The #9101 is the standard battery power unit that comes with new F Model System Units and Expansion Units. Card slots used: None.	1	1	1	1	1	1	-
#5133	<b>Feature Power Supply</b> This feature is needed whenever the third disk position in the System Unit or Expansion Unit (#7120) is used. Two #5133s are required if both third positions are filled. Card slots used: None.	1	1	1	1	1	1	-
#7120	<b>Expansion Unit</b> This unit provides space for adding three disk units, a ¼-inch tape drive, a diskette drive and five card slots. Card slots used: None.	1	-	1	-	1	-	-
#7203	<b>Storage Expansion Unit</b> Provides space for one or two disk units. Sits on top of System Unit or Expansion Unit. Prerequisites are the #7120, #5133, and #2624. Card slots used: None	1	1	1	1	1	1	-
MAIN STORAGE		F10 System Unit	F10 Exp Unit	F20 System Unit	F20 Exp Unit	F25 System Unit	F25 Exp Unit	Fxx Storage Exp
#3120	<b>8 MB Main Storage</b> Occupies one card slot.	2	-	2	-	2	-	-
#3121	<b>8 MB Main Storage Expansion Feature</b> Plugs onto the #3120 8 MB Main Storage Card	2	-	2	-	2	-	-
#3122	<b>32 MB Main Storage</b> Occupies one card slot.	2	-	2	-	2	-	-
WORKSTATION CONTROLLERS		F10 System Unit	F10 Exp Unit	F20 System Unit	F20 Exp Unit	F25 System Unit	F25 Exp Unit	Fxx Storage Exp
#6050 #9050	<b>Enhanced Twinaxial Workstation Controller</b> One eight-port workstation attachment is provided to support 40 5250-type displays or printers. The #9050 is the base Workstation Controller.	5	5	5	5	5	5	-

#6054 #8054 #9054	<b>Workstation Adapter for Apple Macintosh (LocalTalk)</b> Allows Apple Macintosh computer devices to attach directly to the AS/400 system. It also allows for connection to LocalTalk networks. Each adapter allows attachment of 31 Apple Macintosh devices with up to 56 sessions. #6054 attaches to the #2623 #8054 or #9054 attaches to the MFIOF A maximum of one #6054/#8054 can be attached per #2623/MFIOF. A second adapter on the #2623 may be X.21, V.24 or V.35. The third adapter position <i>must not</i> be used. A single-line EIA 232/V.24 adapter may be co-resident with #8054 on MFIOF.	5	5	5	5	5	5	-
#6140 #9140	<b>Twinaxial Workstation Controller</b> Provides eight ports to support a maximum of 40 Twinaxial devices. The #9140 is the base Workstation Controller. Requires one I/O card slot.	5	5	5	5	5	5	-
#6141 #9141	<b>ASCII Workstation Controller</b> Supports up to six ASCII devices. The #9141 is the base Workstation Controller. Requires one I/O card slot.	5	5	5	5	5	5	-
#6142 #9142	<b>ASCII 12-port Workstation Attachment</b> This attachment plugs into the ASCII Workstation Controller #6141/#9141 providing an additional 12 ports. Only one #6142 can be attached per #6141 or #9141. Requires no I/O card slot.	5	5	5	5	5	5	-
<b>COMMUNICATIONS</b>		<b>F10 System Unit</b>	<b>F10 Exp Unit</b>	<b>F20 System Unit</b>	<b>F20 Exp Unit</b>	<b>F25 System Unit</b>	<b>F25 Exp Unit</b>	<b>Fxx Storage Exp</b>
#2605	<b>ISDN Basic Rate Interface Adapter</b> This feature consists of an adapter card and cable to attach to an ISDN network. Each adapter supports two 64 Kbps "B" channels and one 16 Kbps "D" channel. ISDN lines are full duplex. Prerequisite is #2623. Two #2605 features may be attached per #2623. The #2605 cannot be attached to a #2623 that also attaches EIA 232/V.24, X.21, or V.35 adapters.	4	5	4	5	4	5	-
#2620	<b>Full Cryptographic Processor</b> This feature provides full cryptographic support for encrypting and decrypting data. This feature consists of an I/O processor card and cable to attach an optional 4754-001. Distribution of this feature is restricted by US Government export regulations. In countries outside the USA and Canada, it may be marketed only to financial institutions and subsidiaries of US companies. Requires one I/O card slot.	1	1	1	1	1	1	-
#2623	<b>Six-Line Communications Controller (SLCC)</b> This feature provides the basic control and common circuits for up to six communications lines. Requires one feature card slot.	4	5	4	5	4	5	-

#2628	<b>Limited Cryptographic Processor</b> Provides the same functions as #2620, except for Data Encryption Standard based data scrambling. Instead it uses Commercial Data Masking Facility for data scrambling. Supports attachment of optional 4754-L01. Does not require US Customs clearance. Requires one I/O card slot.	1	1	1	1	1	1	-
#2654 #2657	<b>EIA 232/V.24 Two-Line Adapter (Enhanced Cable)</b> This feature consists of an adapter and two enhanced cables to support two communication lines using ASYNC, BSC, SDLC or X.25 protocols. #2654 provides 20ft (6m) enhanced cable #2657 provides 50ft (15m) enhanced cable Line speeds of up to 19.2 Kbps are supported. Up to three can be connected to the Six-Line Communications Controller.	6	6	9	9	12	12	-
#2655 #2658	<b>EIA 232/V.24 Two-Line Adapter</b> This feature consists of an adapter and two cables to support two communication lines using ASYNC, BSC, SDLC or X.25 protocols. #2655 provides 20ft (6m) cable #2658 provides 50ft (15m) cable Line speeds of up to 19.2 Kbps are supported. Up to three can be connected to the Six-Line Communications Controller.	6	6	9	9	12	12	-
#2656 #2659	<b>X.21 Two-Line Adapter</b> This feature consists of an adapter and two cables to support two communication lines to an X.21 or X.25 network. #2656 provides 20ft (6m) cable #2659 provides 50ft (15m) cable Up to three can be connected to the Six-Line Communications Controller.	6	6	9	9	12	12	-
#2664	<b>Integrated Fax Adapter</b> Provides the AS/400 system with two ports capable of transmission and receipt of facsimile data to or from a Group 3 capable Fax, another AS/400 system with an integrated Fax adapter, or PCs with appropriately programmed Fax adapter.	4	5	4	5	4	5	-

#2666	<b>High Speed Communications Adapter</b> This feature provides the AS/400 system with one communications port capable of high speed communication over public or private Frame Relay networks. Speeds of up to 2.048 Mbps are possible. V2R3 or later of OS/400 is required. Requires one card slot for each feature. On the 9402, feature #7105, #7106, #7107, or #7115 is a prerequisite. One of the following cables must be ordered with the #2666: #9879 6m V35 cable #9880 24m V35 cable * #9882 6m V36/EIA 449 cable #9883 24m V36/EIA 449 cable ** #9884 45m V36/EIA 449 cable ** #9885 6m X21 cable * Line speeds up to 64 Kbps only  ** Use of these longer cables requires that the attaching Data Communications equipment (DCE) support the V.36 transmitter signal element timing Data Terminal Equipment (DTE) source signal. The #2666 is classed as a communications line for purpose of maximum communications lines per model.	2	2	2	2	2	2	-
#6151 #6171	<b>X.21 One-Line Adapter</b> Provides adapter and cable to support one communications line on X.21 or X.25. This feature is required for X.21 Short Hold Mode ports. #6151 provides 20ft (6m) cable #6171 provides 50ft (15m) cable Line speeds up to 64 Kbps are supported. Two lines at speeds up to 19.2 Kbps or one line at speeds over 19.2 Kbps. Attaches using MFIOF. Does not require any card slots.	1	-	1	-	1	-	-
#6153 #6173	<b>V.35 One-Line Adapter</b> Provides adapter and cable to support one communications line. #6153 provides 20ft (6m) cable #6173 provides 50ft (15m) cable Line speeds up to 48 Kbps or greater using BSC, SDLC and X.25 are supported. Attaches using MFIOF or #2623.	4	4	4	4	4	4	-
#6154 #6155 #6174 #6175	<b>EIA 232/V.24 One-Line Adapter</b> Provides adapter and cable to support one communications line using either ASYNC, BSC, SDLC or X.25 protocol. #6154 provides 20ft (6m) enhanced cable #6155 provides 50ft (15m) enhanced cable #6174 provides 20ft (6m) cable #6175 provides 50ft (15m) cable Line speeds up to 19.2 Kbps are supported. Attaches through MFIOF.	1	-	1	-	1	-	-

LANs		F10 System Unit	F10 Exp Unit	F20 System Unit	F20 Exp Unit	F25 System Unit	F25 Exp Unit	Fxx Storage Exp
#2617	<b>Ethernet/IEEE 802.3 Adapter/HP</b> Provides a single attachment to one Carrier Sense Multiple Access/Collision Detect Local Area Network. The customer must procure the Attachment Unit Interface (AUI) cable which connects between the adapter and the Ethernet/IEEE 802.3 transceiver. Requires one I/O card slot.	2	2	2	2	2	2	-
#2618	<b>Fiber Distributed Data Interface Adapter</b> Provides one interface to connect an AS/400 system to an FDDI LAN, which complies with ANSI X3T9.5 and ISO 9314 standards. Requires one I/O card slot. Cables: requires multinode (62.5/125) micron FDDI optical fiber jumper cables to connect the FDDI adapter into the FDDI ring. This must be separately ordered.	1	1	1	1	1	1	-
#2619	<b>16/4 Mbps Token Ring Adapter/HP</b> Provides a single attachment to a 16 Mbps or 4 Mbps IBM Token Ring Network. It consists of an adapter card, Internal Code, which supplies IEEE 802.5 Media Access Control and Logical Link Control functions, and an external 2.5m cable. Requires one I/O card slot.	2	2	2	2	2	2	-
#2625	<b>Ethernet IEEE/802.3 Adapter</b> Provides attachment to Ethernet CSMA/CD LAN. Requires one I/O card slot.	2	2	2	2	2	2	-
#2626	<b>16/4 Mbps Token Ring Adapter/A</b> Provides a single attachment to either a 16 or 4 Mbps Token Ring network. Requires one I/O card slot.	2	2	2	2	2	2	-
#2636	<b>16/4 Mbps Token Ring Adapter</b> Provides a single attachment to a 16 or 4 Mbps Token Ring network. Requires one I/O card slot.	2	2	2	2	2	2	-
#2663	<b>I/O Attachment Processor</b> Provides the communication hardware base for the #2668 AS/400 Wireless LAN Adapter. The #2663 and #2668 are integrated in a single hardware package to operate as a unit Prerequisite for feature #2668. Shares one I/O card slot with #2668	2	2	2	2	2	2	-
#2665	<b>Shielded Twisted-Pair Distributed Data Interface Adapter</b> Provides one interface to connect an AS/400 system to an FDDI LAN which is constructed of IBM Cabling System Type 1, 2, 6, or 9 shielded twisted pair wiring Requires one I/O card slot. Cables: the SDDI adapter requires IBM FDDI copper jumper cables to connect the adapter into the FDDI ring. These must be separately ordered.	1	1	1	1	1	1	-

#2668	<b>Wireless LAN Adapter</b> Provides wireless connectivity from AS/400 systems to workstations or other systems connected to a wireless LAN network. The #2668 comes with an antenna and a cable for connecting the antenna to the adapter. One of the following antenna cables must be specified: #9814 20ft antenna cable #9815 50ft antenna cable One of the following antenna must be specified: #9890 Omni-directional antenna #9891 Hemispherical antenna #9892 Directional antenna Prerequisite: #2663	2	2	2	2	2	2	-
#6516 #6517 #6518 #6519 #6526 #6527 #6528 #6529	<b>Integrated PC Server (formerly known as FSIOP)</b> The Integrated PC Server connects to the AS/400 system to provide high performance file serving to PCs attached through Token Ring or Ethernet networks. The IOP consists of an INTEL 80486 66 MHZ processor and onboard Main Storage (16 to 64 MB). The following initial order configurations can be field upgraded using #6509 and #6520: 16 MB One-Port Integrated PC Server 32 MB One-Port Integrated PC Server 48 MB One-Port Integrated PC Server 64 MB One-Port Integrated PC Server 16 MB Two-Port Integrated PC Server 32 MB Two-Port Integrated PC Server 48 MB Two-Port Integrated PC Server 64 MB Two-Port Integrated PC Server The following cables need to be specified depending on the network attaching into a Integrated PC Server Port: #9024 Token Ring Cable (2.44m) #9025 Ethernet Cable (3m AUI) The Integrated PC Server requires two contiguous card slots	2 2 2 2 1 1 1 1	2 2 2 2 1 1 1 1	2 2 2 2 1 1 1 1	2 2 2 2 1 1 1 1	2 2 2 2 1 1 1 1	2 2 2 2 1 1 1 1	- - - - - - - -
#6509	<b>Additional 16 MB for Integrated PC Server</b> #6509 is used for expanding the memory of an installed Integrated PC Server. One to three #6509s may be installed per Integrated PC Server up to a maximum of 64 MB.	6	6	6	6	6	6	-
#6520	<b>Upgrade One-Port Integrated PC Server to Two-Port Integrated PC Server</b> #6520 cannot be used with a Two-Port Integrated PC Server.	1	1	1	1	1	1	-
<b>DISK UNITS</b>		<b>F10 System Unit</b>	<b>F10 Exp Unit</b>	<b>F20 System Unit</b>	<b>F20 Exp Unit</b>	<b>F25 System Unit</b>	<b>F25 Exp Unit</b>	<b>Fxx Storage Exp</b>
#6100	<b>315 MB Disk Unit</b>	2	3	2	3	2	3	-
#6105	<b>320 MB Disk Unit</b>	2	3	2	3	2	3	-
#6106	<b>640 MB Dual Disk</b>	1	-	1	-	1	-	-
#6107	<b>400 MB Disk Unit</b>	2	3	2	3	2	3	2
#6108	<b>640 MB Dual Disk Unit</b>	2	3	2	3	2	3	-

#6109	<b>988 MB Disk Unit</b> This feature provides a 3 ½-inch single disk unit with 988 MB capacity for additional disk storage. Adding the second optional disk unit to a System Unit or adding the third optional disk unit to an Expansion Unit requires #5133 and #2624. Requires V2R2.	2	3	2	3	2	3	2
#6120	<b>800 MB Dual Disk Unit</b>	1	-	1	-	1	-	-
#6121	<b>800 MB Dual Disk Unit</b>	2	3	2	3	2	3	2
#6123	<b>1976 MB Dual Disk Unit</b> This feature provides two 988 MB 3 ½-inch disks in a single unit for additional disk storage. Adding the second optional disk unit to an E or F Model System Unit or adding the third optional disk unit to an Expansion Unit requires the #5133 and #2624. Requires V2R2.	2	3	2	3	2	3	2
#6124 #8123	<b>Base DASD Upgrade (1976 MB)</b> This feature provides for the addition of a second 988 MB disk drive in the unit housing the base 988 MB disk drive. The resulting dual disk unit has a storage capacity of 1976 MB and occupies the base disk slot in the system unit. Feature #8123 is available only for plant orders. Requires V2R2.	1	-	1	-	1	-	-
#6125	<b>Base DASD Replacement (988 MB)</b> This feature provides for the replacement for the first base disk unit installed in a B, C, D or E Model being upgraded to a 9404 F Model. Occupies the first disk slot position in the System Unit. Requires V2R2.	1	-	1	-	1	-	-
#6602	<b>1.03 GB Disk Unit</b> This feature provides a 3 ½-inch single disk unit with 1.03 GB capacity for additional disk storage. Adding the second optional disk unit to a System Unit or adding the third optional disk unit to an Expansion Unit requires the #5133 and #2624. Requires V2R3.	2	3	2	3	2	3	2
#6603	<b>1.96 GB Disk Unit</b> This feature provides a 3 ½-inch single disk unit with 1.96 GB capacity for additional disk storage. Adding the second optional disk unit to a System Unit or adding the third optional disk unit to an Expansion Unit requires the #5133 and #2624. Requires V2R3.	2	3	2	3	2	3	2
#6612	<b>2.06GB Dual Disk Unit</b> This feature provides two 1.03 GB 3 ½-inch disks in a single unit for additional disk storage. Adding the second optional disk unit to a System Unit or adding the third optional disk unit to an Expansion Unit requires the #5133 and #2624. Requires V2R3.	2	3	2	3	2	3	2
#6613	<b>3934MB Dual Disk Unit</b> This feature provides two 1976 MB 3 ½-inch disks in a single unit for additional disk storage. Adding the second optional disk unit to a System Unit or adding the third optional disk unit to an Expansion Unit requires the #5133 and #2624. Requires V2R3. A maximum of four of these dual disk units may be used on any one system.	2	3	2	3	2	3	2

#7613	<b>Base DASD Replacement (3934 MB)</b> This feature provides for the replacement for the first base disk unit installed in a B, C, D or E Model being upgraded to a 9404 E or F Model. This may also be ordered as a replacement for the first base disk unit in an installed 9404 E or F Model. Occupies the first disk slot position in System Unit. Requires V2R3.	1	-	1	-	1	-	-
#8612	<b>Base 2.06 GB Dual Disk Unit</b> This feature replaces the base disk with two 1.03 GB 3 ½-inch disks in a single unit. It is a plant-installed feature only. Requires V2R3.	1	-	1	-	1	-	-
#8613	<b>Base 3934 MB Dual Disk Unit</b> This feature replaces the base disk unit with two 1976 MB 3 ½-inch disks in a single unit. It is a plant-installed feature only. Requires V2R3.	1	-	1	-	1	-	-
#9100	<b>315 MB Disk Unit</b> This feature identifies 315 MB disk units that were the base disks in 9404 B Models and have been replaced during an upgrade.	2	2	2	2	2	2	-
#9106	<b>Base 640 MB Dual Disk Unit</b>	1	-	1	-	1	-	-
#9109	<b>Base 988 MB Disk Unit</b>	1	-	1	-	1	-	-
#9120	<b>Base 800 MB Dual Disk Unit</b>	1	-	1	-	1	-	-
#9602	<b>Base 1.03 GB Disk Unit</b>	1	-	1	-	1	-	-
<b>INTERNAL TAPE AND DISKETTE UNITS</b>		<b>F10 System Unit</b>	<b>F10 Exp Unit</b>	<b>F20 System Unit</b>	<b>F20 Exp Unit</b>	<b>F25 System Unit</b>	<b>F25 Exp Unit</b>	<b>Fxx Storage Exp</b>
#6137	<b>Diskette Unit (5 ¼-inch)</b> For migration and data interchange with 5 ¼-inch diskettes on 5363, 5364, 9402, and 9331 Models 2 and 12 systems.	1	1	1	1	1	1	-
#6138	<b>Diskette Unit (8-inch)</b> For migration and data interchange with 8-inch diskettes on 5360, 5362, 5381, 5382, and 9331 Models 1 and 11 systems.	1	1	1	1	1	1	-
#6347 #7347 #8347 #9347	<b>525 MB ¼-inch Cartridge Tape Unit</b> Provides full interchange of data with appropriate ¼-inch cartridge tape units provided with the AS/400 system, using the proper media and density.	1	1	1	1	1	1	-
#5348 #6348 #7348 #9348	<b>1.2 GB ¼-inch Cartridge Tape Unit</b> Provides full interchange of data with appropriate ¼-inch cartridge tape units provided with the AS/400 system, using the proper media and density.	1	1	1	1	1	1	-
#6349 #7349 #8349	<b>2.5 GB ¼-inch Cartridge Tape Unit</b> Provides full interchange of data with appropriate ¼-inch cartridge tape units provided with the AS/400 system, using the proper media and density.	1	1	1	1	1	1	-
RPQ 843859	<b>840 MB ¼-inch Cartridge Mini Tape Unit</b> Provides same functionality as #6335 or #1262 on 9406 3xx Models. Requires prerequisite External Tape Attachment RPQ 843857 and #2621. V3R1 is also required.	1	1	1	1	1	1	-



MAGNETIC MEDIA CONTROLLERS		F10 System Unit	F10 Exp Unit	F20 System Unit	F20 Exp Unit	F25 System Unit	F25 Exp Unit	Fxx Storage Exp
#2621	<b>Removable Media Device Attachment</b> Required to support 9348, 7208 3995, or 9427 and provides the hardware data compression (HDC). If #2621 is to support 3995 or 9427, it must be dedicated to it. Maximum two on F10 and four on F20/25. Card slots used: One	2	2	2	2	2	2	-
#2622	<b>3490 Magnetic Tape Attachment</b> Card slots used: One Maximum one per system	1	1	1	1	1	1	-
#2624	<b>Storage Device Controller</b> Required to support the disk unit when added to disk slot position three in either the 9404 Model D, E, or F System Unit or the Expansion Unit. One Storage Device Controller is included as standard on the Expansion Unit to support the disk in positions one and two. Card slots used: One	1	1	1	1	1	1	-
#2644	<b>3490 Magnetic Tape Attachment Card/HP</b> This feature provides attachment for all 34xx Tape subsystem models to <i>all</i> 9404 Models (except SCSI attach 3490 models). This card provides greater throughput than #2622. May only be used as the Alternate IPL device on 9404 Model D25 and all E and F models. Maximum is two per system. Requires V2R3. May also require #9980 Serpentine Cable. Card slots used: One	1	1	1	1	1	1	-
#6501	<b>Tape/Disk Controller</b> This feature provides attachment for up to two SCSI attach 3490 or 35xx Tape Drives. Maximum is two in per system. Supported only on 9404 Models D, E, and F. Card slots used: One	1	1	1	1	1	1	-
#9980	<b>Serpentine Cable</b> Required for attaching all #2644 supported devices (except 3490-Cxx when attached through "internal cables").	1	1	1	1	1	1	-

**Note 1:** Maximum number of #2622 plus #2644 plus #6501 must not exceed two on any of these systems.

# 5.6 Maximum Communication Lines for Models B, C, D, E, and F

The following table indicates line speed maximums for CISC Model B, C, D, E, and F.

Model	Total Comm Lines	Total High Speed Lines	Max T1/E1/J1 Lines (3) > or =			Max 2623 + 2666	Max Other High Speed Lines
			384Kbps	512Kbps	640Kbps		
B10/C10	8	2	0	0	0	0	2
B20/C20/C25	14	2	0	0	0	0	2
D10/D20/D25	14	4	4	4	2	2	4
E10/F10	14	4	4	4	2	2	4
E20/F20	20	6	6	4	2	2	6
E25	26	6	6	4	2	2	8
F25	26	8	8	8	4	4	8

## Notes:

- These are X.21/V.35/ISDN lines, which support BSC, X.25, IDLC, and SDLC at speeds greater than 19.2 Kbps up through 64 Kbps. An ISDN adapter is counted as two lines when determining the number of lines supported.
- This is the combined number of #2666 and #2623 features supporting T1/E1/J1 speeds.

The Six-Line Communications Controller (#2623) supports up to three V.35 SDLC data lines for attachment to T1/E1/J1 facilities through appropriate Data Communications Equipment (DCE).

## Chapter 6. 9406 Models B, D, E, and F Models Overview

This chapter includes information on the 9406 B, D, E, and F models, and the 3xx family of processors with associated features and software.

### 6.1 9406 B Models

Processor Feature	9406 B30	9406 B35	9406 B40	9406 B45	9406 B50	9406 B60	9406 B70
Relative System Performance (CPW) (See Note 1)	3.8	4.6	5.2	6.5	9.3	15.1	20.0
Relative System Performance (RAMP-C) (See Note 2)	1.4	1.6	2.0	2.3	3.2	5.2	7.0
Main Storage (MB)	4-36	8-40	8-40	8-40	16-48	32-96	32-192
Disk Storage (GB)	0.6-13.7	0.6-13.7	0.6-13.7	0.6-13.7	0.6-27.4	0.6-54.8	0.6-54.8
Minimum Feature Card Slots	5	5	5	5	10	13	13
Maximum Feature Card Slots	14	14	24	24	39	71	71
Main Storage Feature Card Slots (See Note 3)	2	2	2	2	2	4	4/5
Communication Lines	2-16	2-16	2-32	2-32	2-32	2-32	2-48
LAN Adapters	0-4	0-4	0-4	0-4	0-4	0-4	0-4
Maximum Workstation Controllers							
Twinaxial/ASCII	4	4	6	6	10	15	20
¼-Inch Cartridge Tape	0-1	0-1	0-1	0-1	0-1	0-1	0-1
½-Inch Reel Tape							
9347	0-2	0-2	0-2	0-2	0-2	0-2	0-2
9348/2440	0-2	0-2	0-2	0-2	0-4	0-4	0-4
3422/3430	0-1	0-1	0-1	0-1	0-2	0-2	0-2
½-Inch Cartridge Tape							
3480/3490	0-1	0-1	0-1	0-1	0-2	0-2	0-2
8mm Cartridge Tape	0-2	0-2	0-2	0-2	0-4	0-4	0-4
Tape Libraries (9427 not supported)	0-1	0-1	0-1	0-1	0-2	0-2	0-2
Optical Libraries	0	0	0	0	0	0	0
Diskette Drives (5 ¼-Inch or 8-Inch)	0-4	0-4	0-6	0-6	0-10	0-15	0-20
Fax Adapters	0	0	0	0	0	0	0
Cryptographic Processors	0	0	0	0	0	0	0
System I/O Buses	1	1	1	1	2	3	3

## 6.2 9406 D Models

	9406 D35	9406 D45	9406 D50	9406 D60	9406 D70	9406 D80
Relative System Performance (CPW) (See Note 1)	7.4	10.8	13.3	23.9	32.3	56.6
Relative System Performance (RAMP-C) (See Note 2)	2.6	3.7	4.8	8.3	11.2	19.8
Number of N-way Multiprocessors	1	1	1	1	1	2
Main Storage (MB)	8-72	16-80	32-128	64-192	64-256	64-384
Disk Storage Base (GB)	1.28	1.28	1.28	1.28	1.28	1.28
Maximum Internal (GB)	4.1	4.1	4.1	4.1	4.1	4.1
Maximum External (GB)	63.0	63.0	94.3	141.7	141.7	251.8
Minimum Feature Card Slots	11	11	18	18	18	18
Maximum Feature Card Slots	55	55	84	140	140	196
Main Storage Feature Card Slots	2	2	5	5	5	5
Communication Lines	1-17	1-33	1-33	1-33	1-49	1-64
LAN Adapters	0-4	0-4	0-4	0-4	0-4	0-4
Maximum Workstation Controllers						
Twinaxial/ASCII/LocalTalk	6	10	15	20	30	50
Maximum Workstations (one minimum)						
Twinaxial	240	400	600	800	1200	2000
ASCII	108	180	270	360	540	900
LocalTalk	186	310	465	620	930	1550
¼-Inch Cartridge Tape	0-5	0-5	0-9	0-9	0-9	0-9
½-Inch Reel Tape						
9347	0-2	0-2	0-2	0-2	0-2	0-2
2440/9348/3422/3430	0-2	0-2	0-4	0-4	0-4	0-4
½-Inch Cartridge Tape						
3480/3490/3490E/3590/3570	0-2	0-2	0-4	0-4	0-4	0-4
8mm Cartridge Tape	0-4	0-4	0-4	0-4	0-4	0-4
Tape Libraries	0-2	0-2	0-4	0-4	0-4	0-4
Optical Libraries	0-8	0-8	0-14	0-14	0-14	0-14
Diskette Drives (5 ¼-Inch or 8-Inch)	0-2	0-2	0-2	0-2	0-2	0-2
Fax Adapters	0-8	0-16	0-16	0-16	0-24	0-32
Cryptographic Processors	0-1	0-1	0-1	0-1	0-1	0-1
System I/O Buses	2	2	3	3-5	3-5	3-7

<b>Note 1:</b>	Commercial Processing Workload (CPW) is used to measure the performance of all AS/400 processors announced from September 1996 onward. The CPW value is measured on maximum configurations. The type and number of disk devices, the number of workstation controllers, the amount of memory, the system model, other factors, and the application being run determine what performance is achievable.
<b>Note 2:</b>	The Relative System Performance ratios are estimated based on AS/400 environment RAMP-C workload, with a 9409 B10 with 16 MB of Main Storage and 945 MB of disk equalling 1.0. The ratios shown were estimated at maximum configurations running at 70% utilization. Relative system performance ratios may not be realized in all environments.
<b>Note 3:</b>	The number of available Main Storage features card slots for the Model B70 depends on whether 16 MB or 32 MB Main Storage cards are installed. When only 16 MB Main Storage cards are installed, the number of Main Storage feature card slots is four. When only 32 MB Main Storage cards are installed, the number of Main Storage feature card slots is five.

## 6.3 9406 E Models

	9406 E35	9406 E45	9406 E50	9406 E60	9406 E70	9406 E80	9406 E90	9406 E95
Relative System Performance (CPW) (See Note 1)	9.7	13.8	18.1	28.1	39.2	69.4	96.7	116.6
Relative System Performance (RAMP-C) (See Note 2)	3.4	4.8	6.4	10.2	14.2	25.2	34.4	42.1
Number of N-Way Multiprocessors	1	1	1	1	1	2	3	4
Main Storage (MB)	8-72	16-80	32-128	64-192	64-256	64-512	64-1024	64-1152
Disk Storage Base (GB)	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06
Maximum Internal (GB)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Maximum External (GB)	63.0	63.0	94.3	141.7	141.7	251.8	251.8	251.8
Minimum Feature Card Slots	11	11	18	18	18	18	18	18
Maximum Feature Card Slots	55	55	84	140	140	196	196	196
Main Storage Feature Card Slots	2	2	5	5	5	5	5	5
Communication Lines	1-20	1-33	1-33	1-33	1-49	1-64	1-64	1-64
LAN Adapters	0-4	0-4	0-4	0-4	0-4	0-6	0-6	0-6
Maximum Workstation Controllers								
Twinaxial/ASCII/LocalTalk	9	12	18	25	35	60	60	60
Maximum Workstations (One minimum)	360	480	720	1000	1400	2400	2400	2400
Twinaxial	162	216	324	450	630	1080	1080	1080
ASCII	279	372	558	775	1085	1860	1860	1860
LocalTalk	0-5	0-5	0-9	0-9	0-9	0-9	0-9	0-9
¼-Inch Cartridge Tape								
9347	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2
2440/9348/3422/3430	0-2	0-2	0-4	0-4	0-4	0-4	0-4	0-4
½-Inch Cartridge Tape								
3480/3490/3490E/3590/3570	0-2	0-2	0-4	0-4	0-4	0-4	0-4	0-4
8mm Cartridge Tape	0-4	0-4	0-4	0-4	0-4	0-4	0-4	0-4
Tape Libraries	0-2	0-2	0-4	0-4	0-4	0-4	0-4	0-4
Optical Libraries	0-8	0-8	0-14	0-14	0-14	0-14	0-14	0-14
Diskette Drives (5 ¼-Inch or 8-Inch)	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2
Fax Adapters	0-10	0-16	0-16	0-16	0-24	0-32	0-32	0-32
Cryptographic Processors	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
System I/O Buses	2	2	3	3-5	3-5	3-7	3-7	3-7

## 6.4 9406 F Models

	9406 F35	9406 F45	9406 F50	9406 F60	9406 F70	9406 F80	9406 F90	9406 F95	9406 F97
Relative System Performance (CPW) (See Note 1)	13.7	17.1	27.8	40.0	57.0	97.1	127.7	148.8	177.4
Relative System Performance (RAMP-C) (See Note 2)	4.8	6.0	10.2	14.7	21.0	36.5	50.5	59.0	71.5
Number of N-Way Multiprocessors	1	1	1	1	1	2	3	4	4
Main Storage (MB)	16-80	16-80	64-192	128-384	128-512	128-768	128-1024	128-1280	128-1536
Disk Storage Base (GB)	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06
Maximum Internal (GB)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Maximum External (GB)	63.0	63.0	110.2	141.7	251.8	251.8	251.8	251.8	251.8
Minimum Feature Card Slots	11	11	18	18	17	17	17	17	17
Maximum Feature Card Slots	55	55	140	140	195	195	195	195	195
Main Storage Feature Card Slots	2	2	5	5	5	5	5	5	5
Communication Lines	1-20	1-33	1-33	1-33	1-64	1-64	1-64	1-64	1-96
LAN Adapters	0-4	0-4	0-4	0-4	0-6	0-6	0-6	0-6	0-8
Maximum Workstation Controllers									
Twinaxial/ASCII/ LocalTalk	12	18	25	35	60	60	60	60	120
Maximum Workstations (one minimum)									
Twinaxial	480	720	1000	1400	2400	2400	2400	2400	4800
ASCII	216	324	450	630	1080	1080	1080	1080	2160
LocalTalk	372	558	775	1085	1860	1860	1860	1860	3270
¼-Inch Cartridge Tape									
120 MB	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
1.2 GB/2.5 GB	0-5	0-5	0-9	0-9	0-9	0-9	0-9	0-9	0-9
½-Inch Reel Tape									
9347	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2
2440/9348/3422/3430	0-2	0-2	0-4	0-4	0-4	0-4	0-4	0-4	0-4
½-Inch Cartridge Tape									
3480/3490/3490E/ 3590/3570	0-2	0-2	0-4	0-4	0-4	0-4	0-4	0-4	0-4
8mm Cartridge Tape	0-4	0-4	0-4	0-4	0-4	0-4	0-4	0-4	0-4
Tape Libraries	0-2	0-2	0-4	0-4	0-4	0-4	0-4	0-4	0-4
Optical Libraries	0-8	0-8	0-14	0-14	0-14	0-14	0-14	0-14	0-14
Diskette Drives (5 ¼-Inch or 8-Inch)	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2
Fax Adapters	0-10	0-16	0-16	0-24	0-32	0-32	0-32	0-32	0-32
Cryptographic Processors	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
System I/O Buses	2	2	3-5	3-5	3-7	3-7	3-7	3-7	3-7

**Note 1:** Commercial Processing Workload (CPW) is used to measure the performance of all AS/400 processors announced from September 1996 onward. The CPW value is measured on maximum configurations. The type and number of disk devices, the number of workstation controllers, the amount of memory, the system model, other factors, and the application being run determine what performance is achievable.

**Note 2:** The Relative System Performance ratios are estimated based on AS/400 environment RAMP-C workload, with a 9404 B10 with 16 MB of Main Storage and 945 MB of disk equalling 1.0. The ratios shown were estimated at maximum configurations running at 70% utilization. Relative system performance ratios may not be realized in all environments.

## 6.5 9406 300, 310, and 320 Models Overview

Model	300			310		320		
Processor Feature	#2040	#2041	#2042	#2043	#2044	#2050	#2051	#2052
Relative System Performance (CPW) (See Note 1)	11.6	16.8	21.1	33.8	56.5	67.5	120.3	177.4
Relative System Performance (RAMP-C) (See Note 2)	4.2	6.0	7.5	12.0	20.2	25.7	45.8	71.5
Number of N-Way Multiprocessors	1	1	1	1	2	1	2	4
Main Storage (MB)	8-72	16-80	32-160	64-832	64-832	128-1536	128-1536	128-1536
Disk Storage Base (GB)		1.03			1.03		1.03	
Maximum Internal (GB)		117.44			159.38		259.52	
Maximum External (GB)		94.42			141.63		251.79	
Maximum Combined (GB)		117.44			159.38		259.66	
External Disk Unit IOPS		0-6			0-16		0-28	
Minimum Feature Card Slots		8			3		1	
Maximum Feature Card Slots		45			115		151	
Feature Main Storage Slots		2			3		5	
Communication Lines		1-33			1-64		1-96	
LAN Adapters (See Note 3)		0-4			0-8		0-8	
Maximum Workstation Controllers								
Twinaxial/ASCII/LocalTalk		25			60		120	
Maximum Workstations (1 minimum)								
Twinaxial		1000			2400		4800	
ASCII		450			1080		2160	
LocalTalk		775			1860		3720	
¼-Inch/8mm Cartridge Tape (Internal)		0-5			0-9		0-9	
½-Inch Tape								
9348/2440		0-4			0-4		0-4	
34xx/35xx		0-2			0-4		0-4	
8mm Cartridge Tape (External)		0-4			0-4		0-4	
Tape Libraries		0-2			0-4		0-4	
Optical Libraries		0-8			0-14		0-2	
Diskette Drives (5 ¼-inch or 8-inch)		0-2			0-2		0-32	
Fax Adapters		0-16			0-32		0-1	
Cryptographic Processors		0-1			0-1		1-7	
System I/O Buses		1-2			1-5			
System Expansion								
#5063		0-1						
#5062					0-4		0-6	
#5061					0-4		0-6	
Bus Extension								
#5042					0-2		0-3	
#5040/#5060		0-2			0-5		0-6	
Storage Expansion								
#5051		0-1			0-1		0	
#5052		0-2			0-5		0-6	

<b>Note 1:</b>	Commercial Processing Workload (CPW) is used to measure the performance of all AS/400 processors announced from September 1996 onward. The CPW value is measured on maximum configurations. The type and number of disk devices, the number of workstation controllers, the amount of memory, the system model, other factors, and the application being run determine what performance is achievable.
<b>Note 2:</b>	The relative system performance ratios are estimated based on AS/400 environment RAMP-C workload, with a 9404 Model B10 with 16 MB of Main Storage and 945 MB of disk equalling 1.0. The ratios shown were estimated at maximum configurations running at 70% utilization. Relative system performance ratios may not be realized in all environments.
<b>Note 3:</b>	On Models 300 and 320, a One-Port or Two-Port Integrated PC Server (formerly known as FS10P) counts as a single LAN. On Model 310, a Two-Port Integrated PC Server counts as two LANs.





## Chapter 7. AS/400 9402 Models 100, 20S; 9404 Models 135, 140; and 9406 Models 20S, 30S

This chapter identifies the maximum capacities of the 9402 1xx, 20S, and 3xS model processors, and 9404 Models 1xx, 20S, and 30S with associated features and software.

Processor	9402 100	9404 135	9404 140	9402 20S	9406 30S	9406 30S
Feature				#2010	#2411	#2412
Relative System Performance (CPW) (See Note 1)						
Client/Server Environment	17.1	32.3	65.6	17.1	32.3	68.5
Interactive Environment	5.5	9.6	11.6	5.5	9.6	11.6
Relative System Performance (RAMP-C) (See Note 2)						
Client/Server Environment	5.9	10.9	22.5	5.9	10.9	23.5
Interactive Environment	1.9	3.3	4.0	1.9	3.3	4.0
Number of N-Way Multiprocessors	1	1	2	1	1	2
Main Storage (MB)	16-56	32-384	64-512	16-128	32-384	64-832
Disk Storage (GB)	1.03-8.2	1.03-27.5	1.03-86.5	1.03-23.6	1.03-86.5	1.03-86.5
Maximum Feature Card Slot	6	6	21	5	64	114
Communication Lines	1-8	1-14	1-20	1-20	1-33	1-33
LAN Adapters	1-2	1-4	1-6	1-2	1-8	1-8
Maximum Workstation Controllers						
Twinax	1	1	1	1	1	1
ASCII	1	1	1	1	1	1
LocalTalk	1	2	2	1	2	2
Maximum Workstations (1 minimum)						
Twinax	7	7	7	7	7	7
ASCII	6	6	6	6	6	6
LocalTalk Devices	31	62	62	31	62	62
¼-Inch Cartridge Tape/8mm Cartridge Tape (Internal)	1-2	1-2	1-3	0-4	0-5	0-5
½-Inch Tape						
9348/2440	0-2	0-4	0-4	0-4	0-4	0-4
(The 2440 is not supported by the Model 100 or 20S)						
34xx/35xx	0	0-2	0-2	0-2	0-2	0-2
8mm Cartridge Tape (External)	0-4	0-4	0-4	0-4	0-4	0-4
Tape Libraries	0	0	0	0-2	0-2	0-2
Optical Libraries	0-1	0-6	0-10	0-4	0-10	0-10
Diskette Drives (5 ¼-inch or 8-inch)	0-1	0-2	0-2	0-2	0-2	0-2
Fax Adapters	0-3	0-6	0-10	0-6	0-16	0-16
Cryptographic Processors	0-1	0-1	0-1	0-1	0-1	0-1
System I/O Buses	1-2	1-2	1-5	1	1-3	1-5

<b>Note 1:</b>	Commercial Processing Workload (CPW) is used to measure the performance of all AS/400 processors announced from September 1996 onward. The CPW value is measured on maximum configurations. The type and number of disk devices, the number of workstation controllers, the amount of memory, the system model, other factors, and the application being run determine the performance that is achievable.
<b>Note 2:</b>	The Relative System Performance ratios are estimated based on AS/400 environment RAMP-C workload, with a 9404 B10 with 16 MB of Main Storage and 945 MB of disk equalling 1.0. The ratios shown are estimates at maximum configurations running at 70% utilization. Relative system performance ratios may not be realized in all environments.



## Chapter 8. Upgrades to 940x 6XX Models

This chapter entails information where the 6xx is the target system for upgrades from other legacy AS/400 systems.

### 8.1 940x 2xx and 3xx Models to Model 6xx

The following table indicates the valid upgrades to 6xx models. B, C, D, and E models cannot be upgraded to 6xx Models. The table also shows the percentage increase in power given by the stated upgrade path.

From 9402/4/6		To 9402/9404/9406 Model 600, 620, 640, and 650															
Model	Proc	600				620					640			650			
		#2129	#2134	#2135	#2136	#2175	#2179	#2180	#2181	#2182	#2237	#2238	#2239	#2240	#2243	#2188	#2189
	RSP CPW (Note 1)	22.7	32.5	45.4	73.1	50.0	85.6	113.8	210.0	464.3	319.0	583.3	998.6	1794	2340	3660	4550
F02	5.5	313%	491%	725%													
F04	7.3	211%	345%	522%	901%												
F06	9.6	136%	239%	373%	661%												
F10	9.6	136%	239%	373%	661%	420%	792%										
F20	11.6	96%	180%	291%	530%	331%	638%	881%									
F25	13.7	66%	137%	231%	434%	265%	525%	731%									
F35	13.7	66%	137%	231%	434%	265%	525%	731%									
F45	17.1		90%	165%	327%	192%	401%	565%									
F50	27.8					80%	208%	309%	655%								
F60	40.0						114%	185%	425%	1064%	698%						
F70	57.0							100%	268%	715%	460%	923%					
F80	97.1								116%	378%	229%	501%					
F90	127.7								64%	264%	150%	357%	682%				
F95	148.8										114%	292%	571%				
F97	177.4										80%	229%	463%	911%			
236 <sup>Note 2</sup>	16.3			179%	348%	207%	425%	598%									
200/#2030	7.3	211%	345%	522%	901%	585%	1073%										
200/#2031	11.6	96%	180%	291%	530%	331%	638%	881%									
200/#2032	16.8		93%	170%	335%	198%	410%	577%									
436/#2104	20.6			120%	255%	143%	316%	452%	919%								
436/#2106	27.4							315%	666%								
300/#2040	11.6	96%	180%	291%	530%	331%	638%	881%									
300/#2041	16.8		93%	170%	335%	198%	410%	577%									
300/#2042	21.1		54%	115%	246%	137%	306%	439%	895%								
310/#2043	33.8						153%	237%	521%	1274%	844%						
310/#2044	56.5							101%	272%	722%	465%	932%					
320/#2050	67.5							69%	211%	588%	373%	764%					
320/#2051	120.3								75%	286%	165%	385%	730%				

From 9402/4/6		To 9402/9404/9406 Model 600, 620, 640, and 650															
Model		600				620					640			650			
	Proc	#2129	#2134	#2135	#2136	#2175	#2179	#2180	#2181	#2182	#2237	#2238	#2239	#2240	#2243	#2188	#2189
	RSP CPW (Note 1)	22.7	32.5	45.4	73.1	50.0	85.6	113.8	210.0	464.3	319.0	583.3	998.6	1794	2340	3660	4550
320/#2052	177.4										80%	229%	463%	911%			
<b>Note 1:</b>	Relative System Performance (CPW-Commercial Processing Workload). For the 6x0 models, this is based on V4. For the "from" model, this is based on V3R1 for CISC boxes and V3R7 for RISC boxes. Boxes still on V3R6 see greater improvements.																
<b>Note 2:</b>	The 236 does not support OS/400. However, the 436-2102 has an equivalent processor. The figures for that processor have been used.																

All upgraded (target) systems are a 9406 machine type (for example, a 9406 Model 600). However, AS/400 systems that are upgraded from a 9402 or 9404 machine type retain the source machine type number. For example, a 9402 or 9404 migrated to a 6xx becomes a 9402 or 9404 Model 6xx. Physically, it is the same as a 9406 6xx.

### 8.1.1 Upgrade Considerations for CISC-Based Models to 6xx RISC-Based AS/400 Models

The process of upgrading to an AS/400 based on RISC Technology from CISC Technology (F, 2xx, and 3xx models) requires careful planning. Refer to *AS/400 Roadmap for Changing to PowerPC Technology*, SA41-5150, for information on planning, ordering, and executing upgrades to RISC Models.

Some considerations are:

- OS/400 Version 4 is a prerequisite for all 6xx Models.
- Prior to ordering an upgrade from CISC to the 6xx Models, order 5798-TBU. It includes the manual *AS/400 Roadmap for Changing to PowerPC Technology*, SA41-5150, as well as the Upgrade Assistant PTFs to assist in planning, ordering, and executing the upgrade.
- If upgrading from a RISC model to the 6xx models, consult *System Upgrade Roadmap (RISC to RISC)*, SA41-5155.
- For physical planning information such as weights, dimensions, and power requirements of the 6xx models, consult *Physical Planning Reference Manual*, SA41-5109.
- Consider the plans for growth before considering an upgrade to a Model 600. The Model 600 provides limited expansion for adapters. For example, if a fully configured Integrated PC Server (IPCS) supporting two LANs (Token Ring or Ethernet) is installed, space remains for four additional adapters, two of which are dedicated for use by the #2838 100/10 Mbps Ethernet IOA or #281x ATM IOAs, and the #2729 PCI Magnetic Media Controller. Instead, consider the Model 620, a 7xx or 8xx system.
- The Model 600 supports PCI cards only. Therefore, when upgrading to the 600, all SPD cards are replaced. Most functions are supported with PCI format cards. However, the following are not supported with PCI cards and are not supported on the Model 600:
  - Cryptographic Processors
  - Fax Adapter
  - ASCII Adapters
  - ISDN Adapter
  - SDDI Adapter
  - FDDI Adapter
  - Wireless LAN
  - LocalTalk Adapter

- All upgrades to 6xx models ship new system units.
- Upgrades from Fxx, 2x0, and 3x0 models require increased main storage. The general rule is to double the existing memory. An exception is when the current memory is less than 160 MB. Here the recommendation is to double the memory and add a further 16 MB. Use BEST/1 to confirm these requirements.
- On most 6xx processors, memory must be installed in pairs or fours. Plan memory requirements carefully.
- When moving from Fxx, 2x0, and 3x0 models to RISC models, application software must be in an observable format, have source code available, or have a RISC-based version ready.
- The following racks are supported with the 9406 RISC models:
  - 9309 - #9171: General Purpose Rack with SPCN (stage 2)
  - 9406 - #5044: Converted #5042 D/E/F System or #5040 Bus Extension Unit
  - 9406 - #5043: Converted D/E/F System Unit (equivalent to 9309-#9171)
  - 9309 - #9141: General Purpose Rack without SPCN (stage 1). Must connect to one of the above three for power control.

The #9141 can attach to all system units if a jumper (P/N 93X0167) is installed. This is only recommended if the rack contains tape or diskette (not on Model 600). The #9141 can be converted to a #9171 using chargeable RPQ 843849. Older racks can be converted to the #9141 rack.

- Upgrades from Fxx, 2x0, and 3x0 have a 4.19 GB disk included with the upgrade. No other disks are included unless ordered. V4R1, V4R2, and V4R3 require more disk space than V3R6 or V3R7. Refer to *Software Installation Guide*, SC41-5120, for sizing.
- A CD-ROM drive is included on all RISC-based models. All IBM AS/400 software is shipped on CD-ROM for these models.
- The CD-ROM on the 6xx models is not identified by a feature. This also applies to base memory on the 600/620 models.
- It is likely that conversion kits will be required for internal tapes and disk units. Therefore, check the expected placement of such units to ensure the correct number of these kits are ordered. The same feature code kit may contain different parts depending in which AS/400 model it is to be placed. And, the same tape unit may require different kits depending in which model it is to be placed.
- AS/400 RISC-based models use a substantially faster bus than CISC systems. Use conversion kits to convert all bus controllers on existing tower or racks on CISC systems to the faster bus controller of RISC systems.
- No 320 MB, 400 MB, 640 MB (dual), 800 MB (dual), 988 MB, or 1976 MB (dual) disk units are supported on the 6xx models. These units must be replaced.
- The 120 MB and 525 MB 1/4-inch cartridges and the 840 MB 1/4-inch cartridge mini cartridge tape units are not supported on the 6xx models.
- Card technology changes from PCI to SPD when upgrading a Model 620 to a 640 or 650.
- The use of CFAS400 or PCAS400 PC-based Portable Configurator is mandatory for all upgrades.

### 8.1.2 Upgrade Specify Codes and Options on CISC to RISC Upgrades

#### #0200 Replacing the Release:

This no-charge specify code denotes the upgrade will be done using the Replacing the Release method. This upgrade method may be used for upgrading systems running OS/400 V3R1, V3R2, or V3R2.

The Replacing the Release method is based on user objects remaining on the DASD units throughout the upgrade process. All supported DASD units are retained in the upgrade to the V4 system. This is the

preferred approach for larger systems when all DASD units are to be moved to the V4 system. Replacing the release reduces potential problems caused by save/restore and tape handling. It is the method most commonly used by AS/400 customers. This upgrade method keeps the same serial number.

Run the Disk Preparation Utility prior to upgrading the hardware to prepare the DASD units on the prior release system for the new 4 KB page size. All necessary object conversions are done by the system as part of the upgrade.

#### **#0201 Unload/Reload:**

This no-charge specify code denotes the upgrade is done using the Unload/Reload upgrade method. This method consists of unloading user applications and data to tape, upgrading the hardware, installing OS/400 V4 and reloading the user applications and data.

This approach is attractive for smaller systems, and reduces upgrade time compared to replacing the release. It may also be an effective method for upgrading common programs and files on multiple systems. This upgrade method keeps the same serial number, unless it is ordered with the #0203.

#### **#0202 Staged Upgrade Offering:**

This priced option provides an upgrade alternative that allows a customer to use the upgrade hardware for a limited period of time to translate and validate user applications prior to the actual upgrade. This option is available using either #0200 Replacing the Release or #0201 Unload/Reload methods. This priced offering requires careful advance planning. *AS/400 Roadmap for Changing to PowerPC Technology*, SA41-5150, describes this offering in detail.

The following hardware is delivered with the Staged Upgrade Offering:

- Power/Frame/Covers/Power Cord
- Processor Card
- Base Memory
- Feature Memory
- Base DASD
- Feature DASD

The customer can order optional features for inclusion in this hardware package.

This package does not include a workstation controller, a tape adapter (or internal tape drive), or a communications adapter to allow transferring of data and programs. The customer needs to supply these for the duration of the transition. These can be “borrowed” from the current system, if possible.

#### **#0203 Side by Side Install:**

This no-charge specify code is used to alert IBM service representatives of the intention to install a new system concurrently with an existing system, and over time, move applications to the new system. This method may be used when adding a system to an existing complex or network, or when a replaced system is being moved to another location. *AS/400 Roadmap for Changing to PowerPC Technology*, SA41-5150, describes this option in detail. The #0203 provides a new system, and therefore, results in a new serial number.

#### **#0204 Staged Side by Side Upgrade:**

This no-charge specify code denotes that the Staged Side-by-Side Upgrade method is to be used. Feature #0202 Staged Upgrade Offering is a prerequisite that provides a base functional RISC system to be used to translate and validate user applications prior to the actual upgrade.

#0204 assumes that the customer is purchasing enough disk storage (and other features as necessary) to completely duplicate the disk storage of their production CISC machine. The #0204 also indicates that the upgrade is to be performed using a method similar to the #0203 Side-by-Side Install method, which is described in the *AS/400 Roadmap for Changing to PowerPC Technology*, SA41-5150. This offering requires careful advanced planning. This upgrade method keeps the same serial number.





## Chapter 9. External Storage Devices and Placement

This chapter describes the external storage devices available for CISC systems. Included are external disk drives, external tape, diskettes, and optical drives. It also discusses magnetic media placement and throughput considerations, cable part numbers, and tape cartridge compatibility.

### 9.1 9406 External Disk

Machine	Model	Description	9406 Model
9336	010	<b>Direct Access Storage Device</b> Provides 942 MB of DASD with two disk drives (471 MB each) with one actuator.	B, D, E, F 3x0, 5x0
9336	020	<b>Direct Access Storage Device</b> Provides 1714 MB of DASD with two disk drives (857 MB each) with one actuator. These devices are housed in 9309 racks. Four optional features are offered with the 9336: #1201 adds a single 471 MB disk drive #1202 adds two 471 MB disk drives (942 MB) #1203 adds a single 857 MB disk drive #1204 adds two 857 MB disk drives (1714 MB) A maximum of two additional disk drives per model can be installed.	
9336	025	<b>Direct Access Storage Device</b> Provides 3428 MB of DASD with four disk drives (857 MB each) as standard. 9336 attaches to 9406 using #6112.	

Type-Mod (See Note 1)	RAID (See Note 2)	MB per disk	No. of disks Min/Max	Max Capacity			9406 Models	Upgrade from
				Feature	Base	HA		
9337-010	N	542	2/7	#1206	3.79		B, D, E, F, 3x0	None
9337-110	Y	542	4/7	#1206		3.25		010
9337-020	N	970	2/7	#1212	6.79			None
9337-120	Y	970	4/7	#1212		5.82		020
9337-040	N	1967	4/7	#1220	13.76			None
9337-140	Y	1967	4/7	#1220		11.80		040
9337-015	N	542	2/7	#1207	3.79		B, D, E, F, 3x0	None
9337-115	Y	542	4/7	#1207		3.25		015
9337-025	N	970	2/7	#1213	6.79			None
9337-125	Y	970	4/7	#1213		5.82		020
9337-210	S	542	2/8	#1206	4.33	3.79	D, E, F, 3x0	010, 110 020, 120
9337-220	S	970	2/8	#1212	7.76	6.79		
9337-215	S	542	2/8	#1207	4.33	3.79	D, E, F, 3x0	015, 115 025, 125 040, 140
9337-225	S	970	2/8	#1213	7.76	6.79		
9337-240	S	1967	4/8	#1220	15.73	13.76		
9337-420	S	970	4/8	#1228	7.76	6.79	D, E, F, 3x0	(See Note 3)
9337-440	S	1967	4/8	#1248	15.73	13.76		
9337-480	S	4194	4/8	#1288	33.55	29.35		
9337-540	S	1967	4/8	#1249	15.73	13.76	D, E, F, 3x0	None
9337-545	S	1967	4/8	#1249	15.73	13.76		
9337-580	S	4194	4/8	#1289	33.55	29.35		
9337-585	S	4194	4/8	#1289	33.55	29.35		
9337-590	S	8589	4/8	#1290	68.71	60.12		
9337-595	S	8589	4/8	#1290	68.71	60.12		

<b>Note 1</b>	<p>Models 0xx and 1xx</p> <p>Models 2xx/4xx</p> <p>Models 4xx</p> <p>Models 545/585/595</p> <p>Models 5xx</p>	<p>Attach to 9406 D, E, F, and 3x0 models using #6500 IOP</p> <p>Attach to 9406 B using IOP #2611</p> <p>Attach to 9406 D, E, F, and 3x0 models using #6501 DASD Controller</p> <p>These are also available as stand-alone towers by specifying #2400 for black covers or #2410 for white covers. Attach using #6501.</p> <p>These are stand-alone towers. #2405 specifies black covers and #2410 specifies white covers.</p> <p>These can be converted to attach to other supported open systems (RS/6000, HP, SUN, and NCR) by specifying Feature #5001. This includes a controller card, operator panel, and installation support disk drive.</p>
<b>Note 2</b>	N=No Y=Yes S=Switchable	
<b>Note 3</b>	There is no direct upgrade path to the 9337-4xx models. However, the 4xx controller card with a #1400 4 MB Write Cache can be installed on any 9337-2xx model to boost performance by up to 20%.	

## 9.2 Enterprise Storage Server

<p><b>2105</b></p> <p><b>F10, F20</b></p> <p><b>E10 or E20</b></p>	<p><b>Enterprise Storage Server</b></p> <p>Enclosure of the Enterprise Storage Server. Incorporates dual RISC 4-way SMP processors. Sixteen standard configurations offered range from 400 GB to over 11 TB. Each standard configuration provides a support infrastructure base of up to 16 GB cache, 384 MB nonvolatile storage (NVS), four device adapter pairs, and serial 9 GB, 18 GB, or 36 GB disks in the optimum serial loop configuration. Provides RAID-5 protection.</p> <p>Enterprise Storage Server supports all platforms supported by the Versatile Storage Server, including RS/6000 running AIX and many leading UNIX variants, Netfinity, and other PC servers running Windows NT or Novell NetWare, and Compaq AlphaServers running OpenVMS. In addition, the ESS supports System/390 servers running OS/490, VM, VSE, and TPF. Storage capacity is partitioned among the attached servers using the Web-based StorWatch ESS Specialist management tool.</p> <p>Field upgrades are only allowed for configurations within the same drive size (9.1 GB, 18.2 GB, and 36.4 GB).</p> <p>Attaches to the AS/400 system using a #6501 (SPD). The #6501 requires V3R1 or later. When attached to the #6501, the Enterprise Storage Server emulates the 9337-5xx or 9337-5xx drive based on the size of the disk unit installed.</p> <p><b>#1001</b> Remote Power Control</p> <p><b>#2100</b> Expansion Enclosure (E20 only)</p> <p><b>#2121</b> 9.1 GB Disk Eight-Pack</p> <p><b>#2122</b> 18.2 GB Disk Eight-Pack</p> <p><b>#2123</b> 36.4 GB Disk Eight-Pack</p> <p><b>#2715</b> Remote Support Facility</p> <p><b>#2716</b> Remote Support Facility Attachment</p> <p><b>#3002</b> SCSI Host Adapter</p> <p><b>#93xx</b> 93xx - Modem Specify Features for Remote Support, country specific</p> <p><b>#96xx</b> Capacity increment consisting of 9.1 GB drives for the E10, E20, F10 or F20</p> <p><b>#9701</b> 10 Meter Cable - Ultra SCSI</p> <p><b>#9702</b> 20 Meter Cable - Ultra SCSI</p> <p><b>#9705</b> 10 Meter AS/400 SCSI-2 Host Attachment Cable</p> <p><b>#9706</b> 20 Meter AS/400 SCSI-2 Host Attachment Cable</p> <p><b>#9801</b> Single Phase 50/60 Hz 50 Am Power Cord</p> <p><b>#9986</b> Single Phase 50/60 Hz 50 Am (Chicago)</p> <p><b>#9870</b> Nominal AC Voltage 200V-240V 50/60 Hz</p> <p><b>#9904</b> Reserve Two Loops</p> <p><b>Note:</b> Resources can be reserved to later incorporate capacity of existing IBM 7133 Serial Storage Disk Architecture (SSA) IBM 2105 Model B09 and Model 100 frames.</p>	D, E, F, 3x0
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## 9.3 Versatile Storage Server

<p><b>2105 B09</b></p>	<p><b>Versatile Storage Server</b>  Primary Enclosure of the Versatile Storage Server. Includes the storage server, two 7133 drawers, and the power control system. There is space for two additional 7133 disk drawers. The primary enclosure can be combined with up to two 2105-100 expansion enclosures.  Attaches to the AS/400 system using a #6501 (SPD). The #6501 requires V3R1 or later. When attached to the #6501, the Versatile Storage Server emulates the 9337-580 or 9337-590 based on the size of the disk unit installed.  <b>Note:</b> Each connection to an AS/400 system using a #6501 supports a maximum of sixteen disk units. There can be a maximum of eight #3001 Host Interface Adapters per 2105 VSS. If eight #6501s are attached to eight #3001s, this would dedicate the 2105 VSS to the AS/400 system and give a maximum capacity of 536.3 GB when emulating 9337-580s and 1099.5 when emulating 9337-590s.  <b>Note:</b> In most cases, the minimum cache memory of 512 MB is best for use with the AS/400 system. The expert cache function OS/400 normally provides better performance.</p>	<p>D, E, F, 3x0</p>
<p><b>2105 100</b></p> <p><b>#1000</b>  <b>#2111</b>  <b>#2713</b>  <b>#2714</b>  <b>#3001</b>  <b>#3201</b>  <b>#4001</b>  <b>#9701</b>  <b>#9702</b>  <b>#9703</b>  <b>#9704</b>  <b>#9705</b>  <b>#9706</b>  <b>#9801</b>  <b>#9851</b>  <b>#9854</b>  <b>#9901</b>  <b>#9986</b>  <b>#9987</b>  <b>#9988</b></p>	<p><b>Versatile Storage Server Expansion Enclosure</b>  Expansion Enclosure that includes space for seven 7133-010 or 7133-020 or 7133-D40 drawers and a power control system.  Prerequisite: 2105-B09</p> <p><b>2105-B09 and 2105-100 Features</b>  Battery Backup System  Additional Storage Capacity Upgrade Base to 456 GB  Remote Support Switch. 2105-B09 only.  Remote Support Attachment. 2105-B09 only.  Host Interface Adapter  SSA Disk Adapter  ReadWrite Cache (per 512M)  Cables-10 meter (Ultra SCSI)  Cables-20 meter (Ultra SCSI)  Cables-20 meter (SCSI-2 FW)  Cables-20 meter (SCSI-2 FW)  Cables-10 meter (AS/400-SCSI-2)  Cables-20 meter (A/S400 SCSI-2)  Single phase 50/60 hz 50 amp  Three phase 50/60 hz 50 amp  Three phase 50/60 hz 60 amp  Designate 7133-020 Drawers  Single phase 50/60 hz 50 amp  Three phase 50/60 hz 50 amp  Three phase 50/60 hz 60 amp</p>	
<p><b>7133 010 and 020 and D40</b></p> <p><b>#0987</b>  <b>#2105</b>  <b>#2106</b>  <b>#3401</b>  <b>#3901</b>  <b>#9850</b></p>	<p><b>Serial Storage Architecture Disk Subsystem</b>  The IBM 7133 SSA Disk Subsystem is a leading-edge, second-generation serial storage subsystem that uses the industry-standard Serial Storage Architecture (SSA). The 7133 can be attached to the AS/400 system only through a 2105 Versatile Storage Server.  When installed in a 2105, disk drives must be added in multiples of eight.  IBM 7133 Model 10 and Model 20 are for migration only.  Prerequisite: 2105-B09 or 2105-100.  RDS Rochester Manufacturing Integration  Plant install in Versatile Storage Server  Field install in Versatile Storage Server  One 4.5 GB Disk Drive Module (valid quantity of 6 or 14 per 7133)  One 9.1 GB Disk Drive Module (valid quantity of 6 or 14 per 7133)  100/200V 50/60hz 300V DC Power</p>	<p>D, E, F, 3x0</p>

## 9.4 High Workload IOP Placement Rules for Magnetic Media

Disk unit, tape, and some LAN IOPs are considered high workload IOPs, and therefore, require special consideration when configuring an AS/400 system. In addition, their workload capability IOPs can be streaming or non-streaming.

See the following table for a list of high workload IOPs and streaming or non-streaming IOPs.

Subsystem	High Workload IOP	Bus Capacity
DASD	#6112, #6500	Non-streaming
Tape	#2621, #2624, #2644, #6112	Non-streaming
DASD	#6501, #6530, #6502, #6512, #6532, #6533	Streaming
Tape	#6501, #6513, #6534	Streaming
Tape IOP with 3590	#6501, #6534	Streaming
Optical	#6534	Streaming
LAN	#2810	Streaming
<b>Limitations on Combinations:</b> <ul style="list-style-type: none"><li>Maximum of five high workload IOPs per bus. This includes system bus 1.</li><li>Maximum of three non-streaming high workload IOPs per bus.</li><li>In feature code #5044, no DASD controllers are allowed on the same bus with a 3590 tape controller. More than one 3590 tape controller is allowed on the same bus.</li></ul>		
<b>Note:</b> These guidelines are for all system buses and include the first system bus (bus 1). Exceeding these guidelines will cause performance degradation.		

## 9.5 External Tape Rules

### 9.5.1 Alternate IPL or Alternate Installation Device

Throughout this redpaper, the *AS/400e System Builder*, SG24-2155, and the *AS/400e System Handbook*, GA19-5486, the term Alternate IPL or ALT-IPL is used to describe both alternate IPL devices and alternate installation devices. It is important to understand the differences:

- An Alternate IPL device must be attached to the first system bus (bus one)
- An Alternate Installation Device can be attached to any bus except bus one

Alternate Installation Device support allows you to perform installation and recovery procedures using a combination of devices. Prior to V4R1, these types of activities can only be performed using devices attached to the first system bus. The first system bus connects to the service processor IOP. Typically, this is where the optical device or tape devices used for installations are attached. On V4R1 and later systems, you can use a combination of devices that are attached on the first system bus and on additional buses. The Alternate Installation Device is not attached to the first system bus.

See *Backup and Recovery*, SC41-5304, for more information.

## 9.6 External Diskette, Tapes, and Optical Devices

Machine	Model	Description	9406 Model
9331	001	<b>8-Inch Diskette Drive</b> Allows data and program transfer between other 9404, 9406, 5360, 5362, 5381, and 5382 systems.	B, D, E, F, 2x0, 3x0,
9331	002	<b>5 ¼-Inch Diskette Drive</b> Allows data and program transfer between other 9404, 9406, 5363, and 5364 systems. Both attach to 9406 using the Magnetic Storage Device Controller #6112 (#6110 for 9406 B Models) or #6146. Maximum: Two 9331 diskette drives per system.	
9331	002	<b>5 ¼-Inch Diskette Drive</b> Attaches to the 9406 using the Magnetic Storage Device Controller #6112 (#6110 for 9406 B Models) or #6146. Allows data and program transfer between other 9404, 9406, 5363, and 5364 systems. Maximum: Two 9331 diskette drives per system.	B, D, E, F, 2x0, 3x0
9331 9331	011 012	<b>8-Inch Diskette Drive</b> <b>5 ¼-Inch Diskette Drive</b> Both allow interchange of data between the AS/400 and other systems. Attaches using the #6146 or to the MFIO using the #6147 Diskette Adapter (3x0 only).	2x0, 3x0
#6135		<b>5 ¼-Inch Diskette Drive</b> Allows interchange of data between the AS/400 and other systems. Attaches using the #6146 or to the MFIO using the #6147 Diskette Adapter (3x0 only).	3x0,
2440	A12  #3903 #3904 #3905 #3906 #3907 #3908	<b>Tape I/O Subsystem</b> A ½-inch reel tape drive that records at 1600/6250 bpi and can be used for save/restore, program distribution, and Alternate IPL. Attaches to 9406 using the Removable Device Media Attachment #2621 (SPD)—#2602 for 9406 B models. The tape drive and controller are packaged in a stand-alone 1.6m high rack. 2440 High-speed feature (field installation) 2440 High-speed feature (factory installation) Allows up to four 9332 disks to be placed in the 2440 rack Allows one 9335-A01 and up to two 9335-B01 drives to be placed in the 2440 rack Allows up to three 9336 drawers to be placed in the 2440 rack Allows up to three 9337 drawers to be placed in the 2440 rack	B, D, E, F, 3x0
9347	001	<b>Tape Drive</b> A ½-inch cartridge tape drive that records at 1600/3200 bpi. At 1600 bpi, it can be used for data interchange, save/restore, program distribution, and Alternate IPL. At 3200bpi, the capacity of a reel can approximately doubled for system backup/restore functions. Attaches to 9406 using the Magnetic Storage Device Controller #6112 (#6110 for 9406 B models). Maximum: Two per system. Refer to the overview section at the beginning of each processor chapter for maximum combination of tape devices per system.	B, D, E, F, 3x0
9348	001 002	<b>Tape Drive</b> A ½-inch reel tape drive that records at 1600/6250 bpi and can be used for restore, program distribution, and Alternate IPL. Attaches to 9406 using #2621 (SPD) or #6534 (SPD) or #2729 (PCI) or #2749 - #2607 or #2608 for 9406 B models. Each 2440 or 9347 attached reduces the number of 9348s, which can be attached by one. Refer to the overview section at the beginning of each processor chapter for maximum combination of tape devices per system.	B, D, E, F (except D02, and E02), 2x0, 3x0

3480	A22 B22	<b>Cartridge Tape Subsystem</b> A ½-inch cartridge tape that can be used for data interchange, save/restore, program distribution, and Alternate IPL. Subsystem consists of stand-alone controller (Model A22) and up to eight tape drives (Model B22), which has two drives. Attaches to 9406 using feature #2621 or #2644 (SPD)—#2604 on 9406 B models. Refer to the overview section at the beginning of each processor chapter for maximum combination of tape devices per system. The attachment of 3480 Models A11 and B11 is also supported.	B, D, E, F, 2x0, 3x0
3490	D31 D32 A01 A02	<b>Cartridge Tape Subsystem</b> A ½-inch cartridge tape that can be used for data interchange, save/restore, program distribution, and Alternate IPL. Attaches to the 9406 with feature #2621 or #2644 (SPD)—#2604 for 9406 B models. Refer to the overview section at the beginning of each processor chapter for maximum combination of tape devices per system. Attachment of 3490 Models B02 and B04 is also supported. <b>Note:</b> Cannot use enhanced capacity cartridge.	B, D, E, F, 2x0, 3x0
3490E	A10 A20	<b>Cartridge Tape Subsystem</b> A ½-inch cartridge tape that can be used for data interchange, save/restore, program distribution, and Alternate IPL. Attaches to 9406 with feature #2621 or #2644 (SPD)—#2604 for 9406 B models. Refer to the overview section at the beginning of each processor chapter for maximum combination of tape devices per system. Attachment of 3490 Models B02 and B04 is also supported. <b>Note:</b> Cannot use enhanced capacity cartridge.	B, D, E, F, 2x0, 3x0
3490E	D41 D42	<b>Cartridge Tape Subsystem</b> A ½-inch cartridge drives that can be used for data interchange, save/restore, program distribution, and Alternate IPL. IDRC is standard. Attach using #2644 (SPD) - #2604 on 9406 B models.	B, D, E, F, 2x0, 3x0
3490E	C10 C11 C22 C1A C2A  #5037 #5040 #5045 #6045 #6120 #6180 #9927 #9931 #9932 #9985	<b>Rack Mounted 3490 tape drives</b> A ½-inch cartridge tape that can be used for data interchange, save/restore, program distribution and Alternate IPL. C10 Control Unit and Tape Drive (1 x 2.4 GB), attach using #2644 only. C11 Control Unit, Tape Drive and Automatic Cartridge Loader for six tape cartridge (6 x 2.4 GB) C22 Control Unit, 2 Tape Drives and Automatic Cartridge Loader for twelve cartridges (12 x 2.4 GB) C1A Control Unit, Tape Drive for 3494 Tape Library C2A Control Unit, 2 Tape Drives for 3494 Tape Library  Attaches to 9406 and 9404 using #2644 (SPD) - #2604 on 9406 B models, #6501/#6534 (SPD), #2729 PCI or #2749 PCI Requires 9309 rack if not C1A or C2A. Parallel Channel Attachment. Maximum two per 3490 SCSI attachment. Maximum two per 3490-C11/C22/C1A/C2A Performance enhancement feature. Maximum 2 per 3490E-C11/C22/C1A/C2A 4.5 M SCSI Cable (#6501 Attach) requires interposer 12 M SCSI Cable (#6501 Attach) requires interposer 18 M SCSI Cable (#6501 Attach) requires interposer Tailgate option (External #2644 (Channel) cables) 6 M internal channel cable (#2644 attach) 24 M internal channel cable (#2644 attach) 6 M External Cable Maximum combination of cables is two per 3490. The following upgrades are supported: C10 to C11/C22/C1A/C2A C11 to C22/C1A/C2A C1A to C2A Both a channel attach (#5037) and a SCSI attach (#5040) are supported together on the same 3490-Cxx unit.	9404 and 9406 - B, D, E, F, 2x0, 3x0

<b>3490E</b>	<b>E01 E11</b>	<b>Cartridge Tape Subsystem</b> A ½-inch cartridge tape. The E01/E01 tapes have IDRC as standard, both include a seven Cartridge Stack Loader. Attachment is only available to a single AS/400 system. E01 Table Top Version (7x2.4 GB) E11 Rack Mounted Version (7x2.4 GB)  Attaches to the AS/400 system using #6501 (SPD). #6501 requires V3R1 or later.	9404 and 9406 - D, E, F, 2x0, 3x0
<b>3490E</b>	<b>F00 F01 F11 F1A</b>	<b>Cartridge Tape Subsystem</b> A ½-inch cartridge tape. These tapes have IDRC as standard. There are four models, with the F01 and F11 having a 10 cartridge stack loader. Attachment is only available to a single AS/400 system. F00 Table Top (1x2.4GB) F01 Stand-alone (10x2.4GB) F11 Rack Mounted Version (10x2.4GB) F1A Tape Unit for 3494 Tape Library  Attaches to the AS/400 system using #6501 (SPD). The #6501 requires V3R1 or later.	9404 and 9406 - D, E, F, 2x0, 3x0
<b>3570</b>	<b>B00 B01 B11 B12</b>  <b>C00 C01 C02 C11 C12</b>  <b>#5205 #5212 #5218 #5225 #5245</b>  <b>#2895</b>	<b>Cartridge Tape Subsystem</b> Cartridge Tape Unit with table-top and library units based on 3590 technology. Up to 5 GB capacity per cassette (up to 15 GB when compressed) or 7 GB capacity per cassette (up to 21 GB when compressed). Both attach to the AS/400 system using #6501 (SPD). The #6501 requires V3R1 or later. One drive can attach to one AS/400 system only. With models B02/C02 and B12/C12, each one of the two drives may be connected to a different system.  <b>Bxx models</b> Data transfer rate of 2.2 M/sec (uncompressed) up to 6.6 M/sec (average compressed) data transfer rate.  <b>Cxx models</b> Data transfer rate of 7 MB/sec (uncompressed) up to 15 MB/sec (average compressed) data transfer rate using C-format cartridges.  Data Transfer rate of 3.5 MB/sec (uncompressed) up to 10.5 MB/sec (average compressed) data transfer rate using B-format cartridges. B00/C00 Table Top Unit (1 x 15GB) B01/B02/C01/C2 Stand Alone Library with 20 cassette slots (20 x 15GB0 and one drive. B11/B12/C11/C12 Rack Mounted Library with 20 cassette slots (20 x 15GB) and one drive.  Requires 9309 Rack.  <b>Cable Features:</b> 0.5 M SCSI cable 12 M SCSI cable 18 M SCSI cable 25M SCSI cable (Models C00, C01, C02, C11, C12) 4.5 M SCSI cable  AS/400 Interposer	D, E, F, 2x0, 3x0 (except D02, E02, F02)

3570 Cont'd	Other Features:								
	#8701	10-Pack Data Cartridges + one cleaning cassette.							
	#8702	20-Pack Data Cartridges + one cleaning cassette.							
	#8703	20-Pack Data Cartridges + one cleaning cassette. All Cxx models.							
	#8705	10-Pack C-format Data Cartridges + one cleaning cassette.							
	#8750	One Cleaning Cassette.							
	#8751	One Data Cassette.							
	#8752	10-pack Data Cassette. All Bxx models.							
	#8753	Two 10-cassette Magazine.							
	#8758	10-Pack Data Cassettes + one cleaning cassette. All Cxx models.							
	#9066	White Covers (B01, B02).							
	#9068	Black Covers (B01, B02).							
	#9076	Attached to SP2.							
	#9080	Watertight Power Plug.							
	#9200	Open System Device Driver. Not Bxx models.							
	#9210	Attached to HP-UNIX. Not Bxx models.							
	#9211	Attached to SUN. Not Bxx models.							
#9212	Attached to Windows NT. Not Bxx models.								
#9400	Attached to AS/400. Not Bxx models.								
#9570	Once Data Cassette, one cleaning cassette.								
#9600	Attached to RS/400. Not Bxx models.								
#9603	AIX Device Driver. Not Cxx models.								
#9710	SUN Device Driver. Not Cxx models.								
3995	Optical Library Dataserver								
	The following OS/400 software is required to support 3995-Cx0 with up to four internal 2.6 GB drives:								
	V3R6 with Group PTF SF 99087 or V3R7 or later								
	V3R2 with 5755-AS3 #1979 and PRPQ 5799-XBW specify code #3520								
	Models C4x with up to four internal 5.2GB drives:								
	V3R2 with 5755-AS3 #1979 and PRPQ 5799-XBW specify code #3520 and Group PTF SF99079								
	8X support on direct attach 3995 require:								
	For #2621 attach: Only V3R2 with PRPQ 5799-XBW #3520 and Group PTF SF99079								
	Note: Media must be formatted as WORM in LAN-attached 3995 libraries to be used in AS/400 direct-attached 3995 libraries.								
	Media Supported								
	Capacity (per Library)								
	Direct Attach	WORM	Rewritable	CCW	Cartridge Capacity	Optical Nerves	Storage Slots	Total Unformatted (GB)	Model Upgrades from
	A43	Yes	Yes	No	.65/1.3	1	16	20	-
	043	Yes	Yes	No	.65/1.3	2	32	40	042
	143	Yes	Yes	Yes	.65/1.3/2.6/5.2	4	144	188	142
	C40	Yes	Yes	Yes	.65/1.3/2.6/5.2	1-2	20	104	-
	C42	Yes	Yes	Yes	.65/1.3/2.6/5.2	2	52	270	-
C44	Yes	Yes	Yes	.65/1.3/2.6/5.2	2-4	104-156	540	-	
C46	Yes	Yes	Yes	.65/1.3/2.6/5.2	4-6	156	811	C44	
C48	Yes	Yes	Yes	.65/1.3/2.6/5.2	4-6	258	1341	-	
#1403	Additional 2.6 GB Optical Drive for 3995-C40 model								
#1413	Two additional 2.6 GB Optical Drives for 3995-C44, C46, or C48 model								
#1440	Additional 2.6 GB Optical Drive for 3995-C40								
#1442	Two additional 5.2 GB Optical Drives for 3995-C44, C46, C48								
#1443	Two 5.2 GB Extended Multifunction Optical Drives Upgrade								
#1444	Four 5.2 GB Extended Multifunction Optical Drives Upgrade								
#9400/									
#7400	12M SCSI Cable for #2621 (SPD)								
#7402	20M SCSI Cable for AS/400 #2621								
#9401/									
#7401	12M SCSI Cable for #2749 (PCI) or #2729 (PCI) and #6534 (SPD)								
#7403	20M SCSI Cable for AS/400 #2749 (PCI) or #2729 or #6534								
	D, E, F (except D02, E02), 2xx, 3xx								



	Media Supported			Capacity (per Library)					
LAN Attach	WORM	Rewritable	CCW	Cartridge Capacity	Optical Nerves	Storage Slots	Total Unformatted (GB)	Model Upgrades from	
<b>023</b>	Yes	Yes	No	.65/1.3	2	144	188	022	
<b>123</b>	Yes	Yes	No	.65/1.3	4	32	40	122	
<b>C20</b>	Yes	Yes	Yes	.65/1.3/2.6/5.2	1-2	20	104	-	
<b>C22</b>	Yes	Yes	Yes	.65/1.3/2.6/5.2	2	52	270	-	
<b>C24</b>	Yes	Yes	Yes	.65/1.3/2.6/5.2	2-4	104	540	-	
<b>C26</b>	Yes	Yes	Yes	.65/1.3/2.6/5.2	4-6	156	811	C24	
<b>C28</b>	Yes	Yes	Yes	.65/1.3/2.6/5.2	4-6	258	1341	-	
<b>#1403</b>	Additional 2.6 GB Optical Drive for 3995-C20 model								
<b>#1413</b>	Two additional Optical Drives for 3995-C24/C26/C28 models								
<b>#1440</b>	Additional 5.2 GB Optical Drive for 3995-C20 model								
<b>#1442</b>	Additional two 5.2 GB Optical Drives for 3995-C22/C24/C28								

<b>7208 002</b>	<b>8 mm Cartridge Tape Drive 2.3 GB</b> 8 mm Helical scan tape drive that can be used for save and restore, program distribution, and Alternate IPL. Has an effective data transfer rate of 245 KB per second. Provides up to 5 GB storage capacity. 7208-002 attaches using #2621 (SPD). <b>012</b> 8 mm Cartridge Tape Drive 5 GB The Model 12 has effective data transfer rate of 1 MB per second when compressed (500 KB per second in native mode). Provides up to 10 GB storage capacity with compression. Attaches using #2621 (SPD), #6543 (SPD) or #2729 (PCI)—#2511 for 9406 B models.	B, D, E, F (except D02, E02) 2x0, 3x0, (012 only)
<b>7208 222</b>	<b>8 mm Cartridge Tape Drive 7 GB</b> Stand-alone 8 mm Cartridge tape drive providing capacity of up to 7 GB per cartridge, or 14 GB with compression, and has an effective data transfer rate of 1 MB/S when compressed (500 KB per second in native mode). It can be used for save and restore, program distribution and alternate IPL. It supports the 160 m data cartridge and read/write compatible with all IBM 8 mm Cartridge Tape Units. Attaches using #2621/#6534 (SPD) or #2729/#2749 (PCI). #2621 requires V3R1. Available in black (#9100) or white (#9200)	D, E, F (except D02, E02)  2x0, 3x0
<b>7208 232</b>	<b>Dual Drive 8 mm Cartridge Tape Unit (10 GB)</b> Provides two 5 GB 8mm drives in a single tape unit each emulating the 7208 Model 012, which can be used for save and restore, program distribution, and Alternate IPL (except 9402 D04, and D06; 9404 B, C, D10, and D20; and 9406 B models). Each drive can provide up to 10 GB of storage capacity or up to 20 GB of unattended capacity if both drives are used in cascade mode with compression (5 GB per drive in native).	B, D, E, F, (except D02, E02 2x0, 3x0)
<b>7208 234</b>	<b>Dual Drive 8 mm Cartridge Tape Unit (28 GB)</b> Provides two 7 GB 8 mm drives in a single tape unit which can be used for save and restore, program distribution and Alternate IPL (except 9402 D04 and D06; 9404 B, C, D10, and D20; and 9406 B models). 7208-234 only available in black.  Each drive can provide up to 14 GB of storage capacity, or up to 28 GB of unattended capacity if both drives are used in cascade mode with compression (7 GB per drive in native).  Both 7208-232 and 7208-234 attach using the #2621/#6534 (SPD), or the #2729 (PCI)—the #2611 for 9406 B models and supports dual host attachment. It has a data transfer rate of 500 KB per second in native mode per drive or 1 MB/S when compressed. It is read/write compatible with all IBM 8mm Cartridge Tape Units and has an integrated label-printer port.	
<b>#0501</b>	Provides a single 8 mm drive unit than can only be used to attach to an existing 7208 Model 012 using a Device-to-Device cable (#9612) to provide the functions of the 7208-232 Dual Drive Unit #0502.	

<b>3590 B11 B1A</b>	<p><b>High Performance Tape Subsystem</b>          ½-inch cartridge rack mountable tape unit which provides:              Up to 17 MB/S sustained data rate              Up to 10 GB capacity per cartridge (up to 30 GB when compressed)          A ten cartridge random access Automatic Cartridge Facility (ACF) giving data capacity of up to 300 GB unattended (not on the B1A model).          The 3590-B11 or B1A can simultaneously attach to two AS/400 Systems or an AS/400 and a RS/6000 system. It attaches to the AS/400 system using the #6501 (SPD), the #6534 (SPD), or the #2729 (PCI) or the #2749 (PCI). The #6501 requires V3R1. The B1A is supported in the 3494 Tape Library and the B11 can upgrade to the B1A.</p> <p><b>Cable Features:</b>  <b>#5106</b> 0.6m SCSI cable used to connect 3590-B11s when they are side-by-side in a rack and connected to the same SCSI port. Maximum: Two  <b>#5128</b> 2.8m SCSI cable used to connect a 3590-B11 when it is in the same rack as the AS/400 or RS/6000 processor. Maximum: Two  <b>#5145</b> 4.5m SCSI cable  <b>#5112</b> 12m SCSI cable  <b>#5118</b> 18m SCSI cable  <b>#5125</b> 25m SCSI cable  <b>#9240</b> Interposer for AS/400  <b>Note:</b> If SCSI Feature #2420 on RS/6000 or POWER parallel SP2 is used, the total length of all device connections cannot exceed the 19m cable length maximum.</p> <p><b>Other Features:</b>  <b>#5790</b> Field installation of Ultra SCSI feature for 3590  <b>#9221</b> First B11 in rack  <b>#9222</b> Second or Fourth B11 in rack  <b>#9223</b> Third B11 in rack  <b>#9400</b> Attached to the AS/400 system  <b>#9790</b> Plant installation of Ultra SCSI attachment feature for 3590.  <b>#9600</b> Attached to the RS/6000 system</p>	B, D, E, F (except D02, E02) 2x0, 3x0
<b>Note 1:</b>	The ¼-inch Cartridge Tape Units are specified as features on the 9406 models and these may be found in the 9406 feature sections.	
<b>Note 2:</b>	Data compression and data transfer rate values are data and application dependent, so end-user results vary.	

## 9.7 Automated Tape Library

3570 TAPE LIBRARY	
See the 3570 in the table in 9.6, "External Diskette, Tapes, and Optical Devices" on page 95.	
9427 8MM TAPE CARTRIDGE LIBRARY	
<b>Model 210</b>	Is the standalone unit
<b>Model 211</b>	Is the rack mounted unit. Two model 211's can be put in a rack side by side
Model 210 cannot be upgraded to the Model 211	
<p>The Tape Library consists of:</p> <ol style="list-style-type: none"> <li>1. Either a single #0701 7 GB 8mm tape drive or two #0702 7 GB 8mm tape drives. The effective data transfer rate is 1 MB per second when compressed (500 KB per second in native mode) for each drive, and is read/write compatible with all IBM 8mm Cartridge Tape Units.</li> <li>2. Two ten-cartridge magazines (one per drive ordered) providing storage for up to 20 8mm cartridges, giving storage capacity of up to 280 GB.</li> <li>3. A power cord (#9800 for 125V or #9833 for 250V)</li> <li>4. a: One SCSI System-to-Device Cable for #2621 attach: <ul style="list-style-type: none"> <li>#9870 - 2m SCSI cable</li> <li>#9871 - 4m SCSI cable</li> <li>#9872 - 12m SCSI cable</li> <li>#9873 - 20 SCSI cable</li> </ul> b: One SCSI System-to-Device Cable for #2749, #2729, #6534, #6501 attach - #6501 requires interposer <ul style="list-style-type: none"> <li>#9245 - 4.5m SCSI cable</li> <li>#9212 - 12m SCSI cable</li> <li>#9218 - 18m SCSI cable</li> <li>#9174 - interposer</li> </ul> </li> <li>5. Either black (#9100) or white (#9200) exterior covers</li> <li>6. A cleaning cartridge and two 8mm cartridges are included</li> </ol>	
Options	
<b>#2007</b>	Additional ten cartridge magazine
<b>#2008</b>	Direct attach feature allows option to configure drive 1 to attach to port 1 and drive 2 to attach to port 2 of the #2621 (SPD) adapter card to allow two concurrent data streams.
<b>#2656/#2857/#2858/#2859</b>	System-to-Device cables for additional host attachment or for dual port attachment with #2008.
Attaches to all AS/400 models, except B and C and 9401 models using #2621 (SPD), #6534 (SPD), or #2729 (PCI) or #2749) or #9427 (PCI). Maximum of one #9427 per controller.	
Requires V3R1 or later.	
<b>Note:</b> Data Compression values are data and application dependent so end-user results may vary.	

### 3494 ½-INCH CARTRIDGE LIBRARY

The 3494 is a stand-alone automated tape storage subsystem which provides the solution for automated tape operations such as save/restore, migration of data between DASD and tape, and other mass data applications.

The Tape Library consists of:

- A Library Control Unit (3494-L10 or 3494-L12), which includes the Media Library Manager (a PC that controls the library) and the Media Library Device Driver.
- Base storage for up to 240 1/2-inch cartridges (210 if the convenience I/O station, #5210, is installed, or 160 of #5230 installed).
- A tape subsystem (either 3490-CxA or 3590-B1A).
- The Accessor (robotic arm that accesses the tape cartridges).
- AS/400 attachment to the Media Library Manager using a RS232 or LAN for the library commands.

The storage capacity and the number of tape subsystems in the Library can be increased by adding Drive Units and Storage Units (see the following table). The Drive Units provide additional cartridge slots and space for additional tape subsystems and the Storage Unit provides an additional 400 Cartridge slots but no space for tape subsystems.

#### 3494 Model Matrix Summary

Model	Cartridge Capacity (Max)	Flexible Growth	Tape Drive Supported
Library Control Units			
3494 - L10	210 (if #5210 installed) 160 (if #5320 installed)	1-8 CxA tape units (16 drives) <sup>1</sup> 1-8 Frames Supports D10, D12, S10 #5300 <sup>2</sup> , #5400 <sup>2</sup> , #5302 <sup>3</sup>	3490E-CxA 3490E-F1A
3492 - L12	210 (if #5210 installed) 160 (if #5230 installed)	1-16 B1A tape units <sup>1</sup> 1-8 Frames Supports D10, D12, S10 #5300 <sup>2</sup> , #5400 <sup>2</sup> , #5302 <sup>3</sup>	3590-B1A
Drive Units			
3494 - D10	400	0 Tape Drives	3490E-CxA 3490E-F1A
	300	1-2 Tape Drives	
3494 - D12	400	0 Tape Drives	3590-B1A
	335	1-2 Tape Drives	
	290	3-4 Tape Drives	
	250	5-6 Tape Drives	
Storage Units			
3494 - S10	400	0 Tape Drives	None

#### Notes:

1. Both 3490E and 3590 tape drives are supported by the L10 and L12 Library Control Units provided that the appropriate Drive Units are installed (3494-D10 for 3490E and 3494-D12 for 3590).
2. The #5300 was the specify feature for a Drive Unit and #5400 was the specify feature for a Storage Unit. These were both withdrawn from marketing on 10 April 1995, and replaced by the 3494 Models D10 and S10 respectively. Both the #5300 and #5400 are supported by the Library Control Units 3494 Models L10 and L12.
3. The #5302 is the specify feature for upgrading a #5300 to support 3590-B1A tape transports in place of 3490-CxA tape transports.
4. The maximum combined total of D10, D12, S10 #5300, #5302, and #5400 is seven.

OPTIONS FOR 3494 MODELS L10 AND L12																												
#5210	<b>Convenience I/O Station (10 cartridges)</b> Allows either input or output of up to 10 ½-inch cartridges into the 3494 Library without interruption of normal operations. See #5230 if a 30 cartridge I/O station required. Maximum: One																											
#5211 #5213	<b>RS232 Host Attachment</b> Supports attachment of AS/400 Host processors and provides communications between the AS/400 system and the tape library using the Media Library Device Driver. The RS232 attached distance for #5211 is 50 feet and for #5213 is 400 feet. One #2511 or #5213 is required per AS/400 attached. Maximum: Four without #5229 - eight with #5229																											
#5214	<b>2nd Disk Drive for Library Manager</b> Allows mirroring of the 3494 Library Manager database and provides the capability to recover the Library Manager data base in case of the failure of the primary disk drive. Maximum: One																											
#5212	<b>Dual Gripper</b> Provides a second cartridge picker on the Accessor for enhanced tape library performance. Maximum: One																											
#5216	<b>Remote Power Sequence</b> Allows power on and off sequencing by attached AS/400 host processors. Maximum: One																											
#5219	<b>Token Ring Adapter</b> Allows the 3494 Library Manager to attach to a Token Ring LAN, and provides communications between the host and the tape library. Maximum: One																											
#5220	<b>Ethernet Adapter</b> Allows the 3494 Library Manager to attach to an Ethernet LAN, and provides communications between the host and the tape library. Maximum: One																											
#5226	<b>Remote Console</b> Provides the capability of controlling and monitoring the status of up to eight 3494 Tape Library Dataservers from a remote location using a LAN connection. One #5226 is required per 3494 connected in the LAN. Maximum: One																											
#5228	<b>Tape Control Unit Expansion</b> This expands the number of tape drive controllers that can be attached to the Library Manager. One feature converts four RS-232 host processor connections into four tape control unit connections in either the base library manager of the #5229 Expansion Attachment. Up to 16 tape control units can be supported on the Library Manager (see the following table). <table><tr><th>No. of #5228 (for direct attach</th><th>Available RS-232 Ports Connections</th><th>Available Tape Control Unit Required</th><th>Additional Features to host)</th></tr><tr><td>0</td><td>4</td><td>4</td><td>None</td></tr><tr><td>0</td><td>8</td><td>8</td><td>#5229</td></tr><tr><td>1</td><td>0</td><td>8</td><td>#5219 or #5220</td></tr><tr><td>1</td><td>4</td><td>12</td><td>#5229</td></tr><tr><td>2</td><td>0</td><td>16</td><td>#5229 and #5219 or #5220</td></tr></table> Maximum: Two				No. of #5228 (for direct attach	Available RS-232 Ports Connections	Available Tape Control Unit Required	Additional Features to host)	0	4	4	None	0	8	8	#5229	1	0	8	#5219 or #5220	1	4	12	#5229	2	0	16	#5229 and #5219 or #5220
No. of #5228 (for direct attach	Available RS-232 Ports Connections	Available Tape Control Unit Required	Additional Features to host)																									
0	4	4	None																									
0	8	8	#5229																									
1	0	8	#5219 or #5220																									
1	4	12	#5229																									
2	0	16	#5229 and #5219 or #5220																									
#5229	<b>Expansion Attachment Card</b> This applies to the Library Manager of the 3494 and is required to support the fifth to eighth tape control units or the fifth to eighth RS232 connection. Maximum: One																											

<b>#5230</b>	<b>Convenience I/O Station (30 Cartridges)</b> Allows either input or output of up to 30 ½-inch cartridges into the 3494 library without interruption of normal operations. See the #5210 if ten cartridge I/O stations required. Maximum: One
<b>#5300</b>	<b>Drive Unit</b> Withdrawn from marketing on 10 April 1995 and replaced by 3494 Model D10. This provided an expansion unit for an additional CxA tape subsystem and additional 300 cartridge storage capacity. Attachment to 3494-L10 is supported but attachment to 3494-L12 requires an RPQ.
<b>#5302</b>	<b>Upgrade #5300 for 3590-B1A</b> This feature upgrades #5300 Drive Unit to accept two 3590-B1A tape systems. RPQ 8B3166 allows the #5300 to accept a third and fourth 3590-B1A. RPQ 8B3167 allows the #5300 to accept a fifth and sixth 3590-B1A tape subsystem. For cartridge storage capacities, refer to "3494 ½-INCH CARTRIDGE LIBRARY" on page 102. Maximum: One per #5300
<b>#5400</b>	<b>Storage Unit</b> Withdrawn from marketing 10 April 1995 and replaced by 3494 Model S10. This provided an expansion unit for 400 additional cartridges. Attachment to the 3494-L10 is supported but attachment to the 3494-L12 requires a RPQ.

TAPE ATTACHMENT TO THE AS/400 SYSTEM	
<p><b>The 3490-C1A and C2A attach as shown here:</b></p> <p><b>(i) Channel Attach</b>  <b>#2644 (SPD)</b> on AS/400 (or optionally #2622 on D/E models). #2644 requires V3R1 or later.</p> <p>The following features on the 3490-CxA:</p> <p><b>#5037</b> Channel Attach  <b>#9931 or #9932</b> Internal cable 6m or 24m</p> <p>A second #5037 can be added to the 3490-CxA to allow attachment of a second AS/400 system.</p> <p><b>(ii) SCSI Attach</b></p> <p><b>#6501 (SPD) on the AS/400 system. #6501 requires V3R1 or later. Note the following features on the 3490-CxA:</b></p> <p><b>#5040</b> Magnetic Tape Subsystem SCSI Attachment  <b>#5045</b> Performance Enhancement Feature</p>	<p>A second #5040 and #5045 can be added to the 3490-CxA to allow attachment to a second AS/400 system. Plus one of the following features per #5040:</p> <p><b>#6045</b> 4.5 M SCSI cable  <b>#6120</b> 12 M SCSI cable  <b>#6140</b> 14 M SCSI cable  <b>#6180</b> 18 M SCSI cable  <b>#9410</b> Interposer for the AS/400</p> <p>Both Channel Attach and SCSI Attach are supported together on the same 3490-CxA unit.</p> <p><b>3590-B1A attaches as follows:</b></p> <p><b>For all AS/400 models that support #6501</b></p> <p><b>#6501</b> on AS/400 — #6501 requires V3R1 or later. The following features are required for each AS/400 attached:</p> <p><b>#5112</b> 12m SCSI Cable  <b>#5118</b> 18m SCSI Cable  <b>#5125</b> 25m SCSI Cable  <b>#5145</b> 45m SCSI Cable  <b>#9400</b> AS/400 Attach Specify  <b>#9410</b> Interposer for the AS/400  <b>#2424</b> US English Specify</p>

UPGRADES		
The following field upgrades are possible	<b>From</b>	<b>To</b>
	3490-C10	3490-C1A
	3490-C11	3490-C1A
	3490-C1A	3490-C2A
	3490-C22	3490-C2A
	3590-B11	3490-B1A
	3494-D10	3490-D12
	3490-L10	3490-L12
Existing ½-inch cartridges can be used after applying 3M barcode labels on CxA drives. 3590-B1A requires new high capacity ½-inch cartridges. The ACL on the 3490-C11 and 3490-C22 and ACF on the 3590-B11 are not used in the Library.		

3575 MAGSTAR MP TAPE LIBRARY DATASERVER				
The 3575 is a stand-alone automated tape storage subsystem that provides the solution for automated tape operations such as save/restore, migration of data between DASD and tape, and other mass data applications. All models of the 3575, except the L06, may be partitioned into two or three logical libraries with separate and distinct drives and storage slots. This allows multiple heterogeneous hosts to share the library easily.				
The 3575 Tape Library Dataserver consists of:				
<ul style="list-style-type: none"> <li>• A Media Mover robotic assembly</li> <li>• Two to six 3570 B1A or C model tape devices</li> <li>• Attachment for up to six host systems using SCSI. When attached to the AS/400 system, the #2749, #2729, #6534, or #6501 is required.</li> </ul>				
There are multiple models of the 3575 that feature varied amounts of attachable tape drives and capacities (see the following table).				
3575 MODEL MATRIX SUMMARY				
Model	Capacity (native)	Capacity (compressed)	Cartridges	Drives
L06	300GB	900GB	60	2
L12	600GB	1.8TB	120	2-4
L18	900GB	2.7TB	180	2-6
L24	1.2TB	3.6TB	240	2-6
L32	1.6TB	4.8TB	324	2-6
<b>Notes:</b> <ol style="list-style-type: none"> <li>1. Fourteen cartridge slots may be configured for bulk I/O within the library. This reduces the maximum cartridges per library by fourteen and reduces the maximum capacity of the library.</li> <li>2. Model L12 can be upgraded to Model L18 to increase the capacity of the library.</li> <li>3. Model L24 can be upgraded to Model L32 to increase the capacity of the library.</li> <li>4. All drives installed at the plant are 3570 Model C tape drives.</li> <li>5. AS/400 configurators allow only one drive per IOP port to enable maximum performance. Installing more than one 3570 Magstar MP Model C tape drive on an IOP port may impact system performance. When using #6501 to attach the 3575, one port on the #6501 must remain unused.</li> </ol>				
FEATURES FOR 3575				
1400	<b>Multi-Path Feature with Two Magstar MP Model C Tape Drives</b> Provides plant installation of the multi-path feature and two Magstar MP Model C tape drives. Required Feature: Yes Maximum: One			

1450	<b>Multi-Path Feature</b> Provides field installation of the multi-path feature for 3575s manufactured, shipped, and installed prior to the availability of #1400. Required Feature: No Maximum: One
1451	<b>Field Installation of Magstar MP 3570 Tape Drive Model B1A</b> Adds Magstar MP 3570 Model B1A tape drives into a currently installed 3575. Not available on Model L06.

3575 MAGSTAR MP TAPE LIBRARY	
1453	<b>Magstar MP Model C Tape Drive</b> Add a Magstar MP Model C tape drive into a currently installed 3575 Tape Library. Not available on Model L06. Prerequisite: #1400 or #1450 Multi-Path Feature
2895	<b>Interposer for AS/400 Feature #6501</b> Allows attachments of tape drives installed in the 3575 Tape Library to AS/400 feature #6501. One is required for each tape drive that will attach to a #6501. AS/400 configurators allow only one drive per IOP port for maximum performance. Installing more than one Magstar MP Model C tape drive on an IOP part can impact system performance. When using a #6501 to attach the 3575 tape drives, one port on the #6501 must remain unused. Prerequisite: #1400 or #1450 Multi-Path Feature
5212	<b>12 Meter SCSI Cable</b> 12 meter (39-foot) cable with an industry-standard high-density 68-pin (HD68) cable connector on each end.
5218	<b>18 Meter SCSI Cable</b> 18 meter (59-foot) cable with an industry-standard high-density 68-pin (HD68) cable connector on each end.
5225	<b>25 Meter SCSI Cable</b> 25 meter (81-foot) cable with an industry-standard high-density 68-pin (HD68) cable connector on each end.
5245	<b>4.5 Meter SCSI Cable</b> 4.5 meter (15-foot) cable with an industry-standard high-density 68-pin (HD68) cable connector on each end.
8750	<b>One Cleaner Cartridge</b> One cleaner cartridge used to clean the Magstar MP Model C tape drives or 3570 Model B1A tape drives. Maximum: 3
8754	<b>30-Pack of Magstar MP B-format Data Cartridges</b>
8755	<b>30-Pack of Magstar MP C-format Data Cartridges</b>
8756	<b>120-Pack of Magstar MP B-format Data Cartridges</b>
8757	<b>120-Pack of Magstar MP C-format Data Cartridges</b>
9400	<b>Attached to the AS/400 system</b>
9907	<b>4.3 Meter (14-foot) Power Cord, 125V</b>
9908	<b>4.3 Meter (14-foot) Power Cord, 250V</b>
9909	<b>4.3 Meter (14-foot) Power Cord, 250V, Watertight</b>
9985	<b>1.8 Meter (6-foot) Power Cord, 125V</b>
9986	<b>1.8 Meter (6-foot) Power Cord, 250V</b>
9987	<b>1.8 Meter (6-foot) Power Cord, 250V, Watertight</b>



## 9.8 SCSI Cable Part Numbers for External Tape

The following part numbers may not be available in all countries or on all models of the AS/400 system and can change.			
<b>SCSI Cables for #2729, #2749, #6534, and #6501</b> (#6501 attach requires interposer p/n 05H3834)			
Tape Drive	Length	Part Number	Feature Code
3490 E01, E11 3590	2.8m	05H4647	5128
	4.5m	05H4648	5145
	12.0m	05H4649	5112
	18.0m	05H4650	5118
	25.0m	05H4651	5125
3490 F00, F01, F11 3570 B / C 7208 - 342 9427 - 210 / 211	0.5m	49G6456	5205
	4.5m	49G6457	5245
	12.0m	49G6458	5212
	18.0m	49G6459	5218
	25.0m	08L6201	5225 (3570 Cxx)
3490 C10, C11, C22 with #5040 - SCSI attach #6501 attach only	4.5m	61G8328	6045
	12.0m	61G8329	6120
	18.0m	61G8330	6180
<b>SCSI Cables for #2729 and #6534</b>			
Tape Drive	Length	Part Number	Feature Code
7208 - 232 / 234 / 222 9348 - 001 / 002	1.0m	06H6037	2875
	4.0m	59H3460	2901
	12.0m	59H3461	2902
7208 - 012	1.5m	52G0174	2871
	4.0m	59H3462	2903
	12.0	59H3463	2904

## 9.9 QIC Format Compatibility

Cartridge Capacity (Native)	Media Type	Format (Density)	6380 6480	6381 6481	4486 4582 6382 6482	4483 4583 6383 6483	6385 6485 Note 5	4486 4586 6386 6486
16GB (3, 6)	MLR1-16GB (1)	*QIC5010				R/W	R/W	R/W
13GB (3, 6)	DC5010 (1)	*QIC5010				R/W	R/W	R/W
8GB	SLR5-4GB	*QIC4DC (2)			R/W	R		R
4GB	SLR5-4GB	*QIC4GB			R/W	R		R
5GB	DC9250	*QIC2DC (2)		R/W	R/W	R		R
2.5GB	DC9250	*QIC2GB	R/W	R/W	R/W	R	R/W	R
1.2GB	DC9120	*QIC1000	R/W	R/W	R/W		R/W	
525MB	DC6525	*QIC525	R/W	R/W	R/W		R/W	
320MB	DC6320	*QIC525	R/W	R/W	R/W		R/W	
120MB	DC6150	*QIC120	R/W	R/W	R/W		R/W	
60MB	DC6150	*QIC24	R	R				
<b>Note 1</b>	13 GB and 16 GB cartridges have auto-retention (retention done as required).							
<b>Note 2</b>	QIC2DC and QIC4DC formats are compression formats. Cartridge capacity is data dependant. Native capacities shown assume a two to one compression ratio.							
<b>Note 3</b>	The internal 13 GB tape drives with feature code #6385 or #6485 also supports the 16 MB IBM MLR1 tape media. For the correct operation of the #6385 and #6485 tape drives with the MLR1 tape media, the MF19447 PTF for V3R7 is required.							
<b>Note 5</b>	The #6385 and #6485 13 GB were withdrawn from marketing 31 May 2000.							
<b>Note 6</b>	The capacity shown can typically be doubled when the compression option is selected.							

## 9.10 Cable Part Numbers

The following part numbers can be used for ordering cables for the AS/400 system. These part numbers may not be available in all countries or on all AS/400 models and can change.			
Description	Length	Part Number	Feature Code
<b>SPD Communication Cables Non-Enhanced</b>			
RS232 Cable	15.2 m (50 ft)	22F9348	#9836
RS232 Cable Germany	15.2 m (50 ft)	21F9953	#9836
RS232 Cable Japan	15.2 m (50 ft)	21F9349	#9836
RS232 Cable	6.1 m (20 ft)	22F0149	#9022
RS232 Cable Germany	6.1 m (20 ft)	22F0150	#9022
RS232 Cable Japan	6.1 m (20 ft)	22F0151	#9022
RS366 Cable	6.1 m (20 ft)	72X5643	
RS366 Cable Japan	6.1 m (20 ft)	21F4415	
<b>SPD Communication Cables Enhanced</b>			
V.24 Cable	6.1 m (20 ft)	22F0152	#9023
V.24 Cable Germany	6.1 m (20 ft)	22F0153	#9023
V.24 Cable Japan	6.1 m (20 ft)	22F0154	#9023
V.24 Cable	15.2 m (50 ft)	21F9350	#9835
V.24 Cable Germany	15.2 m (50 ft)	21F9352	#9835
V.24 Cable Japan	15.2 m (50 ft)	21F9351	#9835
V.24 Cable	24.2 m (80 ft)	74F1837	
<b>Other SPD Communications Cables</b>			
X.21 Cable	6.1 m (20 ft)	72X5640	#9021
X.21 Cable	15.2 m (50 ft)	21F9356	#9839
V.35 Cable	6.1 m (20 ft)	72X5641	#9020
V.35 Cable	15.2 m (50 ft)	21F9357	#9838
V.35 Cable	24.4 m (80 ft)	74F1839	
2 Port Communication Cable	3 m (9.8 ft)	21F9345	#9843
<b>SPD High Speed Communications Adapter (#2666)</b>			
X.21 Cable	6.1 m (20 ft)	17G3987	#9885
V.35 Cable	6.1 m (20 ft)	17G3991	#9879
V.35 Cable	24.4 m (80 ft)	17G3992	#9880
RS449 Cable	6.1 m (20 ft)	17G4000	#9882
RS449 Cable	24.4 m (80 ft)	17G4001	#9883
RS449 Cable	45.7 m (150 ft)	17G4002	#9884
<b>PCI/SPD Miscellaneous system cables</b>			
Diskette Cable	2.4 m (7.9 ft)	46G3658	
Diskette/Twinaxial Cable	2.4 m (7.9 ft)	46G3585	
BBU Cable	2.4 m (7.9 ft)	86G7712	
Ethernet Cable	3.0 m (9.8 ft)	86G7691	#9025
Token Ring Cable	2.44 m (8 ft)	6339098	#9024



## Chapter 10. Feature Codes and CCIN

A feature code is used by IBM Marketing and tools to report configurations and to work with upgrades. A CCIN number is used when working from a Hardware Resource Listing (also known as the Rack Configuration Listing).

The feature codes, CCIN numbers, and a description for many of the AS/400 features are listed for both CISC and RISC systems in the *AS/400e System Builder*, SG24-2155. Separate chapters are provided to cross reference the feature code used for ordering with a CCIN number reported by the Hardware Resources Listing. Use these lists to configure MESes and upgrades.

Part of the feature code table is listed here to help describe what is represented. Refer to *AS/400e System Builder*, SG24-2155, for a more complete table.

Feat. Code	CCIN	Description
0362	0362	Comm Console PCI Cable
0364	0364	Parallel Cable
0366		Optical Bus Cable 20m
1105	6105	Sngl Disk Unt (320MB) Kit
1107	6107	Sngl Disk Unt (400MB) Kit
1109	6109	Sngl Disk Unt (988MB) Kit
1200	6105	Sngl Disk Unt (320MB) Kit
1201	6107	Sngl Disk Unt (400MB) Kit
1202	6109	Sngl Disk Unt (988MB) Kit
1203	6602	Sngl Disk Unt (1031MB) Kit
1204	6603	Sngl Disk Unt (1967MB) Kit
1205	6605	Additional 1.031GB Dsk Unt
1206	6606	Additional 1.967GB Dsk Unt
1207	6607	Additional 4.194GB Dsk Unt
1210	6109	Addt Dsk Unit (988MB)
1211	6602	Addt Dsk Unit (1.031GB)
1212	6603	Addt Dsk Unit (1967MB)
1213	6602	Std Dsk Unit (1.031GB, 2 bytes)
1214	6603	Opt.Bs Dsk Unit (1.967GB, 2 bytes)
1250	6378	525 MB ¼-in Tape Kit
1251	6379	1.2 GB ¼-in Tape Kit
1252	6380	2.5 GB ¼-in Tape Kit
1260	6380	2.5 GB ¼-in Tape
1261	6390	7.0 GB 8mm Cart Tape
1262	6335	840MB QIC-3040-MC
1263	6320	650MB CD ROM (4x)
1305	6335	840MB QIC Mini Tape Unit Kit
1602	6602	Sngl Disk Unt Kit (1031MB)
1603	6603	Sngl Disk Unt Kit (1967MB)
2040	2040	1.1 SPPR Processor
2041	2041	1.6 SPPR Processor
2042	2042	2.0 SPPR Processor
2043	2043	3.0 SPPR Processor
2044	2044	5.0 SPPR Processor
2050	2050	6.4 SPPR Processor
2051	2051	11.4 SPPR Processor
2052	2052	16.8 SPPR Processor
2100	2100	2.3 SPPR CPU for Mod 236
2410	2410	100 Clnt Svr Processor
2411	2411	3.0 SPPR Processor

Feat. Code	CCIN	Description
2412	2412	6.1 SPPR Processor
2413	2531	E06 Processor
2414	2585	F02 Processor
2515	2515	C10 Floating Pt Processor
2516	2516	C20 Floating Pt Processor
2523	2523	D80 OPUS Processor
2528	2528	16.8 SPPR CPU for Mod F97
2530	2530	E04 BASS PISCES CR Proc
2533	2533	E20 PISCES Processor
2534	2534	E25 PISCES Processor
2536	2536	E35 PISCES Processor
2537	2537	E45 PISCES Processor
2539	2539	E02 ZEUS TWINAX PISCES
2540	2540	0.7 SPPR CPU for Mod D35
2541	2541	D45 PISCES Processor
2542	2542	D50 PISCES Processor
2543	2543	D60 PISCES Processor
2544	2544	D70 PISCES Processor
2552	2552	C06 CREST Processor
2553	2553	D06 CREST Processor
2554	2554	D04 PHANTOM Processor
2555	2555	D10 CREST Processor
2556	2556	D20 CREST Processor
2557	2557	D25 PISCES Processor
2558	2558	C04 Phantom Processor 8MB
2559	2559	E50 Opus Processor
2560	2560	E60 Opus Processor
2561	2561	E70 Opus Sort Processor
2562	2562	E80 Opus Sort Processor
2563	2563	E90 OSCAR (2way) Opus Sort
2568	2568	E95 OSCAR (2way) Opus Sort
2582	2582	F06 PIKE PISCES Processor
2583	2583	F25 PISCES Processor
2586	2586	0.7 SPPR for F04
2587	2587	F10 PISCES CR Processor
2588	2588	F20 PISCES Processor
2592	2592	F35 PISCES Processor
2593	2593	F45 PISCES Sort Processor
2594	2594	F50 OPUS Processor
2595	2595	F60 OPUS Sort Processor
2596	2596	F70 CTECH Processor 1-way

Feat. Code	CCIN	Description
2597	2597	F80 CTECH Processor 2-way
2598	2598	F90 CTECH Processor 2-way
2599	259A	F95 CTECH Processor 2-way
2600*	2600	Magnetic Storage Controlr
2601	2601	9346 Mag Tape Unit Contr
2602	2602	Processor Expansion
2604	2604	3422 3430 Mag Tape Subsys
2605*	2605	ISDN Basic Rate Adapter
2607	2602	9348 Mag Tape Unit Attach
2608	2608	2440/9348 HCD Mag Tape Att
2609*	2609	EIA 232/V.24 Two Line Adpt
2610*	2610	X.21 Two Line Adapter
2611*	2611	DASD Controller
2612*	2612	EIA 232/V.24 One-Line Adpt
2613*	2613	V.35 One-Line Adapter
2614*	2614	X.21 One-Line Adapter
2617*	2617	Ethnet/IEEE 802.3 CSMA/CD
2618*	2618	Fiber Distrib Data Inf Adpt
2619*	2619	16/4 Mbps Tkn-Rng Adapt/HP
2620*	2620	Cryptographic Processor
2621*	2621	Removable Media Device Atch
2622	2622	3490 Magnetic Tape Attach
2623*	2623	Six Line Comm Controller
2624*	2624	Storage Device Controller
2625	2625	Ethnet/IEEE 802.3 CSMA/CD
2626*	2626	16/4 Mbps Tkn-Rng Adapt/A
2628*	2628	Limited Cryptographic Proc
2629	2629	LAN/WAN/Workstation IOP
2634	2634	16/4 Mbps Token-Ring Adpt
2636	2636	16/4 Mbps Token-Ring Adpt
2644*	2644	34xx Magnetic Tape Atchmnt
2647	2647	9348 Model 2 Tape Atchmnt
2654*	2609	EIA 232/V.24 Two-Line 20E
2655*	2609	EIA 232/V.24 Two-Line 20
2656*	2610	X.21 Two-Line 20
2657*	2609	EIA 232/V.24 Two-Line 50E
2658*	2609	EIA 232/V.24 Two-Line 50
2659*	2610	X.21 Two-line 50
2663*	2663	I/O Attachment Processor
2664*	2664	Integrated Fax
2665*	2665	Shld Dist Data Inf Adapt
2666*	2666	High Speed Comm Adapter
2668*	2668	ARLAN Wireless LAN Adapter
2669	2669	Shared Bus Interface Card
2670	2670	Sys Unit Exp Twr (optical)
2683	2683	266Mbps OptiConnect Recvr
2685	2685	1063Mbps OptiConnect Rcvr
2705	2705	M1 Filler Tray
2706	2706	M2 Terminator Tray
2801	2801	1.96 GB Internal Dsk Unit
2802	2802	2.0 GB Internal Disk Unit
2853	2853	3450 .66m sys to dev cbl
2855	2855	3450 1.2m sys to dev cbl
2856	2856	3450 1.2m sys to dev cbl
3054	3054	4 MB Additional Main Store
3055	3055	8 MB Additional Main Store
3060	3060	16 MB Additional Main Store

Feat. Code	CCIN	Description
3061	3061	16 MB Additional Main Store
3100	3100	16 MB Main Storage
3101	3101	32 MB Main Storage
3102	3102	16 MB Main Storage
3103	3103	32 MB Main Storage
3104	3104	64 MB Main Storage
3108	3108	8 MB Main Storage
3109	3109	32 MB Main Storage
3110	3110	64 MB Main Storage
3116	3116	MFIO Storage Expansion
3117	3117	8 MB Main Storage
3118	3118	16 MB Main Storage
3119	3119	8 MB Main Storage
3120	3120	8 MB Main Storage
3121	3121	8 MB Main Storage
3122	3122	32 MB Main Storage
3130	3130	32 MB Main Storage
3131	3131	64 MB Main Storage
3132	3132	128 MB Main Storage
3133	3133	64 MB Main Storage
3134	3134	128 MB Main Storage
3135	3135	256 MB Main Storage
3136	3136	256 MB Main Storage
3138	3138	64 MB Main Storage
3140	3140	8 MB Main Storage
3141	3141	16 MB Main Storage
3142	3142	32 MB Main Storage
3144	3144	8 MB Main Storage
3145	3145	16 MB Main Storage
3146	3146	32 MB Main Storage
3147	3147	32 MB Main Storage
3149	3149	128 MB Main Storage
3156	3156	64 MB Main Storage
3157	3157	128 MB Main Storage
3158	3158	256 MB Main Storage
3159	3159	8 MB Main Store
3160	3160	16 MB Main Store
3161	3161	32 MB Main Storage
3172	3172	32 MB Main Store (2 simms)
4103	3103	32 MB Main Storage
4104	4104	4 MB Main Storage
4114	4114	4 MB Main Storage Expansion
4117	3117	8 MB Main Storage SIMM
4118	3118	16 MB Main Storage SIMM
4120	3120	8 MB Main Storage
4121	3121	8 MB Main Storage
4122	3122	32 MB Main Storage
4133	3133	64 MB Main Storage
4134	3134	128 MB Main Storage
4135	3135	256 MB Main Storage
4136	3136	256 MB Main Storage
4138	3138	64 MB Main Storage
4144	3144	8 MB Main Storage
4145	3145	16 MB Main Storage
4146	3146	32 MB Main Storage
4147	3147	32 MB Main Storage
4149	3149	128 MB Main Storage

Feat. Code	CCIN	Description
4156	3156	64 MB Main Storage
4157	3157	128 MB Main Storage
4158	3158	256 MB Main Storage
4161	3161	32 MB Main Storage
4172	3172	32 MB Main Storage
4204	3104	64 MB Main Storage
4205	6605	Addt Dsk Unit (1.031 GB)
4206	6606	Addt Dsk Unit (1.967 GB)
4207	6607	Addt Dsk Unit (4.194 GB)
4211	6602	Addt Dsk Unit (1.031 GB)
4212	6603	Addt Dsk Unt (1967 MB)
4605	6605	Addt Dsk Unt (1.031 GB, reg)
4606	6606	Single Disk Unit (1967 MB)
4607	6607	Addt Dsk Unt (4.194 GB, reg)
4650	6603	Addt Dsk Unt (1.967 GB, reg)
4652	6602	Single Disk Unit (1031 MB)
5051	5051	Opt 8 Disk Unit Expansion
5052	5052	Opt 16 Disk Unit Expansion
5060	5060	Bus Extension Tower
5061	5061	Storage Expansion Tower
5062	5062	Sys Unit Expansion (optical)
5063	5063	Sys Unit Expansion (copper)
5164	5164	Feature Power Supply
5134	5133	Feature Power Supply
5135	5135	Feature Power Supply
5140	5140	Regulator
5141	5141	3.6V I/O Regulator
5142	5142	Tower Attach Power
5143	5143	Bulk 400W Power Supply
5144	5144	BBU External (Opt)
5145	5145	BBU Internal (Opt)
5146	5146	Redundant Power (Bulk+Reg)
5147	5147	Feature Power -560W
5148	5148	Addtnl Bat Bckup Internal
5343	6343	Base Tape Replace (1.2 GB)
5348	6348	Base Tape Replace (1.2 GB)
5349	6349	Base Tape Replace (2.5 GB)
6040	6040	Twinaxial Workstn Contrlr
6041	6041	ASCII Workstation Contrlr
6050*	6050	Twinaxial Workstn Contrlr
6054*	6054	LOCAL TALK Controller
6100	6100	Disk Unit (315 MB)
6103	6103	Single Disk Unit (400 MB)
6105	6105	Single Disk Unit (320 MB)
6107	6107	Single Disk Unit (400 MB)
6108	6105	Addition Dual Disk (640 MB)
6109	6109	Single Disk Unit (988 MB)
6110*	6110	Mag Storage Dev Controller
6111*	6111	Mag Storage Dev Controller
6112*	6112	Mag Storage Dev Controller
6120	6107	Dual Disk Unit (800 MB)
6121	6107	Addition Dual Disk (800 MB)
6123	6109	Addition Dual Dsk (1976 MB)
6124	6109	Base DASD Upgrade (1976 MB)
6125	6109	Base DASD Replace (988 MB)
6126	6104	Base DASD Replace (988 MB)
6127	6109	Base DASD Replace (1976 MB)

Feat. Code	CCIN	Description
6140*	6140	Twinaxial Workstn Contrlr
6141*	6141	ASCII Workstation Contrlr
6142*		ASCII 12-Port WS Expansion
6146*	6146	Diskette Adapter
6147*	6147	Diskette Adapter
6148*		8-Port Twinaxial Expansion
6150*	6150	Three-Line Comm Controller
6151*	6151	X.21 One-Line 20
6152*	6152	EIA 232/V.24 Adapter
6153*	6153	V.35 One-Line 20
6154	6152	EIA 232/V.24 One-Line 20E
6155	6152	EIA 232/V.24 One-Line 20
6160	6160	Token-Ring Network Adapter
6171	6151	X.21 One-Line 50
6173*	6153	V.35 One-Line 50
6174	6152	EIA 232/V.24 One-Line 50E
6175	6152	EIA 232/V.24 One-Line 50
6183	6183	6 port ASCII IOA
6335	6335	840 MB QIC-mini Tape Unit
6341	6341	120 MB ¼-in Cart Tape
6342	6342	525 MB ¼-in Cart Tape
6343	6343	1.2 GB ¼-in Cart Tape
6344	6344	2.5 GB ¼-in Cart Tape
6345	6345	13 GB ¼-in Cart Tape
6346	6346	120 MB ¼-in Cart Tape
6347	6347	525 MB ¼-in Cart Tape
6348	6348	1.2 GB ¼-in Cart Tape
6349	6349	2.5 GB ¼-in Cart Tape
6350	6350	13 GB ¼-in Cart Tape
6365	6335	840 MB QIC-mini Tape Extrnl
6366	6366	120 MB ¼-in Cart Tape
6367	6366	525 MB ¼-in Cart Tape
6368	6368	1.2 GB ¼-in Cart Tape
6369	6369	2.5 GB ¼-in Cart Tape
6370	6370	13 GB ¼-in Cartridge Tape
6380	6380	2.5 GB ¼-in Cart Tape
6390	6390	7.0 GB 8mm Cart Tape Unit
6435	6335	840 MB QIC Mini Tape Unit
6500*	6500	DASD Controller
6501*	6501	Magnetic Storage Cntrlr
6502*	6502	Dsk Unt Cntrlr for RAID
6509	6509	Optional 16 MB SIMM
6512*	6512	Disk Unit Cntrlr for RAID
6520	6520	2 Port LAN for FSIOP
6522*	6502	Dsk Unt Cntrlr for RAID
6523	6530	Dsk Unt Cntrlr
6530*	6530	DASD Controller
6601	6601	Single Disk Unit (1031MB)
6602	6602	Single Disk Unit (1031MB)
6603	6603	Single Disk Unit (1967MB)
6605	6605	Disk Unit (1.031 Gb, reg)
6606	6606	Disk Unit (1.967 GB)
6607	6607	Disk Unit (4.194 GB, reg)
6612	6602	Dual Disk Unit (2.0 GB)
6613	6603	Dual Disk Unit (4 GB)
6650	6603	Addt Dsk Unt (1.967 GB, 2 byte)
6652	6602	Single Disk Unit (1031 MB)

Feat. Code	CCIN	Description
6701	6601	Base Disk Replace (1.0 GB)
6802	6602	Base Disk Replace (1.0 GB)
6812	6602	Base Disk Replace (2.0 GB)
7135	3135	Opt 256 MB Main Storage
7157	3157	Opt Base 128 MB Main Store
7158	3158	Opt Base 256 MB Main Store
7174*	9174	Ethernet IOA
7175*	9175	Token Ring IOA
7343	6343	1.2 GB ¼-in Cart Tape
7344	6344	2.5 GB ¼-in Cart Tape
7347	6347	Base Tape Upgrade (525 MB)
7348	6348	1.2 GB ¼-in Cart Tape
7349	6349	2.5 GB ¼-in Cart Tape
7613	6603	Base DASD Replace (3934 MB)
8002	3002	Opt 128 MB Main Storage
8054*	6054	LocalTalk Adapter
8110	6110	Std Mag Storage Controller
8111	6111	Std Mag Storage Controller
8123	6109	Dual Disk Unit (1976 MB)
8135	3135	Opt Base 256 MB Main Store
8152	9152	Opt Base Twinax
8156	3156	Opt Base 64 MB Main Storage
8157	3157	Opt Base 128 MB Main Store
8158	3158	Opt Base 256 MB Main Store
8160	3160	Opt Addtl 16 MB Main Store
8172	3172	Delt Price 32 MB
8210	3110	Optional 64 MB Main Storage
8342	6342	525 MB ¼-in Cart Tape
8343	6343	1.2 GB ¼-in Cart Tape
8344	6344	2.5 GB ¼-in Cart Tape
8345	6345	13 GB ¼-in Cartridge Tape
8347	6347	525 MB ¼-in Cart Tape
8348	6348	1.2 GB ¼-in Cart Tape
8349	6349	2.5 GB ¼-in Cart Tape
8505	2630	I/O Card Unit Conversion
8606	6606	Single Disk Unit (1967 MB)
8607	6607	Opt Base DASD (4.194 GB) reg
8609*	2654	EIA 232/V.24 Two-Line
8612	6602	Base 2.0 GB Dual Disk Unit
8613	6603	Base DASD Upgrade (3934 MB)
8650	6603	Opt Dsk Unt (1.967 GB,2byte)
8664	2618	Opt Base Fiber DD Inf
8665	2665	Opt Base Shielded DD Inf
8706	6606	Opt Base Dsk Unt (1.967 GB)
8707	6607	Opt Base Dsk Unt (4.194 GB)
8716	6506	Opt 16 MB one Port FSIOP
8717	6506	Opt 32 MB one Port FSIOP
8718	6506	Opt 48 MB one Port FSIOP
8719	6506	Opt 64 MB one Port FSIOP
8726	6506	Opt 16 MB two port FSIOP
8727	6506	Opt 32 MB two Port FSIOP
8728	6506	Opt 48 MB two Port FSIOP
8729	6506	Opt 64 MB two Port FSIOP
8863*	2609	EIA 232/V.24 Two line 20E
8866*	2609	EIA 232/V.24 Two line 50E
9000	7000	Panel Keylock Feature
9020	9020	V.35 cable 20'

Feat. Code	CCIN	Description
9021	9021	X.21 cable 20'
9022	9022	EIA 232 20-ft Cable
9023	9023	EIA 232 20-ft enhanced cbl
9024	9024	802.5 Token Ring Cbl (2.4M)
9025	9025	Ethernet Cable AUI (3M)
9026	9026	EIA 232 6m Client Acc cbl
9027	9027	EIA 232 2.5m Clnt Acc cbl
9050	6050	Twinaxial Workstn Control
9053	6053	Std Twinaxial WSC Specify
9054	6054	Std LocalTalk Controller
9100	6100	315 MB Disk Unit Relocation
9102	6102	Std 320 MB Disk Unit
9103	6103	Std 400 MB Disk Unit
9104	6104	Std 988 MB Disk Unit
9106	6105	Standard Dual Disk (640 MB)
9109	6109	Std 988 MB Disk Unit Spec
9117	7117	Expansion Unit 1
9120	6107	Standard Dual Disk (800 MB)
9122	6122	Std 851 MB Disk Unit (RPQ)
9140	6140	Twinaxial Workstn Control
9141	6141	ASCII Workstation Control
9143*	9143	Twinaxial Workstn Contrlr
9144*	2637	ASCII Workstation Contrlr
9145*	9145	Std MFIOF/ASCII WSC
9146	2638	Std MFIOF/TWINAX WSC
9147	2637	Std MFIOF/ASCII WSC
9148	2661	Std MFIOF/Twinaxial WSC
9149*	9149	Twinaxial passthru adapter
9150	2637	Std MFIOF/ASCII WSC
9151	2661	Std MFIOF/Twinaxial WSC
9152	9152	Std MFIOF/Twinaxial WSC
9153*	9153	Std MFIOF wo/Twinax WSC
9156	3156	Std 64 MB Main Storage
9159	3159	Std 8 MB Main Storage
9160	3160	Std 16 MB (2 SIMM)
9161	3161	Std 32MB Main Storage
9171*	917A	Std MFIOF/ASCII WSC
9172*	2661	APEX TETON TWINAX MFIOF
9173*	917C	Std MFIOF/LocalTalk WSC
9174*	9174	Base ETHERNET IOA
9175*	9175	Base Token Ring IOA
9211	9211	60 meter SPCN Optical Cbl
9212	9212	100 meter SPCN Optical Cbl
9215	9215	60 meter SPCN Copper Cable
9231	3131	Opt Base 64 MB Main Store
9232	3132	Opt Base 128 MB Main Store
9234	3134	Std 128 MB Main Storage
9272	3172	Std 32 MB Main Storage
9282	3172	Std 32 MB Main Storage
9304	3104	Std 64 MB Main Storage
9341	6341	Std 120 MB ¼-in Tape
9342	6342	Std 525 MB ¼-in Tape
9343	6343	Std 1.2 GB ¼-in Tape
9347	6347	Std 525MB ¼-in Tape
9348	6348	Std 1.2 GB ¼-in Tape
9584	2584	ASCII Workstation Contrlr
9585	2585	Twinaxial Workstn Contrlr



Feat. Code	CCIN	Description
9601	6601	Standard 1.0 GB Disk Unit
9602	6602	Standard 1.0 GB Disk Unit
9605	6605	Std 1.031 Dsk Unit
9612	2612	Std EIA 232/V.24 1-Line/Ad
9617	2617	Std Ethrnt/IEEE 802.3 IOP
9618	2618	Std Fiber Distrib Data Inf
9619	2619	Std 16/4 Mbps Tkn Rng IOP
9624	2624	Store Device Control Spec
9651	2651	Storage Device Controller
9652	6602	Std Dsk Unt (1.031 GB, 2 bytes)
9665	2665	Std Copper Dist Data Inf
9705	6605	Std 1.031 Dsk Unit regltd
9707	6607	Base 4.19 GB Disk Unit
9800	2800	Internal Disk Unit (640 MB)
9801	2801	Internal Disk Unit (1GB)
9802	2802	Std 2.0 GB Int Disk Unit
9803	9803	2.5 meter DFCI cable
9814	9814	Antenna Cable - 20-ft
9815	9815	Antenna Cable - 50-ft
9820	9820	2nd Bus cable for Mdl 300
9835	9835	V.24 Enhanced cable 50-ft
9836	9836	RS-232 cable 50-ft
9838	9838	V.35 cable 50-ft
9839	9839	X.21 cable 50-ft
9853	9853	20.0 meter optical bus cbl
9854	9854	60 meter optical bus cbl
9855	9865	100.0 M optical bus cbl
9862	6152	EIA 232/V.24 One line 20E
9865	6152	EIA 232/V.24 One line 50E
9879	9879	V.35 Interface Cbl (20-ft/6M)
9880	9880	V.35 Intrfc Cbl (80-ft/24.4M)
9882	9882	RS449/V.36 Cbl (20-ft/6M)
9883	9883	RS449/V.36 Cbl (80-ft/24.4M)
9884	9884	RS449/V.36 Cbl (150-ft/45.7M)
9885	9885	X.21 Intrface Cbl (20-ft/6M)
9904	4104	4MB Main Store - No Charge
9927	9927	YUMA Channel Box and cable
9928	9928	1.7 meter YUMA attach cbl
9929	9929	6.6 meter YUMA attach cbl
9930	9930	24.0 meter YUMA attach cbl
9980	9980	3490 Serpentine Cable Conn

**Note:** As of January 2000, level 3 microcode fixes for these adapters are no longer provided. There will be no further microcode changes for these components. IBM service and maintenance agreements on systems containing these I/O adapters can be offered within guidelines. Contact your IBM Service Representative for further information.



## Chapter 11. Software

This chapter covers AS/400 software information for releases that support CISC hardware. Included are OS/400 V2R2, V3R0M5, V2R3, V3R1, and V3R2.

### 11.1 Minimum Software Level Requirements for CISC Hardware

V2R2+ CISC	V2R2++ CISC
<b>All F models</b> <b>#2611</b> To attach 9337-0x0 DASD to B models <b>9337-040 DASD Units</b> <b>7208-012 8mm Tape Unit</b>	<b>#6501</b> DASD Controller <b>9337-2xx DASD Units</b> <b>9337-4xx DASD Units</b> (with stack feature #1984) <b>7208-23x 8mm Dual Drive Tape</b>
V2R3 CISC	V3R0.5 CISC
<b>#6054</b> LocalTalk <b>#2644</b> 34xx Tape Attach on 9404 <b>#7203</b> Storage Expansion Unit for F10 and F20 and all Server models <b>#2666</b> High Speed Communication Adapter <b>#2620</b> Full Cryptographic Processor <b>#2628</b> Limited Cryptographic Processor <b>#2618</b> FDDI Adapter <b>#2665</b> SDDI Adapter <b>#3135</b> 256 MB Memory Card for 9406 F Models <b>#3136</b> 256 MB Memory Card for 9406 E Models <b>#6603</b> 1.96 GB Single Disk Unit for 9404 <b>#6613/#7613/#8613</b> 3.93 Dual Disk 9404 <b>#6601/#6701/#9601</b> 1.03 GB Disk Unit for 9402 <b>#6602/#6802/#9602</b> 1.03 GB Disk Unit for 9404 for 9404 <b>#6612/#6812/#86</b> 2.06 GB Dual for 9404 <b>#2802/#9802</b> 2.06 GB Internal Disk Unit for 9404 or 9406 <b>9402 100</b> <b>9404 135 and 140</b> <b>3494-L10 Automated Tape Library</b> <b>3995-142 Optical Library Dataserver</b> <b>3490-Ex1 Tape Units</b> <b>3995-x43/023 Optical Library Dataserver</b> <b>9406 Model F97</b> (with stack feature #1983)	<b>#2664</b> Integrated Fax Adapter <b>#6344/#7344/#8344</b> 2.5 GB 0.25-inch Cartridge Tape for 9402 <b>#6349/#7349/#8349</b> 2.5 GB 0.25-inch Cartridge Tape for 9404 <b>#6369</b> 2.5 GB 0.25-inch Cartridge Tape for 9406 <b>#x605/#x606/#x607</b> 1.03 GB, 1.96 GB, 4.19 GB disks (with stack feature #1984) <b>All 9402 200 and 20S models</b> <b>All 9406 300, 310, 320 and 30S models</b> <b>9337 540, 545, 580, 585, 590 or 595 DASD Units</b>

V3R1 CISC	V3R2 CISC
<b>#2663</b> I/O Attachment Processor <b>#2668</b> Wireless LAN Adapter <b>#5061</b> Storage Expansion Tower (with stack feature #1985) <b>#6512</b> on 3xx Models (with stack feature #1985) <b>#6516 - #6519/#6526 - #6529</b> Integrated PC Server (formerly known as FSIOP) <b>#8716 - #8719/#8726 - #8729</b> Integrated PC Server (formerly known as FSIOP) <b>#x605/#x606/#x607</b> 1.03 GB, 1.96 GB, 4.19 GB disks <b>3494-L12 Automated Tape Library</b> <b>9427-2xx Automated Tape Library</b> <b>3590 Tape Subsystem</b> <b>7208-222 7GB 8mm Tape Subsystem</b> <b>9401 P03 and 10S</b> <b>3570 Tape Subsystem</b> <b>3490 Fxx Tape Subsystem</b>	<b>#6607</b> 4.19GB Disk in 2xx Models <b>#6713</b> 8.58GB Disk in 3xx Models <b>#6616</b> Integrated PC Server (with stack feature #1978) <b>#2861</b> 32MB IPCS Memory <b>#2862</b> 128MB IPCS Memory <b>#6149</b> Token-Ring IOA for IPCS <b>#6181</b> Ethernet IOA for IPCS

V3R0.5 only supports a limited number of licensed programs and, therefore, not all Advanced Series hardware. Refer to the Software section for verification.

This section covers AS/400 software information for all releases.

**Note:** This information was correct at the time this edition was printed. However, it should be verified using OITool, IBMLink, or other online tools.

**Note:** All software releases up to and including Version 3 Release 2 run on CISC models of the AS/400 system only—Bx0, Cx0, Dx0, Exx, Fx0, P0x, 100, 135, 140, 2x0, and 3x0 models. All other software releases (V3R6, V3R7, V4R1, V4R2, V4R3, V4R4 and V4R5) run on RISC models of the AS/400 system only—150, 250, 170, 4x0, 5x0, 6x0, Sx0, 7x0, and 8xx models. See the *AS/400e System Builder*, SG24-2155, for the minimum software release required for the RISC models.

## 11.2 Supported Upgrade Paths

The following table indicates the supported paths for upgrading from OS/400 releases V2R3 onward.

To: From:	V3R05	V3R1	V3R2	V3R6	V3R7	V4R1	V4R2	V4R3	V4R4	V4R5
V2R3	X	X	X	X	-	-	e-Jump*	e-Jump*	e-Jump*	-
V3R05		X	X	X	e-Jump*	-	-	e-Jump*	e-Jump*	-
V3R1			X	X	e-Jump*	e-Jump*	-	e-Jump*	e-Jump*	-
V3R2				-	e-Jump*	e-Jump*	e-Jump*	e-Jump*	e-Jump*	e-Jump*
V3R6					X	X	-	-	-	-
V3R7						X	X	X	-	-
V4R1							X	X	X	X
V4R2								X	X	X
V4R3									X	X
V4R4										X

**Note:** For single step CISC-to-RISC upgrades (previously known as e-Jump) from V2R3, V3R0M5, V3R1, and V3R2, use the Enhanced Upgrade Assistant (5798-TBU).

**Product Preview:** OS/400 V4R4 is the last release to offer single step CISC-to-RISC upgrade (previously known as e-Jump) capabilities from V2R3, V3R0.5, and V3R1 systems. OS/400 V4R5 is the last release to offer single step CISC-to-RISC upgrade capabilities from V3R2.

## 11.3 Current Release to Previous Release Support

The following table shows the valid parameter values when compiling programs for a target release other than the source machine.

Values for TGTRLS Parameter			
Current OS/400 Release	*CURRENT	*PRV	Other Valid Values
V4R5			
V4R4	V4R4	V4R3	V4R2 V3R2
V4R3	V4R3	V4R2	V4R1 V3R7 V3R2
V4R2	V4R2	V4R1	V3R7 V3R2
V4R1	V4R1	V3R7	V3R6 V3R2 V3R1
V3R7	V3R7	V3R6	V3R2 V3R1 V3R0M5

## 11.4 Software Terminology

This section explains the standard software terminology. Rather than repeating this information, the following are terms used for all software versions.

- Stack

Each version of OS/400 has a product identifier. The format will be 57xx-yyy. For example, V4R1 is 5769-SS1. Associated with each version is a stack product identifier whose format is 575x-Ayy. For example, at V4R1 the stack product identifier is 5755-AS5.
- Stack features

When ordering AS/400 software, each product is ordered and a corresponding “stack feature” or Licensed Program Component Supply Feature is inserted into the “stack.”
- Additional feature

These additional features are stack features that relate to the optional feature of the licensed programs. This feature also provides the delivery mechanism for the licensed programs.
- Skip ship

For V4, there are some products which “skip ship” from a prior release, so they retain their original product identifiers, but can still be ordered as part of a 5755-AS5 stack.

## 11.5 AS/400 Software V1.3

**Note:** V1.3 software *does not* support the D, E or F model. V1.3 software was withdrawn from marketing effective 31 December 1991.

Software Offering			
Business Platform	OS/400, Performance Tools, Query, Office, Dictionary, PC Support, Document Search, Office Implementation Toolkit		
Base Platform:	OS/400, Performance Tools, Query		
Decision Support Supplement:	Business Graphics Utility		
RPG Development Supplement:	RPG, Application Development Tools, Application Program Driver, Manage/400		
COBOL Development Supplement:	COBOL, Application Development tools, Application Program Driver, Manage/400		
Education Supplement:	Discover: Implementation, and Additional Topics, Office Support, and Additional Topics, Introduction to Data Communications		
Stack Structure			
The Software Order (Stack) details the following:			
5750-ABD with Media Specify	#3403	¼-inch Cartridge	
Primary Language Specify	#2924	English	
Maintenance Options Specify	#1993	Automatic Shipment of New Releases and Preventative PTFs	
Plus, it includes the Licensed Program Components Supply Feature Codes detailed below in the column “Stack Features”.			
Options	Licensed Programs	Billing Feature (See Below)	Stack Features
RPG/400* (for previous release support order #1725)	5728-RG1	X0ABGR	#1712
COBOL/400* (for previous release support order #1726)	5728-CB1	X0ADGR	#1713
AS/400 BASIC	5728-BA1	X0AFGR	#1714
AS/400 PL/I	5728-PL1	X0AHGR	#1715
AS/400 PASCAL	5728-PS1	X0ASGR	#1716
Structured Query Language (SQL)	5728-ST1	X0ATGR	#1711
C/400*	5728-CX1	X0DXGR	#1727
Performance Tools (PT)	5728-PT1	X0AJGR	#1717

Application Development Tools (ADT)	5728-PW1	X0ANGR	#1709
Communication Utilities	5728-CM1	X0APGR	#1703
TCP/IP Connectivity	5728-TC1	X0DYGR	#1729
Point of Sale Utility	5728-CF1	X0DWGR	#1728
System/38 Utilities	5728-DB1	X0AKGR	#1719
Business Graphics Utility	5728-DS1	X0ALGR	#1707
Query	5728-QU1	X0AGGR	#1706
Office	5728-WP1	X0ACGR	#1704
Dictionaries	5728-DCT	X0AEGR	#1705
AS/400 PC Support	5728-PC1	X0AMGR	#1708
OS/400	5728-SS1	X0AAGR	#1701
Cryptographic Support	5728-CR1	X0ARGR	#1718
FORTRAN/400*	5730-FT1	X0AGGR	#1732
RM/COBOL-85**	5730-MC1	X0AOGR	#1730
System Management Utility	5730-SM1	X0AZGR	#1731
<b>Additional Offerings</b>	<b>Licensed Programs</b>	<b>Billing Feature</b>	<b>Dist/Lang Feature</b>
System/36* Migration Aid 8-inch diskette	5727-MG1	X0DF	#9049/#2924
5 ¼-inch diskette	5727-MG1	X0DF	#9074/#2924
System/38* Migration Aid	5714-MG1	X0AZ	#6050
AS/400 Application Program Driver	5730-095	B0AXGR	#5894/#2924
Natural Language Query	5799-PGP	B0EX	#9076
SYNON/2 RPG III (If HELP text required order S/38 Utilities)	5776-EFR	B0E0GR	#5894/#2927
SYNON/2 - COBOL (See note 5776-EFR)	5776-EFQ	B0EZD5	#5894/#2927
SYNON/2 - COBOL and RPG III (See note 5776-EFR)	5766-EFT	B0E1D5	#5894/#2927
SYNON/2 - Trial Offering	5776-EFP	B0EY	#5894/#2927
Office Implementation Toolkit	5797-AXG	B0VM	#9049/#2927
Document Search/400	5797-A37	B1EEGR	#5894
Manage/400	5786-EKZ	B2UV	#5894/#2927
Super C Compare Utility	5799-DHP	B0J0GR	#2924/#3403
SAA* Imageplus WAF	5730-012	X0ALGR	#5894
System C/400	5799-DNP	B0J1GR	*

#### Billing Feature Structure

This feature should be regarded as follows X-xxx-GR where:

X represents either            B    Basic Licensed Graduated One Time Charge  
   or    E    DSLO Licensed Graduated One Time Charge

GR represents a code corresponding to each processor group:

For a list of the processor groups codes, see 11.9, "Software Pricing Groups" on page 134.

**Note:** For Processor Group upgrades, the appropriate billing feature is required for every software license affected. See Announcement Letters on OITool or IBMLINK.

## 11.6 AS/400 Software V2

Please note that the following pages show those AS/400 software products most commonly ordered. It is not intended to be a definitive list of all the AS/400 software products now available.

Version 2 software was withdrawn from marketing effective 29 December 1995.

Licensed Programs	V2R1	V2R1.1	V2R2	V2R3	Product Identifier	Billing Feature	Stack Feature
Stackable Media Product Identifier	✓	✓	✓	✓	5755-AS2	-	-
AS/400 Operating System (OS/400)	✓	✓	✓	✓	5738-SS1	X0A0xx	#1701
PC Support/400 RUMBA/400** Communications Manager/400 Feature DUA	✓	✓	✓ ✓	✓ ✓	5738-PC1 5775-BEP	X0AMxx Various V3DZ	#1708 #1820 #1866
Application Dictionary Services/400 V2R3				✓	5738-AD1	X0CGxx	#1759
Advanced Function Printing Utilities/400	✓	✓	✓	✓	5738-AF1	X0AFxx	#1741
SAA AD/Cycle* CoOperative Development Environment V2R3				✓	5775-BHW	X0CFxx	#1760
CODE Workstation Feature DUA				✓		V4CE	#1867
DSU Workstation Feature DUA				✓	5775-BHX	V4CF	#1868
Point of Sale Communications Utility	✓	✓	✓	✓	5738-CF1	X0AJxx	#1728
CallPath/400* V2R2			✓	✓	5738-CP2	X0BUxx	#1746
Cryptographic Support/400	✓	✓	✓	✓	5738-CR1	X0ARxx	#1718
Language Dictionaries/400	✓	✓	✓	✓	5738-DCT	X0BP	#1705
CICS/400*			✓	✓	5738-DFH	X0BTxx	#1745
SAA SystemView* OMEGAMON** Services/400				✓	5738-ES1	X0BYxx	#1752
Automated Facilities/400				✓		X0BZxx	#1860
OMEGAVIEW/400** DUA				✓	5775-BBF	V2YE	#1861
Advanced Function Printing Fonts/400	✓	✓	✓	✓	5738-FNT	various	various
Advanced Function Printing DBCS Fonts/400	✓	✓	✓	✓	5738-FN1	various	various
OSI File Services/400		✓	✓	✓	5738-FS1	X0BNxx	#1742
SAA AD/Cycle Application Development Manager/400			✓	✓	5738-LM1	X0BSxx	#1747
SystemView Managed System Services/400				✓	5738-MG1	X0B1	#1758
OSI Message Services/400		✓	✓	✓	5738-MS1	X0ATxx	#1720
OSI Communications Subsystem/400		✓	✓	✓	5738-OS1	X0AGxx	#1702
Application Program Driver/400				✓	5738-PDI	X0B2xx	#1757
Performance Tools/400	✓	✓	✓	✓	5738-PT1	X0AVxx	#1717
Query/400	✓	✓	✓	✓	5738-QU1	X0AWxx	#1706
SAA SystemView System Manager/400	✓	✓	✓	✓	5738-SMI	X0AZxx	#1731
SAA Structured Query Language/400	✓	✓	✓	✓	5738-ST1	X0AXxx	#1711
TCP/IP Connectivity Utilities/400	✓	✓	✓	✓	5738-TC1	X0AYxx	#1729
SAA OfficeVision/400*	✓	✓	✓	✓	5738-WP1	X0BRxx	#1704



Languages	V2R1	V2R1.1	V2R2	V2R3	Product Identifier	Billing Feature	Stack Feature
AS/400 BASIC	✓	✓	✓	✓	5738-BA1	X0A1xx	#1714
SAA AD/Cycle COBOL/400	✓	✓	✓	✓	5738-CB1	X0A3xx	#1713
SAA C/400	✓	✓	✓	✓	5738-CX1	X0BJxx	#1727
Integrated Language Environment* C/400				✓	5738-CX2	X0BXxx	#1749
SAA FORTRAN/400	✓	✓	✓	✓	5738-FT1	X0ASxx	#1732
RM/COBOL-85 Version 3 for the AS/400	✓	✓	✓	✓	5738-MC1	X0AUxx	#1730
AS/400 PL/1	✓	✓	✓	✓	5738-PL1	X0BKxx	#1715
AS/400 PASCAL	✓	✓	✓	✓	5738-PS1	X0BLxx	#1716
SAA AD/Cycle RPG/400	✓	✓	✓	✓	5738-RG1	X0BMxx	#1712
Utilities	V2R1	V2R1.1	V2R2	V2R3	Product Identifier	Billing Feature	Stack Feature
AS/400 Communication Utilities	✓	✓	✓	✓	5738-CM1	X0AHxx	#1703
AS/400 System/38 Utilities	✓	✓	✓	✓	5738-DB1	X0AKxx	#1719
AS/400 Business Graphics Utility	✓	✓	✓	✓	5738-DS1	X0APxx	#1707
AS/400 Application Development Tools	✓	✓	✓	✓	5738-PW1	X0ALxx	#1709
Application Development Toolset/400				✓	5738-PW2	X0CKxx	#1762

Additional Licensed Programs	V2R1	V2R1.1	V2R2	V2R3	Product Identifier	Billing Feature	Stack Feature
Current-OfficeVision/400 Workgroup Program			✓	✓	5622-055	X0AV	-
NetView* File Transfer Program	✓	✓	✓	✓	5730-082	B0A8xx	-
LAN Resource Extension and Services/400				✓	5733-CSA	B0BN	-
SAA Imageplus WAF	✓	✓	✓	✓	5733-055	X0ABxx	-
SAA AD/Cycle CODE/400		✓	✓		5733-073	X0AFxx	-
CODE Workstation Feature DUA		✓	✓		5775-AJC	V2D5	-
DSU Workstation Feature DUA		✓	✓		5775-AJD	V2D6	-
Message Queue Manager/400				✓	5733-103	X0BMxx	-
SystemView ManageWare/400				✓	5733-119	X0BWxx	-
NetView Remote Operations Agent/400			✓	✓	5733-165	X0BVxx	-
ADSTAR* Distributed Storage Manager/400							
Multiple Client Workstations Supported				✓	5733-197	various	-
Multiple Systems Software V2			✓	✓	5776-FAJ	various	-
SAMAC Spreadsheet for the AS/400	✓	✓	✓	✓	5776-DAK	X0HExx	-
TELEX/Fax/400	✓	✓	✓	✓	5776-EKH	B0KSxx	-
Report/Data Archive and Retrieval System				✓	5733-218	various	-
EIS TRACK/400** Development Licence	✓	✓	✓	✓	5793-LWN	X6SS	-
EIS TRACK/400 Runtime Licence	✓	✓	✓	✓	5793-LWP	B6SW	-
Licensed Program Offerings	V2R1	V2R1.1	V2R2	V2R3	Product Identifier	Billing Feature	Stack Feature
Neural Network Utility/400	✓	✓	✓	✓	5798-RYB	X0C3xx	-
NNU Runtime DUA	✓	✓	✓	✓	5775-AFN	V1VB	-

NNU Development & Runtime DUA	✓	✓	✓	✓	5775-AFR	V1VD	-
Facsimile Support/400*	✓	✓	✓	✓	5798-RYC	X0C2xx	-
WindowTool/400	✓	✓	✓	✓	5798-RYF	X0C7xx	-
Performance Tools Subset/400	✓	✓	✓	✓	5798-RYP	X0DNxx	-
Backup Recovery and Media Services/400			✓	✓	5798-RYT	X0DYxx	-
TCP/IP File Server Support/400			✓	✓	5798-RYW	X0D3xx	-
Application Program Driver/400 V2R2			✓		5798-RYX	X0D4xx	-
RadioPac/400			✓	✓	5798-RYY	various	-
PagerPac/400			✓	✓	5798-RYZ	various	-
Connection Program/400 for UNIX** Environments			✓	✓	5798-RZB	various	-
<b>Additional Software Products</b>	<b>V2R1</b>	<b>V2R1.1</b>	<b>V2R2</b>	<b>V2R3</b>	<b>Product Identifier</b>	<b>Billing Feature</b>	<b>Stack Feature</b>
System/38 Migration Aid	✓	✓	✓	✓	5714-MG1	X0AZ	-
System/36 Migration Aid (8-inch or 5 ¼-inch diskette)	✓	✓	✓	✓	5727-MG1	X0DF	-

<b>Note 1:</b>	V2R1 supports all 9402/9404/9406 B, C, and D models (V2R1 withdrawn on 12 March 1993) V2R1.1 supports all 9402/9404/9406 B, C, D, and E models (V2R1.1 withdrawn on 12 March 1993) V2R2 supports all 9402/9404/9406 B, C, D, and E models (V2R2 withdrawn on 6 September 1994) V2R2+ supports all 9402/9404/9406 B, C, D, E, and F models V2R2++ supports all 9402/9404/9406 B, C, D, E, and F models and additional devices announced on 7 September 1993. V2R3 supports all 9402/9404/9406 B, C, D, E, and F models (V2R3+ withdrawn on 29 December 1995).  <b>Note:</b> All software products on a single AS/400 system must be at the same version, release and modification. They cannot be intermixed.
<b>Note 2:</b>	An order for licensed programs will be constructed as follows: 5775-AS2                   #1701           OS/400 #17xx       Licensed Programs #199X       Maintenance Option (see below) #2924       Primary Language English #340X       Media option (see below) #35xx       Release Specifier (see below) Maintenance Options:    #1991       New Releases and CumPacks supplied on demand on #1992       New Releases and CumPacks supplied on demand only #1993       New Releases on demand only, Automatic Shipment of CumPacks Media Options:           #3401       6250bpi Reel Tape #3402       1600bpi Reel Tape #3403       QIC-120 (120 MB ¼-inch Cartridge Tape) #3404       ¼-inch Cartridge Tape #3405       QIC-525 (525 MB ¼-inch Cartridge Tape) - also for 1.2GB Tape Drive #3407       8mm Cartridge Tape Release Specifiers:      #3510       Release Specifier for V2R1 - available only until March 12, 1993 #3511       Release Specifier for V2R1.1 - available only until March 12, 1993 #3520       Release Specifier for V2R2 #3530       Release Specifier for V2R3 #1981       Release Specifier for V2R2+ #1982       Release Specifier for V2R2++ #1983       Release Specifier for V2R3+ #1984       Hardware Update Feature for V2R2 and V2R3
<b>Note 3:</b>	Billing features are constructed as follows:- #X123xx where: X represents either B for Basic License Charge or E for DSLO License charge, 123 is a unique identifier, and xx represents a code corresponding to each processor model for a Graduated One-Time Charge. Billing features beginning with “B” have no DSLO option Billing features without “xx” at the end are One-Time Charge (not graduated by processor) For a list of the processor groups codes, see 11.9, “Software Pricing Groups” on page 134.

## 11.7 AS/400 CISC System Software V3R0M5, V3R1, V3R2

The following table shows those AS/400 software products that were most commonly ordered. It is not a definitive list of all the AS/400 software products that were available.

See Notes at the bottom of the table for information about different releases of V3 software.

V3R0M5 was withdrawn from marketing and no longer supported effective 31 May 1997.

V3R1 was withdrawn from marketing and no longer supported effective 31 October 1998.

V3R2 was withdrawn from marketing effective 25 February 2000 and is no longer supported effective 31 May 2000.

Database Products	WDFM V3R2 <sup>2</sup>	V3R0.5	V3R1	V3R2	Product Identifier	Stack Feature	Addn'l Feature
System Program Order (also known as Software Stack)	✓	✓	✓	✓	5755-AS3	-	-
Operating System/400 <sup>*</sup>	✓	✓	✓	✓	5763-SS1	#1501	-
SystemView Base for OS/400		x	x	✓	-	-	#1595
OptiConnect for OS/400		x	✓	✓	-	-	#1642
Network Extensions		x	✓	N/A	-	-	#1643
Integration Services for FSIOP		x	✓	✓	-	-	#1644
Netware <sup>**</sup> Integration for OS/400		x	✓	✓	-	-	#1645
Integration of Lotus Notes <sup>*</sup>		x	x	✓	-	-	#1656
PSF/400 <sup>*</sup>		x	✓	✓	-	-	#1691
CPA Toolkit		x	✓	✓	-	-	#1690
Media and Storage Extensions		x	✓	✓	-	-	#1619
DB2 Symmetric Multiprocessing		x	✓	✓	-	-	#1698
DB2 Multisystem		x	x	3	-	-	#1699
Cryptographic Support	✓	✓	✓	✓	5763-CR1	#1518	-
AS/400 S/38 Utilities	✓	✓	✓	✓	5763-DB1	#1519	-
DataPropagator Relational Capture and Apply/400 <sup>*</sup>	✓	x	✓	✓	5763-DP1	#1565	-
Query/400 <sup>*</sup>	✓	✓	✓	✓	5763-QU1	#1508	-
DB2/400 Query Manager and SQL Development Kit	✓	✓	✓	✓	5763-ST1	#1511	
Networking Products	WDFM V3R2 <sup>2</sup>	V3R0.5	V3R1	V3R2	Product Identifier	Stack Feature	Addn'l Feature
NetView File Transfer Program	✓	✓	✓	✓	5733-196	-	-
Point-of-Sale Communication Utility/400	✓	✓	✓	✓	5763-CF1	#1528	-
Communications Utilities/400	✓	✓	✓	✓	5763-CM1	#1503	-
CallPath/400	✓	✓	✓	x	5763-CP2	#1546	-
CallPath	✓	x	x	✓	5763-CP3	#1399	-
OSI File Services/400	✓	✓	✓	✓	5763-FS1	#1542	-

Message Queue Manager	✓	✓	✓	x	5763-MQ1	#1523	-
MQSeries	✓	x	x	✓	5763-MQ2	#1594	-
OSI Message Services/400	✓	✓	✓	✓	5763-MS1	#1520	-
OSI Communications Subsystem/400	✓	✓	✓	✓	5763-OS1	#1502	-
Client Access/400*	✓	✓	✓	✓	5763-XA1	#1580	-
DOS Extended Client	✓	x	✓	✓	-	-	#1581
OS/2 Client	✓	x	✓	✓	-	-	#1582
DOS Client	✓	x	✓	✓	-	-	#1583
Windows 3.1 Client	✓	x	✓	✓	-	-	#1584
Optimized OS/2 Client	✓	x	✓	✓	-	-	#1586
Windows 95/NT Client	✓	x	✓	✓	-	-	#1596
Client Access Family for Windows*	✓	x	x	✓	5763-XW1	#1411	-
Enhanced for Window 3.1 Client	✓	x	x	✓	-	-	-
Windows 95/NT Client	✓	x	x	✓	-	-	-
Windows 95/NT Client Refresh V4R3 for V3R2	✓	x	x	✓	-	-	#1721
Client Access Family	✓	x	x	✓	5763-XY1	#1412	-
DOS Client	✓	x	x	✓	-	-	-
DOS Extended Client	✓	x	x	✓	-	-	-
OS/2 Client	✓	x	x	✓	-	-	-
Optimized OS/2 Client	✓	x	x	✓	-	-	-
Windows 3.1 Client	✓	x	x	✓	-	-	-
Client Access Migration Aid	✓	x	x	✓	-	#1413	-
LAN Server/400	✓	x	✓	✓	5763-XZ1	#1566	-
RadioPac/400	✓	✓	✓	✓	5798-RYY	-	-
PagerPac/400	✓	✓	✓	✓	5798-RYZ	-	-
Connection Program/400 for UNIX Environments	✓	✓	✓	✓	5798-RZB	-	-
TCP/ICP File Server Support/400	✓	✓	✓	✓	5798-TAA	-	-
Network Station Manager for AS/400 (V3R2)	✓	x	x	✓	5648-B06	-	-
Network Station Browser	✓	x	x	✓	5648-B08	-	-
<b>Systems Management Products</b>	<b>WDFM V3R2<sup>2</sup></b>	<b>V3R0.5</b>	<b>V3R1</b>	<b>V3R2</b>	<b>Product Identifier</b>	<b>Stack Feature</b>	<b>Addn'l Feature</b>
Backup Recovery and Media Services/400	✓	✓	✓	✓	5763-BR1	#1521	
SystemView OMEGAMON Services/400	✓	✓	✓	✓	5763-ES1	#1522	
Automated Facilities	✓	✓	✓	✓	-	-	#1608
OMEGAVIEW	✓	✓	✓	✓	-	#1609	
Job Scheduler	✓	x	x	✓	5763-JS1	#1593	-
SystemView Managed System Services/400	✓	✓	✓	✓	5763-MG1	#1558	-

SystemView ManageWare/400	✓	✓	✓	✓	5763-MW1	#1524	-
Performance Tools/400*	✓	✓	✓	✓	5763-PT1	#1525	-
Performance Tools Manager	✓	✓	✓	✓	-	-	#1610
Performance Tools Agent	✓	x	✓	✓	-	-	#1611
Report/Data Archive and Retrieval System	✓	x	x	✓	5763-RD1	#1591	-
Spool File Archive	✓					-	#1497
Record Level Archive	✓					-	#1498
Object Archive	✓					-	#1499
SystemView System Manager/400	✓	✓	✓	✓	5763-SM1	#1533	-
ADSTAR Distributed Storage Manager/400	✓	✓	✓	x	5763-SV1	#1569	-
Multiple Client Workstations Supported	✓	✓	✓	x	-	-	#1671 to #1689
ADSTAR Distributed Storage Manager V2R1 for AS/400*	✓	x	x	✓	5763-SV2	#1597	-
Multiple Client Workstations Supported	✓						#1497 to #1484
NetView Remote Operations Agent/400	✓	✓	✓	✓	5733-165	-	-
Report/Data Archive and Retrieval System	✓	✓	✓	x	5733-218	-	-
Job Scheduler	✓	✓	✓	x	5798-JS2	-	-
<b>Multimedia Products</b>	<b>WDFM V3R2<sup>2</sup></b>	<b>V3R0.5</b>	<b>V3R1</b>	<b>V3R2</b>	<b>Product Identifier</b>	<b>Stack Feature</b>	<b>Addn'l Feature</b>
Ultimedia Business Conferencing/400	✓	x	✓	✓	5763-UB1	#1570	-
Person-to-Person	✓	x	✓	✓	-	-	#1623
Client Access Ultimedia Tools/400	✓	x	✓	✓	5763-US1	#1572	-
Ultimedia Perfect Image/400	✓	x	✓	✓	-	-	#1621
Ultimedia Builder/400		x	✓	✓	-	-	#1622
<b>Application Development Products</b>	<b>WDFM V3R2<sup>2</sup></b>	<b>V3R0.5</b>	<b>V3R1</b>	<b>V3R2</b>	<b>Product Identifier</b>	<b>Stack Feature</b>	<b>Addn'l Feature</b>
AS/400 BASIC	✓	✓	✓	✓	5763-BA1	#1514	-
ILE* COBOL/400	✓	✓	✓	✓	5763-CB1	#1513	-
CoOperative Development Environment/400*	✓	✓	✓	✓	5763-CD1	#1540	-
Application Development ToolSet Client Server/400*	✓	x	✓	✓	5763-CL1	#1567	-
Application Development ToolSet Client Server V3R2	✓	x	x	✓	5763-CL3	#1441	-
ILE C/400	✓	✓	✓	✓	5763-CX2	#1527	-
CICS/400	✓	✓	✓	✓	5763-DFH	#1545	-
RM/COBOL-85	✓	✓	✓	✓	5763-MC1	#1530	-
Application Program Driver/400	✓	✓	✓	✓	5763-PD1	#1557	-
AS/400 PL/I	✓	✓	✓	✓	5763-PL1	#1515	-
AS/400 Pascal	✓	✓	✓	✓	5763-PS1	#1516	-

Application Development ToolSet/400*	✓	✓	✓	✓	5763-PW1	#1526	-
Application Dictionary Services/400*	✓	✓	✓	✓	-	-	#1612
Application Development Manager/400*	✓	✓	✓	✓	-	-	#1613
ILE RPG/400*	✓	✓	✓	✓	5763-RG1	#1512	-
VisualGen OS/400 Host Services	✓	x	✓	✓	5763-VG1	#1577	-
AS/400 VRPG Client/2*	✓	x	✓	✓	5763-VR1	#1534	-
BYPASS2000 for AS/400	✓	x	✓	✓	5697-C20	-	-
DCE Base Services/400	✓	x	✓	✓	5733-167	-	-
Neural Network Utility/400	✓	✓	✓	✓	5798-RZK	-	-
KnowledgeTool Runtime/400	✓	✓	✓	✓	5798-RZW	-	-
KnowledgeTool Development/400	✓	✓	✓	✓	5798-RZX	-	-
AS/400 Toolbox for Java	✓	x	x	✓	5798-JC1	-	-
<b>Office Products</b>	<b>WDFM V3R2<sup>2</sup></b>	<b>V3R0.5</b>	<b>V3R1</b>	<b>V3R2</b>	<b>Product Identifier</b>	<b>Stack Feature</b>	<b>Addn'l Feature</b>
Current-OfficeVision Workgroup Program	✓	✓	✓	✓	5622-055	-	-
ImagePlus Workfolder Application Facility	✓	✓	✓	✓	5733-228	-	-
Advanced Function Printing Utilities/400*	✓	✓	✓	✓	5763-AF1	#1541	-
Advanced DBCS Printer Support†	✓	✓	✓	✓	5763-AP1	#1510	-
Language Dictionaries/400*	✓	✓	✓	✓	5763-DCT	#1505	-
AS/400 Business Graphics Utility	✓	✓	✓	✓	5763-DS1	#1507	-
Advanced Function Printing Fonts/400	✓	✓	✓	✓	5763-FNT	#1550	-
Various Fonts	✓	✓	✓	✓	-	-	#1625 to #1639
Advanced Function Printing DBCS Fonts/400	✓	✓	✓	✓	5763-FN1	#1535	-
Various Fonts	✓	✓	✓	✓	-	-	#1650 to #1654
OfficeVision/400*	✓	✓	✓	✓	5763-WP1	#1504	-
SAMAC Spreadsheet for the AS/400	✓	✓	✓		5776-DAK	-	-
TELEX/FAX/400	✓	✓	✓		5776-ERL	-	-
AFP PrintSuite*	✓	x	x	✓	5798-AF2	-	-
OfficeVision JustMail/400	✓	✓	✓		5798-RZJ	-	-
Facsimile Support/400	✓	x	✓	✓	5798-RZT	-	-
OV Support for Lotus Notes Clients	✓	x	✓	✓	5798-TBN	-	-
<b>Packaged Software</b>	<b>WDFM V3R2<sup>2</sup></b>	<b>V3R0.5</b>	<b>V3R1</b>	<b>V3R2</b>	<b>Product Identifier</b>	<b>Stack Feature</b>	<b>Addn'l Feature</b>
BasePak for Lotus Notes	✓	x	x	✓	5763-APK	#1471	-
EnhancedPak for Lotus Notes	✓	x	x	✓	5763-EPK	#1472	-
ValuPak	✓	✓	✓	✓	5763-VPK	#1554	-

ValuPak for V3R2	✓	x	x	✓	5763-VP1	#1455	-
GrowthPak	✓	✓	✓	✓	5763-GPK	#1555	-
GrowthPak for V3R2	✓	x	x	✓	5763-GP1	#1456	-
DeveloperPak	✓	x	✓	✓	5763-DPK	#1556	-
Application Development ToolSet Plus	✓	x	x	✓	5763-PWK	#1461	-
PrintPak	✓	x	x	✓	5763-PPK	#1460	-

Additional Products	WDFM V3R2 <sup>2</sup>	V3R0.5	V3R1	V3R2	Product Identifier	Stack Feature	Addn'l Feature
System/38 Migration Aid	✓	✓	✓	✓	5714-MG1	-	-
System/36 Migration Aid	✓	✓	✓	✓	5727-MG1	-	-

<b>Note 1:</b>	<p>V3R0.5, V3R1 and V3R2 supports the following AS/400 CISC models only:</p> <p>White: 9402/9404/9406 B, C, D, E and F</p> <p>Black: Advanced Series</p> <p>9401-Pxx/10S</p> <p>9402-200/20S</p> <p>9404 white-to-black upgrades</p> <p>9406-300/310/320/30S</p> <p><b>These releases <i>do not</i> support AS/400 RISC (PowerPC) models.</b></p> <p>V3R05 was withdrawn from marketing and no longer supported effective 31 May 1997.</p> <p>V3R1 was withdrawn from marketing and no longer supported effective 31 October 1998.</p> <p>V3R2 was withdrawn from marketing effective 25 February 2000 and is no longer supported effective 31 May 2000.</p>
<b>Note 2:</b>	<p>A “✓” in the WDFM column indicates that a product is about to be, or is already, withdrawn from marketing for all applicable releases. A date in the WDFM column indicates a date in the future when the product will be withdrawn from marketing.</p>
<b>Note 3:</b>	<p>† This product is available in Asia Pacific countries only.</p>

<b>Note 4:</b>	A typical order for licensed programs may be constructed as follows:		
	5755-AS3	#1501	OS/400
		#15xx	Licensed Programs
		#1xxx	Additional Features of Licensed Programs
		#198x	Update Feature (not all stacks - see below)
		#1991	New Release and CumPacks supplied on demand only
		#292x	Primary Language
		#340x	Media option (see below)
		#35xx	Release Specifier (see below)
		#PRLI	Preload Required
	Media Options:	#3401	16250bpi Reel Tape
		#3402	600bpi Reel Tape
		#3403	QIC-120 (120 MB ¼-inch Cartridge Tape)
		#3404	½-inch Cartridge Tape
		#3405	QIC-525 (525 MB ¼-inch Cartridge Tape) - also for 1.2 GB and 2.5 GB Tape Drives
		#3407	8 mm Cartridge Tape
		#3424	QIC-3040-MC (840 MB ¼-inch Cartridge Tape)
	Release Specifiers:	#3599	Release Specifier for V3R0.5
		#3510	Release Specifier for V3R1
		#3520	Release Specifier for V3R2
	Update Features:	#1984	V3R0.5 Hardware Update Feature for 5755-AS3 shipped before 25 November 1994
		#1985	V3R1 Internal DASD Update feature for 5755-AS3 shipped before 30 June 1996
		#1978	V3R2 Integrated PC Server Support
		#1979	V3R2 3995-C4x Support
<b>Note 5:</b>	Alternate IPL Device Feature Codes		
	#5501	120 MB ¼-inch Cartridge Tape Unit	
	#5502	840 MB ¼-inch Mini Tape Unit	
	#5503	9347 Tape Unit	
	#5504	3490 E01/E11 Tape Units	
	#5505	2440 Tape Unit	
	#5507	9348 Tape Unit	
	#5508	3422 Tape Subsystem	
	#5509	3430 Tape Subsystem	
	#5510	525 MB ¼-inch Tape Unit	
	#5511	3480 Tape Subsystem	
	#5512	3490 C10/C11/C22 Tape Unit	
	#5513	3490 Tape Subsystem	
	#5514	7208 8 mm Tape Drive and Internal 8 mm Tape Unit	
	#5515	3570 Tape Subsystem (Requires RPQ 843945 for Alt-IPL on IMPI Models)	
	#5516	1.2 GB ¼-inch Cartridge Tape Unit	
	#5517	2.5 GB ¼-inch Cartridge Tape Unit	
	#5518	13 GB ¼-inch Cartridge Tape Unit	
	#5519	3590 Tape System (Requires RPQ 843945 for Alt-IPL on IMPI Models)	
	Refer to 9.6, "External Diskette, Tapes, and Optical Devices" on page 95, to see which tape devices are supported on which models.		



Note 6:	The maximum number of chargeable user by product are:				Maximum Number of Users				
			Users in		P05	P10	P20	P30	P40
			Base						
	OS/400	5763-SS1	N/A	-----	Not	Applicable	-----		
	Client Access for OS/400	5763-XA1	1	5	30	75	125	125	
	Client Access Family for Windows	5763-XW1	0	10	40	100	150	200	
	Client Access Family	5763-XY1	0	10	40	100	150	200	
	CICS for OS/400	5763-DFH	1	5	30	75	200	450	
	OfficeVision for OS/400	5763-WP1	1	10	40	100	200	300	
	System Manager for OS/400	5763-SM1	1	250	250	250	250	250	
	BRMS for OS/400	5763-BR1	0	50	50	50	50	50	
	RadioPac for OS/400	5798-RYY	N/A	750	750	750	750	750	
	PagerPac for OS/400	5798-RYZ	N/A	750	750	750	750	750	
	R/DARS for OS/400	5763-RD1	1	25	25	25	25	25	
	ADSM for AS/400, V2.1	5763-SV1/SV2	N/A	-----	No	Maximum Limit	-----		
	ADTS C/S for OS/400	5763-CL1/CL3	N/A	-----	No	Maximum Limit	-----		
	CallPath for OS/400	5763-CP3	1	-----	No	Maximum Limit	-----		
	CA Ultimedia Tools for OS/400	5763-US1	0	-----	No	Maximum Limit	-----		
	Facsimile Support for OS/400	5798-RZT	N/A	-----	No	Maximum Limit	-----		
	LAN Server for OS/400	5763-XZ1	1	-----	No	Maximum Limit	-----		
	MQSeries for OS/400	5763-MQ2	1	-----	No	Maximum Limit	-----		
	OMEGAMON OMEGAVIEW	5763-ES1	1	-----	No	Maximum Limit	-----		
	Ultimedia Bus Conf for OS/400	5763-UB1	1	-----	No	Maximum Limit	-----		
	UNIX Connection Program	5798-RZB	N/A	-----	No	Maximum Limit	-----		

Note 7:	Products marked “*” are also available in Software Packages.				Number of Users Provided				
	5763-VPK ValuPak for OS/400 includes:				P05	P10	P20	P30	P40
	5763-SS1	Operating System/400			5	15	30	100	250
		From August 19, 1997			-----	Unlimited Usage	-----		
	5763-XA1	Client Access/400 Family			5	15	30	100	250
	5763-QU1	Query/400			-----	Not Applicable	-----		
	5763-ST1	DB2/400 Query Manager and SQL Development Kit			-----	Not Applicable	-----		
	5763-VP1 ValuPak for V3R2 includes:								
	5763-SS1	Operating System/400			-----	Unlimited Usage	-----		
		PSF 1-19 ipm feature of OS/400			-----	Not Applicable	-----		
	5763-XW1	Client Access Family for Windows			10	20	50	70	125
	5763-QU1	Query/400			-----	Not Applicable	-----		
	5763-ST1	DB2/400 Query Manager and SQL Development			-----	Not Applicable	-----		
	5763-PT1	Performance Tools/400 (Manager feature)			-----	Not Applicable	-----		
	5763-GPK GrowthPak for OS/400 includes:								
	5763-SS1	Operating System/400			5	15	30	100	250
		Beginning 19 August 1997			-----	Unlimited Usage	-----		
	5763-XA1	Client Access/400 Family			5	15	30	100	125
	5763-QU1	Query/400			-----	Not Applicable	-----		
	5763-ST1	DB2/400 Query Manager and SQL Development Kit			-----	Not Applicable	-----		
	5763-DCT	Language Dictionary/400			-----	Not Applicable	-----		
		5763-WP1 OfficeVision/400			5	15	30	100	250
	5763-PT1	Performance Tools/400			-----	Not Applicable	-----		

Note 7:	5763-GP1 GrowthPak for V3R2 includes:						
			Number of Users Provided				
			P05	P10	P20	P30	P40
	5763-SS1	Operating System/400	-----Unlimited Usage-----				
	5763-XW1	Client Access Family for Windows	10	20	50	70	125
	5763-QU1	Query/400	-----Not Applicable-----				
	5763-ST1	DB2/400Query Manager and SQL Development Kit	-----Not Applicable-----				
	5763-PT1	Performance Tools/400 (Manager feature)	-----Not Applicable-----				
	5763-WP1	OfficeVision/400	10	20	50	140	250
	5763-DCT	Language Dictionaries	-----Not Applicable-----				
	5763-DPK DeveloperPak for OS/400 includes:						
	5763-PW1	Application Development ToolSet/400	-----Not Applicable-----				
	5763-RG1	Integrated Language Environment RPG/400	-----Not Applicable-----				
	5763-CL3	Application Development ToolSet Client Server/400	5	15	30	100	250
	5763-PWK Application Development ToolSet Plus includes:						
	5763-PW1	Application Development ToolSet	-----Not Applicable-----				
	-	Application Dictionary Services	-----Not Applicable-----				
	-	Application Development Manager	-----Not Applicable-----				
	5763-CL3	Application Development ToolSet Client Server	1	1	1	1	1
	5763-PPK PrintPak includes:						
	5763-AF1	Advanced Function Printing Utilities	Note: User-based pricing does not apply to any of the products in this Pak.				
	5648-113	AFP Font Collection					
	5798-AF2	AFP PrintSuite components:					
	-	Advanced Print Utility					
	-	Page Printer Formatting Aid					
	5763-APK OS/400 Integration BasePack for Lotus Notes (withdrawn May 1998) includes:						
		Integration Services for Integrated PC Server feature of OS/400	Note: One BasePack is required for each Integrated PC Server on which Lotus Notes will be installed				
		IBM OS/400 Integration for Lotus Notes feature of OS/400					
		One Lotus Notes Server license					
		One Lotus Notes Client license .					
	5763-EPK OS/400 Integration EnhancedPack for Lotus Notes (withdrawn May 1998) includes:						
		IBM OS/400 Integration Base Pack for Lotus Notes (see above)	Note: One Enhanced Pack is required for the first Integrated PC Server on which Lotus Notes is to be installed. Use BasePack for the second and subsequent Integrated PC Servers with Lotus Notes. Three ADSM users are provided.				
		5763-DP1 DataPropagator Relational for OS/400					
		5763-SV2 ADSTAR Distributed Storage Manager for AS/400, V2.1					
	The Lotus Notes Packs are available for OS/400 V3R2 only.						

## 11.8 Software Pricing Groups: V1 and V2 to V3 Conversions

V1 and V2 Groups	Hardware Models	Version 3 Groups
B5	P01, P02, F02	P05
B5	A02, E02, D02, 100	P10
C5	C04, D04, E04, F04	P10
D5	C06, B10, C10	P10
D6	D06, D10, E06, E10, F06, F10	P10
D6	135	P20
E5	B20, C20	P10
E6	D20, E20	P10
E6	F20, 140	P20
F5	C25, B30, B35	P10
F6	D25, D35, E35	P10
F6	E25, F25, F35	P20
G5	B40, B45	P10
G6	D45	P10
G6	E45, F45	P20
H5	B50	P10
H6	D50, E50	P20
H6	F50	P30
J5	B60	P20
J6	D60	P20
J6	E60, F60	P30
K5	B70	P20
K6	D70, E70, F70	P30
L6	D80	P30
L6	E80, F80	P40
M6	E90, F90	P40
N6	E95, F95, F97	P40

## 11.9 Software Pricing Groups

V1 and V2 Groups	Hardware Models	Interactive Feature	Version 3 Groups	Version 4 Groups
B5	P01, P02, F02	-	P05	-
-	P03, 10S, 20S 150 436 #2102	-	P05	-
-	200 #2030	-	P05	-
B5	A02, E02, D02, 100	-	P10	-
C5	C04, D04, E04, F04	-	P10	-
D5	C06, B10, C10	-	P10	-
D6	D06, D10, E06, E10, F06, F10	-	P10	-
E5	B20, C20	-	P10	-
E6	D20, E20	-	P10	-
F5	C25, B30, B35	-	P10	-
F6	D25, D35, E35	-	P10	-
G5	B40, B45	-	P10	-
G6	D45	-	P10	-
H5	B50	-	P10	-
-	200 #2031 / #2032	-	P10	-
D6	135	-	P20	-
E6	F20, 140	-	P20	-
F6	E25, F25, F35	-	P20	-
G6	E45, F45	-	P20	-
H6	D50, E50	-	P20	-
J5	B60	-	P20	-
J6	D60	-	P20	-
K5	B70	-	P20	-
-	300	-	P20	-
H6	F50	-	P30	-
J6	E60, F60	-	P30	-
K6	D70, E70, F70	-	P30	-
L6	D80	-	P30	-
-	310	-	P30	-
L6	E80, F80	-	P40	-
M6	E90, F90	-	P40	-
N6	E95, F95, F97	-	P40	-

V1 and V2 Groups	Hardware Models	Interactive Feature	Version 3 Groups	Version 4 Groups
-	320	-	P40	-

## 11.10 Release-to-Release Product Mapping

V2	V3R05 & V3R1	V3R2 <sup>2</sup>	V3R6 <sup>2</sup>	V3R7	V4R1	V4R2	V4R3	V4R4	V4R5
5738-SS1	5763-SS1	5763-SS1	5716-SS1	5716-SS1	5769-SS1	5769-SS1	5769-SS1	5769-SS1	5769-SS1
-	-	5798-JC1	-	5798-JC1	5798-JC1				
5738-AF1	5763-AF1	5763-AF1	5716-AF1	5716-AF1	*	5769-AF1	*	5769-AF1	*
5738-AP1	5763-AP1	5763-AP1	5716-AP1	5716-AP1	*	5769-AP1	*	5769-AP1	5769-AP1
5798-RYT	5763-BR1	5763-BR1	5716-BR1	5716-BR1	5769-BR1	*	5769-BR1	5769-BR1	*
5738-CB1	5763-CB1	5763-CB1	5716-CB1	5716-CB1	*	5769-CB1	*	5769-CB1	*
5738-CD1 WS Feature	5763-CD1 and 5763-VR1 Upgrade to	5763-CL3	5716-CL1	5716-CL3	*	5769-CL3	*	5769-CL3	*
5738-RP1	5763-CL1								
5733-073									
5738-CF1	5763-CF1	*	5716-CF1	*	*	5769-CF1	*	5769-CF1	*
5738-CM1	5763-CM1	5763-CM1	5716-CM1	5716-CM1	*	5769-CM1	*	5769-CM1	*
5738-CP1 5738-CP2	5763-CP2	5763-CP3	5716-CP2		*	*	5769-CP4	*	N/A
5738-CR1	5763-CR1	5763-CR1	5716-CR1	5716-CR1	*	5769-CR1	*	5769-CR1	*
5738-CX1 5738-CX2	5763-CX2	*	5716-CX2	5716-CX2	*	5769-CX2	5769-CX2	5769-CX2	*
-	-	5716-CX4	*	*	*	*	*	*	*
-	-	-	5716-CX5	*	*	*	*	5769-CX5	*
5738-DB1	5763-DB1	*	5716-DB1	*	*	5769-DB1	*	5769-DB1	*
-	-	-	-	-	-	-	5769-DC1	*	*
							5769-DCE	*	*
5738-DCT	5763-DCT	5763-DCT	5716-DCT	5716-DCT	*	*	*	*	<div>*</div> <div>5769-DL1</div>
5738-DFH	5763-DFH	*	5716-DFH	*	*	5769-DFH	5769-DFH	5769-DFH	*
-	5763-DP1	5763-DP1	5716-DP1	5716-DP1	*	5769-DP1	5769-DP2	*	5769-DP3
5738-DS1	5763-DS1	*	5716-DS1	*	*	5769-DS1	*	5769-DS1	*
5738-ES1	5763-ES1	5763-ES1	5716-ES1	*	NA				

V2	V3R05 & V3R1	V3R2 <sup>2</sup>	V3R6 <sup>2</sup>	V3R7	V4R1	V4R2	V4R3	V4R4	V4R5
5738-FNT	5763-FNT	*	5716-FNT	*	*	5769-FNT	*	*	*
5738-FN1	5763-FN1	5763-FN1	5716-FN1	*	5769-FN1	*	*	*	*
5738-FS1	5763-FS1	5763-FS1	5716-FS1	*	*	NA			
5738-FT1	5738-FT1	NA							
-	-	-	-	-	5769-FW1	*	5769-FW1	5769-FW1	*
5799-JS3	5798-JS2	5763-JS1	5716-JS1	5716-JS1	*	5769-JS1	*	5769-JS1	*
5738-MC1	5738-MC1	NA							
5738-MG1 5733-165	5763-MG1	5763-MG1	5716-MG1	5716-MG1	*	5769-MG1	*	*	*
5733-103	5763-MQ1	5763-MQ2	5716-MQ1	5716-MQ1	*	5769-MQ1	5769-MQ2	*	*
5738-MS1	5763-MS1	5763-MS1	5716-MS1	*	*	NA			
5733-119	5763-MW1	*	5716-MW1	*	NA				
-	-	-	-	-	5769-NC1	*	NA		
-	-	-	-	-	5769-NCE	*	NA		
5738-OS1	5763-OS1	5763-OS1	5716-OS1	*	*	NA			
5738-PD1 5798-RYX	5763-PD1	*	5716-PD1	*	5769-PD1	5769-PD1	5769-PD1	*	*
5738-PL1	5763-PL1	*	NA						
5738-PS1	5763-PS1	*	NA						
5738-PT1 5798-RYP	5763-PT1	5763-PT1	5716-PT1	5716-PT1	*	5769-PT1	*	5769-PT1	5769-PT1
5738-PW1 5738-RP1 5738-PW2 5738-AD1 5733-080 5738-LM1	5763-PW1	5763-PW1	5716-PW1	5716-PW1	*	5769-PW1	*	5769-PW1	*
5738-QU1	5763-QU1	5763-QU1	5716-QU1	5716-QU1	5769-QU1	*	5769-QU1	5769-QU1	5769-QU1
-	5733-218	5763-RD1	-	5716-RD1	*	5769-RD1	5769-RD1	5769-RD1	5769-RD1
5738-RP1 <sup>1</sup> 5738-RG1	5763-RG1	5763-RG1	5716-RG1	5716-RG1	*	5769-RG1	*	5769-RG1	*
5738-SM1	5763-SM1	5763-SM1	5716-SM1	5716-SM1	5769-SM1	*	5769-SM1	5769-SM1	5769-SM1
5738-ST1	5763-ST1	5763-ST1	5716-ST1	5716-ST1	5769-ST1	*	5769-ST1	5769-ST1	5769-ST1
5733-197	5763-SV1	5763-SV2	5716-SV1	5716-SV2	*	*	5769-SV3	*	NA
-	5763-UB1	*	5716-UB1	*	*	*	NA		

V2	V3R05 & V3R1	V3R2 <sup>2</sup>	V3R6 <sup>2</sup>	V3R7	V4R1	V4R2	V4R3	V4R4	V4R5
-	5763-US1	*	5716-US1	*	*	*	NA		
-	5763-VG1	*	5716-VG1	*	*	*	*	5769-VG1	5769-VG1
5738-WP1	5763-WP1	5763-WP1	5716-WP1	5716-WP1	5769-WP1	5769-WP1	*	*	*
5738-PC1	5763-XA1	5763-XA1 5763-XW1 5763-XY1	5716-XA1	5716-XA1 5716-XW1 5716-XY	5769-XW1	5769-XW1	5769-XW1	5769-XW1	5769-XW1
					5769-XY1	*	*	*	NA
-	5763-XZ1	5763-XZ1	5716-XZ1	5716-XZ1	5769-XZ1	*	*	*	NA
5798-RYD	5798-RZW	*	5798-TAT	**	**	**	**	**	NA
5798-RYE	5798-RZX	**	5798-TAW	**	**	**	**	**	NA
5798-RYW	5798-TAA	**	5798-TAZ	**	NA				
5798-RYB	5798-RZK	**	5798-TBA	NA					
5798-RYZ	**	**	5798-TBC	NA					
5798-RYY	**	**	5798-TBD	NA					
-	5798-RZB	**	5798-TBE	**	NA				
5621-051	**	**							
5765-173	**	**							
-	5733-167	5733-167	5798-TBF	**	**	**	**	**	NA
5798-RZC	5798-RZC	5798-RZJ	5798-TAQ	5798-TAQ	5798-TBT	5798-TBT	**	**	NA
5798-RYC	5798-RZT	**	5798-TAY	5798-TAY	**	5798-TBY	**	**	**
<div>- Product announced after this version/release.</div> <div>* LP Product compatible with and unmodified for this release.</div> <div>** LPO supported on this version/release.</div> <div>NA Not available</div> <div>1 Functions found in 5738-RP1 were moved to various products. Most functions were merged into 5763-RG1. Some functions require the addition of 5763-PW1 and 5763-CL1 to provide full compatibility. See the announcement letters for these products for assistance in determining if they are required.</div> <div>2 You cannot upgrade from V3R2 to V3R6.</div>									





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# AS/400 CISC System Builder

Version 1 Release 2 - Version 3 Release 6



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