



# UNIX and PC Network Multivendor Solutions

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## Configuration Guide

Order Number: EK-SMMVP-CG. D01

**Digital Equipment Corporation**  
**Maynard, Massachusetts**

## CHANGES SINCE LAST REVISION

The changes since the last revision of this Configuration Guide include the following components and subsystems:

SWXSE-06	StorageWorks Expansion Storage Pedestal. Accepts up to seven 3.5-inch SBBs. Includes 150W power supply, dual speed blowers to support 7200 rpm SBBs, documentation, and power cord.
SWXSS-06	StorageWorks Rack Mount Shelf. Accepts up to seven 3.5-inch SBBs. Includes 150W power supply, dual speed blowers to support 7200 rpm SBBs, documentation, and power cord.
SWXBF-AA	StorageWorks Dual Speed Blower Upgrade Kit. Contains two dual-speed blowers, a foam block kit, and instructions. Used to upgrade an existing SWXSE-02 Expansion Storage Pedestal or SWXSS-02 Rack Mounted Shelf with dual-speed blowers required to support new 7200 rpm SBBs.
SWXSE-22	StorageWorks 16-bit Expansion Storage Pedestal. Accepts up to seven 3.5-inch SBBs. Includes 150W power supply, documentation, and power cord.
SWXSS-22	StorageWorks 16-bit Rack Mount Shelf. Accepts up to seven 3.5-inch SBBs. Includes 150W power supply, documentation, and power cord.
SWXD3-WB	StorageWorks 2.10 GB 3.5-inch Fast Wide SCSI Disk Drive mounted in a 3.5-inch SBB
SWXD3-WC	StorageWorks 1.05 GB 3.5-inch Low Profile Fast Wide SCSI Disk Drive mounted in a 3.5-inch SBB
SWXD3-SE	StorageWorks 4.29 GB Fast 3.5-inch Disk Drive (7200 rpm) mounted in a 3.5-inch SSB
SWXRA-YX	(RAID Ready Subsystem) RAID Array 410 controller with 32 MB Write Back Cache, Raid License in office-sized cabinet w/one 2.1 GB disk drive.
SWXRA-YA	(10 GB Subsystem) RAID Array 410 controller with 32 MB Write Back Cache, Raid License in office-sized cabinet w/six 2.1 GB disk drives (12.6 GB/10 GB usable).
SWXRA-YB	(20 GB Subsystem) RAID Array 410 controller with 32 MB Write Back Cache, Raid License in office-sized cabinet w/twelve 2.1 GB disk drives (25.2 GB/20 GB usable).
SWXRA-YD	(40 GB Subsystem) RAID Array 410 controller with 32 MB Write Back Cache, Raid License in office-sized cabinet w/twenty-four 2.1 GB disk drives (50.4 GB, 40 GB usable).
SWSK-CA	RAID Array 410 Platform Kit for Sun Solaris 2.2 & 2.3: driver, Graphical Use Interface (GUI), cable, S-BUS Fast Wide Differential Adapter, license, and documentation.
SWSK-CB	RAID Array 410 Platform Kit for SunOS 4.1.3: appropriate drivers, cable, S-BUS Fast Wide Differential Adapter, and documentation
SWHK8-CB	RAID Array 410 Platform Kit for HP9000 -800 HP-UX 9.04: cable, HP-IB Fast Wide Differential Adapter, documentation.
SWBK-CB	RAID Array 410 Platform Kit for IBM RS6000 AIX 3.2.5: Installation and operation software, cable, Microchannel Fast Wide Differential Adapter, documentation.

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## HOW TO USE THIS CONFIGURATOR

### PURPOSE AND INTENDED AUDIENCE:

This configuration guide is intended for use in ordering a subsystem configuration of StorageWorks components for either UNIX or Intel PC systems. This document assumes that the user knows the capacities and functionality required for the system they want to order. It leads the user through the ordering process, specifying the hardware, software, part numbers, and ordering information required for a properly configured order.

### CONTENTS:

#### **Platform/Operating System Support Matrix**

*Defines the StorageWorks hardware components that are compatible with each System Platform and Operating System.*

#### **Application Support Matrix**

*Defines the supported storage application software that is compatible with each StorageWorks device.*

#### **General StorageWorks Configuration Rules**

*Defines the general rules governing StorageWorks controllers, power, packaging and cabling.*

#### **Configurators for Expansion and Backup**

*Each Configurator section leads the user through configuring a subsystem using just the components that have been qualified for the particular platform and operating system.*

#### **Configurator for RAID**

*This section explains how to configure a RAID (Redundant Array of Independent Devices) Subsystem.*

#### **Appendix A Ordering Configured Subsystems**

*This section shows how to list an order so the the factory integrates and tests a subsystem as you want it and how to list accessories and individual devices such that they are shipped separate from the subsystem.*

#### **Appendix B Cabling Guidelines**

*This section identifies the various cables that are used with the different interfaces and packaging.*

#### **Appendix C Warranty and Service Information**

*This section explains the warranty for each component and the process and phone numbers for service and support.*

#### **Appendix D Product Information And References**

*This section includes document titles and order numbers of published information sheets that include product functionality, features and specifications and how they can be obtained.*

*Note: A small "x" in either a part number or an operating system version indicates that there are several variants of the part or versions of the OS that apply.*

## **HOW TO CONFIGURE A SUBSYSTEM:**

First, use the Support Matrix chapters to determine which StorageWorks components and applications are supported for your system.

Next, familiarize yourself with the SCSI and StorageWorks general configuration rules. If you are unfamiliar with either SCSI configuration requirements (cable length for example) or the capabilities and limits of StorageWorks controllers and packaging, this section will help you understand why certain configurations are recommended.

Finally, each Configurator chapter helps you specify a configured StorageWorks subsystem for your specific System and Operating System and contains some or all of the following sections:

- **STORAGE EXPANSION**  
Selection of magnetic disk, solid state disk and CD-ROM devices.
- **BACKUP**  
Selection of tape backup hardware devices and loaders and the recommended storage management software.
- **POWER & PACKAGING**  
Matches enclosures with the hardware selected in the previous sections.
- **ADAPTERS AND CABLES**  
Specifies host adapters and the correct SCSI cables needed for your platform type.
- **RAID**  
Helps you configure fault-tolerant storage subsystems for your mission critical applications.
- **OPTICAL ARCHIVING**  
Helps you configure Magneto Optical storage subsystems to support system storage.

## **Platform/Operating System Support Matrix**

## INTEL OPERATING SYSTEM SUPPORT MATRIX (Page 1)

Platform Operating System		Intel Netwr 3.1x	Intel Netwr 4.x	Intel Netwr SFT III	Intel DOS/ Windows	Intel SCOUnix 3.2.4	Intel Windows NT 3.1	Intel Windows NT 3.5
	StorageWorks Part Number							
<b>Magnetic Disk:</b>								
<u>SCSI-2 (8-bit)</u>								
1.05 GB								
General Formatted	SWXD3-SC	yes	yes	yes	yes	yes	yes	yes
Sun Formatted	SWSD3-SC	no	no	no	no	no	no	no
5 Pack General Formatted	SWXDB-5C	yes	yes	yes	yes	yes	yes	yes
2.10 GB								
General Formatted	SWXD3-SB	yes	yes	yes	yes	yes	yes	yes
Sun Formatted	SWSD3-SB	no	no	no	no	no	no	no
5 Pack General Formatted	SWXDB-5B	yes	yes	yes	yes	yes	yes	yes
4.29 GB <sup>1</sup>								
General & Sun Formatted	SWXD3-SE	yes	yes	yes	yes	no	yes	yes
<u>Wide SCSI-2 (16-bit)<sup>2</sup></u>								
1.05 GB General & Sun Formatted	SWXD3-WC	yes	yes	yes	yes	no	yes	yes
2.10 GB General & Sun Formatted	SWXD3-WB	yes	yes	yes	yes	no	yes	yes
<b>Solid State Disk:</b>								
107MB	SWSE5-RA	no	no	no	no	no	no	no
428MB	SWSE5-RB	no	no	no	no	no	no	no
<b>Tape:</b>								
4mm 4 GB	SWXTA-AA	yes	yes	no	no	no	yes	yes
4mm 8 GB	SWXTA-BA	yes	yes	no	no	no	no	yes
4mm 8/16 GB loader	SWXTA-LA	yes	yes	no	no	no	no	no
8mm 5GB 5.25" in SBB	SWXTE-AA	yes	yes	no	no	no	no	yes
8mm SBB upgrade (for 2/SBB)	SWXTE-AB	yes	yes	no	no	no	no	yes
8mm desktop option	SWXTE-AC	yes	yes	no	no	no	no	yes
TZ86 6 GB	SWXTL-AA	yes	yes	no	no	no	no	yes
TZ87N 10 GB in SBB	SWXTL-BA	yes	yes	no	no	no	no	yes
TZ87N 10 GB Tabletop	SWXTL-BT	yes	yes	no	no	no	no	yes
TZ87N 10 GB w/5 cart loader in Tabletop	SWXTL-BL	yes	yes	no	no	no	no	no

**NOTES:**

1. Because of heat dissipation requirements, the 4.29 GB drive must only be used in a SWXSE-06 Expansion Storage Pedestal (or SWXSS-06 Storage Shelf) or in a SWXSE-02 Expansion Storage Pedestal (or SWXSS-02 Storage Shelf) in which a SWXBF-BA Blower Upgrade Kit has been installed. It cannot be used in the Desktop Expansion Unit (SWXSE-03). The 4.29 GB drive has not been qualified for use in the Departmental Cabinet (SWXSC-CA/CB) or the Data Center Cabinet (SWXSC-DA/DB).
2. The wide SCSI-2 (16-bit) SBBs (SWXD3-WB, WC) must only be mounted in the SWXSE-22 Wide Expansion Storage Pedestal or the SWXSS-22 Wide Storage Shelf.

## INTEL OPERATING SYSTEM SUPPORT MATRIX (Page 2)

Platform Operating System		Intel Netwr 3.1x	Intel Netwr 4.x	Intel Netwr SFT III	Intel DOS/ Windows	Intel SCOUnix 3.2.4	Intel Windows NT 3.1	Intel Windows NT 3.5	
	StorageWorks Part Number								
<b>Packaging:</b>									
Expansion Storage Pedestal <sup>1,4</sup>	SWXSE-02	yes	yes	yes	yes	yes	yes	yes	
Blower Upgrd Kit for SWXSE-02	SWXBF-AA	yes	yes	yes	yes	yes	yes	yes	
Desktop Storage Unit <sup>1</sup>	SWXSE-03	yes	yes	yes	yes	yes	yes	yes	
Expansion Storage Pedestal <sup>1</sup>	SWXSE-06	yes	yes	yes	yes	yes	yes	yes	
Expansion Storage Shelf <sup>1</sup>	SWXSS-06	yes	yes	yes	yes	yes	yes	yes	
Wide Expansion Storage Pedestal <sup>2</sup>	SWXSE-22	yes	yes	yes	yes	yes	yes	yes	
Wide Expansion Storage Shelf <sup>1</sup>	SWXSS-22	yes	yes	yes	yes	yes	yes	yes	
Departmental Cabinet (10 shelf - 120V)	SWXSC-CA	yes	yes	yes	yes	yes	yes	yes	
Departmental Cabinet (10 shelf - 240V)	SWXSC-CB	yes	yes	yes	yes	yes	yes	yes	
Data Center Cabinet (24 shelf - 208V)	SWXSC-DA	yes	yes	yes	yes	yes	yes	yes	
Data Center Cabinet (24 shelf - 416V)	SWXSC-DB	yes	yes	yes	yes	yes	yes	yes	
<b>Adapters:</b>									
<u>SCSI-2 (8-bit)</u>									
EISA Adaptec 1740, 1742	N/A	yes	yes	yes	yes	yes	yes	yes	
EISA 2740B (Digital Part #)	FR-PCTAZ-CC	yes	yes	yes	yes		yes	yes	
EISA BusLogic BT747S,BT747C	N/A	yes	yes	yes	no	yes	yes	yes	
EISA DPT PM2022, PM2122	N/A	yes	yes	yes	no	yes	yes	yes	
ISA Adaptec 1540, 1540C, 1542	N/A	yes	yes	yes	yes	yes	yes	yes	
ISA 1540CF (Digital Part #)	FR-PCTAZ-AE	yes	yes	yes	yes		yes	yes	
ISA BusLogic BT5455	N/A	yes	yes	yes	no	yes	yes	yes	
ISA DPT PM2021	N/A	yes	yes	yes	no	yes	yes	yes	
PCI 2940 (Digital Part #)	FR-PCTAZ-DA	yes	yes	no	yes	yes	yes	yes	
PCI Future Domain TMC-3260	N/A	yes	yes	yes	yes	yes	yes	yes	
PCI DPT PM2124 <sup>3</sup>	N/A	yes	yes	yes	yes	yes	yes	yes	
VESA Ultrastore Ultra 34FK	N/A	yes	yes	yes	no	yes	yes	yes	
<u>SCSI-2 (16-bit)</u>									
EISA Adaptec 2742W	N/A	yes	yes	yes	yes	no	no	yes	
EISA BusLogic BT757	N/A	yes	yes	yes	yes	no	no	yes	
PCI Qlogic Fast!SCSI	N/A	yes	yes	yes	yes	no	no	yes	
PCI Adaptec 2940W	N/A	yes	yes	yes	yes	no	no	yes	

**NOTES:**

1. The Expansion Storage Pedestals, Expansion Storage Shelf, and Desktop Storage Unit can only accept SCSI-2 (8-bit) SSBs.
2. The Wide Expansion Storage Pedestal and Wide Expansion Shelf can only accept the SWXD3-WB and -WC Wide SCSI-2 (16-bit) Disk Device SBBs.
3. Requires PM14NW31 V3.e, or higher, disk driver.
4. Not recommended for new applications.



## INTEL OPERATING SYSTEM SUPPORT MATRIX (Page 3)

Platform Operating System	StorageWorks Part Number	Intel Netwr 3.1x	Intel Netwr 4.x	Intel Netwr SFT III	Intel DOS/ Windows	Intel SCO Unix 3.2.4	Intel Windows NT 3.1	Intel Windows NT 3.5	
<b>RAID:</b>									
<u>RAID Array 110<sup>1</sup></u>									
RAID Array110 w/o drives	SWXRA-01	yes	yes	no	yes	yes	no	no	
RAID Array110 w/5 1GB disks	SWXRA-XC	yes	yes	no	yes		yes	no	no
RAID Array110 w/5 2GB disks	SWXRA-XB	yes	yes	no	yes		yes	no	no
RAID Dual Expansion w/up to 10 disks	SWXSE-01	yes	yes	no	yes	yes	no	no	
RAID Array110 Novell Kit	SWIKN-AA	yes	yes	no	no	no	no	no	
RAID Array110 MSDOS Kit	SWIKM-AA	no	no	no	yes		no	no	no
RAID Array110 SCO Unix Kit	SWIKS-AA	no	no	no	no	yes	no	no	
<u>RAID Array 210</u>									
1-Channel RAID 211 Array Controller Kit	SWIKX-BA	yes	yes	yes	yes	no	yes	yes	
3-Channel RAID 213 Array Controller Kit	SWIKX-BB	yes	yes	yes	yes	no	yes	yes	
RAID Array 210-3150 Subsys	SWIRA-BA	yes	yes	yes	yes	no	yes	yes	
RAID Array 210-6300 Subsys	SWIRA-BB	yes	yes	yes	yes	no	yes	yes	
<b>CD-ROM:</b>									
<u>Dual Speed, Low Cost</u>									
600 MB	SWXOR-BA	yes	yes	yes	yes	no	yes	yes	
600 MB upgrade (2 SBB)	SWXOR-BB	yes	yes	yes	yes	no	yes	yes	
600 MB desktop option	SWXOR-BC	yes	yes	yes	yes	no	yes	yes	
600 MB (5.25-in 3-pac in SBB)	SWXOR-BD	yes	yes	yes	yes	no	yes	yes	
<u>Multi-speed, High Performance</u>									
600 MB	SWXOR-CA	yes	yes	yes	no	no	no	yes	
600 MB upgrade (2 SBB)	SWXOR-CB	yes	yes	yes	no	no	no	yes	
600 MB desktop option	SWXOR-CC	yes	yes	yes	no	no	no	yes	
<b>Optical Multifunction Disk Drive</b>									
1.3 GB Magneto Optical	SWIOW-AA	yes	yes	yes	no	no	no	no	
<b>Optical Juke Box:</b>									
19 GB MO	SWXOW-JA	yes	yes	no	no	no	no	no	
38 GB MO	SWXOW-JB	yes	yes	no	no	no	no	no	
19 GB w/media	SWXOW-MA	yes	yes	no	no	no	no	no	
38 GB w/media	SWXOW-MB	yes	yes	no	no	no	no	no	
114 GB MO	SWXOW-JC	yes	yes	no	no	no	no	no	
187 GB MO	SWXOW-JD	yes	yes	no	no	no	no	no	

1. The RAID Array 110 product for Novell contains a DPT EISA to SCSI host adapter that can be used in the same system with other DPT SCSI host adapters. When used in the same system with other manufacturer's EISA to SCSI host adapters, call 1-800-STORWOR for specific configuration rules. (In Europe, call +31-80-52-9805). The RAID Array 110 has not been qualified with the SWXD3-SE.

## INTEL OPERATING SYSTEM SUPPORT MATRIX (Page 4)

Platform Operating System		Intel Netwr 3.1x	Intel Netwr 4.x	Intel Netwr SFT III	Intel DOS/ Windows	Intel SCOUNIX 3.2.4	Intel Windows 3.1	Intel NT 3.5
	StorageWorks Part Number							
<b>Data Center Components:</b>								
RAID Array 110 Controller	SWXCR-01	yes	yes	no	yes	yes	yes	yes
Redundant Cab Pwr Cntrl (120V)	SWXBP-CA	yes	yes	yes	yes	yes	yes	yes
Redundant Cab Pwr Cntrl(240V)	SWXBP-CD	yes	yes	yes	yes		yes	yes
Redundant Cab Pwr Cntrl(208V)	SWXBP-DA	yes	yes	yes	yes		yes	yes
Redundant Cab Pwr Cntrl(416V)	SWXBP-DB	yes	yes	yes	yes		yes	yes
Expansion Controller Shelf w/power supply and mtg brackets	SWXSS-01	yes	yes	yes	yes	yes	yes	yes
7-slot Drive Shelf w/pwr supply and mtg brackets	SWXSS-02	yes	yes	yes	yes	yes	yes	yes
Blower Upgrade Kit	SWXBF-BA	yes	yes	yes	yes	yes	yes	yes
7-slot Drive Shelf w/pwr supply and mtg brackets	SWXSS-06	yes	yes	yes	yes	yes	yes	yes
7-slot Wide Drive Shelf w/pwr supply and mtg brackets	SWXSS-22	yes	yes	yes	yes	yes	yes	yes
<b>SCSI Cables:</b>								
SCSI-2 to device, 0.3 meter	BN21H-0C	yes	yes	yes	yes		yes	yes
SCSI-2 to device, 0.5 meter	BN21H-0E	yes	yes	yes	yes	yes	yes	yes
SCSI-2 to device, 1 meter	BN21H-01	yes	yes	yes	yes	yes	yes	yes
SCSI-2 to device, 1.5 meter	BN21H-1E	yes	yes	yes	yes	yes	yes	yes
SCSI-2 to device, 2 meter	BN21H-02	yes	yes	yes	yes	yes	yes	yes
SCSI-2 to device, 3 meter	BN21H-03	yes	yes	yes	yes	yes	yes	yes
ISA SCSI to device, 1 meter	BN23G-01	yes	yes	yes	yes	yes	yes	yes
ISA SCSI to device, 3 meter	BN23G-02	yes	yes	yes	yes	yes	yes	yes
ISA SCSI to DLT Tbl Top, 1 meter	BC19J-03	yes	yes	yes	yes	yes	yes	yes
ISA SCSI to DLT Tbl Top, 2 meter	BC19J-06	yes	yes	yes	yes	yes	yes	yes
EISA,HP,Sun Wide to device, 1 m	BN21K-01	yes	yes	yes	yes	no	yes	yes
EISA,HP,Sun Wide to device, 2 m	BN21K-02	yes	yes	yes	yes	no	yes	yes
EISA,HP,Sun Wide to cntrl, 5 m	BN21K-05	yes	yes	yes	yes	no	yes	yes
EISA,HP,Sun Wide to cntrl, 10 m	BN21K-10	yes	yes	yes	yes	no	yes	yes
Intel EISA to RAID 110, 5 meter	BN21K-05	yes	no	no	yes	yes	no	no
Intel EISA to RAID 110, 10 meter	BN21K-10	yes	no	no	yes	yes	no	no
<b>Miscellaneous:</b>								
Single-speed Blower Assy <sup>1</sup>	BA35X-MA	yes	yes	yes	yes	yes	yes	yes
Dual-speed Blower Assy	BA35X-MD	yes	yes	yes	yes	yes	yes	yes
Blower Upgrade Kit for SWXSE-02	SWXBF-AA	yes	yes	yes	yes	yes	yes	yes
Battery Backup	SWXBP-SC	yes	yes	yes	yes	yes	yes	yes
AC Power Supply (131 watt) <sup>2</sup>	SWXBP-SA	yes	yes	yes	yes	yes	yes	yes
AC Power Supply (145 watt) <sup>2</sup>	SWXBP-SB	yes	yes	yes	yes	yes	yes	yes
AC Power Supply (150 watt) <sup>2</sup>	SWXBP-SD	yes	yes	yes	yes	yes	yes	yes
SCSI Backplane Jumper (8-bit)	BA35X-MC	yes	yes	yes	yes	yes	yes	yes
SCSI Backplane Terminator (8-bit)	BA35X-MB	yes	yes	yes	yes	yes	yes	yes
SCSI Backplane Jumper (16-bit)	54-23378-01	yes	yes	yes	yes	yes	yes	yes
SCSI Backplane Terminator (16-bit)	54-23376-01	yes	yes	yes	yes	yes	yes	yes
Diff SCSI RAID Terminator	H879 -AA	yes	yes	yes	yes	yes	yes	yes

**NOTES:**

1. The Single-speed blower is not qualified for use with the 4.29 GB SBB.
2. The SWXBP-SD 150 watt AC Power Supply is recommended for all new applications and for replacement in all packaging.

## INTEL OPERATING SYSTEM SUPPORT MATRIX (Page 5)

Platform Operating System		Intel Netwr 3.1x	Intel Netwr 4.x	Intel Netwr SFT III	Intel DOS/ Windows	Intel SCOUnix 3.2.4	Intel Windows NT 3.1	Intel Windows NT 3.5
	StorageWorks Part Number							
Power Cord (US/Japan)	BN27S-03	yes	yes	yes	yes	yes	yes	yes
Power Cord (Israel)	BN18L-2E	yes	yes	yes	yes	yes	yes	yes
Power Cord (Ireland/UK)	BN19A-2E	yes	yes	yes	yes	yes	yes	yes
Power Cord (Cntrl Europe)	BN19C-2E	yes	yes	yes	yes	yes	yes	yes
Power Cord (Denmark)	BN19K-2E	yes	yes	yes	yes	yes	yes	yes
Power Cord (Switzerland)	BN19E-2E	yes	yes	yes	yes	yes	yes	yes
Power Cord (India/South Africa)	BN19S-2E	yes	yes	yes	yes	yes	yes	yes
Power Cord (Australia/New Zealand)	BN19H-2E	yes	yes	yes	yes	yes	yes	yes
Power Cord (Italy)	BN19M-2E	yes	yes	yes	yes	yes	yes	yes

## UNIX OPERATING SYSTEM SUPPORT MATRIX (Page 1)

Platform Operating System		HP9000/700 HP-UX 9.05	HP9000/800 HP-UX 9.04	IBM RS/6000 AIX 3.2	Sun SunOS 4.1.x (1)	Sun Solrs 2.x
	StorageWorks Part Number					
<b>Magnetic Disk:</b>						
<u>SCSI-2 (8-bit)</u>						
1.05 GB						
General Formatted	SWXD3-SC	yes	yes	yes	no	no
Sun Formatted	SWSD3-SC	no	no	no	yes	yes
5 Pack General Formatted	SWXDB-5C	(2)	(2)	(2)	(2)	(2)
2.1 GB						
General Formatted	SWXD3-SB	yes	yes	yes	no	no
Sun Formatted	SWSD3-SB	no	no	no	yes	yes
5 Pack General Formatted	SWXDB-5B	(2)	(2)	(2)	(2)	(2)
4.29 GB General and Sun Formatted <sup>3</sup>	SWXD3-SE	yes	yes	yes	yes	yes
<u>Wide SCSI-2 (16-bit)<sup>4</sup></u>						
1.05 GB General and Sun Formatted	SWXD3-WC	yes	yes	yes	yes	yes
2.10 GB General and Sun Formatted	SWXD3-WB	yes	yes	yes	yes	yes
<b>Solid State Disk:</b>						
107 MB	SWSE5-RA	no	no	no	yes	yes
428 MB	SWSE5-RB	no	no	no	yes	yes
<b>Tape:</b>						
4mm 4 GB	SWXTA-AA	no	no	no	yes	yes <sup>5</sup>
4mm 8 GB	SWXTA-BA	yes	no	no	yes	yes <sup>5</sup>
4mm w/4 cart loader	SWXTA-LA	no	no	no	no	no
8mm 5GB 5.25" in SBB	SWXTE-AA	yes	yes	yes	yes	yes <sup>5</sup>
8mm SBB upgrade (for 2/SBB)	SWXTE-AB	no	no	yes	yes	yes <sup>5</sup>
8mm desktop option	SWXTE-AC	no	no	yes	yes	yes <sup>5</sup>
TZ86 6GB	SWXTL-AA	no	no	no	no	no
TZ87N 10GB in SBB	SWXTL-BA	yes	no	yes	yes	yes
TZ87N 10GB Tabletop	SWXTL-BT	yes	no	yes	yes	yes
TZ87N 10GB w/5 cart loader in Tabletop	SWXTL-BL	no	no	no	yes	yes

**NOTES:**

- For SunOS 4.1.1 and disks greater than 1 GB, please use software patch 100343-04 or later available from Sun.
- The 5 pack disks are not Sun formatted and are used as RAID sets in the SWXRA-01 and SWXSE-01 (RAID Array 110 and RAID Expansion).
- Because of heat dissipation requirements, the 4.29 GB drive must only be used in a SWXSE-06 Expansion Storage Pedestal (or SWXSS-06 Storage Shelf) or in a SWXSE-02 Expansion Storage Pedestal (or SWXSS-02 Storage Shelf) on which a SWXBF-BA Blower Upgrade Kit has been installed. It cannot be used in the Desktop Expansion Unit (SWXSE-03). The 4.29 GB drive has not been qualified for use in the Departmental Cabinet (SWXSC-CA/CB) or the Date Center Cabinet (SWXSC-DA/DB).
- The wide SCSI-2 (16-bit) SBBs (SWXD3-WB, WC) must only be mounted in the SWXSE-22 Wide Expansion Storage Pedestal or the SWXSS-22 Wide Storage Shelf.
- 4mm and 8mm Tapes can only be used with Solaris Release 2.3.

## UNIX OPERATING SYSTEM SUPPORT MATRIX (Page 2)

Platform Operating System		HP9000/700 HP-UX 9.05	HP9000/800 HP-UX 9.04	IBM RS/6000 AIX 3.2	Sun SunOS 4.1.x (1)	Sun Solrs 2.x
	StorageWorks Part Number					
<b>Packaging:</b>						
Expansion Storage Pedestal <sup>2,4</sup>	SWXSE-02	yes	yes	yes	yes	yes
Blower Upgrade Kit	SWXBF-AA	yes	yes	yes	yes	yes
Expansion Storage Pedestal <sup>1</sup>	SWXSE-06	yes	yes	yes	yes	yes
Expansion Storage Shelf <sup>1</sup>	SWXSS-06	yes	yes	yes	yes	yes
Wide Expansion Storage Pedestal <sup>2</sup>	SWXSE-22	yes	yes	yes	yes	yes
Wide Expansion Storage Shelf <sup>1</sup>	SWXSS-22	yes	yes	yes	yes	yes
Desktop Storage Unit	SWXSE-03	yes	yes	yes	yes	yes
Departmental Cabinet (10 shelf - 120V)	SWXSC-CA	yes	yes	yes	yes	yes
Departmental Cabinet (10 shelf - 240V)	SWXSC-CB	yes	yes	yes	yes	yes
Data Center Cabinet (24 shelf - 208V)	SWXSC-DA	yes	yes	yes	yes	yes
Data Center Cabinet (24 shelf - 416V)	SWXSC-DB	yes	yes	yes	yes	yes
<b>Adapters:</b>						
8-bit Diff. to Single Ended (table top unit)	SWXA2-AT	yes	yes	yes	yes	yes
8-bit Diff. to Single Ended (in an SBB)	SWXA2-AA	yes	yes	yes	yes	yes
<b>Sun Adapters</b>						
SBUS Adapter FSE w/cable <sup>1</sup>	SWSAP-AB	no	no	no	yes	yes
SBUS Adapter FWSE w/cable <sup>1</sup>	SWSAP-BB	no	no	no	yes	yes
All Sun Native FCSI adapters	N/A	no	no	no	yes	yes
PTI SBS-430 FSE	N/A	no	no	no	yes	yes
PTI SBS-440 FWSE	N/A	no	no	no	yes	yes
<b>IBM Adapters</b>						
IBM MCA to FWSE w/cable	N/A	no	no	yes	no	no
2410 FS	N/A	no	no	yes	no	no
2415 FWSE	N/A	no	no	yes	no	no
2420 FD	N/A	no	no	yes	no	no
<b>HP Adapters</b>						
2679A EISA - FSE	N/A	yes	no	no	no	no
28655A HP-PB - FSE	N/A	no	yes	no	no	no

**NOTES:**

1. For SunOS 4.1.1 and disks greater than 1 GB, please use software patch 100343-04 or later available from Sun.
2. The Expansion Storage Pedestals, Expansion Storage Shelf, and Desktop Storage Unit can only accept SCSI-2 (8-bit) SBBs.
3. The Wide Expansion Storage Pedestal and Wide Expansion Shelf can only accept the SWXD3-WB and -WC Wide SCSI-2 (16-bit) Disk SBBs.
4. Not recommended for new applications.

## UNIX OPERATING SYSTEM SUPPORT MATRIX (Page 3)

Platform Operating System		HP9000/700 HP-UX 9.05	HP9000/800 HP-UX 9.04	IBM RS/6000 AIX 3.2	Sun SunOS 4.1.x	Sun Solrs 2.x
	StorageWorks Part Number					
<b>RAID:<sup>1</sup></b>						
<u>RAID Array 110</u>						
RAID Array110 w/o drives	SWXRA-01	no	no	no	yes	yes
RAID Array110 w/5 1GB disks	SWXRA-XC	no	no	no	yes	yes
RAID Array110 w/5 2GB disks	SWXRA-XB	no	no	no	yes	yes
RAID Dual Expansion w/up to 10 disks	SWXSE-01	no	no	no	yes	yes
RAID Array110 Sun Kit	SWSK -AA	no	no	no	yes	yes
RAID Array110 Novell Kit	SWIKN-AA	no	no	no	no	no
RAID Array110 MSDOS Kit	SWIKM-AA	no	no	no	no	no
RAID Array110 SCO Unix Kit	SWIKS-AA	no	no	no	no	no
<u>RAID Array 210</u>						
1-Channel RAID 211 Cntrl Kit	SWIKX-BA	no	no	no	no	no
3-Channel RAID 213 Cntrl Kit	SWIKX-BB	no	no	no	no	no
RAID Array 210-3150 Subsys	SWIRA-BA	no	no	no	no	no
RAID Array 210-6300 Subsys	SWIRA-BB	no	no	no	no	no
<u>RAID Array 410</u>						
RAID Array 410 w/1 2GB disk	SWXRA-YX	no	yes	yes	yes	yes
RAID Array 410 w/6 2GB disks	SWXRA-YA	no	yes	yes	yes	yes
RAID Array 410 w/12 2GB disks	SWXRA-YB	no	yes	yes	yes	yes
RAID Array 410 w/24 2GB disks	SWXRA-YD	no	yes	yes	yes	yes
Power Entry Power Controller	SWXBP-AA	no	yes	yes	yes	yes
Environmental Monitor Unit	SWXBE-AA	no	yes	yes	yes	yes
RAID Array 410 Solaris 2.2/3 Kit	SWSK-CA	no	no	no	no	yes
RAID Array 410 Solaris 1.x Kit	SWSK-CB	no	no	no	yes	no
RAID Array 410 HP-UX 9.04 Kit	SWHK8-CB	no	yes	no	no	no
RAID Array 410 IBM AIX 3.2.5 Kit	SWBK-CB	no	no	yes	no	no
<b>CD-ROM:</b>						
<u>Dual Speed, Low Cost</u>						
600 MB	SWXOR-BA	no	no	no	yes	yes
600 MB upgrade (2 SBB)	SWXOR-BB	no	no	no	yes	yes
600 MB desktop option	SWXOR-BC	no	no	no	yes	yes
600 MB (5.25-in 3-pac in SBB)	SWXOR-BD	no	no	no	yes	yes
<u>Multi-speed, High Performance</u>						
600 MB	SWXOR-CA	yes	yes	yes	yes	yes
600 MB upgrade (2 SBB)	SWXOR-CB	yes	yes	yes	yes	yes
600 MB desktop option	SWXOR-CC	yes	yes	yes	yes	yes
<b>Optical Juke Box:</b>						
19 GB MO	SWXOW-JA	no	no	no	no	no
38 GB MO	SWXOW-JB	no	no	no	no	no
19 GB w/media	SWXOW-MA	no	no	no	no	no
38 GB w/media	SWXOW-MB	no	no	no	no	no
114 GB MO	SWXOW-JC	no	no	no	no	no
187 GB MO	SWXOW-JD	no	no	no	no	no

1. SWXD3-SD and SWSD3-SD Disk Drives are not compatible with RAID Array 110.

## UNIX OPERATING SYSTEM SUPPORT MATRIX (Page 4)

Platform Operating System		HP9000/700 HP-UX 9.05	HP9000/800 HP-UX 9.04	IBM RS/6000 AIX 3.2	Sun SunOS 4.1.x	Sun Solrs 2.x
	StorageWorks Part Number					
<b>Data Center Components:</b>						
RAID Array 110 Controller	SWXCR-01	no	no	no	yes	yes
RAID Array 410 Controller	SWXRC-04	no	yes	yes	yes	yes
Redndnt Cab Pwr Cntrl (120V)	SWXBP-CA	yes	yes	yes	yes	yes
Redndnt Cab Pwr Cntrl (240V)	SWXBP-CD	yes	yes	yes	yes	yes
Redndnt Cab Pwr Cntrl (208V)	SWXBP-DA	yes	yes	yes	yes	yes
Redndnt Cab Pwr Cntrl (416V)	SWXBP-DB	yes	yes	yes	yes	yes
Controller Shelf w/power supply and mtg brackets	SWXSS-01	yes	yes	yes	yes	yes
7-slot Drive Shelf w/pwr supply and mtg brackets	SWXSS-02	yes	yes	yes	yes	yes
Blower Upgrade Kit	SWXBF-AA	yes	yes	yes	yes	yes
7-slot Drive Shelf w/pwr supply and mtg brackets	SWXSS-06	yes	yes	yes	yes	yes
7-slot Wide Drive Shelf w/pwr supply and mtg brackets	SWXSS-22	yes	yes	yes	yes	yes
<b>SCSI Cables:</b>						
SCSI-2 to device, 0.3 meter	BN21H-0C	yes	yes	yes	yes	yes
SCSI-2 to device, 0.5 meter	BN21H-0E	yes	yes	yes	yes	yes
SCSI-2 to device, 1 meter	BN21H-01	yes	yes	yes	yes	yes
SCSI-2 to device, 1.5 meters	BN21H-1E	yes	yes	yes	yes	yes
SCSI-2 to device, 2 meters	BN21H-02	yes	yes	yes	yes	yes
SCSI-2 to device, 3 meters	BN21H-03	yes	yes	yes	yes	yes
Sun Sbus to RAID110, 5 meters	BN21N-05	no	no	no	yes	yes
Sun Sbus to RAID110, 10 meters	BN21N-10	no	no	no	yes	yes
EISA,HP,Sun Wide to Device, 2 m	BN21K-02	yes	yes	no	yes	yes
EISA,HP,Sun Wide to Cntrl, 5 m	BN21K-05	yes	yes	no	yes	yes
EISA,HP,Sun Wide to Cntrl, 10 m	BN21K-10	yes	yes	no	yes	yes
IBM Wide to Device, 2 meters	BN31R-02	no	no	yes	no	no
IBM Wide to Controller, 3 meters	BN31R-03	no	no	yes	no	no
IBM Wide to BN21K cable cnvrtr	H8588-AA	no	no	yes	no	no
<b>Miscellaneous:</b>						
Single-speed Blower Assy <sup>1</sup>	BA35X-MA	yes	yes	yes	yes	yes
Dual-speed Blower Assy	BA35X-MD	yes	yes	yes	yes	yes
Fan Upgrade Kit for SWXSE-02	SWXBF-AA	yre	yes	yes	yes	yes
Battery Backup	SWXBP-SC	yes	yes	yes	yes	yes
AC Power Supply (131 watt) <sup>2</sup>	SWXBP-SA	yes	yes	yes	yes	yes
AC Power Supply (145 watt) <sup>2</sup>	SWXBP-SB	yes	yes	yes	yes	yes
AC Power Supply (150 watt) <sup>2</sup>	SWXBP-SD	yes	yes	yes	yes	yes
SCSI Backplane Jumper (8-bit)	BA35X-MC	yes	yes	yes	yes	yes
SCSI Backplane Terminator (8-bit)	BA35X-MB	yes	yes	yes	yes	yes
SCSI Backplane Jumper (16-bit)	54-23378-01	yes	yes	yes	yes	yes
SCSI Backplane Terminator (16-bit)	54-23376-01	yes	yes	yes	yes	yes

**NOTES:**

1. The Single-speed blower is not qualified for use with the 4.29 GB SBB.
2. The SWXBP-SD 150 watt AC Power Supply is recommended for all new applications and for replacement in all packaging.

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**UNIX OPERATING SYSTEM SUPPORT MATRIX (Page 5)**


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<b>Platform</b>		<b>HP9000/700</b>	<b>HP9000/800</b>	<b>IBM RS/6000</b>	<b>Sun</b>	<b>Sun</b>
<b>Operating System</b>		<b>HP-UX</b>	<b>HP-UX</b>	<b>AIX</b>	<b>SunOS</b>	<b>Solrs</b>
		<b>9.05</b>	<b>9.04</b>	<b>3.2</b>	<b>4.1.x</b>	<b>2.x</b>
	StorageWorks Part Number					
<b>Miscellaneous (continued):</b>						
Diff SCSI RAID Terminator	H879 -AA	no	yes	yes	yes	yes
Power Cord (US/Japan)	BN27S-03	yes	yes	yes	yes	yes
Power Cord (Israel)	BN18L-2E	yes	yes	yes	yes	yes
Power Cord (Ireland/UK)	BN19A-2E	yes	yes	yes	yes	yes
Power Cord (Cntrl Europe)	BN19C-2E	yes	yes	yes	yes	yes
Power Cord (Denmark)	BN19K-2E	yes	yes	yes	yes	yes
Power Cord (Switzerland)	BN19E-2E	yes	yes	yes	yes	yes
Power Cord (India/South Africa)	BN19S-2E	yes	yes	yes	yes	yes
Power Cord (Australia/New Zealand)	BN19H-2E	yes	yes	yes	yes	yes
Power Cord (Italy)	BN19M-2E	yes	yes	yes	yes	yes



**THIRD PARTY APPLICATION SOFTWARE SUPPORT MATRIX (Page 1)****Intel Network Operating Systems – Novell<sup>1</sup>, NT****TAPE PRODUCTS**

	4mm 2/4 GB Tape SWXTA-AA	4mm 4/8 GB Tape SWXTA-BA	4mm Loader SWXTA-LA	8mm Tape SWXTE-Ax	6 GB TZ86 SWXTL-AA	10/20 GB TZ87N SWXTL-BA,BT	50/100 GB TZ87N TapeLdr SWXTL-BL
<u>Palindrome</u>							
Network Archivist V.3.1 SMS Single or Multi-server License SW-PNA31-NS, -NM	yes	yes	yes	yes	yes	yes	yes
Autoloader Software for Network Archivist Single autoloader device support SW-AL31	no	no	yes	no	no	no	yes
Backup Director V.2.1 SW-PBD-NLM	yes	yes	yes	yes	yes	yes	yes
<u>Cheyenne</u>							
ARCServe for NetWare (DOS Edition 4.0 Windows Edition 5.0)	yes	yes	yes	yes	no	yes	yes
<u>Arcada<sup>2</sup></u>							
Backup Exec for Netware Enterprise Edition	yes	yes	yes	yes	no	yes	yes <sup>3</sup>
Backup Exec for NTAS	yes	yes	yes	yes	no	yes	yes <sup>3</sup>
<u>Legato<sup>2</sup></u>							
Networker for Netware	yes	yes	yes	yes	no	yes	yes <sup>3</sup>
<u>Microsoft NT 3.5</u>							
NT Backup Utility	yes	yes	yes	yes	yes	yes	yes <sup>4</sup>
<u>Microsoft NT 3.1</u>							
NT Backup Utility	yes	no	no	no	no	no	no
<u>Novell</u>							
Netware 3.1x Server Backup	yes	yes	no	yes	yes	yes	no
Netware 4.x Server Backup	yes	yes	no	yes	yes	yes	no

**NOTES:**

1. Novell support includes 3.x and 4.x products in all cases.
2. Consult third-party vendor hotline or BBS for latest support software and patches.
3. Available 2/95
4. Device recognition only, no loader support

**THIRD PARTY APPLICATION SOFTWARE SUPPORT MATRIX (Page 2)****Intel Network Operating Systems – Novell, NT****OPTICAL PRODUCTS**

	19 GB MO SWXOW-JA SWXOR-MA	38 GB MO SWXOW-JB SWXOR-MB	114 GB MO SWXOW-JC	187 GB MO SWXOW-JD	1.3 GB MO SWIOW-AA	CD-ROM SWXOR-Bx	CD-ROM SWXOR-Cx
<u>Corel Network Manager</u> (Novell 3.x only)	yes	yes	yes	yes	yes	yes	yes
<u>Corel SCSI Version 2</u> (DOS only)	no	no	no	no	no	yes	no
<u>Cheyenne</u> ARCServe for NetWare (DOS Edition 4.0 Windows Edition 5.0)	no	no	no	no	no	no	no
<u>Micro Design Int'l Co</u> SCSI Express	yes	yes	yes	yes	yes	no	no
<u>Palindrome</u> Network Archivist V.3.1 SMS SW-PNA31-NS, -NM	yes	yes	yes	yes	no	no	no
Autoloader single device support SW-AL31	yes	no	no	no	no	no	no
Autoloader Software - multiple autoloader device support SW-AL31-MD	no	yes	yes	yes	no	no	no

**THIRD PARTY APPLICATION SOFTWARE SUPPORT MATRIX (Page 3)**

**SUN**

**TAPE PRODUCTS**

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	4mm Tape SWXTA-AA	4mm 8 GB SWXTA-BA	8mm Tape SWXTE-Ax
Sun Microsystems OnLine: Backup Copilot	yes	yes	yes

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**DISK PRODUCTS**

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	1GB Disk SWSD3-SC	2GB Disk SWSD3-SB SWSD3-SD	Solid State Disk SWSE5-RA SWSE5-RB	RAID Array 110	RAID Array 410
Sun Microsystems OnLine: Disk Suite	yes	yes	yes	yes	yes

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## GENERAL STORAGEWORKS CONFIGURATION RULES

This section describes the general configuration rules for StorageWorks products. These rules may appear multiple times in this section because some rules apply to multiple products.

There are two types of configurations rules---logical and physical.

- Logical rules describe items such as how to select a device address.
- Physical rules define capacities, cable lengths, and so forth.

The following sections are organized by general subject and include both the logical and physical configuration rules.

Configuration rules for a specific StorageWorks product have precedence over the general configuration rules listed in this section.

### DEVICE ADDRESSES

The following general configuration rules apply to StorageWorks device addresses:

- Either physical location of the storage device in the shelf or the device address switch setting determines the SCSI device addressor ID of the following devices:
  - 3.5-inch tape drives (3.5-inch disk drives do not have a device address switch)
  - All 5.25-inch devices

The physical location device addresses are assigned from right or top (SCSI connector end) to left or bottom (Power Supply end) as viewed from the front.

- The available device addresses for each shelf are 0 through 6.
- The shelf slot numbers and the device addresses for 3.5-inch SBBs are the same.
- The device addresses for 3.5-inch tape SBBs and all 5.25-inch SBBs can be set either manually using the address switch on the rear of the SBB or automatically by the shelf connector. The default address is "automatic" to activate the shelf connector device address. (For detailed information on setting device addresses with the switches, see the StorageWorks Expansion Storage Pedestal User's Guide.)
- The shelf power slot is always slot 7 and does not have a device address.

### SUBSYSTEM BUILDING BLOCK (SBB) SHELVES

The following general configuration rules apply to SBB Shelves (Pedestal or Cabinet mounted enclosures). SBBs are the device carriers that house and connect the 3.5-inch Enclosures:

- Shelf capacity is measured by the number of 3.5-inch SBBs in the shelf.
- Each 3.5-inch SBB occupies one slot in a shelf.
- All Shelf power units and battery backup units (BBUs) are mounted in 3.5-inch modular carriers.
- Shelf power requirements are based on a maximum of seven 3.5-inch SBBs.
- All hard disk devices in a shelf must spin up sequentially under software or device firmware control at four second or greater intervals.

- A 5.25-inch SBB requires three slots for mounting.
- The 5.25-inch SBB can hold either one full-height (FH) or two half-height (HH) 5.25-inch devices.
- A 5.25-inch SBB with an FH device has one connector mounted in the center position.
- A 5.25-inch SBB with two HH devices has two connectors. The connector in the center position is for the lower HH device; the other connector is for the upper HH device.

## SCSI BUS

The following general configuration rules apply to StorageWorks SCSI buses:

- The maximum number of storage devices on a single (8-bit) single-ended SCSI-2 bus is seven.
- The maximum number of storage devices on a single wide (16-bit) single-ended SCSI-2 bus is seven (13 in the future).
- The total length of an 8-bit or 16-bit, single-ended, SCSI bus is the distance between the two bus terminators.
- The total length of an 8-bit or 16-bit, single-ended, SCSI bus operating at 10 MB/s or 20MB/s respectively cannot exceed 3.0 meters (9.8 feet).
- The total length of an 8-bit or 16-bit, single-ended, SCSI bus operating at 5 MB/s or 10MB/s respectively cannot exceed 6.0 meters (19.7 feet).
- All Hard Disk Drives, Solid State Disk Drives, and RAID Arrays are fast SCSI devices. Most other devices are standard SCSI devices.
- The rate at which data is transferred over an 8-bit or 16-bit, single-ended, SCSI bus is primarily determined by the capabilities of the host SCSI adapter, controller, and SCSI bus driver software. A controller is rated on the maximum rate at which it can transfer data (standard or fast). When the host system is powered-up, the SCSI controller polls each device on the SCSI bus to determine the rate at which each device can accept data. The SCSI controller retains this information and when it addresses data to a specific drive, it transfers it at the proper speed.

This capability enables the reliable transfer of data to both slow and fast devices on the same bus, provided the bus is designed as a fast bus with a maximum bus length of 3.0 meters (9.8 feet).

### NOTE

When the adapter can transmit at the fast rate and there is at least one fast device on the bus, the SCSI bus must be designed as a fast bus (maximum length 3.0 meters [9.8 feet]).

- The total length of a fast 8-bit or fast-wide 16-bit differential SCSI bus cannot exceed 25 meters (82 feet).
- To ensure the reliable transfer of data the maximum StorageWorks differential cable length is 20 meters (65.6 ft).
- A single, single-ended fast SCSI bus cannot be used for more than two shelves.
- All SCSI buses require termination at both ends of the bus.
- The single-ended SCSI buses are terminated on the last shelf on the bus.

**NOTE**

SCSI buses must be terminated at both ends to ensure proper operation. SBBs do not terminate a bus; a BA35X-MB terminator board must be installed on the Shelf backplane.

- The rules for installing SCSI bus terminators and jumpers are shelf specific and are included in the respective User Manual.
- Shelves are shipped configured as a single SCSI bus of 7 devices. The shelf can be user-configured for 2 SCSI buses of 3 and 4 devices by exchanging the backplane terminator (BA35X-MB (8-bit) or 54-23376-01 (16-bit)) and the backplane jumper (BA35X-MC (8-bit) or 54-23378-01 (16-bit)). The 8-bit terminator and jumper are installed on the shelf backplane. The 16-bit terminator and jumper must be special ordered.

For a detailed description of the StorageWorks shelf SCSI buses, including lengths, see the Expansion Storage Pedestal (SWXSE-06) Users Guide (EK-SMCPA-UG) or the Wide Expansion Storage Pedestal (SWXSE-22) Users Guide (EK-SMCPC-UG).

- The Desktop Expansion Unit (SWXSE-03) is configured as a single SCSI-2 bus with connections for 3 SBB's. One of the devices may be a half height 5.25-inch device. The Expansion Storage Pedestal does not require an external SCSI terminator. Termination is electronically implemented by self-sensing internal circuitry.

## **POWER SUPPLIES**

The following general configuration rules apply to StorageWorks power:

- Each shelf requires either an ac or dc input primary power unit.
- Each StorageWorks enclosure usually provides switch-controlled input voltages to the shelf power units.
- Each power unit can support a maximum of seven 3.5-inch SBBs or one 3.5-inch and two 5.25-inch SBBs.
- The shelf power unit must be mounted in slot 7 (power slot) of the shelf.
- An optional redundant power unit or an optional battery backup unit (BBU) can be mounted in slot 6 only.

## **DESKTOP EXPANSION UNITS**

Each StorageWorks Desktop Expansion unit can contain a maximum of three 3.5-inch SBBs or two 3.5-inch SBBs and one 5.25-inch half-height (HH) device. An ac power supply is integral to this unit.

The following general configuration rules apply to the desktop expansion unit:

- The unit can be installed either beneath the monitor or beneath the CPU. It can also be installed in the vertical position on the desktop.
- The unit is compatible with only SCSI-2 (8-bit) devices and is not compatible with Wide SCSI-2 (16-bit) devices. The unit is not supported by the SWXD3-SE disk (cooling insufficient).
- No service area is required.

## **EXPANSION STORAGE PEDESTALS**

The following general configuration rules apply to the StorageWorks expansion storage pedestals:

- Unless specifically stated otherwise, the shelf configuration rules apply to all Expansion Storage Pedestals.
- Each unit has an ac distribution unit that provides switch-controlled input voltages to the shelf power units.
- Each unit has a switched ac outlet for connecting a maximum of two units to the same wall receptacle.
- The unit can be installed without a front or rear service area.
- Slot 6 can be used for either a redundant power unit or a battery backup unit.

## **SWXSC-CA/CB DEPARTMENTAL CABINET**

The SWXSC-CA/CB data center cabinet has a maximum capacity of up to 10 SBB shelves. The following general configuration rules apply to this cabinet:

- Capacities are measured by the number of shelves that can be installed.
- Shelves are installed in the cabinet in a specific sequence to ensure that thermal stability is maintained. The installation sequence is model specific.
- Unless specifically stated otherwise, the shelf configuration rules apply to all cabinets.
- Front and rear service areas of approximately 0.9 meters (3.0 feet) are required.
- The SWXSC-CA/CB series data center cabinets have a single-phase ac distribution unit rated for either 240 Vac 50 Hz or 120 Vac 60 Hz.

## **SWXSC-DA/DB DATA CENTER CABINET**

The SWXSC-DA/DB data center cabinet is the largest StorageWorks storage enclosure and has a capacity of up to 24 SBB shelves. The following general configuration rules apply to this cabinet:

- Capacities are measured by the number of shelves that can be installed.
- Shelves are installed in the cabinet in a specific sequence to ensure that thermal stability is maintained. The installation sequence is model specific.
- Unless specifically stated otherwise, the shelf configuration rules apply to all cabinets.
- Front and rear service areas of approximately 0.9 meters (3.0 feet) are required.
- The SWXSC-DA/DB data center cabinet has a three-phase ac distribution unit rated for either 380-416 Vac 50 Hz or 120/208 Vac 60 Hz.
- A second cable distribution unit is required when more than 12 shelves are installed.

## **CONFIGURATOR FOR EXPANSION AND BACKUP**



## UNIX AND PC NETWORK CONFIGURATOR

The following configuration worksheets are an aid for you to insure that the StorageWorks packaging is adequate to hold your required expansion and backup storage.

**Please use the Platform/Operating System Matrix's on pages 6 to 18 to insure you are planning devices and packaging that is compatible with your system before you attempt to use the configurator worksheet.**

### WIDE SCSI-2 (16-bit) STORAGE EXPANSION

Disk Type	Formatted Capacity per Device	Qty	Total Capacity	Slots per SBB	Qty	Total Slots
<b>Magnetic Wide SCSI-2 (16-bit)</b>						
SWXD3-WB	2.10 GB	X	=	1	X	=
SWXD3-WC	1.05 GB	X	=	1	X	=
SWXBP-SD Redundant Power (optional)				1	X	=
Total 16-bit Capacity in GB =				Total 16-bit = Slots Req'd		

### WIDE SCSI-2 (16-bit) POWER & PACKAGING:

If you wish to install the foregoing devices into a new StorageWorks enclosure, then you must order the Wide Expansion Storage Pedestal.

Wide Expansion Storage Pedestal (SWXSE-22)	<u>3.5" SBB</u> 7
(7 maximum)	

### WIDE SCSI-2 (16-bit) ADAPTERS AND CABLES

If you require a host-based adapter and cable to interconnect between your StorageWorks wide expansion enclosure and the host system or if you require a cable to interconnect between your StorageWorks wide expansion enclosure and the host system's Wide SCSI-2 native interface then the following are available to configure your system...

<u>Description</u>	<u>Adapter/Kit Part #</u>	<u>Cable OnlyPart#</u>
IBM MicroChannel Bus Adapter, Fast Wide-Single-ended. Includes 2 meter cable and documentation.	SWBAP-BB	BN31R-02 (2 Meter)
IBM Feature 2415 Microchannel to Fast Wide SCSI-2 adapter for RS/6000.	N/A	BN31R-02 (2 Meter)
SBUS Adapter, Fast Wide Single-ended. Includes media, 2 meter cable and documentation.	SWSAP-BB	BN21K-02 (2 Meter)
Sun X1063A Sbus to Fast Wide SCSI-2 Adapter	N/A	BN21K-02 (2 Meter)
EISA to FWSE cable for PCs	N/A	BN21K-02 (2 Meter)
PCI to FWSE cable for PCs	N/A	BN21K-02 (2 Meter)

**SCSI-2 (8-bit) STORAGE EXPANSION**

Disk Type	Formatted Capacity per Device	Qty	Total Capacity	Slots per SBB	Qty	Total Slots
<b>Magnetic SCSI-2 (8-bit)</b>						
SWXD3-SB	2.10 GB	X	=	1	X	=
SWXD3-SC	1.05 GB	X	=	1	X	=
SWSD3-SB	2.10 GB	X	=	1	X	=
SWSD3-SC	1.05 GB	X	=	1	X	=
SWXD3-SE	4.29 GB	X	=	1	X	=
<b>Solid State</b>						
SWSE5-RA	107 MB	X	=	3	X	=
SWSE5-RB	428 MB	X	=	3	X	=
<b>Power Supply</b>						
SWXBP-SD Redundant Power (optional)				1	X	=
Total 8-bit Capacity in GB =				Total 8-bit = Slots Req'd		
<b>CD-ROM</b>						
SWXOR-BA (SBB)	0.600 GB	X	=	3	X	=
SWXOR-BB (Upgrd) <sup>1</sup>	0.600 GB	X	=	0	X	=
SWXOR-BC (Desktop) <sup>2</sup>	0.600 GB	X	=	1	X	=
SWXOR-BD (3 SBB)	1.86 GB	X	=	3	X	=
SWXOR-CA (SBB)	0.600 GB	X	=	3	X	=
SWXOR-CB (Upgrd) <sup>1</sup>	0.600 GB	X	=	0	X	=
SWXOR-CC (Desktop) <sup>2</sup>	0.600 GB	X	=	1	X	=
Total Capacity in GB =				Total Slots = Required		

1. Each SWXOR-xB fits into an SWXTE-AA or SWXOR-xA SBB.
2. One Slot in Desktop Expansion Unit only.

**BACKUP**

If you desire a back-up solution for your Storage, the following solutions are available to you:

Labor Intensity	Relative Capacity	Solution
Manual	Small-Medium	Tape Device with native or Storage Management Software
Semi-Automated	Medium	Tape Device with native or application Storage Management Software
Automated	Medium-Large	Tape Loader with native or application Storage Management Software

**Tape Device Solution Options:**

Tape Type	Tape Capacity	Qty	Total Capacity	Qty	Slots Used	Total Slots
<b>4mm:</b>						
SWXTA-AA SBB	2/4 GB <sup>1</sup>	X	=	X	1	=
SWXTA-BA SBB	4/8 GB <sup>1</sup>	X	=	X	1	=
<b>8mm</b>						
SWXTE-AA (SBB)	5/10GB <sup>1</sup>	X	=	X	3	=
SWXTE-AB (Upgrd) <sup>2</sup>	"	X	=	X	0	=
SWXTE-AC (Desktop) <sup>3</sup>	"	X	=	X	1	=
<b>DLT</b>						
SWXTL-AA	6 GB	X	=	X	3	=
SWXTL-BA	10/20 GB <sup>1</sup>	X	=	X	3	=
			Total Capacity =	Total Slots Required =		

1. Be sure tape capacity is sufficient to backup magnetic hard drive and solid state devices. The slashed numbers represent the uncompressed and compressed capacity of the tape.
2. Each SWXTE-AB fits into an SWXTE-AA or SWXOR-xA SBB.
3. One Slot in Desktop Expansion Unit only.

**SBB Loader Backup Solutions:**

Tape Type	Tape Capacity	Qty	Total Capacity	Qty	Slots Used	Total Slots
<b>4mm</b>						
SWXTA-LA	8/16 GB <sup>1</sup>	X	=	X	3	=
			Total Slots Required =			

**STANDALONE (NON-SBB) BACKUP SOLUTIONS:**

SWXTL-BT 10/20 GB, TZ87-series, Digital Linear Tape (DLT), Table Top Model  
 SWXTL-BL 50/100 GB, TZ875-series, Digital Linear Tape (DLT) 5-cartridge Loader Table-Top Model

Note: Table Top unit includes appropriate country power cord, documentation, tape, cleaning cartridge, and SCSI terminator. Units are 120v/240v 50/60 Hz compatible. Order the appropriate external SCSI cable from the below (Note: the connector style may vary by SCSI adapter manufacturer):

From	To	Cable Required
SWXTL-BT, BL (Low density connector)	ISA SCSI adapter (Low density connector)	BC19J-03 (1 meter) BC19J-06 (2 meter)
SWXTL-BT, BL (Low density connector)	PCI, EISA, or Sbus SCSI adapter or SWXSE-06 or -03 (High density connector)	BN23G-01 (1 meter) BN23G-02 (2 meter)

**STANDALONE (NON SBB) OPTICAL SOLUTION:**

The following are the optical jukebox device and kits which are available. Optical jukeboxes are supplied with a cable suitable for ISA SCSI adapter attachment. When attached to an EISA SCSI adapter, a BN23G-01 or BN23G-02 cable must be separately ordered.

Optical	Description	Part #
Jukeboxes:	19 GB Multifunction	SWXOW-JA
	38 GB Multifunction	SWXOW-JB
	19 GB Multifunction w/16 media	SWXOW-MA
	38 GB Multifunction w/32 media	SWXOW-MB
	114 GB Multifunction	SWXOW-JC
	187 GB Multifunction	SWXOW-JD

**SCSI-2 (8-bit) POWER & PACKAGING:**

Add number slots required from ...

STORAGE EXPANSION	Slots Required _____
	+
BACK-UP	_____

Total Slots Required =

If you wish to install the foregoing devices into a new StorageWorks enclosure the following configuration rules apply...

1. If you have specified 3.5" disk and tape devices, you may install up to three devices into a Desktop Expansion Unit or up to seven devices into a Expansion Storage Pedestal. Future requirements should be considered before making this decision. A Desktop Expansion Unit will hold A) one, two, or three 3.5" devices or B) one or two 3.5" devices \*and\* one 5.25" half height device as the table below indicates...

	<u>3.5" SBB</u>	<u>5.25" SBB</u>	<u>5.25"HH</u>
Desktop Expansion Unit (SWXSE-03)	or 3	No	0
(3 maximum)	2	No	1

2. If you have specified greater than three 3.5" devices, or any 5.25" full height device, or two 5.25" half height devices, then you must order the Expansion Storage Pedestal.

	<u>3.5" SBB</u>	<u>5.25" SBB</u>	<u>5.25"HH</u>
Expansion Storage Pedestal (SWXSE-06)	or 7	0	0
1or2/SBB	or 4	1	2 (in 5.25" SBB)
(7 maximum)	1	2	4 (in 5.25" SBB)

## ADAPTERS AND CABLES<sup>1</sup>

If you require a host-based adapter and cable to interconnect between your StorageWorks expansion enclosure and the host system or if you require a cable to interconnect between your StorageWorks expansion enclosure and the host system's SCSI-2 native interface then the following are available to configure your system...

<u>Description</u>	<u>Adapter/Kit Part #</u>	<u>Cable Part#</u>
EISA – SCSI Adapter for PC systems	FR-PCTAZ-CC	BN21H-02 (2 Meter)
ISA – SCSI Adapter for PC systems	FR-PCTAZ-AE	BN23G-02 (2 Meter)
PCI – SCSI Adapter for PC systems	FR-PCTAZ-DA	BN21H-02 (2 Meter)
SBUS Fast Single-End SCSI-2 Adapter for Sun systems with 2 meter Cable	SWSAP-AB	BN21H-02 (2 Meter)
Sun 1052A Sbus – Fast Diff SCSI/Ethernet	N/A	BN21H-02 (2 Meter)
Sun 1053A Sbus – Fast SCSI/Ethernet	N/A	BN21H-02 (2 Meter)
Sun 1054A Sbus – SCSI/Ethernet	N/A	BN21H-02 (2 Meter)
Sun 1055A Sbus – SCSI Host Adapter	N/A	BN21H-02 (2 Meter)
HP 25525B HP-supplied SCSI-2 to EISA adapter for HP9000/700 systems (FD)	N/A	BN21H-02 (2 Meter)
HP 2679A HP-supplied SCSI-2 to EISA adapter for HP9000/700 systems (FSE)	N/A	BN21H-02 (2 Meter)
HP 28655A HP-supplied SCSI-2 to HP-PB adapter for HP9000/800 systems (FSE)	N/A	BN21H-02 (2 Meter)
2410 IBM-supplied SCSI-2 to Microchannel adapter for RS/6000 systems (FSE)	N/A	BN31R-02 (2 Meter)

### NOTE:

1. See Appendix B for multiple SCSI-2, 8-bit Expansion Storage Pedestal configurations.

## CONFIGURATOR FOR RAID

### GENERAL RULES

If you want Redundant Array of Independent Disk (RAID) Technology, StorageWorks provides several choices for your selection:

- RAID Level 0: Striping. No redundancy
- RAID Level 1: Mirroring or Shadowing. Full redundancy
- RAID Level 0+1: Mirroring + Striping. Full redundancy
- RAID Level 3: Striping. Full redundancy
- RAID Level 5: Striping with Striped Parity. Full redundancy

### NEW SUBSYSTEM CONFIGURING:

If you are ordering a complete RAID Array Subsystem and you are not adding capacity to an existing RAID Array Subsystem, use the following Five Step method:

- STEP 1: Determine the key parameters of the desired RAID subsystem (RAID level, usable capacity, number of disks, etc.). Tables 1 identifies some key configuration rules to help you identify the best solution.
- STEP 2: Choose the appropriate RAID Subsystem configuration from Tables 2 and 3 (RAID Array 110), Tables 5, 6 and 7 (RAID Array 210) or Tables 9 and 10 (RAID Array 410). This involves selecting a base system, the right number of expansion pedestal enclosures (RAID Arrays 110 and 210) and the appropriate number of disk drive 5-packs or single disk drives.
- STEP 3: Order the Platform Kit for your operating system from Table 4 (RAID Array 110), Tables 6, and 7 (RAID Array 210) or Table 11 (RAID Array 410). The Platform Kit includes Operating System drivers, RAID utilities, a SCSI host adapter, and RAID controller to host or drive SCSI cables.
- STEP 4: Pick disk drives from Table 4 (RAID Array 110) or Table 8 (RAID Array 210) or Table 11 (RAID Array 410).
- STEP 5: Configuration/Ordering Information:  
In order for the manufacturing plant to know how to assemble the RAID subsystem, it is important that the items be listed on the purchase order in the sequence listed above. (NOTE: This rule does not apply in Europe. European orders require the addition of part number SWXVM-AA to designate Configure to Order.) The RAID Subsystem or RAID Enclosures must be listed before the disk drive 5-packs, platform kit, and additional options.

**SUBSYSTEM EXPANSION/UPGRADES:**

If you already have a StorageWorks RAID Array Subsystem and want to add additional capacity use the following 3 Step process:

- STEP 1: Identify the existing configuration (number of enclosures and drives).
- STEP 2: Determine the target configuration with aid of Table 1, Table 3 (RAID Array 110), Tables 6 and 7 (RAID Array 210) and Tables 9 and 10 (RAID Array 410).
- STEP 3: Add the components listed in Table 4 (RAID Array 110), Tables 6 and 8 (RAID Array 210) or Table 11 (RAID Array 410) to upgrade from the current configuration to the desired one.

**Table 1 Key RAID Configuration Rules**


---

Percentage of usable disk capacity :	
RAID 0:	100%
RAID 1:	50%
RAID 0+1:	50%
RAID 3, 5:	$(n-1)/n$ %, where n= total number of drives per rank (eg. 5 drive = 80%)
Number of Logical Units supported by Operating System:	
SunOS 4.1	8
Solaris 2.2/2.3	8
IBM AIX 3.2	8
HP-UX 9.04	8
Novell Netware	8
Windows NT	8
SCO Unix	8
DOS	1

---

## Raid Array Subsystem 110 Configuration Rules

**Table 2 RAID Array 110 Subsystem Disk Drive Requirements**

RAID Level	Drives <sup>1</sup> per Logical Unit <sup>2</sup>	Comments
0,1,5	N/A	All drives within a RAID set must be of the same vendor type and capacity.
0	2 to 10	None
1	2 to 10	Must specify an even number of drives.  The mirrored pairs are created by grouping the first and second drive you enter as the first pair; the third and fourth drives as the second pair; and so forth.  Mirrored pair drives cannot be on the same channel.
5	3 to 5	Each drive must be on a separate channel.

- Types of devices supported: SCSI-2 (8 bit) Disk drives only. SWXD3-SC (1.05GB) and SWXD3-SB (2.1GB) disk drives are qualified. All disks in a RAID set must be of the same vendor type and capacity. If all drives in a set are replaced, a larger capacity drive can be used.
- A logical unit is a grouping of drives that has its own device SCSI ID and number (LUN). A logical unit appears as a single drive to the host. For most purposes, a logical unit is equivalent to an array.

**Table 3 RAID Array 110 Subsystem New Subsystems and Subsystem Upgrades**

Number of disk drives	Part Numbers (Order the parts listed. Numbers in parenthesis denote quantities)
5 Disk Drives	1) SWXRA-01 - RAID Subsystem w/out disk drives. 2) SWXDB-5x - Disk Drive 5-pack (select from Table 4)
10 Disk Drives	1) SWXRA-01 - RAID Subsystem w/out disk drives. 2) SWXSE-01 - Dual Expansion Pedestal 3) (2) SWXDB-5x - Disk Drive 5-packs (from Table 4)
15 Disk Drives	1) SWXRA-01 - RAID Subsystem w/out disk drives. 2) SWXSE-01 - Dual Expansion Pedestal 3) (3) SWXDB-5x - Disk Drive 5-packs (from Table 4)
20 Disk Drives	1) SWXRA-01 - RAID Subsystem w/out disk drives. 2) (2) SWXSE-01 - Dual Expansion Pedestals 3) (4) SWXDB-5x - Disk Drive 5-packs (from Table 4)
25 Disk Drives	1) SWXRA-01 - RAID Subsystem w/out disk drives. 2) (2) SWXSE-01 - Dual Expansion Pedestals 3) (5) SWXDB-5x - Disk Drive 5-packs (from Table 4)
30 Disk Drives	1) SWXRA-01 - RAID Subsystem w/out disk drives. 2) (2) SWXSE-01 - Dual Expansion Pedestals 3) (6) SWXDB-5x - Disk Drive 5-packs (from Table 4)

The jumpers and terminators for the upgraded subsystems must be configured at installation time. Upgrades are incremental; for example, to expand a 5 drive system to a 20 drive system, you must order the 5 to 10 drive upgrade, *plus* the 10 to 15 drive upgrade, *and* the 15 to 20 drive upgrade. All disks in a RAID set must be of the same vendor type and capacity.



**Table 4 StorageWorks RAID Array 110 options**

Part Number	Description
SWXRA-01	StorageWorks Drive-Ready RAID Array 110 Subsystem. Includes a dual pedestal enclosure with 2 Power distribution units and power supplies; an HSZ10 RAID controller; Documentation. A USA/Japan 120V power cord is included.
SWXSE-01	StorageWorks Drive-Ready dual pedestal enclosure for RAID Array 110 storage expansion. Includes two separate pedestal enclosures. Each pedestal includes one power distribution unit and one power supply, and supports an additional (redundant) power supply or a battery backup unit (BBU). The SWXSE-01 accepts up to 2, 3.5" Disk Drive 5-packs. Includes 4 SCSI cables (BN21H-03) and Documentation. A USA/Japan 120V power cord is included.
Sun Platform Kit: SWSK-AA	The Sun Platform Kit includes RAID Utility Software License, Platform SWSK-AA documentation, and binaries for SunOS 4.1.3 or later (3.5-inch diskettes or CD-ROM); Solaris 2.2 or later (3.5-inch diskettes or CD-ROM); Sbus to fast wide differential SCSI Host Adapter (SWSA1-AA) and a controller to host adapter SCSI (68 pin to 68 pin) cable (BN21N-03).
Novell Netware <sup>1</sup> Platform Kit: SWIKN-AA	Novell Netware Platform Kit for use with Intel systems. Includes RAID Utility Software License ,documentation, and binaries for Novell Netware (3.5" Floppy media); EISA to SCSI Host Adapter (SWXA1-AA) with device drivers, license and binaries (3.5" floppy media), BN21P-OB Y-cable; BN21K (68 pin-68 pin) cable.
MS DOS Platform Kit: SWIKM-AA	MS DOS Platform Kit for use with Intel systems. Includes RAID Utility: Software License, documentation, and binaries for MS DOS (3.5" Floppy media); EISA to SCSI Host Adapter (SWXA1-AA) with device drivers, license and binaries (3.5" floppy media), BN21P-OB (Y-cable); BN21K (68 pin-68 pin) cable.
SCO UNIX Platform Kit: SWIKS-AA	SCO UNIX Platform Kit for use with Intel systems Includes RAID Utility Software License, documentation, and binaries for SCO UNIX (3.5" Floppy media); EISA to SCSI Host Adapter (SWXA1-AA) with device drivers, License and binaries (3.5" floppy media), BN21P-OB (Y-cable); BN21K (68 pin-68 pin) cable.
SWXDB-5B	StorageWorks Disk Drive 5-Pack: Five, 2.1 GB
SWXDB-5C	StorageWorks Disk Drive 5-Pack: Five, 1.05 GB
SWXBP-SB	Battery Backup unit
SWXCR-01	RAID Array controller
SWXBP-SA	131-watt AC power supply
SWXD3-SB	Spare 2.10 GB disk drive in SBB
SWXD3-SC	Spare 1.05 GB disk drive in SBB
BN27S-03	USA/Japan 120 VAC
BN19H-2E	Australia/New Zealand 220 VAC
BN19C-2E	Central Europe 220 VAC
BN19A-2E	U.K./Ireland 240 VAC
BN19E-2E	Switzerland 220 VAC
BN19K-2E	Denmark 220 VAC
BN19M-2E	Italy 220 VAC
BN19S-2E	India/South Africa 220 VAC
BN18L-2E	Israel

1. The RAID Array 110 product for Novell contains an EISA to SCSI Host Adapter that can be used in the same system with other DPT SCSI host adapters. When used in the same system with other manufacturer's EISA to SCSI host adapters, call 1-800-STORWOR for specific configuration rules. (In Europe, call +31-80-52-9805.)

## Raid Array Subsystem 210 Configuration Rules

The RAID Array 210 Subsystem consists of one or more RAID 21x controllers connected to one or more StorageWorks Expansion Units. StorageWorks expansion units are required to fully implement RAID Array 210's fault management features, such as Auto-Rebuild Upon Drive Replacement. (Also see Tables 1 and 5.)

- Maximum LUNs per Controller: 8
- Maximum drive groups per controller: 8
- Maximum disks in each group: 8

### General Rules

The 1-channel RAID Array 211 controller board requires 1 EISA bus slot  
 The 3-channel RAID Array 213 controller board requires 2 EISA bus slots  
 Maximum number of controller boards per system: 2  
*Remember to add a disk if you desire one as a hot spare*

### RAID Array 210 Subsystems

**Table 5 RAID Array 210 Subsystem Disk Drive Requirements**

RAID Level	Drives <sup>1</sup> per Logical Unit <sup>2</sup>	Comments
0,1,5	N/A	None
0	2 to 8	one
1	2 to 8	Must specify an even number of drives.  The mirrored pairs are created by grouping the first and second drive you enter as the first pair; the third and fourth drives as the second pair; and so forth.  Mirrored pair drives cannot be on the same channel.
5	3 to 8	None

1. Types of devices supported: Disk drives only. SWXD3-SC (1.05GB) and SWXD3-SB (2.1GB) disk drives are qualified. Wide disk drives SWXD3-WB and SWXD3-WC are not compatible with RAID Array 210. All disks in a RAID set must be of the same vendor type and capacity. If all drives in a set are replaced, a larger capacity drive can be used. Note: a tape device can be placed in the same Expansion Storage Pedestal if connected to a separate SCSI Adapter.
2. A logical unit is a grouping of drives that has its own device SCSI ID and number (LUN). A logical unit appears as a single drive to the host. For most purposes, a logical unit is equivalent to an array.

StorageWorks offers two completely configured subsystems (see Table 6).

**Table 6 Preconfigured RAID Array 210 Subsystems**

<b>SWIRA-BA</b>	<b>Complete StorageWorks RAID Array 210-3150 Subsystem consisting of:</b>		
	1	SWIKX-BA	StorageWorks RAID Array 211 Controller Kit with: one-channel RAID Controller, SCSI cable, DOS, Netware 3.x/4.x and Windows NT 3.1/3.5 driver kits, and RAID utilities
	1	SWXSE-06	Expansion Storage Pedestal
	1	SWXBP-SA	Additional AC Power Supply (131 watts)
	3	SWXD3-SC	1.05 GB Disk Drives
<b>SWIRA-BB</b>	<b>Complete StorageWorks RAID Array 210-6300 Subsystem consisting of:</b>		
	1	SWIKX-BA	StorageWorks RAID Array 211 Controller Kit with: one-channel RAID Controller, SCSI cable, DOS, Netware 3.x/4.x and Windows NT 3.1/3.5 driver kits, and RAID utilities
	1	SWXSE-06	Expansion Storage Pedestal
	1	SWXBP-SA	Additional AC Power Supply (131 watts)
	3	SWXD3-SB	2.10 GB Disk Drives

To configure a system that is not listed above, refer to Tables 7 and 8.

**Table 7 RAID Array 210 Subsystems - New Subsystems and Subsystem Upgrades**

<b>Number of Drives</b>	<b>Part Numbers</b>
2-3	SWIKX, SWXSE-06, or SWXSE-03 <sup>1</sup> , n drives
2-7 <sup>3</sup>	SWIKX-BA <sup>2</sup> , SWXSE-06, n drives
8-14	SWIKX-BB, (2) SWXSE-06, n drives
15-21	SWIKX-BB, (3) SWXSE-06, n drives
22-28	(2) SWIKX-BB or (1) SWIKX-BA and (1) SWIKX-BB, (4) SWXSE-06, n drives
29-35	(2) SWIKX-BB, (5) SWXSE-06, n drives
36-42	(2) SWIKX-BB, (6) SWXSE-06, n drives

1. If future expansion is anticipated, consider using a Expansion Storage Pedestal
2. If future expansion is anticipated. consider a 3-channel controller (SWIKX-BB) as the 1-channel cannot be upgraded.
3. Six disks can be placed in the enclosure if a redundant power supply or backup battery supply is used.

**Table 8 StorageWorks RAID Array 210 Options**

<b>Part Number</b>	<b>Description</b>
SWIKX-BA	StorageWorks RAID Array 211 System with one-channel EISA Backplane RAID Controller with 4MB cache, packaged with RAID configuration and management utilities; operating system drivers; Installation, Configuration, and User's guides, and a 2 meter SCSI cable for connection to an external enclosure.
SWIKX-BB	StorageWorks RAID Array 213 System with three-channel EISA Backplane RAID Controller with 4MB cache, packaged with RAID configuration and management utilities; operating system drivers; Installation, Configuration, and User's guides, and necessary SCSI cables for connection to three external enclosures.
SWXSE-06	Storage Expansion Pedestal
SWXSE-03	Desktop Expansion Unit
SWXBP-SC	Battery Backup
SWXBP-SA	AC Power Supply (131 watt)
SWXD3-SC	1.05 GB, 3.5-inch Disk Drive
SWXD3-SB	2.10 GB 3.5-inch Disk Drive
BN27S-03	USA/Japan 120 VAC
BN18L-2E	Israel 220 VAC
BN19H-2E	Australia/New Zealand 220 VAC
BN19C-2E	Central Europe 220 VAC
BN19A-2E	U.K./Ireland 240 VAC
BN19E-2E	Switzerland 220 VAC
BN19K-2E	Denmark 220 VAC
BN19M-2E	Italy 220 VAC
BN19S-2E	India/South Africa 220 VAC

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## Raid Array Subsystem 410 Configuration Rules

**Table 9 RAID Array 410 Subsystem Disk Drive Requirements**

RAID Level	Drives <sup>1</sup> per Logical Unit <sup>2</sup>	Comments
0, 3, 5	3 to 14	Each drive should be on a separate channel or the drives should be distributed evenly over the 6 drive channels

1. Types of devices supported: Disk drives only. SWXD3-SC (1.05GB) and SWXD3-SB (2.1GB) disk drives are qualified. If all drives in a set are replaced, a larger capacity drive can be used.

2. A logical unit is a grouping of drives that has its own device SCSI ID, target unit number and logical unit number (LUN). A logical unit appears as a single drive to the host.

**Table 10 RAID Array 410 Subsystem New Subsystems and Subsystem Upgrades**

Total Subsystem Capacity Required <sup>1</sup>	Part Numbers (Order the parts listed. Numbers in parenthesis denote quantities)
12.6GB RAID0,JBOD 10.5GB RAID3,5	1) SWXRA-YX - RAID-Ready RAID Subsystem w/ one 2.1GB disk drive. 2) (5) SWXD3-SB - Disk Drives (select from Table 11) <b>or</b> 1) SWXRA-YA - 10GB RAID Array 410 Subsystem w/ six 2.1GB disk drives.
25.2GB RAID0,JBOD 21.0GB RAID3,5	1) SWXRA-YX - RAID-Ready RAID Subsystem w/ one 2.1GB disk drive. 2) (11) SWXD3-SB - Disk Drives (select from Table 11) <b>or</b> 1) SWXRA-YB - 20GB RAID Array 410 Subsystem w/ twelve 2.1GB disk drives.
37.8GB RAID0,JBOD 31.5GB RAID3,5	1) SWXRA-YX - RAID-Ready RAID Subsystem w/ one 2.1GB disk drive. 2) (17) SWXD3-SB - Disk Drives (select from Table 11) <b>or</b> 1) SWXRA-YB - 20GB RAID Array 410 Subsystem w/ twelve 2.1GB disk drives 2) (6) SWXD3-SB - Disk Drives (select from Table 11)
50.4GB RAID0,JBOD 42.0GB RAID3,5	1) SWXRA-YX - RAID-Ready RAID Subsystem w/ one 2.1GB disk drive. 2) (23) SWXD3-SB - Disk Drives (select from Table 11) <b>or</b> 1) SWXRA-YD - 40GB RAID Array 410 Subsystem w/ twenty four 2.1GB disk drives

1. JBOD or Just A Bunch of Drives refers to configuring each disk drive as a LUN. RAID3 and RAID5 usable capacity per LUN equals the number of disks in the LUN minus one. Six disk LUN's are recommended to optimize subsystem performance.

**Table 11 StorageWorks RAID Array 410 options**

<b>Part Number</b>	<b>Description</b>
SWXRA-YX	StorageWorks RAID-Ready RAID Array 410 Subsystem. Includes RAID 410 Controller, Office Expansion RAID Enclosure, one 2.1GB disk drive, five power supplies.
SWXRA-YA	StorageWorks 10GB RAID Array 410 Subsystem. Includes RAID 410 Controller, Office Expansion RAID Enclosure, six 2.1GB disk drives, five power supplies.
SWXRA-YB	StorageWorks 20GB RAID Array 410 Subsystem. Includes RAID 410 Controller, Office Expansion RAID Enclosure, twelve 2.1GB disk drives, five power supplies.
SWXRA-YD	StorageWorks 40GB RAID Array 410 Subsystem. Includes RAID 410 Controller, Office Expansion RAID Enclosure, twenty-four 2.1GB disk drives, five power supplies.
SWXRC-04	StorageWorks RAID 410 Controller for RAID storage subsystem, SCSI interface, with 32MB Read and Write-Back Cache, RAID License.
SWSK-CA	StorageWorks Solaris Platform Kit. For use with RAID Array 410. Includes Sun Manager V1.0 (GUI), License, FWD Adapter, cable, documentation.
SWSK-CB	StorageWorks SunOs Platform Kit. For use with RAID Array 410. Includes FWD Adapter, cable, documentation.
SWHK8-CB	StorageWorks HP-UX Platform Kit for Series 800 systems. For use with RAID Array 410. Includes FWD Adapter, cable, documentation.
SWBK-CB	StorageWorks AIX Platform Kit. For use with RAID Array 410. Includes FWD Adapter, cable, documentation.
SWXD3-SC	StorageWorks 1.05GB SCSI-2 (8-bit) disk mounted in 3.5" building block.
SWXD3-SB	StorageWorks 2.1GB SCSI-2 (8-bit) disk mounted in 3.5" building block.
SWXD3-SE	StorageWorks 4.29GB SCSI-2 (8-bit) disk mounted in 3.5" building block.
SWXBP-SB	StorageWorks replacement AC Power Supply in 3.5" building block for OfficeExpansion RAID Enclosure Subsystems (SWXRA-Yx).
SWXBP-SD	StorageWorks 150W AC Power Supply in 3.5" building block recommended for replacement or redundant power for Office Expansion RAID Enclosure Subsystems (SWXRA-Yx).
SWXBP-AA	StorageWorks AC Power Entry Controller for Office Expansion RAID Enclosure Subsystems (SWXRA-Yx).
SWXBE-AA	StorageWorks Environmental Monitor Unit for Office Expansion RAID Enclosure Subsystems (SWXRA-Yx).
SWXBP-SC	Battery Backup unit
BN27S-03	USA/Japan 120 VAC
BN19H-2E	Australia/New Zealand 220 VAC
BN19C-2E	Central Europe 220 VAC
BN19A-2E	U.K./Ireland 240 VAC
BN19E-2E	Switzerland 220 VAC
BN19K-2E	Denmark 220 VAC
BN19M-2E	Italy 220 VAC
BN19S-2E	India/South Africa 220 VAC
BN18L-2E	Israel

## APPENDIX A

### ORDERING CONFIGURED SUBSYSTEMS

Devices that are listed before Enclosures, on an order, are assumed to be spare devices that will be shipped as loose pieces. Those devices that are listed after the Enclosure will be integrated and tested in the Enclosure and will be shipped as a configured subsystem. (Note: This rule does not apply in Europe. European orders require the addition of part number SWXVM-AA to designate Configure to Order.)

StorageWorks Expansion and Backup Devices may be pre-installed into your Desktop Enclosure or Expansion Storage Pedestal by listing your devices under the enclosure you wish the device to be pre-installed in. Examples:

EXAMPLE 1)

Qty	Part #	Description	Slots
1	SWXSE-03	Desktop Expansion	3 Avail
1	SWSD3-SC	Sun 1 GB Disk drive	1 Used
1	SWSD3-SB	Sun 2 GB Disk drive	1 Used
1	SWXTA-BA	4/8 GB 4mm Tape drive	<u>1 Used</u>
			0 Spare

Result: You will receive a 1GB disk, 2GB disk, and 4MM tape pre-installed in the StorageWorks Desktop Expansion Enclosure.

EXAMPLE 2)

Qty	Part #	Description	Slots
1	SWXD3-SB	2GB Disk drive	N/A
1	SWXSE-03	Desktop Expansion	3 Avail
1	SWXD3-SC	1GB Disk drive	1 Used
1	SWXTA-BA	4/8GB 4MM Tape drive	<u>1 Used</u>
			1 Spare

Result: You will receive a 1GB and 4MM tape pre-installed in the StorageWorks Desktop Expansion Enclosure. You will also receive a 2GB drive in a separate package.

EXAMPLE 3)	Qty	Part #	Description	Slots
	1	SWXSE-06	Expansion Storage Pedestal	7 Avail
	2	SWXD3-SC	1GB Disk drive	2 Used
	2	SWXD3-SB	2GB Disk drive	2 Used
	1	SWXTE-AA	5/10GB 8MM Tape drive	3 Used
	1	SWXTE-AB	5/10GB 8MM Tape Upgrd	<u>0 Used</u>
				0 Spare

Result: You will receive two 1GB drives, two 2GB drives, and two 8MM Tape drives pre-installed in the StorageWorks Expansion Storage Pedestal. Note that the two 8MM tapes share a single 5.25" SBB which takes up three 3.5" slots.

EXAMPLE 4)	Qty	Part #	Description	Slots
	1	SWXTE-AA	5/10GB 8MM Tape drive	N/A
	1	SWXTE-AB	5/10GB 8MM Tape Upgrd	N/A
	1	SWXSE-06	Expansion Storage Pedestal	7 Avail
	1	SWXD3-SC	1GB Disk drive	1 Used
	1	SWXD3-SB	2GB Disk drive	1 Used
	1	SWXTL-BA	10/20 GB DLT Tape Drive	<u>3 Used</u>
				2 Spare

Result: You will receive one 1GB drive, one 2GB drive, and one DLT Tape drive pre-installed in the StorageWorks Expansion Storage Pedestal. Two slots remain unused in the pedestal and are available for your future expansion requirements. You will also receive the two 8MM tapes in a separate package bundled together in a single 5.25" SBB)

EXAMPLE 5)	Qty	Part #	Description	Slots
	1	SWSE5-RA	107MB SolidStateDisk	N/A
	1	SWXSE-06	Expansion Storage Pedestal	7 Avail
	1	SWSD3-SC	Sun 1GB Disk drive	1 Used
	1	SWSD3-SB	Sun 2GB Disk drive	1 Used
	1	SWXOR-BA	600MB CDROM	<u>3 Used</u>
				2 Spare

Result: You will receive one 1GB drive, one 2GB drive, and one CDROM drive pre-installed in the StorageWorks Expansion Storage Pedestal. Two slots remain unused in the pedestal and are available for your future expansion requirements. You will also receive the one 107MB Solid State Disk in a separate package.

With the above examples and your previous configuration worksheets you are ready to specify an order with the devices and enclosure boxes you want and the configuration you want for your storage expansion.

Qty	Part #	Description	Slots
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## APPENDIX B

### CABLING GUIDELINES

SCSI cabling between the various StorageWorks products is critical to proper operation of the system. ISA and IBM Wide SCSI-2 (16 bit) interfaces are low-density connector interfaces and the EISA, HP, IBM SCSI-2 (8 bit) and Sun interfaces are high-density connector interfaces. Because of this density difference, the cables will be different for the specific application. Cables are also different between 8 bit and 16 bit SCSI-2 connections.

#### CABLING RULES:

- A fast, narrow 8 bit or wide 16 bit, single-ended SCSI bus, including internal wiring and external cabling, can have a maximum length of 3 meters (EISA, HP, IBM and Sun).
- A standard, narrow 8 bit or wide 16 bit, single-ended SCSI bus, single-ended SCSI bus, including internal wiring and external cabling, can have a maximum length of 6 meters (ISA).
- SWXSE-06 and SWSE-22 units have an internal backplane wire length of 0.9 meters.
- SWXSE-06, SWSE-22 and SWXSE-03 units have high-density interface connectors.
- Desktop Digital Linear Tape Drive units have a low-density interface connector.
- Disk drives require a fast narrow (8 bit) or wide (16 bit) interface and tape drives require a standard narrow interface.
- Cable lengths should be optimized for the shortest total length.

Cables that are available, their length, density are shown below:

CABLE PART NUMBER	LENGTH (METERS)	DENSITY H=Hi, L=Lo, 16=16 Bit
BN21H-0C <sup>1</sup>	0.3	H/H
BN21H-0E <sup>1</sup>	0.5	H/H
BN21H-01 <sup>1</sup>	1.0	H/H
BN21H-1E <sup>1</sup>	1.5	H/H
BN21H-02 <sup>1</sup>	2.0	H/H
BN21H-03 <sup>1</sup>	3.0	H/H
BN23G-01	1.0	L/H
BN23G-02	3.0	L/H
BN19J-03	1.0	L/L
BN19J-06	2.0	L/L
BN21K-01	1.0	H16/H16
BN21K-02	2.0	H16/H16
BN21K-05	5.0	H16/H16
BN21K-10	10.0	H16/H16
BN31R-02	2.0	L16/H16
BN31R-03	3.0	L16/H16

**EXAMPLES:**

**Note**

To minimize cable lengths, connections to the Expansion Storage Pedestal (SWXSE-06) may be made through the knockout panels located on the four corners of the pedestal's side panels. Observe "cabling rules" when choosing cable part numbers and associated cable lengths.

Cabling Requirement	Cable(s) to be used
<b>Fast, Narrow, Single-ended SCSI Connections</b>	
Sun, HP, IBM or EISA unit attached to 1 SWXSE-06	
1 cable between System SCSI connector and SWXSE-06	BN21H-01 or BN21H-1E
Sun, HP, IBM or EISA unit attached to 2 SWXSE-06s:	
1 cable between System SCSI connector and 1st SWXSE-06	BN21H-01
1 cable between SWXSE-06s (Bus on second SWXSE-06 must be split)	BN21H-0E
EISA or Sun unit attached to SWXSE-06 and Desktop Digital Linear Tape Drive:	
1 cable between EISA connector and SWXSE-06	BN21H-01 or BN21H-1E
1 cable between SWXSE-06 and Desktop Digital Linear Tape Drive	BN23G-01
Sun, HP, IBM or EISA unit attached to SWXSE-03:	
1 cable between host unit and SWXSE-03	BN21H-0E, -01, -1E, -02
<i>or</i>	
when the SWXSE-03 is located on top of or under the host unit	BN21H-0C
Sun or EISA unit attached to Desktop Digital Linear Tape Drive:	
1 cable between EISA connector and Desktop Digital Linear Tape Drive	BN23G-01 or BN23G-02
<b>Fast, Wide, Single-ended SCSI Connections</b>	
EISA, Sun or HP unit attached to 1 SWXSE-22:	
1 cable between System Wide SCSI connector and SWXSE-22	BN21K-02
IBM unit attached to 1 SWXSE-22:	
1 cable between System Wide SCSI connector and SWXSE-22	BN31R-02

**Standard, Narrow, Single-ended SCSI Connections**

ISA Unit Attached to 1 SWXSE-06:

1 cable between ISA connector and SWXSE-06                      BN23G-01 or BN23G-02

ISA Unit Attached to 2 SWXSE-06s:

1 cable between ISA connector and 1st SWXSE-06                      BN23G-01

1 cable between SWXSE-06s - (the second SWXSE-06                      BN21H-0E  
must be configured to have a split bus)

ISA Unit attached to SWXSE-06 and Desktop Digital  
Linear Tape Drive:

1 cable between ISA connector and SWXSE-06                      BN23G-01

1 cable between SWXSE-06 and Desktop Digital                      BN23G-01  
Linear Tape Drive

ISA Unit to Tabletop Digital Linear Tape Drive:

1 cable between the units    BC19J-03 or BC19J-06

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Note: A Digital Linear Tape (DLT) Drive is the name, for example, for a TZ87N Tape Drive.

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## APPENDIX C

### HARDWARE WARRANTY AND SERVICE INFORMATION

#### Limited Warranty and Allocation of Liability

Digital products are warranted against defects in workmanship and material for the period specified below commencing on the date of delivery. Additional warranties may apply as provided in documentation accompanying the Digital product. Digital does not warrant that the operation or execution of any product will be uninterrupted or error free.

Some jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

**Exclusive Remedies:** Digital will repair or replace any defective Digital product reported to Digital during the warranty period. Repair or replacement will be done on site or at a Digital facility depending on the country and product. At its option, Digital may refund the purchase price in lieu of providing a repaired or replacement product.

**Warranty Limitations:** Digital's warranty does not apply to conditions resulting from improper use, external causes, or modifications to the Digital product.

**Third Party Products Warranty:** Digital does not warrant Third Party products, which Digital distributes "AS IS". Third Party products may be warranted by the manufacturer as expressly provided in the Third Party documentation accompanying the product. Purchaser's remedy under any Third Party warranty is provided in the Third Party documentation accompanying the product.

EXCEPT AS EXPRESSLY SET FORTH IN THIS WARRANTY, NO OTHER WARRANTIES OR CONDITIONS, EXPRESSED OR IMPLIED, APPLY. DIGITAL EXPRESSLY EXCLUDES THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND THOSE ARISING BY STATUTE OR OTHERWISE IN LAW OR FROM A COURSE OF DEALING OR USAGE OF TRADE. DIGITAL'S LIABILITY TO YOU FOR ANY CLAIM OR DAMAGES RELATING TO ANY DEFECTIVE OR ALLEGEDLY DEFECTIVE PRODUCT OR FOR ANY OTHER CLAIM ARISING OUT OF THE PURCHASE OR USE OF THIS PRODUCT WILL BE LIMITED TO ITS ACTUAL PURCHASE PRICE PAID TO DIGITAL OR TO ITS AUTHORIZED RESELLER. DIGITAL'S ENTIRE LIABILITY IS LIMITED TO DIRECT DAMAGES ONLY. IN NO EVENT SHALL DIGITAL BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES, NOR DAMAGES FOR ANY LOSS OF DATA OR PROGRAMS, LOSS OF USE, LOST PROFITS OR ANY ECONOMIC LOSS, REGARDLESS OF THE FORM OF ACTION (WHETHER CONTRACT, TORT INCLUDING NEGLIGENCE, OR STATUTORY).

Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which depend on local law.

## Storage Systems Limited Hardware Warranty

### Hardware Warranty Attributes by Product

StorageWorks Family	Warranty Duration	Products
Controllers	3 yrs	SWIKX-BA/BB SWXCR-01 SWXRC-04
Adapters	3 Yrs	SWXA2-AA/AT SWSAP-AB/BB/BC SWHAP-BB/BC SWBAP-BB/BC
Winchester Disks	5 Yrs	SWXD3-SB/SC/SE/WB/WC SWXDB-5B/5C SWSD3-SB/SC
DLT Tapes/ Loaders	2 Yrs	SWXTL-AA, SWXTL-BA/BL/BT
Other Tapes/ Loaders	1 Yr	SWXTA-AA/BA/LA SWXTE-AA/AB/AC
Solid state disks	3 Yrs	SWSE5-RA/RB
CD-ROM	3 Yrs	SWXOR-BA/BB/BC/BD SWXOR-CA/CB/CC
AC/DC power supplies	3 Yrs	SWXBP-SA/SB/SD
Battery power supplies	1 Yr	SWXBP-SC
Optical jukeboxes	1 Yr	SWXOW-JA/JB/JC/JD/MA/MB

#### NOTES:

- First year of warranty is onsite. The balance of warranty term, if any, is Return-To-Digital (RTD).
- Configured systems with differing warranties by component will receive warranty at the component level.
- All warranties exclude consumables.
- Tape Media, disk packs, disk cartridges – One year return to Digital
- Documentation – 90 days return to Digital
- Accessories and supplies – 90 days return to Digital

**On site:** Purchaser notifies Digital and Digital repairs or replaces the product at Purchaser's site or provides Purchaser with a replacement unit. On site warranty may not be available in all countries.

**RTD:** Purchaser will notify Digital of the defective Field-Replaceable-Unit (FRU), and Digital will send a replacement via an advance exchange returns process. Defective FRU's must then be received back from the customer within 10 days of shipment of the replacement FRU, or the customer will be billed for the replacement part at full Country List Price (CLP).

Warranty commences on the date of delivery from Digital or authorized reseller. Purchaser pays transportation for RTD warranty returns to the nearest Digital return center. Digital pays transportation for RTD warranty returns to Purchaser.

### **Warranty Claims Requirements**

Purchaser claims made pursuant to this warranty must conform to the following requirements:

For Return-To-Digital warranty, fault diagnosis is the sole responsibility of the purchaser.

The purchaser shall package and prepay transportation cost of any unit and or option sent to Digital.

The purchaser assumes the risk of loss or damage of parts in transit to Digital.

### **How To Make a Warranty Claim**

Consult the purchase documents for the product or directly contact Digital in the country of purchase if you should have any questions concerning your warranty terms and conditions. To make a warranty claim, please follow the pre-call checklist, then call the number listed for your respective country.

### **Pre-Call Checklist**

Completing a pre-call checklist will allow us to assist you more quickly and efficiently:

1. Consult your user documentation that is included with your product to assure that your device and system features are properly configured.
2. Execute any user diagnostics that are provided with your product, and record any error indications present. Consult the accompanying product user manuals for more details on the product diagnostics and utilities.
3. Record the product full model name and serial number.

## Digital Phone Support

If your country is not in the following list, please consult the salesperson who sold you the Digital product.

Country	Service Number
UNITED STATES	1-800-354-9000
AUSTRALIA	008-252-277
AUSTRIA	0222-86630-555
BELGIUM	02-7297744
CANADA (English)	1-800-267-5251
(French)	1-800-267-2603
CHINA - Beijing	861-8492266
- Guangzhou	8620-6665666
- Shanghai	8621-5457460
DENMARK	80301005
FINLAND	9800-2870
FRANCE	1-69874123
GERMANY	01307702
HONG KONG	852-8053333
ISRAEL	052-592-300
ITALY	2-1678 20062
JAPAN	81-3-52733720
KOREA	82-2-7991333
MALAYSIA	603-800-3435
MEXICO	91-800-00210
NETHERLANDS	030-832888
NEW ZEALAND	0800-801-272
NORTHERN IRELAND	0232 381381
NORWAY	02-256300
PHILIPPINES	623-810-5156
PORTUGAL - Lisbon	01-3877051
- Oporto	02-6068805
PUERTO RICO	800-981-4764
REPUBLIC OF IRELAND	01-381216
SINGAPORE	65-3366129
SPAIN - Madrid	34-(9)1-5834257
- Barcelona	34-(9)3-4012222
SWEDEN	08-988835
TAIWAN	886-2-7767355
THAILAND	66-2-3120280
UNITED KINGDOM	025 6-59200

## APPENDIX D

### PRODUCT INFORMATION AND REFERENCES

The following Customer Documentation can be ordered from Digital by calling the SSB Order Desk at DTN 264-3030 or 603-884-3030.

Document Title	Order Number <sup>1</sup>
<b>RAID Array 110 Subsystems</b>	
RAID Array 110 Subsystem User's Guide	EK-SM2CA-UG
RAID Array 110 Subsystem Product Notes	AV-Q3Y4C-TE
RAID Array 110 Manager for Sun User's Guide	AA-Q2KWB-TE
RAID Array 110 Manager for Sun Release Notes	AV-Q3HTC-TE
RAID Array 110 Utilities for Novell NetWare User's Guide	AA-Q0N4A-TE
RAID Array 110 Utilities for SCO/Unix	AA-Q0N6A-TE
<b>RAID Array 210 Subsystems</b>	
RAID Array 210 Installation and Configuration Guide	EK-SWRA2-IG
RAID Array 210 Controller Bracket Installation Product Notes	EK-SWRA2-PN
RAID Array 210 User's Guide for NetWare 3.1x and 4.0x	AA-Q6TLB-TE
RAID Array 210 NetWare 3.1x and 4.0x Release Notes	AA-QHFGA-TE
RAID Array 210 User's Guide for SCO/Unix	AA-Q7NMB-TE
RAID Array 210 User's Guide for Windows NT for Intel	AA-Q6TPB-TE
RAID Array 210 Windows NT for Intel Release Notes	AA-QHFFA-TE
<b>RAID Array 410 Subsystems</b>	
RAID Array 410 Manager V1.0 for Sun User's Guide	AV-QEPPB-TE
RAID Array 410 Manager V1.0 for Sun Release Notes	AA-QEPJA-TE
RAID Array 410 for Solaris 1.x – Getting Started	EK-SMRA1-IG
RAID Array 410 for Solaris 2.x – Getting Started	EK-SMRA2-IG
RAID Array 410 for HP-UX 9.04 – Getting Started	EK-SMRA3-IG
RAID Array 410 for IBM AIX 3.2.5 – Getting Started	EK-SMRA4-IG
SWXRC-04 RAID Controller User's Guide	EK-SMCS1-UG
<b>Hard Disk Drives</b>	
SWSD3-SA 1.05 GB, 3.5-inch Disk Drive SBB for Sun®	EK-SM2DA-PN
SWSD3-SB 2.10 GB, 3.5-inch Disk Drive SBB for Sun®	EK-SM2DB-PN
SWSD3-SC 1.05 GB, 3.5-inch Low Profile Disk Drive SBB for Sun®	EK-SM2DC-PN
SWSD3-SD 2.10 GB, 3.5-inch Disk Drive SBB for Sun®	EK-SM2DF-PN
SWSD5-SA 3.57 GB, 5.25-inch Disk Drive SBB for Sun®	EK-SM5DA-PN
SWXD3-SA 1.05 GB, 3.5-inch Disk Drive SBB	EK-SM2DC-PN
SWXD3-SB 2.10 GB, 3.5-inch Disk Drive SBB	EK-SM2DD-PN
SWXD3-SC 1.05 GB, 3.5-inch Low Profile Disk Drive SBB	EK-SM2DE-PN
SWXD3-SD 2.10 GB, 3.5-inch Disk Drive SBB	EK-SM2DH-PN
SWXD3-SE 4.29 GB, 3.5-inch Disk Drive SBB	EK-SM2DG-PN
SWXD3-WB 2.10 GB, 3.5-inch Wide Disk Drive SBB	EK-SM2DJ-PN
SWXD3-WC 1.07 GB, 3.5-inch Wide Disk Drive SBB	EK-SM2DI-PN
<b>Tape Drives/Tape Loaders</b>	
SWXTA-AA/LA 2/4 GB, DAT Drive/DAT Loader	EK-SM2TA-UG
	EK-SM1TA-PN
SWXTE 8mm Cartridge Tape Drive	EK-STWCT-UG
SWXTL-AA 6 GB Digital Linear Tape (DLT) Drive	EK-SM1TD-UG
	EK-SM2TB-PN
SWXTL-BA/BT 10/20 GB Table Top DLT Tape Drive	EK-SM1TB-UG
	EK-SM1TB-RC
SWXTL-BL 50/100 GB 5-Cartridge DLT Tape Drive Mini Library	EK-SM1TC-UG
	EK-SM1TC-RC



Document Title	Order Number <sup>1</sup>
<b>CD-ROM Devices</b>	
SWXOR Series 600 MB, 5.25-inch Dual-Speed CD-ROM Disk Drive (RRD43)	EK-SM1RC-UG
SWXOR Series 600 MB 5.25-inch Multispeed CD-ROM Disk Drive (RRD44)	EK-SM1RD-UG
<b>Optical Drives</b>	
SWIOW-AA Multifunction Optlcal Disk Drive SBB User's Guide	EK-AMOD1-UG
<b>Solid State Disk Drives</b>	
SWSE5 Series 107/428 MB Solid State Disk with Data Retention	EK-SM1SA-UG
<b>Expansion Storage Units</b>	
Expansion Storage Pedestal (SWXSE-02/06) User's Guide	EK-SMCPA-UG
Dual-Speed Blower Upgrade Kit Product Note	EK-SMBKU-PN
Desktop Expansion Unit (SWXSE-03) User's Guide	EK-SMCPB-UG
Wide Expansion Storage Pedestal (SWXSE-22) User's Guide	EK-SMCPD-UG
Office Expansion RAID Enclosure (SWXSC-AA) User's Guide	EK-SMCPD-UG
Bezel Replacement for all Storage Pedestals Product Note	EK-SMCPD-UG
<b>Application Notes</b>	
PC Server and Workstation Cabling Guidelines	EK-SMA01-AN
Redundant System Using Novell SFT III and RAID Array 200	EK-SMA02-AN
Novell Tape Backup Performance Testing	EK-SMA03-AN
1. The suffix on the EK-series Order Numbers has the following meanings:	
AN Application Note	PN Product Notes
IG Installation Guide	RC Reference Card
	UG User's Guide
	CG Configuration Guide

Additional product information packages can be found on the StorageWorks FAX Back System by calling 1-800-STORWORK (1-800-786-7967)