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2104 Model DL1 Expandable Storage Plus Service Guide

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2104 Model DL1 Expandable Storage Plus Service Guide

Hardware

May 2000

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Contents

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The following statements apply to this product. The statements for other products intended for use with this product appear in their accompanying manuals.

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

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This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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This product is a Class A Information Technology Equipment and conforms to the standards set by the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). In a domestic environment, this product might cause radio interference, in which event the user might be required to take adequate measures.

Korean Government Ministry of Communication (MOC) Statement

Please note that this device has been approved for business purposes with regard to electromagnetic interference. If you find that this device is not suitable for your use, you can exchange it for one that is approved for non-business purposes.

New Zealand Compliance Statement

This is a Class A product. In a domestic environment this product might cause radio interference, in which event the user might be required to take adequate measures

International Electrotechnical Commission (IEC) Statement

This product has been designed and built to comply with Standard IEC 60950.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Industry Canada Compliance Statement

This Class A digital apparatus complies with IECS-003.

United Kingdom Telecommunications Requirements

This apparatus is manufactured to the International Safety Standard EN60950 and as such is approved in the U.K. under approval number NS/G/1234/J/100003 for indirect connection to public telecommunications systems in the United Kingdom.

European Union (EU) Statement

This product is in conformity with the protection requirements of EU council directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. Neither the provider nor the manufacturer can accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of option cards not supplied by the manufacturer.

This product is in conformity with the EU council directive 73/23/EEC on the approximation of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits. This conformity is based on compliance with the following harmonized standard: EN60950.

Radio Protection for Germany

Zulassungsbescheinigung laut Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 30, August 1995.

Dieses Gerät ist berechtigt in Übereinstimmung mit dem deutschen EMVG das EG–Konformitätszeichen zu führen.

Der Aussteller der Konformitätserklärung ist die IBM Deutschland.

Informationen in Hinsicht EMVG Paragraph 3 Abs. (2):

Das Gerät erfüllt die Schutzanforderungen nach EN 50082-1 und EN 55022 Klasse A.

EN55022 Klasse A Geräte bedürfen folgender Hinweise:

Nach dem EMVG: “Geräte dürfen an Orten, für die sie nicht ausreichend entstört sind, nur mit besonderer Genehmigung des Bundesministeriums für Post und Telekommunikation oder des Bundesamtes für Post und Telekommunikation betrieben werden. Die Genehmigung wird erteilt, wenn keine elektromagnetischen Störungen zu erwarten sind.” (Auszug aus dem EMVG, Para.3, Abs.4). Dieses Genehmigungsverfahren ist nach Paragraph 9 EMVG in Verbindung mit der entsprechenden Kostenverordnung (Amtsblatt 14/93) kostenpflichtig.

Nach der EN 55022: “Dies ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Massnahmen durchzuführen und dafür aufzukommen.”

Anmerkung: Um die Einhaltung des EMVG sicherzustellen, sind die Geräte wie in den Handbüchern angegeben zu installieren und zu betreiben.

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這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Safety Notices

For a translation of the *danger* and *caution* notices contained in this book, see “Appendix C. Translated Safety Notices” on page 141.

Definitions of Safety Notices

A *danger* notice indicates the presence of a hazard that has the potential of causing death or serious personal injury.

This book contains a *danger* notice on pages 61 and 77.

A *caution* notice indicates the presence of a hazard that has the potential of causing moderate or minor personal injury.

This book contains a *caution* notice on pages: 88, 91, 94, 96, and 100.

An *attention* notice indicates an action that could cause damage to a program, device, system, or data.

Safety Notice for Installing, Relocating, or Servicing

Before connecting or removing any cables to or from connectors at the using system, be sure to follow the steps in the installation or relocation checklist specified in the *Installation and Service Guide*, or equivalent, for your using system.

For safety checks when servicing, refer to “Service Inspection Guide” on page 25.

About This Book

This book provides service information for any person who is required to service Expandable Storage Plus: 2104 disk subsystems. That person could be a technically-qualified employee of the owner of the subsystem, or a service representative. This information is organized as follows:

- Chapter 1 briefly introduces the 2104, and gives useful reference information.
- Chapter 2 gives problem determination procedures.
- Chapter 3 gives removal and replacement procedures.
- Chapter 4 is the parts catalog.
- Appendix A gives additional information for 2104s that are attached to RISC systems.
- Appendix B shows examples of cable configurations for the 2104.
- Appendix C gives translations of the safety notices that appear in this book.

An index is provided at the back of the book.

Numbering Convention

In this book, one gigabyte (GB) equals 1 000 000 000 bytes.

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AIX

IBM

RS/6000

Related Publications

The *Installation and Service Guide*, or equivalent, for your using system

Expandable Storage Plus: 2104 Operator's Guide, SA33-3294

Expandable Storage Plus: 2104 Model DL1 Installation Guide, GA33-3292

Expandable Storage Plus: 2104 Model TL1 Installation Guide, GA33-3293

For other publications, see "Related Publications" in Appendix A. Additional Information for RISC Systems.

Electrostatic Discharge

When you handle field-replaceable units (FRUs) and other computer parts, take these precautions to avoid static damage:

- Limit your movement. Movement can cause static electricity to build up around you.
- Always touch computer parts carefully. Hold adapters and memory-modules by their edges. Never touch any exposed circuits.
- Prevent other people from touching computer parts.
- Before you install a new part, touch the static-protective package that contains the part against an unpainted metal part of the 2104 or using system for at least two seconds. This action reduces static electricity in the package and in your body.
- Remove the part from its package and, if possible, install it directly into the 2104 without putting the part down. If you need to put the part down, first place the static-protective package that contained the part onto a smooth, level surface, then place the part onto the package.
- Do not place the part onto any metal surface.

Chapter 1. Reference Information

Note: Ensure that you read “Safety Notices” on page xi before you do any of the actions that are described in this book.

The Expandable Storage Plus: 2104 subsystems (see Figure 1) can be attached to any computer that provides support for Small Computer System Interface (SCSI). The 2104 Model DL1 **1** is a rack-mounted unit that can be installed in a standard Electrical Industries Association (EIA) 19-inch rack. The 2104 Model TL1 **2** is a deskside unit.

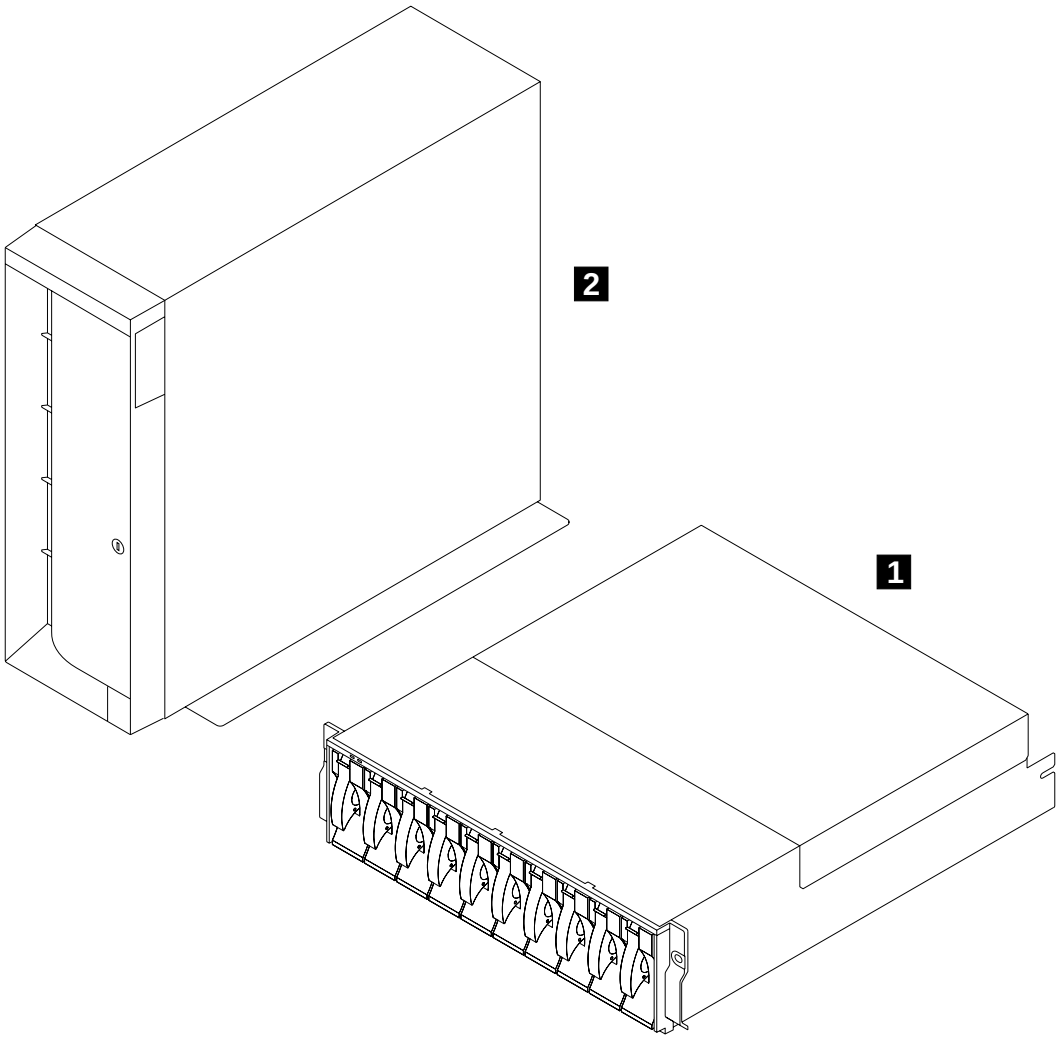


Figure 1. 2104 Subsystems

The 2104 can contain up to 10 SCSI disk drive modules. These modules can be a mixture of various types, which vary in size and speed (see “Chapter 4. Parts Catalog” on page 105).

The 2104 can be disconnected from its related SCSI attachments while the using system is running. Also, most of the field-replaceable units (FRUs) of the 2104 can be removed and replaced while the 2104 and the using system are running. For a list of those FRUs, see “Concurrent Maintenance” on page 57.

The 2104 has two fan-and-power-supply assemblies, or one fan-and-power-supply assembly and one fan assembly, to provide all the necessary power and cooling. It also has up to two SCSI interface cards, which monitor and control the various functions of the 2104 (see also “SCSI Interface Cards” on page 3). Each SCSI interface card can be accessed to collect enclosure information only if it is connected to a SCSI attachment. A switch card assembly provides option selection switches (see also “Switch Card Assembly Switches” on page 8).

The 2104 can be configured to the using system as a device if applicable. See “Configuring a 2104 to the Using System” in “Appendix A. Additional Information for RISC Systems”. When a 2104 is configured as a device:

- Errors that are detected in the 2104 can be collected by the diagnostics.
- Vital product data (VPD) for the 2104 can be accessed.

Most FRUs contain their own vital product data (VPD). A using system can access this VPD while the 2104 is being configured to that particular using system.

Enclosure configuration information is stored in several locations in the 2104 to allow concurrent replacement of FRUs. When a new FRU is installed, any special configuration information that is required by that FRU is read from other locations in the 2104. That information is then used to update the new FRU. To ensure that the configuration is not corrupted or changed, always exchange FRUs one at a time.

SCSI Interface Cards

The SCSI interface card of the 2104:

- Provides SCSI Enclosure Services (SES). RS/6000™ systems use these services.
- Provides Conner/Intel SCSI Accessed Fault-Tolerant Enclosures (SAF-TE) services. NT systems use these services; RS/6000 systems do not.
- Reads the VPD for the backplanes and the power supplies.
- Controls the Subsystem Check light and the disk drive module Check lights.
- Monitors the 'Emergency Power Off Warning (EPOW)' signal from the power-supply assembly or assemblies. If an 'EPOW' signal occurs, the SCSI interface card sends a 'SCSI Reset' signal to all the disk drive modules.
- Provides support for the hot plugging of the disk drive modules.
- Monitors itself. The SCSI interface card detects a self-failure if:
  - The microprocessor fails.
  - An SES function fails.
  - The enclosure temperature is outside the specified limits.

If the 2104 has two SCSI interface cards, each SCSI interface card can be accessed to collect enclosure information only if it is connected to a SCSI attachment. If both cards are operational, the SES-active card provides all the functions described here. The other card only detects self-failure and drives the internal SCSI bus.

Error Logging

Errors that the 2104 detects are not automatically logged to the system error log.

To collect error data, run diagnostics. For more details, see "Collecting Errors" in "Appendix A. Additional Information for RISC Systems".

Configurations

Each SCSI interface card can be attached to only one using system. A 2104 that has one SCSI interface card can, therefore, be attached to only one using system. A 2104 that has two SCSI interface cards can be attached to two using systems. No SCSI terminators are needed.

Lights and Switches

The lights and switches of the 2104 consist of:

- Subsystem lights
- SCSI interface card lights
- Fan-and-power-supply assembly lights and switches
- Fan assembly light
- Switch card assembly switches
- Disk drive module lights

Figure 2 shows the lights and switches of the 2104 Model DL1; Figure 3 shows the lights and switches of the 2104 Model TL1.

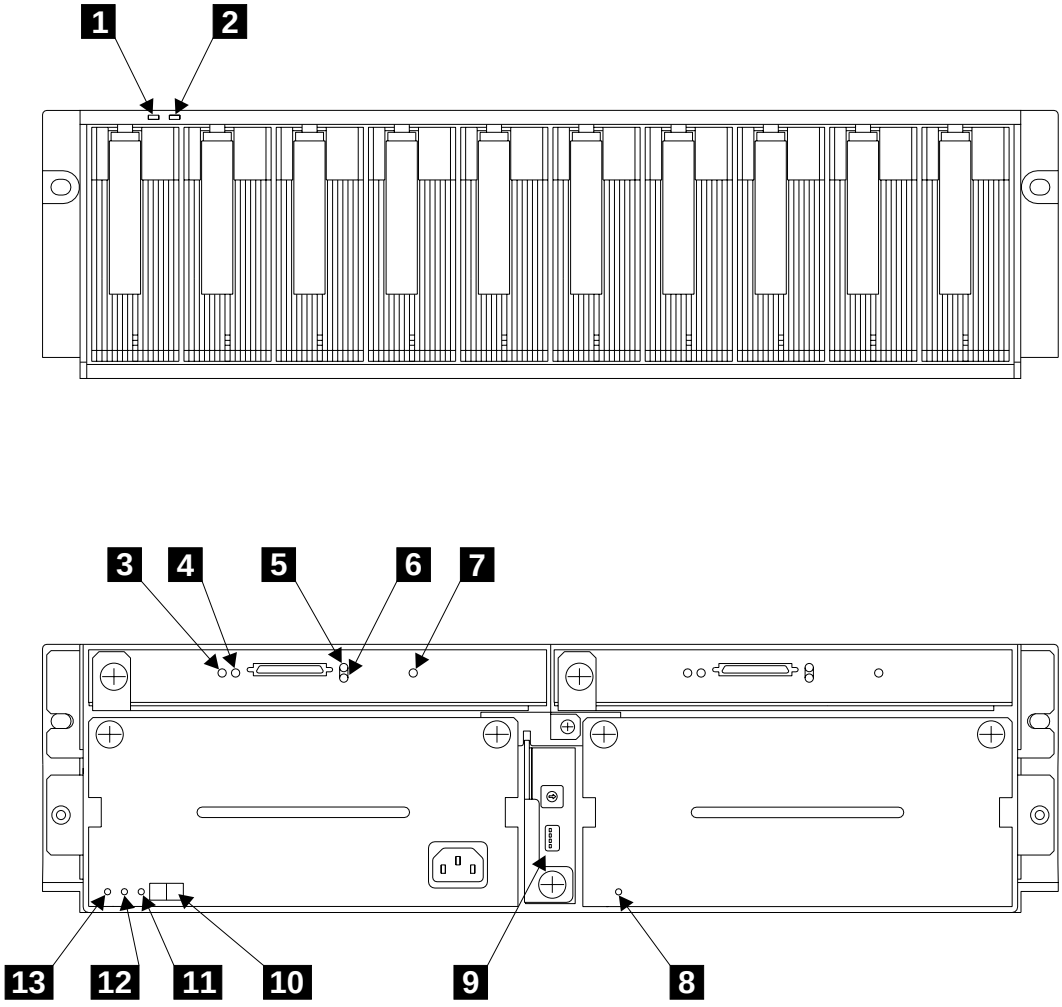


Figure 2. Lights and Switches of the 2104 Model DL1

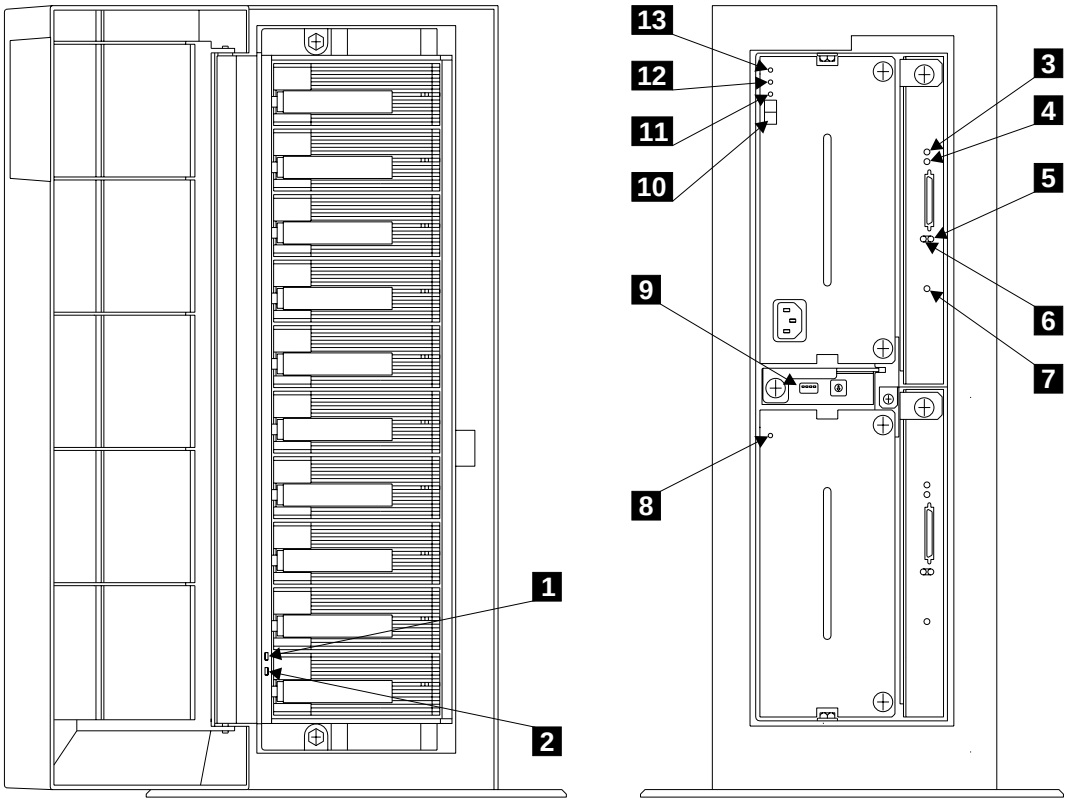


Figure 3. Lights and Switches of the 2104 Model TL1

Subsystem Lights and Switches

To identify the lights that are described here, see Figures 2 and 3.

The Subsystem Power light (LED) and Subsystem Check light are located on the backplane assembly. The lights are made visible by light pipes that pass through the bezel at the front of the 2104.

Subsystem Power light 1 : This green light is on continuously when dc voltage is present in the 2104.

Subsystem Check light 2 : This amber light comes on continuously if a failure occurs in the 2104. The 2104 might be able to continue operating satisfactorily although the failure of a particular part has been detected. The light flashes when a service aid identifies a disk drive module.

Note: The Subsystem Check light comes on only if the 2104 has an active SCSI connection.

SCSI Interface Card Lights

To identify the lights that are described here, see Figures 2 and 3.

TERM POWER light 3 : This green light is on when the 'TERMPWR' signal is present on the external SCSI connector, and the voltage is correct.

LVD/SE light 4 : This green light is on for differential SCSI operation, and off for single-ended SCSI operation.

ACTIVE light 5 : This amber light is on when a command is in progress.

RESET light 6 : This amber light comes on when a 'power-on reset' (POR) signal or a 'SCSI bus reset' signal occurs.

FAULT light 7 : This amber light comes on if the SCSI interface card fails.

Fan-and-Power-Supply Assembly Lights and Switches

To identify the lights and switches that are described here, see Figures 2 and 3.

DC On/Standby switch 10 : This switch switches off the dc electrical power to the disk drive modules and other components of the 2104. The switch must be set to On for the power supply and the fan unit to start.

If the DC On/Standby switch is set to On (on either fan-and-power-supply assembly, if two are present), dc power in the 2104 is turned on automatically if all the following conditions exist:

- Mainline power is present at the 2104.
- At least one fan-and-power-supply assembly is correctly installed.
- ***Either*** the Power Control switch on the Switch card assembly is set to On ***or*** terminator power is active in an external SCSI connection.

CHK light 11 : This amber light is on continuously if the fan-and-power-supply assembly fails. When a power supply fails, the CHK light gets its power from the other fan-and-power-supply assembly (if present). The light can, therefore, indicate a critical power supply failure only if the 2104 has two fan-and-power-supply assemblies.

Note: The CHK light is active only when the DC On/Standby switch is set to On.

DC PWR light 12 : This green light is on when the power supply assembly is supplying dc power to the 2104.

AC PWR light 13 : This green light is on when mainline electrical power is present in the power supply assembly.

Fan Assembly Light

To identify the light that is described here, see Figures 2 and 3.

CHK light 8 : This amber light comes on if the fan fails.

Switch Card Assembly Switches

The switch card assembly is item **9** in Figures 2 and 3. To identify the switch card assembly switches, refer to Figure 4 or Figure 5 on page 9, as appropriate for your switch card assembly.

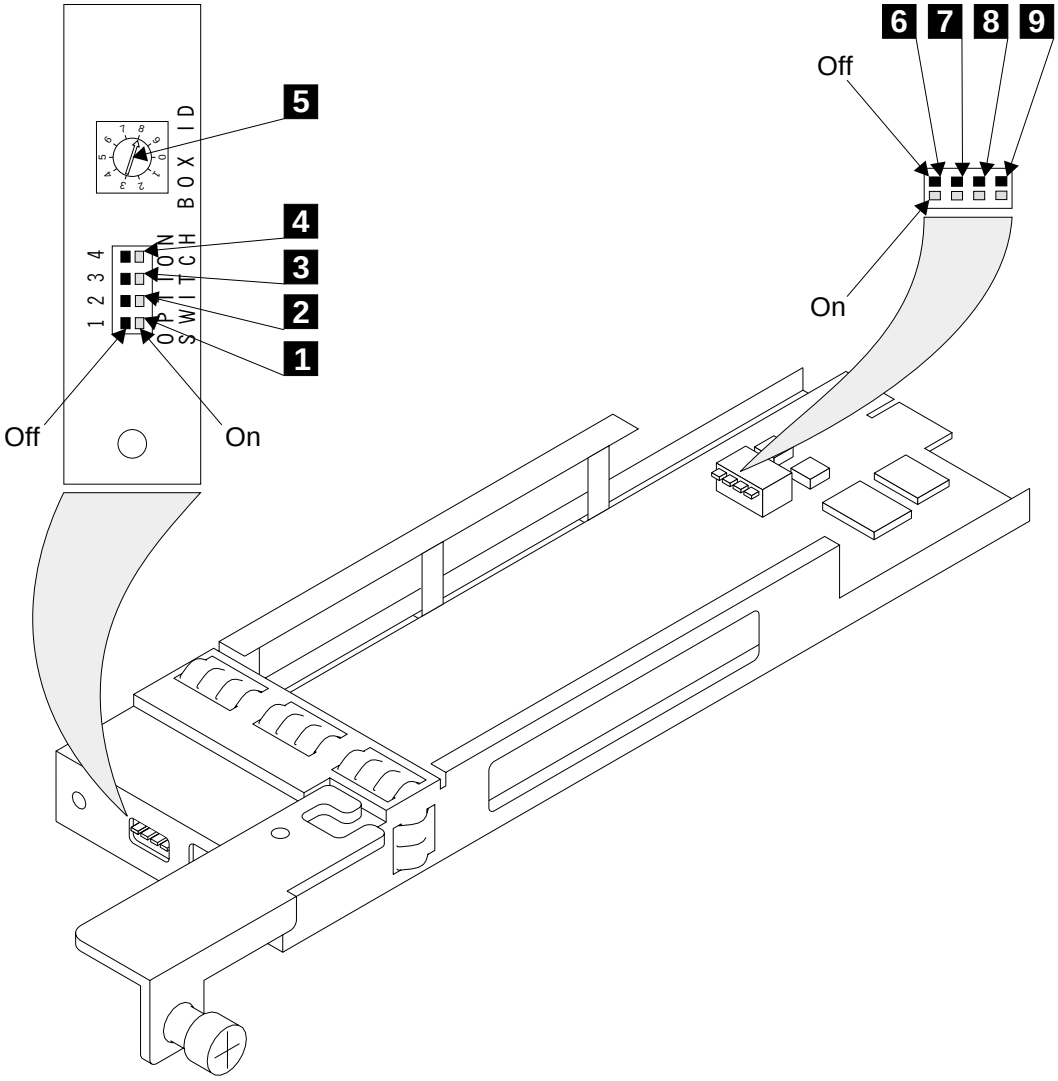


Figure 4. Switch Card Assembly Switches (Early Type)

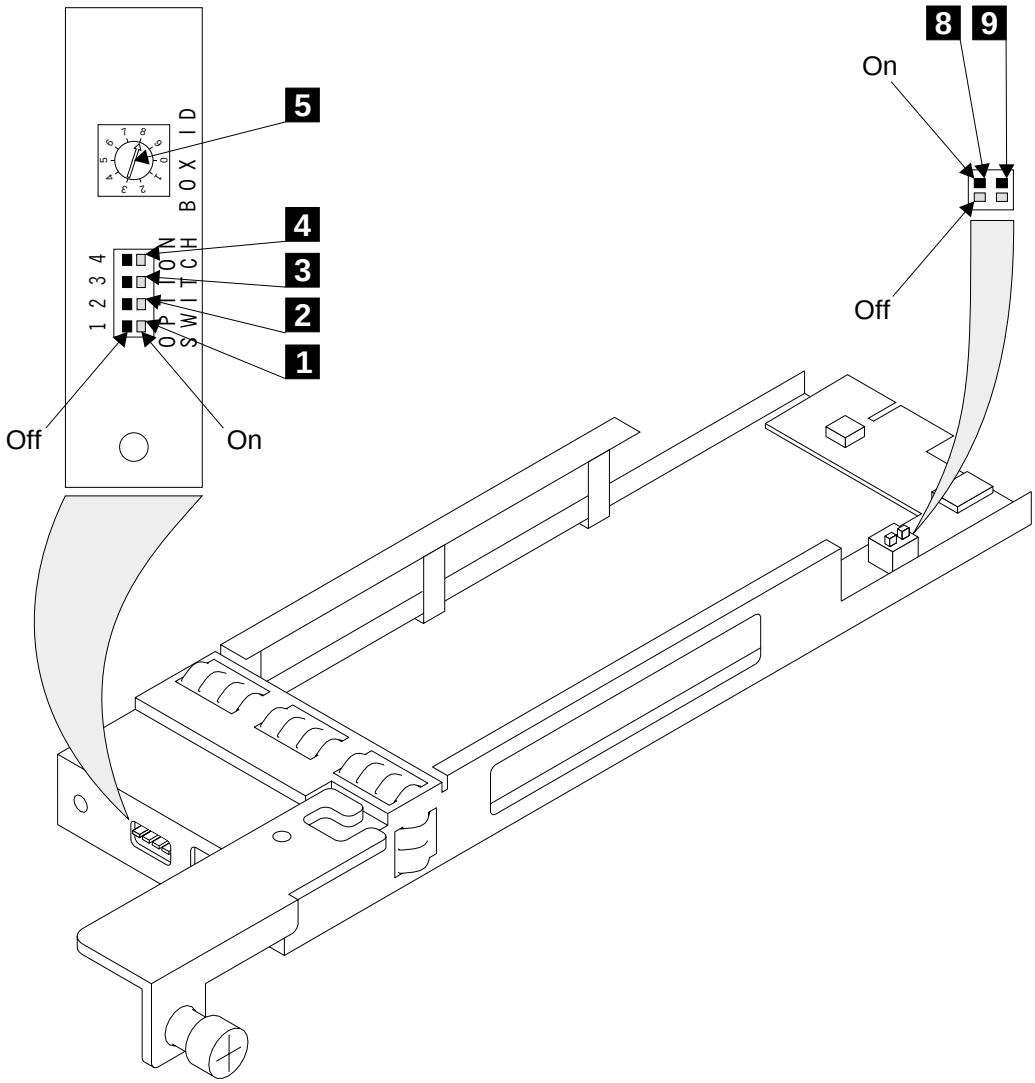


Figure 5. Switch Card Assembly Switches (Later Type)

Notes:

1. Switch **2** is not used on either type of switch card assembly.
2. Switches **6** and **7** are present only on the early type of switch card assembly; they are not used.
3. The numbers **6** and **7** have been intentionally omitted from Figure 5 so that so that the switch identifications in both diagrams are compatible with the following descriptions.
4. In this section, “default logical setting” means the setting that the enclosure uses if the switch card assembly is not present when a power-on or reset operation occurs.

Power Control switch 1 : When this switch is set to OFF, the SCSI interface card can enable the 2104 power supplies if both the following conditions exist:

- The 2104 is connected to mainline power.
- The 'terminator power (TERMPWR)' signal is active in an external SCSI connection.

Under these conditions, the SCSI interface card provides a remote power on control function. That is, the 2104 switches off automatically when all the connected using systems switch off; it switches on automatically when one using system switches on.

When the switch is set to ON, power is not controlled by the 'TERMPWR' signal. The 2104 does not switch on and off automatically with the using system.

If the switch card assembly is not present when the 2104 is first switched on, or when the 2104 receives a 'Reset' signal, the default logical setting for this switch is OFF.

Enable Enclosure Services switch 3 : When the switch is set to ON, the enclosure services operate. When the switch is set to OFF, the 2104 does not respond to requests for enclosure services, and SCSI address 15 (the address of the SCSI enclosure services) is not used.

If the switch card assembly is not present when the 2104 is first switched on, or when the 2104 receives a 'Reset' signal, the default logical setting for this switch is ON.

Select Enclosure Services switch 4 : When the switch is set to ON, the SCSI enclosure services are selected. When the switch is set to OFF, the SAF-TE enclosure services are selected.

Note: SAF-TE services are not supported on an RS/6000

If the switch card assembly is not present when the 2104 is first switched on, or when the 2104 receives a 'Reset' signal, the default logical setting for this switch is ON.

Enclosure ID switch 5 : This 10-position rotary switch sets the ID of the 2104. The SES Inquiry command and the SAF-TE Buffer 1 command use the setting of this switch. If the switch card assembly is not present when the 2104 is first switched on, or when the 2104 receives a 'Reset' signal, the default logical setting for this switch is address 0.

The following switches can be accessed only when the switch card assembly is removed from the 2104. They are set during manufacture of the 2104, and indicate whether the 2104 is a Model DL1 or a Model TL1. In service operations, these switches need be checked and, if necessary, set only when a replacement switch card assembly is installed.

SCSI Address switch 8 : This switch, when set to ON, reverses the SCSI addresses of the disk drive modules. Normally, the switch is set to OFF.

Normally, on a 2104 Model DL1, the leftmost disk drive module slot has the lowest SCSI address; the rightmost slot has the highest SCSI address (see Table 1 on page 22). When the switch is set to ON, the SCSI addresses are reversed. The leftmost disk drive module slot now has the highest SCSI address; the rightmost slot has the lowest SCSI address.

Note: On the 2104 Model DL1, the **physical** numbers of the disk drive module slots are always 1 through 10, from left to right.

Normally, on a 2104 Model TL1, the topmost disk drive module slot has the highest SCSI address; the bottommost slot has the lowest SCSI address (see Table 1 on page 22). When the switch is set to ON, the SCSI addresses are reversed. The topmost disk drive module slot now has the lowest SCSI address; the bottommost slot has the highest SCSI address.

Note: On the 2104 Model TL1, the **physical** numbers of the disk drive module slots are always 1 through 10, from bottom to top.

If the switch card assembly is not present when the 2104 is first switched on, or when the 2104 receives a 'Reset' signal, the default logical setting for this switch is OFF.

2104 Orientation switch 9 : This switch must be set to OFF for the 2104 Model DL1, and to ON for the 2104 Model TL1:

- When the switch is set for the 2104 Model DL1, the two-color LEDs that are related to the 2104 Power light and to the 2104 Check light are set so that the left-hand LED becomes the green Power light, and the right-hand LED becomes the amber Check light.
- When the switch is set for the 2104 Model TL1, the two-color LEDs that are related to the 2104 Power light and to the 2104 Check light are set so that the upper LED becomes the green Power light, and the lower LED becomes the amber Check light.

If the switch card assembly is not present when the 2104 is first switched on, or when the 2104 receives a 'Reset' signal, the default logical setting for this switch is OFF (that is, for Model DL1).

Disk Drive Module Lights

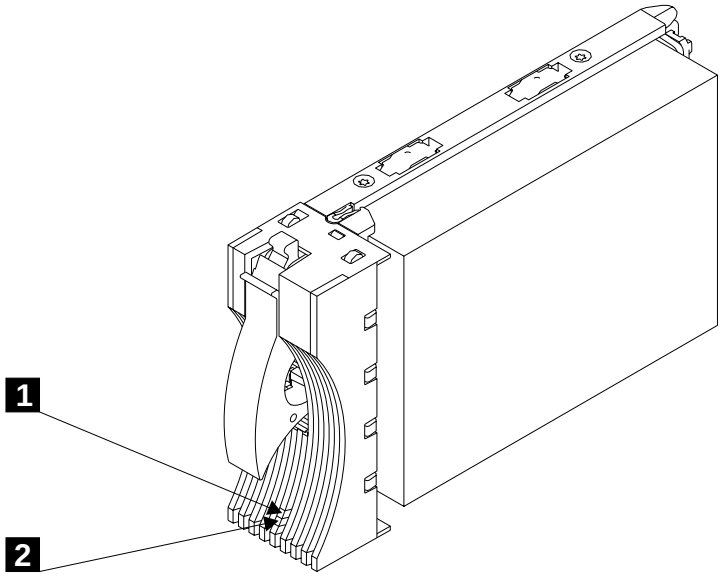


Figure 6. Disk Drive Module Lights

The disk drive module light (LEDs) are located on the backplane of the 2104. They are made visible by light pipes that pass through the disk drive module.

1 **Activity light:** When on, this green light shows that a command is in progress.

2 **Check light:** This amber light shows the following conditions:

Status of Light	Meaning
Off	Normal operating condition.
Permanently on	One of the following conditions exists: • If a disk drive module is present, the service aid has set **Remove** (see “SCSI Device Identification and Removal” in “Appendix A. Additional Information for RISC Systems”). • If a disk drive module is not present, the service aid has set **Insert** (see “SCSI Device Identification and Removal” in “Appendix A. Additional Information for RISC Systems”). • The disk drive has reported a Predictive Failure Analysis (PFA) error. This error indicates that the disk drive has had an excessive number of internally recovered errors. • The disk drive module is failing. (This is a SAF-TE error.)
Slow flash (two seconds on, two seconds off)	The Check light has been set by a service aid to identify the position of this particular disk drive module.
Fast flash (0.5 seconds on, 0.5 seconds off)	The disk drive module is a member of a RAID array, and is being rebuilt. (This is a SAF-TE function.)

Parts Locations

This section has two subsections; one is for the 2104 Model DL1, the other is for the 2104 Model TL1. Go to the appropriate subsection.

Parts Locations (2104 Model DL1)

1. Frame assembly
2. Disk drive modules
3. Fan-and-power-supply assembly or fan assembly (position 2)
4. Fan-and-power-supply assembly or fan assembly (position 1)
5. SCSI interface card assembly or dummy card assembly (position 2)
6. Switch card assembly
7. SCSI interface card assembly (position 1)

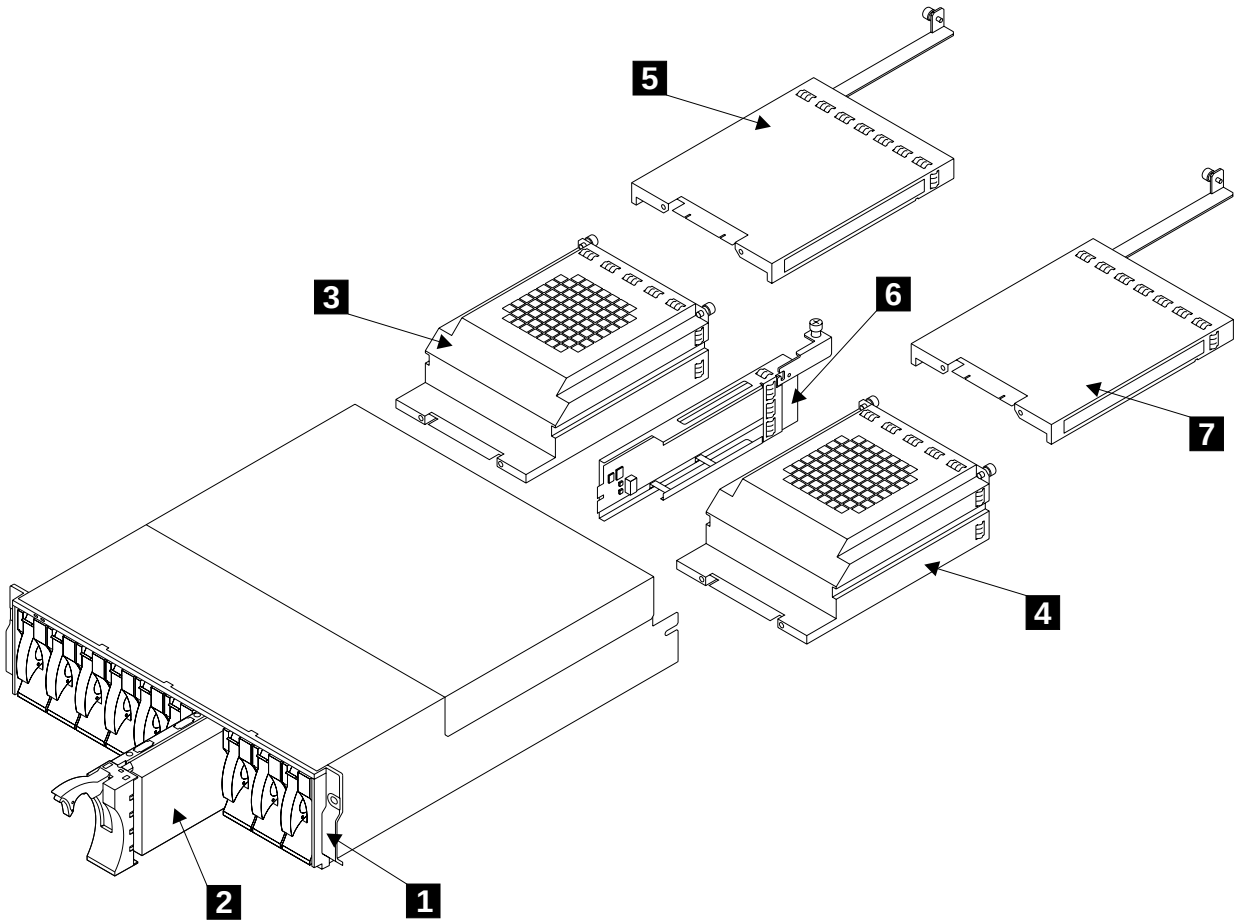


Figure 7. Parts Locations of the 2104 Model DL1

Notes:

1. The disk drive modules are numbered 1 through 10 from left to right.
2. The 2104 can have two fan-and-power-supply assemblies or one fan-and-power-supply assembly and one fan assembly. Either assembly can be installed in either position 1 or position 2.

Parts Locations (2104 Model TL1)

1. Frame assembly
2. Disk drive modules
3. Fan-and-power-supply assembly or fan assembly (position 2)
4. Fan-and-power-supply assembly or fan assembly (position 1)
5. SCSI interface card assembly or dummy card assembly (position 2)
6. Switch card assembly
7. SCSI interface card assembly (position 1)

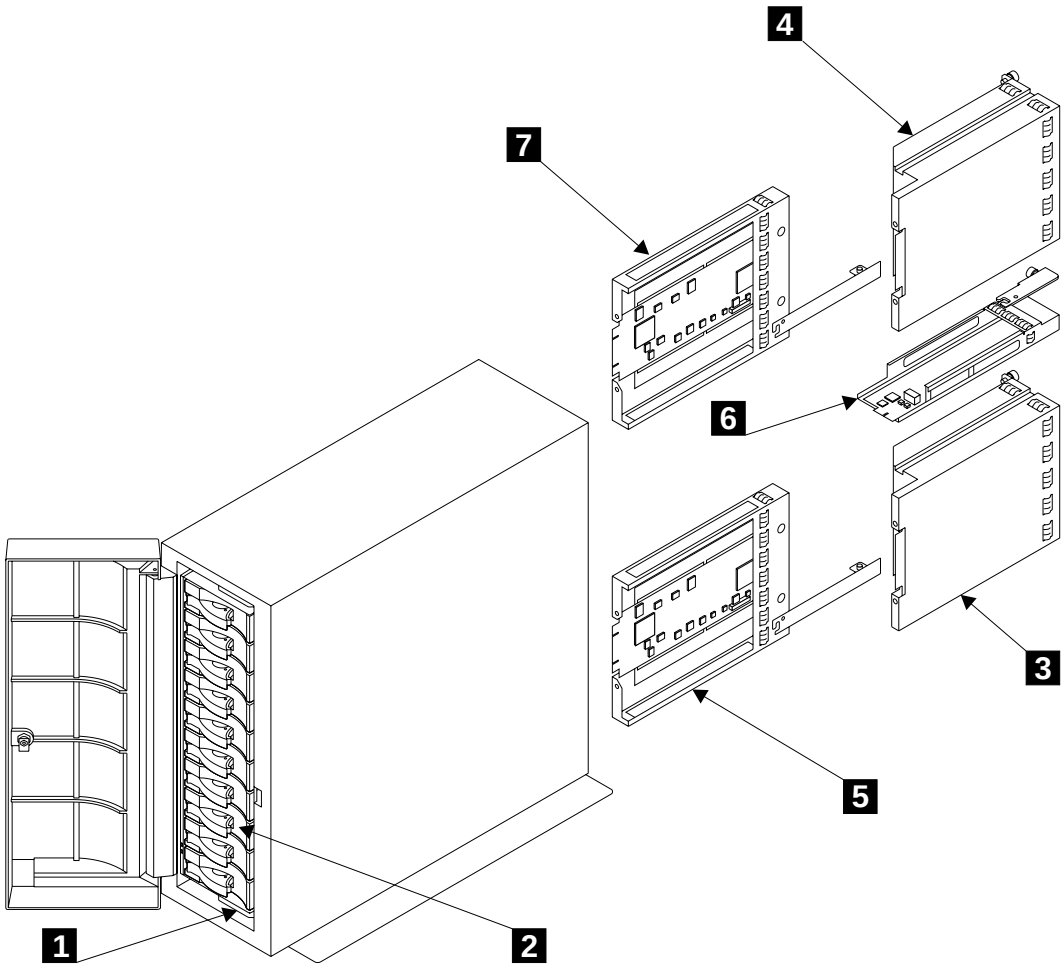


Figure 8. Parts Locations of the 2104 Model TL1

Notes:

1. The disk drive modules are numbered 1 through 10 from bottom to top.
2. The 2104 can have two fan-and-power-supply assemblies or one fan-and-power-supply assembly and one fan assembly. Either assembly can be installed in either position 1 or position 2.

Connectors

This section shows the locations of the external connectors of the 2104.

Back Connectors (2104 Model DL1)

1 SCSI connectors

2 Mainline power connectors

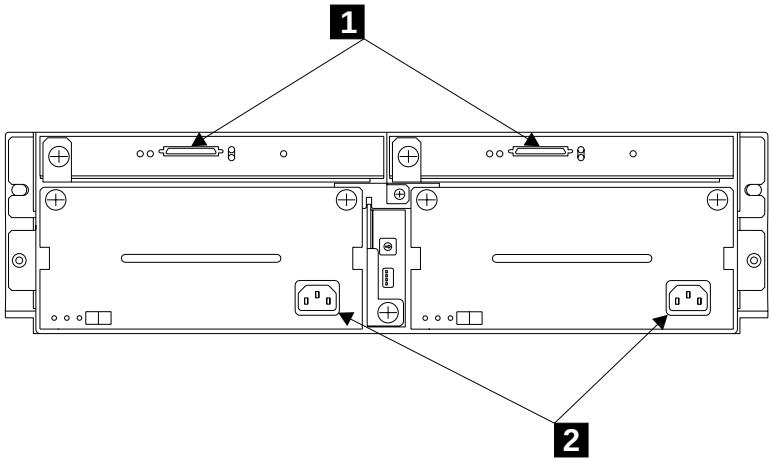


Figure 9. Back Connectors of the 2104 Model DL1

Note: The 2104 Model DL1 that is shown has two SCSI interface cards and two fan-and-power-supply assemblies. A 2104 that has only one SCSI interface card has only one SCSI connector. A 2104 that has one fan-and-power-supply assembly and a fan assembly has only one mainline power connector.

Back Connectors (2104 Model TL1)

1. Mainline power connectors
2. SCSI connectors

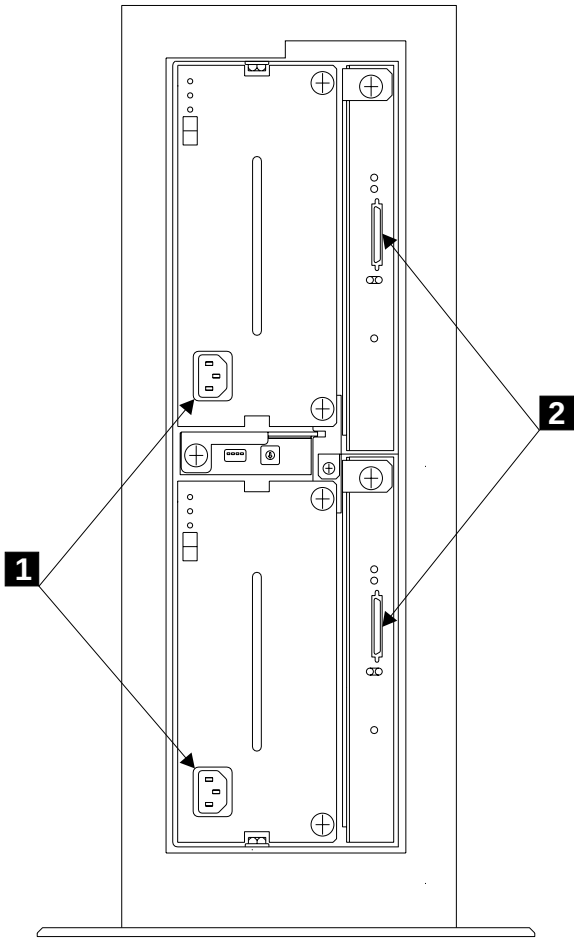


Figure 10. Back Connectors of the 2104 Model TL1

Note: The 2104 Model TL1 that is shown has two SCSI interface cards and two fan-and-power-supply assemblies. A 2104 that has only one SCSI interface card has only one SCSI connector. A 2104 that has one fan-and-power-supply assembly and a fan assembly has only one mainline power connector.

Mainline-Power Connector

This type of connector is on each fan-and-power-supply assembly. It permits the 2104 to be connected to a mainline power source.

1. Ground
2. Neutral
3. Live

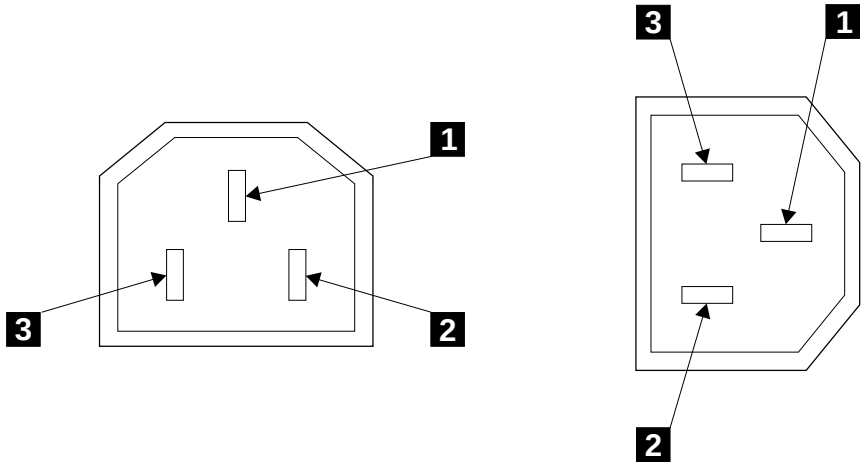


Figure 11. Mainline-Power Connector (220 V ac/dc). The diagram shows the connector for a Model DL1 (left), and for a Model TL1 (right)

Labels

1. Serial number (2104 Model DL1)
2. Serial number (2104 Model TL1)
3. Serial number and size (disk drive module)

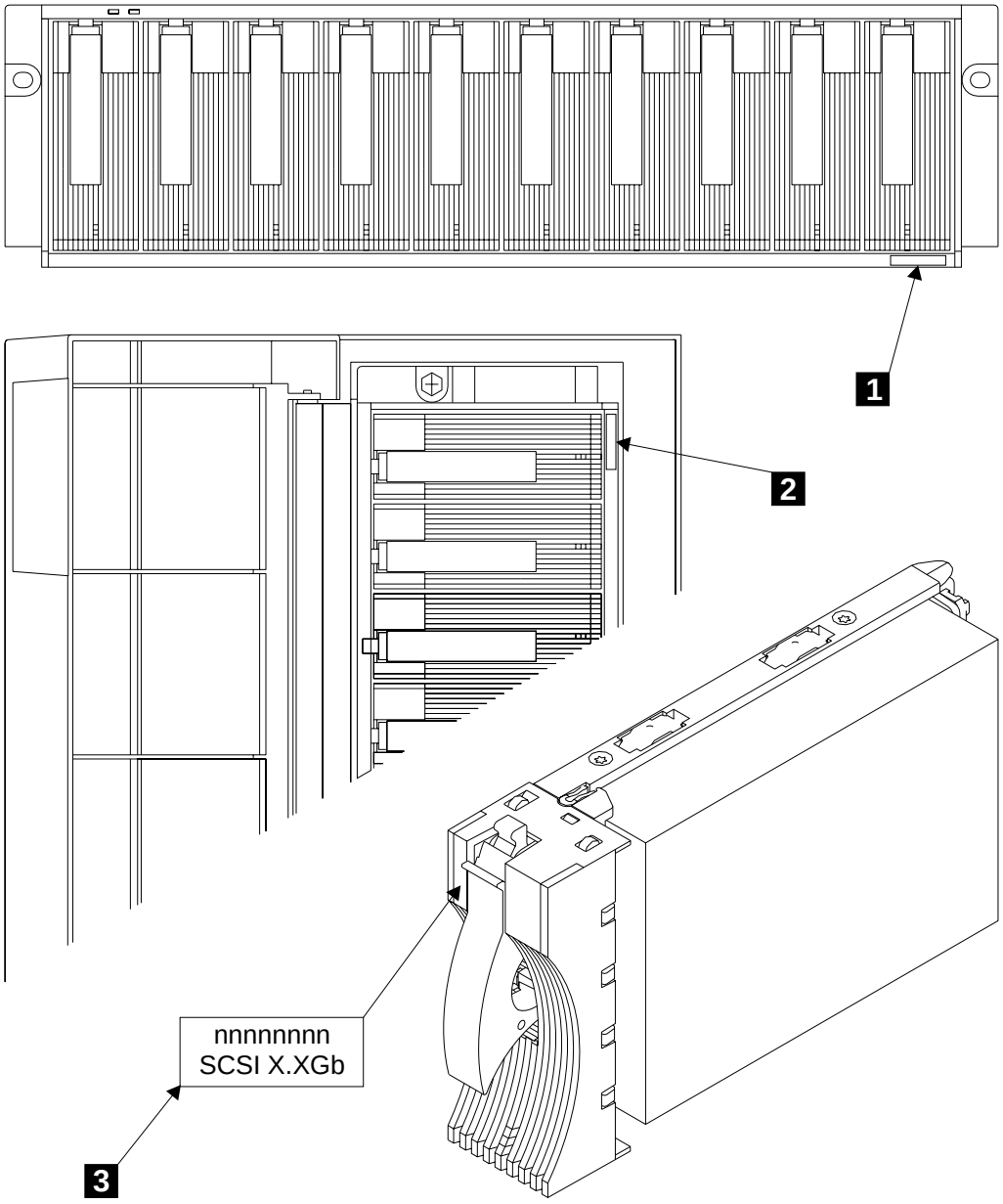


Figure 12. Serial-Number Labels

Product Characteristics

Dimensions and Weight (2104 Model DL1)

Height	Width	Depth	Approximate Minimum Weight	Approximate Maximum Weight
126 mm	444 mm	546 mm	28.6 kg	38.5 kg
(5 in.)	(17.5 in.)	(21.5 in.)	(63 lb)	(85 lb)

Dimensions and Weight (2104 Model TL1)

Height	Width	Depth	Approximate Minimum Weight	Approximate Maximum Weight
529 mm	281 mm	594 mm	44.5 kg	54.5 kg
(21 in.)	(11 in.)	(23.5 in.)	(98 lb)	(120 lb)

AC and DC Input-Voltage Requirements

Power Supply Assembly Type	Voltage	Frequency
220 V	90 to 260 V ac	47 to 63 Hz

Environment

	Operating Environment	Nonoperating Environment	Storing Environment	Shipping Environment
Air temperature	10°C to 40°C (50°F to 104°F)	10°C to 52°C (50°F to 125°F)	1°C to 60°C (34°F to 140°F)	–40°C to 60°C (–40°F to 140°F)
Relative Humidity	8% to 80% noncondensing	8% to 80% noncondensing	5% to 80% noncondensing	5% to 100% condensing but not precipitating
Maximum wet bulb	27°C (80°F)	27°C (80°F)	29°C (84°F)	29°C (84°F)

Notes:

1. Each rack-mounted 2104 Model DL1 requires an airflow of 1.1 m^3 per minute (40 ft^3 per minute). When racks containing many 2104s are to be installed together, the following requirements must be met to ensure that the 2104s are adequately cooled:
   - The airflow enters at the front of the rack and leaves at the back. To prevent the air that is leaving the rack from entering the intake of another piece of equipment, racks should be positioned in alternate rows, back-to-back and front-to-front.

- The front of racks should be positioned on floor-tile seams, with a full line of perforated tiles immediately in front of the racks.
- Where racks are in rows front-to-front or back-to-back, there should be a gap of at least 1220 mm (48 in) separating the rows.
- To ensure correct air flow within each rack, the rack filler plates must be installed in unused positions. Also, all the gaps in the front of the racks must be sealed, including the gaps between the 2104s.

2. The recommended operating temperature is 22°C (72°F) or lower.

Altitude

	Operating Environment	Nonoperating Environment	Storing Environment	Shipping Environment
Altitude (from sea level)	0 to 2133 m (0 to 7000 ft)	–305 to 12 192 m (–1000 to 40 000 ft)	–305 to 12 192 m (–1000 to 40 000 ft)	–305 to 12 192 m (–1000 to 40 000 ft)

Heat Output (Maximum)

Maximum configuration (10 disk drive modules)	330 watts (1126 Btu per hour)

Disk Drive Acclimation

If you bring a disk drive module into the operating environment from an environment where the temperature is outside the specified operating range (see Environment), allow the disk drive module time to acclimate to the operating environment (approximately 2 hours). Remove the disk drive module from any shipping packaging, but leave it in its sealed plastic bag (if present) to prevent condensation forming.

Power Sequencing

The 2104 has no power sequencing. All the disk drive modules start their power sequence when the input voltages are inside the specified limits. Their motors are started under control of the SCSI attachments in the using system. To prevent the need for excessive electrical current, the disk drive module motors are not all started together. Normally, all the disk drive module motors are running in less than 30 seconds from the time the 2104 is switched on.

SCSI Addresses

Each disk drive module is identified to the using system by a SCSI address. This address is related to the slot in which the disk drive module is installed. The SCSI address switch (see “Switch Card Assembly Switches” on page 8) allows the addresses of the slots to be reversed, if required.

Table 1 shows the normal and reversed SCSI addresses of the slots.

Note: In the 2104 Model DL1, slot 1 is the leftmost slot (viewed from the front of the 2104). In the 2104 Model TL1, slot 1 is the bottommost slot (viewed from the front of the 2104).

Table 1. SCSI Addresses of Disk Drive Module Slots

Disk drive module slot	1	2	3	4	5	6	7	8	9	10
Normal device address	0	1	2	3	4	8	9	10	11	12
Reversed device address	12	11	10	9	8	4	3	2	1	0

The SCSI enclosure services (SES) use address 15 if the Enable Enclosure Services switch is set to ON (see “Switch Card Assembly Switches” on page 8).

Attention: The SCSI address of the adapter that is connected to the 2104 must be different from the addresses of the installed disk drive modules. When a second adapter is connected to a 2104, the SCSI addresses of that adapter must be different from the address of the first adapter and the addresses of the installed disk drive modules.

Microcode Maintenance

When a new level of SCSI interface card microcode or disk drive microcode becomes available, that microcode and the appropriate installation instructions are put onto the web support page (see “Web Support Page” in “Appendix A. Additional Information for RISC Systems”). The supplied installation instructions ensure that the microcode is downloaded to the correct location.

To update the 2104 vital product data (VPD) that is held in the using system, you might need to reconfigure the 2104 to the using system. For more details, see “Configuring a 2104 to the Using System” in “Appendix A. Additional Information for RISC Systems”.

Vital Product Data (VPD)

You can display the vital product data (VPD) for the 2104 by using the service aids. This section shows the types of information that are contained in the VPD.

Abbreviations used in this section are:

FRU Field-replaceable unit

RAM Random-access memory

ROM Read-only memory

ROS Read-only storage

SCSI Small computer systems interface

SCSI Disk Drives

Manufacturer	Manufacturer and plant code
Machine type and model	Type and model
Part number	Disk drive part number
ROS Level and ID	ROM and RAM code load part number
Serial number	Disk enclosure serial number
EC level	Disk enclosure engineering change level
FRU number	FRU part number
Device Specific Z0	
Device Specific Z1	
Device Specific Z2	
Device Specific Z3	
Device Specific Z5	
Device Specific Z6	

2104

Manufacturer	Manufacturer and plant code
Machine type and model	Type and model
ROS Level and ID	ROM code load part number
Device Specific (Z0)	

2104 Service Aids

Service aids are available for the 2104. For descriptions of those service aids, see "System Service Aids" in "Appendix A. Additional Information for RISC Systems".

2104 Enclosure Services

If the using system and the 2104 are both operating, you can use the enclosure services to determine the status of the 2104. The 2104 enclosure services can operate in either of two modes, which you can select with the Enable Enclosure Services switch (see "Switch Card Assembly Switches" on page 8):

- ANSI SCSI Enclosure Service (SES)
- SAF-TE

ANSI SCSI Enclosure Services (SES) Mode

Use the **Receive Diagnostic Results** command, and go to the enclosure status page (page 02). That page shows the health status of the 2104, and the status of the components of the 2104.

In the health status byte, the critical fault bit, if set, indicates that a component in the 2104 has failed.

In the fan element, power supply element, and enclosure services element status fields, the fault bit, if set, indicates the failure of a particular component.

SAF-TE Mode

Note: SAF-TE mode is not supported on RS/6000.

Use the **Read Buffer** command, and go to the enclosure status page (page 02). In the fan element and power supply element status fields, the fault bit, if set, indicates the failure of the component.

Service Inspection Guide

This inspection guide helps you to identify possible unsafe conditions on 2104s. Each 2104 has the necessary safety items installed to protect users and service personnel from injury. This guide addresses only those items. You should use your good judgment, however, to identify possible safety hazards that are not covered by this guide.

If any unsafe conditions are present, you must determine how serious the possible hazard could be, and whether you should continue without first correcting the problem.

Consider the following conditions and the safety hazards they present:

- **Electrical hazards (especially primary power):** Primary voltage on the frame can cause serious or lethal electrical shock.
- **Mechanical hazards:** Loose or missing items (for example, nuts and screws) can cause serious injury.

Using the following inspection checklist as a guide, inspect the 2104 for unsafe conditions. See, if necessary, any suitable safety publications.

Inspection Checklist

1. Remove all power from the 2104 (see “All Power” on page 61).
2. Check the frame for damage (loose, broken, or sharp edges).
3. Check the power cables and ensure that:
   a. The third-wire ground connector is in good condition. Use a meter to check that the third-wire ground continuity is 0.1 ohm or less between the external ground pin and the frame ground.
   b. The insulation is not worn or damaged.
4. Check for any obvious nonstandard changes. Use good judgment about the safety of any such changes.
5. Check inside the 2104 for any obvious unsafe conditions, such as metal particles, water or other fluids, or marks of overheating, fire, or smoke damage.
6. Check for worn, damaged, or pinched cables.
7. Ensure that the voltage specified on the product-information label matches the specified voltage of the electrical power outlet. If necessary, verify the voltage.
8. Inspect the fan-and-power-supply assemblies, and check that the fasteners in the cover of the power-supply unit (screws or rivets) have not been removed or disturbed.
9. Before connecting the 2104 to the using system, check the grounding as described in “Checking the Grounding of the 2104” on page 26.

Checking the Grounding of the 2104

Go to the appropriate subsection for the 2104 that you are servicing.

Grounding Check (2104 Model DL1)

1. Refer to Figure 13.

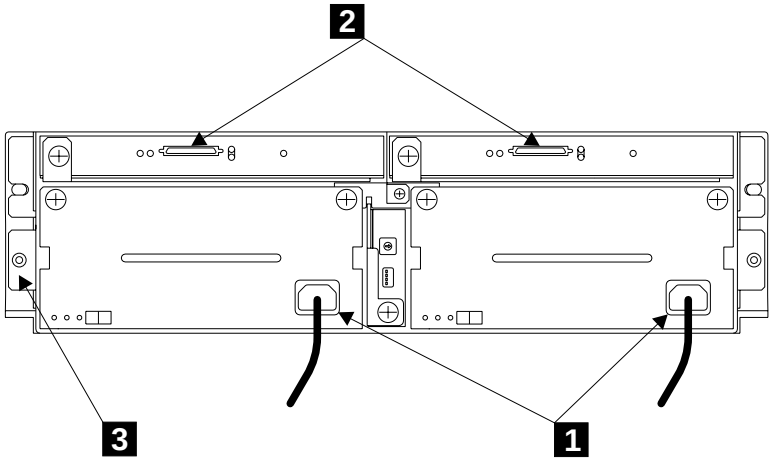


Figure 13. Power Cables and SCSI Sockets (2104 Model DL1)

2. Ensure that all power is removed from the rack (see the *Installation and Service Guide*, or equivalent, for the rack or using system).
3. Ensure that the power cables **1** are plugged into each fan-and-power-supply assembly. Ensure also that the other ends of the power cables are plugged into the power distribution unit or battery-backup unit in the rack (see the *Installation and Service Guide*, or equivalent, for the rack or using system).
4. **Attention:** Some electrical circuits could be damaged if the external SCSI cables are present at the 2104 while the grounding check is being done.

   Ensure that no external SCSI cables are present at the connectors **2**.

5. Follow your local procedures and check the grounding of the 2104. Any test equipment must be connected to the ***frame of the 2104*** **3** .

   If the grounding is correct (see step 3a on page 25), go no further with these instructions.

   If the grounding is not correct, unplug the power cables from the fan-and-power-supply assemblies in the 2104, and continue with step 6.
6. Refer to Figure 14.

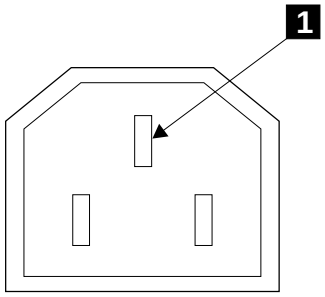


Figure 14. Ground Pin (2104 Model DL1)

7. Check for continuity between the ***frame of the 2104*** and the ***ground pin*** **1** of the power connector on each fan-and-power-supply assembly.
8. If any fan-and-power-supply assembly has no continuity, exchange that assembly for a new one (see “Fan-and-Power-Supply Assemblies” on page 75), then do the complete grounding check again.

   If each fan-and-power-supply assembly has continuity, you might have a problem with the power cable or with the grounding of the using system.
9. Check the power cable for continuity.

   If the power cable does not have continuity, exchange it for a new one, then do the complete grounding check again.

   If the power cable does have continuity, see the rack, or using-system, *Installation and Service Guide*, or equivalent, to isolate the fault.

Grounding Check (2104 Model TL1)

1. Refer to Figure 15.

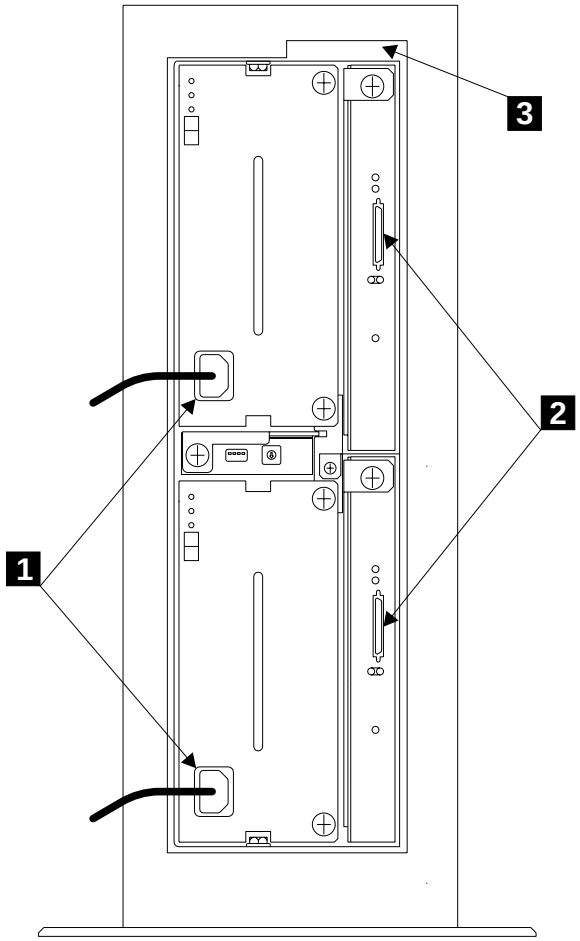


Figure 15. Power Cables and SCSI Sockets (2104 Model TL1)

2. Ensure that a power cable is plugged into each power socket **1** .
3. Ensure that the other ends of the power cables are *not* plugged into electrical power outlets. Unplug the cables if necessary.
4. **Attention:** Some electrical circuits could be damaged if the external SCSI cables are present at the 2104 while the grounding check is being done.

   Ensure that no external SCSI cables are present at the SCSI connectors **2** .
5. Check for continuity between the ***frame of the 2104*** **3** and the ***ground pin*** of each power cable.
6. If the continuity is good (see step 3a on page 25), the grounding of the 2104 is correct. Go no further with these instructions.
7. If the grounding is not correct, unplug the power cables from the mainline power connectors. Then continue with step 8.
8. Check each power cable, for continuity.

9. If either power cable is failing, exchange it for a new one, then go to step 10 .
10. Refer to Figure 16.

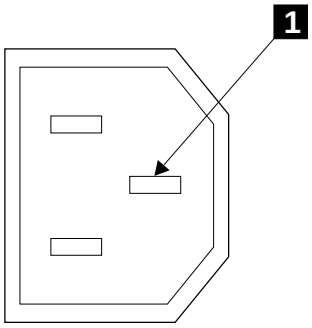


Figure 16. Ground Pin (2104 Model TL1)

11. Check for continuity between the ***frame of the 2104*** and the ***ground pin*** **1** of the power connector on each fan-and-power-supply assembly.
12. If either fan-and-power-supply assembly does not have continuity, exchange that assembly for a new one (see “Fan-and-Power-Supply Assemblies” on page 75), then do the complete grounding check again.

Chapter 2. Problem Determination Procedures

Problem determination procedures are provided by power-on self-tests (POSTs), service request numbers, and maintenance analysis procedures (MAPs). Some of these procedures use the service aids that are described in the user or maintenance information for your using-system SCSI attachment.

Disk Drive Module Power-On Self-Tests (POSTs)

The disk drive module POSTs start each time the module is switched on, or when a Send Diagnostic command is received. They check whether the disk drive module is working correctly. The POSTs also help verify a repair after a FRU has been exchanged.

The tests are POST-1 and POST-2.

POST-1 runs immediately after the 'power-on reset' line goes inactive, and before the disk drive module motor starts. POST-1 includes tests of:

- Microprocessor
- ROM
- Checking circuits.

If POST-1 completes successfully, POST-2 is enabled.

If POST-1 fails, the disk drive module is not configured into the system.

POST-2 runs after the disk drive module motor has started. POST-2 includes tests of:

- Motor control
- Servo control
- Read and write on the diagnostic cylinder (repeated for all heads)
- Error checking and correction (ECC).

If POST-2 completes successfully, the disk drive module is ready for use with the system.

If POST-2 fails, the disk drive module is not configured into the system.

SCSI Interface Card Power-On Self-Tests (POSTs)

The SCSI interface card POSTs start each time power is switched on, or when a Reset command is sent from the using-system SCSI attachment. They check only the internal components of the SCSI interface card; they do not check any interfaces to other FRUs.

If the POSTs complete successfully, control passes to the functional microcode of the SCSI interface card. This microcode checks all the internal interfaces of the 2104, and reports failures to the using system.

If the POSTs fail:

- The SCSI interface card Check light and the 2104 Check light come on.
- The functional operation of the 2104 is not affected. For example, the customer still has access to all the disk drive modules.
- If a second SCSI interface card is present, it becomes the SES active card.
- The failure is reported:
  - If the failure occurs at system bringup time, the using system detects that the 2104 is missing, and reports an error.
  - If the failure occurs at any time other than system bringup time, the hourly health check reports the failure.

Service Request Numbers (SRNs)

Service request numbers (SRNs) are generated for the 2104 by diagnostics and the SES healthcheck (see “Error Logging” on page 3). SRNs help you to identify the cause of a problem, the failing field-replaceable units (FRUs), and the service actions that might be needed to solve the problem.

The SRN Table

The table in this section lists the SRNs and describes the actions you should do. The table columns are:

SRN	The service request number.
FRU list	The FRU or FRUs that might be causing the problem (see also “FRU Names Used in the SRN Table” on page 33), and how likely it is (by percentage) that the FRU is causing the problem.
Problem	A description of the problem and the action you must take.

Abbreviations used in the table are:

FRU	Field-replaceable unit

Using the SRN Table

Important: You should have been sent here from MAP 2010: 2104 – START. Do not start problem determination from the SRN table; always go to “MAP 2010: 2104 – START” on page 38 first.

1. Locate the SRN in the table. ***If you cannot find a particular SRN in the table***, go to the SRN list that is in the user or maintenance information for your using-system SCSI attachment. If you still cannot find the SRN, you have a problem with the diagnostics, the microcode, or the documentation. Call your support center for assistance.

2. Read carefully the “Action” you must do for the problem. ***Do not exchange FRUs unless you are instructed to do so***.
3. Unless instructed otherwise, ***exchange only one FRU at a time***, starting from the top of the FRU list for that SRN. Always use instructions given in “Chapter 3. Removal and Replacement Procedures” when exchanging FRUs; a page reference is given with each FRU in the FRU list. After each FRU is exchanged, go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

FRU Names Used in the SRN Table

This section provides a glossary of the FRU names used.

FRU Name in Table	Definition
Frame assembly	*The frame of the 2104 and the backplanes and cables that it contains.*
Disk drive module	*A disk drive attached to a carrier that plugs into one of the backplanes of the 2104.*
External SCSI cable	*A cable that connects the 2104 to a SCSI attachment or to another device (for example, another 2104).*
Fan-and-power-supply assembly	*An assembly that consists of a power supply unit and a fan.* The 2104 can have two fan-and-power-supply assemblies, or one fan-and-power-supply assembly and one fan assembly, whichever is suitable for the required configuration.
Fan assembly	*An assembly that contains a dc cooling fan*. The 2104 can have two fan-and-power-supply assemblies, or one fan-and-power-supply assembly and one fan assembly, whichever is suitable for the required configuration.
SCSI interface card assembly	*The card that monitors and controls the various functions of the 2104.*
SCSI attachment	*The means by which the 2104 is connected to the using system (for example, a SCSI adapter card).* The SCSI attachment is located in the using system.
Switch card assembly	*The assembly that contains all the option switches for the 2104.*

The SRNs

SRN	FRU List	Problem
807-12X	**Fan-and-power-supply assembly (90%)** (“Fan-and-Power-Supply Assemblies” on page 75) **SCSI interface card assembly (5%)** (“SCSI Interface Card Assembly” on page 80) **Frame assembly (5%)** (“Frame Assembly” on page 87)	Description: A power supply has failed. The diagnostic message indicates the specific position of the failing FRU (for example, Power Supply (n)). Action: Exchange the FRU for a new FRU.
807-13X	**Fan assembly (90%)** (“Fan Assembly” on page 78) **SCSI interface card assembly (5%)** (“SCSI Interface Card Assembly” on page 80) **Frame assembly (5%)** (“Frame Assembly” on page 87)	Description: The fan assembly has failed. The diagnostic message indicates the specific position of the failing FRU (for example, Fan (n)). Action: Exchange the FRU for a new FRU.
807-148	**None**	Description: Temperature warning. Action: Take action to bring the ambient temperature inside the specified limits (see “Environment” on page 20). If the problem remains, exchange the SCSI interface card for a new one (see “SCSI Interface Card Assembly” on page 80).
807-149	**None**	Description: Critical temperature warning. Action: Take action to bring the ambient temperature inside the specified limits (see “Environment” on page 20). If the problem remains, exchange the SCSI interface card for a new one (see “SCSI Interface Card Assembly” on page 80).
807-17X	**SCSI interface card assembly (100%)** (“SCSI Interface Card Assembly” on page 80)	Description: A SCSI interface card has failed. The diagnostic message indicates the specific position of the failing FRU (for example, Enclosure Services (n)). Action: Exchange the FRU for a new FRU.
807-180	**Switch card assembly (90%)** (“Switch Card Assembly” on page 84) **SCSI interface card assembly (5%)** (“SCSI Interface Card Assembly” on page 80) **Frame assembly (5%)** (“Frame Assembly” on page 87)	Description: Switch card assembly failure. Action: Exchange the FRUs for new FRUs.

SRN	FRU List	Problem
807-201	**SCSI interface card assembly (60%)** ("SCSI Interface Card Assembly" on page 80) **SCSI attachment (40%)** (using system-service information)	Description: A device configuration error has occurred. Action: Exchange the FRUs for new FRUs.
807-202	**SCSI interface card assembly (60%)** ("SCSI Interface Card Assembly" on page 80) **SCSI attachment (40%)** (using system-service information)	Description: The 2104 enclosure failed to open. Action: Exchange the FRUs for new FRUs.
807-203	**SCSI interface card assembly (60%)** ("SCSI Interface Card Assembly" on page 80) **SCSI attachment (40%)** (using system-service information)	Description: The 2104 enclosure failed to return inquiry data. Action: 1. Observe the switch card assembly. Ensure that: • Switch 3 (Enable Enclosure Services) is set to ON. • Switch 4 (Select Enclosure Services) is set to ON. 2. Go to "MAP 2010: 2104 – START" on page 38. 3. If the problem remains, exchange the FRUs for new FRUs.
807-204	**Fan-and-power-supply assembly (45%)** ("Fan-and-Power-Supply Assemblies" on page 75) **Fan assembly (45%)** ("Fan Assembly" on page 78) **SCSI interface card assembly (4%)** ("SCSI Interface Card Assembly" on page 80) **Switch card assembly (3%)** ("Switch Card Assembly" on page 84) **Frame assembly (3%)** ("Frame Assembly" on page 87)	Description: A 2104 has detected a noncritical enclosure failure. Action: Go to "MAP 2010: 2104 – START" on page 38. If the problem remains, exchange the FRUs for new FRUs.

SRN	FRU List	Problem
807-205	**Fan-and-power-supply assembly (45%)** (“Fan-and-Power-Supply Assemblies” on page 75) **Fan assembly (45%)** (“Fan Assembly” on page 78) **SCSI interface card assembly (4%)** (“SCSI Interface Card Assembly” on page 80) **Switch card assembly (3%)** (“Switch Card Assembly” on page 84) **Frame assembly (3%)** (“Frame Assembly” on page 87)	Description: A 2104 has detected a critical enclosure failure. Action: Go to “MAP 2010: 2104 – START” on page 38. If the problem remains, exchange the FRUs for new FRUs.

Maintenance Analysis Procedures (MAPs)

These maintenance analysis procedures (MAPs) describe how to analyze a continuous failure that has occurred in a 2104 containing one or more SCSI disk drive modules. Failing field-replaceable units (FRUs) of the 2104 can be isolated with these MAPs.

How to Use these MAPs

Attention: Unless the using system needs to be switched off for some other reason, do not switch off the using system when servicing the 2104 or any of its SCSI devices. Power cables and external SCSI cables that connect the 2104 to the using system can be disconnected while that system is running.

- To isolate the FRUs in the failing 2104, do the actions and answer the questions given in these MAPs.
- When instructed to exchange two or more FRUs in sequence:
  1. Exchange the first FRU in the list for a new one.
  2. Verify that the problem is solved. For some problems, verification means running the diagnostic programs (see the using-system service procedures).
  3. If the problem remains:
     a. Reinstall the original FRU.
     b. Exchange the next FRU in the list for a new one.
  4. Repeat steps 2 and 3 until either the problem is solved, or all the related FRUs have been exchanged.
  5. Do the next action indicated by the MAP.
- See “Lights and Switches” on page 4 for locations and descriptions of the lights and switches.

Attention: Disk drive modules are fragile. Handle them with care, and keep them well away from strong magnetic fields.

MAP 2010: 2104 – START

This MAP is the entry point to the MAPs for the 2104. If you are not familiar with these MAPs, read “How to Use these MAPs” on page 37 first.

You might have been directed here because:

- The system problem determination procedures sent you here.
- Action from an SRN list sent you here.
- A problem occurred during the installation of an 2104 or a disk drive module.
- Another MAP sent you here.
- A customer observed a problem that was not detected by the system problem determination procedures.

Attention: Unless the using system needs to be switched off for some other reason, do not switch off the using system when servicing the 2104 or any of its SCSI devices. Power cables and external SCSI cables that connect the 2104 to the using system can be disconnected while that system is running.

Step 1.

Does the 2104 emit smoke or a smell of burning?

NO Go to step 2.

YES Go to “MAP 2022: 2104 – Power-On” on page 46.

Step 2. (from step 1)

Are you at this MAP because power is not removed completely from the 2104 when the using systems are switched off?

NO Go to step 3.

YES Go to “MAP 2030: 2104 – Power Control” on page 51.

Step 3. (from step 2)

Have you been sent to this MAP from an SRN?

NO Go to step 4 on page 39.

YES Go to step 7 on page 39.

Step 4. (from step 3)

Have the system diagnostics or problem determination procedures given you an SRN for the 2104 (sesn)?

NO

- If the system diagnostics for the 2104 are available, go to step 5.
- If the system diagnostics for the 2104 are not available, but the stand-alone diagnostics for the 2104 are available:
  a. Run the stand-alone diagnostics.
  b. Go to step 6.
- If neither the system diagnostics nor the stand-alone diagnostics are available, go to step 7.

YES Go to "Service Request Numbers (SRNs)" on page 32.

Step 5. (from step 4)

a. Run the concurrent diagnostics to the 2104. For information about how to run concurrent diagnostics, see "Concurrent Diagnostics" in "Appendix A. Additional Information for RISC Systems".
b. When the concurrent diagnostics have completed, go to step 6.

Step 6. (from steps 4 and 5)

Did the diagnostics give you an SRN for the 2104?

NO Go to step 7.

YES Go to "Service Request Numbers (SRNs)" on page 32.

Step 7. (from steps 3, 4, and 6)

Is the Subsystem Check light flashing?

NO Go to step 8.

YES A device is in Identify mode.

Step 8. (from step 7)

Is the Subsystem Check light on continuously?

NO Go to step 11 on page 41.

YES Go to step 9 on page 40.

Step 9. (from step 8)

Does any FRU have its Check light on?

Note: The Check light might be on:

- A SCSI interface card assembly.
- A fan-and-power-supply assembly. (Ensure that the DC On/Standby switch is set to On.)
- A fan assembly.
- A disk drive module.

NO In the sequence shown, exchange the following FRUs for new FRUs. Ensure that for *each* FRU exchange, you go to "MAP 2410: 2104 – Repair Verification" on page 55 to verify the repair.

a. SCSI interface card assembly (see "SCSI Interface Card Assembly" on page 80)

b. Fan-and-power-supply assembly (see "Fan-and-Power-Supply Assemblies" on page 75)

c. Fan assembly (see "Fan Assembly" on page 78)

d. Switch card assembly (see "Switch Card Assembly" on page 84)

e. Frame assembly (see "Frame Assembly" on page 87)

YES

a. If the FRU is a fan-and-power-supply assembly, go to step 10 on page 41. Otherwise, exchange, for a new FRU, the FRU whose Check light is on.

b. Go to "MAP 2410: 2104 – Repair Verification" on page 55 to verify the repair.

Step 10. (from step 9)

Is the enclosure set up for remote power control (that is, is the Power Control switch of the switch card assembly set to Off)?

NO

a. Exchange, for a new one, the fan-and-power-supply whose CHK light is on (see “Fan-and-Power-Supply Assemblies” on page 75).

b. Go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

YES

a. Ensure that:

- The DC On/Standby switch is set to On.
- Both ends of the SCSI cable are correctly connected.
- The Power Control switch of the switch card assembly is set to OFF (see “Switch Card Assembly Switches” on page 8).
- The using system is switched on.

b. If the CHK light of the fan-and-power-supply assembly is still on, pull out the fan-and-power-supply to disconnect it from the 2104, then push it back to reseat its connectors (see “Fan-and-Power-Supply Assemblies” on page 75).

c. If the CHK light is still on, exchange, in the sequence shown, the following FRUs for new FRUs. Ensure that for *each* FRU exchange, you go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

1) Fan-and-power-supply assembly whose CHK light is on (see “Fan-and-Power-Supply Assemblies” on page 75)
2) SCSI interface card (see “SCSI Interface Card Assembly” on page 80)
3) Switch card assembly (see “Switch Card Assembly” on page 84)
4) Frame assembly (see “Frame Assembly” on page 87)

Step 11. (from step 8)

Is the Subsystem Power light on?

NO Go to “MAP 2020: 2104 – Power” on page 43.

YES Go to step 12 on page 42.

Step 12. (from step 11)

Are any FRU power lights off when they should be on?

NO Go to step 13.

YES

a. Exchange, for a new FRU, the FRU whose light is off.

b. Go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

Step 13. (from step 12)

Are you here because access to the SCSI devices that are in the 2104 has been lost?

NO No problem has been found on the 2104. For a final check, go to “MAP 2410: 2104 – Repair Verification” on page 55.

YES Go to “MAP 2340: 2104 – SCSI Bus” on page 53.

MAP 2020: 2104 – Power

This MAP helps you to isolate FRUs that are causing a power problem on a 2104.

Attention: Unless the using system needs to be switched off for some other reason, do not switch off the using system when servicing the 2104 or any of its SCSI devices. Power cables and external SCSI cables that connect the 2104 to the using system can be disconnected while that system is running.

Step 1. (from step 11 in MAP 2010: 2104 – START)

You are here because the Subsystem Power light is off.

Are any lights on at the front of the 2104?

NO Go to step 2.

YES The Subsystem Power light has failed. In the sequence shown, exchange the following FRUs for new FRUs. Ensure that for *each* FRU exchange, you go to "MAP 2410: 2104 – Repair Verification" on page 55 to verify the repair.

a. SCSI interface card (see "SCSI Interface Card Assembly" on page 80)

b. Frame assembly (see "Frame Assembly" on page 87)

Step 2. (from step 1)

Observe the fan-and-power-supply assembly (or assemblies, if two are present).

Does at least one fan-and-power-supply assembly have its AC PWR light on?

NO Check the mainline power source and the power cable.

YES Go to step 3.

Step 3. (from step 2)

Observe the fan-and-power-supply assembly whose AC PWR light is on.

Is this fan-and-power-supply assembly switched on?

NO

a. Set the DC On/Standby switch to On.

b. If the problem is still not solved, go to "MAP 2010: 2104 – START" on page 38.

YES Go to step 4 on page 44.

Step 4. (from step 3)

Does the fan-and-power-supply assembly have its DC PWR light on?

NO

a. Set the DC On/Standby switch to Standby, then to On again.
b. Go to step 5.

YES

a. Exchange the frame assembly for a new one (see “Frame Assembly” on page 87).
b. Go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

Step 5. (from step 4)

Does the fan-and-power-supply assembly have its DC PWR light on now?

NO Go to step 6.

YES If the problem is still not solved, go to “MAP 2010: 2104 – START” on page 38.

Step 6. (from step 5)

Observe the switch card assembly (see “Switch Card Assembly Switches” on page 8).

Is the power control switch set to OFF?

NO In the sequence shown, exchange the following FRUs for new FRUs. Ensure that for *each* FRU exchange, you go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

a. Fan-and-power-supply assembly (see “Fan-and-Power-Supply Assemblies” on page 75)
b. SCSI interface card assembly (see “SCSI Interface Card Assembly” on page 80)
c. Switch card assembly (see “Switch Card Assembly” on page 84)

YES Go to step 7 on page 45.

Step 7. (from step 6)

Observe the SCSI interface card assemblies.

Does either SCSI interface card have its TERM POWER light on?

NO Go to step 8.

YES In the sequence shown, exchange the following FRUs for new FRUs. Ensure that for *each* FRU exchange, you go to "MAP 2410: 2104 – Repair Verification" on page 55 to verify the repair.

a. Fan-and-power-supply assembly (see "Fan-and-Power-Supply Assemblies" on page 75)

b. SCSI interface card (see "SCSI Interface Card Assembly" on page 80)

c. Switch card assembly (see "Switch Card Assembly" on page 84)

Step 8. (from step 7)

Is the using system switched on?

NO Switch on the using system (see the service information for the using system). The 2104 should switch on when the using system switches on.

If the problem is still not solved, go to "MAP 2010: 2104 – START" on page 38.

YES In the sequence shown, exchange the following FRUs for new FRUs. Ensure that for *each* FRU exchange, you go to "MAP 2410: 2104 – Repair Verification" on page 55 to verify the repair.

a. External SCSI cables

b. SCSI interface card assembly (see "SCSI Interface Card Assembly" on page 80)

Note: If the TERM POWER light is still off, you might have a problem with the SCSI attachment that is in the using system (see the service information for the using system).

MAP 2022: 2104 – Power-On

This MAP helps you to isolate FRUs that are causing a power problem on a 2104.

Attention: Unless the using system needs to be switched off for some other reason, do not switch off the using system when servicing the 2104 or any of its SCSI devices. Power cables and external SCSI cables that connect the 2104 to the using system can be disconnected while that system is running.

Step 1. (from step 1 in MAP 2010: 2104 – START)

a. Remove both fan-and-power-supply assemblies, if two are present. If your 2104 has only one fan-and-power supply assembly, remove also the fan assembly (see “Fan-and-Power-Supply Assemblies” on page 75 and “Fan Assembly” on page 78).

b. Remove the SCSI interface card assemblies (see “SCSI Interface Card Assembly” on page 80). If your 2104 has only one SCSI interface card assembly, you do not need to remove the dummy assembly.

c. Remove the switch card assembly (see “Switch Card Assembly” on page 84).

d. Disconnect all the disk drive modules from the backplane. To do this, open the handle on each module (see “Disk Drive Modules and Dummy Disk Drive Modules” on page 65). You do not need to completely remove the disk drive modules.

e. Go to step 2 on page 47.

Step 2. (from step 1)

a. Reinstall a fan-and-power-supply assembly into position 1.

b. Connect a power cable to the fan-and-power-supply assembly.

c. Set the DC On/Standby switch of the fan-and-power-supply assembly to On.

Note: Unless a procedure needs you to switch off the 2104, leave the 2104 switched on for the remainder of this MAP.

Does the 2104 emit smoke or a smell of burning?

NO Go to step 3 on page 48.

YES

a. In the sequence shown, exchange the following FRUs for new FRUs:

1) The fan-and-power-supply assembly that you have just reinstalled

2) The frame assembly (see “Frame Assembly” on page 87)

b. Go to step 3 on page 48.

Step 3. (from step 2)

a. Reinstall the other fan-and-power-supply assembly, or the fan assembly, into position 2.

b. If you have just reinstalled a fan-and-power-supply assembly into position 2:

   1) Connect a power cable to that assembly.

   2) Set the DC On/Standby switch of the fan-and-power-supply assembly to On.

Note: Unless a procedure needs you to switch off the 2104, leave the 2104 switched on for the remainder of this MAP.

Does the 2104 emit smoke or a smell of burning?

NO Go to step 4.

YES

a. In the sequence shown, exchange the following FRUs for new FRUs:

   1) The fan-and-power-supply assembly, or fan assembly, that you have just reinstalled

   2) The frame assembly (see “Frame Assembly” on page 87)

b. Go to step 4.

Step 4. (from step 3)

Reinstall a SCSI interface card assembly into position 1.

Does the 2104 emit smoke or a smell of burning?

NO If the 2104 has two SCSI interface cards, go to step 5 on page 49. Otherwise, go to step 6 on page 49.

YES

a. Exchange, for a new one, the SCSI interface card assembly that you have just reinstalled.

b. If the 2104 has two SCSI interface cards, go to step 5 on page 49. Otherwise, go to step 6 on page 49.

Step 5. (from step 4)

Reinstall the other SCSI interface card assembly into position 2.

Does the 2104 emit smoke or a smell of burning?

NO Go to step 6.

YES

a. Exchange, for a new one, the SCSI interface card assembly that you have just reinstalled.

b. Go to step 6.

Step 6. (from steps 4 and 5)

Reinstall the switch card assembly.

Does the 2104 emit smoke or a smell of burning?

NO Go to step 7.

YES

a. Exchange the switch card assembly for a new one.

b. Go to step 7.

Step 7. (from step 6)

Reconnect a disk drive module by closing its handle (see “Installing a Module” on page 70).

Does the 2104 emit smoke or a smell of burning?

NO Go to step 8.

YES

a. Exchange, for a new one, the disk drive module that you have just reconnected.

b. Go to step 8.

Step 8. (from steps 7 and 9)

Reconnect the next disk drive module.

Does the 2104 emit smoke or a smell of burning?

NO Go to step 9.

YES

a. Exchange, for a new one, the disk drive module that you have just reconnected.

b. Go to step 9.

Step 9. (from step 8)

Have you reconnected all the disk drive modules?

NO Return to step 8.

YES Go to step 10 on page 50.

Step 10. (from steps 4 and 9)

Have you solved the problem?

NO Remove all power from the 2104, and call for assistance.

YES Go to step “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

MAP 2030: 2104 – Power Control

This MAP helps you to isolate FRUs that are causing a power problem when power control is active.

Attention: Unless the using system needs to be switched off for some other reason, do not switch off the using system when servicing the 2104 or any of its SCSI devices. Power cables and external SCSI cables that connect the 2104 to the using system can be disconnected while that system is running.

Step 1. (from step 2 in MAP 2010: 2104 – START, and from step 5 in MAP 2020: 2104 – Power)

You are here because power is still present at the 2104 although the using system is switched off.

Observe the switch card assembly (see “Switch Card Assembly” on page 84).

Is the power control switch set to Off?

NO If you want the 2104 to switch to Standby when the using system is switched off or to Standby, set the 2104 power control switch to Off. Alternatively, you can manually set the DC On/Standby switch to Standby on each fan-and-power-supply assembly in the 2104.

YES Go to step 2.

Step 2. (from step 1)

Observe a SCSI interface card.

Is the TERM POWER light on?

NO Go to step 4 on page 52.

YES

a. Disconnect the SCSI cable from the SCSI interface card.

b. Go to step 3.

Step 3. (from step 2)

Does the TERM POWER light remain on?

NO The using system to which the SCSI cable is attached is supplying terminator voltage. Check the using system to isolate the problem.

YES

a. Exchange the SCSI interface card assembly for a new one (see “SCSI Interface Card Assembly” on page 80).

b. Go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

Step 4. (from step 2)

Does the 2104 have two fan-and-power-supply assemblies?

NO

a. In the sequence shown, exchange the following FRUs for new FRUs:
   1) Fan-and-power-supply assembly (see “Fan-and-Power-Supply Assemblies” on page 75)
   2) SCSI interface card assembly (see “SCSI Interface Card Assembly” on page 80)
b. Go to step 7.

YES Go to step 5.

Step 5. (from step 4)

Do both fan-and-power-supply assemblies have their DC PWR lights on?

NO Go to step 6.

YES In the sequence shown, exchange the following FRUs for new FRUs. Ensure that for *each* FRU exchange, you go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

a. SCSI interface card assembly (see “SCSI Interface Card Assembly” on page 80)
b. Frame assembly (see “Frame Assembly” on page 87)

Step 6. (from step 5)

Does only one fan-and-power-supply assembly have its DC PWR light on?

NO Go to step 7.

YES

a. Exchange, for a new one, the fan-and-power-supply assembly whose DC PWR light remains on (see “Fan-and-Power-Supply Assemblies” on page 75).
b. Go to step 7.

Step 7. (from steps 4 and 6)

Is the 2104 still powered on?

NO The problem is solved.

YES Call for assistance.

MAP 2340: 2104 – SCSI Bus

You are here because the using system cannot get access to any SCSI device (disk drive module or enclosure services).

Attention: Unless the using system needs to be switched off for some other reason, do not switch off the using system when servicing the 2104 or any of its SCSI devices. Power cables and external SCSI cables that connect the 2104 to the using system can be disconnected while that system is running.

Step 1. (from step 13 in MAP 2010: 2104 – START)

Note the positions of all the disk drive modules and dummy disk drive modules so that you can reinstall the modules into their correct slots later.

Step 2. Remove all the disk drive modules, except for one (see “Disk Drive Modules and Dummy Disk Drive Modules” on page 65).

Step 3. (from steps 2 and 5)

Can the using system access this disk drive module?

NO Go to step 4 on page 54.

YES Go to step 5 on page 54.

Step 4. (from step 3)

Remove the disk drive module that you have just tested, and install a ***different*** disk drive module into a ***different*** slot.

Can the using system access this disk drive module?

NO

a. In the sequence shown, exchange the following FRUs for new FRUs. Ensure that for *each* FRU exchange, you check whether you can access the disk drive module, to verify the repair.
   1) External SCSI cable
   2) One SCSI interface card assembly (see "SCSI Interface Card Assembly" on page 80)
   3) The other SCSI interface card assembly (if present).
   4) SCSI attachment (see the using-system service information)
   5) Frame assembly (see "Frame Assembly" on page 87)
b. If the repair is successful, reinstall all the disk drive modules, go to "MAP 2410: 2104 – Repair Verification" on page 55 to verify the repair.

YES

a. In the sequence shown, exchange the following FRUs for new FRUs. Ensure that for *each* FRU exchange, you check whether you can access the disk drive module.
   1) The disk drive module that you tested ***immediately before this one*** (see "Disk Drive Modules and Dummy Disk Drive Modules" on page 65). Install the replacement disk drive module into the ***original*** slot.
   2) Frame assembly (see "Frame Assembly" on page 87)
b. Reinstall all the other disk drive modules.
c. Go to "MAP 2410: 2104 – Repair Verification" on page 55 to verify the repair.

Step 5. (from step 3)

Have you reinstalled all the disk drive modules?

NO

a. Install another disk drive module.
b. Go to step 3 on page 53.

YES No fault has been found. You have probably solved the problem by reconnecting the disk drive modules.

MAP 2410: 2104 – Repair Verification

This MAP helps you to verify a repair after a FRU has been exchanged for a new one.

Attention: Unless the using system needs to be switched off for some other reason, do not switch off the using system when servicing the 2104 or any of its SCSI devices. Power cables and external SCSI cables that connect the 2104 to the using system can be disconnected while that system is running.

Step 1.

Do all the FRUs that you have exchanged have their power lights on (where applicable)?

NO Exchange, for a new one, the FRU whose power light is off.

YES Go to step 2.

Step 2. (from step 1)

Ensure that the DC On/Standby switch of each fan-and-power-supply assembly is set to On.

Are all Check lights off?

NO Go to “MAP 2010: 2104 – START” on page 38.

YES Go to 3.

Step 3. (from step 2)

Run concurrent diagnostics to the 2104. For information about how to run concurrent diagnostics, see “Concurrent Diagnostics” in “Appendix A. Additional Information for RISC Systems”.

Did the programs run without error?

NO If an SRN was generated, follow the instructions given by that SRN. Otherwise, call for assistance.

YES The repair is complete.

Chapter 3. Removal and Replacement Procedures

These instructions describe how to remove field-replaceable units (FRUs) from the 2104.

Each FRU has its own removal procedure, for example, “Fan-and-Power-Supply Assembly”. Where a *step* in a specific procedure represents a complete *procedure* that is described separately, a reference to that procedure is given. For example:

1. Remove the front cover (see “Cover” on page 58).
2. Remove all the disk drive modules (see “Removing a Module” on page 65).

The references show you where to find more detail, if you need it.

Note: Because these instructions relate to the 2104 Model DL1 and to the 2104 Model TL1, some diagrams might not specifically show the model that you are servicing.

Concurrent Maintenance

Subject to the configuration of the 2104, most FRUs can be removed, replaced, and tested while the subsystem and using system are powered on and doing productive work. This ability is called “concurrent maintenance”. Unless you have a particular reason to do so, do not remove the power unless these instructions tell you to do so.

The following FRUs *can* be maintained concurrently in a 2104 subsystem:

- Fan assembly
- Fan-and-power-supply assembly (if two are present)
- Disk drive module
- Dummy disk drive module
- SCSI Interface card assembly (if the subsystem configuration allows)
- Switch card assembly
- External SCSI cables (if the subsystem configuration allows)

Cover

Note: Unless you have a particular reason to do so, do not switch off the using system or the 2104 when removing, opening or closing the cover of the 2104.

The 2104 Model DL1 has no covers. The 2104 Model TL1 has only a front cover.

To open and, if required, remove the cover:

Step 1. Ask the customer for the key to the cover.

Step 2. Refer to Figure 17.

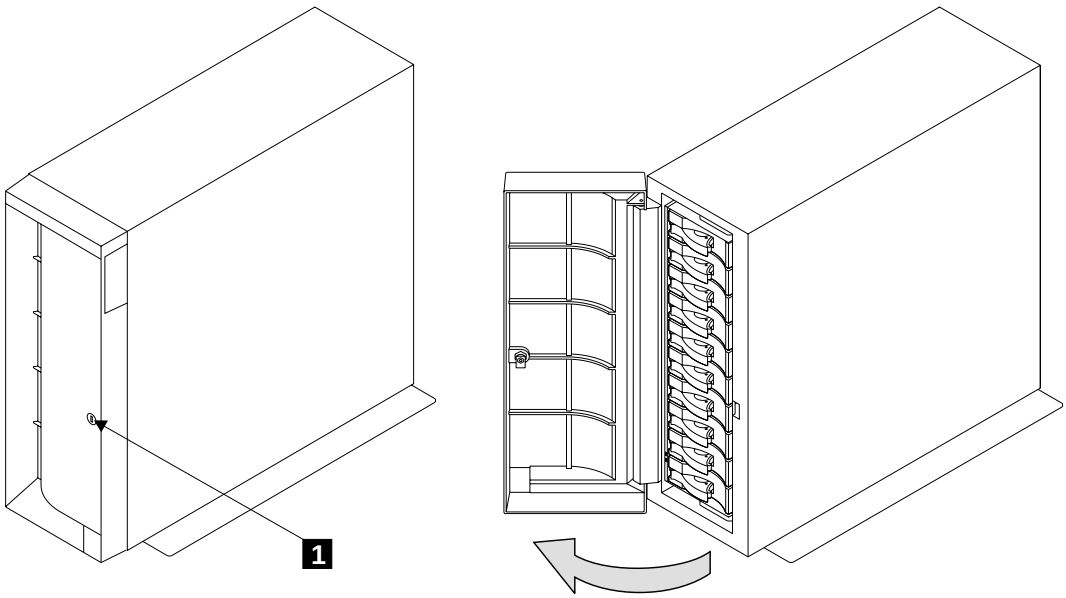


Figure 17. Opening the Front Cover of a 2104 Model TL1

Step 3. Insert the key into the lock **1**, and turn the key counterclockwise.

Step 4. The cover is pivoted on its left-hand side, and is held closed by clips. Pull strongly on the right-hand side of the cover to release it from the clips.

Step 5. If you want to remove the cover, refer to Figure 18 on page 59.

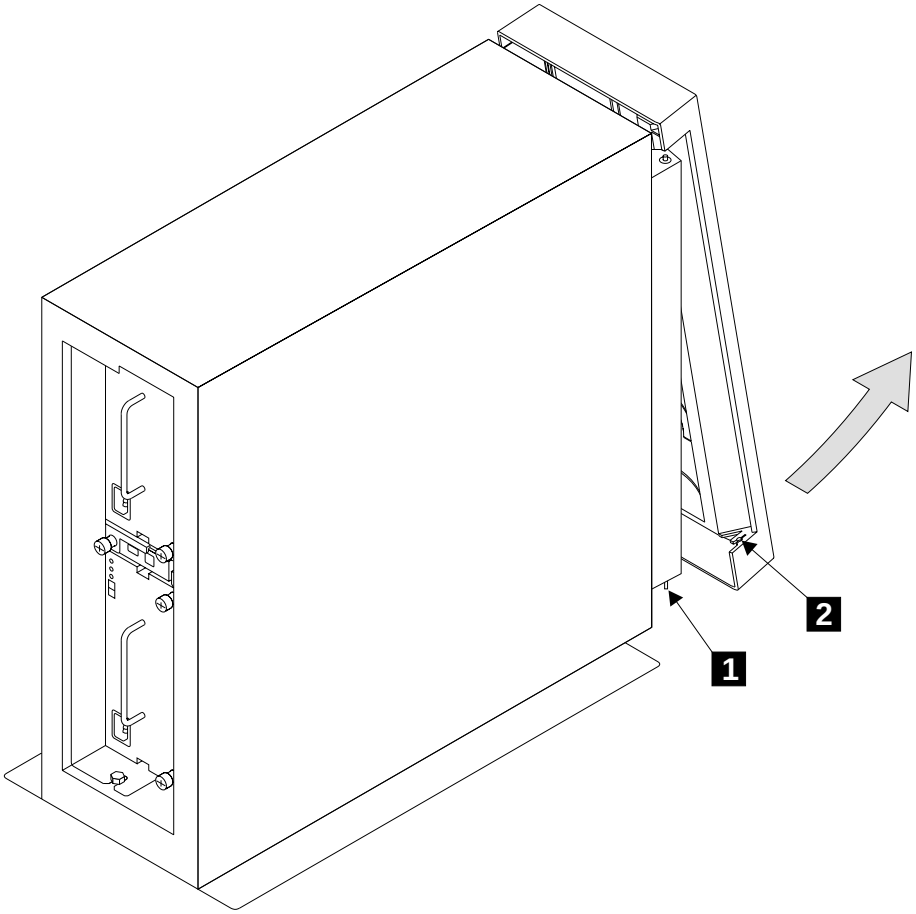


Figure 18. Removing the Front Cover of a 2104 Model TL1 (1)

Step 6. Ensure that the cover is unlocked and open.

Step 7. Grasp the bottom of the cover and pull it outward to release the lower cover hinge **2** from the hinge pin **1**.

Step 8. Refer to Figure 19.

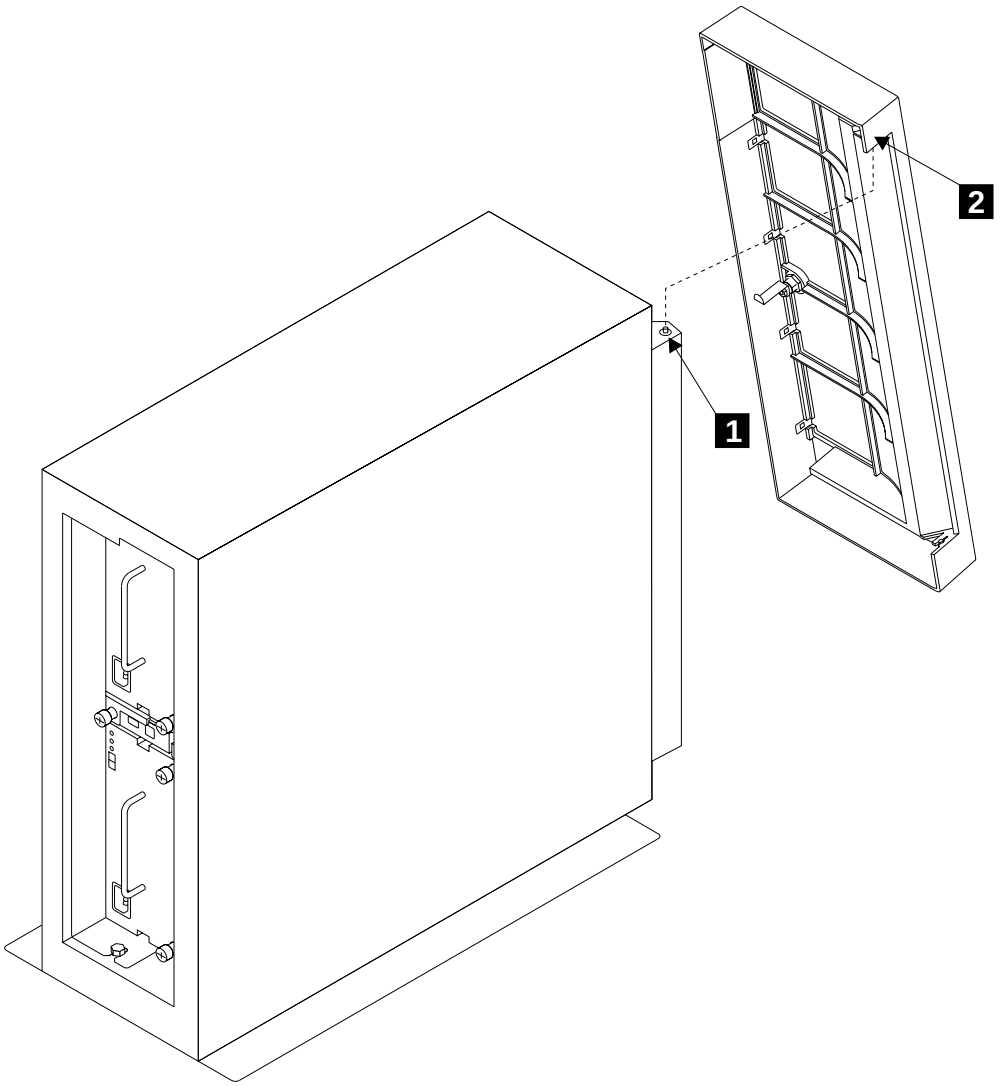


Figure 19. Removing the Front Cover of a 2104 Model TL1 (2)

Step 9. Lift the cover to disengage the pivot hole **2** from the upper hinge pin **1**.

Step 10. Replace parts in the reverse sequence.

Note: Before you install the cover, ensure that the lock is in the unlocked position. Otherwise, the front cover might become damaged.

All Power

Note: Unless you have a particular reason to do so, do not remove power from the using system or from the 2104 unless the instructions that you are following tell you to.

This section has two parts:

- "Power (2104 Model DL1)"
- "Power (2104 Model TL1)" on page 63.

Go to the part that is relevant to the Model of 2104 that you are servicing.

Power (2104 Model DL1)

Step 1. Verify with the customer that all operations between the 2104 and the using system have been stopped.

Step 2. Refer to Figure 20.

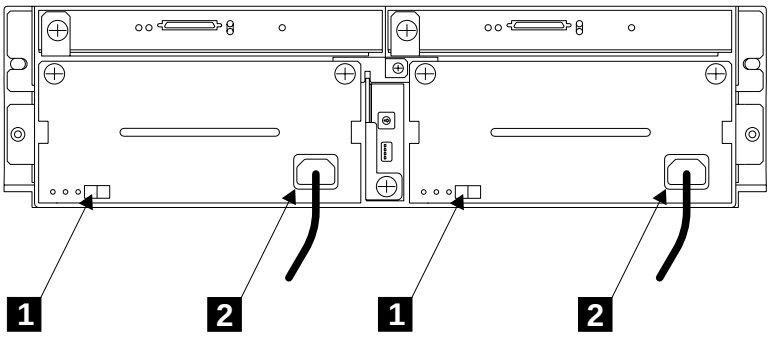


Figure 20. Removing the Power from a 2104 Model DL1

Step 3. Set the DC On/Standby switch **1** of each fan-and-power-supply assembly to Standby.

Note: Some 2104s have a fan-and-power-supply assembly and a fan assembly. The fan assembly has no power switch.

Note: For a translation of the following notice, see "Appendix C. Translated Safety Notices" on page 141.

DANGER

In the following step you are going to remove the power cables. These cables are live if the rack power distribution unit or uninterruptible power supply (UPS) unit is still switched on.

Step 4. Remove the power cables **2** from the back of the 2104.

Step 5. To return power to the 2104:

a. Reinstall the power cables **2** .

b. Set the DC On/Standby switch **1** of each fan-and-power-supply assembly to On.

Note: The 2104 has no power sequencing. All the disk drive modules start their power sequence when the input voltages are inside the specified limits. Their motors are started under control of the SCSI attachments in the using system. To prevent the need for excessive electrical current, the disk drive module motors are not all started together. Normally, all the disk drive module motors are running in less than 30 seconds from the time the 2104 is switched on.

Power (2104 Model TL1)

Step 1. Verify with the customer that all operations between the 2104 and the using system have been stopped.

Step 2. Refer to Figure 21.

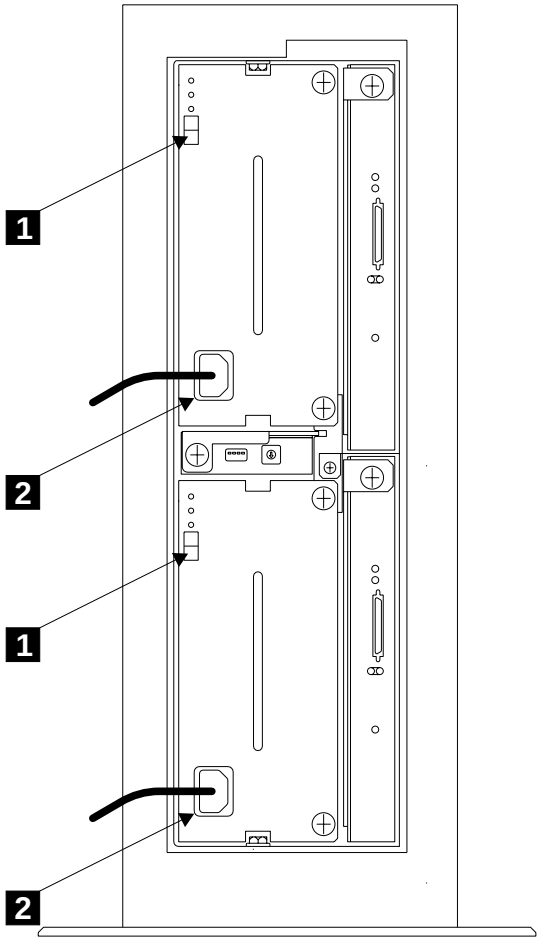


Figure 21. Removing Power from a 2104 Model TL1

Step 3. At the back of the 2104, set the DC On/Standby switch **1** of each fan-and-power-supply assembly to Standby.

Note: Some 2104s have a fan-and-power-supply assembly and a fan assembly. The fan assembly has no power switch.

Step 4. Remove the power cables **2** from the electrical power outlet and from the back of the 2104.

Step 5. To return power to the 2104:

a. Reinstall the power cables **2**.

b. Set the DC On/Standby switch **1** of each fan-and-power-supply assembly to On.

Note: The 2104 has no power sequencing. All the disk drive modules start their power sequence when the input voltages are inside the specified limits. Their motors are started under control of the SCSI attachments in the using system. To prevent the need for excessive electrical current, the disk drive module motors are not all started together. Normally, all the disk drive module motors are running in less than 30 seconds from the time the 2104 is switched on.

Disk Drive Modules and Dummy Disk Drive Modules

Note: A disk drive module is one FRU. Always exchange it as a complete FRU.

Removing a Module

Attention:

- Disk drive modules are electrostatic-discharge (ESD) sensitive. Use the tools and procedures defined by your organization to protect such parts. See also “Electrostatic Discharge” on page xiv.
- Disk drive modules are fragile. Handle them with care, and keep them well away from strong magnetic fields.
- Any slot that has no disk drive module installed *must* contain a dummy disk drive module. The dummy module ensures that the correct airflow is maintained around the disk drive modules in the other slots. If a slot remains empty, overheating might occur.

Notes:

1. Unless you have a particular reason to do so, do not switch off the using system or the 2104 when removing disk drive modules or dummy disk drive modules.
2. The diagrams in these instructions show a 2104 Model DL1. The procedure for a 2104 Model TL1 is the same, except that everything is turned through 90 degrees.

Step 1. If you are removing a module from a 2104 Model TL1, open the front cover (see “Cover” on page 58), if not already done.

Step 2. If you are removing a ***dummy*** disk drive module, go to step 3 on page 66. Otherwise, go to step 7 on page 67.

Step 3. Refer to Figure 22.

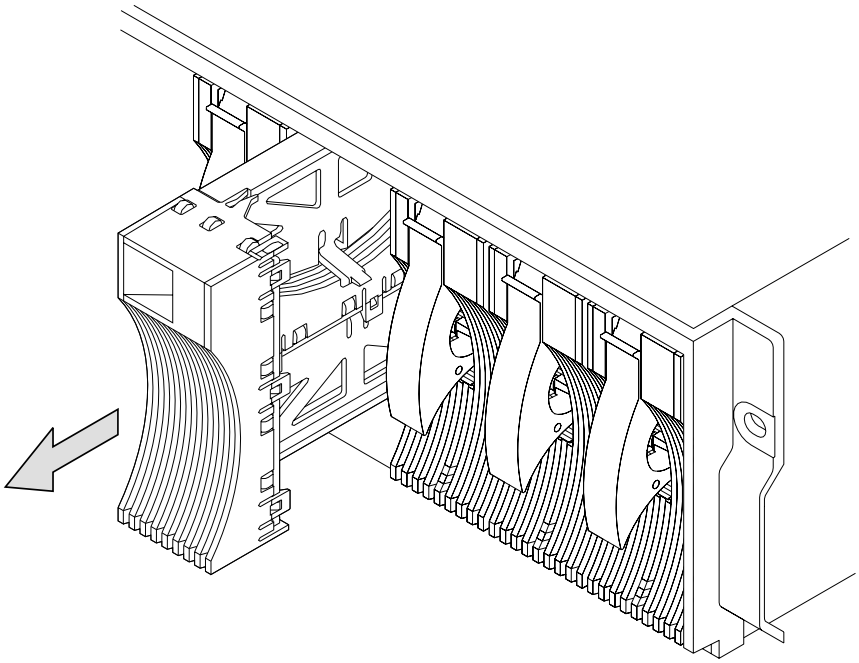


Figure 22. Removing a Dummy Disk Drive Module

Step 4. Using the finger slot that is provided at the top of the module, remove the dummy disk drive module.

Step 5. Lay the dummy disk drive module on its side in a safe place.

Step 6. Go to “Installing a Module” on page 70, and install a disk drive module.

Step 7. Ensure that the using system is not using the disk drive module that you are going to remove.

Step 8. Find the disk drive module that you are going to remove (see “SCSI Addresses” on page 22.)

Step 9. If the 2104 is powered on, use the SCSI Device Identification and Removal service aid to set the disk drive module to **Remove** (see “System Service Aids” in “Appendix A. Additional Information for RISC Systems”). The Check light of the disk drive module that you are going to remove comes on and remains on.

Note: If the failing disk drive module is affecting the SCSI bus operation, the service aid might not work correctly.

Step 10. Refer to Figure 23.

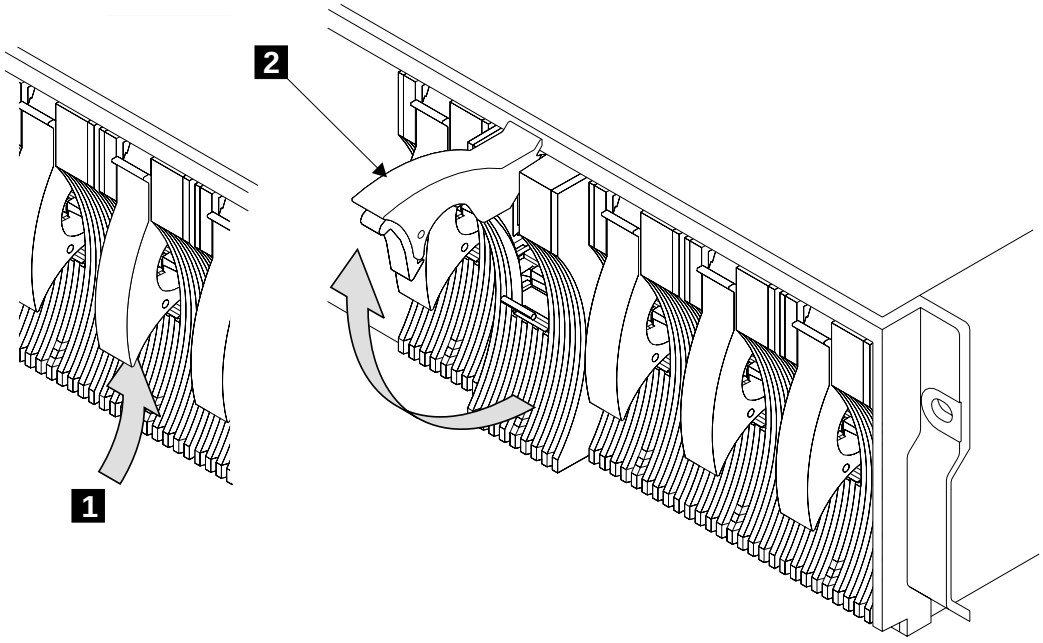


Figure 23. Opening the Handle of a Disk Drive Module

Step 11. On the disk drive module whose Check light is on (see step 9), press the blue latch **1**, and lift the handle **2** fully. This action pulls the module partially out of its slot.

Step 12. Refer to Figure 24.

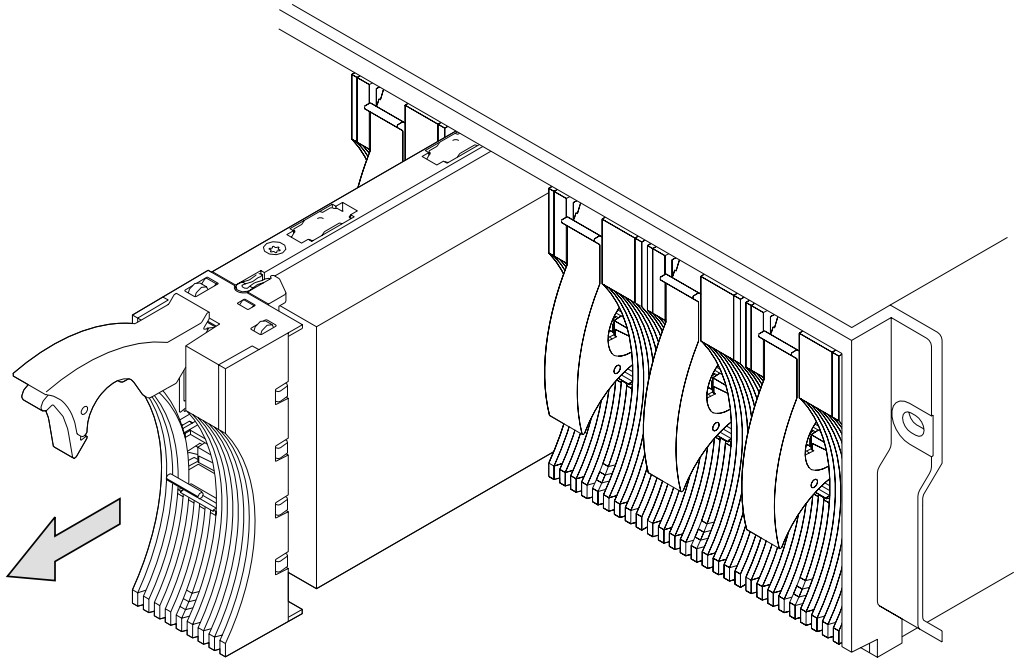


Figure 24. Removing a Disk Drive Module

Step 13. Grip the handle, and carefully pull out the disk drive module. As the module comes out, put one hand under its base to prevent it from falling.

Step 14. Refer to Figure 25.

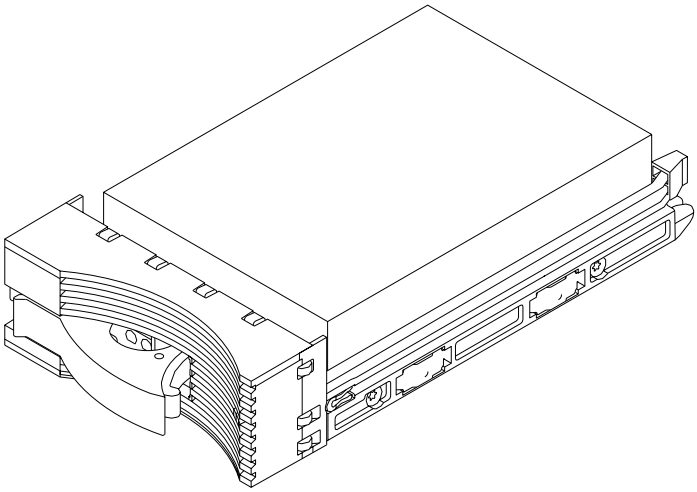


Figure 25. Placing a Disk Drive Module into a Safe Position

Step 15. Lay down the module as shown. In this position, the module rests on four supports (not visible in Figure 25).

Step 16. **Attention:** Any slot that has no disk drive module installed *must* contain a dummy disk drive module. The dummy module ensures that the correct airflow is maintained around the disk drive modules in the other slots. If a slot remains empty, overheating might occur.

Go to “Installing a Module” on page 70, and install a disk drive module or a dummy disk drive module, as required.

Installing a Module

Attention:

- Disk drive modules are electrostatic-discharge (ESD) sensitive. Use the tools and procedures defined by your organization to protect such parts. See also “Electrostatic Discharge” on page xiv.
- Disk drive modules are fragile. Handle them with care, and keep them well away from strong magnetic fields.
- Any slot that has no disk drive module installed *must* contain a dummy disk drive module. The dummy module ensures that the correct airflow is maintained around the disk drive modules in the other slots. If a slot remains empty, overheating might occur.

Notes:

1. Unless you have a particular reason to do so, do not switch off the using system or the 2104 when installing disk drive modules or dummy disk drive modules.
2. The diagrams in these instructions show a 2104 Model DL1. The procedure for a 2104 Model TL1 is the same, except that everything is turned through 90 degrees.

Step 1. If you are installing a module into a 2104 Model TL1, open the front cover (see “Cover” on page 58), if not already done.

Step 2. If you installing a ***dummy*** disk drive module into an empty slot, go to step 3.

If you installing a disk drive module into an empty slot, go to step 7 on page 72.

If you installing a disk drive module into a slot that already contains a disk drive module or a dummy disk drive module, remove that module (see “Removing a Module” on page 65), then go to step 7 on page 72.

Step 3. Refer to Figure 26.

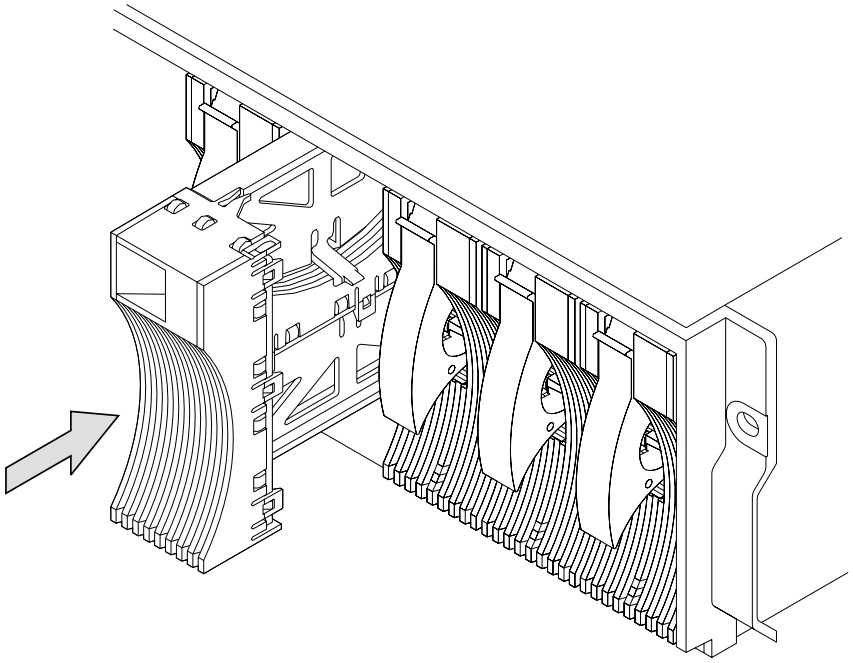


Figure 26. Installing a Dummy Disk Drive Module

Step 4. Insert the dummy disk drive module into the slot and push it fully home.

Step 5. Verify that the dummy disk drive module that you have just installed is aligned with the sides of the 2104, and that no gap exists between this module and the modules that are next to it. Verify also that the front edge of this module aligns with the front edges of the modules that are next to it. If the dummy disk drive module is not correctly aligned, remove it then reinstall it.

Step 6. Repeat this procedure for other dummy disk drive modules, or go to step 7 on page 72 to install disk drive modules.

Step 7. If the 2104 is powered on, use the SCSI Device Identification and Removal service aid to set the slot to **Insert** (see “System Service Aids” in “Appendix A. Additional Information for RISC Systems”). The Check light that is at the back of the slot (on the backplane) comes on.

Step 8. Refer to Figure 27.

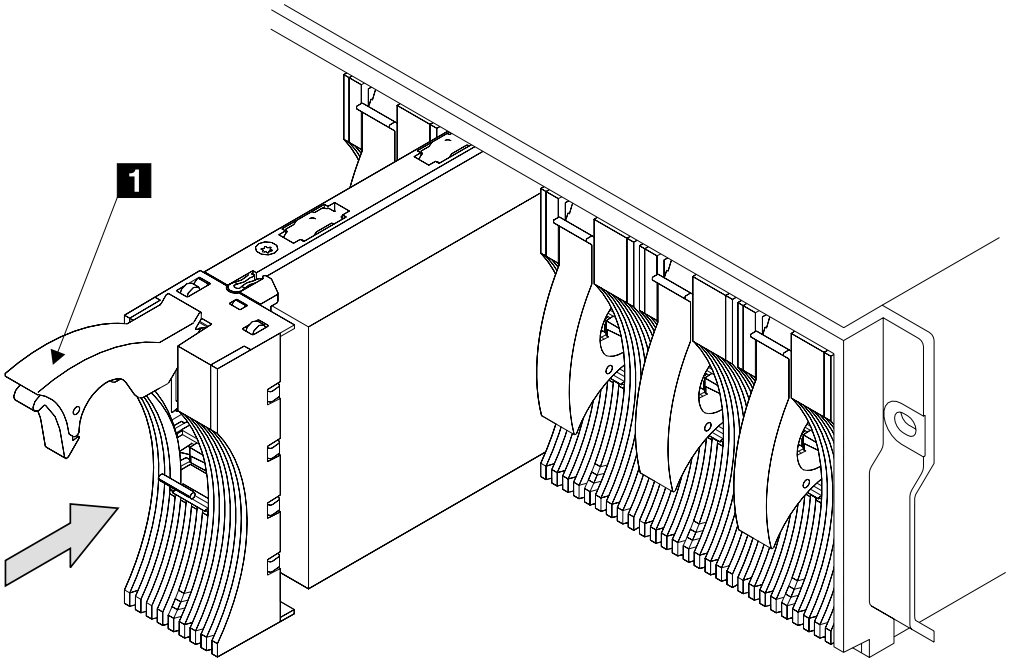


Figure 27. Installing a Disk Drive Module

Step 9. Ensure that the handle **1** is fully open on the module that you are going to install.

Step 10. With one hand giving support to the base of the module and the other hand holding the handle, insert the module, and push it into the slot whose Check light is on (see step 7). When the handle touches the front of the 2104, the module stops. Note that the module is not yet fully home.

Step 11. Refer to Figure 28

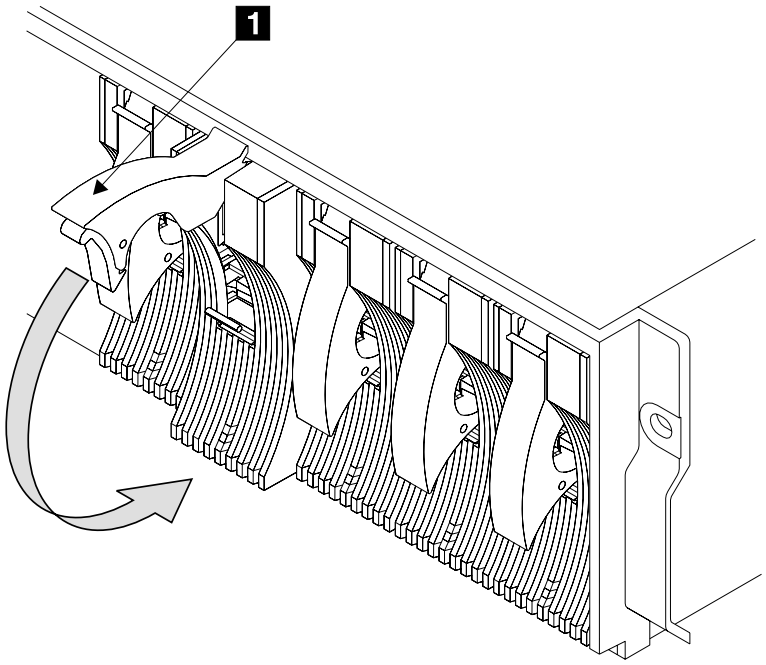


Figure 28. Closing the Handle of a Disk Drive Module

Step 12. While continuing to push the disk drive module into the slot, slowly close the handle **1** until it stops with a click. This action pushes the module fully home.

Step 13. Verify that the disk drive module that you have just installed is aligned with the sides of the 2104, and that no gap exists between this module and the modules that are next to it. Verify also that the front edge of this disk drive module aligns with the front edges of the modules that are next to it. If the disk drive module is not correctly aligned, remove it then reinstall it.

Step 14. Replace other parts in the reverse sequence.

Step 15. If you installed the disk drive module under concurrent maintenance (see “Concurrent Maintenance” on page 57), configure the new disk drive module to your using system. For more information, see “Appendix A. Additional Information for RISC Systems”.

If you installed the disk drive module while the using system was switched off, switch on the using system when you are ready to do so. When you switch on the using system, the disk drive module is automatically configured.

Step 16. Using the method that is provided on your using system, check the level of microcode that is present on the disk drive module that you have just installed. Additional information about the latest levels of disk drive microcode is given on the web support page (see “Web Support Page” in “Appendix A. Additional Information for RISC Systems”). If you need to download the latest microcode, see “Disk Drive Microcode Maintenance” in “Appendix A. Additional Information for RISC Systems”.

Step 17. If the 2104 is attached to a RISC system, go to step 18. Otherwise, go to step 19.

Step 18. The disk drive that you have just installed has been configured with new hdisk numbers. If you want to change those numbers, go to “Configuring a Disk Drive Module to the Using System” in “Appendix A. Additional Information for RISC Systems”. Otherwise, go to step 19.

Step 19. If you came to this section from a step in MAP, return to that step, and continue with the MAP. Otherwise, go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

Fan-and-Power-Supply Assemblies

Notes:

1. Unless you have a particular reason to do so, do not switch off the using system or the 2104 when removing or installing power supply assemblies.
2. The diagrams in these instructions show a 2104 Model DL1. The procedure for a 2104 Model TL1 is the same, except that everything is turned through 90 degrees.
3. A fan-and-power-supply assembly can be installed in either position at the back of the 2104. You can easily distinguish it from a fan assembly, because it has a power switch and a power connector.
4. The CHK light is active only when the DC On/Standby switch is set to On.

Step 1. Refer to Figure 29.

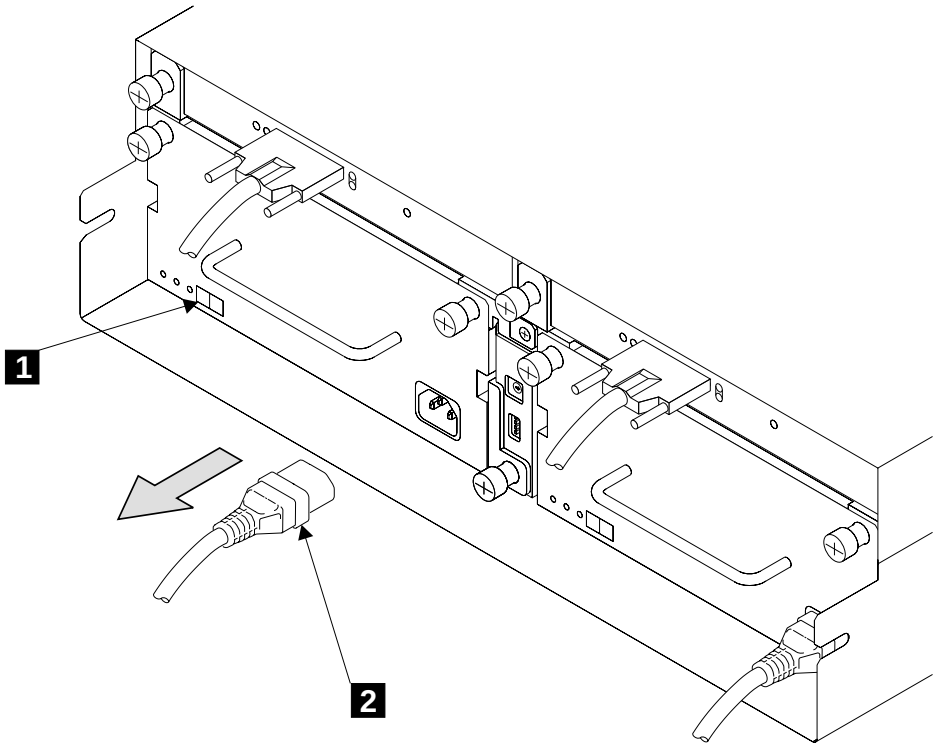


Figure 29. Switching Off and Disconnecting a Fan-and-Power-Supply Assembly

Step 2. At the back of the 2104, set the DC On/Standby switch **1** to Standby on the fan-and-power-supply assembly that you are removing.

Notes:

a. You might hear the speed of the other fan increase.

b. Although you have set the DC On/Standby switch to Standby, the amber CHK light on the fan-and-power-supply assembly might come on or flash. This condition is not a problem. Continue with the next step.

Step 3. Unplug the power cable **2** from the fan-and-power-supply assembly that you are removing.

Note: The fan-and-power-supply lights might stay on for a short time. Wait until they are all off before you go to the next step.

Step 4. Refer to Figure 30.

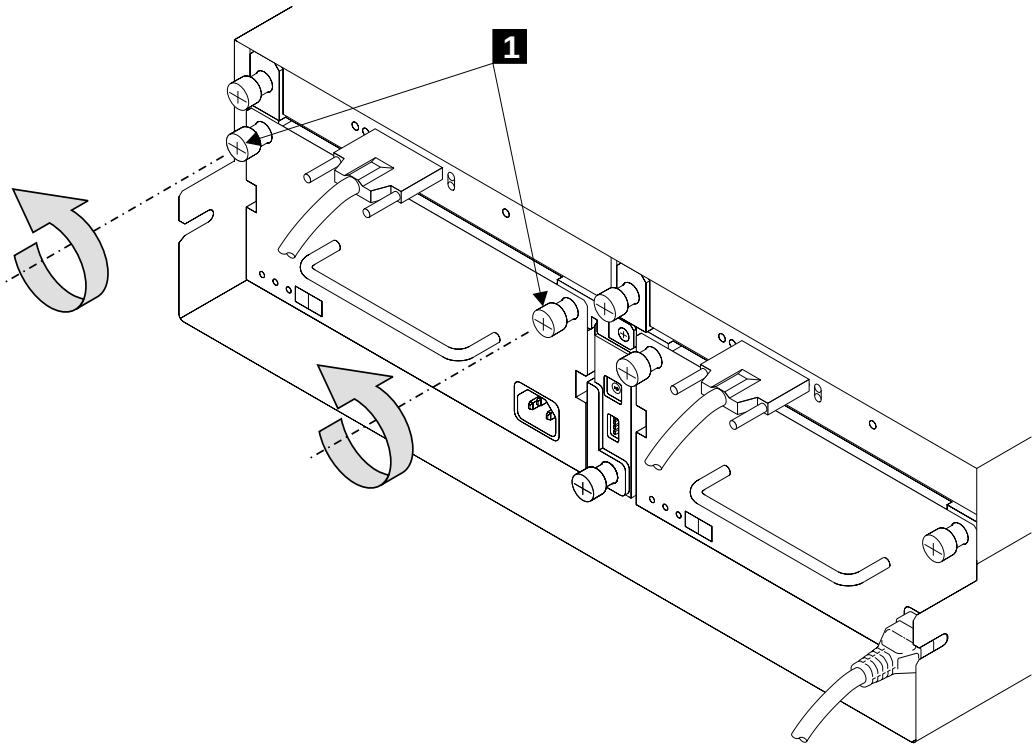


Figure 30. Unscrewing the Thumbscrews

Step 5. Unscrew the two thumbscrews **1** on the fan-and-power-supply assembly.

Step 6. Refer to Figure 31.

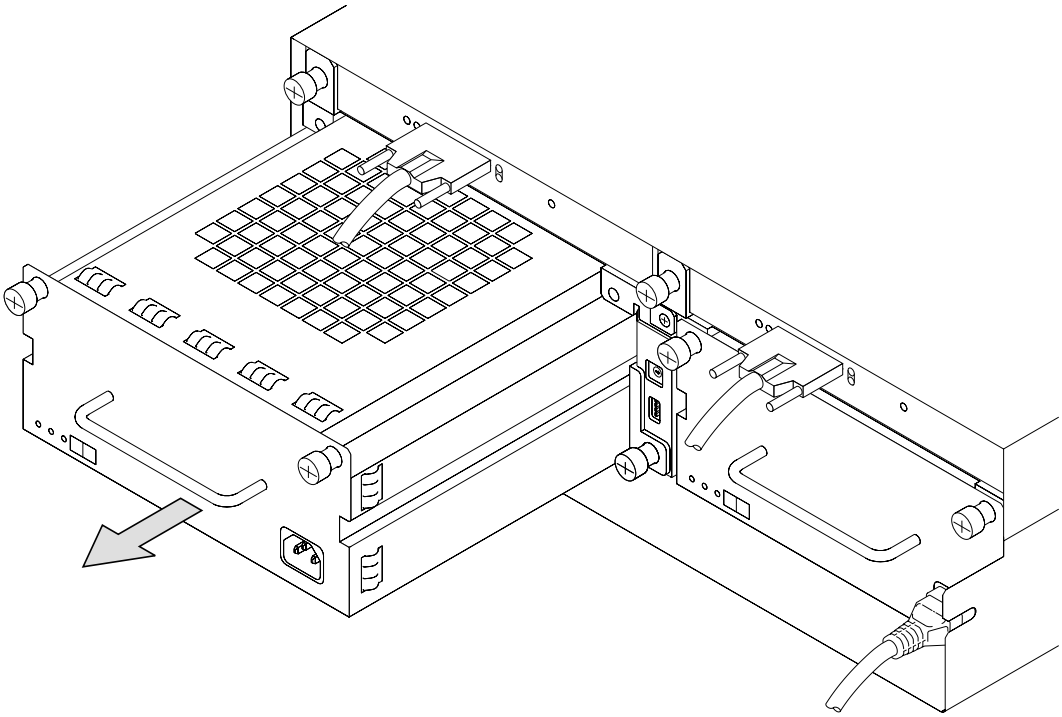


Figure 31. Removing a Fan-and-Power-Supply Assembly

Step 7. Remove the fan-and-power-supply assembly.

The fan-and-power-supply assembly is a complete FRU. Do not try to repair or exchange any part of it.

Note: For a translation of the following notice, see “Appendix C. Translated Safety Notices” on page 141.

DANGER

Do not try to open the covers of the fan-and-power-supply assembly.

Step 8. Replace parts in the reverse sequence.

Note: Remember to set the DC On/Standby switch to On after you have reinstalled the fan-and-power-supply assembly. If the DC On/Standby switch is already set to On when you reinstall the fan-and-power-supply assembly, the CHK light might come on. If it does, set the DC On/Standby switch to Standby, then to On.

Step 9. Go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

Fan Assembly

Notes:

1. Unless you have a particular reason to do so, do not switch off the using system or the 2104 when removing or installing a fan assembly.
2. The diagrams in these instructions show a 2104 Model DL1. The procedure for a 2104 Model TL1 is the same, except that everything is turned through 90 degrees.
3. A fan assembly can be installed in either position at the back of the 2104. You can easily distinguish it from the fan-and-power-supply assembly, because it has no power switch or power connector.

Step 1. Refer to Figure 32.

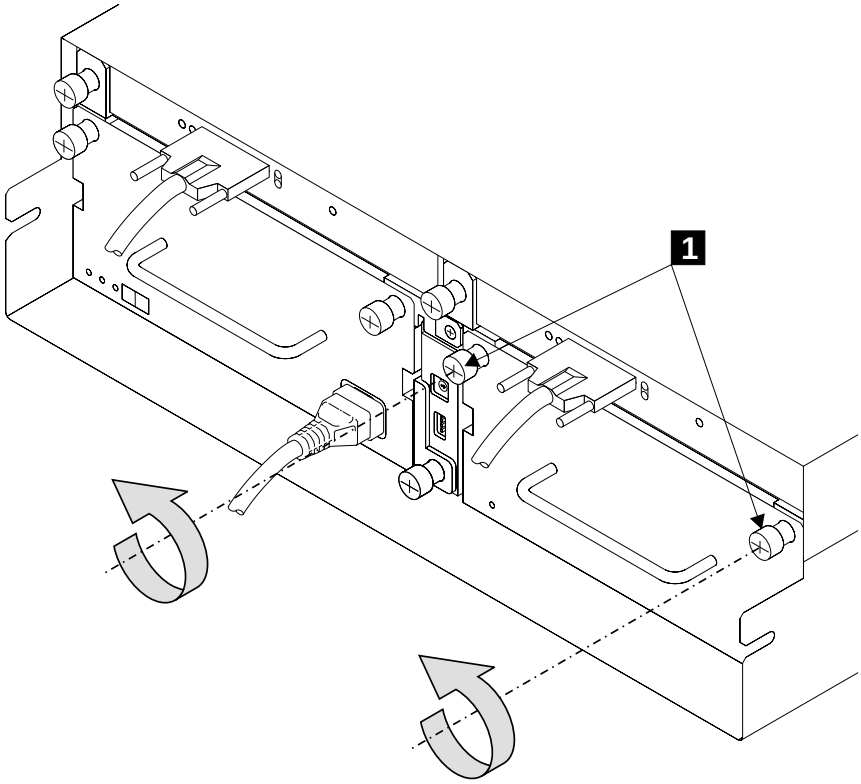


Figure 32. Unscrewing the Thumbscrews

Step 2. At the back of the 2104, unscrew the thumbscrews **1** of the fan assembly.

Step 3. Refer to Figure 33.

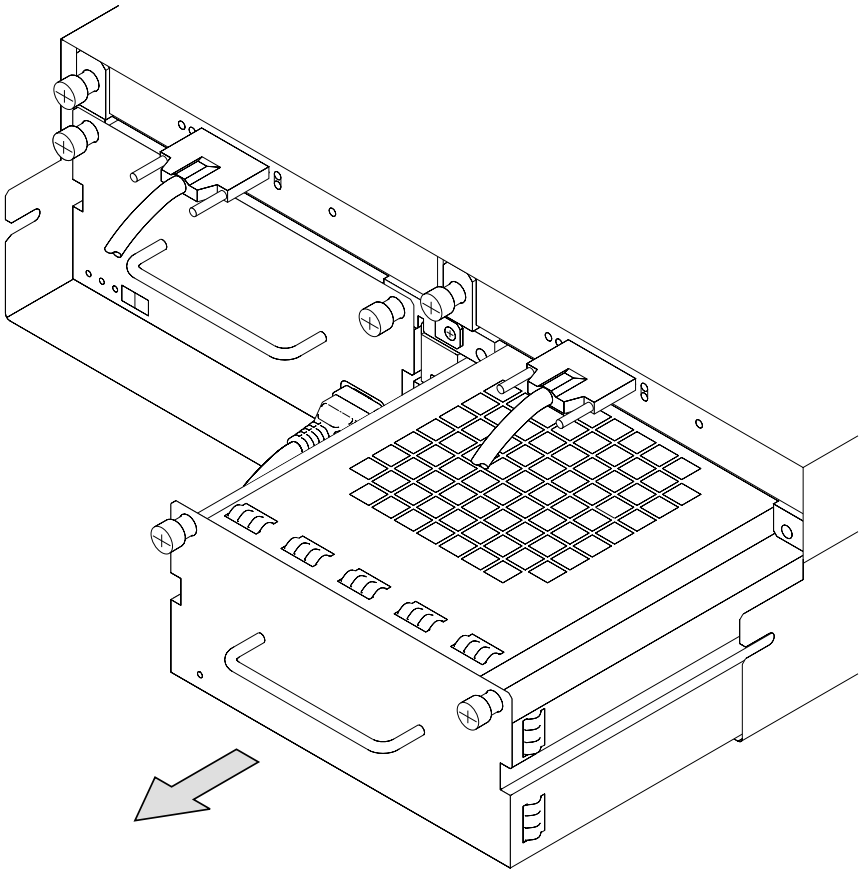


Figure 33. Removing a Fan Assembly

Step 4. Pull out the assembly.

Note: You might hear the speed of the other fan increase.

The fan assembly is a complete FRU. Do not try to repair or exchange any part of it.

Step 5. Replace parts in the reverse sequence.

Note: When you insert the fan assembly, you might hear the speed of the other fan decrease.

Step 6. Go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

SCSI Interface Card Assembly

Attention: The SCSI interface card is electrostatic-discharge (ESD) sensitive. Use the tools and procedures defined by your organization to protect such parts. See also “Electrostatic Discharge” on page xiv.

Notes:

1. Unless you have a particular reason to do so, do not switch off the using system or the 2104 when removing or installing the SCSI interface card assembly.
2. The diagrams in these instructions show a 2104 Model DL1. The procedure for a 2104 Model TL1 is the same, except that everything is turned through 90 degrees.

Step 1. Refer to Figure 34

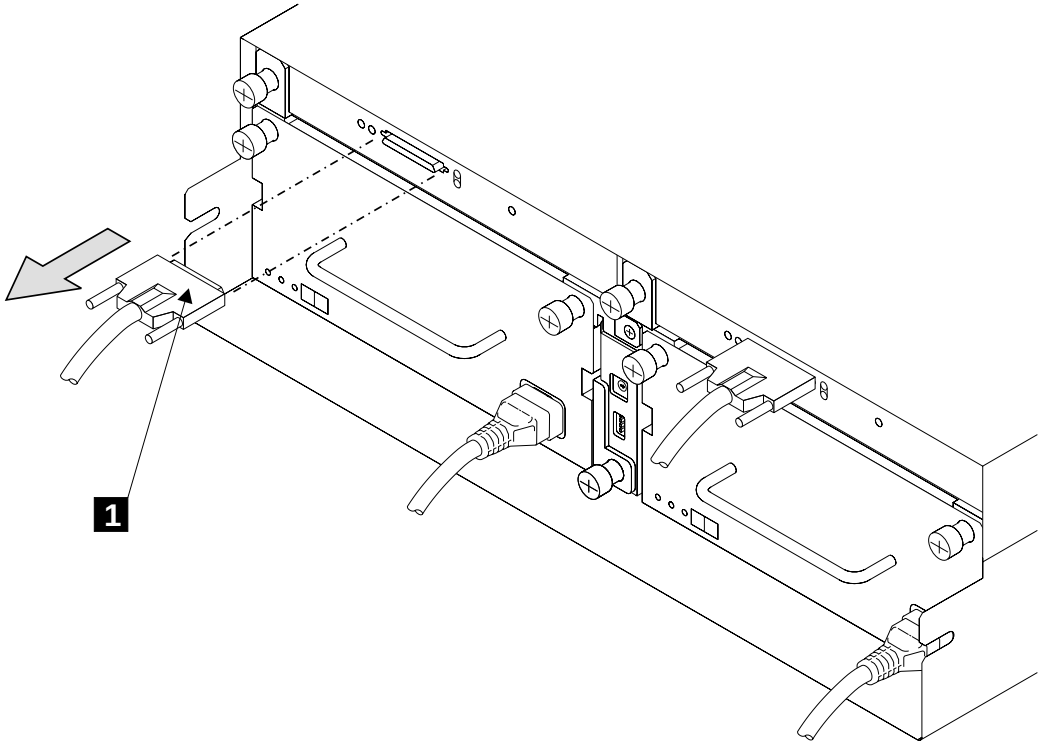


Figure 34. Disconnecting the SCSI Cable

Step 2. Disconnect the SCSI cable **1** (if present).

Note: If the 2104 is switched on, it might switch off when you do this action.

Step 3. Refer to Figure 35

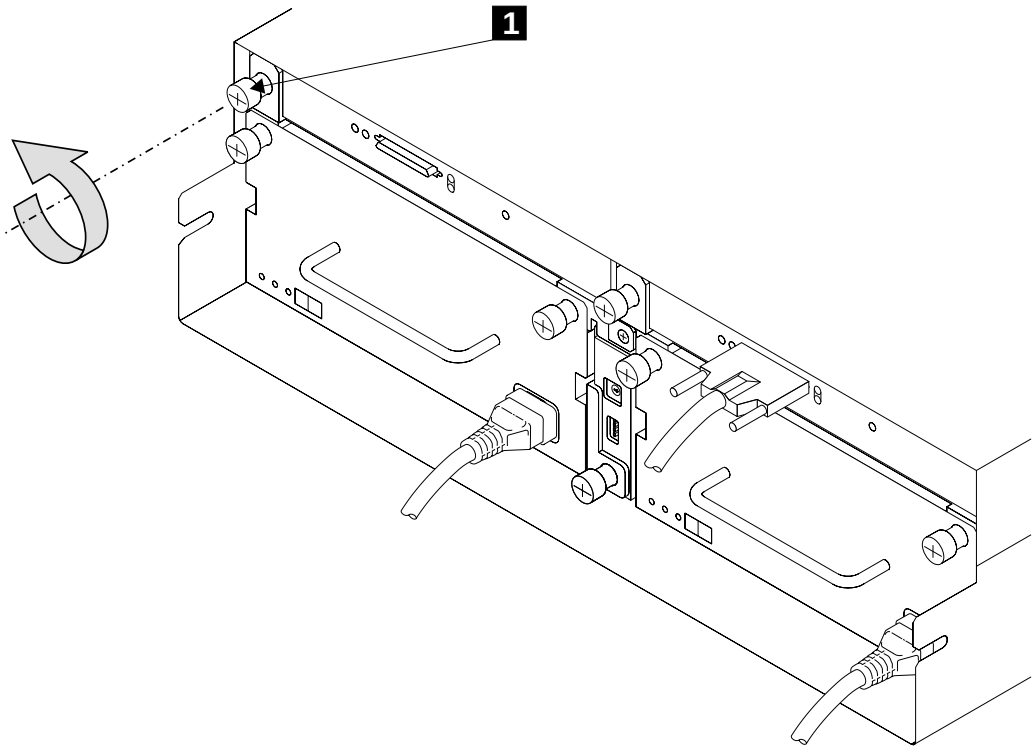


Figure 35. Unscrewing the Thumbscrew

Step 4. Unscrew the thumbscrew **1** .

Step 5. Refer to Figure 36.

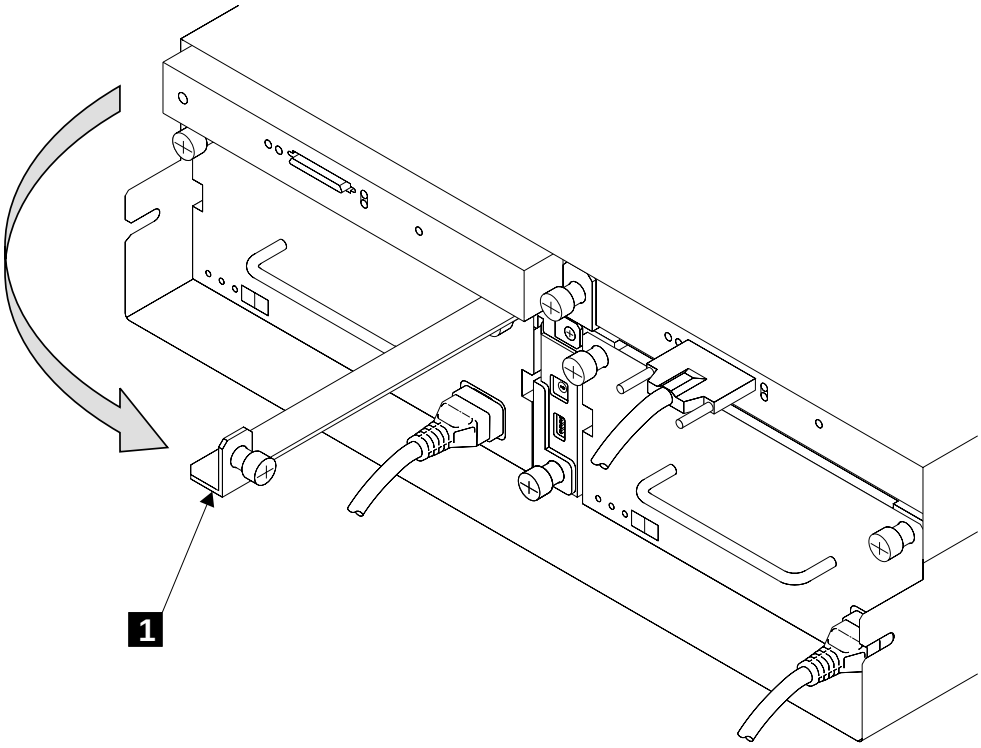


Figure 36. Opening the Lever

Step 6. Open the lever **1** fully. This action unplugs the card assembly from the backplane.

Step 7. Refer to Figure 37.

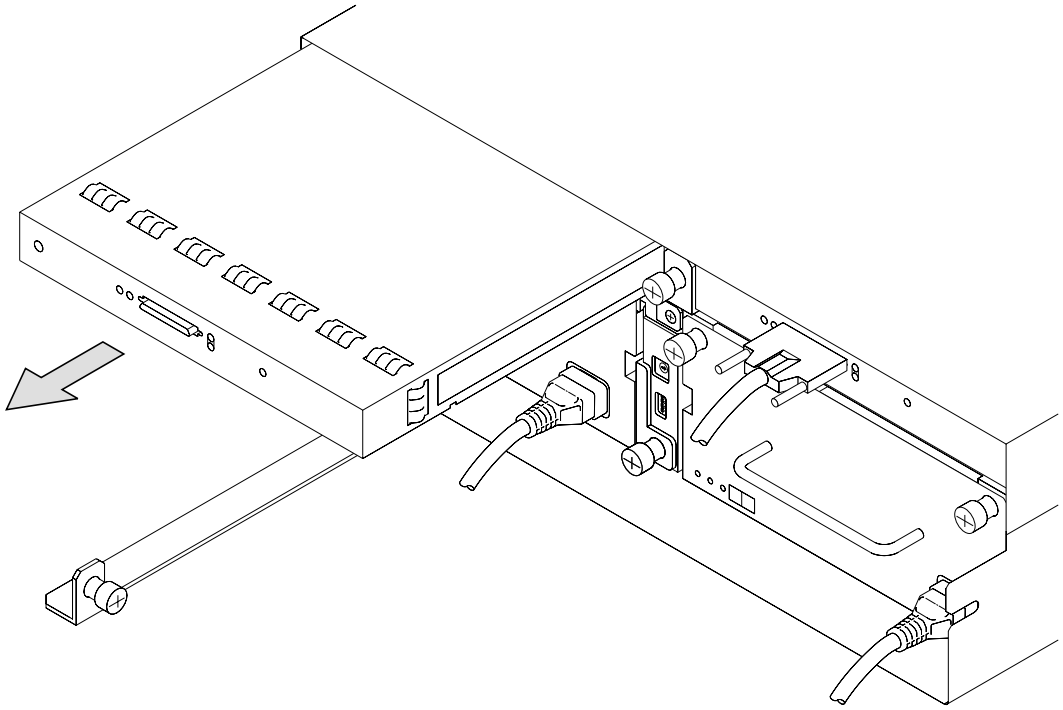


Figure 37. Removing the SCSI Interface Card Assembly

Step 8. Pull the SCSI interface card assembly out from the 2104.

Step 9. Replace parts in the reverse sequence.

Note: When you reconnect the SCSI cable, ensure that its connector is correctly aligned with the connector of the SCSI interface card assembly. Otherwise, you might bend the pins. Engage the connectors carefully.

Step 10. Using the method that is provided on your using system, check the level of microcode that is present on the SCSI interface card that you have just installed. Additional information about the latest levels of SCSI interface card microcode is given on the web support page (see “Web Support Page” in “Appendix A. Additional Information for RISC Systems”). If you need to download the latest microcode, see “Microcode Maintenance” on page 22.

Step 11. Replace parts in the reverse sequence.

Note: If the 2104 is switched off, it might switch on when you reinstall the SCSI cable.

Step 12. Go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

Switch Card Assembly

Attention:

- The switch card assembly is electrostatic-discharge (ESD) sensitive. Use the tools and procedures defined by your organization to protect such parts. See also “Electrostatic Discharge” on page xiv.
- If the switch card assembly has been removed, and the 2104 receives a ‘Reset’ signal, the 2104 uses the default logical switch settings (see “Switch Card Assembly Switches” on page 8).

Notes:

1. Unless you have a particular reason to do so, do not switch off the using system or the 2104 when removing or installing the switch card assembly.
2. The diagrams in these instructions show a 2104 Model DL1. The procedure for a 2104 Model TL1 is the same, except that everything is turned through 90 degrees.

Step 1. Refer to Figure 38.

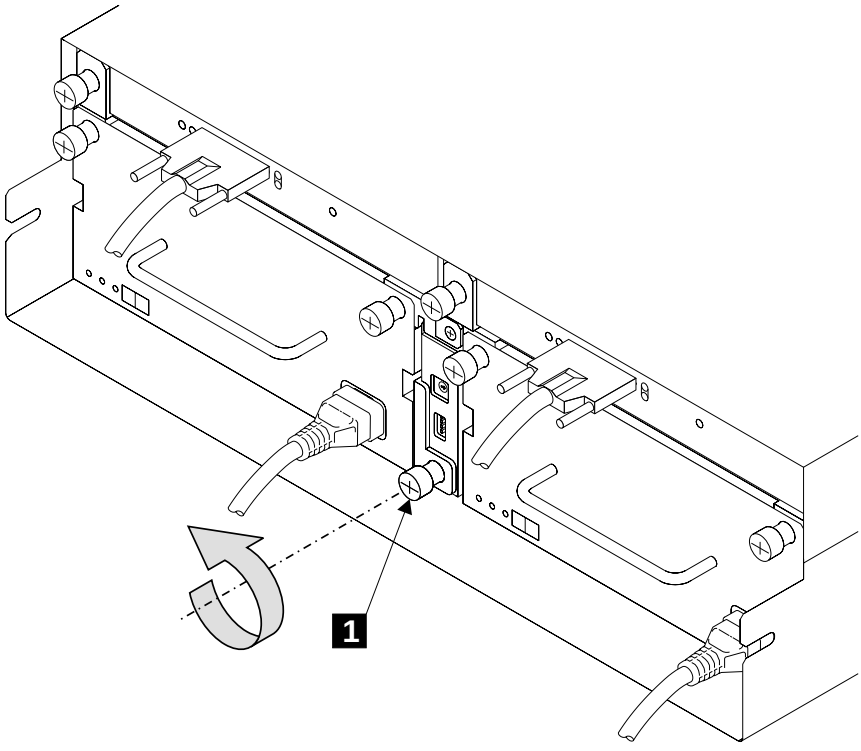


Figure 38. Unscrewing the Thumbscrew on the Switch Card Assembly

Step 2. Unscrew the thumbscrew **1** .

Step 3. Refer to Figure 39.

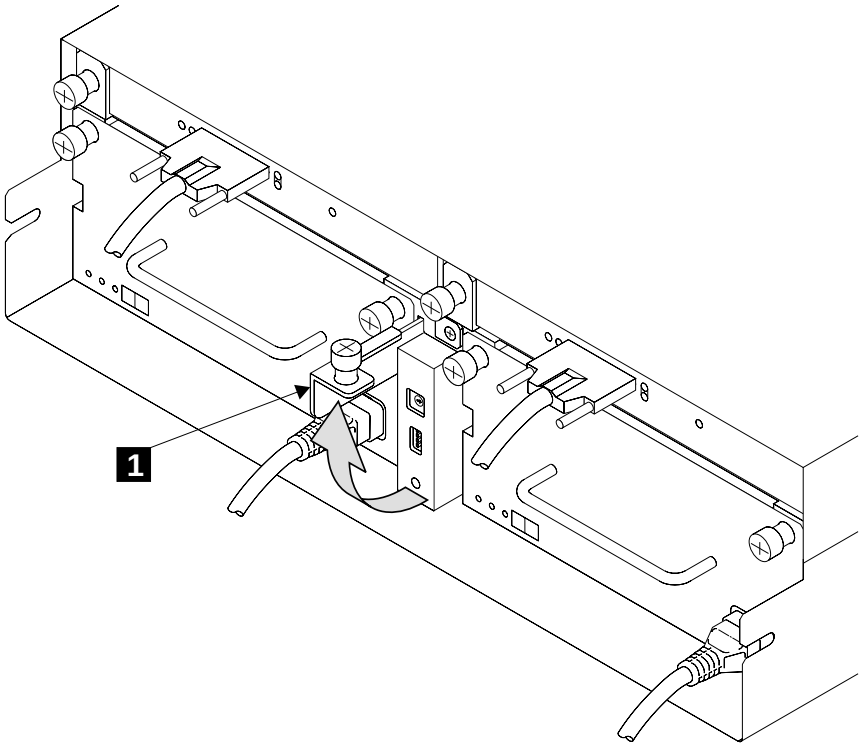


Figure 39. Opening the Lever on the Switch Card Assembly

Step 4. Pull the lever **1** upward. This action unplugs the switch card assembly from the backplane.

Note: If the 2104 is switched on, it might switch off when you do this action.

Step 5. Refer to Figure 40.

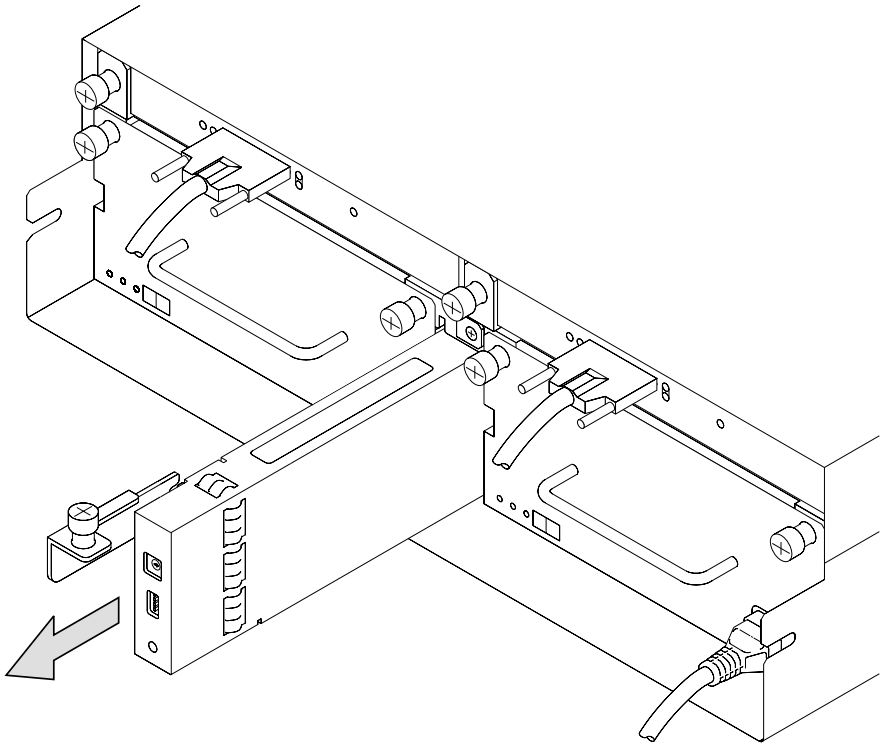


Figure 40. Removing the Switch Card Assembly

Step 6. Pull the switch card assembly out from the 2104.

Step 7. If you are installing a different switch card assembly, ensure that its switch settings match those of the original switch card assembly. (See also “Switch Card Assembly Switches” on page 8, if necessary.)

Step 8. Replace parts in the reverse sequence.

Note: If the 2104 is switched off, it might switch on when you reinstall the switch card assembly.

Step 9. Go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

Frame Assembly

Notes:

1. ***Use this procedure only if you are exchanging the frame of the 2104***. If you are removing a complete 2104 Model DL1 from the rack (for example, to locate it elsewhere), go to “Removing a 2104 Model DL1 from a Rack” on page 96.
2. You will need another person to help you remove the frame from the rack.

Attention: Unless the using system needs to be switched off for some other reason, do not switch off the using system when servicing the 2104. Power cables and external SCSI cables that connect the 2104 to the using system can be disconnected while that system is running.

Step 1. Verify with the customer that all operations between the 2104 and the using system have been stopped.

Step 2. Remove power from the 2104 (see “All Power” on page 61).

Step 3. For the 2104 Model TL1, open the front cover (see “Cover” on page 58).

Step 4. Carefully make a note of the locations of the disk drive modules and (if present) dummy disk drive modules that are in the 2104. This action ensures that you reinstall the modules into their original slots. It is recommended that you attach identifying labels to the modules.

Step 5. Remove all the disk drive modules and dummy disk drive modules (see “Removing a Module” on page 65).

Step 6. Remove the fan-and-power-supply assemblies, or fan assembly and fan-and-power-supply assembly, from the back of the 2104 (see “Fan-and-Power-Supply Assemblies” on page 75 and, if required, “Fan Assembly” on page 78).

Step 7. Make a note of which SCSI cable (if present) is connected to each particular SCSI interface card.

Step 8. Disconnect the external SCSI cables (if present) from the SCSI interface cards.

Step 9. **Attention:** In the new frame assembly, each SCSI interface card assembly must occupy the position that it occupied in the original frame assembly.

Make a note of the positions of the SCSI interface card assemblies before you remove them. Attach labels if necessary.

Step 10. Remove the SCSI interface card assemblies (see “SCSI Interface Card Assembly” on page 80).

Step 11. If you are removing the frame assembly of a 2104 Model DL1, go to “2104 Model DL1” on page 88.

If you are removing the frame assembly of a 2104 Model TL1, go to “2104 Model TL1” on page 93.

2104 Model DL1

Note: For a translation of the following notice, see “Appendix C. Translated Safety Notices” on page 141.

CAUTION:
The stabilizer must be correctly attached to the bottom front of the rack to prevent the rack from tipping forward while the units are being removed from the rack. Do not pull out or install any unit if the stabilizer is not attached to the rack.

Step 1. Refer to Figure 41

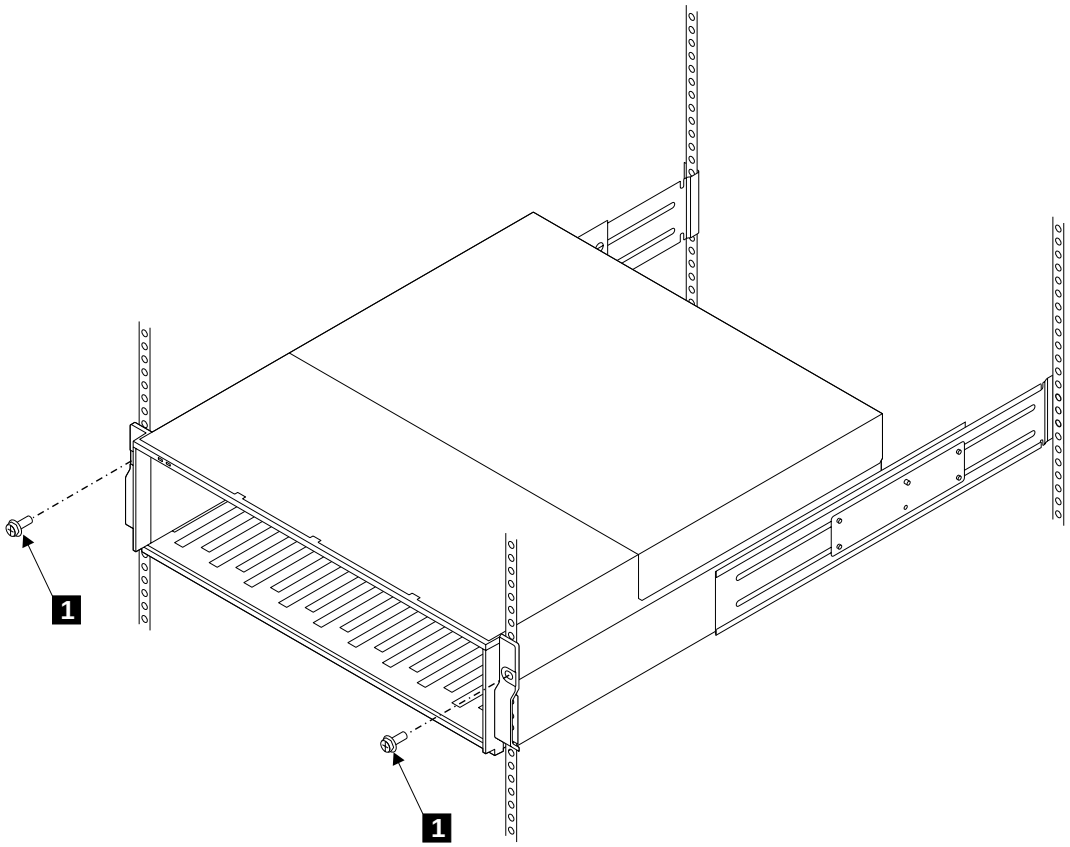


Figure 41. Removing the Front Screws

Step 2. Remove the two front mounting screws **1**.

Step 3. Refer to Figure 42

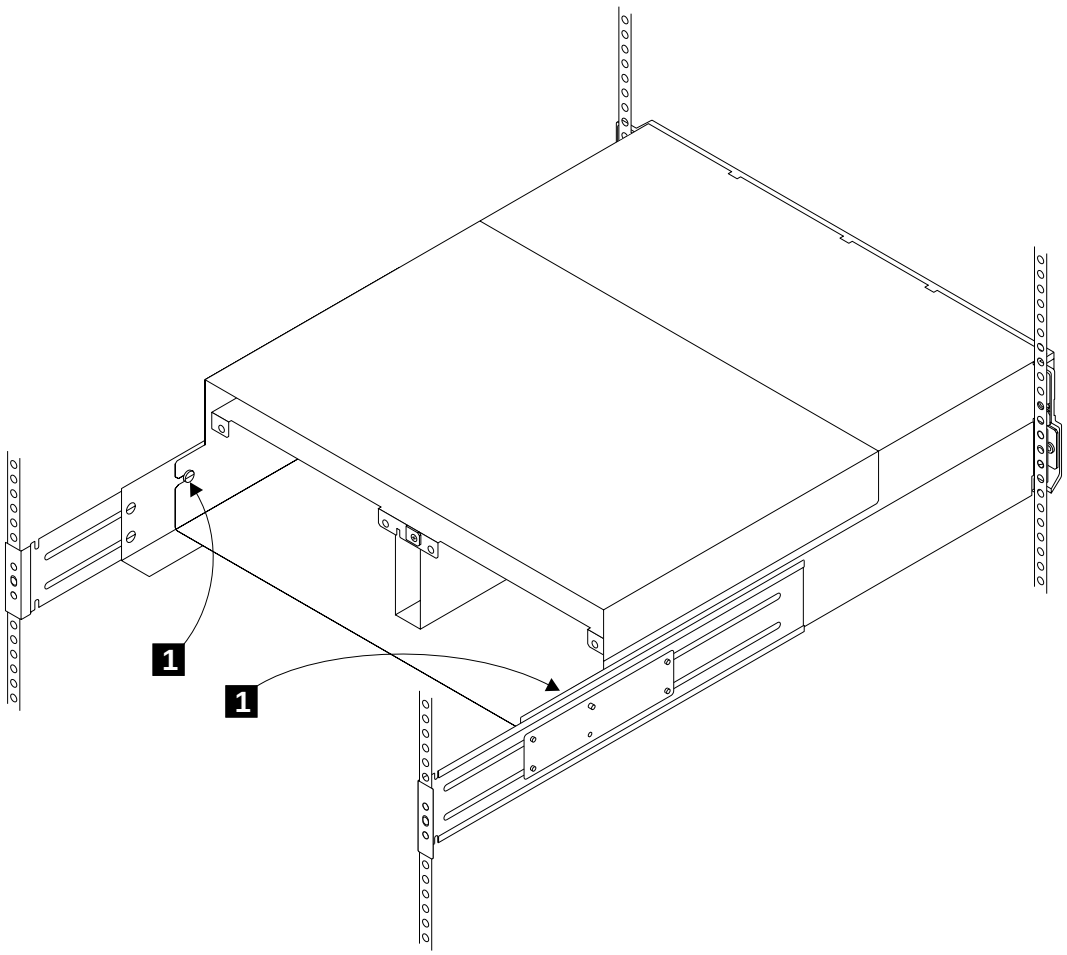


Figure 42. Loosening the Clamp Screws

Step 4. At the back of the 2104, loosen the two clamp screws **1** .

Step 5. Refer to Figure 43.

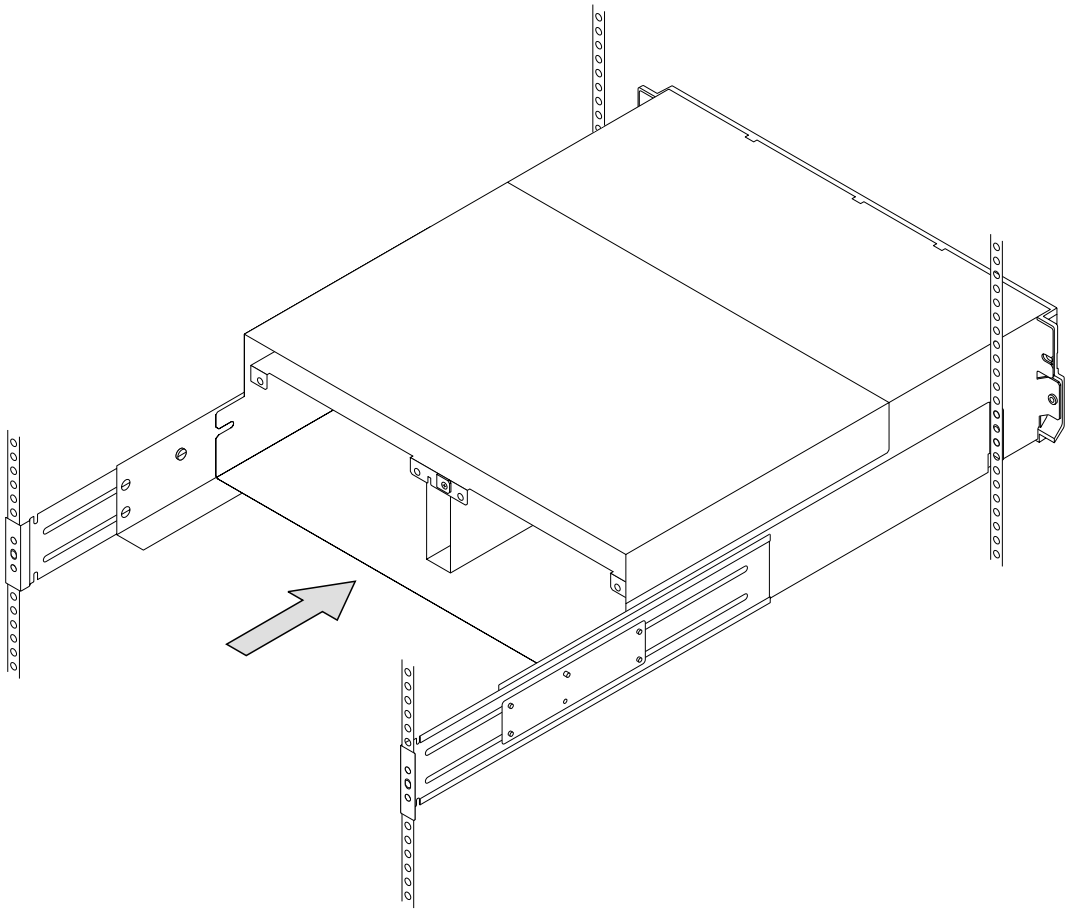


Figure 43. Pushing the Frame Assembly Forward

Step 6. **Attention:** Do not push the frame assembly too far forward.
Push the frame assembly forward approximately 5 cm (2 in.).

Step 7. Refer to Figure 44.

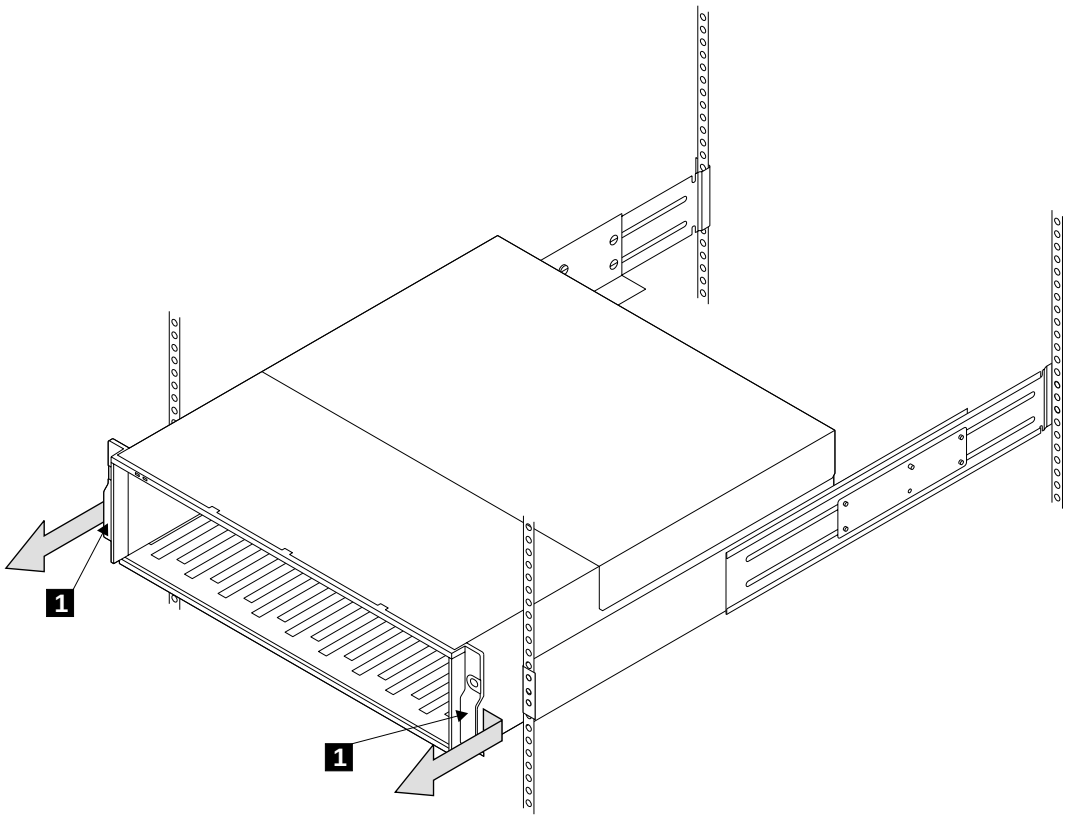


Figure 44. Removing the Frame Assembly from the Rack

Step 8. Go to the front of the rack.

Step 9. **Note:** For a translation of the following notice, see “Appendix C. Translated Safety Notices” on page 141.

CAUTION:
Do not attempt to lift the 2104 by yourself. Ask another person for aid.

Attention: When you remove the frame assembly from the rack, ensure that you pull the ***metal*** brackets **1** that are behind the plastic bezel. ***Do not pull the bezel***: it will break.

With aid from another person, pull the frame assembly forward and remove it from the rack.

Step 10. Replace parts in the reverse sequence.

Notes:

a. Ensure that, in the replacement frame assembly, each SCSI interface card assembly occupies the position that it occupied in the original frame assembly.

b. If you have installed a replacement frame assembly, attach the blank self-adhesive serial-number label that is supplied with the frame assembly. The new label must cover the original label (see “Labels” on page 19).

c. Write the serial number of the original frame assembly onto the blank label.

d. Destroy the serial number on the original frame assembly.

Step 11. Go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

2104 Model TL1

Step 1. Refer to Figure 45.

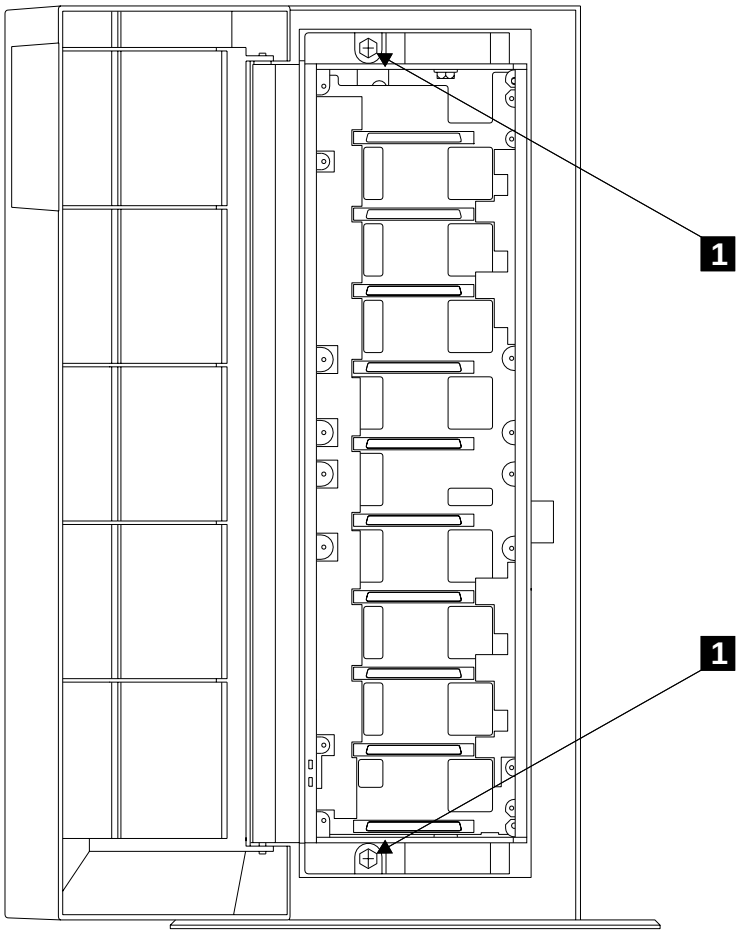


Figure 45. Removing the Frame from a 2104 Model TL1 (1)

Step 2. Remove the two mounting screws **1** from the front of the frame assembly.

Step 3. Refer to Figure 46.

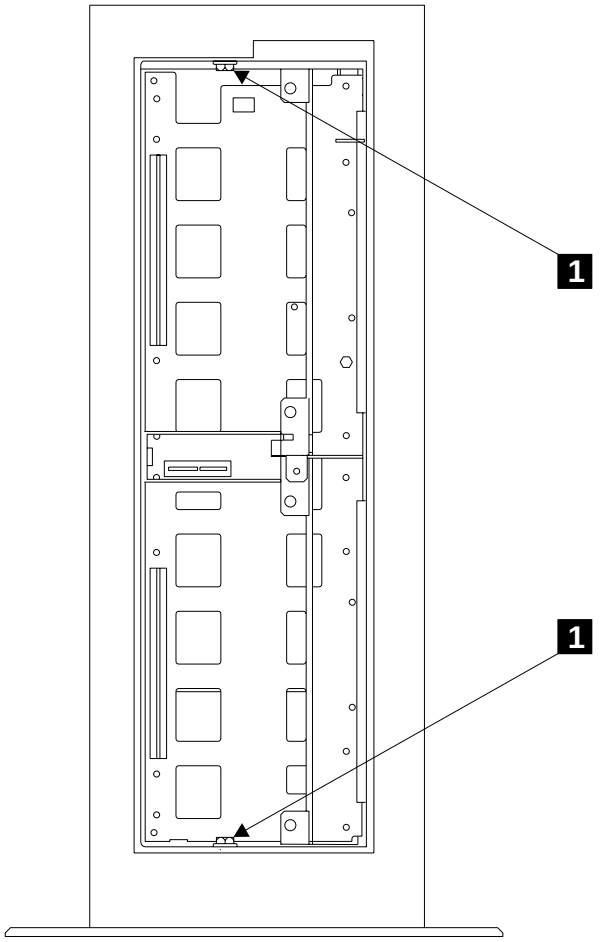


Figure 46. Removing the Frame from a 2104 Model TL1 (2)

Step 4. At the back of the 2104, loosen the two clamp screws **1** .

Step 5. **Attention:** Do not push the frame assembly too far forward.

Push the frame assembly forward approximately 5 cm (2 in.).

Step 6. Go to the front of the 2104.

Step 7. **Note:** For a translation of the following notice, see “Appendix C. Translated Safety Notices” on page 141.

CAUTION:
Do not attempt to lift the 2104 by yourself. Ask another person for aid.

Attention: When you remove the frame assembly from the rack, ensure that you pull the ***metal*** brackets **1** that are behind the plastic bezel. ***Do not pull the bezel***: it will break.

With aid from another person, pull the frame assembly forward and remove it from the deskside unit.

Step 8. Replace parts in the reverse sequence.

Notes:

a. Ensure that, in the replacement frame assembly, each SCSI interface card assembly occupies the position that it occupied in the original frame assembly.

b. If you have installed a replacement frame assembly, attach the blank self-adhesive serial-number label that is supplied with the frame assembly. The new label must cover the original label (see “Labels” on page 19).

c. Write the serial number of the original frame assembly onto the blank label.

d. Destroy the serial number on the original frame assembly.

Step 9. Go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

Removing a 2104 Model DL1 from a Rack

Notes:

1. ***Use this procedure only if you are removing a complete 2104 Model DL1 from the rack (for example, to locate it elsewhere)***. If you are exchanging the frame of the 2104, go to “Frame Assembly” on page 87.
2. You will need another person to help you remove the 2104 from the rack.

Attention: Unless the using system needs to be switched off for some other reason, do not switch off the using system when servicing the 2104. Power cables and external SCSI cables that connect the 2104 to the using system can be disconnected while that system is running.

Step 1. If not already done:

a. Verify with the customer that all operations between the 2104 and the using system have been stopped.

b. If applicable, unconfigure the 2104 from the using system. For more information, see “Unconfiguring a 2104 from the Using System” in “Appendix A. Additional Information for RISC Systems”.

c. Make a note of the positions of the external SCSI cables that are connected at the back of the 2104.

d. Disconnect the external SCSI cables from the back of the 2104.

e. Remove all power from the 2104 (see “All Power” on page 61).

Step 2. **Note:** For a translation of the following notice, see “Appendix C. Translated Safety Notices” on page 141.

CAUTION:

- **The stabilizer must be correctly attached to the bottom front of the rack to prevent the rack from tipping forward while the units are being removed from the rack. Do not pull out or install any unit if the stabilizer is not attached to the rack.**
- **A 2104 Model DL1 weighs up to 38.5 kg (85 lb) with disk drive modules installed. Do not attempt to remove the 2104 from the rack unless all the disk drive modules have been removed.**

You are now going to remove all the disk drive modules and (if present) dummy disk drive modules from the 2104. If the 2104 is to be used later with its disk drive modules configured as they are now, carefully make a note of the locations of the disk drive modules and dummy disk drive modules before you start to remove them. This action ensures that you reinstall the modules into their original slots. It is recommended that you attach identifying labels to the modules.

Step 3. Remove the all the disk drive modules (see “Disk Drive Modules and Dummy Disk Drive Modules” on page 65).

Step 4. Refer to Figure 47

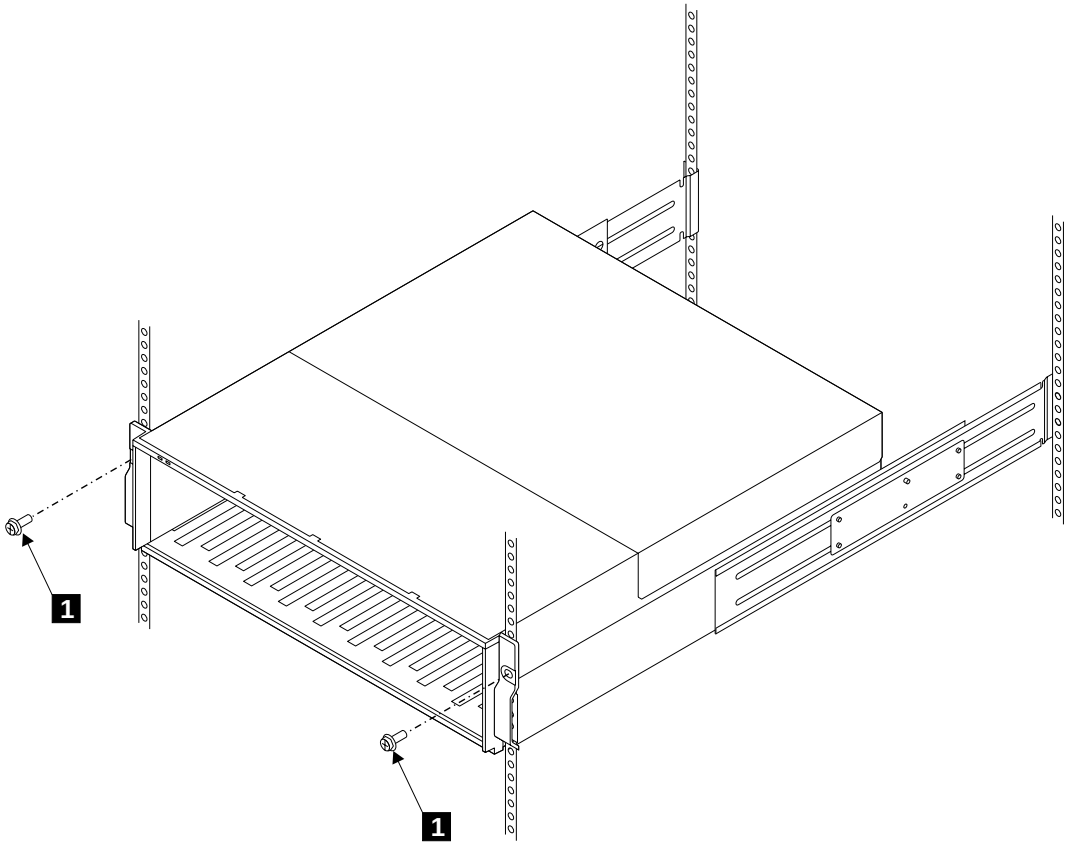


Figure 47. Removing the Front Screws

Step 5. Remove the two front mounting screws **1** .

Step 6. Refer to Figure 48

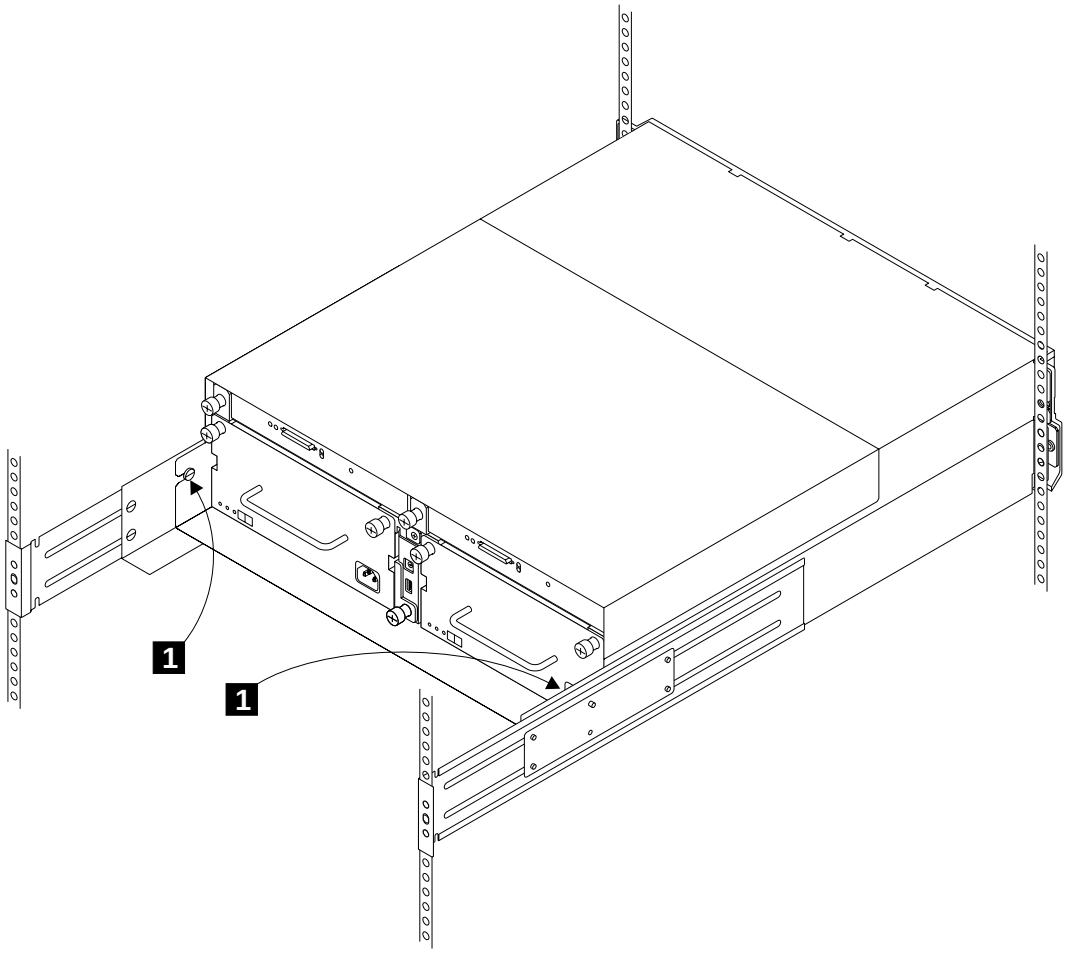


Figure 48. Loosening the Clamp Screws

Step 7. At the back of the 2104, loosen the two clamp screws **1** .

Step 8. Refer to Figure 49.

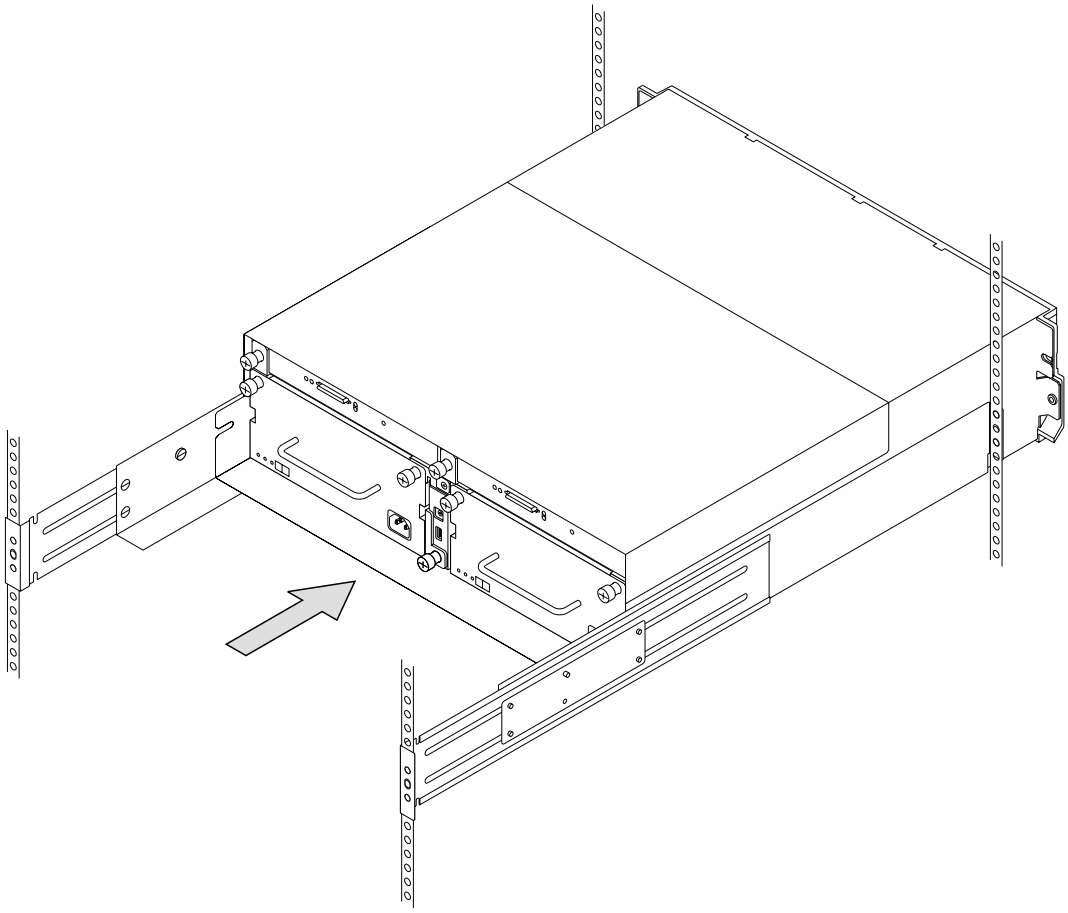


Figure 49. Pushing the 2104 Model DL1 Forward

Step 9. **Attention:** Do not push the frame assembly too far forward.
Push the frame assembly forward approximately 5 cm (2 in.).

Step 10. Refer to Figure 50.

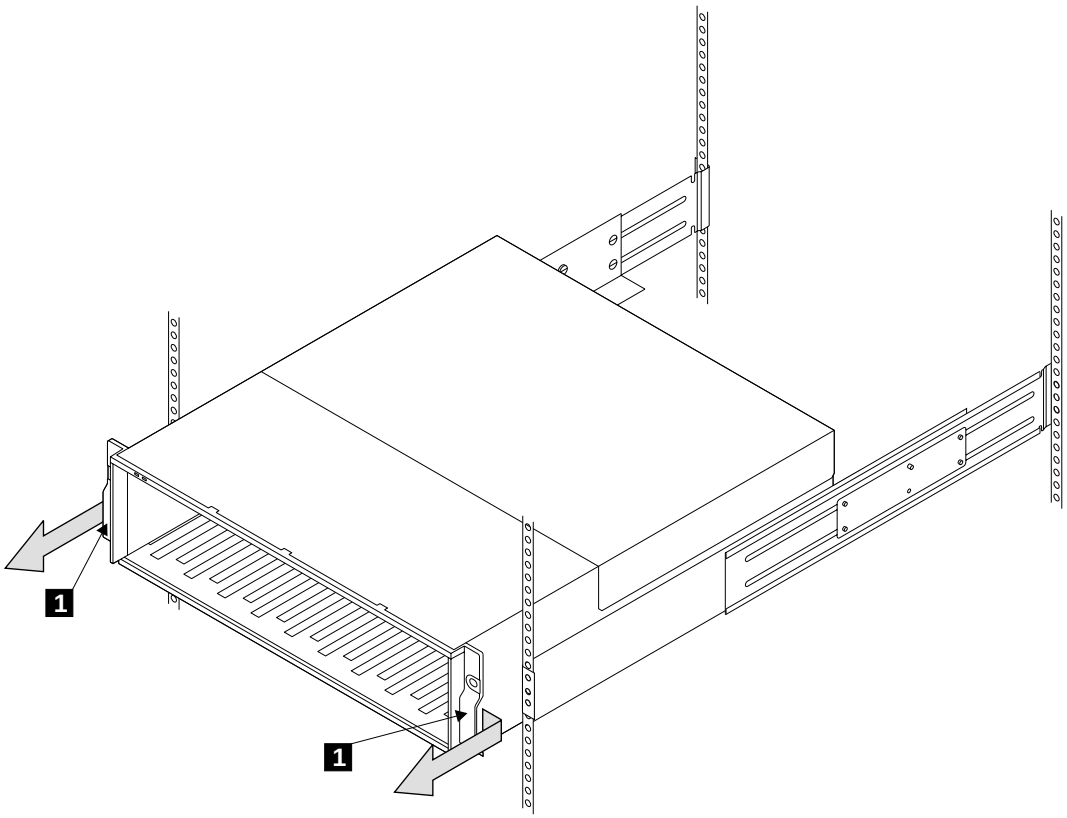


Figure 50. Removing the 2104 Model DL1 from the Rack

Step 11. Go to the front of the rack.

Step 12. **Note:** For a translation of the following notice, see “Appendix C. Translated Safety Notices” on page 141.

CAUTION:

- **Do not attempt to lift the 2104 by yourself. Ask another person for aid.**
- **Do not use the handles of the fan or fan-and-power-supply assemblies to carry the unit. These handles are not intended to support the weight of the unit.**

Attention: When you remove the 2104 from the rack, ensure that you pull the ***metal*** brackets **1** that are behind the plastic bezel. ***Do not pull the bezel***: it will break.

With aid from another person, pull the frame assembly forward and remove it from the rack.

Step 13. Reinstall the 2104 in the reverse sequence.

Step 14. Go to “MAP 2410: 2104 – Repair Verification” on page 55 to verify the repair.

Support Rails

Step 1. Refer to Figure 51.

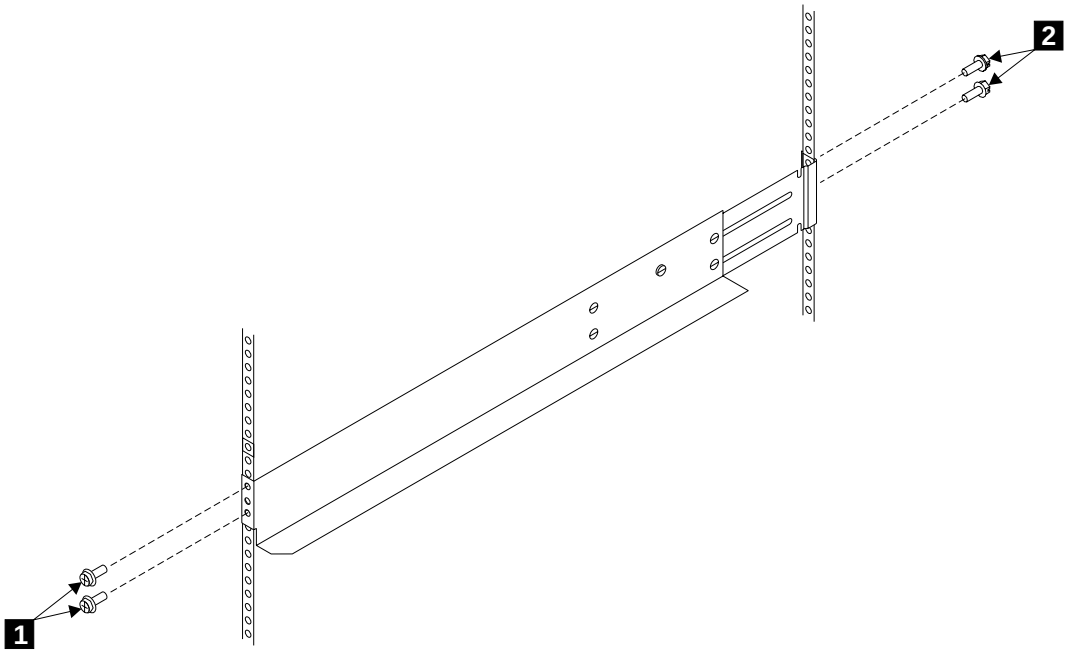


Figure 51. Removing the Support Rails from the Rack

Step 2. To remove the support rails, remove the screws **1** and **2**, then remove the rails.

Step 3. If you need to reinstall the support rails (for example, because you are relocating the 2104), or you need to install replacement rails, go to step 4.

Step 4. The 2104 Model DL1 is three EIA[1] units high. Using the preinstallation planning information, or other information supplied by the customer, determine where you are going to locate the 2104 in the rack.

Step 5. Refer to the EIA markings on the rack and decide where you are going to install the support rails. If appropriate, allow for possible future installation of other subsystems.

1. Electronics Industries Association.

Step 6. For each support rail:

a. Refer to Figure 52.

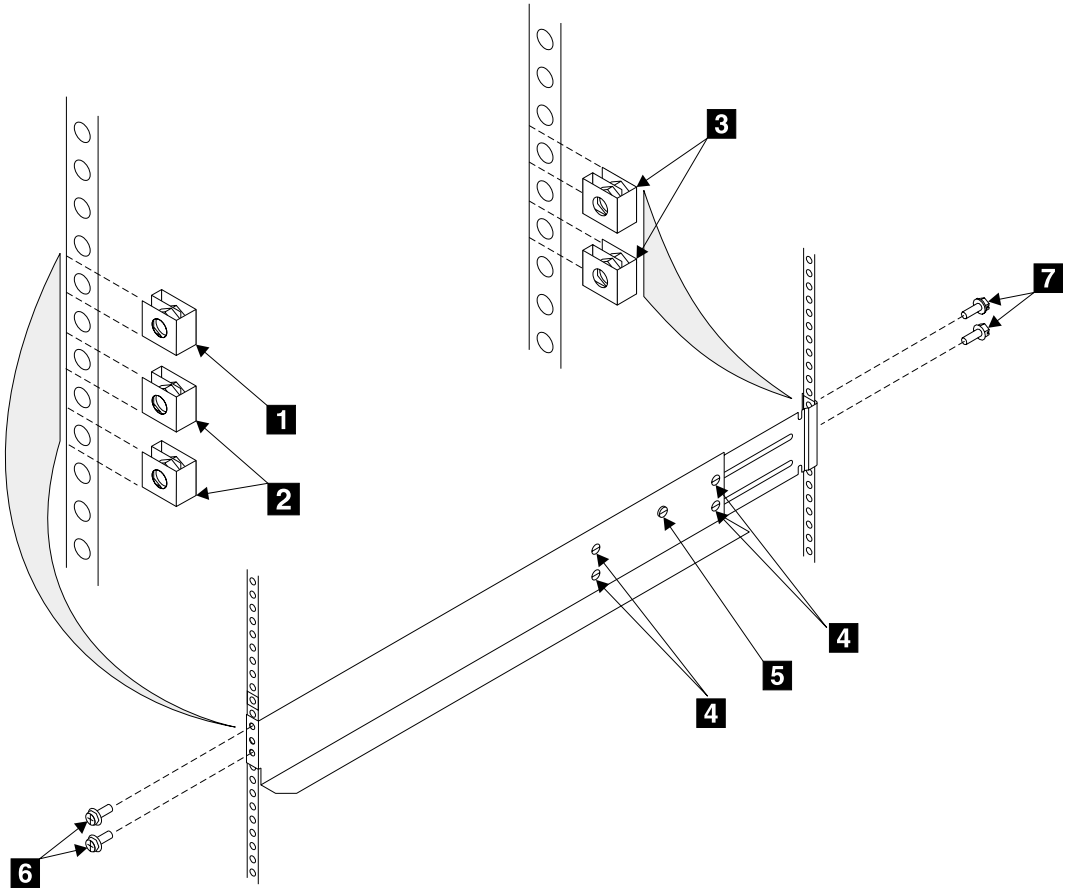


Figure 52. Installing the Support Rails into a Rack

b. Attach nut clips **2** at the selected holes in the front of the rack. These nut clips must align with the upper and lower holes in the support rail.

c. Count two holes upward from the upper nut clip and attach a nut clip **1**.

d. At the back of the rack, install two nut clips **3** at the selected holes.

e. If necessary, loosen the four adjustment screws **4** and the clamp screw **5** so that you can adjust the length of the support rail.

f. At the front of the rack, locate the support rail so that its mounting lug is ***outside*** the nut clips **2**.

g. Insert the rail screws **6** through the holes in the lug and into the nut clips.

h. Partially tighten the screws.

i. At the back of the rack, locate the support rail so that its mounting lug is ***outside*** the nut clips **3**.

j. Insert the rail screws **7** through the holes in the lug and into the nut clips.

k. Partially tighten the screws.

l. Check whether the support rail is horizontal (a spirit level might be useful here). If the rail is not horizontal, relocate it as necessary.

m. Fully tighten the front and back rail screws.

n. Fully tighten the four adjustment screws **4** . Do not tighten the clamp screw **5** . The screw must be loose to allow the installation of the 2104.)

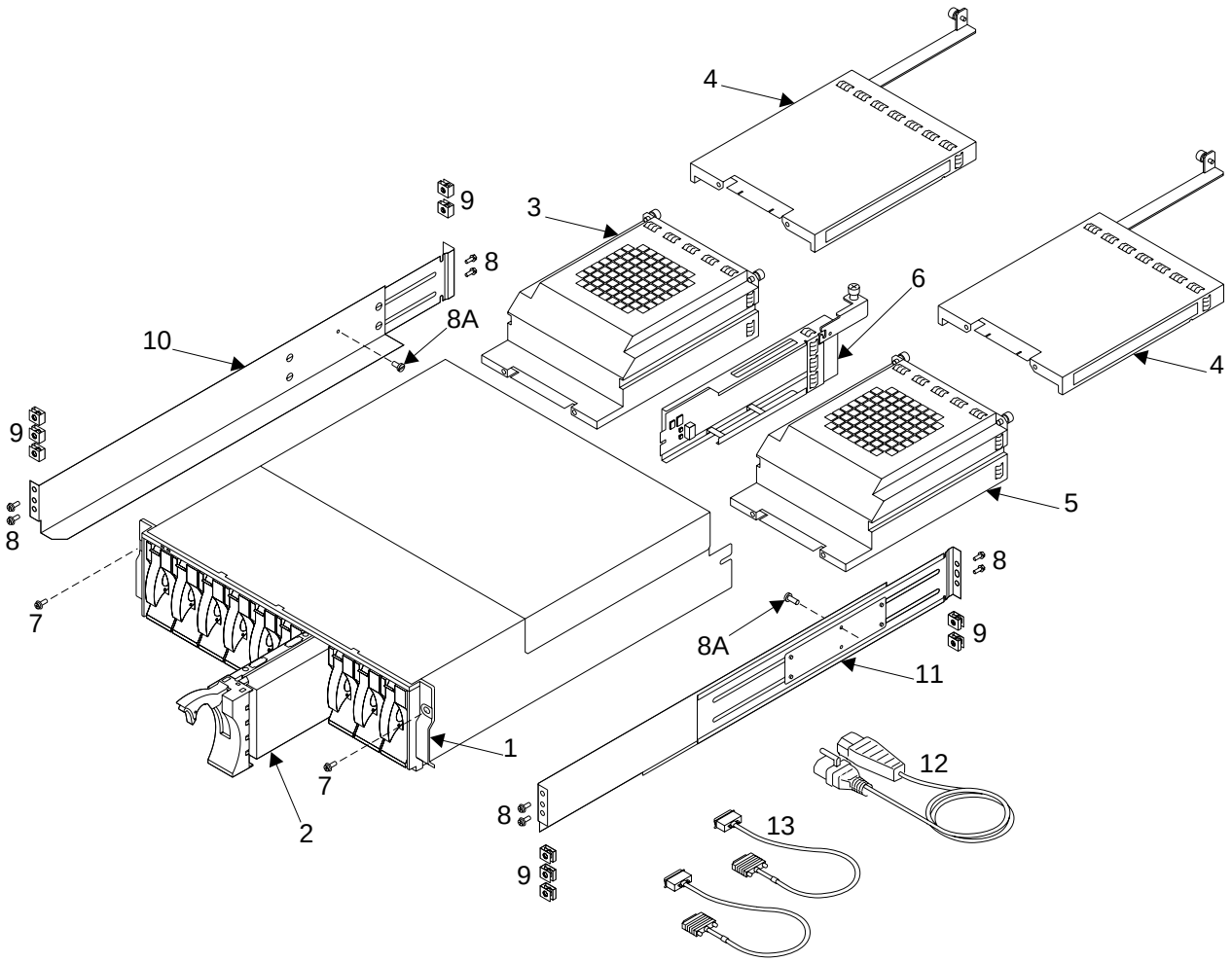
Chapter 4. Parts Catalog

This parts catalog gives part numbers for the parts and FRUs of the 2104 Model DL1 and 2104 Model TL1.

Conventions

AR in the units column of the parts list denotes that the quantity used is as required.

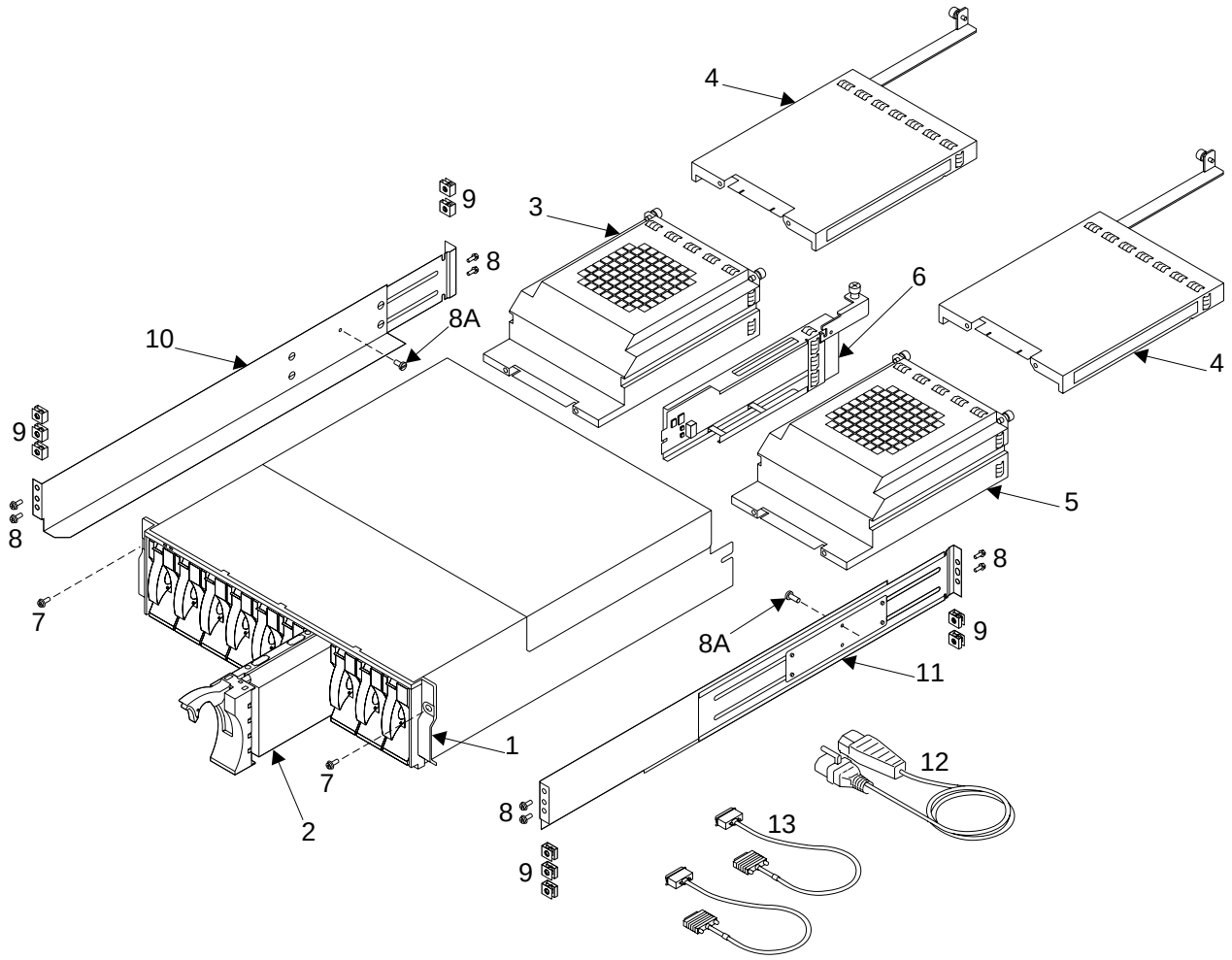
Assembly 1: 2104 Model DL1



Assembly 1: (continued)

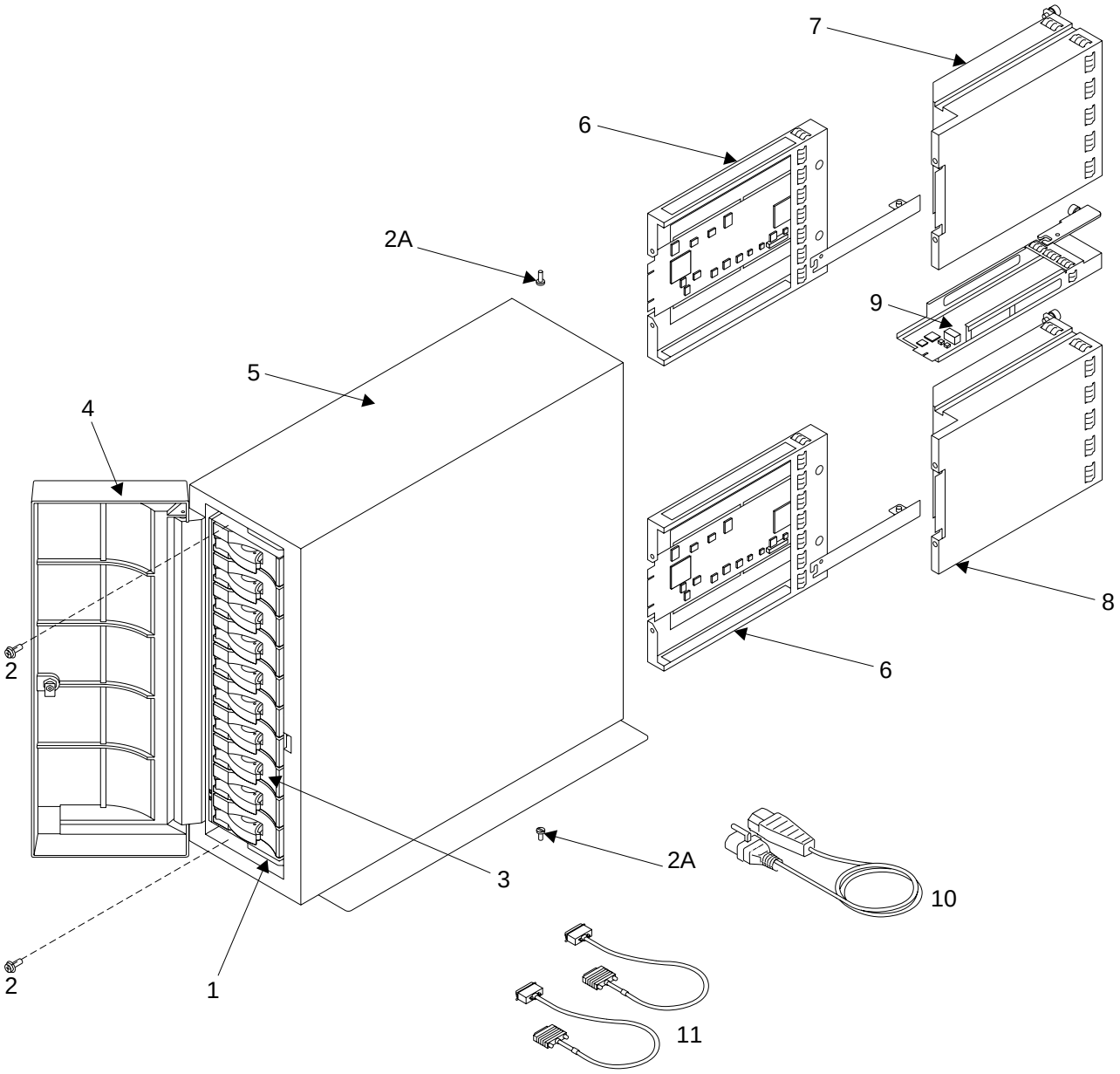
Asm–Index	Part Number	Units	Description
1–1	07K5677	1	Frame assembly (FRU kit, including foam baffle and labels)
–2	09L3393	AR	9.1 GB, 3.5-inch, SCSI disk drive module (7200 rpm)
–2	09L3394	AR	18.2 GB, 3.5-inch, SCSI disk drive module (7200 rpm)
–2	09L3395	AR	36.4 GB, 3.5-inch, SCSI disk drive module (7200 rpm)
–2	09L3391	AR	9.1 GB, 3.5-inch, SCSI disk drive module (10 000 rpm)
–2	09L3392	AR	18.2 GB, 3.5-inch, SCSI disk drive module (10 000 rpm)
–2	07K5701	AR	36.4 GB, 3.5-inch, SCSI disk drive module (10 000 rpm)
–2	00N7272	AR	Dummy disk drive module
–3	09L3108	AR	Fan-and-power-supply assembly, 220 V ac/dc (for 2104s that have two fan-and-power-supply assemblies)
–3	09L3109	AR	Fan assembly (for 2104s that have one fan-and-power-supply assembly)
–4	07K5990	AR	SCSI interface card assembly
–4	09L3246	AR	Dummy card assembly
–5	09L3108	1	Fan-and-power-supply assembly, 220 V ac/dc
–6	09L3452	1	Switch card assembly
–7	12J5289	2	Front mounting screw
–8	12J5289	8	Rail mounting screw
–8A	54G2882	2	Back mounting screw
–9	00N8709	10	Nut clip
–10	37L0042	1	Support rail, left, for full-height rack
–11	37L0043	1	Support rail, right, for full-height rack
–12	36L8886	2	Power cable
–13	09L3299	AR	External SCSI copper cable, 1.0 m (3.3 ft), for 2104s attached to: •PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205) •PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, feature 2494)
–13	09L3301	AR	External SCSI copper cable, 3.0 m (9.8 ft), for 2104s attached to: •PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205) •PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, feature 2494)
–13	09L3309	AR	External SCSI copper cable, 3.0 m (9.8 ft), for 2104s attached to: •PCI Single-Ended Ultra SCSI Adapter (type 4-K, feature 6206) •PCI SCSI-2 Single_Ended Fast/Wide Adapter (type 4_A, feature 6208) •PCI SCSI-2 Fast/Wide RAID Adapter (type 4-H, feature 2493)
–13	09L3311	AR	External SCSI copper cable, 3.0 m (9.8 ft), for 2104s attached to a SCSI-2 Fast/Wide Adapter/A (type 4-7, feature 2415)

Assembly 1: (continued)



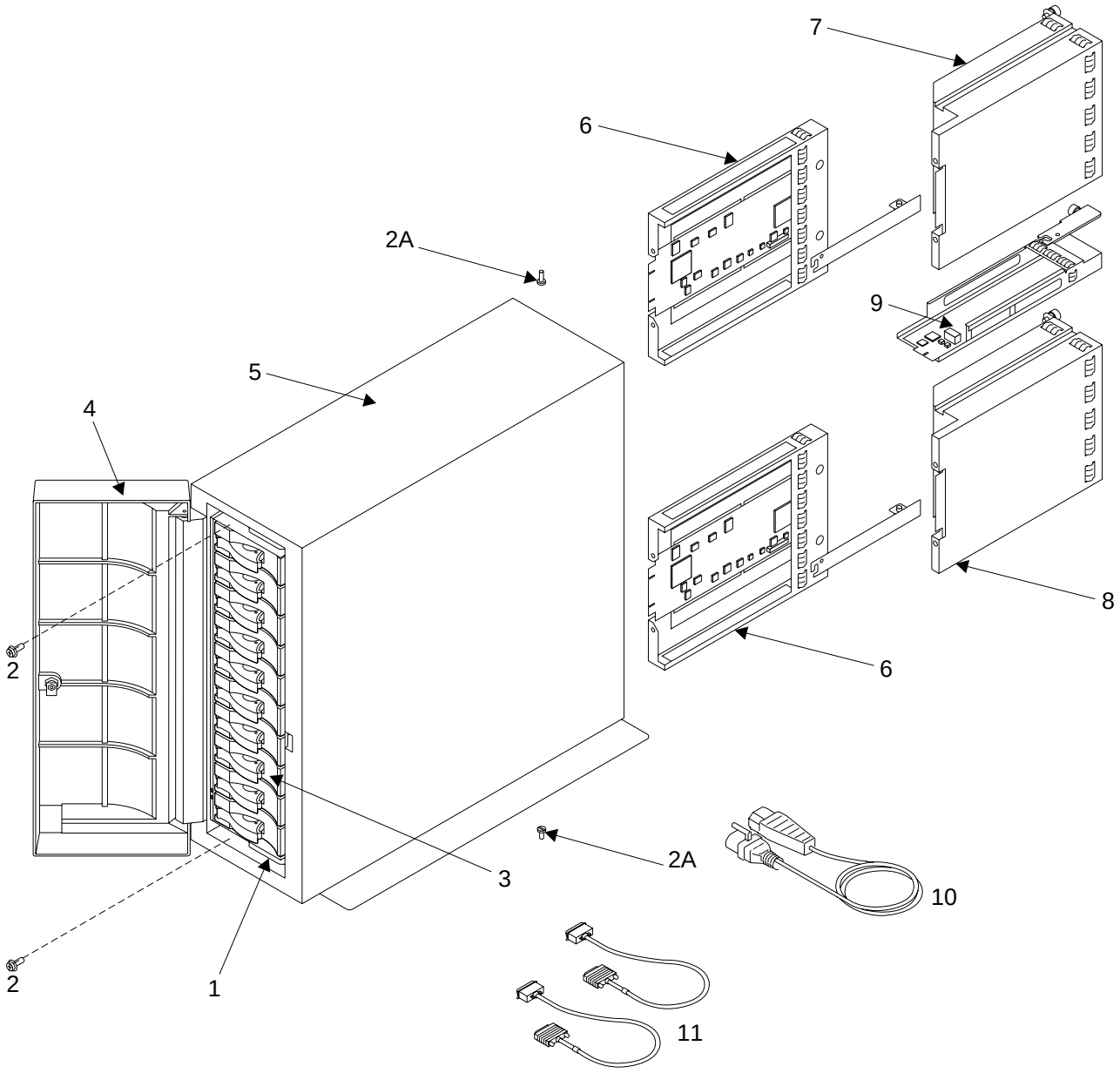
Asm–Index	Part Number	Units	Description
1–13	09L3303	AR	External SCSI copper cable, 5.0 m (16.4 ft), for 2104s attached to: •PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205) •PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, feature 2494)
–13	09L3305	AR	External SCSI copper cable, 10.0 m (32.8 ft), for 2104s attached to: •PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205) •PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, 2494)
–13	09L3307	AR	External SCSI copper cable, 20.0 m (65.6 ft), for 2104s attached to: •PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205) •PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, feature 2494)

Assembly 2: 2104 Model TL1



Asm–Index	Part Number	Units	Description
2–1	07K5679	1	Frame assembly
–2	12J5289	2	Front mounting screw
–2A	54G2882	2	Back mounting screw
–3	09L3393	AR	9.1 GB, 3.5-inch, SCSI disk drive module (7200 rpm)
–3	09L3394	AR	18.2 GB, 3.5-inch, SCSI disk drive module (7200 rpm)
–3	09L3395	AR	36.4 GB, 3.5-inch, SCSI disk drive module (7200 rpm)
–3	09L3391	AR	9.1 GB, 3.5-inch, SCSI disk drive module (10 000 rpm)
–3	09L3392	AR	18.2 GB, 3.5-inch, SCSI disk drive module (10 000 rpm)
–3	07K5701	AR	36.4 GB, 3.5-inch, SCSI disk drive module (10 000 rpm)
–3	00N7272	AR	Dummy disk drive module
–4	09L3374	1	Front cover assembly
–5	09L3373	1	Complete set of covers
			Note: Covers are available only as a complete set, which consists of:
			•Top cover
			•Left-hand side cover
			•Right-hand side cover
			•Foot
–6	07K5990	AR	SCSI interface card assembly
–6	09L3246	AR	Dummy card assembly
–7	09L3108	1	Fan-and-power-supply assembly, 220 V ac/dc
–8	09L3108	AR	Fan-and-power-supply assembly, 220 V ac/dc (for 2104s that have two fan-and-power-supply assemblies)
–8	09L3109	1	Fan assembly (for 2104s that have one fan-and-power-supply assembly)
–9	09L3452	1	Switch card assembly
–10	VARIOUS	2	Power cable. See “Country Power Cables” on page 114.
–11	09L3299	AR	External SCSI copper cable, 1.0 m (3.3 ft), for 2104s attached to:
			•PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205)
			•PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, feature 2494)
–11	09L3301	AR	External SCSI copper cable, 3.0 m (9.8 ft), for 2104s attached to:
			•PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205)
			•PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, feature 2494)

Assembly 2: (continued)



Asm–Index	Part Number	Units	Description
2–11	09L3309	AR	External SCSI copper cable, 3.0 m (9.8 ft), for 2104s attached to: •PCI Single-Ended Ultra SCSI Adapter (type 4-K, feature 6206) •PCI SCSI-2 Single_Ended Fast/Wide Adapter (type 4_A, feature 6208) •PCI SCSI-2 Fast/Wide RAID Adapter (type 4-H, feature 2493)
–11	09L3311	AR	External SCSI copper cable, 3.0 m (9.8 ft), for 2104s attached to a SCSI-2 Fast/Wide Adapter/A (type 4-7, feature 2415)
–11	09L3303	AR	External SCSI copper cable, 5.0 m (16.4 ft), for 2104s attached to: •PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205) •PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, feature 2494)
–11	09L3305	AR	External SCSI copper cable, 10.0 m (32.8 ft), for 2104s attached to: •PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205) •PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, 2494)
–11	09L3307	AR	External SCSI copper cable, 20.0 m (65.6 ft), for 2104s attached to: •PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205) •PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, feature 2494)

Country Power Cables

Part	Description	Country
6952301	Power Cord 125V, 10A, 1.8 m (6 ft)	U.S./Chicago
13F9997	Power Cord 250V, 10A, 2.8 m (9 ft)	Denmark
14F0087	Power Cord 250V, 10A, 2.8 m (9 ft)	Israel
14F0051	Power Cord 250V, 10A, 2.8 m (9 ft)	Switzerland
13F9940	Power Cord 250V, 10A, 2.8 m (9 ft)	Australia, New Zealand
36L8880	Power Cord 250V, 10A, 2.8 m (9 ft)	Uruguay, Argentina, Paraguay
6952300	Power Cord 125V, 10A, 2.8 m (9 ft) (Group 1)	United States, Canada, Celestica, Antigua, St. Lucia, St. Vincent, Dominica, Grenadines, Grenada, Aruba, Bahamas, Barbados, Belize, Bermuda, Bolivia, Cayman Islands, Colombia, Costa Rica, Dominican Republic, El Salvador, Ecuador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Panama, Peru, Suriname, Trinidad, Venezuela, Brazil, Japan, Korea, Nicaragua, Philippines, Taiwan, Vietnam, Albania, Eritrea, Saudi Arabia
13F9979	Power Cord 250V, 10A, 2.8 m (9 ft) (Group 2)	Afghanistan, Netherlands Antilles, China, French Polynesia, Guinea, Indonesia, Armenia, Latvia, Angola, Austria, Belgium, Luxembourg, Belarus, Bosnia, Botswana, Bulgaria, Camaroon, Central Africa Republic, Czech Republic, Congo, Egypt, Finland, France, Germany, Greece, Hungary, Iceland, Kazakhstan, Kirghizsta, Lebanon, Liberia, Macedonia, Mali, Mauritania, Moldavia, Morocco, Mozambique, Netherlands, Norway, Poland, Portugal, Romania, Rwanda, Sao Tome and Principe, Senegal, Serbia, Slovenia, Slovakia, Spain, Sudan, Swaziland, Sweden, Syria, Arab Republic, Tunisia, Turkey, Ukraine, Russia, Uzbekistan, Zaire, Zimbabwe, Burundi, Cape Verde Islands, Estonia, Lesotho, Liechtenstein, Republic of Djibouti

Part	Description	Country
14F0033	Power Cord 250V, 10A, 2.8 m (9 ft) (Group 3)	Abu Dhabi, Brunei, Fiji, Hong Kong, Macao, Malaysia, Singapore, Bahrain, Cyprus, Gambia, Ghana, Iraq, Ireland, Jordan, Kenya, Kuwait, Malawi, Nepal, North Yemen, Nigeria, Oman, Qatar, Sierra Leone, Tanzania, Uganda, United Arab Emirates, United Kingdom, Zambia.
14F0015	Power Cord 250V, 10A, 2.8 m (9 ft) (Group 4)	Bangladesh, Myanmar, Sri Lanka, Pakistan, South Africa, India
14F0069	Power Cord 250V, 10A, 2.8 m (9 ft) (Group 5)	Chile, Ethiopia, Italy, Libya, Malta, Somalia.
1838574	Power Cord 250V, 10A, 2.8 m (9 ft) (Group 6)	Thailand
02K0546	Power Cord 250V, 6A, 2.8 m (9 ft)	People's Republic of China

Appendix A. Additional Information for RISC Systems

This appendix provides information that is specific to 2104s that are attached to RISC systems.

Related Publications

- *Diagnostic Information for Micro Channel Bus Systems,* SA23-2765
- *Diagnostic Information for Multiple Bus Systems,* SA38-0509
- *Site and Hardware Planning Information,* SA38-0508
- *Adapters, Devices, and Cable Information for Micro Channel Bus Systems,* SA23-2764
- *Adapters, Devices, and Cable Information for Multiple Bus Systems,* SA38-0516

Web Support Page

You can find the web support page at:

http://www.rs6000.ibm.com/support/

SCSI Adapters

The 2104 can be attached to any of these types of SCSI adapter:

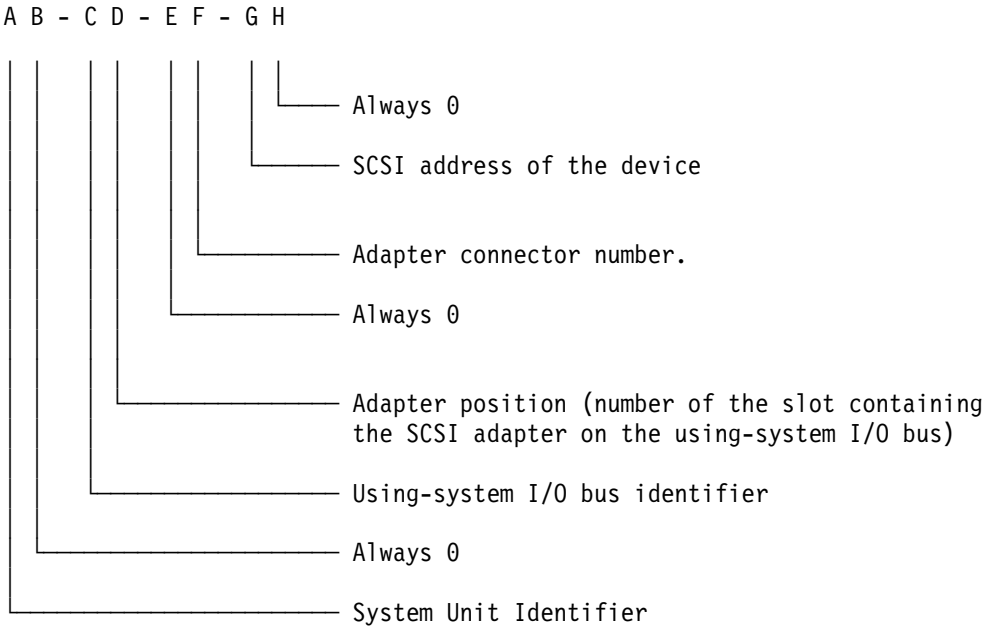
- PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205)
- PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, feature 2494)
- PCI Single-Ended Ultra SCSI Adapter (type 4-K, feature 6206)
- PCI SCSI-2 Single_Ended Fast/Wide Adapter (type 4_A, feature 6208)
- PCI SCSI-2 Fast/Wide RAID Adapter (type 4-H, feature 2493)
- SCSI-2 Fast/Wide Adapter/A (type 4-7, feature 2415)

See also “Appendix B. Cable Configurations” on page 127 for information about configurations with these adapters.

Location Code Format

Location codes identify the locations of adapters and devices in the using system and its attached subsystems and devices. These codes are displayed by the service aids, and when the diagnostic programs isolate a problem. For information about the location codes that are used by the using system, see the *Operator Guide* for the using system.

This section shows the location codes for the 2104.



System Service Aids

Service aids are available on the using system to help you service the 2104. This section briefly describes some of those aids, and tells how to use them. More details are given in the service information for the using system.

The service aids that are described here are:

- Format Media
- Certify Media
- SCSI Device Identification and Removal
- Download Microcode

Format Media

Attention: The Format Media service aid destroys all data on the disk.

To run this service aid:

1. Install the disk drive module (if not already installed) into the 2104.
2. Ensure that power is present in the 2104.
3. Go to the using system, select **Diagnostic Operating Instructions**, and follow the instructions to select the Function Selection menu.
4. Select **Task Selection**.
5. Select **Format Media**, and follow the instructions given.

   Note: You cannot start the Format Media service aid if I/O operations are running on the disk drive.

   Attention: Formatting the wrong disk drive might destroy valuable data.

   If you are not sure about the location code for the disk-drive module that you want to format, see “Location Code Format” on page 119 for an explanation of the codes.

The Format Media service aid can take up to 15 minutes to run. If it completes successfully, run the Certify Media service aid before the disk drive module is used.

Certify Media

The Certify Media service aid checks the disk for defective sectors. Before running Certify Media, ensure that the diagnostics can run in System Verification mode without errors to the disk drive module.

To run this service aid:

1. Go to the using system, select **Diagnostic Operating Instructions**, and follow the instructions to select the Function Selection menu.
2. Select **Task Selection**.
3. Select **Certify Media**, and follow the instructions given.

The Certify service aid takes approximately 10 minutes to run.

SCSI Device Identification and Removal

To run this service aid:

1. Go to the using system, select **Diagnostic Operating Instructions**, and follow the instructions to select the Function Selection menu.
2. Select **Task Selection**.
3. Select **Identify and Remove Resource**.
4. Select the device (enclosure or disk drive) from the displayed list.
5. Select the slot from the displayed list.
6. A menu is displayed. From this menu, you can choose to:
   - Set a disk drive module to **Identify**. The Check light of the selected disk drive module flashes so that you can physically identify that module. The Identify function does not affect the operation of the disk drive module.
   - Set a disk drive module to **Remove**. The Check light of the selected disk drive module comes on and remains on continuously so that you can physically identify the module that you are going to remove. The light goes off when the disk drive module is removed. The Remove function does not affect the operation of the disk drive module until that module is removed.
   - Set a disk drive slot to **Insert**. The Check light at the back of the slot (on the backplane) comes on and remains on continuously so that you can physically identify the slot into which you are going to install a disk drive module.
   - Set a disk drive module or slot to **Normal**. The Check light of the disk drive module, or slot, goes off.

Download Microcode to a Disk Drive or to a SCSI Interface Card

The procedure for downloading microcode is similar for disk drives and for SCSI interface cards. For some configurations, additional actions are needed for SCSI interface cards (see also “Microcode Maintenance” on page 22).

Downloading to Disk Drives

1. Go to the using system, select **Diagnostic Operating Instructions**, and follow the instructions to select the Function Selection menu.
2. Select **Task Selection**.
3. Select the **Download Microcode**.
4. Select **Device**, and follow the instructions given.

Downloading to SCSI Interface Cards

Do the actions given in Table 2.

Table 2. How to Download Microcode to a SCSI Interface Card

Configuration	Action
One SCSI interface card.	Download as described in Downloading to Disk Drives.
Two SCSI interface cards, but only one is connected to a SCSI attachment.	1. Download as described in Downloading to Disk Drives. 2. Stop all I/O to the disk drive modules that are in this enclosure. 3. Swap the SCSI cable to the other SCSI interface card 4. Download as described in Downloading to Disk Drives.
Two SCSI interface cards. Both are connected to SCSI attachments (AIX version 4.3.3).	1. Download to one SCSI interface card as described in Downloading to Disk Drives. 2. Download to the other SCSI interface card as described in Downloading to Disk Drives.
Two SCSI interface cards. Both are connected to SCSI attachments (AIX version above 4.3.3).	Download as described in Downloading to Disk Drives.

If you want to check whether the microcode has downloaded successfully select, from the AIX Diagnostics Functions, **Display Hardware Vital Product Data** to display the existing microcode level (ROS Level and ID).

Software and Microcode Errors

Some failures might be caused by software errors or by microcode errors. If you think you have a software or microcode error:

1. Ensure that your system software, adapter microcode, disk drive microcode, and enclosure microcode are all at the latest levels. Information about the latest levels of software and microcode is given on the web support page (see “Web Support Page” on page 117).
2. Make a note of all failure indicators: for example, the contents of error logs, or physical symptoms.
3. For AIX Versions 4.2 and above, run the **snap -g** command to collect system configuration data, and to dump data.

   For AIX versions below 4.2, go to the using-system service aids and select **Display Vital Product Data** to display the VPD of the failing system. Make a note of the VPD for all the SCSI adapters and disk drives.
4. Report the problem to your support center. The center can tell you whether you have a known problem, and can, if necessary, provide you with a correction for the software or microcode.

Diagnostics Information

Note: If you were sent here from other instructions, return to those instructions when you have finished running the diagnostics.

Concurrent Diagnostics

When the instructions tell you to run concurrent diagnostics, run diagnostics (***not Advanced Diagnostics***) in System Verification mode (see the using-system *Installation and Service Guide*).

Nonconcurrent Diagnostics

When the instructions tell you to run nonconcurrent diagnostics, run Advanced Diagnostics in System Verification mode (see the using-system *Installation and Service Guide*).

Problems Corrected

Run Advanced Diagnostics in System Verification mode ***only to the device that you have just repaired.*** You can then enter information to prevent the generation of another SRN for the problem that you have just solved. If you do not enter that information, the errors that were previously logged for your problem might generate another SRN.

Collecting Errors

To collect enclosure errors, add this cron job SES Healthcheck to the system cron table.

Note: You must have root permissions to complete this procedure.

Edit the system crons with the **crontab -e** command. At the bottom of the file, enter:

```
15 * * * * /usr/lpp/diagnostics/bin/run_ses_healthcheck 1> /dev/null 2> /dev/null
```

For further information about the crontab command, see the web page at:

http://www.rs6000.ibm.com/doc_link/en_US/a_doc_lib/cmds/aixcmds1/crontab.htm#A1599114e

This cron runs at 15 minutes after each hour, and sends mail to the “root user” with details of any errors that are present in the enclosure. It also presents a console message indicating which enclosure has a problem.

The cron requires a script. To create this script, generate a file named run_ses_healthcheck in directory /usr/lpp/diagnostics/bin. The contents of the file must be:

```
#!/bin/ksh
#Name: run_ses_healthcheck
#Location: /usr/lpp/diagnostics/bin
#Function: SCSI SES hourly healthcheck

/usr/sbin/lsdev -Cc container -t ses -s scsi -F name -S available |
              /usr/bin/xargs -n1 -i /bin/nice --10 /usr/lpp/diagnostics/bin/diagela -t {}
```

Note: Although, because of page width, the final line of the contents is shown here split between two lines, you must enter it all on one line.

Give the following command so that the script can be run:

```
chmod 544 /usr/lpp/diagnostics/bin/run_ses_healthcheck
```

Configuring a Disk Drive Module to the Using System

If you have just installed a new disk drive module, and want to change the hdisk number, do the following:

1. Remove the new hdisk number by giving the command:

   ```
   rmdev -l [hdisknumber] -d
   ```

   where [hdisknumber] is the hdisk number that you want to remove (for example, hdisk12).
2. Remove the definition of the *original* hdisk by giving the command:

   ```
   rmdev -l [hdisknumber] -d
   ```

   where [hdisknumber] is the hdisk number of the original disk drive module (for example, hdisk7).
3. Run the **cfgmgr** command.

Configuring a 2104 to the Using System

Use the **cfgmgr** command to configure or reconfigure a 2104 to the using system.

Unconfiguring a 2104 from the Using System

To remove a 2104 from the using system, give the following command:

```
rmdev -l [enclosurenumber] -d
```

where [enclosurenumber] is the enclosure device that was generated by the **cfgmgr** command (for example, [ses0], [ses1], [ses2]).

Appendix B. Cable Configurations

This appendix shows examples of cable configurations for the 2104. Some of the configurations are valid for all the adapters that the 2104 supports; others are valid only for particular types of adapter. Also shown are configurations that are not valid. Do not use any configuration that is shown as not valid; unexpected results might occur.

AIX Versions

These configurations support AIX versions 4.2.1 and 4.3.3. PTFs are available on the support webpage:

http://service.boulder.ibm.com/cgi-bin/support/rs6000.support/downloads

Adapter Microcode

Adapter microcode is available under “RS/6000 Microcode” on this webpage:

http://www.rs6000.ibm.com/support/micro/download.html

Modes

The 2104 supports high-availability cluster multiprocessing (HACMP) in standby and mutual takeover modes for these non-RAID adapters:

- PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205)
- PCI Single-Ended Ultra SCSI Adapter (type 4-K, feature 6206)
- PCI SCSI-2 Single_Ended Fast/Wide Adapter (type 4_A, feature 6208)
- SCSI-2 Fast/Wide Adapter/A (type 4-7, feature 2415)

HACMP standby mode consists of two systems. One system is active, the other passive. The passive system can take control if the active system fails.

HACMP mutual takeover mode also consists of two systems. Both systems are active, but they do not share disk drives. The good system can take control of the disk drives in the failed system.

Note: The 2104 does not support concurrent access to the disk drives of both systems.

Configurations That Are Valid

One Adapter in One Using System Connected to One 2104

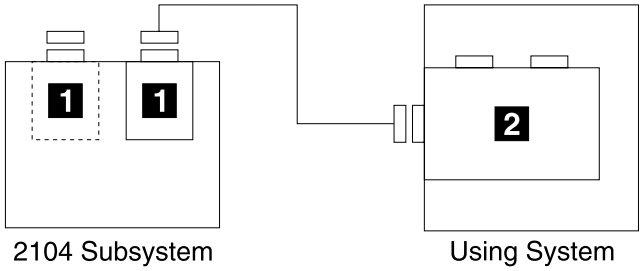


Figure 53. One Adapter in One Using System Connected to One 2104

1	SCSI interface card **Note:** The second SCSI interface card that is in the 2104 is optional.
2	SCSI or SCSI RAID adapter of one of these types: • PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205) • PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, feature 2494) • PCI Single-Ended Ultra SCSI Adapter (type 4-K, feature 6206) • PCI SCSI-2 Single_Ended Fast/Wide Adapter (type 4_A, feature 6208) • PCI SCSI-2 Fast/Wide RAID Adapter (type 4-H, feature 2493) • SCSI-2 Fast/Wide Adapter/A (type 4-7, feature 2415)

Attention: The SCSI address of the adapter that is connected to the 2104 must be different from the addresses of the installed disk drive modules.

Two Adapters in One Using System Connected to Two 2104s

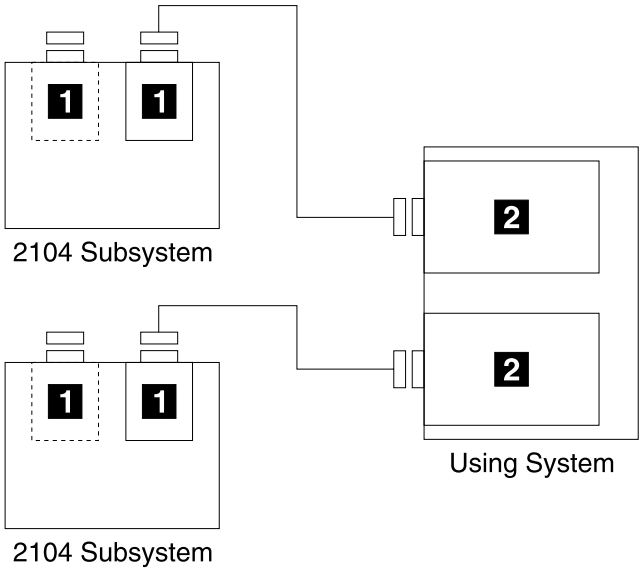


Figure 54. Two Adapters in One Using System Connected to Two 2104s

1	SCSI interface card **Note:** The second SCSI interface card that is in the 2104 is optional.
2	SCSI or SCSI RAID adapter of one of these types: • PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205) • PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, feature 2494) • PCI Single-Ended Ultra SCSI Adapter (type 4-K, feature 6206) • PCI SCSI-2 Single_Ended Fast/Wide Adapter (type 4_A, feature 6208) • PCI SCSI-2 Fast/Wide RAID Adapter (type 4-H, feature 2493) • SCSI-2 Fast/Wide Adapter/A (type 4-7, feature 2415)

Attention: The SCSI address of the adapter that is connected to the 2104 must be different from the addresses of the installed disk drive modules.

Two Adapters in Two Using Systems Connected to Two 2104s

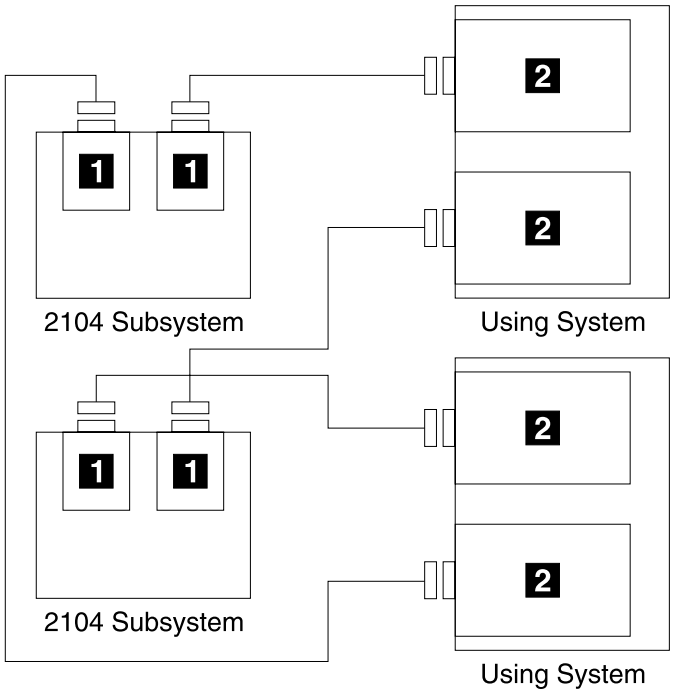


Figure 55. Two Adapters in Two Using Systems Connected to Two 2104s

1	SCSI interface card
2	Non-RAID SCSI adapter of one of these types: • PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205) • PCI Single-Ended Ultra SCSI Adapter (type 4-K, feature 6206) • PCI SCSI-2 Single_Ended Fast/Wide Adapter (type 4_A, feature 6208) • SCSI-2 Fast/Wide Adapter/A (type 4-7, feature 2415) This configuration is valid when the adapter is using high-availability cluster multiprogramming (HACMP) in standby and mutual takeover modes (see “Modes” on page 127). **Note:** For additional connections, more than two SCSI adapters can be installed in each using system.

Attention: The SCSI address of the adapter that is connected to the 2104 must be different from the addresses of the installed disk drive modules. When a second adapter is connected to a 2104, the SCSI addresses of that adapter must be different from the address of the first adapter and the addresses of the installed disk drive modules.

One Adapter in One Using System Connected to Two 2104s

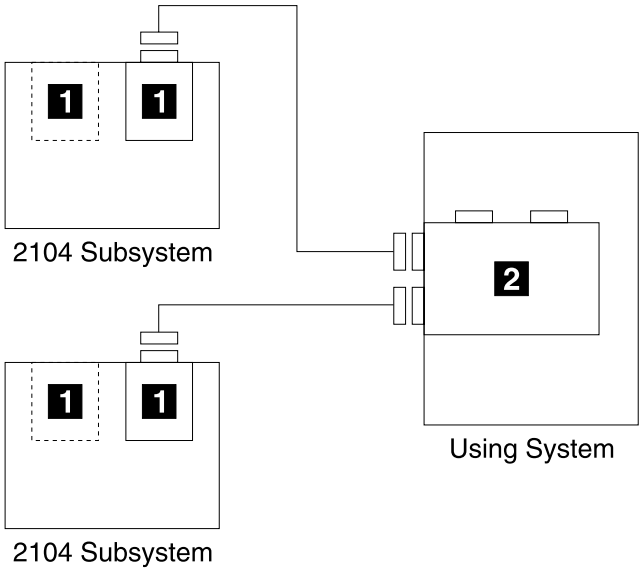


Figure 56. One Adapter in One Using System Connected to Two 2104s

1	SCSI interface card **Note:** The second SCSI interface card that is in the 2104 is optional.
2	SCSI adapter of one of these types: • PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205) • PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, feature 2494)

Attention: The SCSI address of the adapter that is connected to the 2104 must be different from the addresses of the installed disk drive modules.

One Adapter in One Using System Connected to Two 2104s and an Internal RAID Array

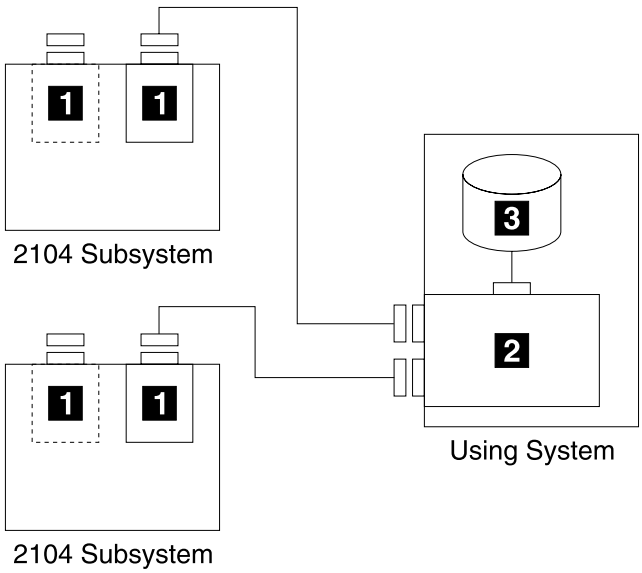


Figure 57. One Adapter, One Using System with Internal RAID Array, and Two 2104s

1	SCSI interface card **Note:** The second SCSI interface card that is in the 2104 is optional.
2	PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, feature 2494) only
3	Internal RAID-5 array

Attention: The SCSI address of the adapter that is connected to the 2104 must be different from the addresses of the installed disk drive modules.

One Adapter in Each of Two Using Systems Connected to Two 2104s

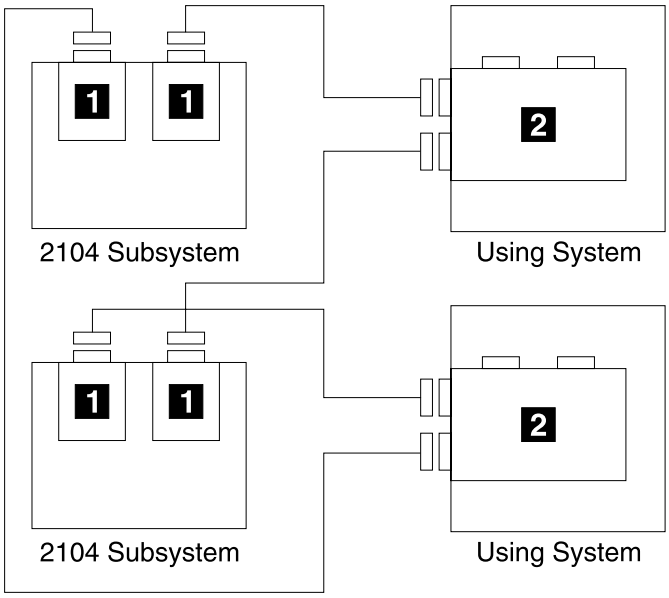


Figure 58. One Adapter in Each of Two Using Systems Connected to Two 2104s

1	SCSI interface card
2	PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205) only. This configuration can use high-availability cluster multiprogramming (HACMP) in standby and mutual takeover modes (see “Modes” on page 127). **Note:** For additional connections, more than one dual-channel adapters can be installed in each using system.

Attention: The SCSI address of the adapter that is connected to the 2104 must be different from the addresses of the installed disk drive modules. When a second adapter is connected to a 2104, the SCSI addresses of that adapter must be different from the address of the first adapter and the addresses of the installed disk drive modules.

One Adapter in Each of Two Using Systems Connected to One 2104

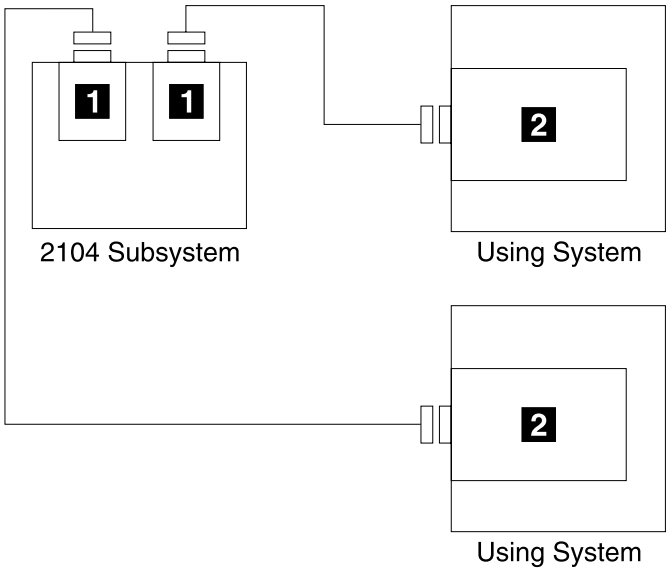


Figure 59. One Adapter in Each of Two Using Systems Connected to One 2104

1	SCSI interface card
2	Non-RAID SCSI adapter of one of these types: • PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205) • PCI Single-Ended Ultra SCSI Adapter (type 4-K, feature 6206) • PCI SCSI-2 Single_Ended Fast/Wide Adapter (type 4_A, feature 6208) • SCSI-2 Fast/Wide Adapter/A (type 4-7, feature 2415) This configuration is valid when the adapter is using high-availability cluster multiprogramming (HACMP) in standby and mutual takeover modes (see “Modes” on page 127).

Attention: The SCSI address of the adapter that is connected to the 2104 must be different from the addresses of the installed disk drive modules. When a second adapter is connected to a 2104, the SCSI addresses of that adapter must be different from the address of the first adapter and the addresses of the installed disk drive modules.

Configurations That Are Not Valid

Two Adapters in One Using System Connected to One 2104

Attention: ***This configuration is not valid.***

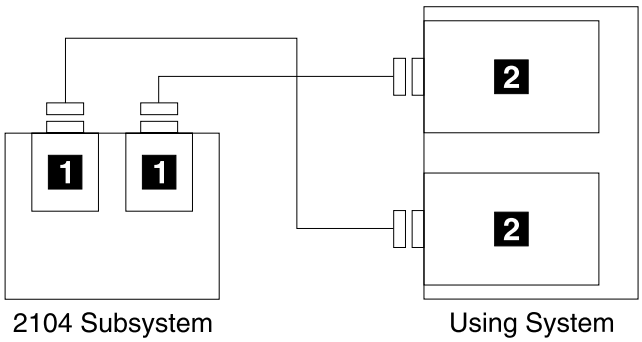


Figure 60. Two Adapters in One Using System Connected to One 2104

1	SCSI interface card
2	SCSI adapter. This configuration is not valid for any type of adapter.

One Adapter in One Using System Connected to Two 2104s via the SCSI Interface Cards

Attention: ***This configuration is not valid.***

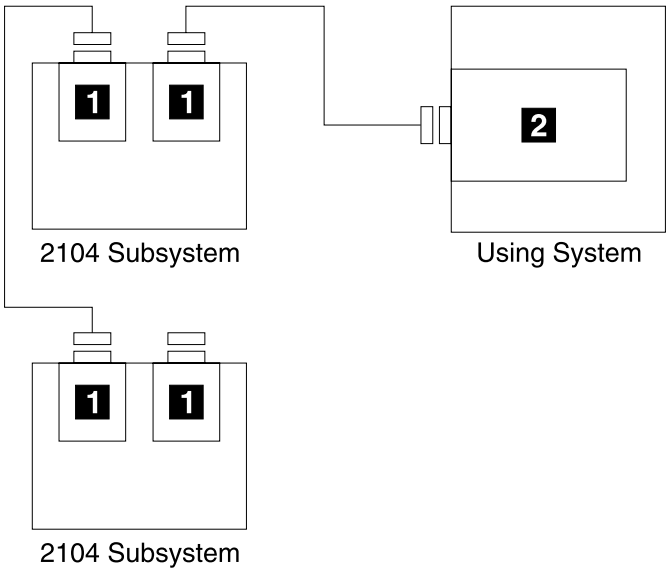


Figure 61. One Adapter in One Using System Connected to Two 2104s via the SCSI Interface Cards

1	SCSI interface card
2	SCSI adapter. This configuration is not valid for any type of adapter.

One Adapter in One Using System Connected to 2104s via a Y-Cable (1)

Attention: ***This configuration is not valid.***

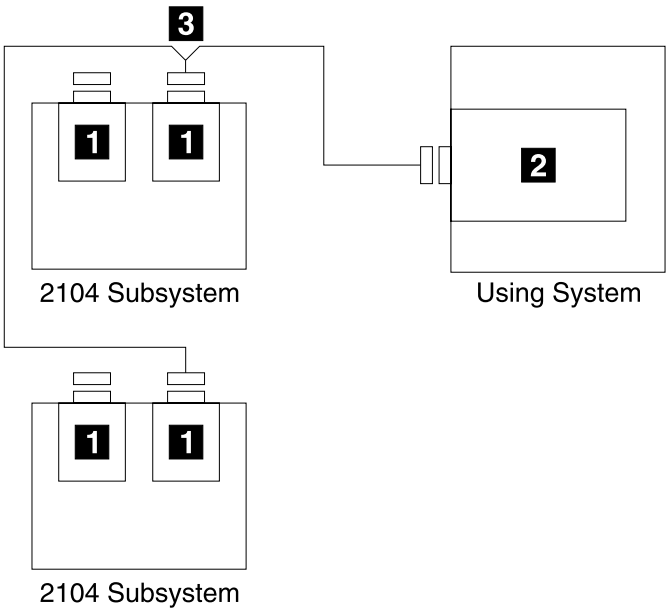


Figure 62. One Adapter in One Using System Connected to 2104s via a Y-Cable (1)

1	SCSI interface card
2	SCSI adapter. This configuration is not valid for any type of adapter.
3	Y-cable. Not supported for any type of adapter that is used with the 2104.

One Adapter in One Using System Connected to 2104s via a Y-Cable (2)

Attention: ***This configuration is not valid.***

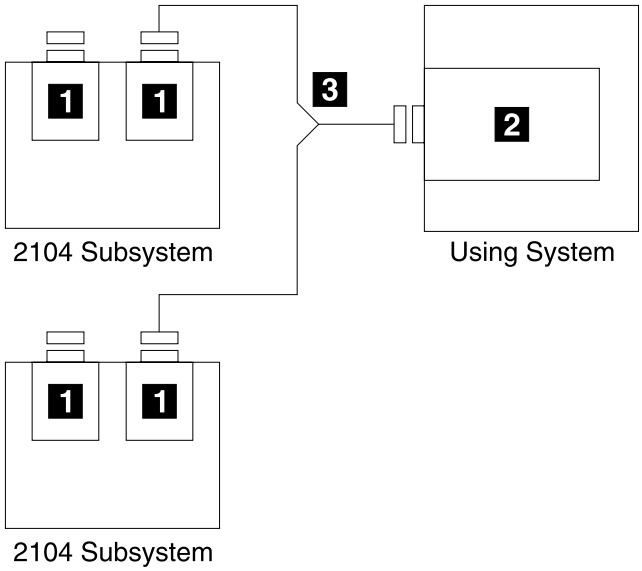


Figure 63. One Adapter in One Using System Connected to 2104s via a Y-Cable (2)

1	SCSI interface card
2	SCSI adapter. This configuration is not valid for any type of adapter.
3	Y-cable. Not supported for any type of adapter that is used with the 2104.

One Dual-Channel Adapter in One Using System Connected to Two 2104s and Internal Disk Drives

Attention: ***This configuration is not valid.***

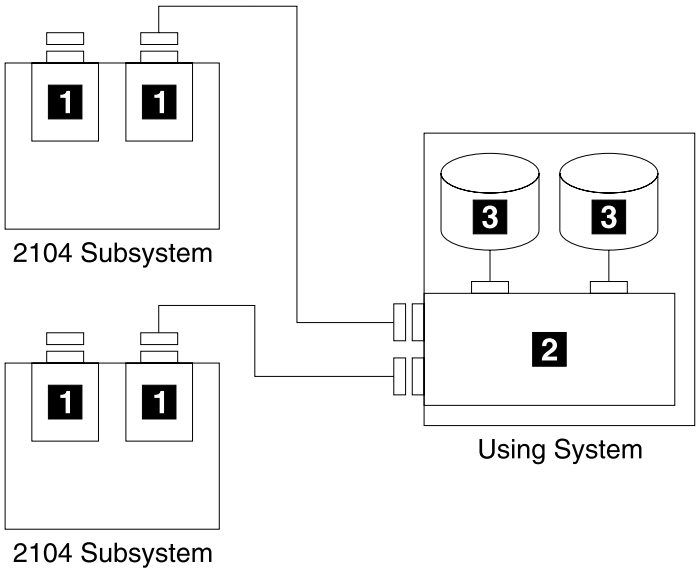


Figure 64. One Dual-Channel Adapter in One Using System Connected to Two 2104s and Internal Disk Drives

1	SCSI interface card
2	PCI Dual Channel Ultra2 SCSI Adapter (type 4-R, feature 6205). This configuration is not valid on this adapter because two internal and two external attachments that are on the same SCSI bus exceed the capacity of the adapter.
3	Internal disk drives.

One RAID Adapter in Each of Two Using Systems Connected to Two 2104s

Attention: ***This configuration is not valid.***

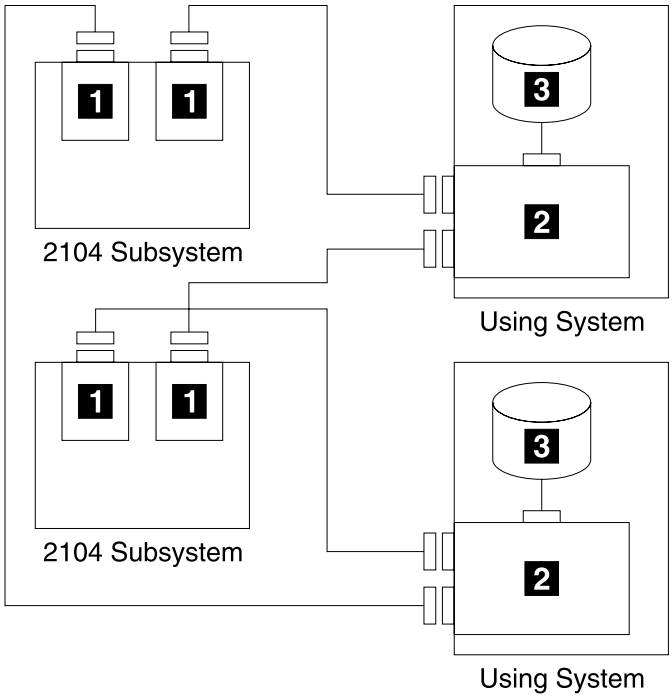


Figure 65. One RAID Adapter in Each of Two Using Systems Connected to Two 2104s

1	SCSI interface card
2	This configuration is not valid for RAID adapters, including the PCI 3-Channel Ultra2 SCSI RAID Adapter (type 4-T, feature 2494) because it cannot use high-availability cluster multiprogramming (HACMP).
3	Internal RAID-5 disk drive array

Appendix C. Translated Safety Notices

This appendix contains the danger and caution notices that are used in the various books related to the Expandable Storage Plus: 2104 Models DL1 and TL1. The notices are shown in English and in various other languages.

Danger notice	A danger notice calls attention to a situation that is potentially lethal or extremely hazardous to people.
Caution notice	A caution notice calls attention to a situation that is potentially hazardous to people because of some existing condition.

Always use safe working procedures whenever you work on machines. Use your own judgment to identify safety conditions that these notices do not describe.

Danger Notices

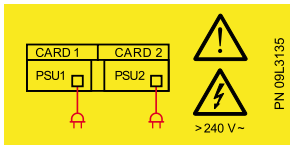
DANGER

In the following step you are going to remove the power cables. These cables are live if the rack power distribution unit or uninterruptible power supply (UPS) unit is still switched on.

DANGER

Do not try to open the covers of the fan-and-power-supply assembly.

Caution Notices



CAUTION:
This unit may have two linecords, to remove all power, disconnect both linecords.

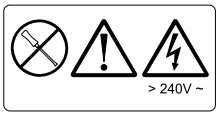
CAUTION:
This unit weighs 38.5 kg.

CAUTION:
The stabilizer must be correctly attached to the bottom front of the rack to prevent the rack from tipping forward while the units are being removed from the rack. Do not pull out or install any unit if the stabilizer is not attached to the rack.

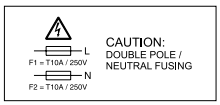
CAUTION:
Do not use the handles of the fan or fan-and-power-supply assemblies to carry the unit. These handles are not intended to support the weight of the unit.

CAUTION:
A 2104 Model DL1 weighs up to 38.5 kg (85 lb) with disk drive modules installed. Do not attempt to remove the 2104 from the rack unless all the disk drive modules have been removed.

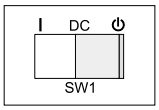
CAUTION:
Do not attempt to lift the 2104 by yourself. Ask another person for aid.



CAUTION:
Do not remove cover, do not service, no serviceable parts.



CAUTION:
Double pole/neutral fusing



CAUTION:
A ″Standby″ condition is indicated by the symbol to the right of ″DC″ directly above the switch, SW1. When SW1 is toggled to the right position directly under the ″Standby″ symbol, the unit's AC-power is not shut off.

Traduction des consignes de sécurité

Français

Cette annexe contient la traduction des consignes de type Danger et Attention figurant dans les différents manuels concernant Expandable Storage Plus: 2104 Models DL1 and TL1.

Consignes de type Danger	Les consignes de sécurité de type Danger indiquent la présence d'un risque de blessures graves, voire mortelles.
Consignes de type Attention	Les consignes de sécurité de type Attention indiquent la présence d'un risque de blessures légères.

Respectez toujours les consignes de sécurité lorsque vous travaillez sur des machines. Mettez vous même en place les conditions de sécurité nécessaires dans les cas non prévus par ces consignes.

Consignes Danger

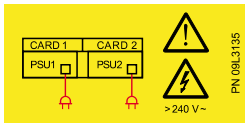
DANGER

Dans l’étape qui suit, vous allez devoir débrancher les cordons d'alimentation. Ces cordons sont toujours alimentés si le cordon d'alimentation de l'armoire ou la batterie de secours sont en fonction.

DANGER

N'essayez pas d'ouvrir le bloc ventilateur-alimentation.

Consignes Attention



ATTENTION:
Cette unité peut posséder deux cordons d'alimentation. Pour supprimer toutes les tensions dans l'unité, débranchez les deux cordons.

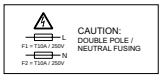
ATTENTION:
Cette unité pèse 38.5 kg.

ATTENTION:
Le stabilisateur doit être solidement fixé au bas de la face avant de l'armoire pour empêcher cette dernière de basculer lorsqu'on en retire des unités. Ne retirez pas ou n'installez pas d'unité avant d'avoir vérifié que le stabilisateur est bien fixé à l'armoire.

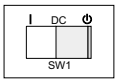
ATTENTION:
Un 2104 Modèle DL1 peut peser jusqu'à 38.5 kg, disque dur compris. N'essayez pas de retirer le 2104 de l'armoire avant d'avoir retirè le disque dur.

ATTENTION:
N'essayez pas de soulever seul le 2104. Faites-vous aider pour le déplacer en toute sécurité.

ATTENTION:
Ne pas ouvrir. Ne tenter aucune réparation. Aucune pièce n'est réparable en clientèle.



ATTENTION:
L'un des deux fusibles est sur le neutre.



ATTENTION:
Un état "Attente" est indiqué par le symbole à droite de "DC" au-dessus de l'interrupteur SW1. Lorsque Sw1 bascule dans la bonne position sous le symbole "Attente", l'alimentation (courant alternatif) de l'unité n'est pas coupée.

Sicherheitshinweise

Deutsch

Dieser Abschnitt enthält die Sicherheitshinweise VORSICHT und ACHTUNG, die in den Veröffentlichungen zum IBM Expandable Storage Plus 2104, Modelle DL1 und TL1 verwendet werden.

Hinweis VORSICHT	Der Hinweis VORSICHT macht auf eine Gefahr aufmerksam, die tödliche oder schwere Verletzungen zur Folge haben kann.
Hinweis ACHTUNG	Der Hinweis ACHTUNG macht auf mögliche Probleme aufmerksam, die zu einer Personengefährdung führen können.

Beachten Sie bei Arbeiten an Maschinen stets die Sicherheitsbestimmungen. Es liegt in der Verantwortung jedes einzelnen selbst, mögliche Sicherheitsrisiken zu erkennen.

Hinweise VORSICHT

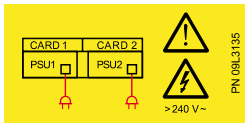
VORSICHT

Im folgenden Schritt werden die Netzkabel gelöst. Ist die Stromversorgungseinheit oder Notstromversorgungseinheit des Gehäuses noch eingeschaltet, führen diese Kabel Strom.

VORSICHT

Abdeckungen des Netzteils nicht abnehmen.

Hinweise ACHTUNG



ACHTUNG:
Sollte die Einheit zwei Stromversorgungskabel besitzen, beide Stromversorgungskabel lösen, um die Einheit ganz von der Netzspannung zu trennen.

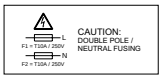
ACHTUNG:
Diese Einheit wiegt ungefähr 38.5 kg.

ACHTUNG:
Der Stabilisator muß ordnungsgemäß unten an der Vorderseite des Gehäuses angebracht werden, um ein Vorkippen beim Entfernen der Einheiten aus dem Gehäuse zu verhindern.
Die Einheiten nicht installieren oder entfernen, wenn der Stabilisator nicht am Gehäuse montiert ist.

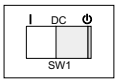
ACHTUNG:
Ein IBM 2104 Modell DL1 kann mit installierten Plattenlaufwerkmodulen bis zu 38.5 kg wiegen.
Den IBM 2104 Modell DL1 nicht aus dem Gehäuse entfernen, bevor alle Plattenlaufwerkmodule entfernt wurden.

ACHTUNG:
Nicht versuchen, den IBM 2104 alleine anzuheben.
Zum Anheben sind zwei Personen erforderlich.

ACHTUNG:
Verkleidung nicht entfernen, nicht reparieren. Es sind keine zu wartenden Teile enthalten.



ACHTUNG:
Zweipolige bzw. Neutralleitersicherung



ACHTUNG:
Eine "Standby"-Bedingung wird durch das Symbol rechts von der Gleichstromkontrolleuchte (DC) direkt über dem Schalter Sw1angezeigt. Wenn der Schalter Sw1 rechts direkt unter dem Symbol “Standby" steht, ist die Einheit nicht ausgeschaltet.

Greek

Ελληνικά

Το παράρτημα αυτό περιέχει μεταφράσεις των σημειώσεων κινδύνου και προσοχής που χρησιμοποιούνται στα διάφορα εγχειρίδια που σχετίζονται με το προϊόν Expandable Storage Plus: 2104 Τύπος DL1 και TL1.

Σημείωση κινδύνου: Μια σημείωση κινδύνου επισημαίνει μια κατάσταση που μπορεί να είναι πολύ επικίνδυνη ή και θανατηφόρος για τους ανθρώπους.

Σημείωση προσοχής: Μια σημείωση προσοχής επισημαίνει μια κατάσταση που μπορεί να είναι επικίνδυνη για τους ανθρώπους λόγω ορισμένων συνθηκών.

Ακολουθείτε πάντα ασφαλείς διαδικασίες εργασίας όταν εργάζεστε με μηχανές. Χρησιμοποιείτε τη δική σας κρίση για να αναγνωρίζετε άλλες συνθήκες που τυχόν επηρεάζουν την ασφάλεια και δεν περιγράφονται σε αυτές τις σημειώσεις.

Σημειώσεις κινδύνου

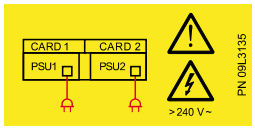
ΚΙΝΔΥΝΟΣ

Στο ακόλουθο βήμα θα αφαιρέσετε τα καλώδια ρεύματος. Στα καλώδια αυτά υπάρχει ηλεκτρικό ρεύμα αν η μονάδα διανομής ρεύματος του ικριώματος (rack) ή η εφεδρική μπαταρία είναι ακόμα σε λειτουργία.

ΚΙΝΔΥΝΟΣ

Μην επιχειρήσετε να ανοίξετε τα καλύμματα της συσκευής που περικλείει την πηγή ρεύματος και τον ανεμιστήρα.

Σημειώσεις προσοχής



ΠΡΟΣΟΧΗ:
Ο σταθεροποιητής πρέπει να προσαρτηθεί σωστά στο κάτω εμπρόσθιο μέρος του ικριώματος ώστε να μην γείρει προς τα εμπρός το ικρίωμα κατά την αφαίρεση των μονάδων από το ικρίωμα. Μην αφαιρέσετε ή εγκαταστήσετε καμία μονάδα αν δεν έχει προσαρτηθεί στο ικρίωμα ο σταθεροποιητής.

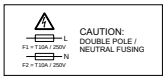
ΠΡΟΣΟΧΗ:
Η μονάδα αυτή έχει βάρος 38,5 Kg.

ΠΡΟΣΟΧΗ:
Μια μονάδα 2104 Τύπου DL1 έχει βάρος 38,5 Kg με εγκατεστημένες τις μονάδες δίσκου. Μην επιχειρήσετε να αφαιρέσετε τη μονάδα 2104 από το ικρίωμα αν δεν έχουν αφαιρεθεί όλες οι μονάδες δίσκου.

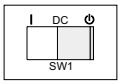
ΠΡΟΣΟΧΗ:
Μην επιχειρήσετε να ανυψώσετε τη μονάδα 2104 μόνος σας. Ζητήστε τη βοήθεια ενός ακόμα τεχνικού υπηρεσιών.

ΠΡΟΣΟΧΗ:
Μην αφαιρέσετε το κάλυμμα, μην επιχειρήσετε να κάνετε συντήρηση της μονάδας, δεν υπάρχουν εξαρτήματα των οποίων μπορεί να γίνει συντήρηση.

ΠΡΟΣΟΧΗ:
Η μονάδα αυτή μπορεί να έχει δύο καλώδια γραμμής. Για να διακόψετε πλήρως την παροχή ρεύματος, αποσυνδέστε και τα δύο καλώδια γραμμής.



ΠΡΟΣΟΧΗ:
Ασφάλεια δύο πόλων/ουδέτερου.



ΠΡΟΣΟΧΗ:
Η κατάσταση "Standby" σημειώνεται με το σύμβολο που βρίσκεται στα δεξιά της σήμανσης "DC" πάνω από το διακόπτη SW1. Αν ο διακόπτης SW1 είναι στη δεξιά θέση, κάτω ακριβώς από το σύμβολο "Standby", η παροχή εναλλασσόμενου ρεύματος της μονάδας δεν έχει διακοπεί.

הודעות בטיחות מתורגמות

עברית

נספח זה מכיל תרגומים של הודעות הסכנה והזהירות המופיעות בספרים השונים הקשורים אל Expandable Storage Plus: 2104 דגמים DL1 ו-TL1.

הודעת סכנה — הודעת סכנה מפנה את תשומת הלב למצב העלול לגרום מוות או להיות מסוכן ביותר לבני אדם.

הודעת זהירות — הודעת זהירות מפנה את תשומת הלב למצב העלול להיות מסוכן לבני אדם בגלל תנאים קיימים מסוימים.

יש לנהוג תמיד לפי כללי הזהירות בעת העבודה עם מכונות. השתמשו בשיפוטכם כדי לזהות תנאי בטיחות שהודעות אלה אינן חלות עליהם.

הודעות סכנה

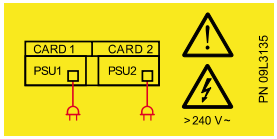
סכנה

בשלב הבא אתם עומדים לנתק את כבלי החשמל. כבלים אלה מכילים זרם חשמלי אם יחידת מפצל המתח ויחידת אל-פסק במסד המכשירים עדיין פועלים.

סכנה

אל תנסו לפתוח את המכסים של מכלול המאוורר וספק הכוח.

הודעות זהירות



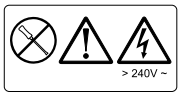
זהירות:
המייצב חייב להיות מחובר כראוי בתחתית מסד המכשירים כדי למנוע מהמסד ליפול קדימה בזמן הוצאת היחידות מהמסד. אל תמשכו החוצה או תתקינו יחידות אם המייצב אינו מחובר אל מסד המכשירים.

זהירות:
יחידה זו שוקלת 38.5 ק"ג.

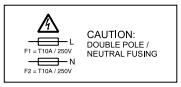
זהירות:
יחידת 2104 דגם DL1 שוקלת 38.5 ק"ג כאשר המודולים של כונני הדיסקים מותקנים בתוכה. אל תנסו להוציא את היחידה מהמסד לפני שתנתקו את כל המודולים של כונני הדיסקים.

זהירות:
אל תנסו להרים לבדכם את יחידת 2104. בקשו עזרה מנציג שירות אחר.

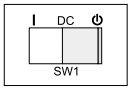
זהירות:
אל תסירו את המכסה, אל תבצעו טיפול שירות, אין חלקים שאפשר לטפל בהם.



זהירות:
ליחידה זו יכולים להיות שני כבלי חשמל. לניתוק הזרם, יש לנתק את שני הכבלים.



זהירות:
הגנת נתיך כפולה (פאזה/אפס)



זהירות:
חיווי מצב "כוננות" (standby) מופיע מימין לציון DC בדיוק מעל המתג SW1. כאשר מתג SW1 מוסט ימינה, בדיוק מתחת לחיווי הכוונות, מתח הרשת של היחידה אינו מנותק.

Lefordított biztonsági előírások

Magyar

Ez a függelék a veszélyre és az óvatosságra figyelmeztető előírások fordítását tartalmazza, amely a bővíthető tárolók: 2104 Modell DL1 és TL1 berendezésekre vonatkozó különféle könyvekben fordul elő.

Veszélyre utaló megjegyzés

A veszélyre utaló megjegyzés olyan helyzetre hívja fel a figyelmet, amely halálos vagy rendkívüli veszélyt jelent az emberekre.

Figyelmeztető megjegyzés

A figyelmeztető megjegyzés olyan helyzetre hívja fel a figyelmet, amely bizonyos meglévő feltételek miatt veszélyt jelent az emberekre.

Mindig a biztonságos munkavégzésre helyezze a hangsúlyt, valahányszor a berendezésekkel dolgozik. A biztonságos helyzet megítélésében saját véleményére támaszkodjon, ha az alábbi megjegyzések nem ismertetik az adott szituációt.

Veszélyre utaló megjegyzések

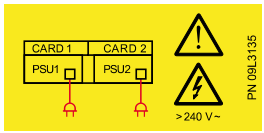
Vigyázat, veszély!

A következő lépésben eltávolítja a tápkábeleket. Ezek a kábelek áram alatt vannak, ha a tartókeret tápfeszültség elosztó egysége vagy a tartalék akkumulátor egysége még bekapcsolt állapotban van.

Vigyázat, veszély!

Ne próbálja meg a ventillátor és a tápegység szerelvény borítóit kinyitni.

Figyelmeztető megjegyzések



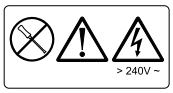
Figyelem:
A stabilizátort (rögzítőt) megfelelően szerelje fel a tartókeret elejének alsó részére, hogy megakadályozza a keret megbillenését, amikor az egységeket kihúzza a keretből. Ne húzzon ki és ne telepítsen egyetlen egységet sem, ha a rögzítő nincs felszerelve.

Figyelem:
Az egység súlya 38.5 kg.

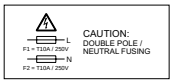
Figyelem:
A 2104 Modell DL1 súlya 38.5 kg (85 lb) is lehet, ha a lemezegység modulok telepítve vannak. Ne próbálja meg eltávolítani a 2104-es berendezést a keretből addig, amíg ki nem vette az összes lemezegység modult.

Figyelem:
Ne kísérelje meg egyedül megemelni a 2104-es berendezést. Kérjen meg másik szerviz szakembert, hogy segítsen.

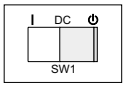
Figyelem:
Ne távolítsa el a borítót, ne szervizeljen nem szervizelhető részeket.



Figyelem:
Ez az egység két tápkábellel rendelkezhet, ezért a teljes áramtalanításhoz húzza ki mind a kettő tápkábelt.



Figyelem:
Dupla pólus/nulla biztosítása



Figyelem:
A "Standby" feltételt a közvetlenül az SW1 kapcsoló felett lévő "DC" felirattól jobbra látható szimbólum jelzi. Amikor az SW1 kapcsolót jobbra kapcsolja közvetlenül a "Standby" szimbólum alá, akkor az egységek AC tápforrása nincs lekapcsolva.

Informazioni relativi alla sicurezza

Italiano

Questo opuscolo contiene la traduzione degli avvisi di pericolo e di attenzione presenti nei manuali relativi all'Expandable Storage Plus: 2104 Modelli DL1 e Tl1.

Avviso di pericolo	Un avviso di pericolo richiama l'attenzione su una situazione potenzialmente mortale oppure estremamente pericolosa per le persone.
Avviso di attenzione	Un avviso di attenzione richiama l'attenzione su una situazione che, in presenza di alcune condizioni, è potenzialmente pericolosa per le persone.

Rispettare sempre le norme di sicurezza quando si utilizzano le macchine. Valutare con attenzione eventuali condizioni di rischio che non sono descritte in questi avvisi.

Avvisi di pericolo

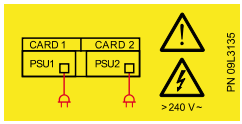
PERICOLO

Al prossimo passo, sarà necessario rimuovere i cavi di alimentazione. Se l'unità di distribuzione dell'energia nel rack e l'unità batteria di riserva sono ancora accese, tali cavi sono in tensione.

PERICOLO

Non tentare di aprire i coperchi dell'assieme ventilatore-alimentatore.

Avvisi di attenzione



ATTENZIONE:
Quest'unità può avere due cavi di alimentazione; per disattivare completamente l'alimentazione, scollegare entrambi i cavi.

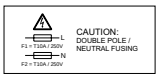
ATTENZIONE:
Questa unità pesa 38.5 KG.

ATTENZIONE:
Lo stabilizzatore deve essere correttamente assicurato alla parte frontale, estremità inferiore del rack per evitare che quest'ultimo si inclini in avanti durante la rimozione delle unità dal rack. Non installare o non estrarre alcuna unità se lo stabilizzatore non è installato.

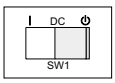
ATTENZIONE:
Un'unità 2104 pesa fino a 38.5 kg (85 lb) con i moduli disco installati. Rimuovere tutti i moduli disk driver prima di estrarre l'unità 2104.

ATTENZIONE:
Non tentare di sollevare l'unità 2104 da solo. Chiedere l'aiuto di un'altra persona del servizio assistenza.

ATTENZIONE:
Non rimuovere il coperchio, non effettuare manutenzione, non contiene parti soggette a manutenzione.



ATTENZIONE:
Fusibili fase e neutro



ATTENZIONE:
La condizione di "Standby" (attesa) viene indicata dal simbolo "DC Standby" posto a destra sopra l'interruttore Sw1. Quando l'interruttore Sw1 è attivato, in basso a destra viene indicata la dicitura "DC ON"; l'unità "AC power" (alimentazione ca) risulta accesa.

日本語

ここでは、Exp Plus:2104 モデル DL1 および TL1 に関連する各種マニュアルの中で使われている危険と注意について記述しています。

⚠ 危険 この表示を無視して誤った取り扱いをすると、人が死亡または重傷を負う可能性がある危険が存在する内容を示しています。

⚠ 注意 この表示を無視して誤った取り扱いをすると、人が障害を負う可能性が想定される内容または物的障害の発生が想定される内容を示しています。

機器を作動させているときは常に、安全で正しい手続きに従って使用してください。また、ここでの注意書きに記述されていないケースについても、ユーザー自身の判断で安全な条件のもとで機器を使用するようにしてください。

⚠ 危険

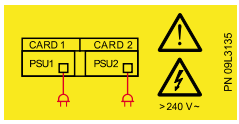
⚠ 危険

次のステップで電源ケーブルを抜きます。電力配分装置のラックやバッテリー・バックアップ 装置の電源がオンの場合、このケーブルには電流が通っています。

⚠ 危険

ファン / 電源機構のカバーを開けないでください。

⚠ 注意



⚠ 注意

装置をラックから取り外す時には、ラックが前に傾かない
ように、ラックの底面の前部に安定板を正しく取り付けてください。安定板がラックに付いていないときには、装置をラックに収めたり、ラックから引き出すことはしないでください。

⚠ 注意

この装置の重量は 38.5 kgです。

⚠ 注意

2104 モデル DL1 の重量は、ディスク・ドライブ・モジュールをインストールすると、38.5 kg になります。すべてのディスク・ドライブ・モジュールを取り外してから、ラックから 2104 を取り出すようにしてください。

⚠ 注意

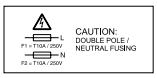
2104 をひとりで持ち上げないでください。他の保守担当員の助けを借りてください。

⚠ 注意

この装置には電源コードが 2 本あります。遮断を完全に行うには、2 本とも引き抜いてください。

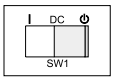
⚠ 注意

カバーを外さないでください。保守作業をしないでください。保守可能な部品はありません。



⚠ 注意

両極 / 中性線ヒューズ



⚠ 注意

「スタンバイ」状態は、SW1 スイッチの真上の DC の右に記号で示されます。SW1 が「スタンバイ」記号の真下で右側に倒されている場合、装置の AC 電源は遮断されていません。

안전 주의사항

한글

이 부록에는 Expandable Storage Plus: 2104 모델 DL1 및 TL1과 관련된 여러 책에서 사용되는 위험 및 경고 주의사항을 번역한 내용이 들어 있습니다.

위험 주의사항 — 사용자에게 치명적일 수 있거나 매우 위험한 상황에 대해 주의를 환기시킵니다.

경고 주의사항 — 기존의 조건때문에 사용자에게 위험할 수 있는 상황에 대해 주의를 환기시킵니다.

기계 작업을 할 때는 항상 안전 작업 절차를 따르십시오. 이 주의사항에 나와있지 않은 안전에 관한 상황은 스스로 판단해서 조치를 취하십시오.

위험 주의사항

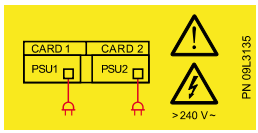
위험

다음 단계에서 전원 케이블을 제거하는 경우, 랙 분산 장치 또는 배터리 백업 장치의 전원이 켜져 있으면 이 케이블에는 전류가 흐르고 있는 상태입니다.

위험

송풍기 및 전원 공급 장치의 덮개를 열지 마십시오.

경고 주의사항



경고:
이 장치에는 두 개의 라인코드가 있습니다. 모든 전원을 차단하려면 두 개의 라인코드를 모두 연결 해제하십시오.

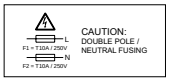
경고:
이 장치의 무게는 38.5 kg 입니다.

경고:
장치가 랙에서 제거되는 동안 앞쪽으로 넘어지는 것을 방지하기 위해서는 스테블라이저가 랙의 앞쪽 아래 부분에 제대로 설치되어 있어야 합니다. 스테블라이저가 랙에 접속되어 있지 않다면 어떤 장치도 꺼내거나 설치하지 마십시오.

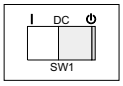
경고:
디스크 드라이브 모듈이 설치되어 있는 2104 모델 DL1은 38.5 kg (85 파운드)까지 무게가 나갑니다. 모든 디스크 드라이브 모듈이 제거되지 않은 경우, 2104를 랙에서 제거하지 마십시오.

경고:
2104를 혼자 들어올리려고 하지 마십시오. 다른 서비스 직원에게 도움을 요청하십시오.

경고:
덮개를 제거하지 마십시오. 서비스 가능 부품이 아니오니 서비스하지 마십시오.



경고:
이중 중성극 휴즈



경고:
"Standby" 상태는 SW1 스위치 바로 위쪽의 "DC" 오른쪽에 기호로 표시됩니다. SW1이 "Standby" 기호 아래의 오른쪽 위치로 설정되면 장치의 AC 전원은 차단되지 않습니다.

Avisos de Segurança Traduzidos

Português

Este apêndice contém traduções dos avisos de perigo e cuidado utilizados em diversos manuais relacionados ao produto Expandable Storage Plus: 2104 Modelos DL1 e Tl1.

Aviso de perigo	Um aviso de perigo adverte sobre uma situação potencialmente letal ou extremamente prejudicial às pessoas.
Aviso de cuidado	Um aviso de cuidado adverte sobre uma situação potencialmente prejudicial às pessoas devido a alguma condição existente.

Sempre utilize procedimentos de trabalho seguros ao operar máquinas. Utilize seu próprio julgamento para identificar as condições de segurança não descritas nestes avisos.

Avisos de Perigo

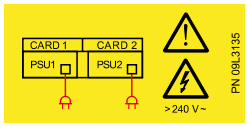
PERIGO

Na etapa a seguir você removerá os cabos de alimentação. Estes cabos conduzirão corrente elétrica, se a unidade de distribuição de energia do rack ou a unidade de bateria de backup ainda estiverem ligadas.

PERIGO

Não tente abrir as tampas do conjunto de ventilador e fonte de alimentação.

Avisos de Cuidado



CUIDADO:
Esta unidade pode ter dois cabos de alimentação; para desligar toda a energia, desconecte os dois cabos.

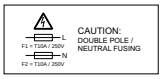
CUIDADO:
Esta unidade pesa 38,5 kg.

CUIDADO:
O estabilizador deve estar conectado corretamente à parte frontal inferior do rack para evitar que o rack caia para frente quando as unidades estiverem sendo removidas do rack. Não retire ou instale nenhuma unidade, se o estabilizador não estiver conectado ao rack.

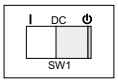
CUIDADO:
Um subsistema 2104 Modelos Dl1 e Tl1pode pesar até 38.5 kg (85 lb) com os módulos de unidade de disco instaladas. Não tente remover o subsistema 2104 do rack, a menos que todos os módulos da unidade de disco tenham sido removidos

CUIDADO:
Não tente erguer o subsistema 2104 sozinho. Peça ajuda de outro representante técnico.

CUIDADO:
Não remova a tampa, não faça manutenção, não existem peças que possam ser consertadas.



CUIDADO:
Fusão dupla polo/neutro



CUIDADO:
Uma condição de "Standby" é indicada pelo símbolo à direita de "DC", diretamente acima da chave, Sw1. Quando a chave SW1 é comutada para a direita, diretamente abaixo do símbolo "Standby", a energia AC da unidade não é desligada.

Avisos de seguridad traducidos

Español

Este apéndice contiene las traducciones de los avisos de peligro y precaución que se utilizan en diversos manuales relacionados con los Modelos DL1 y TL1 del Expandable Storage Plus: 2104.

Aviso de peligro

Un aviso de peligro llama la atención ante una situación potencialmente mortal o extremadamente peligrosa para los usuarios.

Aviso de precaución

Un aviso de precaución llama la atención ante una situación potencialmente peligrosa para los usuarios debido a alguna condición existente.

Deben utilizarse siempre procedimientos de trabajo seguros en el trabajo con máquinas. Utilice su propio criterio para identificar las condiciones de seguridad que no están descritas en estos avisos.

Avisos de peligro

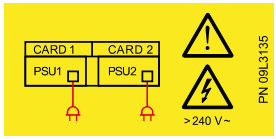
PELIGRO

En el próximo paso va a eliminar los cables de alimentación. Estos cables están activos si la unidad de distribución de alimentación del bastidor o la unidad de batería de reserva todavía está conectada.

PELIGRO

No intente abrir las cubiertas del conjunto del ventilador y la fuente de alimentación.

Avisos de precaución



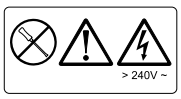
PRECAUCIÓN:
Esta unidad puede tener dos cables de línea; para eliminar toda la alimentación, desconecte ambos cables.

PRECAUCIÓN:
Esta unidad pesa 38,5 kg.

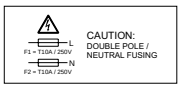
PRECAUCIÓN:
El estabilizador debe estar correctamente conectado a la parte frontal inferior del bastidor, para evitar que el bastidor se incline hacia adelante cuando se extraigan las unidades de su interior. No extraiga ni instale ninguna unidad si el estabilizador no está conectado al bastidor.

PRECAUCIÓN:
Un 2104 Modelo DL1 pesa hasta 38,5 kg. (85 libras) si tiene instalados los módulos de unidad de disco. No intente extraer el 2104 del bastidor a menos que se hayan extraído los módulos de unidad de disco.

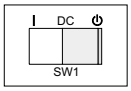
PRECAUCIÓN:
No intente levantar usted mismo el 2104. Solicite ayuda de otro representante del servicio técnico.



PRECAUCIÓN:
No quite la cubierta, no preste servicio de mantenimiento, estas piezas no son susceptibles de recibir servicio de mantenimiento.



PRECAUCIÓN:
Fusión neutra/polo doble



PRECAUCIÓN:
Una condición de "Espera" se indica mediante el símbolo que aparece a la derecha de "DC" (CC), directamente encima del conmutador, SW1. Cuando SW1 está conmutado a la posición derecha directamente debajo del símbolo de "Espera", la alimentación CA de la unidad no está desactivada.

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