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- Industry Canada Equipment Standard for Digital Equipment (ICES-003) — Canada
- Voluntary Control Council for Interference (VCCI) — Japan
- Bureau of Standards Metrology and Inspection (BSMI) — Taiwan

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
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2. This device must accept any interference received, including interference that may cause undesired operation.

Note: 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 it is not installed and used in accordance with the instruction manual, it may cause harmful 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.

Shielded Cables: Connections between the workstation and peripherals must be made using shielded cables to comply with FCC radio frequency emission limits. Networking connections can be made using unshielded twisted-pair (UTP) cables.

Modifications: Any modifications made to this device that are not approved by Sun Microsystems, Inc. may void the authority granted to the user by the FCC to operate this equipment.

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

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
   - Reorient or relocate the receiving antenna.
   - Increase the separation between the equipment and receiver.
   - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
   - Consult the dealer or an experienced radio/television technician for help.

Shielded Cables: Connections between the workstation and peripherals must be made using shielded cables in order to maintain compliance with FCC radio frequency emission limits. Networking connections can be made using unshielded twisted pair (UTP) cables.

Modifications: Any modifications made to this device that are not approved by Sun Microsystems, Inc. may void the authority granted to the user by the FCC to operate this equipment.
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This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

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

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警告使用者：
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。
Preface

The Sun StorEdge T3 Site Preparation and Planning Guide provides information on preparing a customer site for installation of a Sun StorEdge™ T3 disk tray or rack system. This guide is intended for Sun™ field sales and technical support personnel.

Before You Read This Book

Read the Sun StorEdge T3 Installation, Operation, and Service Manual for product overview information.
How This Book Is Organized

Chapter 1 provides an overview of the preparation and installation requirements for the Sun StorEdge T3 disk tray.

Chapter 2 provides safety information for the local facility.

Chapter 3 describes facilities requirements for the Sun StorEdge T3 disk tray.

Chapter 4 shows, in pictorial form, how a Sun StorEdge T3 rack is packaged, and how to unpack it. It also describes how much clearance is needed to remove the outer packaging, and how to remove it from the shipping pallet.

Chapter 5 describes installation requirements for installing Sun StorEdge T3 disk trays in a rack or on a tabletop.

Appendix A contains requirements for operating a Sun StorEdge T3 disk tray in standard 19-inch EIA/RETMA cabinets and racks.

Appendix B provides a worksheet for gathering and recording the information required to successfully install a Sun StorEdge T3 disk tray.

Using UNIX Commands

Use this section to alert readers that not all UNIX commands are provided.

For example:

This document may not contain information on basic UNIX® commands and procedures such as shutting down the system, booting the system, and configuring devices.

See one or more of the following for this information:

- Solaris Handbook for Sun Peripherals
- AnswerBook2™ online documentation for the Solaris™ operating environment
- Other software documentation that you received with your system
## Typographic Conventions

<table>
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<th>Meaning</th>
<th>Examples</th>
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<td>AaBbCc123</td>
<td>The names of commands, files, and directories; on-screen computer output</td>
<td>Edit your .login file. Use <code>ls -a</code> to list all files. % You have mail.</td>
</tr>
<tr>
<td>AaBbCc123</td>
<td>What you type, when contrasted with on-screen computer output</td>
<td>% su</td>
</tr>
<tr>
<td>AaBbCc123</td>
<td>Book titles, new words or terms, words to be emphasized</td>
<td>Password:</td>
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| AaBbCc123 | Command-line variable; replace with a real name or value | To delete a file, type `rm filename`.

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<td>Installation Road Map</td>
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docfeedback@sun.com

Please include the part number (806-4212-11) of your document in the subject line of your email.
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<td>Host System Types</td>
<td>B-2</td>
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This manual describes facilities and site design, and preparation and installation requirements for the Sun StorEdge T3 disk tray.

To determine what total components and disk trays your Sun StorEdge T3 shipment will include, consult your local Sun sales representative.

As a guide, typical configurations are included in Appendix A.

This chapter includes the following sections:

- Section 1.1, “Product Description” on page 1-2
- Section 1.2, “Customer Obligations” on page 1-3
1.1 Product Description

The Sun StorEdge T3 disk tray is a high performance standalone device that includes a single hardware RAID cached controller card and nine disk drives.

To achieve extensive reliability, availability, and serviceability (RAS), the disk tray also features redundant power and cooling units (with battery backup), and data interconnect cards. All components in the Sun StorEdge T3 disk tray are “hot-swappable,” which means you can replace components while it is online.

The Sun StorEdge T3 can be connected to another Sun StorEdge T3 in a partner group using interconnect cables to the data interconnect cards for back-end data and administrative connections. The partner group provides all the reliability, availability, and serviceability of a single Sun StorEdge T3 disk tray, with an added redundant hardware RAID controller, mirrored cache, and redundant host channel, for continuous data availability and host applications.

When configured as a partner group, one Sun StorEdge T3 disk tray is designated the master controller unit (MCU), handling all management services for both disk trays. The other Sun StorEdge T3 disk tray is designated the alternative master controller unit (AMCU) and supplies controller redundancy, becoming available as a master controller if the MCU fails. For more information and sample layouts, see Appendix A.
1.2 Customer Obligations

The customer is obliged to inform Sun Microsystems, Inc. of any and all ordinances and regulations that would affect installation. The customer is responsible for meeting all government codes and regulations concerning facilities. The customer is also responsible for compliance with the following requirements:

1. Meet all local, national, and international codes covered in this specification. The subjects covered include fire and safety, building, and electrical codes.

2. Document and inform Sun Microsystems, Inc. of any deviations from this specification.

A fully configured rackmounted system can weigh in excess of 1400 pounds (627 kg). Any floor that this system will cross has to be able to withstand this load.
Local Facility Safety

This chapter provides safety information for the local facility, and includes the following sections:

- Section 2.1, “Handling Precautions” on page 2-2
- Section 2.2, “Safety Precautions” on page 2-2
- Section 2.3, “Placement of a Sun Product” on page 2-3
- Section 2.4, “Laser Compliance Notice” on page 2-3

**Note** – Do not make mechanical or electrical modifications to the equipment. Sun Microsystems, Inc. is not responsible for regulatory compliance of a modified Sun product.

Install the Sun StorEdge T3 disk trays in accordance with the local safety codes and regulations at the facility site.
2.1 Handling Precautions

A fully configured rackmounted system can weigh in excess of 1400 pounds (627 kg). Any floor that this system will cross has to be able to withstand this load.

The rackmounted system is equipped with wheels for ease in installation, and moveability of the system prior to installation. Use enough personnel when moving the rack, especially on sloping loading docks and ramps to gain access to a raised computer room floor. Move the rack slowly and deliberately, and make sure the floor is free of foreign objects and cables that the rack could roll over.

Sun Microsystems suggests that all personnel moving the rack wear protective footwear.

Install the rack on a level surface. At each corner, on the base of the rack, are adjustable non-skid pads. These must be extended when the rack is installed to stop the rack from rolling around. These pads are not to be used to level the rack.

The Sun StorEdge T3 disk tray weighs 67 pounds (30 kg). Use two people to lift the disk tray to avoid injury. Choose a table or flat surface that can adequately support the disk trays.

2.2 Safety Precautions

For your protection, observe the following safety precautions when setting up your equipment:

- Follow all cautions and instructions marked on the equipment.
- Ensure that the voltage and frequency of your power source match the voltage and frequency inscribed on the equipment’s electrical rating label.
- Never push objects of any kind through openings in the equipment. Dangerous voltages may be present. Conductive foreign objects could produce a short circuit that could cause fire, electric shock, or damage to your equipment.
2.2.1 Power Safety

- Sun products are designed to work with single phase power systems having a grounded neutral conductor. To reduce the risk of electric shock, do not plug Sun products into any other type of power system. Contact your facilities manager or a qualified electrician if you are not sure what type of power is supplied to your building.

- Your Sun product is shipped with a grounding type (three-wire) power cord. To reduce the risk of electric shock, always plug the cord into a grounded power outlet.

- Not all power cords have the same current ratings. Household extension cords do not have overload protection and are not meant for use with computer systems. Do not use household extension cords with your Sun product.

2.3 Placement of a Sun Product

Do not block or cover the openings of your Sun product. Never place a Sun product near a radiator or heat register. Failure to follow these guidelines can cause overheating and affect the reliability of your Sun product.

2.4 Laser Compliance Notice

Sun products that use laser technology comply with Class-1 laser requirements.
Facility Requirements

This chapter describes facilities requirements for the Sun StorEdge T3 disk tray, and includes the following sections:

■ Section 3.1, “Environmental Specifications” on page 3-2
■ Section 3.2, “Electrical and Power Specifications” on page 3-4
■ Section 3.3, “Physical Specifications” on page 3-5
3.1 Environmental Specifications

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<th>Specifications</th>
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<th>Nonoperating</th>
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<tr>
<td>Temperature</td>
<td>10˚ to 35˚C with maximum gradient 20˚C per hour</td>
<td>-40˚ to 70˚C with maximum gradient 20˚C per hour</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>20 to 80% noncondensing with maximum gradient 10% per hour</td>
<td>5 to 95% noncondensing with maximum gradient 10% per hour</td>
</tr>
<tr>
<td>Altitude</td>
<td>-1,000 to +10,000 feet (-305 to +3,048 meters)</td>
<td>-1,000 to +40,000 feet (-305 to +12,192 meters)</td>
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</table>
3.1.1 Electromagnetic Compatibility (EMC)

The following is recommended for all installations:

- All AC mains and supply conductors to power distribution boxes for both the rack system and the desktop system must be enclosed in metal conduit or raceway, when specified by local, national, and/or other applicable government codes and regulations. The supply conductors and power distribution boxes (or equivalent metal enclosure) are to be grounded at both ends.

- The supplied disk trays require voltages within minimum fluctuation. The facilities voltage supplied by the customer/end user must maintain a voltage of not more than (+/-) 5%.

- The customer facilities shall provide suitable surge protection.

3.1.2 Secure Installation Requirements

3.1.2.1 Placement of Rackmounted Systems

The Sun StorEdge T3 rackmounted configuration can exceed 1400 pounds (627 kg).

The floor surface must be level. The rack is equipped with wheels, for ease in installation, and moveability of the system prior to installation. At each corner, on the base of the rack, are adjustable non-skid pads. These must be extended when the rack is installed to stop the rack from rolling around. These pads are not to be used to level the rack.

To minimize personal injury in the event of a seismic occurrence, Sun Microsystems suggest that the rack be securely fastened to a rigid structure extending from the floor to the ceiling or from the walls of the room in which the rack is located.

3.1.2.2 Placement of Individual Tabletop Units

The Sun StorEdge T3 disk tray weighs 67 pounds (30 kg). The Sun StorEdge T3 partner group configuration weighs 135 pounds (60 kg).

Choose a table or flat surface that can adequately support the disk trays. Do not place more than two Sun StorEdge T3 disk trays on a table, unless the table is rated to support the combined weight of the disk trays designated to be installed, and the table is securely fastened to the wall or a rigid structure extending from the ceiling to the floor.
Do not stack more than two Sun StorEdge T3 disk trays. If the tabletop configuration is a greater number than two disk trays, place the disk trays side by side in stacks of two or one.

Do not place the disk trays on the edge of the table. Set the disk tray so that at least 50% of the disk tray is inside the table or desk leg support area. Failure to do this may cause the table or desk to tip over.

3.2 Electrical and Power Specifications

3.2.1 Sun StorEdge T3 Rackmounted Systems

All Sun StorEdge T3 disk trays require two independent power sources. Each Sun StorEdge T3 Rack has two power conditioners (distribution), for redundancy, mounted in the base of the rack. Each Sun StorEdge T3 disk tray has two power and cooling units, and each power and cooling unit on the disk tray plugs into a different conditioner. To maintain the power redundancy, each conditioner must be connected to independent power sources. The following table discusses the power required for each conditioner.

<table>
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<tr>
<td>Voltage and frequency</td>
<td>200 to 240 VAC, 47 to 63 Hz</td>
</tr>
<tr>
<td>Input current</td>
<td>20A max</td>
</tr>
<tr>
<td>Input power</td>
<td>3,600W max</td>
</tr>
<tr>
<td>Heat load</td>
<td>12,320 BTUs/hr. max</td>
</tr>
</tbody>
</table>

3.2.2 Sun StorEdge T3 Disk Trays

All Sun StorEdge T3 disk trays require two independent power sources. Each Sun StorEdge T3 disk tray has two power and cooling units for redundancy. The following table discusses the power required for each power and cooling unit.
### 3.3 Physical Specifications

#### 3.3.1 Sun StorEdge T3 Rackmounted Systems

##### 3.3.1.1 Installation clearances

For FRU removal and replacement:

- The rack has a front door that is 24 inches (61 cm) wide. This is the required front clearance.
- The rack has a back door that is 21 inches (53 cm) wide. This is the required back clearance.

##### 3.3.1.2 Cooling Clearances

For cooling:

- The rack has a front door that is 24 inches (61 cm) wide. This is the required front clearance.
- The rack has a back door that is 21 inches (53 cm) wide. This is the required back clearance.
- No cooling clearance is required on the sides of the rack.

---

**TABLE 3-3** Power Specifications for the Sun StorEdge T3 Disk Tray (Each Source)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage and frequency</td>
<td>100 to 240 VAC, 47 to 63 Hz</td>
</tr>
<tr>
<td>Input current</td>
<td>5A max</td>
</tr>
<tr>
<td>Input power</td>
<td>450W max</td>
</tr>
<tr>
<td>Heat load</td>
<td>1,540 BTUs/hr. max</td>
</tr>
</tbody>
</table>
3.3.1.3 Physical Dimensions

TABLE 3-4 Sun StorEdge T3 Rack

<table>
<thead>
<tr>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>74 inches</td>
<td>24 inches</td>
<td>36.5 inches</td>
<td>1,400 lbs</td>
</tr>
<tr>
<td>188 cm</td>
<td>61 cm</td>
<td>93 cm</td>
<td>627 kg</td>
</tr>
</tbody>
</table>

3.3.2 Sun StorEdge T3 Disk Trays

3.3.2.1 Installation clearances
For FRU removal and replacement, 15 inches (37 cm) is required front and back.

3.3.2.2 Cooling Clearances
For cooling, 6 inches (15 cm) is required front and back. No cooling clearance is required on the sides or the top and bottom of the disk tray.

3.3.2.3 Physical Dimensions

TABLE 3-5 Sun StorEdge T3 Disk Tray

<table>
<thead>
<tr>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.25 inches</td>
<td>17.5 inches</td>
<td>18.5 inches</td>
<td>67 lbs</td>
</tr>
<tr>
<td>13.33 cm</td>
<td>44.45 cm</td>
<td>47 cm</td>
<td>30.4 kg</td>
</tr>
</tbody>
</table>
Receiving the Sun StorEdge T3 Rack

This chapter shows, in pictorial form, how a Sun StorEdge T3 rack is packaged, and how to unpack it. This chapter also describes how much clearance is needed to remove the outer packaging, and how to remove it from the shipping pallet.

Note – Make note of the clearances needed to remove the outer packaging.

All packaging for Sun products should be retained, so that it can be reused in the event that the product needs to be moved or shipped to a subsequent location during its life cycle.
**FIGURE 4-1** Sun StorEdge T3 Rack Packaging

**TABLE 4-1** Sun StorEdge T3 Rack Packaging Dimensions

<table>
<thead>
<tr>
<th>Packaging Dimensions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>80 inches (203 cm)</td>
</tr>
<tr>
<td>Width</td>
<td>43 inches (109 cm)</td>
</tr>
<tr>
<td>Depth</td>
<td>47 inches (119 cm)</td>
</tr>
<tr>
<td>Weight</td>
<td>1500 lbs (672 kg)</td>
</tr>
</tbody>
</table>
**FIGURE 4-2** Sun StorEdge T3 Rack Packaging Removal Detail

- **Remove Banding**
- **Plastic Locking Clips (6)**
- **Lift Lid Off**
FIGURE 4-3  Removing the Saddle Bag and Positioning the Ramps
FIGURE 4-4  Removing the Sun StorEdge Rack from the Shipping Pallet

<table>
<thead>
<tr>
<th>Rack Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
</tr>
<tr>
<td>Width</td>
</tr>
<tr>
<td>Depth</td>
</tr>
<tr>
<td>Weight</td>
</tr>
</tbody>
</table>

**Caution** – Take care when removing the rack from the pallet. Use two or more people to roll the rack down the ramps provided. Wear protective footwear.
Sun StorEdge T3 Rack and Tabletop Installation Requirements

This chapter describes installation requirements for installing Sun StorEdge T3 disk trays in a rack or on a tabletop, and includes the following sections:

- Section 5.1, “Sun StorEdge T3 Rack Placement” on page 5-2
- Section 5.2, “Tabletop Placement” on page 5-3
- Section 5.3, “Cable Specifications” on page 5-4
5.1 Sun StorEdge T3 Rack Placement

Caution – The Sun StorEdge T3 disk tray rackmounted configuration can exceed 1400 pounds (627 kg).

Follow these guidelines when preparing a rackmount placement for your system.

- The floor surface must be level.
- The rack is equipped with wheels, for ease in installation, and moveability of the system prior to installation. Move the rack slowly and deliberately, and make sure the floor is free of foreign objects and cables that the rack could roll over.
- At each corner, on the base of the rack, are adjustable non-skid pads. These must be extended when the rack is installed to stop the rack from rolling around.
- Leave enough space in front of the rack to access components in the event of the need to replace them. The rack has a front door. The door is 24 inches (61 cm) wide. This is the required front clearance.
- Leave enough space in back of the rack to access components in the event of the need to replace them. The rack has a back door. The back door is 21 inches (53 cm) wide. This is the required back clearance.
- Keep power and interface cables clear of foot traffic. Route cables inside walls, under the floor, through the ceiling, or in protective channels or raceways. Route interface cables (excluding fiber optic cables) away from motors and other sources of magnetic or radio frequency interference.
- Do not exceed cable length limitations. See TABLE 5-1 for cable specifications and lengths.
- The Sun StorEdge T3 rack requires two separate power sources. These power sources are to be independent to each other, and each controlled by a separate circuit breaker at the power distribution point.
- Up to eight Sun StorEdge T3 disk trays can be installed in one Sun StorEdge T3 rack.
5.2 Tabletop Placement

The Sun StorEdge T3 disk tray is designed to sit on a desk or a table. Follow these guidelines when preparing a tabletop placement for your system.

- Choose a desk or a table that can support 67 pounds (30 kg) for one fully configured disk tray or 135 pounds (60 kg) for two disk trays.
- Do not place the disk tray(s) on the edge of the table. Set the disk tray so that at least 50% is inside the table or desk leg support area. Failure to do this may cause the table to tip over.
- Leave enough space in front and in back of the disk tray to access components in the event of the need to replace them. To remove the components requires a clearance of 15 inches (37 cm) front and back of the disk tray.
- Provide a minimum space of 6 inches (15 cm) in front and in back of the disk tray for adequate air flow.
- Keep power and interface cables clear of foot traffic. Route cables inside walls, under the floor, through the ceiling, or in protective channels or raceways. Route interface cables (excluding fiber optic cables) away from motors and other sources of magnetic or radio frequency interference.
- Do not exceed cable length limitations. See TABLE 5-1 for cable specifications and lengths.
- Ensure that the operating environment for the disk tray does not exceed the specifications. See TABLE 3-1 for environmental specifications.
- Use two people to lift the disk tray to avoid injury. The disk tray can weigh up to 67 pounds (30 kg).
- Do not place the disk tray in a vertical position. Place the Sun StorEdge T3 disk tray horizontally.
- If two disk trays, as in a partner group, are being installed the disk trays can be stacked one on top of each other.
- The Sun StorEdge T3 disk tray requires two separate power sources. These power sources are to be independent to each other, and controlled by two separate circuit breakers at the power distribution point.
5.3 Cable Specifications

<table>
<thead>
<tr>
<th>Cable Type</th>
<th>Connector</th>
<th>Maximum Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host Interface (FC-AL)</td>
<td>FC-AL optical data cable (requires media interface adapter)</td>
<td>25 meters</td>
</tr>
<tr>
<td>Shielded Ethernet (10BASE-T)</td>
<td>RJ-45</td>
<td>100 meters</td>
</tr>
<tr>
<td>RS-232 (COM)</td>
<td>RJ-11-6</td>
<td>25 meters</td>
</tr>
<tr>
<td>T3 disk tray interconnect cable</td>
<td>DB-9 (not FC-AL compliant)</td>
<td>14 inches (36 cm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24 inches (61 cm)</td>
</tr>
</tbody>
</table>
Cabinet and Rack Requirements

This appendix contains requirements for installing a Sun StorEdge T3 disk tray in standard 19-inch Electronics Industries Association/Radio Electronics Television Manufacturers Association (EIA/RETMA) cabinets or racks. The Sun StorEdge T3 disk tray is designed to be compatible with Sun and other standard 19-inch EIA/RETMA cabinets or racks. However, you must make sure the cabinet or rack you are using meets the requirements in this chapter before installing and operating the disk tray.

The information in this appendix includes:
- Section A.1, “Cabinet and Rack Hardware” on page A-2
- Section A.2, “Specifications” on page A-6
- Section A.3, “Product Servicing” on page A-7
- Section A.4, “SunService Policy on Third-Party Products” on page A-8
A.1 Cabinet and Rack Hardware

A cabinet is a freestanding and self-supporting enclosure for housing electrical and electronic equipment. It is usually fitted with doors and side panels, which may or may not be removable. A rack is an open structure for mounting electrical and electronic equipment. This section describes features of cabinets and racks that can be used to hold a Sun StorEdge T3 disk tray.

A.1.1 Physical Dimensions

There are two mounting kits available for the Sun StorEdge T3 disk tray:

- Rackmount hardware that can be adapted to install the disk tray in standard 19-inch EIA/RETMA cabinets.
- Rackmount hardware for mounting disk trays in standard 19-inch EIA/RETMA racks.

To use one of these kits, the rack or cabinet must meet the criteria listed in TABLE A-1.

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Cabinet</th>
<th>Rack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth (the distance between the front and back flanges)</td>
<td>30 to 34 in.</td>
<td>3 in. or 6 in.</td>
</tr>
<tr>
<td></td>
<td>76.2 cm to 86.4 cm</td>
<td>7.6 cm to 15.2 cm</td>
</tr>
<tr>
<td>Mounting hole pitch (the width between the mounting holes)</td>
<td>18.3 in.¹</td>
<td>18.3 in.¹</td>
</tr>
<tr>
<td></td>
<td>46.5 cm</td>
<td>46.5 cm</td>
</tr>
</tbody>
</table>

¹: This is an industry standard dimension and confirms that the structure is a 19-inch cabinet or rack.
FIGURE A-1 Cabinet and Rack Physical Measurements
Also, the mounting flanges must contain the industry standard repeating hole pattern shown:

![Industry Standard Repeating Hole Pattern](image)

**FIGURE A-2** Industry Standard Repeating Hole Pattern

### A.1.2 Vertical Mounting Space

Vertical mounting space is defined in rack units (RUs). One rack unit is equivalent to 1.75 inches (4.4 cm) of vertical mounting space, or three mounting holes. Subsystems such as the Sun StorEdge T3 disk tray are usually specified as requiring some number or RUs of mounting space.

To install the Sun StorEdge T3 disk tray in a cabinet or rack, the cabinet or rack must support the RU measurements listed in **TABLE A-2**.

<table>
<thead>
<tr>
<th>Number of disk trays</th>
<th>Cabinet</th>
<th>Rack</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>4-RUs</td>
<td>Not available</td>
</tr>
<tr>
<td>Two</td>
<td>7-RUs</td>
<td>7-RUs</td>
</tr>
</tbody>
</table>

**TABLE A-2** Mounting Kit RU Measurement
FIGURE A-3  Rack Unit Spacing

Note: RU boundaries are between the holes spaced closer (0.50 in.) together.
A.2 Specifications

To use the Sun StorEdge T3 disk tray in a standard 19-inch EIA/RETMA cabinet or rack, the environment must meet the specifications outlined in this section, along with those listed in the *Sun StorEdge T3 Disk Tray Installation, Operation, and Service Manual*.

**Note** – For power system redundancy, you must use two separate connectors supplied by two different power sources (the power requirements listed are for each connector).

<table>
<thead>
<tr>
<th>TABLE A-3</th>
<th>Power Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifications</td>
<td>Rating</td>
</tr>
<tr>
<td>Voltage and frequency</td>
<td>100 to 240 VAC, 47 to 63 Hz</td>
</tr>
<tr>
<td>Input current</td>
<td>5A max</td>
</tr>
<tr>
<td>Input power</td>
<td>450W</td>
</tr>
<tr>
<td>Heat load</td>
<td>1,540 BTUs/hr max</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TABLE A-4</th>
<th>Environmental Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifications</td>
<td>Operating</td>
</tr>
<tr>
<td>Temperature</td>
<td>5˚ to 35˚C with maximum gradient 20˚C per hour</td>
</tr>
<tr>
<td>Ventilation</td>
<td>25 in.² (63.5 cm²) in front open area 25 in.² (63.5 cm²) in back open area</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>20 to 80% noncondensing with maximum gradient 10% per hour</td>
</tr>
</tbody>
</table>
A.3 Product Servicing

To allow room for service, the Sun StorEdge T3 disk tray must be installed in a rack or cabinet such that:

- The front and back LED status indicators are visible.
- Cables and connections are accessible and are not subject to stress from adjacent panels or closed doors.
- Field-replaceable units (FRUs) are accessible for servicing and replacement.

### TABLE A-4 Environmental Specifications (Continued)

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Operating</th>
<th>Nonoperating</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective altitude (from drive specification)</td>
<td>-1,000 to +10,000 feet (-305 to +3048 meters)</td>
<td>-1,000 to +40,000 feet (-305 to +12,192 meters)</td>
<td></td>
</tr>
<tr>
<td>Shock (from drive specification)</td>
<td>4.0G for maximum duration of 11 ms (half sinewave)</td>
<td>15G for maximum duration of 11 ms (half sinewave)</td>
<td>Shock can be applied from any axis X,Y, or Z.</td>
</tr>
<tr>
<td>Vibration (from drive specification)</td>
<td>5 to 500 Hz @ 0.25G (swept sinewave)</td>
<td>5 to 500 Hz @ 1.0G (swept sinewave)</td>
<td>Vibration can be applied from any axis X,Y, or Z. The cabinet or rack must not exert any excessive shock or vibration to the product that could interfere with proper operation.</td>
</tr>
</tbody>
</table>
A.4 SunService Policy on Third-Party Products

Sun Microsystems, Inc. and its affiliates (Sun), provide product warranties only for products listed on Sun Network Storage Product Group’s price list (Sun Products).

It is the policy of the SunServiceSM group to provide a warranty for all Sun Products pursuant to the terms set forth in the original purchase agreement. Sun does not provide any warranties, implied or express, on products purchased by customers from third-party vendors and installed on Sun Products.

Customers can install third-party products without voiding Sun’s warranty accompanying the Sun Products. Installation of third-party products, however, may void certain regulatory certifications.

Service calls that originate as a result of the failure of a third-party product, or any damage to a Sun Product resulting from the installation or presence of a third-party product, will be billed to the Customer at Sun’s then-current time and materials rates.
Preinstallation Worksheet

This appendix provides a worksheet for gathering and recording the information required to successfully install a Sun StorEdge T3 disk tray. It includes the following sections:

- Section B.1, “Host System Types” on page B-2
- Section B.2, “Information Required Prior to Installation” on page B-2

Use this worksheet to preplan the data, Ethernet, and TFTP connections from the application, management and TFTP host system(s). The application, management and TFTP hosts can all reside on the same server.

Note – Root access is required for all hosts during installation.
B.1 Host System Types

TABLE B-1 lists the host system types supported by the Sun StorEdge T3 disk tray:

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application host</td>
<td>The application host utilizes the FC-AL fiber channel connection as a data path to and from the Sun StorEdge T3 disk tray.</td>
</tr>
<tr>
<td>Management host</td>
<td>The management host will administer configuration and health monitoring of the Sun StorEdge T3 disk tray, through a network connection.</td>
</tr>
<tr>
<td>TFTP host</td>
<td>The TFTP host is used to download bootcode to the Sun StorEdge T3 disk tray, through a network connection.</td>
</tr>
</tbody>
</table>

B.2 Information Required Prior to Installation

A preinstallation worksheet is included for your use. The information contained in this form should be available before the Sun StorEdge T3 disk tray is installed. Make copies of this preinstallation worksheet and complete it for each Sun StorEdge T3 disk tray.
<table>
<thead>
<tr>
<th>Field</th>
<th>Management Host</th>
<th>Application Host</th>
<th>TFTP Host</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host ID</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Host Name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Host IP Address</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gateway IP Address</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sun StorEdge T3 IP Address</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>StorEdge T3 Tray Name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TFTP Host Address</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OS/Patch Revision Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veritas DMP Release</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Application</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>StorTools Release</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component Manager Release</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Legend:**

- **Required Field**
- **Optional Field**
- **Not Applicable**
Glossary

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>administrative domain</strong></td>
<td>Buffering</td>
</tr>
<tr>
<td>Partner groups (interconnected controller units) that share common administration through a master controller.</td>
<td>Data that is being transferred between the host and the drives.</td>
</tr>
<tr>
<td><strong>alternate master unit</strong></td>
<td></td>
</tr>
<tr>
<td>The secondary disk tray unit in a partner group that provides failover capability from the master unit.</td>
<td></td>
</tr>
<tr>
<td><strong>alternate pathing</strong> (AP)</td>
<td></td>
</tr>
<tr>
<td>A mechanism that reroutes data to the other disk tray controller in a partner group upon failure in the host data path. Alternate pathing requires special software to perform this function.</td>
<td></td>
</tr>
<tr>
<td><strong>auto cache mode</strong></td>
<td></td>
</tr>
<tr>
<td>The default cache mode for the Sun StorEdge T3 disk tray. In a fully redundant configuration, cache is set to write-behind mode. In a nonredundant configuration, cache is set to write-through. Read caching is always performed.</td>
<td></td>
</tr>
<tr>
<td><strong>auto disable</strong></td>
<td></td>
</tr>
<tr>
<td>The Sun StorEdge T3 disk tray default that automatically disables a disk drive that has failed.</td>
<td></td>
</tr>
<tr>
<td><strong>auto reconstruction</strong></td>
<td></td>
</tr>
<tr>
<td>The Sun StorEdge T3 disk tray default that automatically reconstructs data onto a new disk drive from one of the other drives.</td>
<td></td>
</tr>
</tbody>
</table>
command line interface (CLI)
The interface between the Sun StorEdge T3 disk tray’s pSOS operating system and the user in which the user types commands to administer the disk tray.

controller unit
A StorEdge T310 disk tray that includes a controller card. It can be used as a standalone unit or configured with other Sun StorEdge T3 disk trays.

expansion unit
A StorEdge T301 disk tray without a controller card. It must be connected to a StorEdge T310 disk tray to be operational.

electrically erasable programmable read-only memory (EEPROM)
Memory stored on the controller card; useful for stable storage for long periods without electricity while still allowing reprogramming.

Fibre Channel Arbitrated Loop (FC-AL)
A 100 MB/s serial channel, which allows connection of multiple devices (disk drives and controllers).

field-replaceable unit (FRU)
A component that is easily removed and replaced by a field service engineer or a system administrator.

gigabit interface converter (GBIC)
An adapter used on an SBus card to convert fiber-optic signal to copper.
<table>
<thead>
<tr>
<th>Glossary Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>gigabyte (GB or Gbyte)</strong></td>
<td>One gigabyte is equal to one billion bytes (1x10^9).</td>
</tr>
<tr>
<td><strong>graphical user interface (GUI)</strong></td>
<td>A software interface that enables configuration and administration of the Sun StorEdge T3 disk tray using a graphic application.</td>
</tr>
<tr>
<td><strong>hot spare</strong></td>
<td>A drive in a RAID 1 or RAID 5 configuration that contains no data and acts as a standby in case another drive fails.</td>
</tr>
<tr>
<td><strong>hot-swap</strong></td>
<td>The characteristic of a field-replaceable unit (FRU) to be removed and replaced while the system remains powered on and operational.</td>
</tr>
<tr>
<td><strong>input/output operations per second (IOPS)</strong></td>
<td>A performance measurement of the transaction rate.</td>
</tr>
<tr>
<td><strong>interconnect card</strong></td>
<td>A disk tray component that contains the interface circuitry and two connectors for interconnecting multiple Sun StorEdge T3 disk tray units.</td>
</tr>
<tr>
<td><strong>interconnect cable</strong></td>
<td>An FC-AL cable with a unique switched loop architecture that is used to interconnect multiple Sun StorEdge T3 disk trays.</td>
</tr>
<tr>
<td><strong>light emitting diode (LED)</strong></td>
<td>A device that converts electrical energy into light that is used to display activity.</td>
</tr>
<tr>
<td><strong>logical unit number (LUN)</strong></td>
<td>One or more drives that can be grouped into a unit; also called a “volume.”</td>
</tr>
</tbody>
</table>
M

master unit  The main controller unit in a partner group configuration.

media access control (MAC) address  A unique address that identifies a storage location or a device.

media interface adapter (MIA)  An adapter that converts fiber-optic light signals to copper.

megabyte (MB or Mbyte)  One megabyte is equal to one million bytes (1x10⁶).

megabytes per second (MB/s)  A performance measurement of the sustained data transfer rate.

P

parity  Additional information stored with data on a disk that enables the controller to rebuild data after a drive failure.

partner group  A pair of interconnected controller units. Expansion units interconnected to the pair of controller units can also be part of the partner group.

power and cooling unit  A FRU component in the Sun StorEdge T3 disk tray. It contains a power supply, cooling fans, and an integrated UPS battery. There are two power and cooling units in a Sun StorEdge T3 disk tray.

pSOS  A real-time operating system used as the primary operating system for the Sun StorEdge T3 disk tray.

R

read caching  Data for future retrieval, to reduce disk I/O as much as possible.

reliability, availability, serviceability (RAS)  A term to describe product features that include high availability, easily serviced components, and very dependable.
redundant array of independent disks (RAID) A configuration in which multiple drives are combined into a single virtual drive, to improve performance and reliability.

Simple Network Management Protocol (SNMP) A network management protocol designed to give a user the capability to remotely manage a computer network.

synchronous dynamic random access memory (SDRAM) A form of dynamic random access memory (DRAM) that can run at higher clock speeds than conventional DRAM.

system area Located on the disk drive label, the space that contains configuration data, boot firmware, and file system information.

uninterruptable power source (UPS) A component within the power and cooling unit. It supplies power from a battery in the case of an AC power failure.

volume Also called a LUN, a volume is one or more drives that can be grouped into a unit for data storage.
write caching  Data used to build up stripes of data, eliminating the read-modify-write overhead. Write caching improves performance for applications that are writing to disk.