

# Site Requirements Guide

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# Table of Contents

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|                  |                                                                    |    |
|------------------|--------------------------------------------------------------------|----|
|                  | <b>Preface</b> . . . . .                                           | v  |
| <b>Chapter 1</b> | <b>Site Preparation</b> . . . . .                                  | 1  |
|                  | Required tools and equipment . . . . .                             | 2  |
|                  | System connectivity requirements . . . . .                         | 3  |
|                  | Circuit breaker and power outlet requirements . . . . .            | 8  |
| <b>Chapter 2</b> | <b>Hardware Characteristics</b> . . . . .                          | 11 |
|                  | Filers, FAS systems, and V-Series systems/gFiler gateways. . . . . | 12 |
|                  | F85 filers . . . . .                                               | 13 |
|                  | F87 filers . . . . .                                               | 15 |
|                  | F700 series filers . . . . .                                       | 17 |
|                  | F800 series filers and GF825 gateways . . . . .                    | 19 |
|                  | F880 filers . . . . .                                              | 21 |
|                  | FAS250 systems . . . . .                                           | 23 |
|                  | FAS270 systems and GF270c gateways . . . . .                       | 26 |
|                  | FAS900 series systems and GF900 series gateways . . . . .          | 28 |
|                  | FAS3000/V3000 series systems . . . . .                             | 30 |
|                  | FAS6000/V6000 series systems . . . . .                             | 32 |
|                  | NearStore systems . . . . .                                        | 34 |
|                  | R100 system . . . . .                                              | 35 |
|                  | R150 system . . . . .                                              | 39 |
|                  | R200 system . . . . .                                              | 43 |
|                  | VTL600/VTL1200 systems . . . . .                                   | 46 |
|                  | NetCache appliances . . . . .                                      | 50 |
|                  | C700 series NetCache appliances . . . . .                          | 51 |
|                  | C1100 series NetCache appliances. . . . .                          | 53 |
|                  | C1200 NetCache appliances/SC100 service consoles . . . . .         | 55 |
|                  | C1300 NetCache appliances . . . . .                                | 57 |
|                  | C2100 NetCache appliances . . . . .                                | 59 |
|                  | C2300 and C3300 NetCache appliances . . . . .                      | 61 |
|                  | C3100 and C6100 NetCache appliances . . . . .                      | 63 |
|                  | C6200 NetCache appliance . . . . .                                 | 65 |
|                  | Disk shelves. . . . .                                              | 67 |
|                  | DS14 series disk shelves . . . . .                                 | 68 |
|                  | FC9 disk shelves . . . . .                                         | 71 |

|                   |                                                          |           |
|-------------------|----------------------------------------------------------|-----------|
|                   | FC7 and FC8 disk shelves . . . . .                       | 73        |
|                   | SDS12 SCSI disk shelves . . . . .                        | 75        |
|                   | System cabinets. . . . .                                 | 77        |
|                   | 36-unit cabinets. . . . .                                | 78        |
|                   | 42-unit cabinets. . . . .                                | 80        |
|                   | Third-party switches . . . . .                           | 83        |
| <b>Chapter 3</b>  | <b>System Setup Worksheets. . . . .</b>                  | <b>85</b> |
|                   | Stand-alone system setup worksheet . . . . .             | 86        |
|                   | Cluster system setup worksheet . . . . .                 | 87        |
|                   | FAS3000 series and C2300/C3300 setup worksheet . . . . . | 88        |
|                   | FAS6000 series setup worksheet. . . . .                  | 89        |
| <b>Appendix A</b> | <b>Recommended Power Line Sizes . . . . .</b>            | <b>91</b> |
|                   | Recommended AC power line sizes . . . . .                | 92        |
|                   | <b>Index . . . . .</b>                                   | <b>95</b> |

# Preface

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- About this guide

This guide describes hardware platform error messages and basic methods of troubleshooting hardware.
- Audience

This guide is for both end-users and Professional Service personnel.
- Command conventions

You can enter storage appliance commands on the system console or from any client that can obtain access to the appliance using a Telnet session. In examples that illustrate commands executed on a UNIX® workstation, the command syntax and output might differ, depending on your version of UNIX.
- Formatting conventions

The following table lists different character formats used in this guide to set off special information.

| Formatting convention       | Type of information                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Italic type</i>          | <ul style="list-style-type: none"><li>◆ Words or characters that require special attention.</li><li>◆ Placeholders for information you must supply. For example, if the guide requires you to enter the <code>fc test adaptername</code> command, you enter the characters “<code>fc test</code>” followed by the actual name of the adapter.</li><li>◆ Book titles in cross-references.</li></ul> |
| Monospaced font             | <ul style="list-style-type: none"><li>◆ Command and daemon names.</li><li>◆ Information displayed on the system console or other computer monitors.</li><li>◆ The contents of files.</li></ul>                                                                                                                                                                                                     |
| <b>Bold monospaced font</b> | Words or characters you type. What you type is always shown in lowercase letters, unless your program is case-sensitive and uppercase letters are necessary for it to work properly.                                                                                                                                                                                                               |

**Keyboard  
conventions**

This guide uses capitalization and some abbreviations to refer to the keys on the keyboard. The keys on your keyboard might not be labeled exactly as they are in this guide.

| What is in this guide... | What it means...                                                                                                |
|--------------------------|-----------------------------------------------------------------------------------------------------------------|
| hyphen (-)               | Used to separate individual keys. For example, Ctrl-D means holding down the Ctrl key while pressing the D key. |
| <i>Enter</i>             | Used to refer to the key that generates a carriage return; the key is named Return on some keyboards.           |
| <i>type</i>              | Used to mean pressing one or more keys on the keyboard.                                                         |
| <i>enter</i>             | Used to mean pressing one or more keys and then pressing the Enter key.                                         |

**Special messages**

This guide contains special messages that are described as follows:

**Attention** \_\_\_\_\_

A note contains important information that helps you install or operate the system efficiently.

\_\_\_\_\_

**Caution** \_\_\_\_\_

A caution contains instructions that you must follow to avoid damage to the equipment, a system crash, or loss of data.

\_\_\_\_\_

**WARNING** \_\_\_\_\_

A warning contains instructions that you must follow to avoid personal injury.

\_\_\_\_\_

**About this chapter** This chapter describes the tools you need and the system connection, circuit breaker, and outlet requirements for your site.

**Topics in this chapter** This chapter discusses the following topics:

- ◆ “[Required tools and equipment](#)” on page 2
- ◆ “[System connectivity requirements](#)” on page 3
- ◆ “[Circuit breaker and power outlet requirements](#)” on page 8

# Required tools and equipment

---

## Required tools and equipment

Prior to receiving your hardware, make sure that you have the appropriate tools and equipment assembled and ready to use:

- ◆ Pallet jack or forklift, if you ordered a filer, FAS system, or NetCache™ appliance and nine or more disk shelves, or a NearStore® system; or a hand truck or cart, if you ordered just a filer, FAS appliance, gFiler™ gateway, NetCache appliance, or individual disk shelves
- ◆ #1 and #2 Phillips head screwdrivers and a flathead screwdriver for cable adapters and LRC screws
- ◆ ASCII terminal (also referred to as an ANSI terminal) or Serial console
- ◆ Null modem cable (optional)

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### Attention

If the DB-9 to DB-9 straight-through serial cable for an ASCII terminal connection provided with your system is not compatible with your terminal connector, you need a null modem cable.

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### WARNING

**Three people are required to install FAS900 series appliances, GF900 series gateways, C6200 NetCache appliances, FAS6000 series appliances, and NearStore R150 and R200 storage engines when both power supplies are installed. Two people are required to install all other storage appliances and disk shelves safely into a rack or System Cabinet.**

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## Additional tools necessary for -48V DC power connections

If you ordered a -48V DC version of your appliance, you need the following -48V DC power supply cable tools and equipment to fabricate the three-way cables required for DC power connections:

- ◆ Wire-stripper
- ◆ Soldering tool
- ◆ Pliers
- ◆ 12 AWG (2 mm diameter) x 3C copper wire (Wire length is determined by your environment.)

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### Attention

Do not mix different AC with DC power supplies in your appliance.

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# System connectivity requirements

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## Types of connectivity

Your system requires the following types of connections:

- ◆ Fibre Channel—Connects your appliance to disk shelves, Fibre Channel switches, tape backup devices, and to other storage devices.
- ◆ Ethernet —Connects your appliance to an Ethernet network through the following media:
  - ❖ Copper
  - ❖ Fiber

---

### Note

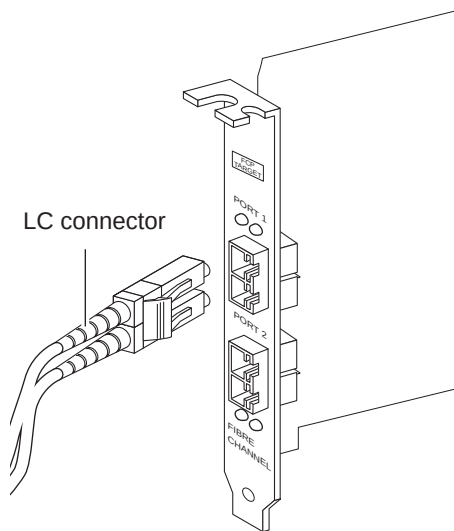
For ATM and DAFS network connectivity, see your platform hardware guide.

---

- ◆ TCP Offload Engine (TOE)—Connects your appliance to an Ethernet network

## Fibre Channel connectivity

Your appliance connects to disk shelves, Fibre Channel switches, tape backup devices, and other storage through onboard ports or adapter ports.



**Type:** Dual

**Connector type:** LC or SC

**Cable type:** 50 micron or 62.5 micron multimode fiber optic

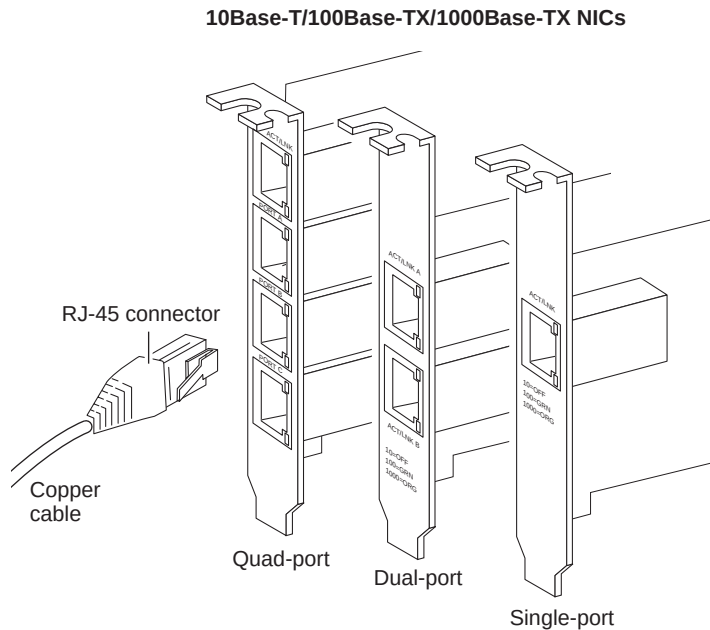
**Maximum distance:**

- ◆ 550m for 50 micron—500 MHz BW with 850 nm MM laser
- ◆ 300m for 62.5 micron—200 MHz BW with 850 nm MM laser

## Ethernet connectivity

Your appliance connects to a GbE network through either onboard ports or GbE NICs, which support either copper or fiber cabling.

**Copper GbE cabling and NICs:** The cabling and network requirements are for GbE networks using copper cabling.



**Types:** Single-port, dual-port, quad-port

**Connector type:** RJ-45 for all

**Cable type:** Category 5 or Category 5E unshielded four-pair cable for 10/100-T/100Base-TX/1000Base-TX

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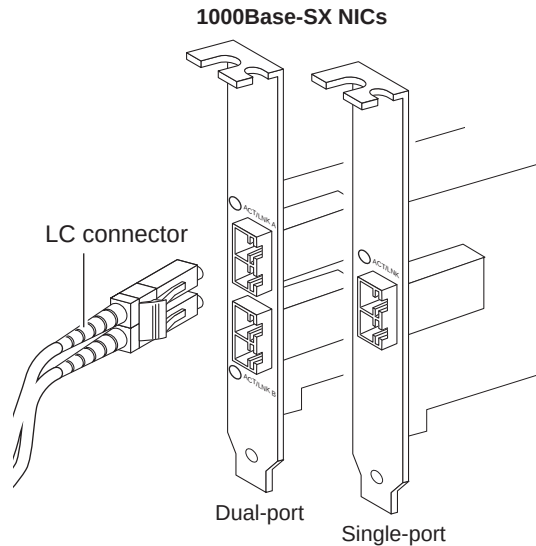
**Note**

Category 5 cables that do not have four-pair wires do not work properly with 10/100-T/100Base-TX/1000Base-TX speed networks.

---

**Maximum distance:** 100m

**Fiber GbE cabling and NICs:** The following cabling and network requirements are for GbE networks using optical cabling.



**Types:** Single-port and dual-port

**Connector type:** LC connector

**Cable types:**

- ◆ 50 micron multimode fiber optic
- ◆ 62.5 micron multimode fiber optic

**Maximum distance:**

- ◆ 550m for 50 micron—500 MHz BW with 850 nm MM laser
- ◆ 220m for 62.5 micron—160 MHz BW with 850 nm MM laser
- ◆ 275m for 62.5 micron—200 MHz BW with 850 nm MM laser

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**Note**

Some earlier versions of fiber NICs have SC connectors.

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## **TCP Offload Engine connectivity**

Your appliance can connect to a network through TCP Offload Engine (TOE) NICs:

**1000Base-T TOE NIC:** The following cable requirements are for 1000Base-T TOE NICs.



**Type:** Quad-port

**Connector type:** RJ-45 connector

**Cable types:** Category 5 four-pair cable for 10/100-T/100Base-TX/1000Base-TX

**Maximum distance:** 100m

**10G Base SR TOE NIC:** The following cable requirements are for 10G Base SR TOE NICs.



**Connector type:** LC duplex connector

**Cable types:**

- ◆ 50 micron multimode fiber optic
- ◆ 62.5 micron multimode fiber optic

**Maximum distance:**

- ◆ 300m for 50 micron—500 MHz BW with 850 nm MM laser
- ◆ 300m for 62.5 micron—200 MHz BW with 850 nm MM laser

# Circuit breaker and power outlet requirements

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## About the requirements

If your equipment is mounted in a rack, the total number of circuit breakers required for your equipment is based on the current draw.

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### Attention

The circuit breakers you are using should be connected only to the equipment. Overloading circuit breakers can lead to tripped breakers or power brownouts that can cause system errors.

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## Typical AC power breaker requirements

The following illustration displays the redundant power configuration of four DS14 disk shelves and one storage appliance. In this example, two 20A circuits at 200–240V AC (four disk shelves and one storage appliance per circuit) are required.

The conditions stated in the following illustration might not meet the requirements of your site. Use this manual to determine the requirements for your hardware.

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### Attention

Each storage appliance and disk shelf must have both a primary power supply and a redundant power supply.

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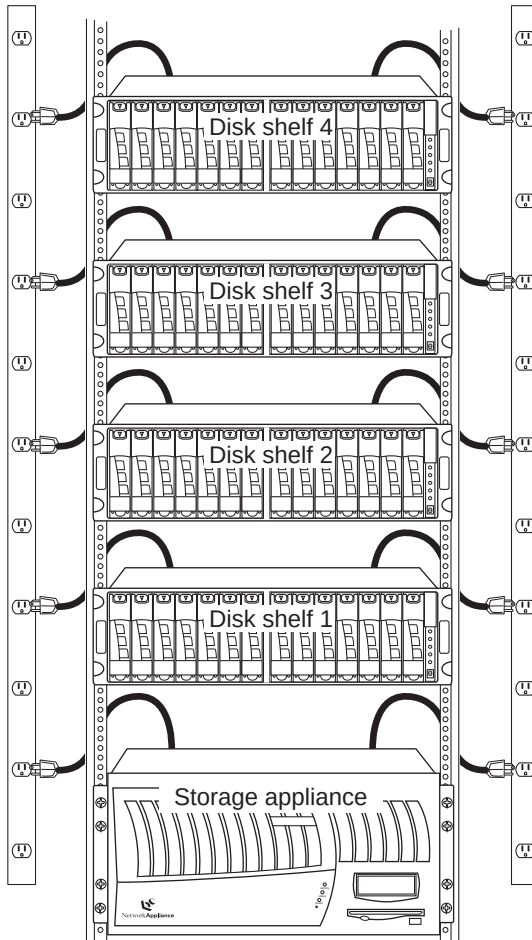
### Attention

The total current draw *should not* exceed 80 percent of the circuit breaker's rated service value (that is, 16A RMS for a 20A circuit breaker and 24A RMS for a 30A circuit breaker).

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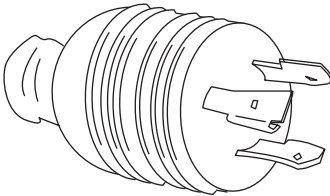
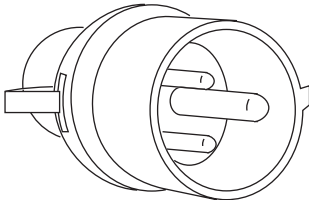
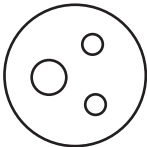
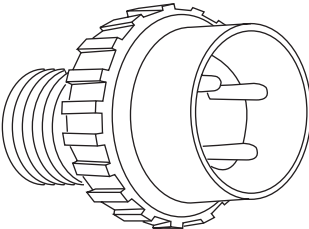
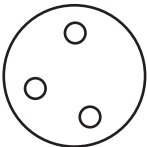
Power strip for  
primary power

Power strip for  
redundant power



## System cabinet power cord plugs

The following table lists system cabinet power cord plugs.

| Region                                             | Power cord                                                     | Plug                                                                                                                                                                                           | Socket View                                                                           |
|----------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| U.S.A.<br>Canada                                   | NEMA L6-30<br>North America<br><br>NEMA L6-20<br>North America |  <p><b>Note</b>_____</p> <p>NEMA L6-20 is slightly smaller in dimension than the NEMA L6-30</p> <p>_____</p>  |    |
| Europe<br>Asia<br>Central America<br>South America | International IEC309-30<br><br>International IEC309-20         |  <p><b>Note</b>_____</p> <p>IEC 309-20 plug is slightly smaller in dimension than IEC309-30.</p> <p>_____</p> |    |
| Australia<br>New Zealand                           | Australia AS/NZS3123-20                                        |                                                                                                             |  |

## System cabinet power cord length

The length of a system cabinet power cord is 15 feet (4.57m).

## About this chapter

This chapter tabulates hardware characteristics for the following types of hardware:

- ◆ “Filers, FAS systems, and V-Series systems/gFiler gateways” on page 12
- ◆ “NearStore systems” on page 34
- ◆ “NetCache appliances” on page 50
- ◆ “[Disk shelves](#)” on page 67
- ◆ “System cabinets” on page 77
- ◆ “[Third-party switches](#)” on page 83

# Filers, FAS systems, and V-Series systems/gFiler gateways

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## About this section

This section lists tabulated descriptions of the hardware characteristics, clearance requirements, environmental requirements, and electrical requirements for different systems.

## For detailed information

For details about specific models of systems, see the following topics:

- ◆ “F85 filers” on page 13
- ◆ “F87 filers” on page 15
- ◆ “F700 series filers” on page 17
- ◆ “F800 series filers and GF825 gateways” on page 19
- ◆ “F880 filers” on page 21
- ◆ “FAS250 systems” on page 23
- ◆ “FAS270 systems and GF270c gateways” on page 26
- ◆ “FAS900 series systems and GF900 series gateways” on page 28
- ◆ “FAS3000/V3000 series systems” on page 30
- ◆ “FAS6000/V6000 series systems” on page 32

## F85 filers

**F85 characteristics** The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                   |                |                    |
|--------------------------|-------------------|----------------|--------------------|
|                          | Weight            |                | 55 lbs (25 kg)     |
|                          | Rack units        |                | 6U                 |
|                          | Height            | Rack-mount     | 10.5 in. (26.7 cm) |
|                          |                   | Tower          | 17.5 in. (44.5 cm) |
|                          | Width             | Rack-mount     | 17.5 in. (44.5 cm) |
|                          |                   | Tower          | 10.5 in. (26.7 cm) |
|                          | Depth             | Rack-mount     | 23.5 in. (59.7 cm) |
|                          |                   | Tower          | 23.5 in. (59.7 cm) |
| Clearance dimensions     |                   |                |                    |
|                          | Front—cooling     | All versions   | 9 in. (22.9 cm)    |
|                          | Rear—cooling      | Tower          | 12 in. (30.5 cm)   |
|                          |                   | Two-post rack  | 19 in. (48.3 cm)   |
|                          |                   | Four-post rack | 12 in. (30.5 cm)   |
|                          | Front—maintenance | Tower          | 12 in. (30.5 cm)   |
|                          |                   | Two-post rack  | 45 in. (114.3 cm)  |
|                          |                   | Four-post rack | 32 in. (81.3 cm)   |
|                          | Rear—maintenance  | Tower          | 12 in. (30.5 cm)   |
|                          |                   | Two-post rack  | 19 in. (48.3 cm)   |
|                          |                   | Four-post rack | 12 in. (30.5 cm)   |

| <b>Environmental requirements</b> |                                         |                                      |
|-----------------------------------|-----------------------------------------|--------------------------------------|
|                                   | Operating temperature maximum range     | 50° F to 95° F<br>(10° C to 35° C)   |
|                                   | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C)   |
|                                   | Nonoperating temperature range          | -4° F to 149° F<br>(-20° C to 65° C) |
|                                   | Relative humidity                       | 8 to 80% noncondensing               |
|                                   | Acoustic level                          | 56 dBA @ 23° C                       |
| <b>Electrical requirements</b>    |                                         |                                      |
|                                   | Input voltage, V                        | 115/230                              |
|                                   | Input current actual, A                 | 2.81/1.18                            |
|                                   | Input power actual, W                   | 253                                  |
|                                   | Thermal dissipation, BTU/hr             | 863                                  |
|                                   | Inrush current, A @ V                   | 35 @ 115<br>70 @ 264                 |

## F87 filers

**F87 characteristics** The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                   |                |                    |
|--------------------------|-------------------|----------------|--------------------|
|                          | Weight            |                | 90 lbs (40.8 kg)   |
|                          | Rack units        |                | 5U                 |
|                          | Height            | Rack-mount     | 8.6 in. (21.8 cm)  |
|                          |                   | Tower          | 17.9 in. (45.5 cm) |
|                          | Width             | Rack-mount     | 17.9 in. (45.5 cm) |
|                          |                   | Tower          | 9.1 in. (23 cm)    |
|                          | Depth             | Rack-mount     | 24.5 in. (62.2 cm) |
|                          |                   | Tower          | 24.5 in. (62.2 cm) |
| Clearance dimensions     |                   |                |                    |
|                          | Front—cooling     | All versions   | 6 in. (15.2 cm)    |
|                          | Rear—cooling      | Tower          | 12 in. (30.5 cm)   |
|                          |                   | Two-post rack  | 19 in. (48.3 cm)   |
|                          |                   | Four-post rack | 12 in. (30.5 cm)   |
|                          | Front—maintenance | Tower          | 12 in. (30.5 cm)   |
|                          |                   | Two-post rack  | 45 in. (114.3 cm)  |
|                          |                   | Four-post rack | 32 in. (81.3 cm)   |
|                          | Rear—maintenance  | Tower          | 12 in. (30.5 cm)   |
|                          |                   | Two-post rack  | 19 in. (48.3 cm)   |
|                          |                   | Four-post rack | 12 in. (30.5 cm)   |

| <b>Environmental requirements</b> |                                         |                                      |
|-----------------------------------|-----------------------------------------|--------------------------------------|
|                                   | Operating temperature maximum range     | 50° F to 95° F<br>(10° C to 35° C)   |
|                                   | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C)   |
|                                   | Nonoperating temperature range          | -4° F to 149° F<br>(-20° C to 65° C) |
|                                   | Relative humidity                       | 10 to 90%<br>noncondensing           |
|                                   | Acoustic level                          | 45 dBA @ 23° C<br>5.9 bels @ 23° C   |
| <b>Electrical requirements</b>    |                                         |                                      |
|                                   | Input voltage, V                        | 100–240                              |
|                                   | Input current actual, A                 | 2.72–1.5                             |
|                                   | Input power actual, W                   | 256                                  |
|                                   | Thermal dissipation, BTU/hr             | 874                                  |
|                                   | Inrush current, A @ V                   | 57 @ 115<br>66 @ 264                 |

F700 series filers

**F700 characteristics**    The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                     |                     |
|--------------------------|---------------------|---------------------|
|                          | Weight              | 64 lbs (29.1 kg)    |
|                          | Rack units          | 5U                  |
|                          | Height              | 8.75 in. (22.4 cm)  |
|                          | Width               | 17 in. (43.2 cm)    |
|                          | Depth               | 25.25 in. (64.3 cm) |
| Clearance dimensions     |                     |                     |
|                          | Front               | 9 in. (22.9 cm)     |
|                          | Rear—cooling        | 30 in. (76.2 cm)    |
|                          | Bezel               | 1 in. (2.5 cm)      |
|                          | Rear—maintenance    | 24 in. (61 cm)      |
|                          | Vertical rack space | 10.5 in. (26.7 cm)  |

| Environmental requirements |                                         |                                     |                                 |
|----------------------------|-----------------------------------------|-------------------------------------|---------------------------------|
|                            | Operating temperature maximum range     | 50° F to 104° F<br>(10° C to 40° C) |                                 |
|                            | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C)  |                                 |
|                            | Nonoperating temperature range          | -4° F to 149° F (-20° C to 65° C)   |                                 |
|                            | Relative humidity                       | 10 to 90% noncondensing             |                                 |
|                            | Acoustic level                          | 50 dBA @ 23° C                      |                                 |
| Electrical requirements    |                                         |                                     |                                 |
|                            | Input voltage, V                        | AC                                  | 100–240                         |
|                            |                                         | DC                                  | -40 to -60                      |
|                            | Input current actual, A                 | AC                                  | 2.23–1.15                       |
|                            |                                         | DC                                  | 3                               |
|                            | Input power actual, W                   | AC                                  | 215                             |
|                            |                                         | DC                                  | 215                             |
|                            | Thermal dissipation, BTU/hr             | AC                                  | 733                             |
|                            |                                         | DC                                  | 733                             |
|                            | Inrush current, A @ V                   | AC                                  | 40 @ 115<br>50 @ 220            |
|                            |                                         | DC                                  | No greater than 25 @ -40 to -70 |

## F800 series filers and GF825 gateways

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### F800 series and GF825 characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics   |                                            |                                      |
|----------------------------|--------------------------------------------|--------------------------------------|
|                            | Weight                                     | 66 lbs (30 kg)                       |
|                            | Rack units                                 | 5U                                   |
|                            | Height                                     | 8.8 in. (22.4 cm)                    |
|                            | Width                                      | 17 in. (43.2 cm)                     |
|                            | Depth                                      | 25.3 in. (64.3 cm)                   |
| Clearance dimensions       |                                            |                                      |
|                            | Front                                      | 9 in. (22.9 cm)                      |
|                            | Rear—cooling                               | 30 in. (76.2 cm)                     |
|                            | Bezel                                      | 1 in. (2.5 cm)                       |
|                            | Rear—maintenance                           | 24 in. (61 cm)                       |
|                            | Vertical rack space                        | 10.5 in. (26.7 cm)                   |
| Environmental requirements |                                            |                                      |
|                            | Operating temperature<br>maximum range     | 50° F to 104° F<br>(10° C to 40° C)  |
|                            | Operating temperature<br>recommended range | 68° F to 77° F<br>(20° C to 25° C)   |
|                            | Nonoperating temperature range             | -4° F to 149° F<br>(-20° C to 65° C) |
|                            | Relative humidity                          | 10 to 90% noncondensing              |
|                            | Acoustic level                             | 50 dBA @ 23° C                       |

| Electrical requirements |                                |    |                                 |
|-------------------------|--------------------------------|----|---------------------------------|
|                         | Input voltage, V               | AC | 100–240                         |
|                         |                                | DC | -40 to -60                      |
|                         | Input current actual, A        | AC | 2.05–1.0                        |
|                         |                                | DC | 3                               |
|                         | Input power actual, W          | AC | 170                             |
|                         |                                | DC | 217                             |
|                         | Thermal dissipation,<br>BTU/hr | AC | 580                             |
|                         |                                | DC | 741                             |
|                         | Inrush Current, A @ V          | AC | 50 @ 220<br>30 @ 115            |
|                         |                                | DC | No greater than 25 @ -40 to -70 |

F880 filers

**F880 characteristics**    The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                     |                    |
|--------------------------|---------------------|--------------------|
|                          | Weight              | 66 lbs (30 kg)     |
|                          | Rack units          | 5 U                |
|                          | Height              | 8.8 in. (22.4 cm)  |
|                          | Width               | 17 in. (43.2 cm)   |
|                          | Depth               | 25.3 in. (64.3 cm) |
| Clearance dimensions     |                     |                    |
|                          | Front               | 9 in. (22.9 cm)    |
|                          | Rear—cooling        | 30 in. (76.2 cm)   |
|                          | Bezel               | 1 in. (2.5 cm)     |
|                          | Rear—maintenance    | 24 in. (61 cm)     |
|                          | Vertical rack space | 10.5 in. (26.7 cm) |

| Environmental requirements |                                         |                                      |                                  |
|----------------------------|-----------------------------------------|--------------------------------------|----------------------------------|
|                            | Operating temperature maximum range     | 50° F to 104° F<br>(10° C to 40° C)  |                                  |
|                            | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C)   |                                  |
|                            | Nonoperating temperature range          | -4° F to 149° F<br>(-20° C to 65° C) |                                  |
|                            | Relative humidity                       | 10 to 90% noncondensing              |                                  |
|                            | Acoustic level                          | 50 dBA @ 23° C                       |                                  |
| Electrical requirements    |                                         |                                      |                                  |
|                            | Input voltage, V                        | AC                                   | 100–240V                         |
|                            |                                         | DC                                   | -40 to -60V                      |
|                            | Input current actual, A                 | AC                                   | 2.05–1.21                        |
|                            |                                         | DC                                   | 3                                |
|                            | Input power actual, W                   | AC                                   | 185                              |
|                            |                                         | DC                                   | 200                              |
|                            | Thermal dissipation, BTU/hr             | AC                                   | 631                              |
|                            |                                         | DC                                   | 683                              |
|                            | Inrush current, A @ V                   | AC                                   | 50 @ 220<br>30 @ 115             |
|                            |                                         | DC                                   | No greater than 25 @ -40 to -70V |

FAS250 systems

FAS250  
characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |            |                  |                    |
|--------------------------|------------|------------------|--------------------|
|                          | Weight     | With disk drives | 77 lbs (35 kg)     |
|                          |            | Empty            | 50.6 lbs (23 kg)   |
|                          | Rack units |                  | 3U                 |
|                          | Height     | Rack-mount       | 5.25 in. (13.3 cm) |
|                          |            | Tower            | 20.3 in. (51.6 cm) |
|                          | Width      | Rack-mount       | 17.6 in. (44.7 cm) |
|                          |            | Tower            | 10.4 in. (26.4 cm) |
|                          | Depth      | Rack-mount       | 20 in. (50.8 cm)   |
|                          |            | Tower            | 20 in. (50.8 cm)   |

| <b>Clearance dimensions</b> |                   |                |                  |
|-----------------------------|-------------------|----------------|------------------|
|                             | Front—cooling     | All versions   | 6 in. (15.3 cm)  |
|                             | Rear—cooling      | Tower          | 12 in. (30.5 cm) |
|                             |                   | Two-post rack  | 19 in. (48.3 cm) |
|                             |                   | Four-post rack | 12 in. (30.5 cm) |
|                             | Front—maintenance | Tower          | 25 in. (63.5 cm) |
|                             |                   | Two-post rack  | 25 in. (63.5 cm) |
|                             |                   | Four-post rack | 25 in. (63.5 cm) |
|                             | Rear—maintenance  | Tower          | 12 in. (30.5 cm) |
|                             |                   | Two-post rack  | 12 in. (30.5 cm) |
|                             |                   | Four-post rack | 12 in. (30.5 cm) |

| Environmental requirements |                                         |                                       |
|----------------------------|-----------------------------------------|---------------------------------------|
|                            | Operating temperature maximum range     | 32° F to 104° F<br>(10° C to 40° C)   |
|                            | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C)    |
|                            | Nonoperating temperature range          | -40° F to 149° F<br>(-40° C to 65° C) |
|                            | Relative humidity                       | 10 to 90% noncondensing               |
|                            | Acoustic level                          | 48.7 dBA@ 23° C<br>5.64 bels @ 23° C  |
| Electrical requirements    |                                         |                                       |
|                            | Input voltage, V                        | 100–127/200-240                       |
|                            | Input current actual, A                 | 3.95/1.9                              |
|                            | Input power actual, W                   | 356                                   |
|                            | Thermal dissipation, BTU/hr             | 1,215                                 |
|                            | Inrush Current, A @ V                   | 20 @ 220                              |

## FAS270 systems and GF270c gateways

### FAS270 and GF270c characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                   |                  |                    |
|--------------------------|-------------------|------------------|--------------------|
|                          | Weight            | With disk drives | 77 lbs (35 kg)     |
|                          |                   | Empty            | 50.6 lbs (23 kg)   |
|                          | Rack units        |                  | 3U                 |
|                          | Height            |                  | 5.25 in. (13.3 cm) |
|                          | Width             |                  | 17.6 in. (44.8 cm) |
|                          | Depth             |                  | 20 in. (50.9 cm)   |
| Clearance dimensions     |                   |                  |                    |
|                          | Front—cooling     | All versions     | 6 in. (15.3 cm)    |
|                          | Rear—cooling      | Two-post rack    | 12 in. (30.5cm)    |
|                          |                   | Four-post rack   | 12 in. (30.5 cm)   |
|                          | Front—maintenance | Two-post rack    | 25 in. (63.5 cm)   |
|                          |                   | Four-post rack   | 25 in. (63.5 cm)   |
|                          | Rear—maintenance  | Two-post rack    | 12 in. (30.5 cm)   |
|                          |                   | Four-post rack   | 12 in. (30.5 cm)   |

| Environmental requirements |                                         |                                       |
|----------------------------|-----------------------------------------|---------------------------------------|
|                            | Operating temperature maximum range     | 32° F to 104° F<br>(10° C to 40° C)   |
|                            | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C)    |
|                            | Nonoperating temperature range          | -40° F to 149° F<br>(-40° C to 65° C) |
|                            | Relative humidity                       | 10 to 90% noncondensing               |
|                            | Acoustic level                          | 48.7 dBA@ 23° C<br>5.64 bels @ 23° C  |
| Electrical requirements    |                                         |                                       |
|                            | Input voltage, V                        | 100–127/200-240                       |
|                            | Input current actual, A                 | 3.95/1.9                              |
|                            | Input power actual, W                   | 356                                   |
|                            | Thermal dissipation, BTU/hr             | 1,215                                 |
|                            | Inrush Current, A @ V                   | 20 @ 220                              |

## FAS900 series systems and GF900 series gateways

### FAS900 series and GF900 series characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                   |                |                    |
|--------------------------|-------------------|----------------|--------------------|
|                          | Weight            |                | 105 lbs (47.7 kg)  |
|                          | Rack units        |                | 6U                 |
|                          | Height            |                | 10.3 in. (26.2 cm) |
|                          | Width             |                | 17 in. (43.2 cm)   |
|                          | Depth             |                | 22 in. (55.9 cm)   |
| Clearance dimensions     |                   |                |                    |
|                          | Front—cooling     | All versions   | 6 in. (15.2 cm)    |
|                          | Rear—cooling      | Two-post rack  | 12 in. (30.5 cm)   |
|                          |                   | Four-post rack | 12 in. (30.5 cm)   |
|                          | Front—maintenance | Two-post rack  | 25 in. (63.5 cm)   |
|                          |                   | Four-post rack | 25 in. (63.5 cm)   |
|                          | Rear—maintenance  | Two-post rack  | 40 in. (101.6 cm)  |
|                          |                   | Four-post rack | 40 in. (101.6 cm)  |
|                          |                   |                |                    |

| <b>Environmental requirements</b> |                                         |                                      |
|-----------------------------------|-----------------------------------------|--------------------------------------|
|                                   | Operating temperature maximum range     | 50° F to 104° F<br>(10° C to 40° C)  |
|                                   | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C)   |
|                                   | Nonoperating temperature range          | -4° F to 149° F<br>(-20° C to 65° C) |
|                                   | Relative humidity                       | 10 to 90% noncondensing              |
|                                   | Acoustic level                          | 49.5 dBA @ 23° C                     |
| <b>Electrical requirements</b>    |                                         |                                      |
|                                   | Input voltage, V                        | 100–240                              |
|                                   | Input current actual, A                 | 3.8–1.95                             |
|                                   | Input power actual, W                   | 330                                  |
|                                   | Thermal Dissipation, BTU/hr             | 1,126                                |
|                                   | Inrush Current, A @ V                   | 30 @ 264                             |

## FAS3000/V3000 series systems

### FAS3000/V3000 series characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                   |                |                     |
|--------------------------|-------------------|----------------|---------------------|
|                          | Weight            |                | 75 lbs (34.019 kg)  |
|                          | Rack units        |                | 3U                  |
|                          | Height            |                | 5.13 in. (13 cm)    |
|                          | Width             |                | 17.68 in. (44.9 cm) |
|                          | Depth             |                | 24.33 in. (61.8 cm) |
| Clearance dimensions     |                   |                |                     |
|                          | Front—cooling     | All versions   | 6 in. (15.2 cm)     |
|                          | Rear—cooling      | Two-post rack  | 12 in. (30.5 cm)    |
|                          |                   | Four-post rack | 12 in. (30.5 cm)    |
|                          | Front—maintenance | Two-post rack  | 30 in. (76.2 cm)    |
|                          |                   | Four-post rack | 30 in. (76.2 cm)    |
|                          | Rear—maintenance  | Two-post rack  | 36 in. (91.4 cm)    |
|                          |                   | Four-post rack | 36 in. (91.4 cm)    |

| Environmental requirements |                                         |    |                                      |
|----------------------------|-----------------------------------------|----|--------------------------------------|
|                            | Operating temperature maximum range     |    | 50° F to 104° F<br>(10° C to 40° C)  |
|                            | Operating temperature recommended range |    | 68° F to 77° F<br>(20° C to 25° C)   |
|                            | Nonoperating temperature range          |    | -4° F to 149° F<br>(-20° C to 65° C) |
|                            | Relative humidity                       |    | 20 to 80% noncondensing              |
|                            | Acoustic level                          |    | 54 dBA @ 23° C                       |
| Electrical requirements    |                                         |    |                                      |
|                            | Input voltage, V                        | AC | 100–240                              |
|                            |                                         | DC | -40 to -60                           |
|                            | Input current actual, A                 | AC | 3.0–1.6                              |
|                            |                                         | DC | 7.7                                  |
|                            | Input power actual, W                   | AC | 250                                  |
|                            |                                         | DC | 350                                  |
|                            | Thermal dissipation, BTU/hr             | AC | 853                                  |
|                            |                                         | DC | 1,195                                |
|                            | Inrush current, A @ V                   | AC | 35 @ 220                             |
|                            |                                         | DC | 26.5 @ 220                           |

## FAS6000/V6000 series systems

### FAS6000/V6000 series characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                                         |                |                      |
|--------------------------|-----------------------------------------|----------------|----------------------|
|                          | Weight                                  |                | 121 lbs (54.885 kg)  |
|                          | Rack units                              |                | 6U                   |
|                          | Height                                  |                | 10.32 in. (26.21 cm) |
|                          | Width                                   |                | 17.53 in. (44.52 cm) |
|                          | Depth (including cable management tray) |                | 29 in. (73.66 cm)    |
| Clearance dimensions     |                                         |                |                      |
|                          | Front—cooling                           | All versions   | 6 in. (15.2 cm)      |
|                          | Rear—cooling                            | Two-post rack  | 12 in. (30.5 cm)     |
|                          |                                         | Four-post rack | 12 in. (30.5 cm)     |
|                          | Front of chassis—maintenance            | Two-post rack  | 25 in. (63.5 cm)     |
|                          |                                         | Four-post rack | 25 in. (63.5 cm)     |
|                          | Rear of chassis—maintenance             | Two-post rack  | 40 in. (102 cm)      |
|                          |                                         | Four-post rack | 40 in. (102 cm)      |

| <b>Environmental requirements</b> |                                         |                                      |
|-----------------------------------|-----------------------------------------|--------------------------------------|
|                                   | Operating temperature maximum range     | 50° F to 104° F<br>(10° C to 40° C)  |
|                                   | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C)   |
|                                   | Nonoperating temperature range          | -4° F to 149° F<br>(-20° C to 65° C) |
|                                   | Relative humidity                       | 20 to 80% noncondensing              |
|                                   | Acoustic level                          | 54 dBA @ 23° C                       |
| <b>Electrical requirements</b>    |                                         |                                      |
|                                   | Input voltage, V                        | 100–240                              |
|                                   | Input current actual, A                 | 10.63–5.19                           |
|                                   | Input power actual, W                   | 938                                  |
|                                   | Thermal dissipation, BTU/hr             | 3,201                                |
|                                   | Inrush current, A @ V                   | N/A                                  |

# NearStore systems

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**About this section**      This section lists tabulated descriptions of the hardware characteristics, clearance requirements, environmental requirements, and electrical requirements for NearStore systems.

**For detailed information**      For details about specific models of NearStore systems, see the following topics:

- ◆ “R100 system” on page 35
- ◆ “R150 system” on page 39
- ◆ “R200 system” on page 43
- ◆ “VTL600/VTL1200 systems” on page 46

NearStore systems

# R100 system

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**R100**  
**characteristics**

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |            |                                |                        |
|--------------------------|------------|--------------------------------|------------------------|
|                          | Weight     | Storage engine                 | 66 lbs (30 kg)         |
|                          |            | Disk shelf                     | 55 lbs (25 kg)         |
|                          |            | Fully loaded in system cabinet | 768.30 lbs (349.22 kg) |
|                          | Rack units | Storage engine                 | 5U                     |
|                          |            | Disk shelf                     | 4U                     |
|                          | Height     | Storage engine                 | 8.8 in. (22.4 cm)      |
|                          |            | Disk shelf                     | 7 in. (17.8 cm)        |
|                          | Width      | Storage engine                 | 17 in. (43.2 cm)       |
|                          |            | Disk shelf                     | 17 in. (43.2 cm)       |
|                          | Depth      | Storage engine                 | 25.3 in. (64.3 cm)     |
|                          |            | Disk shelf                     | 22 in. (55.9 cm)       |

| Clearance dimensions |                                                           |                               |                    |
|----------------------|-----------------------------------------------------------|-------------------------------|--------------------|
|                      | Front                                                     | Storage engine and disk shelf | 9 in. (22.9 cm)    |
|                      | Rear—cooling                                              | Storage engine and disk shelf | 30 in. (76.2 cm)   |
|                      | Bezel                                                     | Storage engine and disk shelf | 1 in. (2.5 cm)     |
|                      | Rear—maintenance                                          | Storage engine and disk shelf | 24 in. (61 cm)     |
|                      | Vertical rack space                                       | Storage engine and disk shelf | 10.5 in. (26.7 cm) |
|                      | Vertical rack space between storage engine and disk shelf | Storage engine and disk shelf | 1.5 in. (3.8 cm)   |

| Environmental requirements |                                         |                               |                                      |
|----------------------------|-----------------------------------------|-------------------------------|--------------------------------------|
|                            | Operating temperature maximum range     | Storage engine                | 50° F to 104° F<br>(10° C to 40° C)  |
|                            |                                         | Disk shelf                    | 41° F to 104° F<br>(5° C to 40° C)   |
|                            | Operating temperature recommended range | Storage engine                | 68° F to 77° F<br>(20° C to 25° C)   |
|                            |                                         | Disk shelf                    | 68° F to 77° F<br>(20° C to 25° C)   |
|                            | Nonoperating temperature range          | Storage engine and disk shelf | -4° F to 149° F<br>(-20° C to 65° C) |
|                            | Relative humidity                       | Storage engine                | 10 to 90%<br>noncondensing           |
|                            |                                         | Disk shelf                    | 5 to 90%<br>noncondensing            |
|                            | Acoustic level                          | Storage engine                | 50 dBA @ 23° C                       |
|                            |                                         | Disk shelf                    | 55 dBA @ 23° C<br>5.5 bels @ 23° C   |

| Electrical requirements |                             |                               |           |
|-------------------------|-----------------------------|-------------------------------|-----------|
|                         | Input voltage, V            | Storage engine                | 100–240   |
|                         |                             | Disk shelf                    | 100–240   |
|                         | Input current actual, A     | Storage engine                | 2.05–1.21 |
|                         |                             | Disk shelf                    | 0.7       |
|                         | Input power actual, W       | Storage engine                | 185       |
|                         |                             | Disk shelf                    | 200       |
|                         | Thermal dissipation, BTU/hr | Storage engine                | 631       |
|                         |                             | Disk shelf                    | 682       |
|                         | Inrush current, A @ V       | Storage engine and disk shelf | 50 @ 220  |

NearStore systems

# R150 system

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R150  
characteristics

The following table lists the characteristics and requirements for your hardware.

**Note**\_\_\_\_\_

The R150 system also supports the DS14mk2 AT. See “R200 system” on page 43 for details about DS14mk2 AT.

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| Physical characteristics |            |                                |                    |
|--------------------------|------------|--------------------------------|--------------------|
|                          | Weight     | Storage engine                 | 105 lbs (47.7 kg)  |
|                          |            | Disk shelf                     | 55 lbs (25 kg)     |
|                          |            | Fully loaded in system cabinet | 875 lbs (398 kg)   |
|                          | Rack units | Storage engine                 | 6U                 |
|                          |            | Disk shelf                     | 4U                 |
|                          | Height     | Storage engine                 | 10.3 in. (26.2 cm) |
|                          |            | Disk shelf                     | 7 in. (17.8 cm)    |
|                          | Width      | Storage engine                 | 17 in. (43.2 cm)   |
|                          |            | Disk shelf                     | 17 in. (43.2 cm)   |
|                          | Depth      | Storage engine                 | 22 in. (55.9 cm)   |
|                          |            | Disk shelf                     | 25.3 in. (64.3 cm) |

| Clearance dimensions |                                                           |                               |                    |
|----------------------|-----------------------------------------------------------|-------------------------------|--------------------|
|                      | Front                                                     | Storage engine and disk shelf | 25 in. (63.5 cm)   |
|                      | Rear—cooling                                              | Storage engine and disk shelf | 30 in. (76.2 cm)   |
|                      | Bezel                                                     | Storage engine and disk shelf | 1.5 in. (3.8 cm)   |
|                      | Rear—maintenance                                          | Storage engine and disk shelf | 40 in. (101.6 cm)  |
|                      | Vertical rack space                                       | Storage engine and disk shelf | 10.5 in. (26.7 cm) |
|                      | Vertical rack space between storage engine and disk shelf | Storage engine and disk shelf | 1.5 in. (3.8 cm)   |

| Environmental requirements |                                         |                               |                                      |
|----------------------------|-----------------------------------------|-------------------------------|--------------------------------------|
|                            | Operating temperature maximum range     | Storage engine                | 50° F to 104° F<br>(10° C to 40° C)  |
|                            |                                         | Disk shelf                    | 41° F to 104° F<br>(5° C to 40° C)   |
|                            | Operating temperature recommended range | Storage engine                | 68° F to 77° F<br>(20° C to 25° C)   |
|                            |                                         | Disk shelf                    | 68° F to 77° F<br>(20° C to 25° C)   |
|                            | Nonoperating temperature range          | Storage engine and disk shelf | -4° F to 149° F<br>(-20° C to 65° C) |
|                            | Relative humidity                       | Storage engine                | 10 to 90% noncondensing              |
|                            |                                         | Disk shelf                    | 5 to 90% noncondensing               |
|                            | Acoustic level                          | Storage engine                | 49.5 dBA @ 23° C                     |
|                            |                                         | Disk shelf                    | 55 dBA at 25° C<br>5.5 bels at 25° C |

| Electrical requirements |                             |                               |          |
|-------------------------|-----------------------------|-------------------------------|----------|
|                         | Input voltage, V            | Storage engine                | 100–240  |
|                         |                             | Disk shelf                    | 100–240  |
|                         | Input current actual, A     | Storage engine                | 3.8–1.95 |
|                         |                             | Disk shelf                    | 0.7      |
|                         | Input power actual, W       | Storage engine                | 330      |
|                         |                             | Disk shelf                    | 200      |
|                         | Thermal dissipation, BTU/hr | Storage engine                | 1,126    |
|                         |                             | Disk shelf                    | 682      |
|                         | Inrush current, A @ V       | Storage engine and disk shelf | 30 @ 264 |

NearStore systems

# R200 system

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**R200**  
**characteristics**

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |            |                                |                     |
|--------------------------|------------|--------------------------------|---------------------|
|                          | Weight     | Storage engine                 | 105 lbs (47.7 kg)   |
|                          |            | DS14mk2 AT                     | 77 lbs (35 kg)      |
|                          |            | Fully loaded in system cabinet | 50.06 lbs (23 kg)   |
|                          | Rack units | Storage engine                 | 6U                  |
|                          |            | DS14mk2 AT                     | 3U                  |
|                          | Height     | Storage engine                 | 10.3 in. (26.2 cm)  |
|                          |            | DS14mk2 AT                     | 5.25 in. (13.3 cm)  |
|                          | Width      | Storage engine                 | 17 in. (43.2 cm)    |
|                          |            | DS14mk2 AT                     | 17.6 in. (44.8 cm)  |
|                          | Depth      | Storage engine                 | 22 in. (55.9 cm)    |
|                          |            | DS14mk2 AT                     | 21.75 in. (55.2 cm) |

| Clearance dimensions       |                                                           |                               |                                         |
|----------------------------|-----------------------------------------------------------|-------------------------------|-----------------------------------------|
|                            | Front                                                     | Storage engine and DS14mk2 AT | 25 in. (63.5 cm)                        |
|                            | Rear—cooling                                              | Storage engine and DS14mk2 AT | 12 in. (30.5 cm)                        |
|                            | Bezel                                                     | Storage engine and DS14mk2 AT | 1.5 in. (3.8 cm)                        |
|                            | Rear—maintenance                                          | Storage engine and DS14mk2 AT | 40 in. (101.6 cm)                       |
|                            | Vertical rack space                                       | Storage engine and DS14mk2 AT | 10.5 in. (26.7 cm)                      |
|                            | Vertical rack space between storage engine and disk shelf | Storage engine and DS14mk2 AT | 1.5 in. (3.8 cm)                        |
| Environmental requirements |                                                           |                               |                                         |
|                            | Operating temperature maximum range                       | Storage engine                | 50° F to 104° F<br>(10° C to 40° C)     |
|                            |                                                           | DS14mk2 AT                    | 32° F to 104° F<br>(10° C to 40° C)     |
|                            | Operating temperature recommended range                   | Storage engine and DS14mk2 AT | 68° F to 77° F<br>(20° C to 25° C)      |
|                            | Nonoperating temperature range                            | Storage engine and DS14mk2 AT | -4° F to 149° F<br>(-40° C to 65° C)    |
|                            | Relative humidity                                         | Storage engine                | 10 to 90%<br>noncondensing              |
|                            |                                                           | DS14mk2 AT                    | 5 to 90%<br>noncondensing               |
|                            | Acoustic level                                            | Storage engine                | 49.5 dBA @ 23° C                        |
|                            |                                                           | DS14mk2 AT                    | 48.7 dBA at 25° C<br>5.64 bels at 25° C |

| Electrical requirements |                             |                |                 |
|-------------------------|-----------------------------|----------------|-----------------|
|                         | Input voltage, V            | Storage engine | 100–240         |
|                         |                             | DS14mk2 AT     | 100–127/200–240 |
|                         | Input current actual, A     | Storage engine | 3.8–1.95        |
|                         |                             | DS14mk2 AT     | 3.95/1.9        |
|                         | Input power actual, W       | Storage engine | 330             |
|                         |                             | DS14mk2 AT     | 356             |
|                         | Thermal dissipation, BTU/hr | Storage engine | 1,126           |
|                         |                             | DS14mk2 AT     | 1,215           |
|                         | Inrush current, A @ V       | Storage engine | 30 @ 264        |
|                         |                             | DS14mk2 AT     | 20 @ 220        |

NearStore systems

**VTL600/VTL1200 systems**

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**VTL600/VTL1200  
characteristics**

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |            |                                |                     |
|--------------------------|------------|--------------------------------|---------------------|
|                          | Weight     | Storage engine                 | 75 lbs (34.019 kg)  |
|                          |            | DS14mk2 AT                     | 77 lbs (35 kg)      |
|                          |            | Fully loaded in system cabinet | 999 lbs (453.14 kg) |
|                          | Rack units | Storage engine                 | 3U                  |
|                          |            | DS14mk2 AT                     | 3U                  |
|                          | Height     | Storage engine                 | 5.13 in. (13 cm)    |
|                          |            | DS14mk2 AT                     | 5.25 in. (13.3 cm)  |
|                          | Width      | Storage engine                 | 17.68 in. (44.9 cm) |
|                          |            | DS14mk2 AT                     | 17.6 in. (44.8 cm)  |
|                          | Depth      | Storage engine                 | 24.33 in. (61.8 cm) |
|                          |            | DS14mk2 AT                     | 21.75 in. (55.2 cm) |

| <b>Clearance dimensions</b> |                                                           |                               |                    |
|-----------------------------|-----------------------------------------------------------|-------------------------------|--------------------|
|                             | Front                                                     | Storage engine and DS14mk2 AT | 25 in. (63.5 cm)   |
|                             | Rear—cooling                                              | Storage engine and DS14mk2 AT | 12 in. (30.5 cm)   |
|                             | Bezel                                                     | Storage engine and DS14mk2 AT | 1.5 in. (3.8 cm)   |
|                             | Rear—maintenance                                          | Storage engine and DS14mk2 AT | 40 in. (101.6 cm)  |
|                             | Vertical rack space                                       | Storage engine and DS14mk2 AT | 10.5 in. (26.7 cm) |
|                             | Vertical rack space between storage engine and disk shelf | Storage engine and DS14mk2 AT | 1.5 in. (3.8 cm)   |

| Environmental requirements |                                         |                               |                                         |
|----------------------------|-----------------------------------------|-------------------------------|-----------------------------------------|
|                            | Operating temperature maximum range     | Storage engine                | 50° F to 104° F<br>(10° C to 40° C)     |
|                            |                                         | DS14mk2 AT                    | 32° F to 104° F<br>(10° C to 40° C)     |
|                            | Operating temperature recommended range | Storage engine and DS14mk2 AT | 68° F to 77° F<br>(20° C to 25° C)      |
|                            | Nonoperating temperature range          | Storage engine and DS14mk2 AT | -4° F to 149° F<br>(-40° C to 65° C)    |
|                            | Relative humidity                       | Storage engine                | 10 to 90%<br>noncondensing              |
|                            |                                         | DS14mk2 AT                    | 5 to 90%<br>noncondensing               |
|                            | Acoustic level                          | Storage engine                | 54 dBA @ 23° C                          |
|                            |                                         | DS14mk2 AT                    | 48.7 dBA at 25° C<br>5.64 bels at 25° C |

| Electrical requirements |                             |                |                 |
|-------------------------|-----------------------------|----------------|-----------------|
|                         | Input voltage, V            | Storage engine | 100–240         |
|                         |                             | DS14mk2 AT     | 100–127/200–240 |
|                         | Input current actual, A     | Storage engine | 3.0–1.6         |
|                         |                             | DS14mk2 AT     | 3.95/1.9        |
|                         | Input power actual, W       | Storage engine | 250             |
|                         |                             | DS14mk2 AT     | 356             |
|                         | Thermal dissipation, BTU/hr | Storage engine | 853             |
|                         |                             | DS14mk2 AT     | 1,215           |
|                         | Inrush current, A @ V       | Storage engine | 35 @ 220        |
|                         |                             | DS14mk2 AT     | 20 @ 220        |

# NetCache appliances

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## About this section

This section lists tabulated descriptions of the hardware characteristics, clearance requirements, environmental requirements, and electrical requirements for NetCache appliances.

### Note

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This section also includes the information for the SC100 service console.

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## For detailed information

For details about specific models of NetCache appliances, see the following topics:

- ◆ “C700 series NetCache appliances” on page 51
- ◆ “C1100 series NetCache appliances” on page 53
- ◆ “C1200 NetCache appliances/SC100 service consoles” on page 55
- ◆ “C1300 NetCache appliances” on page 57
- ◆ “C2100 NetCache appliances” on page 59
- ◆ “C2300 and C3300 NetCache appliances” on page 61
- ◆ “C3100 and C6100 NetCache appliances” on page 63
- ◆ “C6200 NetCache appliance” on page 65

NetCache appliances

# C700 series NetCache appliances

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Platform characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                     |                    |
|--------------------------|---------------------|--------------------|
|                          | Weight              | 64 lbs (29.1 kg)   |
|                          | Rack units          | 5U                 |
|                          | Height              | 8.8 in. (22.4 cm)  |
|                          | Width               | 17 in. (43.2 cm)   |
|                          | Depth               | 25.3 in. (64.3 cm) |
| Clearance dimensions     |                     |                    |
|                          | Front               | 9 in. (22.9 cm)    |
|                          | Rear—cooling        | 30 in. (76.2 cm)   |
|                          | Bezel               | 1 in. (2.5 cm)     |
|                          | Rear—maintenance    | 24 in. (61 cm)     |
|                          | Vertical rack space | 10.5 in. (26.7 cm) |

| Environmental requirements |                                         |    |                                     |
|----------------------------|-----------------------------------------|----|-------------------------------------|
|                            | Operating temperature maximum range     |    | 50° F to 104° F<br>(10° C to 40° C) |
|                            | Operating temperature recommended range |    | 68° F to 77° F<br>(20° C to 25° C)  |
|                            | Nonoperating temperature range          |    | -4° F to 149° F (-20° C to 65° C)   |
|                            | Relative humidity                       |    | 10 to 90% noncondensing             |
|                            | Acoustic level                          |    | 50 dBA @ 23° C                      |
| Electrical requirements    |                                         |    |                                     |
|                            | Input voltage, V                        | AC | 100–240                             |
|                            |                                         | DC | -40 to -60                          |
|                            | Input current actual, A                 | AC | 2.64–1.28                           |
|                            |                                         | DC | 3                                   |
|                            | Input power actual, W                   | AC | 234                                 |
|                            |                                         | DC | 215                                 |
|                            | Thermal dissipation, BTU/hr             | AC | 799                                 |
|                            |                                         | DC | 799                                 |
|                            | Inrush current, A @ V                   | AC | 40 @ 115<br>50 @ 220                |
|                            |                                         | DC | No greater than 25 @ -40 to -70     |

NetCache appliances

# C1100 series NetCache appliances

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C1100  
characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                            |                    |
|--------------------------|----------------------------|--------------------|
|                          | Weight                     | 23 lbs (10.5 kg)   |
|                          | Rack units                 | 1U                 |
|                          | Height                     | 1.7 in. (4.3 cm)   |
|                          | Width                      | 16.8 in. (42.7 cm) |
|                          | Depth                      | 22 in. (55.9 cm)   |
| Clearance dimensions     |                            |                    |
|                          | Front                      | 9 in. (22.9 cm)    |
|                          | Rear                       | 30 in. (76.2 cm)   |
|                          | Bezel                      | 1.5 in. (3.8 cm)   |
|                          | Work space for maintenance | 24 in. (61 cm)     |
|                          | Vertical rack space        | 1.75 in. (4.45 cm) |

| <b>Environmental requirements</b> |                                         |                                    |
|-----------------------------------|-----------------------------------------|------------------------------------|
|                                   | Operating temperature maximum range     | 50° F to 95° F<br>(10° C to 35° C) |
|                                   | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C) |
|                                   | Nonoperating temperature range          | -4° F to 149° F (-20° C to 65° C)  |
|                                   | Relative humidity                       | 10 to 90% noncondensing            |
|                                   | Acoustic level                          | 45 dBA @ 23° C                     |
| <b>Electrical requirements</b>    |                                         |                                    |
|                                   | Input voltage, V                        | 100–240                            |
|                                   | Input current actual, A                 | 1.05–.62                           |
|                                   | Input power actual, W                   | 94                                 |
|                                   | Thermal dissipation, BTU/hr             | 321                                |
|                                   | Inrush current, A @ V                   | 45 @ 264                           |

C1200 NetCache appliances/SC100 service consoles

C1200/SC100 characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                   |                    |
|--------------------------|-------------------|--------------------|
|                          | Weight            | 29 lbs (13.2 kg)   |
|                          | Rack units        | 1U                 |
|                          | Height            | 1.75 in. (4.4 cm)  |
|                          | Width             | 16.9 in. (43 cm)   |
|                          | Depth             | 25.5 in. (64.8 cm) |
| Clearance dimensions     |                   |                    |
|                          | Front—cooling     | 1 in. (2.5 cm)     |
|                          | Front—maintenance | 30 in. (25.4 cm)   |
|                          | Rear—cooling      | 6 in. (15.2 cm)    |
|                          | Rear—maintenance  | 12 in. (30.5 cm)   |

| <b>Environmental requirements</b> |                                            |                                       |
|-----------------------------------|--------------------------------------------|---------------------------------------|
|                                   | Operating temperature<br>Maximum range     | 50° F to 95° F<br>(10° C to 35° C)    |
|                                   | Operating temperature<br>recommended range | 68° F to 77° F<br>(20° C to 25° C)    |
|                                   | Nonoperating temperature range             | -4° F to 149° F (-20° C to 65° C)     |
|                                   | Relative humidity                          | 10 to 90% noncondensing               |
|                                   | Acoustic level                             | 46.4 dBA @ 23° C<br>6.05 bels @ 23° C |
| <b>Electrical requirements</b>    |                                            |                                       |
|                                   | Input voltage, V                           | 100–127/200–240                       |
|                                   | Input current actual, A                    | 1.32/.68                              |
|                                   | Input power actual, W                      | 118                                   |
|                                   | Thermal dissipation, BTU/hr                | 403                                   |
|                                   | Inrush current, A @ V                      | 19 @ 264                              |

NetCache appliances

# C1300 NetCache appliances

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C1300  
characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                                |                    |                     |
|--------------------------|--------------------------------|--------------------|---------------------|
|                          | Weight<br>Rack units<br>Height |                    | 24.5 lbs (11.1 kg)  |
|                          |                                |                    | 1U                  |
|                          |                                |                    | 1.7 in. (4.24 cm)   |
|                          | Width                          | Chassis            | 17.1 in. (43.4 cm)  |
|                          |                                | With slide rails   | 17.5 in. (44.57 cm) |
|                          |                                | With mounting ears | 19.0 in. (48.3 cm)  |
|                          | Depth                          |                    | 23.5 in. (59.7 cm)  |
| Clearance dimensions     |                                |                    |                     |
|                          | Front—cooling                  |                    | 6 in. (215 cm)      |
|                          | Front—maintenance              |                    | 30 in. (25.4 cm)    |
|                          | Rear—cooling                   |                    | 6 in. (15.2 cm)     |
|                          | Rear—maintenance               |                    | 12 in. (30.5 cm)    |

| <b>Environmental requirements</b> |                                            |                                    |
|-----------------------------------|--------------------------------------------|------------------------------------|
|                                   | Operating temperature<br>Maximum range     | 50° F to 95° F<br>(10° C to 35° C) |
|                                   | Operating temperature<br>recommended range | 68° F to 77° F<br>(20° C to 25° C) |
|                                   | Nonoperating temperature range             | -4° F to 158° F (-20° C to 70° C)  |
|                                   | Relative humidity                          | 20 to 80% noncondensing            |
|                                   | Acoustic level                             | 6.8 bels @ 23° C                   |
| <b>Electrical requirements</b>    |                                            |                                    |
|                                   | Input voltage, V                           | 100–240                            |
|                                   | Input current actual, A                    | 1.8–1.0                            |
|                                   | Input power actual, W                      | 156                                |
|                                   | Thermal dissipation, BTU/hr                | 532                                |
|                                   | Inrush current, A @ V                      | 55 @ 264                           |

NetCache appliances

# C2100 NetCache appliances

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C2100  
characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                   |                    |
|--------------------------|-------------------|--------------------|
|                          | Weight            | 47 lbs (21.4 kg)   |
|                          | Rack units        | 2U                 |
|                          | Height            | 3.5 in. (8.9 cm)   |
|                          | Width             | 16.9 in. (42.9 cm) |
|                          | Depth             | 25.2 in. (64 cm)   |
| Clearance dimensions     |                   |                    |
|                          | Front—cooling     | 1 in. (2.5 cm)     |
|                          | Front—maintenance | 30 in. (25.4 cm)   |
|                          | Rear—cooling      | 6 in. (15.2 cm)    |
|                          | Rear—maintenance  | 12 in. (30.5 cm)   |

| <b>Environmental requirements</b> |                                         |                                      |
|-----------------------------------|-----------------------------------------|--------------------------------------|
|                                   | Operating temperature maximum range     | 50° F to 95° F<br>(10° C to 35° C)   |
|                                   | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C)   |
|                                   | Nonoperating temperature range          | -4° F to 149° F (-20° C to 65° C)    |
|                                   | Relative humidity                       | 10 to 90% noncondensing              |
|                                   | Acoustic level                          | 53.3 dBA @ 23° C<br>6.5 bels @ 23° C |
| <b>Electrical requirements</b>    |                                         |                                      |
|                                   | Input voltage, V                        | 100–127/200–240                      |
|                                   | Input current actual, A                 | 3.1/1.42                             |
|                                   | Input power actual, W                   | 307                                  |
|                                   | Thermal dissipation, BTU/hr             | 1,048                                |
|                                   | Inrush current, A @ V                   | 16 @ 264                             |

NetCache appliances

# C2300 and C3300 NetCache appliances

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C2300 and C3300 characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                   |                           |                     |
|--------------------------|-------------------|---------------------------|---------------------|
|                          | Weight            | Fully loaded (six drives) | 80 lbs (36.29 kg)   |
|                          |                   | Empty (no drives)         | 72 lbs (32.66 kg)   |
|                          | Rack units        |                           | 3U                  |
|                          | Height            |                           | 5.13 in. (13 cm)    |
|                          | Width             |                           | 17.68 in. (44.9 cm) |
|                          | Depth             |                           | 24.33 in. (61.8 cm) |
| Clearance dimensions     |                   |                           |                     |
|                          | Front—cooling     | All versions              | 6 in. (15.2 cm)     |
|                          | Rear—cooling      | Two-post rack             | 12 in. (30.5 cm)    |
|                          |                   | Four-post rack            | 12 in. (30.5 cm)    |
|                          | Front—maintenance | Two-post rack             | 30 in. (76.2 cm)    |
|                          |                   | Four-post rack            | 30 in. (76.2 cm)    |
|                          | Rear—maintenance  | Two-post rack             | 36 in. (91.4cm)     |
|                          |                   | Four-post rack            | 36 in. (91.4 cm)    |

| Environmental requirements |                                         |    |                                      |
|----------------------------|-----------------------------------------|----|--------------------------------------|
|                            | Operating temperature maximum range     |    | 50° F to 104° F<br>(10° C to 40° C)  |
|                            | Operating temperature recommended range |    | 68° F to 77° F<br>(20° C to 25° C)   |
|                            | Nonoperating temperature range          |    | -4° F to 149° F<br>(-20° C to 65° C) |
|                            | Relative humidity                       |    | 20 to 80% noncondensing              |
|                            | Acoustic level                          |    | 54 dBA @ 23° C                       |
| Electrical requirements    |                                         |    |                                      |
|                            | Input voltage, V                        | AC | 100–240                              |
|                            |                                         | DC | -40 to -60                           |
|                            | Input current actual, A                 | AC | 3.0–1.6                              |
|                            |                                         | DC | 7.7                                  |
|                            | Input power actual, W                   | AC | 250                                  |
|                            |                                         | DC | 350                                  |
|                            | Thermal dissipation, BTU/hr             | AC | 853                                  |
|                            |                                         | DC | 1,195                                |
|                            | Inrush current, A @ V                   | AC | 35 @ 220                             |
|                            |                                         | DC | 26.5 @ 220                           |

## C3100 and C6100 NetCache appliances

### C3100 and C6100 characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics   |                                         |                                      |
|----------------------------|-----------------------------------------|--------------------------------------|
|                            | Weight                                  | 66 lbs (30 kg)                       |
|                            | Rack units                              | 5U                                   |
|                            | Height                                  | 8.8 in. (22.4 cm)                    |
|                            | Width                                   | 17 in. (43.2 cm)                     |
|                            | Depth                                   | 25.3 in. (64.3 cm)                   |
| Clearance dimensions       |                                         |                                      |
|                            | Front—cooling                           | 9 in. (22.9 cm)                      |
|                            | Rear—cooling                            | 30 in. (76.2 cm)                     |
|                            | Bezel                                   | 1 in. (2.5 cm)                       |
|                            | Front and rear—maintenance              | 24 in. (61 cm)                       |
|                            | Vertical rack space                     | 10.5 in. (26.7 cm)                   |
| Environmental requirements |                                         |                                      |
|                            | Operating temperature maximum range     | 50° F to 104° F<br>(10° C to 40° C)  |
|                            | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C)   |
|                            | Nonoperating temperature range          | -4° F to 149° F<br>(-20° C to 65° C) |
|                            | Relative humidity                       | 10 to 90% noncondensing              |
|                            | Acoustic level                          | 50 dBA @ 23° C                       |

| Electrical requirements |                                |    |                                 |
|-------------------------|--------------------------------|----|---------------------------------|
|                         | Input voltage, V               | AC | 100–240                         |
|                         |                                | DC | -40 to -60                      |
|                         | Input current actual, A        | AC | 2.05–1.0                        |
|                         |                                | DC | 3                               |
|                         | Input power actual, W          | AC | 170                             |
|                         |                                | DC | 217                             |
|                         | Thermal dissipation,<br>BTU/hr | AC | 580                             |
|                         |                                | DC | 741                             |
|                         | Inrush current, A @ V          | AC | 30 @ 115<br>50 @ 220            |
|                         |                                | DC | No greater than 25 @ -40 to -70 |

NetCache appliances

# C6200 NetCache appliance

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C6200  
characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                   |                |                    |
|--------------------------|-------------------|----------------|--------------------|
|                          | Weight            |                | 105 lbs (47.7 kg)  |
|                          | Rack units        |                | 6U                 |
|                          | Height            |                | 10.3 in. (26.2 cm) |
|                          | Width             |                | 17 in. (43.2 cm)   |
|                          | Depth             |                | 22 in. (55.9 cm)   |
| Clearance dimensions     |                   |                |                    |
|                          | Front—cooling     | All versions   | 6 in. (15.2 cm)    |
|                          | Rear—cooling      | Two-post rack  | 12 in. (30.5 cm)   |
|                          |                   | Four-post rack | 12 in. (30.5 cm)   |
|                          | Front—maintenance | Two-post rack  | 25 in. (63.5 cm)   |
|                          |                   | Four-post rack | 25 in. (63.5 cm)   |
|                          | Rear—maintenance  | Two-post rack  | 40 in. (101.6 cm)  |
|                          |                   | Four-post rack | 40 in. (101.6 cm)  |

| <b>Environmental requirements</b> |                                         |                                      |
|-----------------------------------|-----------------------------------------|--------------------------------------|
|                                   | Operating temperature maximum range     | 50° F to 104° F<br>(10° C to 40° C)  |
|                                   | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C)   |
|                                   | Nonoperating temperature range          | -4° F to 149° F<br>(-20° C to 65° C) |
|                                   | Relative humidity                       | 10 to 90% noncondensing              |
|                                   | Acoustic level                          | 49.5 dBA @ 23° C                     |
| <b>Electrical requirements</b>    |                                         |                                      |
|                                   | Input voltage, V                        | 100–240                              |
|                                   | Input current actual, A                 | 3.8–1.95                             |
|                                   | Input power actual, W                   | 330                                  |
|                                   | Thermal Dissipation, BTU/hr             | 1,126                                |
|                                   | Inrush Current, A @ V                   | 30 @ 264                             |

# Disk shelves

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## About this section

This section lists tabulated descriptions of the hardware characteristics, clearance requirements, environmental requirements, and electrical requirements for disk shelves.

### Note

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NearStore system disk shelf information is listed in the section “Filers, FAS systems, and V-Series systems/gFiler gateways” on page 12.

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## For detailed information

For details about specific models of disk shelves, see the following topics:

- ◆ “DS14 series disk shelves” on page 68
- ◆ “FC9 disk shelves” on page 71
- ◆ “FC7 and FC8 disk shelves” on page 73
- ◆ “SDS12 SCSI disk shelves” on page 75

Disk shelves

# DS14 series disk shelves

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**DS14 series characteristics**

The following table lists the characteristics and requirements for your hardware.

**Note**—  
The DS14 series includes the DS14, DS14mk2 FC, DS14mk2 FC with an ESH or ESH2 (references to ESH include ESH 2), and, finally, DS14mk2 AT.

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| Physical characteristics |                   |                  |                    |
|--------------------------|-------------------|------------------|--------------------|
|                          | Weight            | With disk drives | 77 lbs (35 kg)     |
|                          |                   | Empty            | 50.06 lbs (23 kg)  |
|                          | Rack units        |                  | 3U                 |
|                          | Height            |                  | 5.25 in. (13.3 cm) |
|                          | Width             |                  | 17.6 in. (44.7 cm) |
|                          | Depth             | DS14mk2 FC       | 20 in. (50.8 cm)   |
|                          |                   | DS14mk2 AT       | 21.75 (55.2 cm)    |
| Clearance dimensions     |                   |                  |                    |
|                          | Front—cooling     | All versions     | 6 in. (15.3 cm)    |
|                          | Rear—cooling      | Two-post rack    | 12 in. (30.5 cm)   |
|                          |                   | Four-post rack   | 12 in. (30.5 cm)   |
|                          | Front—maintenance | Two-post rack    | 25 in. (63.5 cm)   |
|                          |                   | Four-post rack   | 25 in. (63.5 cm)   |
|                          | Rear—maintenance  | Two-post rack    | 12 in. (30.5 cm)   |
|                          |                   | Four-post rack   | 12 in. (30.5 cm)   |

| <b>Environmental requirements</b> |                                         |                                       |
|-----------------------------------|-----------------------------------------|---------------------------------------|
|                                   | Operating temperature maximum range     | 32° F to 104° F<br>(10° C to 40° C)   |
|                                   | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C)    |
|                                   | Nonoperating temperature range          | -4° F to 149° F<br>(-40° C to 65° C)  |
|                                   | Relative humidity                       | 10 to 90%<br>noncondensing            |
|                                   | Acoustic level                          | 48.7 dBA @ 23° C<br>5.64 bels @ 23° C |

| Electrical requirements |                                   |                                  |                      |
|-------------------------|-----------------------------------|----------------------------------|----------------------|
|                         | Input voltage, V                  | DS14<br>DS14mk2 FC<br>DS14mk2 AT | 100–127/200–240      |
|                         |                                   | DS14mk2 FC<br>with an ESH        | 100–127/200–240      |
|                         | Input current actual, A           | DS14<br>DS14mk2 FC<br>DS14mk2 AT | 3.95–1.9             |
|                         |                                   | DS14mk2 FC<br>with an ESH        | 4.4–2.3              |
|                         | Input power actual, W             | DS14<br>DS14mk2 FC<br>DS14mk2 AT | 356                  |
|                         |                                   | DS14 mk2 FC<br>with an ESH       | 440                  |
|                         | Thermal dissipation,<br>BTU/hr    | DS14<br>DS14mk2 FC<br>DS14mk2 AT | 1,215                |
|                         |                                   | DS14mk2 FC<br>with an ESH        | 1,502                |
|                         | Inrush current, A @ V             | DS14<br>DS14mk2 FC<br>DS14mk2 AT | 20 @ 120<br>20 @ 220 |
|                         |                                   | DS14mk2 FC<br>with an ESH        | 20 @ 120<br>20 @ 220 |
|                         | DC input current, A               | DS14<br>DS14mk2 FC               | 8                    |
|                         | DC input voltage, V               |                                  | 48                   |
|                         | DC input power actual, W          |                                  | 384                  |
|                         | DC thermal dissipation,<br>BTU/hr |                                  | 1,310 BTU/hr         |

Disk shelves

# FC9 disk shelves

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**FC9 characteristics**     The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                   |                  |                    |
|--------------------------|-------------------|------------------|--------------------|
|                          | Weight            | With disk drives | 62 lbs (34 kg)     |
|                          |                   | Empty            | 32 lbs (14.5 kg)   |
|                          | Rack units        |                  | 2.9U               |
|                          | Height            |                  | 5.1 in. (13 cm)    |
|                          | Width             |                  | 17.5 in. (44.5 cm) |
|                          | Depth             |                  | 16 in. (40.6 cm)   |
| Clearance dimensions     |                   |                  |                    |
|                          | Front—cooling     |                  | 6 in. (15.3 cm)    |
|                          | Rear—cooling      |                  | 19 in. (48.3 cm)   |
|                          | Front—maintenance |                  | 45 in. (114.3 cm)  |
|                          | Rear—maintenance  |                  | 19 in. (48.3 cm)   |

| <b>Environmental requirements</b> |                                         |                                       |
|-----------------------------------|-----------------------------------------|---------------------------------------|
|                                   | Operating temperature maximum range     | 32° F to 104° F<br>(0° C to 40° C)    |
|                                   | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C)    |
|                                   | Nonoperating temperature range          | -40° F to 149° F<br>(-40° C to 65° C) |
|                                   | Relative humidity                       | 5 to 80% noncondensing                |
|                                   | Acoustic level                          | 48.7 dBA @ 23° C<br>5.64 bels @ 23° C |
| <b>Electrical requirements</b>    |                                         |                                       |
|                                   | Input voltage, V                        | 100–127/200–240                       |
|                                   | Input current actual, A                 | 3.05/2.08                             |
|                                   | Input power actual, W                   | 200                                   |
|                                   | Thermal dissipation, BTU/hr             | 683                                   |
|                                   | Inrush current, A @ V                   | 30 @ 220<br>22 @ 115                  |

Disk shelves

# FC7 and FC8 disk shelves

---

**FC7 and FC8  
characteristics**

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics |                   |                  |                    |
|--------------------------|-------------------|------------------|--------------------|
|                          | Weight            | With disk drives | 43.7 lbs (19.9 kg) |
|                          |                   | Empty            | 15.1 lbs (6.9 kg)  |
|                          | Rack units        |                  | 3U                 |
|                          | Height            |                  | 5.1 in. (13 cm)    |
|                          | Width             |                  | 17.5 in. (44.5 cm) |
|                          | Depth             |                  | 16 in. (40.6 cm)   |
| Clearance dimensions     |                   |                  |                    |
|                          | Front—cooling     |                  | 6 in. (15.3 cm)    |
|                          | Rear—cooling      |                  | 19 in. (48.3 cm)   |
|                          | Front—maintenance |                  | 45 in. (114.3 cm)  |
|                          | Rear—maintenance  |                  | 19 in. (48.3 cm)   |

| Environmental requirements |                                         |                                       |
|----------------------------|-----------------------------------------|---------------------------------------|
|                            | Operating temperature maximum range     | 32° F to 104° F<br>(0° C to 40° C)    |
|                            | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C)    |
|                            | Nonoperating temperature range          | -40° F to 149° F<br>(-40° C to 65° C) |
|                            | Relative humidity                       | 10 to 90%<br>noncondensing            |
|                            | Acoustic level                          | 48.7 dBA @ 23° C<br>5.64 bels @ 23° C |
| Electrical requirements    |                                         |                                       |
|                            | Input voltage, V                        | 110/220                               |
|                            | Input current actual, A                 | 3.05/2.08                             |
|                            | Input power actual, W                   | 200                                   |
|                            | Thermal dissipation, BTU/hr             | 683                                   |
|                            | Inrush current, A @ V                   | 22 @ 115<br>30 @ 220                  |

Disk shelves

# SDS12 SCSI disk shelves

---

**SDS12  
characteristics**

The following table lists the various characteristics and requirements for your hardware.

**Note**\_\_\_\_\_

This disk shelf is designed for use with the F85 only.

---

| Physical characteristics   |                   |                  |                    |
|----------------------------|-------------------|------------------|--------------------|
|                            | Weight            | With disk drives | 75 lbs (34 kg)     |
|                            |                   | Empty            | 35.4 lbs (16 kg)   |
|                            | Rack units        |                  | 3U                 |
|                            | Height            |                  | 5.3 in. (13.5 cm)  |
|                            | Width             |                  | 17.6 in. (44.7 cm) |
|                            | Depth             |                  | 17 in. (43.2 cm)   |
| Clearance dimensions       |                   |                  |                    |
|                            | Front—cooling     |                  | 6 in. (15.3 cm)    |
|                            | Rear—cooling      |                  | 19 in. (48.3 cm)   |
|                            | Front—maintenance |                  | 45 in. (114.3 cm)  |
|                            | Rear—maintenance  |                  | 19 in. (48.3 cm)   |
| Environmental requirements |                   |                  |                    |

|                                |                                         |                                       |
|--------------------------------|-----------------------------------------|---------------------------------------|
|                                | Operating temperature maximum range     | 32° F to 104° F<br>(0° C to 40° C)    |
|                                | Operating temperature recommended range | 68° F to 77° F<br>(20° C to 25° C)    |
|                                | Nonoperating temperature range          | -40° F to 149° F<br>(-40° C to 65° C) |
|                                | Relative humidity                       | 8 to 80% noncondensing                |
|                                | Acoustic level                          | 56 dBA @ 23° C                        |
| <b>Electrical requirements</b> |                                         |                                       |
|                                | Input voltage, V                        | 115/230                               |
|                                | Input current actual, A                 | 3.8/1.9                               |
|                                | Input power actual, W                   | 392/380                               |
|                                | Thermal dissipation, BTU/hr             | 1,338/1,297                           |
|                                | Inrush current, A @ V                   | 20 @ 115<br>40 @ 220                  |

# System cabinets

---

## About this section

This section lists tabulated descriptions of the hardware characteristics, clearance requirements, environmental requirements, and electrical requirements for NetApp System Cabinets.

## Power connectors for the cabinets for 36-U cabinets

NetApp System Cabinets use one of three types of power connectors, depending on your location in the world. The most current power connectors are the NEMA (North America), the IEC 309 (Europe and elsewhere), and the AS/NZS3123 (Australia and New Zealand).

For more information about system cabinet power cords, see Chapter 1, “Circuit breaker and power outlet requirements,” on page 8.

## For detailed information

For details about specific models of system cabinet, see the following topics:

- ◆ “36-unit cabinets” on page 78
- ◆ “42-unit cabinets” on page 80

System cabinets

## 36-unit cabinets

---

### Cabinet characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics   |                                         |         |                                       |
|----------------------------|-----------------------------------------|---------|---------------------------------------|
|                            | Weight                                  | Loaded  | Up to 1,110 lbs (505.5 kg)            |
|                            |                                         | Empty   | 312.4 lbs (142 kg)                    |
|                            | Height                                  | Cabinet | 73 in. (185.4 cm)                     |
|                            |                                         | Crate   | 79 in. (200.7 cm)                     |
|                            | Width                                   | Cabinet | 24 in. (61.0 cm)                      |
|                            |                                         | Crate   | 42 in. (106.7 cm)                     |
|                            | Depth                                   | Cabinet | 36 in. (91.4 cm)                      |
|                            |                                         | Crate   | 44.6 in. (113.3 cm)                   |
| Clearance dimensions       |                                         |         |                                       |
|                            | Front                                   |         | 25 in. (63.5 cm)                      |
|                            | Rear                                    |         | 25 in. (63.5 cm)                      |
| Environmental requirements |                                         |         |                                       |
|                            | Operating temperature maximum range     |         | 32° F to 104° F<br>(0° C to 40° C)    |
|                            | Operating temperature recommended range |         | 68° F to 77° F<br>(20° C to 25° C)    |
|                            | Nonoperating temperature range          |         | -40° F to 149° F<br>(-40° C to 65° C) |
|                            | Relative humidity                       |         | 10 to 90% noncondensing               |

| Electrical requirements |                                                                                                                   |                                 |                           |
|-------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------------------|
|                         | Input voltage, V                                                                                                  | 20A PDU                         | 200–240                   |
|                         |                                                                                                                   | 30A PDU                         | 200–240                   |
|                         | Input current actual, A                                                                                           | 20A PDU                         | 15.3                      |
|                         |                                                                                                                   | 30A PDU                         | 17.3                      |
|                         | Input power actual, W                                                                                             | 20A PDU                         | 2,600                     |
|                         |                                                                                                                   | 30A PDU                         | 3,000                     |
|                         | Thermal dissipation, BTU/hr                                                                                       | 20A PDU                         | 8,874                     |
|                         |                                                                                                                   | 30A PDU                         | 10,239                    |
| Outlet requirements     |                                                                                                                   |                                 |                           |
|                         | Plug type                                                                                                         | 2 x NEMA L6-30<br>North America | 30A rated service         |
|                         |                                                                                                                   |                                 | 24A derated service (rms) |
|                         |                                                                                                                   | 2 x IEC309-32<br>International  | 30A rated service         |
|                         |                                                                                                                   |                                 | 24A derated service (rms) |
|                         | <b>Note</b> _____                                                                                                 |                                 |                           |
|                         | For complete power redundancy, the power distribution units (PDUs) must be connected to two separate AC circuits. |                                 |                           |

## System cabinets

# 42-unit cabinets

---

### Cabinet characteristics

The following table lists the characteristics and requirements for your hardware.

| Physical characteristics   |                                         |         |                                       |
|----------------------------|-----------------------------------------|---------|---------------------------------------|
|                            | Weight                                  | Loaded  | Up to 1,500 lbs (Up to 680 kg)        |
|                            |                                         | Empty   | 275 lbs (124.7 kg)                    |
|                            | Height                                  | Cabinet | 78.7 in. (200 cm)                     |
|                            |                                         | Crate   | 85.8 in. (218 cm)                     |
|                            | Width                                   | Cabinet | 23.6 in. (60 cm)                      |
|                            |                                         | Crate   | 29.8 in. (75.7 cm)                    |
|                            | Depth                                   | Cabinet | 37.4 in. (95 cm)                      |
|                            |                                         | Crate   | 48 in. (121.9 cm)                     |
| Clearance dimensions       |                                         |         |                                       |
|                            | Front                                   |         | 30 in. (76.3 cm)                      |
|                            | Rear                                    |         | 30 in. (76.3 cm)                      |
|                            | Top                                     |         | 12 in. (30 cm)                        |
| Environmental requirements |                                         |         |                                       |
|                            | Operating temperature maximum range     |         | 32° F to 104° F<br>(0° C to 40° C)    |
|                            | Operating temperature recommended range |         | 68° F to 77° F<br>(20° C to 25° C)    |
|                            | Nonoperating temperature range          |         | -40° F to 149° F<br>(-40° C to 65° C) |
|                            | Relative humidity                       |         | 10 to 90% noncondensing               |

| Electrical requirements |                                                                                                                                                                                                                                                                                             |                       |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
|                         | <b>Note</b> —————<br>The system cabinet offers two PDU options: you can order the cabinet with either two 30A PDUs or four 20A PDUs. The 20A PDU is derated at 16A, and the 30A PDU is derated at 24A. The following values refer to fully configured cabinets, unless specified otherwise. |                       |
|                         | Input voltage, V                                                                                                                                                                                                                                                                            | 20A PDU 200–240       |
|                         |                                                                                                                                                                                                                                                                                             | 30A PDU 200–240       |
|                         | Input current actual, A                                                                                                                                                                                                                                                                     | 20A PDU 11.5 per PDU* |
|                         |                                                                                                                                                                                                                                                                                             | 30A PDU 25.2 per PDU  |
|                         | Input power actual, W                                                                                                                                                                                                                                                                       | 20A PDU 2,150 total   |
|                         |                                                                                                                                                                                                                                                                                             | 30A PDU 4,957 total   |
|                         | Thermal dissipation, BTU/hr                                                                                                                                                                                                                                                                 | 20A PDU 7,338 total   |
|                         |                                                                                                                                                                                                                                                                                             | 30A PDU 16,918 total  |
|                         | * Because there are two PDUs per side instead of one, the capacity is double this amount, although the PDUs must be connected to separate 20A branch circuits.<br><br>For details, see your <i>System Cabinet Guide</i> .                                                                   |                       |

| Outlet requirements                                                                                                                                                             |                       |                                 |                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------|-------------------------------|
|                                                                                                                                                                                 | Plug type for 20A PDU | 4 x NEMA L6-20<br>North America | 4 x 20A rated service         |
|                                                                                                                                                                                 |                       |                                 | 4 x 16A derated service (rms) |
|                                                                                                                                                                                 |                       | International<br>4 x IEC309-20  | 4 x 20A rated service         |
|                                                                                                                                                                                 |                       |                                 | 4 x 16A derated service (rms) |
|                                                                                                                                                                                 |                       | Australia<br>4 x AS/NZS3123-20  | 4 x 20A rated service         |
|                                                                                                                                                                                 |                       |                                 | 4 x 16A derated service (rms) |
|                                                                                                                                                                                 | Plug type for 30A PDU | NEMA L6-30<br>North America     | 30A rated service             |
|                                                                                                                                                                                 |                       |                                 | 24A derated service (rms)     |
|                                                                                                                                                                                 |                       | IEC309-32<br>International      | 30A rated service             |
|                                                                                                                                                                                 |                       |                                 | 24A derated service (rms)     |
| <b>Note</b> _____                                                                                                                                                               |                       |                                 |                               |
| For complete power redundancy, the power distribution units (PDUs) must be connected to four separate AC circuits for the 20A PDU and two separate AC circuits for the 30A PDU. |                       |                                 |                               |

**Note**\_\_\_\_\_

The system cabinet uses passive air flow for cooling.

# Third-party switches

Electrical requirements

The following table lists the characteristics and requirements for your hardware.

Note

For information about hardware dimensions, weight, clearance, and environmental requirements, see your switch documentation.

| Vendor  | Model                | Voltage | Amps | Watts | BTU/hr. | Inrush Peak |
|---------|----------------------|---------|------|-------|---------|-------------|
| Brocade | SW3200—8 port        | 100–120 | 0.6  | 54    | 184     | N/A         |
|         |                      | 200–240 | 0.3  | 54    | 184     | 10          |
|         | SW3800—16 port       | 100–120 | 1.5  | 133   | 454     | N/A         |
|         |                      | 200–240 | 0.67 | 128   | 437     | 10          |
|         | SW3900—32 port       | 100–120 | 2.3  | 230   | 785     | N/A         |
|         |                      | 200–240 | 1.25 | 230   | 785     | 10          |
|         | SW3250—8 port        | 100–120 | 0.7  | 60    | 205     | N/A         |
|         |                      | 200–240 | 0.35 | 64    | 218     | N/A         |
|         | SW4100—8–16 port     | 100–120 | 1.14 | 111   | 379     | N/A         |
|         |                      | 200–240 | 0.71 | 109   | 372     | N/A         |
| Cisco   | MDS 0120—20 port     | 100–120 | 2.5  | 180   | 614     | N/A         |
|         |                      | 200–240 | 1.8  | 204   | 696     | N/A         |
|         | MDS 0120—40 port     | 100–120 | 2.9  | 204   | 696     | N/A         |
|         |                      | 200–240 | 1.5  | 204   | 696     | N/A         |
|         | MDS 0120—16–48 port  | 200–240 | 2    | 338   | 1154    | N/A         |
|         | MDS 0120—16–128 port | 200–240 | 8.9  | 1720  | 5870    | N/A         |

| Vendor | Model               | Voltage | Amps | Watts | BTU/hr. | Inrush Peak |
|--------|---------------------|---------|------|-------|---------|-------------|
| McData | ES-4300—4–12 port   | 100–120 | 0.6  | 40    | 137     | N/A         |
|        |                     | 200–240 | 0.3  | 40    | 137     | N/A         |
|        | ED-6064—32–64 port  | 100–120 | 5.5  | 487   | 1662    | N/A         |
|        |                     | 200–240 | 2.9  | 476   | 1625    | N/A         |
|        | ED-6140—32–140 port | 200–240 | 4.95 | 863   | 2945    | N/A         |

## Topics in this chapter

This chapter contains the following worksheets for initial basic setup of your system, where no additional software is licensed. See the *Software Setup Guide* for a worksheet for systems that have additional licensed software.

- ◆ “[Stand-alone system setup worksheet](#)” on page 86.
- ◆ “[Cluster system setup worksheet](#)” on page 87.
- ◆ “FAS3000 series and C2300/C3300 setup worksheet” on page 88

# Stand-alone system setup worksheet

---

**Stand-alone systems**

This worksheet is a planning aid for setting up stand-alone systems.

**Note**\_\_\_\_\_

For FAS3000 series and C2300/C3300 stand alone systems, see “FAS3000 series and C2300/C3300 setup worksheet” on page 88.

---

|                                                         |                                                                          |                         |
|---------------------------------------------------------|--------------------------------------------------------------------------|-------------------------|
| Host name:                                              | _____                                                                    |                         |
| Do you want to configure Ethernet virtual interfaces?   | The default is set to No for most installations.                         |                         |
| Network configuration:                                  | <i>First interface</i>                                                   | <i>Second interface</i> |
| IP address:                                             | _____                                                                    | _____                   |
| Netmask:                                                | _____                                                                    | _____                   |
| Media type/speed (100tx-fd, 100tx, auto [100/1000]):    | _____                                                                    | _____                   |
| Flow control (none, receive, send, full):               | _____                                                                    | _____                   |
| Enable jumbo frames?                                    | _____                                                                    | _____                   |
| IP address or name of default gateway:                  | _____                                                                    |                         |
| Would you like to continue setup through Web interface? | (Yes means you want to use a Web interface)_____                         |                         |
| (You do this through the Setup Wizard.)                 |                                                                          |                         |
| IP address or name of administration host:              | (Leave blank to allow root user access to /etc from any NFS client)_____ |                         |
| Where is filer located? (Text string)                   | _____                                                                    |                         |
| Do you want to run DNS resolver?                        | _____                                                                    |                         |
| Do you want to run NIS client?                          | _____                                                                    |                         |

# Cluster system setup worksheet

---

## Cluster system setup

This worksheet is a planning aid for setting up clustered systems.

| Setup parameters                                                                                     | Node A | Node B |
|------------------------------------------------------------------------------------------------------|--------|--------|
| Host name:                                                                                           |        |        |
| Network configuration information                                                                    |        |        |
| Virtual interfaces:                                                                                  |        |        |
| IP address—first interface, e0a:                                                                     |        |        |
| IP address—second interface, e0b:                                                                    |        |        |
| Netmask—first interface, e0a:                                                                        |        |        |
| Netmask—second interface, e0b:                                                                       |        |        |
| Media type/speed (100tx-fd, 100tx, auto [100/1000])—first interface, e0a:                            |        |        |
| Media type/speed (100tx-fd, 100tx, auto [100/1000])—second interface, e0b:                           |        |        |
| Flow control (none, receive, send, full)—e0a:                                                        |        |        |
| Flow control (none, receive, send, full)—e0b:                                                        |        |        |
| Enable jumbo frames?—first interface, e0a:                                                           |        |        |
| Enable jumbo frames?—second interface, e0b:                                                          |        |        |
| IP address or name of default gateway:                                                               |        |        |
| IP address or name of administration host: (Leave blank for root access to /etc from any NFS client) |        |        |
| Where is the NetApp system located? (Text string)                                                    |        |        |
| Do you want to run DNS resolver?                                                                     |        |        |
| Do you want to run NIS client?                                                                       |        |        |

## FAS3000 series and C2300/C3300 setup worksheet

**Setup parameters**      Use the following table to gather the necessary information to set up your system.

|                                                                                                      |       |       |       |       |
|------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|
| Host name:                                                                                           | _____ |       |       |       |
| Network configuration information                                                                    | e0a   | e0b   | e0c   | e0d   |
| IP addresses: First 3 #s _____.                                                                      | _____ | _____ | _____ | _____ |
| Netmask:                                                                                             | _____ | _____ | _____ | _____ |
| Media type/speed (100tx-fd, 100tx, auto [100/1000]):                                                 | _____ | _____ | _____ | _____ |
| Flow control (none, receive, send, full):                                                            | _____ | _____ | _____ | _____ |
| Enable jumbo frames?                                                                                 | _____ | _____ | _____ | _____ |
| IP address or name of default gateway:                                                               | _____ |       |       |       |
| IP address or name of administration host: (Leave blank for root access to /etc from any NFS client) | _____ |       |       |       |
| Where is the NetApp system located? (Text string)                                                    | _____ |       |       |       |
| Do you want to run DNS resolver?                                                                     | _____ |       |       |       |
| Do you want to run NIS client?                                                                       | _____ |       |       |       |
| Would you like to configure the RLM LAN interface [y]:                                               | _____ |       |       |       |
| Would you like to enable DHCP on the RLM LAN interface [y]:                                          | _____ |       |       |       |
| Please enter the name or IP address of the mail host:                                                | _____ |       |       |       |

## FAS6000 series setup worksheet

**Setup parameters** Use the following table to gather the necessary information to set up your system.

|                                                                                                                  |       |       |       |       |       |       |
|------------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|
| Host name:                                                                                                       | _____ |       |       |       |       |       |
| Network configuration information                                                                                | e0a   | e0b   | e0c   | e0d   | e0e   | e0f   |
| IP addresses: First 3 #s<br>_____._____._____                                                                    | _____ | _____ | _____ | _____ | _____ | _____ |
| Netmask:                                                                                                         | _____ | _____ | _____ | _____ | _____ | _____ |
| Media type/speed<br>(100tx-fd, 100tx, auto<br>[100/1000]):                                                       | _____ | _____ | _____ | _____ | _____ | _____ |
| Flow control (none,<br>receive, send, full):                                                                     | _____ | _____ | _____ | _____ | _____ | _____ |
| Enable jumbo frames?                                                                                             | _____ | _____ | _____ | _____ | _____ | _____ |
| IP address or name of<br>default gateway:                                                                        | _____ |       |       |       |       |       |
| IP address or name of<br>administration host:<br>(Leave blank for root<br>access to /etc from any<br>NFS client) | _____ |       |       |       |       |       |
| Where is the NetApp<br>system located? (Text<br>string)                                                          | _____ |       |       |       |       |       |
| Do you want to run DNS<br>resolver?                                                                              | _____ |       |       |       |       |       |
| Do you want to run NIS<br>client?                                                                                | _____ |       |       |       |       |       |

|                                                                   |       |
|-------------------------------------------------------------------|-------|
| Would you like to<br>configure the RLM LAN<br>interface [y]:      | _____ |
| Would you like to enable<br>DHCP on the RLM LAN<br>interface [y]: | _____ |
| Please enter the name or IP<br>address of the mail host:          | _____ |

**About this appendix** The information in this appendix discusses how to determine the power line lengths running from your appliance to the power source.

# Recommended AC power line sizes

---

## About AC power feeds

Longer AC power feeds need to be properly designed to preserve voltage levels to the equipment. The wiring from the breaker panel to the power strip, which supplies power to your appliance and disk shelves, can often exceed 50 feet.

**Note** \_\_\_\_\_  
Total AC wire length = breaker to wall or ceiling outlet + extension cable or ceiling drop.

---

## Recommended conductor size

The following table lists the recommended conductor size for a 2% voltage drop for a particular distance in feet (taken from the *Radio Engineer's Handbook*).

| 110V, single-phase | 20A circuit | 30A circuit | 40A circuit | 50A circuit |
|--------------------|-------------|-------------|-------------|-------------|
| 25 ft              | 12 AWG      | 10 AWG      | 8 AWG       | 8 AWG       |
| 50 ft              | 8 AWG       | 6 AWG       | 6 AWG       | 4 AWG       |
| 75 ft              | 6 AWG       | 4 AWG       | 4 AWG       | 2 AWG       |

| 220V, single-phase | 20A circuit | 30A circuit | 40A circuit | 50A circuit |
|--------------------|-------------|-------------|-------------|-------------|
| 25 ft              | 14 AWG      | 12 AWG      | 12 AWG      | 10 AWG      |
| 50 ft              | 12 AWG      | 10 AWG      | 8 AWG       | 8 AWG       |
| 75 ft              | 10 AWG      | 8 AWG       | 6 AWG       | 6 AWG       |

**Wire gauge  
approximates**

The following table lists the approximate equivalent of American Wire Gauge (AWG) to Harmonized Cordage.

|                          |     |     |     |
|--------------------------|-----|-----|-----|
| <b>AWG</b>               | 8   | 10  | 12  |
| <b>Harmonized, mm-mm</b> | 4.0 | 2.5 | 1.5 |



# Index

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## A

- AC power
  - recommended power line sizes 92
- audience, intended for this book v

## C

- cable requirements
  - 1000Base-T TOE NIC cabling 6
  - 10G Base SR TOE NIC cabling 7
  - GbE Ethernet network cabling 5
- circuit breaker and power outlet requirements 8
- clearance dimensions
  - 36-unit cabinet 78
  - 42-unit cabinet 80
- C1100 series NetCache appliance 53
- C1200 NetCache appliance 55
- C1300 NetCache appliance 57
- C2100 NetCache appliance 59
- C2300 NetCache appliance 61
- C3100 NetCache appliance 63
- C3300 NetCache appliance 61
- C6100 NetCache appliance 63
- C6200 NetCache appliance 65
- C700 series NetCache appliance 51
- DS14 series disk shelf 68
- DS14mk2 AT 47
- DS14mk2 AT disk shelf 44
- F700 series filer 17
- F800 series filer 19
- F87 filer 15
- F880 filer 21
- FAS250 storage appliance 24
- FAS270 storage appliance 26
- FAS3000 series storage appliance 30
- FAS6000 series storage appliance 32
- FAS900 series storage appliance 28
- FC7 disk shelf 73
- FC8 disk shelf 73
- FC9 disk shelf 71
- GF270c gateway 26
- GF825 gateway 19

- GF900 series gateway 28
- NearStore R100 system 36
- NearStore R150 system 40
- NearStore R200 system 44
- NearStore VTL600/VTL1200 system 47
- SC100 service console 55
- SDS12 disk shelf 75
- V3000 series system 30
- V6000 series system 32

- conventions
  - command v
  - formatting v
  - keyboard vi

## D

- disk shelves
  - DS14 series 68
  - DS14mk2 AT 43
  - FC7 73
  - FC8 73
  - FC9 71
  - SDS12 75

## E

- electrical requirements
  - 36-unit cabinet 79
  - 42-unit cabinet 81
- C1100 NetCache appliance 54
- C1200 NetCache appliance 56
- C1300 NetCache appliance 58
- C2100 NetCache appliance 60
- C2300 NetCache appliance 62
- C3100 NetCache appliance 64
- C3300 NetCache appliance 62
- C6100 NetCache appliance 64
- C6200 NetCache appliance 66
- C700 series NetCache appliance 52
- DS14 series disk shelf 70
- DS14mk2 AT disk shelf 45, 49
- F700 series filer 18
- F800 series filer 20

- F85 filer 14
- F87 filer 16
- F880 filer 22
- FAS250 storage appliance 25
- FAS270 storage appliance 27
- FAS3000 series storage appliance 31
- FAS6000 series storage appliance 33
- FAS900 series storage appliance 29
- FC7 disk shelf 74
- FC8 disk shelf 74
- FC9 disk shelf 72
- GF270c gateway 27
- GF825 gateway 20
- GF900 series gateway 29
- NearStore R100 system 38
- NearStore R150 system 42
- NearStore R200 system 45
- NearStore VTL600/VTL1200 system 49
- SC100 service console 56
- SDS12 disk shelf 76
- V3000 series system 31
- V6000 series system 33
- environmental requirements
  - 36-unit cabinet 78
  - 42-unit cabinet 80
  - C1100 series NetCache appliance 54
  - C1200 NetCache appliance 56
  - C1300 NetCache appliance 58
  - C2100 NetCache appliance 60
  - C2300 NetCache appliance 62
  - C3100 NetCache appliance 63
  - C3300 NetCache appliance 62
  - C6100 NetCache appliance 63
  - C6200 NetCache appliance 66
  - C700 series NetCache appliance 52
  - DS14 series disk shelf 69
  - DS14mk2 AT disk shelf 44, 48
  - F700 series filer 18
  - F800 series filer 19
  - F87 filer 16
  - F880 filer 22
  - FAS250 storage appliance 25
  - FAS270 storage appliance 27
  - FAS3000 series storage appliance 31
  - FAS6000 series storage appliance 33

- FAS900 series storage appliance 29
- FC7 disk shelf 74
- FC8 disk shelf 74
- FC9 disk shelf 72
- GF270c gateway 27
- GF825 gateway 19
- GF900 series gateway 29
- NearStore R100 system 37
- NearStore R150 system 41
- NearStore R200 system 44
- NearStore VTL600/VTL1200 system 48
- SC100 service console 56
- SDS12 disk shelf 75
- V3000 series system 31
- V6000 series system 33

## F

### filers

- F700 17
- F800 19
- F85 13
- F87 15
- F880 21

## G

### gFiler gateways

- GF270c 26
- GF825 19
- GF900 series 28

## N

### NearStore appliances

- NearStore R100 system 35
- NearStore R150 system 39
- NearStore R200 system 43
- NearStore VTL600/VTL1200 system 46

### NetApp system cabinet

- power connectors 78

### NetCache appliances

- C1100 series 53
- C1200 55
- C1300 57
- C2100 59

- C2300 61
- C3100 63
- C3300 61
- C6100 63
- C6200 65
- C700 series 51

## O

- outlet requirements
  - 36-unit cabinet 79
  - 42-unit cabinet 82
  - AC power breaker requirements 8

## P

- physical characteristics
  - 36-unit cabinet 78
  - 42-unit cabinet 80
- C1100 series NetCache appliance 53
- C1200 NetCache appliance 55
- C1300 NetCache appliance 57
- C2100 NetCache appliance 59
- C2300 NetCache appliance 61
- C3100 NetCache appliance 63
- C3300 NetCache appliance 61
- C6100 NetCache appliance 63
- C6200 NetCache appliance 65
- C700 series NetCache appliance 51
- DS14 series disk shelf 68
- DS14mk2 AT 46
- DS14mk2 AT disk shelf 43
- F700 series filer 17
- F800 series filer 19
- F85 filer 13
- F87 filer 15
- F880 filer 21
- FAS250 storage appliance 23
- FAS270 storage appliance 26
- FAS3000 series storage appliance 30
- FAS6000 series storage appliance 32
- FAS900 series storage appliance 28
- FC7 disk shelf 73
- FC8 disk shelf 73
- FC9 disk shelf 71
- GF270c gateway 26

- GF825 gateway 19
- GF900 series gateway 28
- NearStore R100 system 35
- NearStore R150 system 39
- NearStore R200 system 43
- NearStore VTL600/VTL1200 system 46
- SC100 service console 55
- SDS12 disk shelf 75
- V3000 series system 30
- V6000 series system 32

## R

- recommended AC power line sizes 92

## S

- service console
  - SC100 55
- special messages vi
- storage appliances
  - FAS250 23
  - FAS270 26
  - FAS3000 series 30
  - FAS6000 series 32
  - FAS900 series 28
- system cabinets
  - 36-unit cabinet 78
  - 42-unit cabinet 80
- system setup worksheets
  - C2300/C3300 systems 88
  - clustered systems 87
  - FAS3000 series systems 88
  - FAS6000 series systems 89
  - stand-alone systems 86

## T

- tools and equipment required 2

## V

- V-Series systems
  - V3000 30
  - V6000 32

## W

wire gauge approximates 93