

# Platform Guide: WANJet® 500

MAN-0230-01





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## Product Version

This manual applies to the WANJet 500 hardware platform created by F5 Networks, Inc.

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VCCI-A



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## Introducing the WANJet 500 Platform

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- Overview of the WANJet 500 platform
- Getting started with the WANJet 500 platform
- Familiarizing yourself with the WANJet 500
- About this guide



## Overview of the WANJet 500 platform

F5® Networks WANJet® 500 platform is an appliance that delivers LAN-like application performance over the WAN. The WANJet 500 accelerates applications including file transfer, email, client-server applications, data replication, and others, resulting in predictable, fast performance for all WAN users.

The WANJet 500 platform features fault tolerance and scalability for over 20,000 optimized connections. You can incorporate the WANJet 500 seamlessly across all wide-area networks including dedicated links, IP VPNs, frame relay, and satellite connections. The WANJet 500 platform is Restriction of Hazardous Substances (RoHS) compliant, and meets RoHS guidelines regarding lead-free electronic equipment.

For detailed hardware specifications on the WANJet 500, see *WANJet 500 platform specifications*, on page 6-1.

The WANJet 500 delivers excellent application performance and reduces IT expenses. Operating at Layer 5 of the OSI reference model, the WANJet 500 has full application knowledge and network awareness. The WANJet appliance integrates key performance technologies, including Transparent Data Reduction™, adaptive TCP optimization, site-to-site encryption, and quality of service, that are applied to application streams.

Figure 1.1 shows the WANJet 500 platform. For details on configuring and maintaining the WANJet 500, see the *WANJet® Appliance Administrator Guide*.



**Figure 1.1** Front view of the WANJet 500 platform

## Getting started with the WANJet 500 platform

You must complete the following basic tasks to install and set up the WANJet 500 platform.

- Acquaint yourself with the WANJet 500 hardware. For more information, see *Familiarizing yourself with the WANJet 500*, on page 1-5.
- Review the hardware requirements. For more information about the hardware requirements, read the following sections, *Components provided with the WANJet 500*, following, and *Peripheral hardware that you provide*, on page 1-4.
- Install the WANJet 500 hardware and connect it to the network, and optionally connect the peripheral hardware. For more information on mounting the hardware and attaching cables, see *Installing the hardware*, on page 2-1.
- Understand the environmental guidelines. For more information, see Chapter 5, *Understanding Environmental Guidelines for the WANJet 500 Platform*.

The WANJet 500 comes with the hardware that you need for installation. However, you must also provide standard peripheral hardware, such as a serial terminal, if you want to administer the WANJet 500 directly.

## Components provided with the WANJet 500

When you unpack the WANJet 500, you should make sure that the following components, shown in Figure 1.2, are included:

- Rack-mount ears and handles
- Rail-mount kit
- Serial port console cable
- Two power cords
- Two CAT-5e cables (one gray straight-through and one red crossover cable)
- Two packs of screws (rack-mount and rail-mount screws)



*Figure 1.2 Components included with the WANJet 500 platform*

**◆ Important**

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*The power cables included with this unit are for exclusive use with this unit and should not be used with other electrical appliances. The unit handles may look different from those shown in the figure.*

## Peripheral hardware that you provide

For each WANJet 500 that you install, the peripheral hardware you provide is determined by the configuration you want to create:

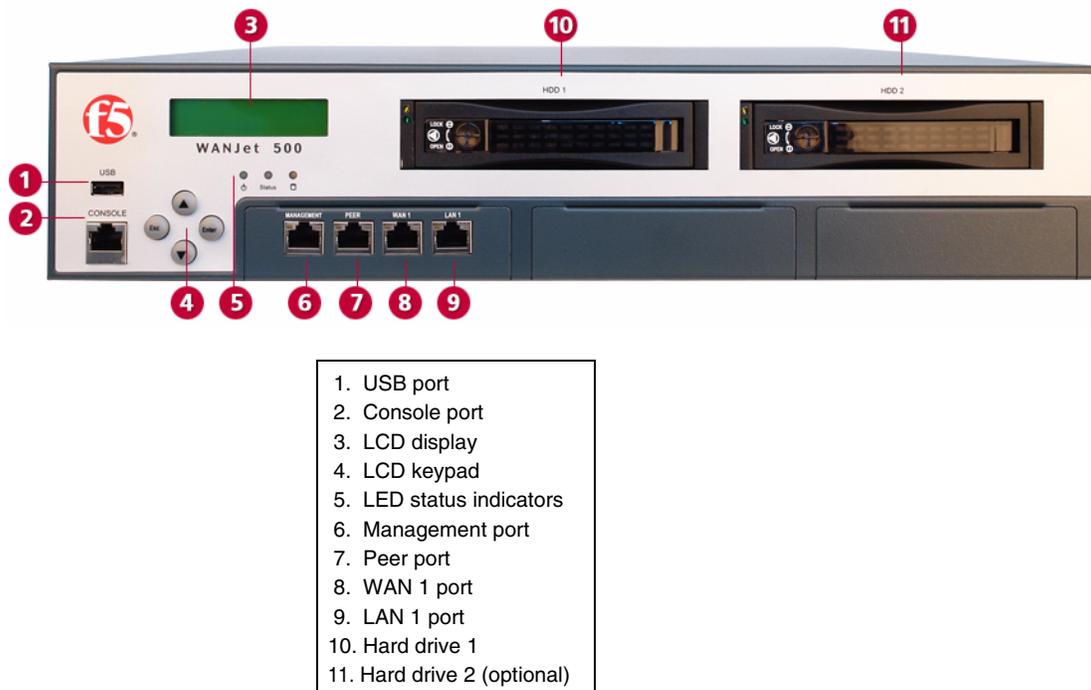
- ◆ If you want direct administrative access to the WANJet 500, you need standard input/output hardware. This requires a serial console or a PC with a serial connector. (You connect it to the WANJet 500 using the serial port console cable that comes with the WANJet appliance.)
- ◆ You also need network hubs, switches, or concentrators to connect to the WANJet 500 network interfaces. The devices you select must be compatible with the network interface cards installed in the WANJet 500. The devices must support 10/100 Ethernet or Gigabit Ethernet.
  - Ethernet requires either a 10 Mbps or 100 Mbps hub or switch.
  - Gigabit Ethernet requires a compatible Gigabit Ethernet switch.
- ◆ If you want to use the Management port, you must have an administrative workstation on the same IP network as the WANJet 500.
- ◆ If you plan on doing remote administration from your own PC workstation (instead of using the Management port), we recommend that you have your workstation already in place on the corporate network.

## Familiarizing yourself with the WANJet 500

Before you begin to install the WANJet 500, quickly review the following figures that identify the controls and ports on the front and the back of the WANJet 500.

### Using the WANJet 500 hardware

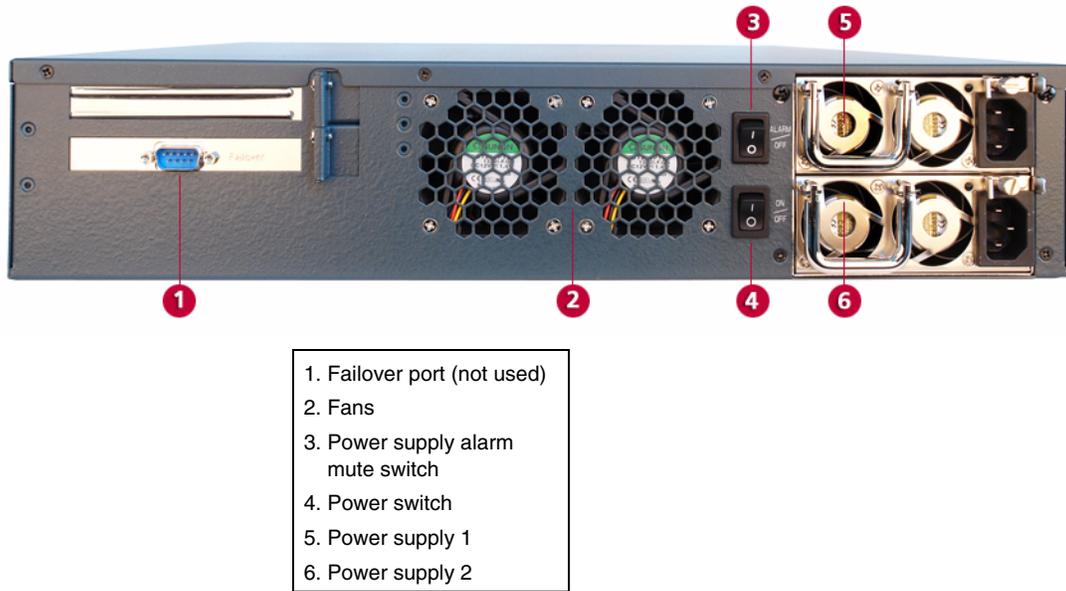
You need to be familiar with both the front and back panels of the WANJet 500. Figure 1.3 illustrates the front of a WANJet 500. On the front of the unit, you can connect a console, connect a USB keyboard, and view the indicator lights for hard disk access.



**Figure 1.3** Front view of a WANJet 500 platform

If you have physical access to the unit, you can use the front-panel LEDs to assess the condition of the unit. For details about the behavior of the LEDs, see *Understanding LED behavior*, on page 3-5.

Figure 1.4 illustrates the back of a WANJet 500.



*Figure 1.4 Back view of the WANJet 500 platform*

Note that the failover port, labeled 1 in the figure, is not used. You may use the Peer port on the front to set up a redundant system for the WANJet platform. Refer to the *WANJet® Appliance Administrator Guide* for details on how to set up WANJet platforms in a redundant system.

## About this guide

This guide describes the features of the WANJet 500 platform and contains the following information.

- **Getting familiar with the WANJet platform**  
Learn about the parts of the WANJet platform. For more information, see *Familiarizing yourself with the WANJet 500*, on page 1-5.
- **Installing the platform**  
Learn how to install the hardware in a rack, power it up, perform minimal configuration tasks, and connect the network cables. For more information, see Chapter 2, *Installing the WANJet 500 Platform*.
- **Using the LCD keypad**  
Learn about using the LCD to configure addresses, shut down and restart the WANJet platform, and perform other basic tasks. For more information, see *Operating the LCD panel*, on page 3-1.
- **Understanding LED behavior**  
Learn how to decipher what conditions are signaled by the LEDs. For more information, see *Understanding LED behavior*, on page 3-5.
- **Changing a power supply**  
Learn how to replace a power supply. For more information, see *Changing a power supply*, on page 4-1.
- **Replacing the hard drives**  
Learn how to replace the hot-swappable drives that may be contained in each of the drive bays. For more information, see *Replacing a hard drive*, on page 4-2.
- **Understanding the environmental guidelines**  
Learn about the environmental requirements for the WANJet 500 platform. For more information, see Chapter 5, *Understanding Environmental Guidelines for the WANJet 500 Platform*.
- **Reviewing the hardware specifications**  
Review the hardware specifications for the WANJet 500 platform. For more information, see Chapter 6, *Reviewing Hardware Specifications*.
- **Installing a rail-mount kit**  
Learn how to install a rail-mount kit into a rack so the installed WANJet 500 can slide in and out of the rack. For more information, see Appendix A, *Installing the WANJet Appliance Using the Rail-Mount Kit*.

## Finding additional information and technical support

In addition to this guide, there are other sources of documentation you can use in order to work with the WANJet platform. The information is available in the guides and documents described below. The following documentation is included with the WANJet platform.

- ◆ **WANJet 500 Appliance Quick Start Card**

The WANJet hardware includes the printed *WANJet 500 Appliance Quick Start Card*. This document provides basic instructions for a quick setup and initial configuration of the WANJet platform.

In addition to the documentation included with the platform, you can find comprehensive technical documentation using the following resources.

- ◆ **WANJet Appliance Administrator Guide**

The *WANJet® Appliance Administrator Guide* provides all the information the administrator needs to configure and manage the WANJet appliance. It introduces the concepts of optimization, Transparent Data Reduction (TDR), Application QoS, Type of Service, and Connection Interception (CI).

- ◆ **Release notes**

Release notes for the WANJet appliance are available in HTML format on the F5 Networks Technical Support web site, <http://tech.f5.com>. The release notes contain the latest information for the current version, including a list of new features and enhancements, a list of fixes, and a list of known issues.

- ◆ **Technical support through the World Wide Web**

The F5 Networks Technical Support web site, <http://tech.f5.com>, provides the latest release notes, technical notes, answers to frequently asked questions, updates to the guides (if available), and the Ask F5<sup>SM</sup> search engine.

## Stylistic conventions

To help you easily identify and understand important information, our documentation uses the stylistic conventions described below.

## Using the solution examples

Examples in this documentation use only private class IP addresses. When you set up the solutions we describe, you must use valid IP addresses suitable to your own network in place of our sample addresses.

## Identifying new terms

When we first define a new term, the term is shown in bold italic text. For example, the *Web UI* is the browser-based utility for administering the WANJet appliance.

## Identifying references to objects, names, and commands

We apply bold formatting to a variety of items to help you easily pick them out of a block of text. These items include web addresses, IP addresses, utility names, and portions of commands, such as variables and keywords. For example, to discover devices requires that you include at least one **<ip\_address>** or an **<ip\_subnet>** variable.

## Identifying references to other documents

We use italic text to denote a reference to another document. In references where we provide the name of a book as well as a specific chapter or section in the book, we show the book name in bold, italic text, and the chapter/section name in italic text to help quickly differentiate the two. For example, you can find information about setting up optimization policies in the *Advanced Configuration* chapter of the **WANJet® Appliance Administrator Guide**.

## Identifying command syntax

We show complete commands in bold Courier text. Note that we do not include the corresponding screen prompt, unless the command is shown in a figure that depicts an entire command line screen. For example, the following command shows how to trace the route of IP packets from the WANJet command line interface:

```
traceroute <ip_address>
```

Table 1.1 explains additional special conventions used in command line syntax.

Item in text	Description
\	Indicates that the command continues on the following line, and that users should type the entire command without typing a line break.
< >	Identifies a user-defined parameter. For example, if the command has <b>&lt;your name&gt;</b> , type in your name, but do not include the angle brackets.
	Separates parts of a command.
[ ]	Indicates that syntax inside the brackets is optional.
...	Indicates that you can type a series of items.
::=	Means <b>is defined as</b> . Indicates that an argument is followed by the description of the elements that you can use for the argument.

**Table 1.1** Command line syntax conventions





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## Installing the WANJet 500 Platform

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- Installing the hardware
- Powering up the WANJet 500 platform
- Configuring the addresses
- Connecting the cables



## Installing the hardware

After you have reviewed the hardware requirements and become familiar with the WANJet 500, you can install the unit.

This chapter includes detailed instructions on installing and setting up the WANJet platform. The same instructions appear in a briefer format in the *WANJet 500 Appliance Quick Start Card*. If you have already followed the instructions on the card, and have completed the installation successfully, you may not need to read this chapter. It describes the same installation procedure in more detail.

## Types of mounts

Two types of mounts are available for the WANJet 500: the standard front-rack mount that comes with the WANJet 500, and a rail mount that allows you to slide the unit in and out as needed. The installation of the WANJet 500 hardware differs depending on which type of mount you decide to use.

- ◆ **Standard front mount**

To install the WANJet 500 platform using the standard front-rack mount that comes with the hardware, follow the instructions in *To install the unit into a standard-mount rack*, on page 2-2.

- ◆ **Optional rail mount**

To install the WANJet 500 platform into a rail mount, first attach the included rail-mount kit. Then, you can install the unit into the rack. For details, refer to Appendix A, *Installing the WANJet Appliance Using the Rail-Mount Kit*.

Whichever mount you are using, read the following general recommendations before installing the WANJet 500.

## General recommendations for mounting a unit in a rack

We recommend that all units have 1U of extra space between them when mounted in a rack to allow for a rack mounting shelf, and to provide additional air circulation for cooling the unit.

Although not required, the 1U of space between units makes it easier to remove the unit from the rack in the event that the unit requires service. A 1U space between units also provides additional cable routing options.

We recommend that you allow about 4 inches (100 mm) of space from the front panel of the unit to the rack front or rack door. This provides enough room to route the cables without bending them excessively.

**◆ WARNING**

*This product is sensitive to electrostatic discharge (ESD). We recommend that when handling the unit, use proper ESD grounding procedures and equipment.*

## Installing the WANJet 500 hardware

To use the standard front mount to hold the WANJet 500 unit, follow the procedure in this section.

You may need a shelf or similar device to support the unit if a single person is installing the unit. To prevent personal injury or damage to the unit, we recommend having at least two people to perform the installation.

You can also install the unit onto any flat surface without having to install it into a rack. In that case, continue on to *Powering up the WANJet 500 platform*, on page 2-5.

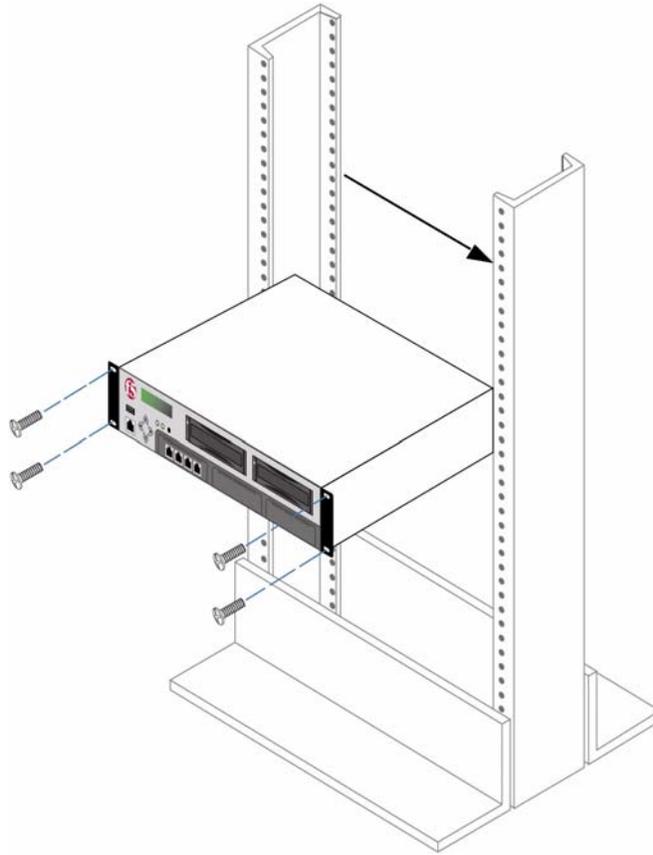
### **To install the unit into a standard-mount rack**

1. Attach the rack-mount ears to the unit, using four black screws per ear.
2. If desired, attach the handles to the rack-mount ears using the provided screws.
3. Lift the unit into place.
4. Secure the unit using the four rack-mounting screws that are provided.

You need to tighten the screws to secure the unit to the rack to provide adequate stability and to prevent the unit from falling out of the rack. Securing the unit to the rack with the screws also provides adequate grounding.

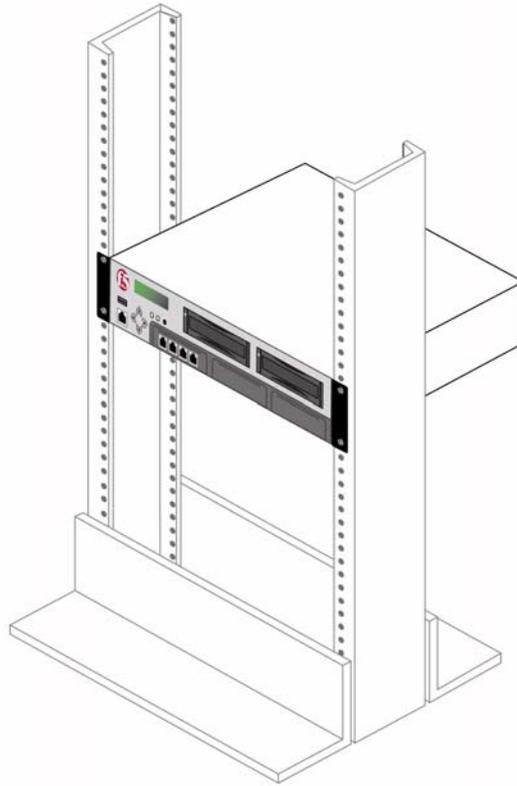
If the rack does not provide adequate support for the unit, you may need a shelf kit. We recommend that you use the shelf kit created by the rack manufacturer. (Some rack manufacturers provide shelf kits for their racks.)

Figure 2.1 shows the orientation of the WANJet 500 and the mounting screws for installation into a standard 19" rack.



**Figure 2.1** Platform orientation for rack mounting

Figure 2.2 shows the WANJet 500 after it has been installed in the rack.



**Figure 2.2** Platform installed in a 19" rack

Regardless of which mount type you use, complete the installation in this order:

- Power on the unit
- Configure the addresses on the WANJet platform
- Connect the cables and other hardware

We recommend that you configure the addresses before connecting the platform to the network.

## Powering up the WANJet 500 platform

After you have installed the WANJet 500 platform, you can power it up. Two power cords provide a redundant power supply.

### To power up the WANJet platform

1. Insert the two power cords into the two power supplies (numbers 5 and 6 in Figure 1.4, on page 1-6) on the back of the WANJet platform.
2. Plug each power cord into a separate power outlet (preferably to different power circuits).
3. Press the power switch on the back of the unit (number 4 in Figure 1.4, on page 1-6).  
The unit starts up, and you may hear a warning sound.

If one of the power cords is not connected, or fails, the unit continuously sounds a warning beep. To disable this sound, press the power supply alarm mute switch (number 3 in Figure 1.4, on page 1-6).

When the appliance is running, the LCD displays the default IP address of **192.168.168.100**. Wait approximately 10 more seconds for the operating system to finish loading.

## Configuring the addresses

After the WANJet platform is powered on and started up, you need to do some minimal configuration, such as entering the WANJet appliance IP address, its subnet mask, and default gateway. You can configure the addresses in one of two ways:

- Set the addresses using the four-key LCD keypad.
- Set the addresses using the **config** command from a serial console or PC.

The advantage of using the LCD keypad is that you do not have to connect another computer to the platform. When you finish the initial configuration on the LCD, you can log in to the Web UI from your computer as you normally would to manage the device.

The advantage of using a serial console or PC is that the configuration is easier from the command line than it is using arrow keys on the LCD keypad. Connecting the console or PC is easy, and a few additional commands are available from the command line.

It is up to you which method you prefer. The following procedures describe both methods. The procedure on using the LCD describes minimal configuration only. For details on the using the LCD, see *Operating the LCD panel*, on page 3-1. If you want to use the **config** command, skip to *To set the addresses using a serial console or PC*, on page 2-7.

### To set the addresses using the LCD keypad

1. Locate the LCD display on the front of the WANJet 500 platform. It should show the default IP address.
2. On the LCD keypad, press ►.  
The LCD displays **Menu**, followed by >**Admin**.
3. Press ►.  
The LCD displays **Admin**, followed by >**Configure**.
4. Press ►.  
The LCD displays **Configure**, followed by >**IP Address**.
5. Set the WANJet 500 IP address:
  - a) Press ► to display the IP address (default: **192.168.168.100**).
  - b) Press ► to move from digit to digit in the address, and use ▲ and ▼ to set the numbers in the address.
  - c) With the cursor on the last number on the right, press ►.  
The LCD displays **Configure**, followed by >**IP Address**.

6. Set the netmask:
  - a) Press ▼.  
The LCD displays: >**NetMask**.
  - b) Press ► to display the netmask (default: **255.255.255.000**) and set it as you did the IP address.
  - c) With the cursor on the last number on the right, press ►.  
The LCD again displays >**Netmask**.
7. Set the default gateway:
  - a) Press ▼.  
The LCD displays >**Gateway**.
  - b) Press ► to display the gateway address (default: **192.168.168.001**) and set it as you did the other addresses.
  - c) With the cursor on the last number on the right, press ►.  
The LCD again displays >**Gateway**.
8. Use the defaults for the other values. If using a separate subnet for management, you can optionally set the **Mgt IP Address**, **Mgt Netmask**, and **Mgt Gateway**. See the *WANJet® Appliance Administrator Guide* if you need additional details.
9. Save the values you set:
  - a) Press ▼ until you see >**Apply**.
  - b) Press ►.  
The LCD displays >**Apply Now?**
  - c) Press ► to apply the values.  
The LCD displays **Config Applying**, then **Config Applied** when complete. The LCD panel shows the IP address you configured for the WANJet platform.

Continue with the section called, *Connecting the cables*, on page 2-9.

### To set the addresses using a serial console or PC

1. Connect the PC or serial terminal to the WANJet platform using the RJ-45 to DB-9 serial port console cable supplied by F5 Networks.
  - a) Connect the DB-9 end to the PC or serial console.
  - b) Plug the RJ-45 end into the Console port (number 2 in Figure 1.3, on page 1-5).
2. Display a console window. On a PC, you can use HyperTerminal or an equivalent console emulator (set it to **9600** bits per second and **Xon/Xoff** for flow control).
3. When the appliance has finished booting, you should see the WANJet appliance login prompt. (If you do not see the login prompt, press Enter.)

4. Log in as **admin** with the default password of **admin**.  
A message displays a list of commands that you can use from the command line.
5. To start configuring the addresses, type **config**.
6. At the **Set WANJet IP** prompt, type the IP address of the WANJet appliance (default is **192.168.168.100**).
7. At the **Set WANJet NetMask** prompt, type the netmask you want to assign to the WANJet appliance (default is **255.255.255.0**).
8. At the **Set WANJet Gateway** prompt, type the IP address of the WANJet appliance gateway (default is **192.168.168.001**).  
The media types are displayed.

```

Type   0       for   Auto Sense
Type  100F    for   100BaseTX Full-Duplex
Type  100H    for   100BaseTX Half-Duplex
Type  10F     for   10BaseT Full-Duplex
Type  10H     for   10BaseT Half-Duplex
    
```

9. To set the media type, type the appropriate alphanumeric code that represents the desired speed and duplex setting for the eth0 (LAN) and eth1 (WAN) media types. You can use the default value of **Auto Sense** unless you are familiar with the settings required in your network environment and want to change them.
10. To manage the WANJet platform from a separate management subnet, you can optionally set the IP addresses for the **WANJet Management IP**, **WANJet Management NetMask**, and **WANJet Management Gateway**. (These options are blank, by default.)
11. Determine how you want to allow access to the Web UI.
  - To allow access from one IP address, at **Set the IP of the first machine allowed to access WANJet UI**, type the IP address of the only computer that you want to access the Web UI.
  - To allow access from multiple IP addresses, leave this blank (the default). In the navigation pane, expand **Security** and click **IP Access Control**. See *Granting Web UI access* in the **WANJet® Appliance Administrator Guide**.
  - To allow access from any browser on any computer in your network (using the correct user name and password), leave this field blank (the default).
12. Type **exit** to disconnect the session.  
Within a few seconds, the LCD panel displays the IP address you configured for the WANJet appliance.

Continue with the section called, *Connecting the cables*, on page 2-9.

## Connecting the cables

After you have configured the WANJet addresses, you can connect the network cables. Note that you need to follow this procedure regardless of the type of mount you installed (front mount or rail mount).

### To connect the cables

1. Connect the gray Ethernet CAT-5e cable to the LAN1 port on the front of the WANJet platform. Connect the other end to your LAN switch.
2. Connect the red crossover CAT-5e cable to the WAN1 port on the front. Connect the other end to your WAN router.
3. Optionally, connect an Ethernet cable to the Management port on the front of the WANJet platform. Connect the other end to your management network for out-of-band management.

You can now log on to the WANJet appliance remotely by using the Web UI, and begin activating the license. For details about how to log on and activate the license, refer to the *WANJet® Appliance Administrator Guide*.





# 3

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## Using the WANJet 500 LCD and LEDs

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- Operating the LCD panel
- Understanding LED behavior



## Operating the LCD panel

The liquid crystal display, or LCD panel, lets you control the WANJet 500 without attaching a serial or network cable. The LCD panel provides menus with options to configure certain features on the system. The following options are available on the LCD panel under the Admin menu:

- Configure
- Utils
- Restart
- Shutdown
- Exit

Some of the configuration options found on the LCD are also available through the Web UI, the browser-based interface to the WANJet appliance. Refer to the *WANJet® Appliance Administrator Guide* for details on using the Web UI.

Table 3.1 summarizes the LCD options and their default values.

LCD menu	Options	Default value	Description
Configure	IP Address	192.168.168.100	Sets the IP address for the WANJet appliance on the network. Also set on the Local WANJet screen in the Configuration settings of the Web UI.
	NetMask	255.255.255.000	Sets the netmask for the WANJet appliance on the network. Also set on the Local WANJet screen in the Configuration settings of the Web UI.
	Gateway	192.168.168.001	Specifies the IP address of the gateway. Also set on the Local WANJet screen in the Configuration settings of the Web UI.
	LAN speed and duplex	Auto Sense	Sets the speed (in Mbps) and duplex mode (full or half) for the network card connecting to the LAN. If you use the Auto Sense setting, the WANJet appliance attempts to match the characteristics of the network device it connects to from the LAN port (for example, the LAN router).  Also set on the Interfaces screen in the Configuration settings of the Web UI.
	Auto Sense 1000 Full 100 Full 100 Half 10 Full 10 Half		
	WAN speed and duplex	Auto Sense	Sets the speed (in Mbps) and duplex mode (full or half) for the network card connecting to the WAN. If you use the Auto Sense setting, the WANJet appliance attempts to match the characteristics of the network device it connects to from the WAN port (for example, the WAN router).  Also set on the Interfaces screen in the Configuration settings of the Web UI.
Auto Sense 1000 Full 100 Full 100 Half 10 Full 10 Half			

**Table 3.1** WANJet 500 LCD menus and options

LCD menu	Options	Default value	Description
Configure (continued)	Mgt IP Address	No IP address specified	Sets the management IP address if managing the WANJet platform on the management network (optional).  Also set on the Local WANJet screen in the Configuration settings of the Web UI.
	Mgt Netmask	No IP address specified	Sets the netmask if managing the WANJet appliance on the management network (optional).  Also set on the Local WANJet screen in the Configuration settings of the Web UI.
	Mgt Gateway	No IP address specified	Sets the gateway IP address if managing the WANJet appliance on the management network (optional).  Also set on the Local WANJet screen in the Configuration settings of the Web UI.
	Allowed IP	No IP address specified	Specifies the IP address of the only computer that you can use to log in to the WANJet Web UI. If you leave this option empty, any computer on your network can access the Web UI (using the correct user name and password).  To allow or deny more than one IP address, use the <b>IP Access Control</b> option on the Security screen in the Web UI.
	Apply	Not applicable	Saves the configuration changes made during this session.
	Reset	Not applicable	Discards the configuration changes made during this session.
Utils	Ping <IP address>	None	Tests whether an IP address is reachable across a network.
	Active Operational mode On/Off	On (check box is selected)	Turns WANJet appliance optimization on or off. Also set on the Operational Mode screen in the Optimization settings of the Web UI.
	Send snapshot	Not applicable	Sends a current snapshot of the system to the email address configured on the Email Alert screen in the Configuration settings of the Web UI. The snapshot is a text file containing statistics, configuration information, logs, and other useful information. Also available in the Web UI.
Restart	Restart Now?	Not applicable	Reboots the WANJet platform. Also available on the Shutdown & Restart screen in the System settings of the Web UI.
Shutdown	Shutdown Now?	Not applicable	Shuts down the WANJet platform and turns off the power. Also available on the Shutdown & Restart screen in the System settings of the Web UI.
Exit	Exit Now?	Not applicable	Ends the session and returns to the initial menu.

**Table 3.1** WANJet 500 LCD menus and options (Continued)

## Configuring the WANJet 500 using the LCD

You can use the Configure menu on the LCD to perform initial configuration of the WANJet 500 platform. Initial configuration includes setting the WANJet 500 IP address, netmask, gateway. For information on initial setup, see Chapter 2, *Installing the WANJet 500 Platform*.

## Administering the WANJet 500 using the LCD

You can perform several basic administration tasks from the LCD keypad after the WANJet 500 is up and running.

### ◆ Note

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*You should do most of the administration of the appliance using the Web UI as described in the **WANJet® Appliance Administrator Guide**.*

### To ping another device on the network

1. On the LCD keypad, press ► twice.  
The LCD displays **Menu**, followed by >**Configure**.
2. Press ▼ once to go to **Utils**, and then press ► twice.  
The LCD displays **Ping**, followed by an IP address with the cursor on the first number.
3. Set the IP address to ping:
  - a) Press ► to move from digit to digit in the address, and use ▲ and ▼ to set the numbers in the address.
  - b) With the cursor on the last number on the right, press ►.  
The LCD displays **Pinging**, followed by the IP address you specified. The LCD shows whether the ping was successful.

### To set the operational mode to active or inactive

1. On the LCD keypad, press ► twice.  
The LCD displays **Menu**, followed by >**Configure**.
2. Press ▼ once to go to **Utils**, press ► once, and then press ▼ once.  
The LCD displays **Active**, followed by a small check box. A check in the box means the WANJet appliance is active, and no check means inactive, and traffic is not being optimized.
3. Press ► once to change the operational mode from On (Active) to Off (Inactive).

### **To send a snapshot of the WANJet appliance to an email address**

Before you can use the LCD to take a snapshot of the WANJet appliance, you must set up an email address on the **Email Alert** screen in the **Configuration** settings of the Web UI. Refer to the section, *Email Alerts*, in the *WANJet® Appliance Administrator Guide*.

1. On the LCD keypad, press ► twice.  
The LCD displays **Menu**, followed by >**Configure**.
2. Press ▼ once to go to **Utils**, press ► once, and then press ▼ twice to display **Send Snapshot**.
3. Press ► once to take a snapshot of the state of the WANJet appliance, and mail it to the email address specified in the Web UI.

### **To restart the WANJet appliance**

1. On the LCD keypad, press ► twice.  
The LCD displays **Menu**, followed by >**Configure**.
2. Press ▼ twice to go to **Restart**.
3. Press ► once.  
The LCD displays **Restart Now?**
4. Press ► once to restart the WANJet appliance.

### **To shut down the WANJet appliance**

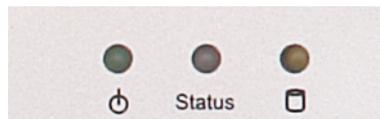
1. On the LCD keypad, press ► twice.  
The LCD displays **Menu**, followed by >**Configure**.
2. Press ▼ three times to go to **Shutdown**.
3. Press ► once.  
The LCD displays **Shutdown Now?**
4. Press ► once to shutdown the WANJet appliance.  
The system shuts down, and then power turns off.

## Understanding LED behavior

This section describes the behavior of the LED indicators and the network interface card LEDs on the WANJet 500 platform.

### LED indicators

There are three LED indicators on the faceplate of each unit, as shown in Figure 3.1.



*Figure 3.1 LED indicators*

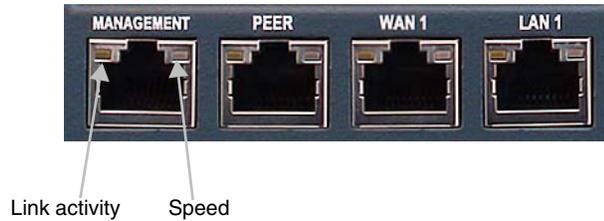
Each LED indicator serves a specific function, as defined in Table 3.2.

Label	Function	Description
	Power	Reports the power status: on (green) or off (none). Off indicates that the unit is not turned on, or that there is no power connected to the unit.
Status	System status	Reports the state of the system: on (green) or off (none).
	Hard disk drives	Reports the status of the hard drives: blinking (yellow) when data is accessed, or off (none) when the drives are idle.

*Table 3.2 LED indicator functions*

## Network interface card LEDs

The WANJet 500 has four network interface card (NIC) ports, each of which have two LEDs. Figure 3.2 shows the ports and shows where the LEDs are located on the Management port.



**Figure 3.2** Network interface card LEDs

Table 3.3 provides a description of the LEDs on the NICs.

LED	Description
Link activity	Displays the status of the link: active (green) or off (none).
Speed	Indicates the speed of the connection: Gigabit (amber), 100BaseT (green), or 10BaseT (off).

**Table 3.3** LEDs on WANJet 500 NIC ports



# 4

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## Maintaining the WANJet 500 Platform

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- Reviewing maintenance options
- Changing a power supply
- Replacing a hard drive



## Reviewing maintenance options

The WANJet 500 platform contains several field replaceable units (FRUs). The FRUs provide the ability to replace parts of the system without replacing the complete system. The FRUs currently available for this platform are:

- Power supply replacement
- Hard drive replacement

## Changing a power supply

The WANJet 500 platform has two hot swappable redundant power supplies. You can replace the power supply in the event of a power supply failure.

## Replacing the power supply

You do not need special tools to replace a power supply. Because the power supply is a redundant, hot swappable power supply, you can replace it while the system is running.

### To replace a power supply

1. On the back panel of the device, locate the power supply that you want to replace.
2. Remove the power cable from the power supply that you want to replace.  
A power supply alarm sounds, indicating that a power supply was removed or is not receiving power.
3. To silence the alarm, press the alarm mute switch (number 3 in Figure 1.4, on page 1-6) that is located to the left of the power supply array.
4. Each power supply is secured to the chassis by a self-clinching knurled fastener and release lever. Loosen the knurled fastener by turning it counterclockwise.
5. Move the release lever to the left and pull the power supply out of the system.
6. Slide the new power supply into the power supply slot.  
The power supply is connected to the system when you slide it completely into the chassis.
7. Tighten the knurled fastener into place by turning it clockwise.
8. Re-attach the power cable.



*Figure 4.1 Power supply partially removed from the system*

Figure 4.1 shows a picture of the unit with the power supply partially removed from the WANJet 500 platform.

## Replacing a hard drive

The WANJet 500 platform includes one hot swappable hard drive and has a slot for an optional second hot swappable hard drive. You can change or replace a hard drive tray as part of the routine maintenance of the unit, or in the event of a drive failure.

## Removing and replacing a hard drive tray

You do not need special tools to replace a hard drive tray.

### **To remove a hard drive**

1. Each hard drive tray is secured by a simple switch. To unlock the switch, turn the switch counterclockwise from Lock to Open.
2. Push the Lock/Open switch slightly to the left to release the tray lever.  
The tray lever extends from the drive tray.
3. Grip the tray lever and pull the drive tray out of the system.



*Figure 4.2 Removable drive tray and hard drive*

Figure 4.2 shows a picture of the drive tray assembly partially removed from the WANJet appliance.

### **To replace a hard drive**

After you remove a hard drive using the procedure *To remove a hard drive*, on page 4-2, you can replace a hard drive using the following procedure.

1. Slide the new tray and hard drive into the chassis.
2. After the drive and tray are secured in the chassis, turn the dial on the front of the drive clockwise to Lock to secure the tray lever.





# 5

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## Understanding Environmental Guidelines for the WANJet 500 Platform

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- Environmental requirements



## Environmental requirements

Before you install the WANJet 500 platform, review the following guidelines to make sure that you are installing and using the appliance in the appropriate environment.

### General environmental guidelines

A WANJet 500 platform is an industrial network appliance, designed to be mounted in a standard 19-inch rack. To ensure safe installation and operation of the unit, adhere to these recommendations:

- Install the rack according to the manufacturer's instructions, and check the rack for stability before placing equipment in it.
- Build and position the rack so that after you install the WANJet 500, the power supply and the vents on both the front and back of the unit remain unobstructed. The WANJet 500 must have adequate ventilation around the unit at all times.
- Do not allow the air temperature in the room to exceed 40° C.
- Do not plug the unit into a branch circuit shared by more electronic equipment than the circuit is designed to manage safely at one time.
- This product is sensitive to electrostatic discharge (ESD). We recommend that when you install or maintain the unit, you use proper ESD grounding procedures and equipment.



**The unit must be connected to Earth ground, and it should have a reliable ground path maintained at all times.**

**L'appareil doit être mis à la terre et disposer en tout temps d'une voie fiable vers la terre.**



The controller contains a lithium battery. There is danger of an explosion if you replace the lithium battery incorrectly. We recommend that you replace the battery only with the same type of battery originally installed in the unit, or with an equivalent type recommended by the battery manufacturer. Be sure to discard all used batteries according to the manufacturer's instructions.

Le contrôleur contient une pile au lithium. Le remplacement incorrect de la pile au lithium risque de provoquer une explosion. Nous vous recommandons de remplacer la pile uniquement par un type de pile identique à celui qui était installé à l'origine dans l'appareil ou par un type équivalent recommandé par le fabricant de pile. Assurez-vous de jeter toutes les piles usées conformément aux instructions du fabricant et aux lois locales.



This equipment is not intended for operator serviceability. To prevent injury and to preserve the manufacturer's warranty, allow only qualified service personnel to service the equipment.

Cet appareil n'a pas été conçu de sorte à être réparé par l'utilisateur. Pour prévenir les blessures et préserver la garantie du fabricant, l'appareil ne doit être réparé que par du personnel de réparation qualifié.



# 6

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## Reviewing Hardware Specifications

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- WANJet 500 platform specifications



## WANJet 500 platform specifications

The following specifications apply to the WANJet 500 platform.

Item	Specification
<b>Dimensions</b>	550mmH x 431mmW x 88mmD (3.5"H x 17"W x 22"D) per unit 2U industry standard rack-mount chassis
<b>Weight</b>	14.0 kilograms (30.87 lbs.) per unit
<b>Processor</b>	Intel® Xeon Processor 3.2 GHz
<b>Power Supply</b>	2 x 460W redundant hot swappable power supplies
<b>Input Voltage</b>	90–264 VAC, +/-10%
<b>Maximum Power Consumption</b>	460 W
<b>Maximum Heat Output</b>	1570 BTUs
<b>Network Interfaces</b>	4 Gigabit Ethernet ports
<b>Hard Drive Capacity</b>	250 GB dual 3.5" hot swappable SATA hard drives (one included; second optional drive available)
<b>LCD module</b>	LCD display and 4-button keypad
<b>RAM</b>	4 GB DDR
<b>Operating Temperature</b>	0° to 40° C (32° to 104° F)
<b>Non-operating ambient temperature range</b>	Temperature -40° to 70° C (-40° to 158° F) at a relative humidity of 5% to 95%
<b>Relative Humidity</b>	5% to 95% at 40° C (104° F)
<b>Hazardous Substance Compliance</b>	RoHS compliant
<b>Safety Agency Approval</b>	UL/CUL/CE EMC: FCC Class B
<b>Electromagnetic Emissions Certifications</b>	FCC Part 15 Class A EN 55022 Class A EN 55024 EN 61000-3-2 EN 61000-3-3 VCCI Class A

*Table 6.1 WANJet 500 platform specifications*

### ◆ Important

*Specifications are subject to change without notification.*





# A

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## Installing the WANjet Appliance Using the Rail-Mount Kit

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- Installing the rail-mount kit



## Installing the rail-mount kit

The WANJet 500 platform includes two types of mounting devices:

- Rack-mount ears
- Rail-mount kit

The rack-mount ears are suitable for a standard type of mount. With rack-mount ears, you can bolt the unit directly into the rack.

As an option, you can use an alternative type of mount, called a *rail mount*, which allows you to slide the unit in and out of the rack. To install this rail-mount kit and install the unit into the rack, you need to perform the following tasks:

- Install the rail-mount kit hardware.
- Install the unit into the rack.
- Connect cables and other hardware.

To perform these tasks, follow the instructions in this appendix.

### **WARNING**

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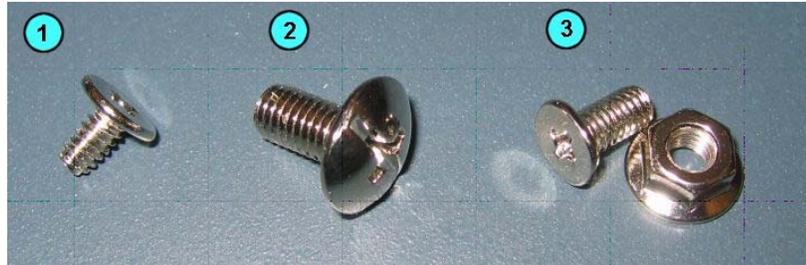
*The rail-mount installation procedure requires two people to lift and install the equipment.*

## Installing the kit hardware

Installing the rail-mount kit involves attaching rail units to the system and attaching rails to the server rack. The rail-mount kit consists of the following parts:

- **Two inner rails that attach to either side of the unit**  
After you attach the rails to the WANJet appliance, these inner rails slide into the outer rails that you install onto the rack.
- **Four mounting brackets that attach to the rack**  
The mounting brackets attach to each post on the rack. The outer rails attach to the brackets.
- **Two outer rails that attach to the mounting brackets on the rack**  
The inner rails that you install on the sides of the unit slide into these outer rails.
- **Set of eight screws for inner rail mount**  
The eight included pan head Phillips screws attach the inner rail mounts to the WANJet appliance.
- **Set of eight screws for rail-mount brackets**  
The eight included pan head Phillips/straight slot hybrid screws attach the rail-mount brackets to the rack. The outer rails fit into these brackets.
- **Set of eight nuts and bolts for outer rail mount**  
Use the included eight pan head Phillips screws and eight flange nuts to mount the outer rails to the rail-mount brackets.

Figure A.1 shows the mounting screws that are included with the kit hardware.



**Figure A.1** The three types of mounting screws included with the WANJet appliance: (1) pan head Phillips, (2) pan head Phillips/straight slot hybrid, (3) pan head Phillips and flanged nut.

## Attaching the inner rails and stops

To install the optional rail-mount kit, you must first attach an inner rail and a stop to each side of the unit. Figure A.2 shows the unit with an inner rail attached to one side.



**Figure A.2** An inner rail attached to the WANJet 500

### To attach the inner rails and stops to the unit

1. Prior to attaching the inner rail, separate the rail slides. The inner rail shown in Figure A.2 slides into the outer rail that attaches to the rack using the rail-mount brackets.
2. Attach an inner rail to each side of the unit, as shown in Figure A.2, using the pan head Phillips screws included with the system. Note that each side requires four screws.

## Attaching the outer rail mounts

The second task in installing the rail-mount kit involves attaching four mounting brackets to the rack. The mounting brackets provide support for the outer rails.

After you have installed the inner rails and stops to the unit, you can attach the four mounting brackets to the rack. The mounting brackets provide support for the outer rails.

### **To attach the mounting brackets**

Attach a mounting bracket to each post in the rack, as shown in Figure A.3, using the pan head Phillips/straight slot hybrid screws included with the system. Ensure that you use two screws per mount and that you align each mounting bracket at the same height on each rack post.



*Figure A.3 Mounting bracket attached to rack post*

## Attaching the outer rails

After you have installed the inner rails and stops to the unit, you can attach the two outer rails to the rack.

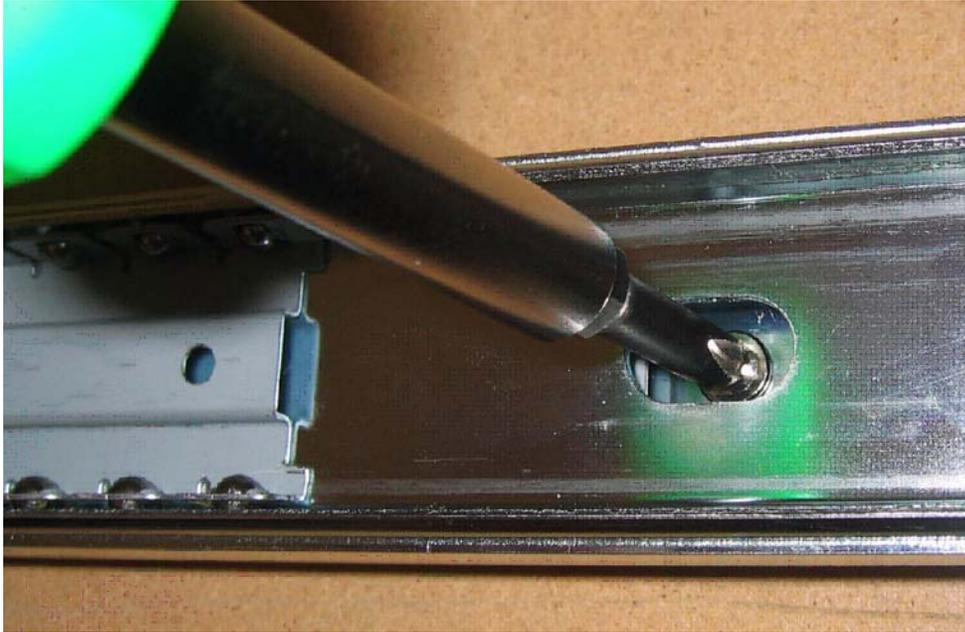
Each outer rail fits into the bracket attached to each post. Use the pan head screws and flanged nuts to attach the outer rail to the mounting brackets.

### To attach the outer rails to the rack

1. On one side of the unit, place the rail into the rail mount, and ensure that the rail slide is not extended.
2. Attach the rail to the front of the mount, as shown in Figure A.4.
3. Extend the rail to reveal additional screw holes.
4. Attach the rail to the mount as shown in Figure A.5.
5. Repeat this procedure for the rail on the other side.



*Figure A.4 Attaching the outer rail to front of the mounting bracket*



*Figure A.5 Attaching the outer rail after extending the rail slide*

## Installing the unit into a rail-mount rack

After you have attached the inner rails to the device, and mounted the outer rails in the rack using the mounting brackets, you can install the device.

### **To install the unit into the rack**

Slide the unit into the rack, fitting the inner rails of the unit to the outer rails of the rack.

## Connecting cables and other hardware

After you have installed the unit into the rack, you need to connect the cables and other hardware. To perform these tasks, see *Connecting the cables*, on page 2-9.





# B

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## Platform-Specific Hazardous Substance Levels, for China

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- WJ500, WA4500, and EM3000 platforms



## WJ500, WA4500, and EM3000 platforms

This table lists hazardous substances controlled by China, and shows how the F5 Networks® WJ500, WA4500, and EM3000 platform components conform to the standards.

### WJ500, WA4500, EM3000 平台有害物质表

WJ500, WA4500, EM3000 Platform Hazardous Substance Table

部件名称 Part Name	有毒有害物质 Hazardous Substance					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	铬 6+ (Cr <sup>6+</sup> )	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
金属部件 Metal Parts	o	o	o	o	o	o
电源 Power Supplies	x	o	o	o	o	o
可移动的卡片 Removable Cards	o	o	o	o	o	o
主板 Motherboard	x	o	o	o	o	o
散热器部件 Heatsink Assemblies	o	o	o	o	o	o
闪存卡 Compact Flash Card	x	o	o	o	o	o
硬盘 Hard Drives	x	o	o	o	o	o
风扇装置 Fan Assembly	o	o	o	o	o	o
港彙纜 Port Assembly	o	o	o	o	o	o
<p>o: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006标准规定的限量要求以下 Expresses that this hazardous substance is below the specified limits as described in SJ/T 11363-2006.</p> <p>x: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006标准规定的限量要求 (企业可在此处, 根据实际情况对上表中打“x”的技术原因进行进一步说明) Expresses that this hazardous substance is above the specified limits as described in SJ/T 11363-2006.</p>						

除非另外特别的标注,此标志为针对所涉及产品的环保使用期标志. 某些零部件会有一个不同的环保使用期(例如,电池单元模块)贴在其产品上.

此环保使用期限只适用于产品是在产品手册中所规定的条件下工作.

The Environmentally Friendly Use Period (EFUP) for all enclosed products and their parts is per the symbol shown here, unless otherwise marked. Certain parts may have a different EFUP (for example, battery modules) and so are marked to reflect such. The Environmentally Friendly Use Period is valid only when the product is operated under the conditions defined in the product manual.







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# Glossary

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**active unit**

In a redundant system, the active unit is the system that currently optimizes connections. If the active unit in the redundant system fails, the standby unit assumes control and begins to optimize connections. See also *redundant system*.

**Application QoS**

Application QoS provides better service for specific data flows by configuring policies that can adjust the bandwidth consumed by specific types of network traffic (also referred to as *traffic shaping*). This way, you can use the network bandwidth optimally for critical network traffic. See also *Quality of Service (QoS) level*.

**Connection Interception (CI)**

Connection Interception (CI) intercepts and resets connections that were initiated before the WANJet appliance became active on the network.

**failover**

Failover is the process whereby a standby unit in a redundant system takes over when a software failure or a hardware failure is detected on the active unit.

**field replaceable unit (FRU)**

An FRU is a part of the appliance that is replaceable. You can order FRUs to replace certain parts of the unit including the fan tray, fan filter, drive tray, and power supply.

**generic routing encapsulation**

Generic routing encapsulation (GRE) tunneling typically connects private IP networks over an Internet connection using two routers (or switches) that support GRE encapsulation.

**Layer 1 through Layer 7**

Layers 1 through 7 refer to the seven layers of the Open System Interconnection (OSI) model. Thus, Layer 1 represents the physical layer, Layer 2 represents the data-link layer, Layer 3 represents the IP layer, and Layer 4 represents the transport layer (TCP and UDP). Layer 5 manages connections between applications, and Layer 6 represents the presentation layer. Layer 7 represents the application layer, handling traffic such as HTTP and SSL.

**LCD**

LCD stands for liquid crystal display. An LCD panel is available on the front of the WANJet 500 platform. You can use the LCD and its associated keypad to configure the LAN, WAN, and Management ports on the unit and perform basic administration tasks.

**LED indicators**

The LED indicators on the front of the WANJet 500 are lights that show the status of the system.

**Management port**

The Management port on the front of the WANJet 500 can connect to the management network, if your organization is using out-of-band management.

**NIC**

A network interface card (NIC) is an expansion board used to connect a computer to a network.

**OSI model**

See *Layer 1 through Layer 7*.

**Peer port**

The Peer port on the front of the WANJet 500 is an Ethernet port that can connect using a crossover cable to a second WANJet 500 to form a redundant system. See also *redundant system*.

**Quality of Service (QoS) level**

The Quality of Service (QoS) level is a means by which network equipment can identify and treat traffic differently based on an identifier. Essentially, the QoS level specified in a packet enforces a throughput policy for that packet. See also *Application QoS*.

**rail mount**

A type of mount that attaches rails to the sides of the unit so that you can slide it in and out of the rack.

**redundant system**

Redundant system refers to a pair of units that are configured for failover. In a redundant system, there are two units, one running as the active unit and one running as the standby unit. If the active unit fails, the standby unit takes over and manages connection requests.

**router**

A router is a Layer 3 networking device. If no VLANs are defined on the network, a router defines a broadcast domain.

**SSL (Secure Sockets Layer)**

SSL is a network communications protocol that uses public-key technology as a way to transmit data in a secure manner.

**standby unit**

A standby unit in a redundant system is a unit that is always prepared to become the active unit if the active unit fails.

**Transparent Data Reduction™ (TDR)**

TDR technology provides a dramatic reduction in the amount of bandwidth consumed by repeated data transfers across a WAN link.

**Type of Service (ToS) level**

The Type of Service (ToS) level is another means, in addition to the Quality of Service (QoS) level, by which network equipment can identify and treat traffic differently based on an identifier.

**WAN (wide area network)**

A WAN is a computer network that spans a large geographic area, and typically consists of two or more local area networks (LANs). A WAN may also include public or shared user networks. The most well-known example of a WAN is the Internet.

**Web UI**

The Web UI is the interface to the WANJet appliance through which you can configure it and monitor network activity.





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