



CHAPTER 1

Introducing the Cisco Wide Area Virtualization Engine 7541, 7571, and 8541

This chapter provides a basic functional overview of the Cisco Wide Area Virtualization Engine 7541, 7571, and 8541 (WAVE-7541, WAVE-7571, and WAVE-8541) appliance and describes the hardware, major components, and front and back panel indicators and controls.

This chapter contains the following sections:

- [Supported Products](#)
- [Hardware Features](#)
- [Connecting a Console Terminal](#)

Supported Products

The WAVE-7541, WAVE-7571, and WAVE-8541 appliance supports Cisco Wide Area Application Services (WAAS) software version 4.4.1 and later releases.

Hardware Features

This section illustrates and describes the front and back panel controls, ports, and LED indicators on the WAVE-7541, WAVE-7571, and WAVE-8541.

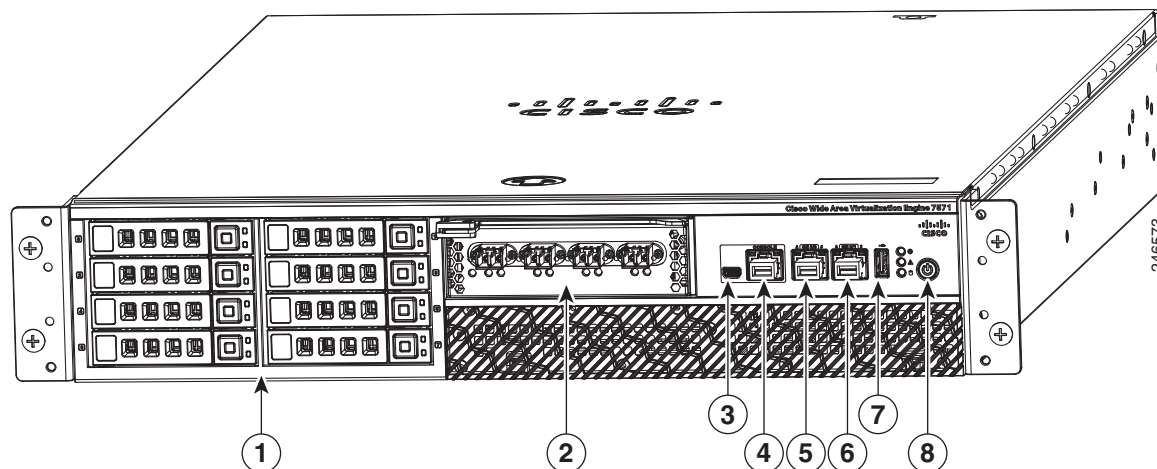
This section contains the following topics:

- [Front Panel Components and LEDs](#)
- [Back Panel Components and LEDs](#)
- [Location of Ports and Connectors](#)

Front Panel Components and LEDs

Figure 1-1 shows the front panel components.

Figure 1-1 Front Panel



| | | | |
|---|----------------------------------|---|------------------------------|
| 1 | Hard drive bays 0-7 (SAS device) | 5 | 10/100/1000 GE 0/0 connector |
| 2 | Interface Module slot | 6 | 10/100/1000 GE 0/1 connector |
| 3 | Console port (mini-USB) | 7 | External USB port |
| 4 | Console port (RJ-45) | 8 | Power On button |

Figure 1-2 shows the front panel LEDs.

Figure 1-2 Front Panel LEDs

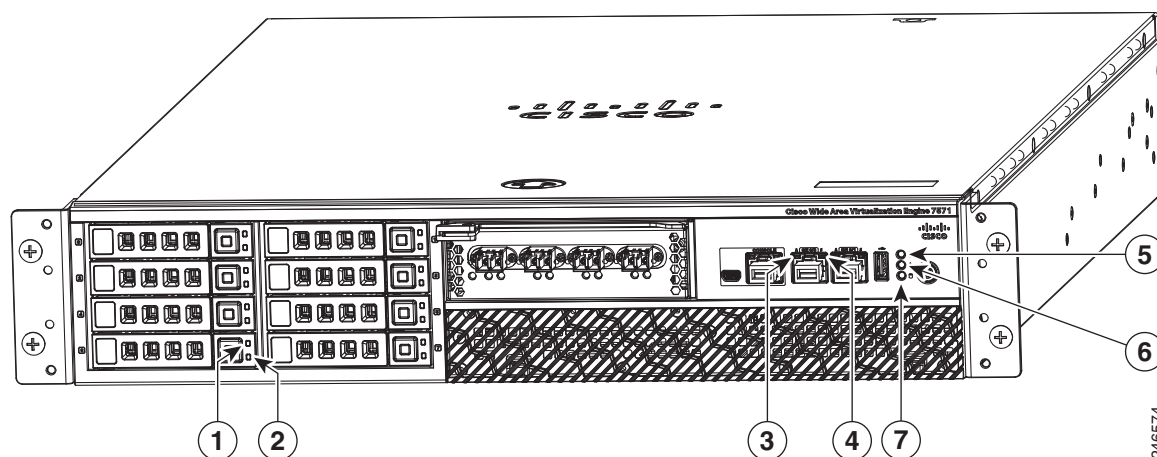


Table 1-1 describes the front panel LEDs and their functions.

Table 1-1 Front Panel LEDs

| LED | | Color | State | Description |
|-----|----------------------|----------|-----------------|--|
| 1 | Drive activity LED | Green | Blinking | Drive activity is normal. |
| | | Green | Blinking 1Hz | Drive locate. |
| | | — | Off | No reading/writing, no activity. |
| 2 | Drive status LED | Orange | Blinking 1Hz | Rebuilding. |
| 3 | NIC link/activity | Green | On | Link exists. |
| | | Blinking | Off | Activity exists. |
| | | — | Off | No link detected. |
| 4 | NIC speed | — | Off | 10Mbps connection. |
| | | Green | On | 100Mbps connection. |
| | | Yellow | On | 1000Mbps connection. |
| 5 | System power LED | Green | On | System is on. |
| | | — | Off | Power cord is not attached or power supply failure has occurred. |
| 6 | System fault LED | Yellow | On | System has detected a fault. For more information, see Chapter 6, “Troubleshooting the System Hardware.” |
| | | — | Off | System operation is normal. |
| 7 | Storage activity LED | Green | Blinking | Drive activity is normal. |
| | | Orange | On | Drive failure has occurred. |

Back Panel Components and LEDs

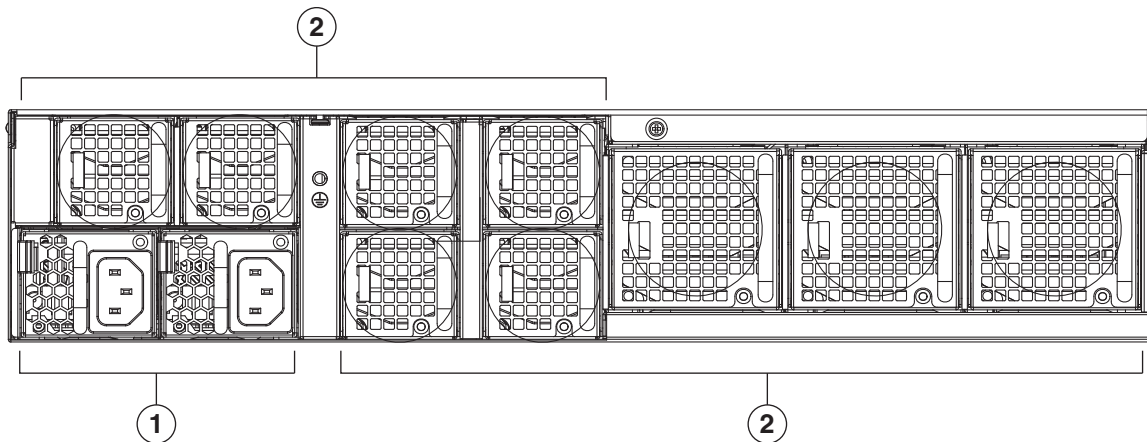
Figure 1-3 shows the back panel components.



Note

To monitor the boot process in normal operation, use the console port.

Figure 1-3 Back Panel Components



| | | | |
|----------|---|----------|---|
| 1 | Power supplies (0 and 1, left to right) | 2 | Fans <ul style="list-style-type: none"> • Large: 1 - 3 (right to left) • Small: 4 - 9 (right to left, bottom row first) |
|----------|---|----------|---|

Figure 1-4 shows the back panel LEDs.

Figure 1-4 Back Panel LEDs

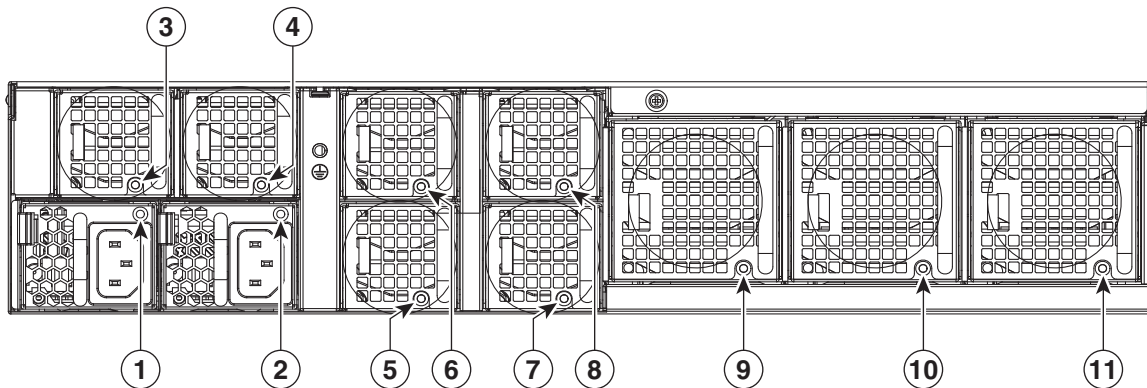


Table 1-2 describes the back panel LEDs and their functions.

Table 1-2 Back Panel LEDs

| LED | | Color | State | Description |
|-------|---------------------|-----------|----------|---|
| 1, 2 | Power supply status | — | Off | No AC power to all power supplies. |
| | | Red | Blinking | No AC power to this power supply. |
| | | Green | Blinking | AC power is present, only standby output on. |
| | | Green | On | Power supply DC outputs on and OK. |
| | | Red | On | Power supply failure. For more information, see Chapter 6, “Troubleshooting the System Hardware.” |
| | | Red/Green | Blinking | Power supply warning. For more information, see Chapter 6, “Troubleshooting the System Hardware.” |
| 3- 11 | Fan status | Orange | On | Alarm. |
| | | Orange | Blinking | Alarm. Fan speed too low. |
| | | — | Off | Normal state. |

Location of Ports and Connectors

The WAVE appliance supports two Ethernet connectors and two Console ports on the front of the appliance.

[Figure 1-3](#) shows the back panel ports and connectors.



Warning

To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone-network voltage (TNV) circuits. LAN ports contain SELV circuits, and WAN ports contain TNV circuits. Some LAN and WAN ports both use RJ-45 connectors. Use caution when connecting cables. Statement 1021

This section contains the following topics:

- [Ethernet Port Connectors](#)
- [Console Port Connectors](#)

Ethernet Port Connectors

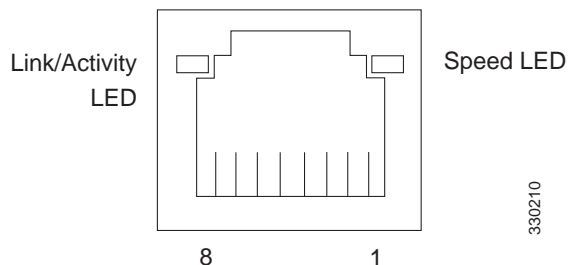
Connect a Category 3, 4, or 5 unshielded twisted-pair cable to an Ethernet connector. 100BASE-TX and 1000BASE-T Fast Ethernet standards require Category 5 or higher cabling.

The WAVE-7541, WAVE-7571, and WAVE-8541 appliance has two Ethernet connectors that are attached to the Ethernet controllers (see [Figure 1-1](#) and [Figure 1-2](#)). The Ethernet controllers are integrated on the system board. They provide an interface for connecting to a 10-Mbps, 100-Mbps, or 1-Gbps network and provide full-duplex (FDX) capability, which enables simultaneous transmission and reception of data on the network. If the Ethernet ports in the server support auto negotiation, the controllers detect the data-transfer rate (10BASE-T, 100BASE-TX, or 1000BASE-T) and duplex mode (full duplex or half duplex) of the network and automatically operate at that rate and mode. You do not have to set any jumpers or configure the controllers.

**Note**

There is a third RJ45 connector on the front of the appliance (see [Figure 1-1](#)). This is a console port. Do not connect this port to your network.

Figure 1-5 Ethernet Port Connector



Console Port Connectors

The WAVE-7541, WAVE-7571, and WAVE-8541 appliance has two console port connectors, serial and mini-USB (see [Figure 1-1](#)). Use a console port connector to access the command-line interface (CLI) for controlling the WAVE appliance.

For information on connecting a console terminal to the mini-USB console port, see [Connecting a Console Terminal](#).

Connecting a Console Terminal

The WAVE appliance has both serial and mini-USB console ports (see [Figure 1-1](#)). These ports provide administrative access to your appliance with a console terminal or PC.

**Note**

You cannot use both ports at the same time. If both ports are connected, the mini-USB port takes priority.

**Note**

When using the mini-USB port to connect to a Windows-based PC for the first time, you must install the Windows USB driver on the PC first. See [Installing the Cisco USB Driver](#).

Cabling

The following cables included with the WAVE appliance may be used for connecting the WAVE appliance to a console terminal or PC:

- USB Console cable—5-pin USB to mini-USB Type A-B
- Serial Console cable— EIA RJ-45 to DB-9

Installing the Cisco USB Driver

When using the mini-USB port to connect a Microsoft Windows based PC as a console terminal to the WAVE appliance, you must first install the Windows USB driver on the PC. Otherwise, the USB interface may not function.

The following Windows operating systems are supported:

- Windows XP—32-bit and 64-bit
- Vista—32-bit, Business edition
- Vista—64-bit
- Windows 7—32-bit and 64-bit

To install the Cisco Microsoft Windows USB driver, perform the following steps:



Note Do not connect the cable from the Windows PC to the WAVE appliance until after the driver is installed.

Step 1 Load the DVD that came with your WAVE appliance and double-click the CUSBInst.exe file. The Cisco Virtual Com InstallShield Wizard begins.

You can also access the driver from the WAAS software download area of Cisco.com located at:

<http://www.cisco.com/cisco/pub/software/portal/select.html?&mdfid=280484571&catid=268437639&softwareid=280836712>

It's located under release 4.4.1 and the filename is CUSBInst_Signed_18May2011.exe

Step 2 Click **Next**. The Ready to Install the Program window appears.

Step 3 Click **Install**. The InstallShield Wizard Completed window appears.

Step 4 Click **Finish**.

Step 5 Connect the USB cable to the PC USB port and WAVE appliance mini-USB console port. Within a few moments, the Found New Hardware Wizard appears.

Follow the instructions to complete the installation of the driver.

Step 6 Once the installation is finished, the USB console is ready for use.



Note If the driver has been installed on the PC but does not get bound to the hardware, you can manually browse the driver installation query to the location C:\Windows\tiinst\. The newly attached hardware will appear in the Windows Device Manager as "TUSB3410 EECODE Ser".

This solution also applies when connecting additional WAVE appliances to the same PC. Multiple WAVE appliances can be independently administered by console sessions on the same PC.



Note You do not need to reinstall the driver if you change to a different USB port on your PC.

**Note**

If you happen to install the driver multiple times, each time the driver is installed the virtual COM port number assigned to the USB port gets incremented. This is expected behavior and may not get reset even if you uninstall the driver.
