

Junos WebApp Secure 5.0

Hardware Guide

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This document contains a specification for the MWS1000 hardware appliance, as well as instructions for installation into a server environment.

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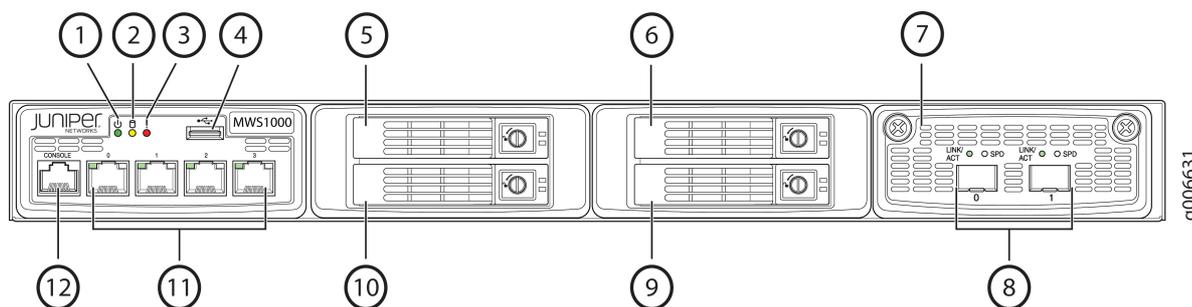
Appliance Features and Specifications

1.1. Chassis Overview for MWS1000

- Rack mountable: 1U; Front-mount or mid-mount; optional front-and-rear four-post mount.
- Console interface: One RJ-45 serial console port.
- Traffic interfaces: Four 1-Gigabit Ethernet RJ-45 ports.
 - Ports 0 and 1 via Intel 82574 -- Reserved for future use.
 - Ports 2 and 3 via Intel 82576 -- for Application Traffic and/or MWS Management.
- Replication interfaces: Two 10-Gigabit Ethernet RJ-45 ports.
 - 10 Gigabit interfaces are designated for replication in High Availability deployments.
- USB interface: One USB port.
- Processor: Dual Quad core Intel E5620 @ 2.4Ghz.
- RAM: 48 GB DDR3.
- Storage: Four 450 gigabyte storage drives in RAID10.
- Fans: Three 40 mm fans.
- Power supplies: Removable AC power supply standard. 90 VAC to 264 VAC, 50-60 Hz, 4.0 A Max, 650 W. Standard IEC power cord is provided for AC power supply. Removable DC power supply is an available option. -48 VDC, 20 A Max, 650 W.

1.2. Front Panel Features for MWS1000

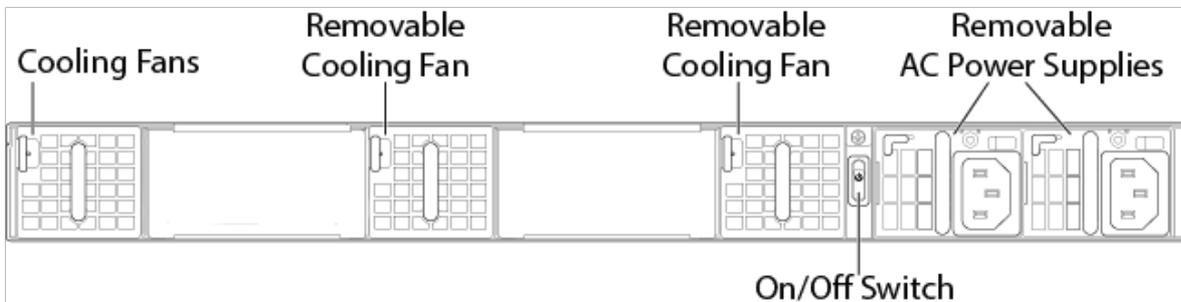
This shows the front panel features of MWS1000. The MWS1000 Front Panel LEDs are listed below.



1. Power (green) - Appliance is powered on.
2. Hard disk activity (yellow) - Storage drive is in use.
3. Hardware fault (red) - Fan, power supply, or temp alarm has occurred.
4. USB Port
5. Hard drive bay 0

6. Hard drive bay 2
7. 10 Gigabit Ethernet module
8. 10 Gigabit Ethernet ports, 0 and 1
9. Hard drive bay 3
10. Hard drive bay 1
11. 1 Gigabit Ethernet ports, 0 through 3
12. Console port.

The MWS1000 has an Input/Output Controller with two 10 Gb RJ-45 Ethernet ports, labeled 0 and 1. Depending on your order configuration, the front panel drive bays may or may not be configured. The MWS1000 Rear Panel provides access to the removable fans and power supplies.



The MWS1000 measures 1.75 high by 17.25 wide by 28 inches deep (44.5 x 438 x 710 mm). It weighs approximately 31 lbs (14 kg), depending on configuration.

Site Preparation

The appliance should be installed in a rack housed in a dry, clean, well-ventilated, and temperature-controlled environment.

- The site should be as dust-free as possible, because dust can clog air intake vents and filters, reducing the efficiency of the appliance cooling system.
- Maintain ambient airflow for normal appliance operation. If the airflow is blocked or restricted, or if the intake air is too warm, the appliance might overheat, causing the appliance temperature monitor to power off the appliance to protect the hardware components.

The MWS1000 environmental requirements are:

- Ambient temperature for normal operation: 41°F to 104°F (5°C to 40°C)
- Ambient temperature for storage: -40°F to 158°F (-40°C to 70°C)
- Relative humidity, operating: 8% to 90% non-condensing
- Relative humidity, storage: 5% to 95% non-condensing
- Maximum operating altitude: 10,000 feet (3000 m)

2.1. Clearance Requirements for Airflow and Hardware Maintenance for MWS1000

When planning the installation site, allow sufficient clearance around the rack. For the cooling system to function properly, the airflow around the chassis must be unrestricted.

- Allow at least 6 in. (15 cm) of clearance on the side between devices that have fans or blowers installed.
- Allow 2.8 in. (7 cm) between the side of the chassis and any non-heat-producing surface such as a wall.
- Ensure that the airflow vents in the front and rear panels remain open and uncovered for proper cooling.
- For service personnel to remove and install hardware components, there must be adequate space at the front and back of the appliance. At least 24 in (60 cm) is required both in front of and behind the chassis. The front of the chassis extends approximately 0.5 in (1.3 cm) beyond the mounting ears.

2.2. Power Specifications

An AC power supply is standard. A DC power supply is an available option.

- AC input voltage: 100 VAC to 240 VAC
- AC input line frequency: 47 Hz/63 Hz nominal
- AC system current rating: 4.0 A max
- AC minimum efficiency: 88%
- DC input voltage: -40 VDC to -72 VDC
- DC system current rating: 20 A max
- DC minimum efficiency: 88%

2.3. Unpacking and Inspecting the MWS1000

Quick Start installation instructions and a cardboard accessory box are included in the shipping box. Before you begin unpacking the device, be sure you have the following tools:

- A No. 2 Phillips screwdriver
- A utility knife

Have two people to assist in lifting and installing the unit.

To unpack the appliance:

1. Move the shipping box to a staging area as close to the installation site as possible, where you have enough room to maneuver.
2. Position the shipping box with the arrows pointing up.
3. Open the shipping box.
4. Remove the accessory box and the Quick Start installation instructions.
5. Verify the parts received against the lists.
6. Save the shipping box and packing materials in case you need to move or ship the appliance at a later time.
7. Confirm the contents of each box.
8. Inspect all external surfaces and external connectors for visible signs of damage.
9. Inspect all accessories shipped with each unit.
10. Document any damage noted during your inspection.
11. Confirm that the platform has the correct number and type of modules for your ordered configuration.

If you detect or suspect damage to any equipment:

- Contact the shipper responsible for delivery, and formally report the damage.
- Contact Juniper Networks at 1-888-314-JTAC (from the United States, Canada, or Mexico) or 1-408-745-9500 (from elsewhere), or contact your sales representative or reseller if you have any questions or concerns.

2.4. Before You Install MWS1000

Before installing a VSE appliance, have the tools and accessories needed to complete the installation.

When equipped with a DC power supply, the Virtual Services Engine supports a DC Isolated return (DC-I) installation. In a DC-I installation, the DC power return conductor is isolated from the equipment chassis or frame when connected to the power supply.

Consider the following guidelines before installing the appliance:

- For AC-power-equipped appliances you should provide an external Surge Protection Device.
- The nominal working voltage range for a DC-power-equipped appliance is -48 VDC. This appliance can operate over an input voltage range from -38 VDC to -72 VDC.

- For DC-power-equipped appliances, you must provide an external certified, dedicated circuit breaker rated at a minimum of 20 A for each DC power supply.
- For DC-power-equipped appliances, you must supply four DC power cables that meet your local code requirements.
- You must provide a good earth ground for the rack.
- On DC-power-equipped models, you must supply a ground cable for the power supply. We recommend using a ground cable identified according to local standards to ground the appliance.
- You must use only copper grounding conductors.
- For a ground wire attaching directly to the rack, we recommend using the following ground lug: Panduit P/N LCDX8-10A-L, #8 AWG, #10 stud, 0.625-inch spacing.
- To ensure a reliable low-resistance ground bond, you must provide and use star washers and thread-forming screws with paint-piercing washers to secure the ground wire to the rack frame, and to secure the appliance chassis to the rack.
- If you connect the ground wire to a ground rail in the rack or to any other grounding facility provided by the site, you must use the appropriate fasteners to ensure a reliable ground bond. When the ground wire is attached with bolts or to studs, locking washers can help ensure the ground wire does not come loose.

Installing MWS1000

To install a MWS1000:

1. Place the shipping container on a flat surface and remove the hardware components.
2. Attach the supplied mounting ears and brackets based on whether you intend to use a front-mounting method or a mid-appliance mounting method.
3. Lift the appliance and insert it in the desired location in the rack. We recommend that you install the appliance with two people; one to lift and one to put the screws in.
4. Align the holes on the mounting brackets with the holes on both sides of the equipment rack.
5. Secure the appliance to the rack.
6. Connect power to the appliance.
7. To connect to a local management device, plug the supplied cat-5 cable into the console port on the front panel.
8. To connect to your network, plug cat-5 cables into Ethernet ports 2 or 3 on the front panel.
9. For a High Availability set up, plug the 10GbE cable into port 0 or 1 on the 10GbE NIC. (They will be configured as eth4 and eth5 in the setup, respectively.)
10. Power on the appliance. When you turn on the power, the internal port uses its two LEDs to indicate the LAN connection status.

3.1. Connecting Power to AC-Powered MWS1000

The power supply in a Virtual Services Engine is located on the rear panel. To connect AC power to the appliance, plug both cords in and then turn the power on.

3.2. Connecting Power to DC-Powered MWS1000



Warning

Before performing DC power procedures, ensure that power is removed from the DC circuit. To ensure that all power is off, locate the circuit breaker that services the DC circuit, switch the circuit breaker to the off position, and secure the switch handle of the circuit breaker in the off position.



Important

Do not mix AC and DC power supplies within the same appliance. Damage to the appliance might occur.

Ensure that the equipment rack is properly grounded and the appliance has a good low-resistance ground bond to the rack before you connect power to the DC power supplies.

Connect DC power to the appliance by attaching power cables from the external DC power sources to the terminals on the power supply faceplates. You must provide the power cables.

To connect the DC source power cables to a DC power supply on the appliance:

1. Switch off the dedicated customer site circuit breaker for the power supply. Ensure that the voltage across the DC power source cable leads is 0 V and that there is no chance that the cable leads might become active during installation.
2. Attach an electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to an ESD point on the grounded rack.
3. Verify that the DC power cables are correctly labeled before making connections to the power supply. In a typical power distribution scheme where the return is connected to chassis ground at the battery plant, you can use a multi-meter to verify the resistance of the V- (-48V) and V+ (RTN) DC cables to chassis ground:
 - The cable with very large resistance (indicating an open circuit) to chassis ground is V- (-48V).
 - The cable with very low resistance (indicating a closed circuit) to chassis ground is V+ (RTN).



Important

Ensure that power connections maintain the proper polarity. The power source cables may be labeled (+) and (-) to indicate their polarity. There is no standard color coding for DC power cables. The color coding used by the external DC power source at your site determines the color coding for the leads on the power cables that attach to the terminals on each power supply.

4. Attach the power cables.
 - Remove the protective cover from the DC terminals on the power supply.
 - Loosen the DC terminal screws.
 - Insert the positive (+) DC source power cable and tighten the screw to secure the cable to the V+ (RTN) return terminal.
 - Insert the negative (-) DC source power cable and tighten the screw to secure the cable to the V- (-48V) input terminal.
 - Replace the protective cover over the DC terminals on the power supply.
5. Attach the grounding cable.
 - Remove the screw from the grounding terminal on the power supply.
 - Insert the screw through the grounding lug on the cable and tighten the screw to secure the cable to the power supply grounding terminal.
6. Route the power and grounding cables so that they do not protrude or prevent access to components of any equipment in the rack. Secure the power and grounding cables with plastic cable ties, which you must provide.
7. Verify that the power and grounding cables are connected correctly, that they are not touching or blocking access to device components, and that they do not drape where people could trip on them.

8. Switch on the dedicated customer site circuit breaker for the power supply.

3.3. RJ-45 Console Connector Pinout

Table 3.1. RJ-45 Console Connector Pinout reference

Pin	Description
1	RTS Output - Request to Send
2	DTR Output - Data Terminal Ready
3	TxD Output - Transmit Data
4	GND - Chassis Ground
5	GND - Chassis Ground
6	RxD Input - Receive Data
7	DSR Input - Data Set Ready
8	CTS Input - Clear to Send