

Dell PowerEdge VRTX, M820, M620, and M520 Getting Started Guide

Regulatory Model: E22S, HHB, and FHB
Regulatory Type: E22S001, HHB, and FHB007 Series



Notes, Cautions, and Warnings



NOTE: A NOTE indicates important information that helps you make better use of your computer.



CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.



WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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Installation And Configuration

⚠ WARNING: Before performing the following procedure, review the safety instructions that came with the server module or enclosure.

Unpacking The System

⚠ WARNING: Whenever you need to lift the system, get others to assist you. To avoid injury, do not attempt to lift the system by yourself.

Unpack the enclosure and the server module(s) and identify each item.

Locating The System Electrical Rating Label

Before setting up the system, make sure you read the electrical rating information for the system provided on the information tag. The information tag also contains the worldwide regulatory agency marks for the system.

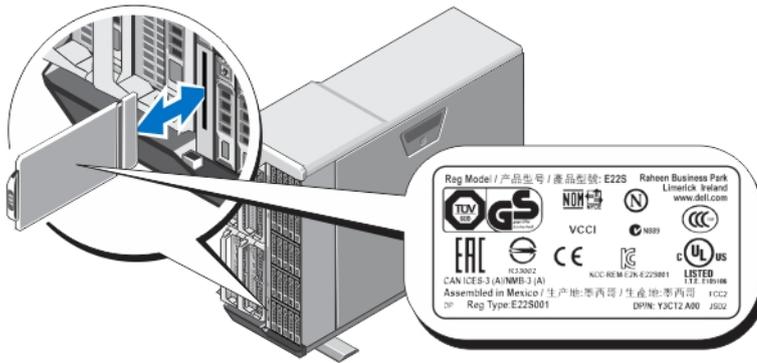


Figure 1. Locating the Electrical Rating Label

Stabilizing The Tower System

The tower system has four feet on its bottom panel that can be extended outward to help properly stabilize the system. You can also replace the system feet with the optional wheels. For more information on installing the wheels, see the *Dell PowerEdge VRTX Owner's Manual* at dell.com/poweredge/manuals.

⚠ WARNING: Failure to extend the system feet outward poses the risk of having the system tip over, possibly causing bodily injury or damage to the system.

⚠ CAUTION: Rolling the system on its wheels can cause vibrations that can damage the system.

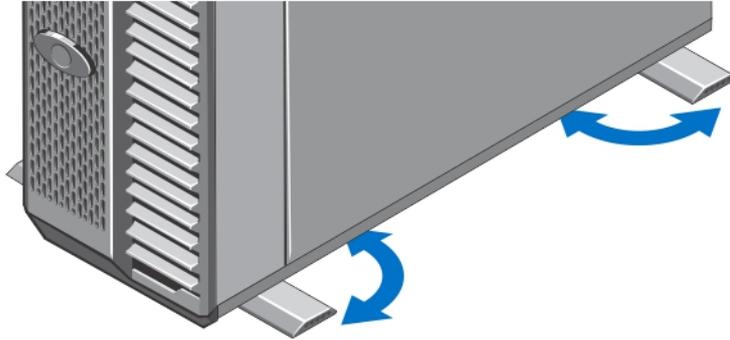


Figure 2. Extending the Feet of the Tower System

Optional — Rack Configuration

If you are using the optional rack configuration, assemble the rails and install the system in the rack following the safety instructions and the rack installation instructions provided with your system.

NOTE: For more information on converting the system to rack mode, see the *Dell PowerEdge VRTX Owner's Manual* at dell.com/poweredgemanuals.

Installing A Server Module

CAUTION: Install a blank in all empty server slots to maintain proper thermal conditions.

NOTE: The enclosure only supports Dell PowerEdge M520, M620, and M820 server modules that are specifically configured for the enclosure, and can be identified by a label marked **PCIe** on the server module. If you install PowerEdge M520, M620, or M820 server modules that are not configured for the enclosure, an error message is displayed. For more information on configuring a server module for the enclosure, see the *Dell PowerEdge VRTX Owner's Manual* at dell.com/poweredgemanuals.

NOTE: To install the M820 full-height server module(s), you must remove the server module partitions. For more information, see the Owner's Manual.

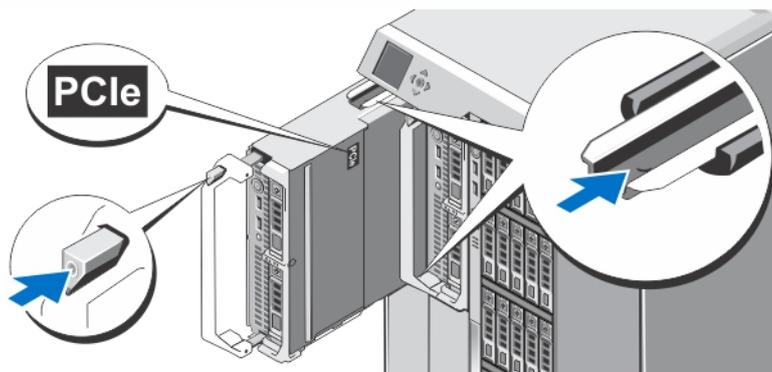


Figure 3. Installing a Server Module

Beginning with slot 1, slide the server modules into the enclosure. When a server module is securely installed, its handle returns to the closed position.

Connecting The CMC Module

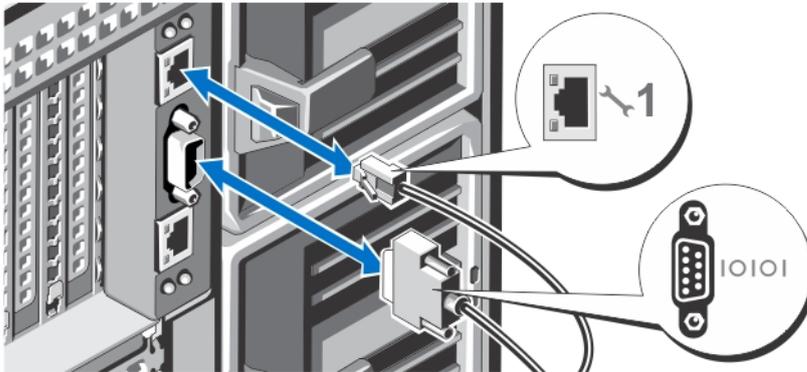


Figure 4. Connecting the CMC Module

Connect the serial cable (optional) and network cable(s) from the management system to the CMC module.

-  **NOTE:** Your system comes with the CMC installed in slot 1.
-  **NOTE:** If the second CMC (optional) is not installed, connect the network cable to CMC port 1 on the enclosure.
-  **NOTE:** The serial port connects to the active CMC module.

Connecting The I/O Module

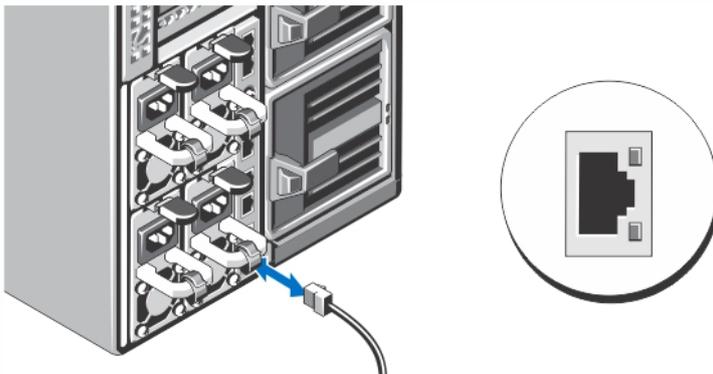


Figure 5. Connecting the I/O Module

Connect the network cable to the I/O module to provide network connection to the server.

-  **NOTE:** If you have a pass-through module installed in the enclosure, each server module requires its own network cable.
-  **NOTE:** For information on configuring the network settings for the I/O module, see the *Dell Chassis Management Controller for Dell PowerEdge VRTX User's Guide* at dell.com/esmanuals.

Connecting The Optional Keyboard, Mouse, And Monitor

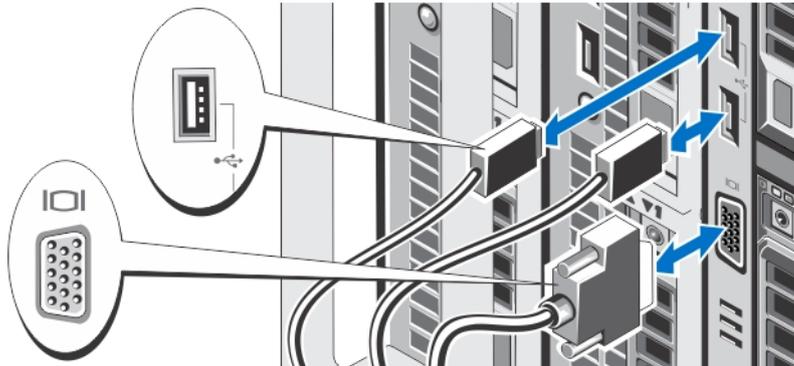


Figure 6. Connecting Keyboard, Mouse, and Monitor

Connect the keyboard, mouse, and monitor.

The connectors on the front of your system have icons indicating which cable to plug into each connector. Be sure to tighten the screws (if any) on the monitor's cable connector.

NOTE: Connecting the keyboard, mouse, and monitor is optional. You can use the LCD menu options to map a server module to the KVM. You can also access the KVM remotely using the iDRAC interface. For more information, see the iDRAC User's Guide at dell.com/esmanuals.

Connecting The System To Power

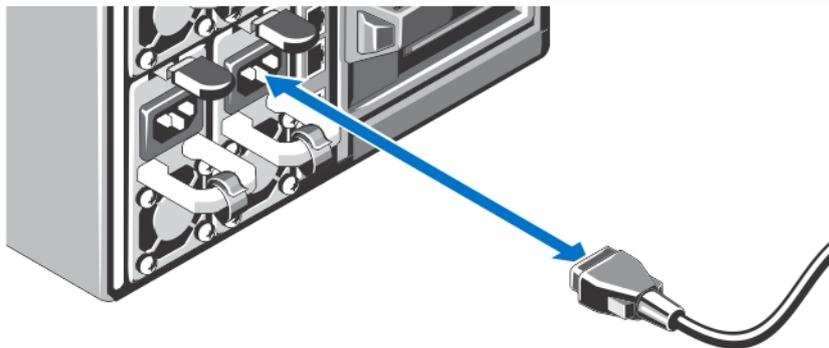


Figure 7. Connecting the System to Power

Connect the power cables to the system power supplies.

NOTE: The power supply units must have the same maximum output power.

Securing The Power Cable

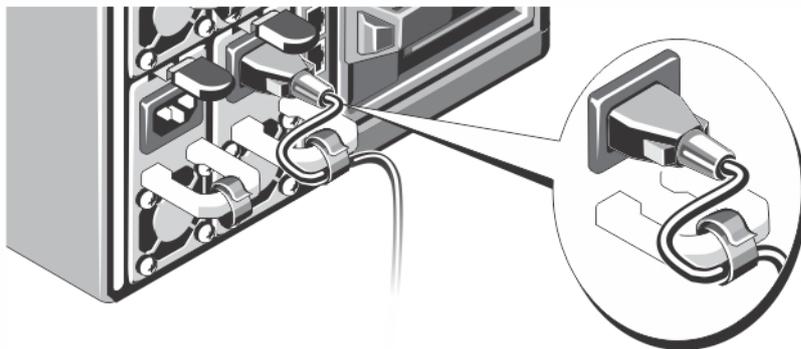


Figure 8. Securing the Power Cable

Bend the system power cable, as shown in the illustration, and attach to the cable strap.

Plug the other end of the power cable into a grounded electrical outlet or a separate power source, such as an uninterruptible power supply (UPS) or a power distribution unit (PDU).

Turning On The Enclosure

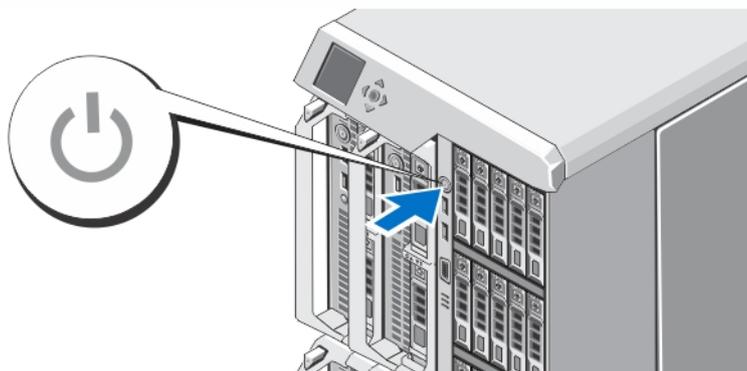


Figure 9. Turning on the Enclosure

Press the power button on the enclosure. The power indicator should light.

 **NOTE:** The CMC may take a few minutes to initialize after you turn on the enclosure.

Log in to the CMC web page using the CMC IP address displayed in the LCD panel. Configure the I/O module, and map the virtual adapters and PCIe slots to the server slots. For more information, see the *Dell Chassis Management Controller for Dell PowerEdge VRTX User's Guide* at dell.com/esmanuals.

Turning On Server Modules

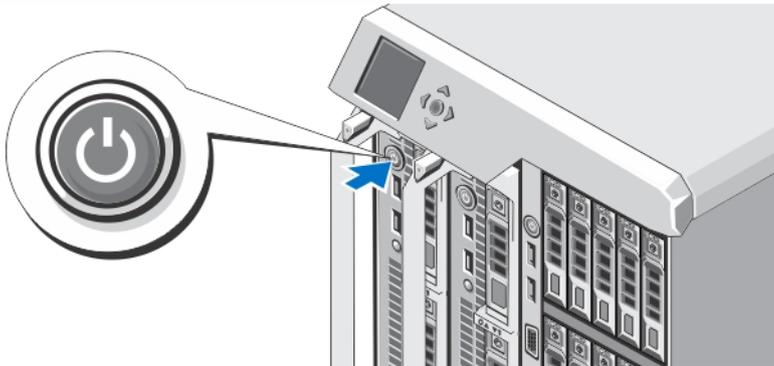


Figure 10. Turning on a Server Module

Press the power button on each server module, or power on the modules using the systems management software.

-  **NOTE:** Make sure that the enclosure is powered on before you power on the server modules.
-  **NOTE:** The server modules do not power on until the CMC is properly configured and has fully initialized. It may take an additional two minutes for the server iDRAC to initialize after the chassis is fully powered on.

Installing The Optional Bezel

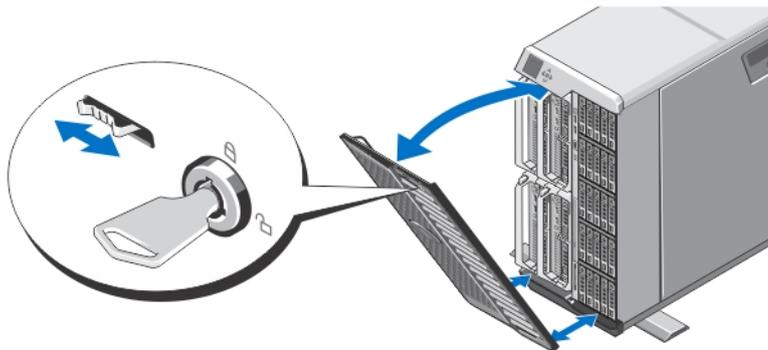


Figure 11. Installing the Optional Bezel

Install the bezel (optional).

Complete The Operating System Setup

If you purchased a preinstalled operating system, see the documentation associated with the operating system. To install an operating system for the first time, see the installation and configuration documentation for your operating system. Be sure the operating system is installed before installing hardware or software not purchased with the system.

-  **NOTE:** See dell.com/support for the latest information on supported operating systems.

Dell Software License Agreement

Before using your system, read the Dell Software License Agreement that came with your system. You must consider any media of Dell-installed software as BACKUP copies of the software installed on your system's hard drive. If you do not accept the terms of the agreement, call the customer assistance telephone number. For customers in the United States, call 800-WWW-DELL (800-999-3355). For customers outside the United States, see dell.com/support and select your country or region from the top left of the page.

Related Documentation

 **WARNING:** See the safety and regulatory information that shipped with your system. Warranty information may be included within this document or as a separate document.

- The *Dell PowerEdge VRTX Owner's Manual* provides information about system features and describes how to troubleshoot the system and install or replace system components. This document is available online at dell.com/poweredge/manuals.
- The *Dell Chassis Management Controller for Dell PowerEdge VRTX User's Guide* provides information on installing, configuring and using the Chassis Management Controller (CMC). This document is available online at dell.com/esmmanuals.
- The *Integrated Dell Remote Access Controller (iDRAC) User's Guide* provides information about installation, configuration and maintenance of the iDRAC on managed systems. This document is available online at dell.com/esmmanuals.
- The rack documentation included with your rack solution describes how to install your system into a rack, if required.
- Any media that ships with your system that provides documentation and tools for configuring and managing your system, including those pertaining to the operating system, system management software, system updates, and system components that you purchased with your system.

 **NOTE:** Always check for updates on dell.com/support/manuals and read the updates first because they often supersede information in other documents.

 **NOTE:** When upgrading your system, it is recommended that you download and install the latest BIOS, drivers, and systems management firmware on your system from dell.com/support.

NOM Information

The following information is provided on the device described in this document in compliance with the requirements of the official Mexican standards (NOM):

Importer:	Dell Inc. de México, S.A. de C.V. Paseo de la Reforma 2620 -11º Piso Col. Lomas Altas 11950 México, D.F.
Model number:	E22S
Supply voltage:	100 V CA to 240 V CA
Frequency:	50 Hz/60 Hz
Current consumption:	12 A to 6.5 A (x4)

Model number:	HHB
Supply voltage:	12 V CC
Current consumption:	37 A
Model number:	FHB
Supply voltage:	12 V CC
Current consumption:	75 A

Technical Specifications

Power

AC power supply (per power supply unit)

Wattage	1100 W
Connector	IEC C14
Heat dissipation	4100 BTU/hr maximum



NOTE: Heat dissipation is calculated using the power supply wattage rating.

System Voltage Requirements 100–240 VAC, autoranging, 50/60 Hz



NOTE: This system is also designed to be connected to IT power systems with a phase to phase voltage not exceeding 230 V.

Battery 3 V CR2032 Lithium coin cell

Physical — Server Modules

PowerEdge M820

Height	38.5 cm (15.2 inch)
Width	5 cm (2 inch)
Depth	48.6 cm (19.2 inch) with handle closed 50.66 cm (19.92 inch) with handle open
Weight (maximum)	14.5 kg (31.9 lb)

PowerEdge M620

Height	19.23 cm (7.57 inch)
Width	5.03 cm (1.98 inch)
Depth	54.43 cm (21.43 inch) with handle closed 56.49 cm (22.24 inch) with handle open
Weight (maximum)	7.0 kg (15.42 lb)

PowerEdge M520

Height	19.23 cm (7.57 inch)
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Physical — Server Modules

Width	5.03 cm (1.98 inch)
Depth	54.43 cm (21.43 inch) with handle closed 56.49 cm (22.24 inch) with handle open
Weight (maximum)	5.50 kg (12.11 lb)



NOTE: For additional specifications, see the server module's *Owner's Manual* at dell.com/poweredgemanuals.

Physical — Enclosure

Tower Configuration

Height	48.44 cm (19.07 inch) with system feet 46.38 (cm) (18.26 inch) without system feet
Width	21.92 cm (8.62 inch) without system feet 30.96 cm (12.18 inch) with system feet opened
Depth	72.98 cm (28.72) with or without bezel
Weight (maximum)	74.79 kg (164.88 lb)
Weight (empty)	31.70 kg (69.70 lb)

Rack Configuration

Height	21.92 cm (8.62 inch)
Width	44.63 cm (17.57 inch) without rack ears 48.24 cm (19.0 inch) with rack ears
Depth	72.98 cm (28.72) with or without bezel
Weight (maximum)	68.72 kg (151.50 lb)
Weight (empty)	24.70 kg (54.45 lb)



NOTE: For additional specifications, see the *Dell PowerEdge VRTX Owner's Manual* at dell.com/poweredgemanuals.

Environmental



NOTE: Your system is capable of 40 °C and 45 °C excursion operation for fresh air cooled data centers. For more information, see the *Dell PowerEdge VRTX Owner's Manual* at dell.com/poweredgemanuals.



NOTE: For additional information about environmental measurements for specific system configurations, see dell.com/environmental_datasheets.

Temperature

Maximum Temperature Gradient (Operating and Storage)	20 °C/h (36 °F/h).
Storage Temperature Limits	–40 °C to 65 °C (–40 °F to 149 °F).

Temperature (Continuous Operation)

Environmental

Temperature Ranges (for altitude less than 950 m or 3117 ft) 10 °C to 35 °C (50 °F to 95 °F) with no direct sunlight on the equipment.

Humidity Percentage Range 10% to 80% Relative Humidity (RH) with 26 °C (78.8 °F) maximum dew point.

Relative Humidity

Storage 5% to 95% RH with 33 °C (91 °F) maximum dew point. Atmosphere must be non-condensing at all times.

Maximum Vibration

Operating 0.26 G_{rms} at 5 Hz to 350 Hz (all operation orientations).

Storage 1.88 G_{rms} at 10 Hz to 500 Hz for 15 min (all six sides tested).

Maximum Shock

Operating One shock pulse in the positive z axis (one pulse on each side of the system) of 31 G for 2.6 ms in the operational orientation.

Storage Four consecutively executed shock pulses in the positive and negative y and z axes (one pulse on each side of the system) of 71 G for up to 2 ms.

Maximum Altitude

Operating -15.2 m to 3048 m (-50 to 10,000 ft).

Storage 12,000 m (39,370 ft).

Operating Altitude De-rating

Up to 35 °C (95 °F) Maximum temperature is reduced by 1 °C/300 m (1 °F/547 ft) above 950 m (3,117 ft).

35 °C to 40 °C (95 °F to 104 °F) Maximum temperature is reduced by 1 °C/175 m (1 °F/319 ft) above 950 m (3,117 ft).

40 °C to 45 °C (104 °F to 113 °F) Maximum temperature is reduced by 1 °C/125 m (1 °F/228 ft) above 950 m (3,117 ft).

Particulate Contamination

 **NOTE:** This section defines the limits to help avoid IT equipment damage and/or failure from particulates and gaseous contamination. If it is determined that levels of particulates or gaseous pollution are beyond the limits specified below and are the reason for the damage and/or failures to your equipment, it may be necessary for you to re-mediate the environmental conditions that are causing the damage and/or failures. Re-mediation of environmental conditions will be the responsibility of the customer.

Air Filtration

Data center air filtration as defined by ISO Class 8 per ISO 14644-1 with a 95% upper confidence limit.

 **NOTE:** Applies to data center environments only. Air filtration requirements do not apply to IT equipment designed to be used outside a data center, in environments such as an office or factory floor.

 **NOTE:** Air entering the data center must have MERV11 or MERV13 filtration.

Conductive Dust

Air must be free of conductive dust, zinc whiskers, or other conductive particles.

Environmental

 **NOTE:** Applies to data center and non-data center environments.

Corrosive Dust

- Air must be free of corrosive dust.

 **NOTE:** Applies to data center and non-data center environments. • Residual dust present in the air must have a deliquescent point less than 60% relative humidity.

Gaseous Contamination

 **NOTE:** Maximum corrosive contaminant levels measured at $\leq 50\%$ relative humidity.

Copper Coupon Corrosion Rate <math><300 \text{ \AA}/\text{month}</math> per Class G1 as defined by ANSI/ISA71.04-1985.

Silver Coupon Corrosion Rate <math><200 \text{ \AA}/\text{month}</math> as defined by AHSRAE TC9.9.