



Installing the Dell™ PowerEdge™ R610 Server

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Chapter 1: Installing the Dell™ PowerEdge™ R610 Server

Dell R610 Server overview

The Avaya Common Servers category includes the Dell™ PowerEdge™ R610 1U server that supports several Avaya software solutions, some requiring additional hardware and memory requirements beyond the standard configuration. This book covers the standard configuration only—consult specific Avaya product documentation for application-specific or solution-specific server configurations.

How to use this document

This guide contains information for installing the Dell™ PowerEdge™ R610 Server as part of an Avaya deployment and provides:

- Instructions for how to find the appropriate online server documentation from Dell
- References to specific topics in standard Dell documentation
- Suggested changes, details, and notes to assist the user in interpreting the manufacturer's documentation and to clarify Avaya's recommended implementation of the equipment
- Additional topics not covered in standard Dell documentation but which are necessary for successful installation and maintenance of Avaya products

Downloading Dell documentation

Use this procedure to find and download the Dell™ PowerEdge™ R610 documentation from Dell.

Procedure

1. Open a browser and go to <http://www.support.dell.com/>.
2. On the Welcome to Dell Support page click on the `Start Here` button in the Support for Enterprise IT section.

3. On the Welcome to Enterprise IT Support click on *Select a product* in the Product Support section.
4. On the next page click on *Select Model* in the Choose a Model section.
5. On the Select Product by Model page, click on *Servers, Storage, Networking*.
6. On the Select Product by Model > Server, Storage, Networking page use the scroll bar in the Select Your Product Line column and click on *PowerEdge Server*.
7. On the Select Product by Model > Server, Storage, Networking > PowerEdge Server page, use the scroll bar in the Select Your Product Model column and click on *R610*.
8. On the Select Product by Model > Server, Storage, Networking > PowerEdge Server > R610 page, click on the *Confirm* button in the Confirm your selection section.
9. On the Product Support for PowerEdge R610 page click on *Manuals and Documentation*.
10. On the Dell™ PowerEdge™ R610 System page, click the *Download* link that corresponds to the document that you want to download.
11. Download the documents in the *Dell R610 document set > Documents to download* section below.

Dell R610 documentation set

Refer to the documents listed below for Dell R610 server installation information and procedures.

*** Note:**

Download the documents listed in the *Documents to download* section below. Printed copies of the documents listed in the *Documents included in the shipping container* section below ship with the server.

Documents to download

Abbreviation	Title	Part number
CMAI	Cable Management Arm Installation	0F880KA00
GS	Getting Started With Your System	R465D
HOM	Hardware Owner's Manual	No number
RI-SR	Rack Installation (Sliding Rails)	0J171KA00

*** Note:**

If you want to locate and download an individual document:

- Go to <http://www.dell.com/>.
- Type *R610* plus the keywords of the document title in the Search field in the upper-right corner and press *Enter*.

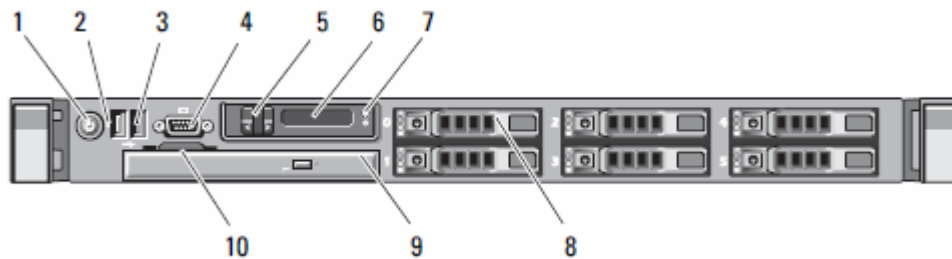
Examples:

- Type R610 Technical Guidebook to search for the *Technical Guidebook* document.
- Type R610 Getting Started to search for the *Getting Started with your System* document.

Documents included in the shipping container

Abbreviation	Title	Part number
PS	Product Safety, EMC & Environmental Datasheet	No number
TG	Technical Guidebook	No number

Front view of Dell R610 Server

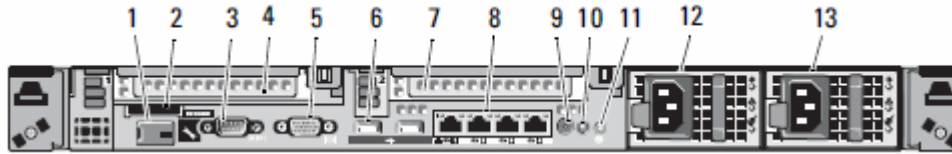


* Note:

Servers ship with 2–4 hard disk drives, depending upon product requirements.

No.	Description
1	power button
2	NMI button
3	USB connectors (2)
4	Video connector
5	LCD menu buttons
6	LCD panel
7	System identification button
8	Hard drives (maximum 4)
9	DVD-RW
10	System identification panel

Back view of Dell R610 Server



No.	Description
1	iDRAC6 Enterprise port (optional)
2	VFlash media slot (optional)
3	Serial connector
4	PCIe slot 1 * Note: Servers might ship with a PCI card installed, depending upon product requirements.
5	Video connector
6	USB connectors (2)
7	PCIe slot 2 * Note: Servers might ship with a PCI card installed, depending upon product requirements.
8	Ethernet connectors (4)
9	System status indicator connector
10	System status indicator
11	System identification button
12	Power supply 1 (PS1)
13	Power supply 2 (PS2)

Dell R610 Server specifications

Base unit	Baseline	Options
R610	1U chassis, dual socket	Listed below
Processor	Intel E5620 quad core /2.4 GHz (Westmere). For optimum performance, add memory in sets of three. 3 memory	<ul style="list-style-type: none"> Intel X5670 six core/2.93 GHz (Westmere)

Table continues...

Base unit	Baseline	Options
	channels per CPU with up to 2 DIMMs per channel.	<ul style="list-style-type: none"> Upgradable to dual processors for either E5620 or X5670
Memory	2 GB DDR3 RDIMMs (1333 MHz); up to 12 GB per processor using 2 GB DIMMs	4 GB DDR3 RDIMMs (1333 MHz); up to 24 GB per processor
HW RAID 1	H700 RAID controller with 512MB cache and battery backup. Optioned as RAID 1, 5, or 10.	For reduced cost replace H700 with H200. Most applications are RAID 1 (H200 supports RAID 0, 1 or 10 only).
Hot-Plug disk drive cage	6 small form factor 2.5" hot-plug hard drives bays included in base unit	N/A
Disk drive	146GB SAS 2.5" 10K RPM 6G DP Hard Drive. Two base configurations: <ul style="list-style-type: none"> 136 total: RAID 1, 2 x 146GB drives 272 total: RAID 5, 3 x 146GB drives 	Options: <ul style="list-style-type: none"> Additional 146GB 10K RPM drive (4 max. with optical drive) High performance 146GB 15K drives 600 GB 10K drives
NICs	4 integrated ENET gigabit NIC ports with TCP offload engine (included on motherboard)	Broadcom 5709 Dual Port 1GbE NIC (430-3261)
PCI slots	2 PCIe risers (left and center) provide: <ul style="list-style-type: none"> Two x 8 PCIe Gen2 slots One x 4 PCIe Gen 1 slot FH/HL PCIe card support 	No additional options supported.
Removable media	DVD+/-RW SATA internal	No additional options supported.
Power supply	<ul style="list-style-type: none"> Single hot plug AC power supply 502 W Hotplug AC power supply 	<ul style="list-style-type: none"> 717 W AC power supply (required for dual X5670 processors) Redundant supply available for either 502 W or 717 W.
Fans	Redundant Speed Adjusting Fans standard (5 for single processor)	No additional options supported. (2nd processor includes 1 additional fan)
Additional items	2 front USB, 2 back USB, 1 internal USB	



Dell R610 Server power specifications

Specification	Value
BTU	2446
Voltage	120 VAC

Table continues...

Specification	Value
Plug Type	NEMA 5–15P
Circuit Breaker	15 amp
Pole	1
AMP Draw	6

Dell R610 Server environmental specifications

Specification	Value
Temperature	
Operating	10° to 35°C (50° to 95°F) with a maximum temperature gradation of 10°C per hour  Note: For altitudes above 2,950 feet, the maximum operating temperature is de-rated 1°F per 550 ft.
Storage	-40° to 65°C (-40° to 149°F) with a maximum temperature gradation of 20°C per hour
Relative Humidity	
Operating	20% to 80% (non-condensing) with a maximum humidity gradation of 10% per hour
Storage	5% to 95% (non-condensing) with a maximum humidity gradation of 10% per hour
Altitude	
Operating	-16 to 3,048 m (-50 to 10,000 ft.)  Note: For altitudes above 2,950 ft, the maximum operating temperature is de-rated 1°F per 550 ft.
Storage	-16 to 10,600 m (-50 to 35,000 ft.)

Dell R610 Server physical specifications

Type	Description
Dimensions	Height: 4.26 cm (1.68 in)
	Width: <ul style="list-style-type: none"> • 48.24 cm (18.99 in) with rack latches • 42.4 cm (16.99 in) without rack latches

Table continues...

Type	Description
	Depth: <ul style="list-style-type: none"> • 77.2 cm (30.39 in) with power supplies and bezel • 73.73 cm (29.02 in) without power supplies and bezel
Weight (maximum configuration)	17.69 kg (39 lb)
Weight (empty)	13.25 kg (29.2 lb)

Installing the server in the rack

This installation checklist contains the principle steps that are necessary to install the server in the rack. Each task refers to an existing Dell document and the topic title(s) that contains the step-by-step procedures. Where applicable, additional information and clarifications appear in the *Avaya recommendation* column. Perform each task in the order specified.

*** Note:**

Although not used frequently, Avaya customers are required to have a monitor, keyboard, and mouse available for use by installation and/or servicing technicians.

No.	Task	Reference	Avaya recommendation	✓
1	Observe safety warnings.	PS RI-SR		
2	Examine contents of shipping container (Avaya provided equipment).		Ensure that the 6-digit material code on the order matches the 6-digit material code on the shipping container.	
3	Verify that the rack is installed according to the manufacturer's instructions and in accordance with all local codes and laws.			
4	Examine installation environment (customer provided equipment).			
5	Verify that the rack is grounded in accordance with local electrical code.			
6	Remove the cabinet doors, if necessary.			

Table continues...

No.	Task	Reference	Avaya recommendation	✓
7	Attach the rails to the rack	RI-SR: <i>Installing and Removing the Rails</i>	<p>The rails included with the server will accommodate most square-hole racks. If these rails do not fit the rack, the customer must provide rails or a shelf for rack installation. Also, the rails included with the server might not work with round-hole racks, in which case the customer can obtain rails and/or a shelf from any distributor, for example http://www.racksolutions.com/. The customer-provided rails and rack must be on site prior to the first day of installation.</p> <p>* Note: The customer is responsible for any rack screws.</p>	
8	Attach the server to the rack.	RI-SR: <i>Installing the System in the Rack</i>		
9	(Optional) Install the cable management arm.	CMAI RI-SR: <i>Routing the Cables</i>		
10	Connect the power cord(s).	GS: <i>Connecting the Power Cables</i> GS: <i>Securing the Power Cord</i>		
11	Power up the server.	GS: <i>Turning on the System</i>		

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