

Figure 21. Pull out the intermediate rail

Table 20. Rail component

Number	Component
1	Intermediate rail
2	Inner rail

3. Attach the inner rails to the sides of the system by aligning the J-slots on the rail with the standoffs on the system and sliding forward on the system until they lock into place.



Figure 22. Attach the inner rails to the system

4. With the intermediate rails extended, install the system into the extended rails.

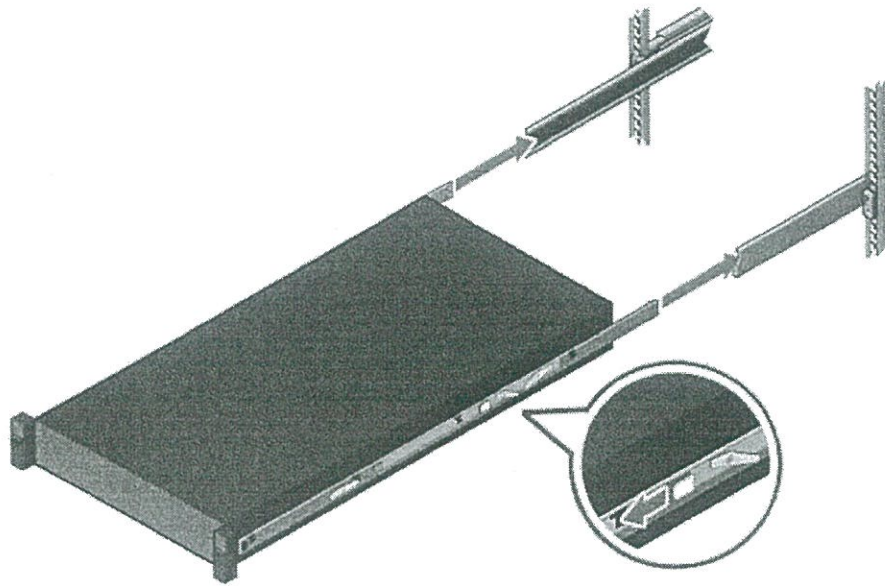


Figure 23. Install system into the extended rails

5. Pull the blue slide release lock tabs forward on both the rails, and slide the system into the rack.

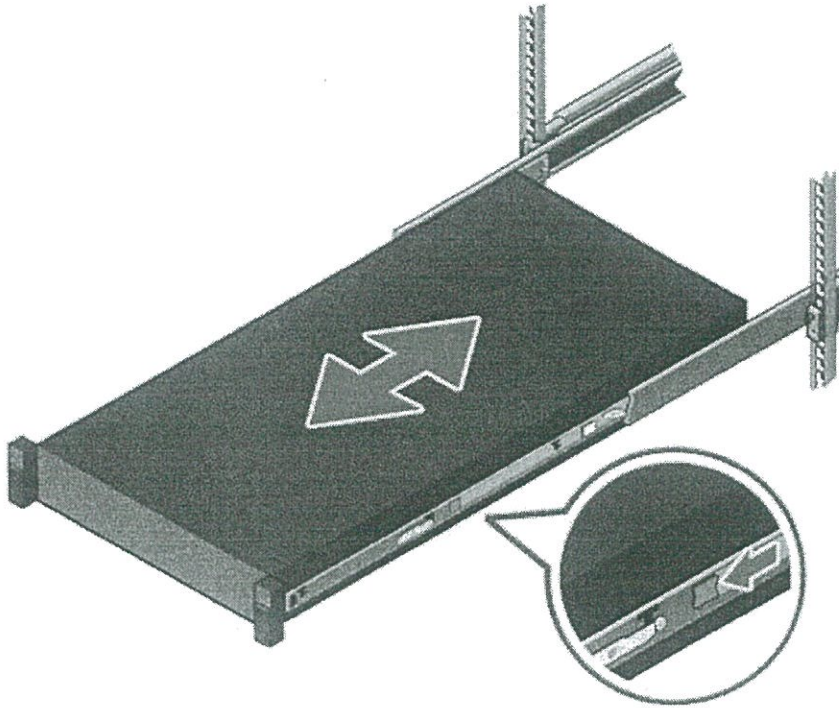


Figure 24. Slide system into the rack

Dell EMC OpenManage systems management

Whether your IT environment consists of a few servers or a few thousand servers, Dell EMC OpenManage systems management solutions provide comprehensive management for evolving IT environments. OpenManage is based on open standards and provides agent-based and agent-free server lifecycle management functionality for Dell EMC PowerEdge servers. OpenManage solutions help you automate and streamline essential hardware management tasks.

Start with a firm foundation for efficient hardware management using OpenManage tools, utilities and management consoles. OpenManage systems management solutions consist of a combination of embedded management features and software products that help you automate and simplify the entire server lifecycle: deploy, update, monitor and maintain. OpenManage solutions are innovatively designed for simplicity and ease of use to help you reduce complexity, save time, achieve efficiency, control costs and empower productivity. OpenManage centers around efficient management of server lifecycle.

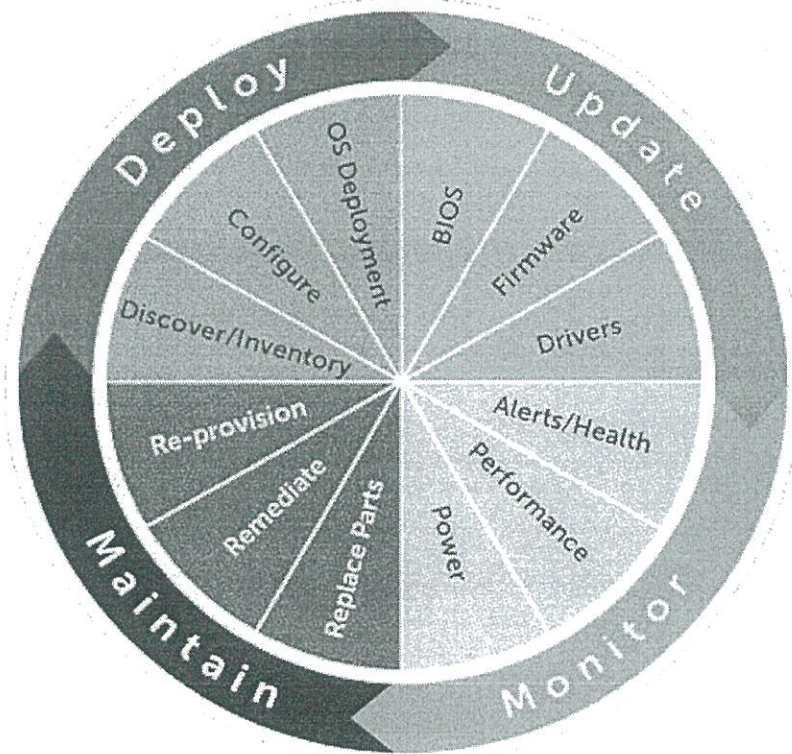


Figure 25. Server lifecycle management operations

OpenManage systems management

The Dell EMC OpenManage systems management portfolio includes powerful hardware and software management tools and consoles. OpenManage simplifies the lifecycle of deploying, updating, monitoring and maintaining your Dell EMC PowerEdge servers.

iDRAC with Lifecycle controller

The integrated Dell Remote Access Controller 9 (iDRAC9) with Lifecycle Controller is embedded within every Dell EMC PowerEdge server and provides functionality that helps IT administrators deploy, update, monitor, and maintain servers with no need for any additional software to be installed. iDRAC functions regardless of operating system or hypervisor presence because from a pre-OS or bare-metal state, iDRAC is ready to work because it is embedded within each server from the factory.

iDRAC features and comparison

The R740 supports the following iDRAC licenses – Basic (default), Express (upgrade) and Enterprise (upgrade).

 **NOTE:** The features listed in bold in the below table are new for iDRAC9.

Table 21. iDRAC feature comparison

Features	iDRAC8 Basic	iDRAC9 Basic	iDRAC8 Express	iDRAC9 Express	iDRAC8 Express for Blades	iDRAC9 Express for Blades	iDRAC8 Enterprise	iDRAC9 Enterprise
Interface/Standards								
Redfish	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IPMI 2.0	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DCMI 1.5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Web-based GUI	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Racadm command line— local/remote	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SMASH-CLP—SSH-only	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Telnet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SSH	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Serial redirection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WSMAN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Network Time Protocol	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Connectivity								
Shared NIC	Yes	Yes	Yes	Yes	N/A	N/A	Yes	Yes
Dedicated NIC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
VLAN tagging	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IPv4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IPv6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DHCP (new default; no static IP)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DHCP with Zero Touch	No	No	No	No	No	No	No	Yes
Dynamic DNS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OS pass-through	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Features	iDRAC8 Basic	iDRAC9 Basic	iDRAC8 Express	iDRAC9 Express	iDRAC8 Express for Blades	iDRAC9 Express for Blades	iDRAC8 Enterprise	iDRAC9 Enterprise
iDRAC Direct-Front panel USB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Connection View	No	Yes	No	Yes	No	Yes	No	Yes
NFS v4	No	Yes	No	Yes	No	Yes	No	Yes
NTLM v1 and NTLM v2	No	Yes	No	Yes	No	Yes	No	Yes
Security								
Role-based authority	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Local users	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SSL encryption	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP blocking	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Directory services—AD, LDAP	No	No	No	No	No	No	Yes	Yes
Two-factor authentication	No	No	No	No	No	No	Yes	Yes
Single sign-on	No	No	No	No	No	No	Yes	Yes
PK authentication	No	No	Yes	Yes	Yes	Yes	Yes	Yes
FIPS 140-2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Secure UEFI boot- certificate management	No	Yes	No	Yes	No	Yes	No	Yes
Lock down mode	No		No	No	No	No	No	Yes
Unique iDRAC default password	No	Yes	No	Yes	No	Yes	No	Yes
Customizable Security Policy Banner-login page	No	Yes	No	Yes	No	Yes	No	Yes
Quick Sync 2.0-optional auth for read operations	No	Yes	No	Yes	No	Yes	No	Yes
Quick Sync 2.0-add mobile device number to LCL	No	Yes	No	Yes	No	Yes	No	Yes
Remote Presence								
Power control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Boot control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Serial-over-LAN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Virtual Media	No	No	No	No	Yes	Yes	Yes	Yes
Virtual Folders	No	No	No	No	No	No	Yes	Yes
Remote File Share	No	No	No	No	No	No	Yes	Yes
Virtual Console	No	No	No	No	Yes	Yes	Yes	Yes
HTML5 access to virtual console	No	No	No	No	Yes	Yes	Yes	Yes

Features	iDRAC8 Basic	iDRAC9 Basic	iDRAC8 Express	iDRAC9 Express	iDRAC8 Express for Blades	iDRAC9 Express for Blades	iDRAC8 Enterprise	iDRAC9 Enterprise
VNC connection to OS	No	No	No	No	No	No	Yes	Yes
Quality/bandwidth control	No	No	No	No	No	No	Yes	Yes
Virtual Console collaboration—6 users	No	No	No	No	No	No	Yes	Yes
Virtual Console chat	No	No	No	No	No	No	Yes	Yes
Virtual Flash partitions	No	No	No	No	No	No	Yes	Yes
Group manager	No	No	No	No	No	No	No	Yes
HTTP/HTTPS support along with NFS/CIFS	No	Yes	No	Yes	No	Yes	No	Yes
Power and Thermal								
Real-time power meter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Power thresholds & alerts	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Real-time power graphing	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Historical power counters	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Power capping	No	No	No	No	No	No	Yes	Yes
Power Center integration	No	No	No	No	No	No	Yes	Yes
Temperature monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Temperature graphing	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Health Monitoring								
Predictive failure monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SNMPv1, v2 and v3—traps and gets	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Email alerting	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Configurable thresholds	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fan monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Power Supply monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Memory monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CPU monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RAID monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NIC monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HD monitoring—enclosure	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Out of Band Performance Monitoring	No	No	No	No	No	No	Yes	Yes
Alerts for excessive SSD wear	No	Yes	No	Yes	No	Yes	No	Yes



Features	iDRAC8 Basic	iDRAC9 Basic	iDRAC8 Express	iDRAC9 Express	iDRAC8 Express for Blades	iDRAC9 Express for Blades	iDRAC8 Enterprise	iDRAC9 Enterprise
Customizable settings for Exhaust Temperature	No	Yes	No	Yes	No	Yes	No	Yes
Update								
Remote agent-free update	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Embedded update tools	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sync with repository—scheduled updates	No	No	No	No	No	No	Yes	Yes
Auto update	No	No	No	No	No	No	Yes	Yes
Improved PSU firmware updates	No	Yes	No	Yes	No	Yes	No	Yes
Deployment and Configuration								
Local configuration via F10	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Embedded OS deployment tools	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Embedded configuration tools	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AutoDiscovery	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Remote OS deployment	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Embedded driver pack	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full configuration inventory	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Inventory export	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Remote configuration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Zerotouch configuration	No	No	No	No	No	No	Yes	Yes
System Retire/Repurpose	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Server Configuration Profile in GUI	No	Yes	No	Yes	No	Yes	No	Yes
Diagnostics, Service and Logging								
Embedded diagnostic tools	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Part Replacement	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Server Configuration Backup	No	No	No	No	No	No	Yes	Yes
Server Configuration Restore	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Easy Restore—system configuration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Easy Restore Auto Timeout	No	Yes	No	Yes	No	Yes	No	Yes

Features	iDRAC8 Basic	iDRAC9 Basic	iDRAC8 Express	iDRAC9 Express	iDRAC8 Express for Blades	iDRAC9 Express for Blades	iDRAC8 Enterprise	iDRAC9 Enterprise
LED health status indicator	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LCD screen—iDRAC9 requires optional bezel	Yes	Yes	Yes	Yes	N/A	N/A	Yes	Yes
Quick Sync—require NFC bezel (13 G only)	Yes	No	Yes	No	N/A	No	Yes	No
Quick Sync 2.0—requires BLE/WiFi hardware	No	Yes	No	Yes	No	N/A	No	Yes
iDRAC Direct—front USB mgmt port	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
iDRAC Service Module (ISM) embedded	No	Yes	No	Yes	No	Yes	No	Yes
ISM to inband alert forwarding to consoles	No	Yes	No	Yes	No	Yes	No	Yes
Crash screen capture	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Crash video capture	No	No	No	No	No	No	Yes	Yes
Boot capture	No	No	No	No	No	No	Yes	Yes
Manual reset for iDRAC—LCD ID button	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Remote reset for iDRAC—requires ISM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Virtual NMI	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OS watchdog	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SupportAssist Report—embedded	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
System Event Log	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lifecycle Log	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Enhanced logging in the Lifecycle controller log	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Work notes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Remote Syslog	No	No	No	No	No	No	Yes	Yes
License management	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improved customer experience								
iDRAC -Faster processor, more memory	No	Yes	No	Yes	No	Yes	No	Yes
GUI rendered in HTML5	No	Yes	No	Yes	No	Yes	No	Yes
Add BIOS configuration to iDRAC GUI	No	Yes	No	Yes	No	Yes	No	Yes

Features	iDRAC8 Basic	iDRAC9 Basic	iDRAC8 Express	iDRAC9 Express	iDRAC8 Express for Blades	iDRAC9 Express for Blades	iDRAC8 Enterprise	iDRAC9 Enterprise
iDRAC support for SW RAID licensing	No	Yes	No	Yes	No	Yes	No	Yes

Agent-free management

As Dell EMC PowerEdge servers have embedded server lifecycle management, in many cases, there is no need to install an OpenManage systems management software agent into the operating system of a Dell EMC PowerEdge server. This greatly simplifies and streamlines the management footprint.

Agent-based management

Most systems management solutions require pieces of software, called agents, to be installed on each node in order to be managed within the IT environment. Additionally, the same agent is often used as a local interface into the hardware health and may be accessed remotely as a management interface, typically referred to as a one-to-one interface. For customers that continue to use agent-based solutions, Dell EMC provides OpenManage Server Administrator.

Dell EMC consoles

The central console in a systems management solution is often referred to as the one-to-many console. The central console provides a rapid view and insight into the overall health of all systems in the IT environment. The Dell EMC systems management portfolio includes several powerful consoles, depending upon your needs, including the following:

Dell EMC OpenManage Essentials

OpenManage Essentials is the one-to-many management console for monitoring Dell HW infrastructure including server, storage and networking, as well as for lifecycle management of PowerEdge servers. It support Windows, Linux, VMware, and HyperV environments. OME provides a simple and easy interface for system administrators to maximize the uptime and health of Dell systems. It helps to

- Monitor health status and events for PowerEdge servers, EqualLogic or MD series storage, and PowerConnect and Force 10 switches.
- Provide hardware-level control and management for PowerEdge server, blade system, and internal storage arrays.
- Link and Launch element management interfaces, such as, iDRAC, CMC, EQL group manager etc
- Integrate with the following Dell solutions:
 - Dell Repository Manager : Builds customized server update baselines that OpenManage Essentials can use.
 - OpenManage Power Center : Optimize power consumption in the servers.
 - SupportAssist : Enables automatic hardware failure notification to be sent securely to Dell technical support for intelligent analysis and diagnosis to optimize availability and reduce manual intervention. This solution is available as part of Dell ProSupport and ProSupport Plus at no additional cost.
- Provide REST interface API support for 3rd Party Integration.
- Manage Server Configuration - it is a fee-based license available on Dell's 14th generation of PowerEdge servers with iDRAC Enterprise or iDRAC Express licenses. The key features include the following:
 - Configure a server or chassis using a template and deploying an operating system on the PowerEdge bare metal servers.
 - During a server operation, automatically detect and notify any server or chassis drift from a customer-defined baseline configuration.
 - Boot a system from a network-mounted ISO using iDRAC.
 - Replicate of FN-IOM and M-IOA configurations within M1000e chassis.
 - Support VLAN Management for FN-IOM and M-IOA.

- For more information, see delltechcenter.com/OME

OpenManage Mobile

OpenManage Mobile(OMM) is a software application that enables easy, convenient, and secure monitoring and management of PowerEdge servers remotely, or at-the-server. With OpenManage Mobile, IT Administrators can securely perform several data center monitoring and remediation tasks using an Android or iOS mobile device. The OpenManage Mobile app is available as a free software download from the Apple Store and the Google Play Store.

OMM can also monitor and manage PowerEdge servers through a OpenManage Essentials console or by directly accessing the server's iDRAC.

The OpenManage Essentials console can be accessed through OpenManage Mobile over a secure IP network. This allows you to monitor all devices managed by OpenManage Essentials such as Dell EMC servers, storage, networking, firewall, and supported third party devices.

If you are remote, you can access iDRAC over a secure IP network. If you are at-the-server, an iDRAC can be accessed directly by tapping an NFC-enabled android mobile device on a PowerEdge "Quick Sync" bezel to perform several basic bare-metal configuration tasks such as assigning an IP address, and changing server credentials or the boot order.

Key Features of OpenManage Mobile (When connected through OpenManage Essentials console):

- Connect to multiple servers which have OME installed, from a single mobile device.
- Connect to multiple servers individually through the iDRAC interface.
- Receive critical alert notification on your mobile device as they arrive into your OpenManage Essentials management console.
- Acknowledge, forward, and delete alerts from your mobile device.
- Browse through device details, firmware inventory, and event logs of individual systems.
- Perform several server management functions such as power-on, power cycle, reboot, and shutdown from the mobile application.

Key Features of OpenManage Mobile (When connected through iDRAC):

- Connect to any 14th gen, 13th gen, or 12th gen server remotely
- Access 14th gen rack or tower server through Quick Sync 2 module.
- Access R730, R730XD, or R630 through Quick Sync bezel
- Assign IP address, change credentials, and update common BIOS attributes for Bare Metal Configuration
- Configure one server manually, or multiple servers simultaneously through a template.
- Browse server details, health status, hardware & firmware inventory, networking details, and System Event or LC logs. Share this information easily with other IT Administrators.
- Access SupportAssist reports, Last Crash screen and video (PowerEdge 14th gen servers)
- Access Virtual Console (and reduce the need for crash carts).
- Power On, Shut down, or Reboot your server from anywhere.
- Run any RACADM command

OpenManage Power Center

OpenManage Power Center is a one-to-many application that can read power usage and thermal readings information from Dell EMC servers, Power Distribution Units (PDU), and Uninterruptible Power Supplies (UPS). It can aggregate this information into rack, row, and room-level views. On servers with iDRAC Enterprise license, you can also cap or throttle the power consumption. You may need to set power caps to reduce the power consumption due to external events such as brownouts or failures of data-center cooling devices. You can also use power capping to safely increase the numbers of servers in a rack to match the power that is provisioned for that rack.

For more information, see OpenManage Power Center User's Guide available at Dell.com/openmanagemanuals.

Dell EMC OpenManage systems management tools, utilities and protocols

Dell EMC OpenManage systems management tools and utilities consist of the following:

Dell EMC Repository Manager:

Dell EMC Repository Manager (DRM) is an application that helps you to:

- Identify the updates that are relevant to the systems in your data center.
- Identify and notify when updates are available.
- Package the updates into different deployment format.

To automate the creation of baseline repositories, DRM provides advanced integration capabilities with iDRAC/LC, OpenManage Essentials, Chassis Management Controller, OpenManage Integration for VMware vCenter and OpenManage Integration for Microsoft System Center (OMIMSSC). Also, DRM packages updates into custom catalogs that can be used for deployment.

Dell EMC Repository Manager can create the following deployment tools:

- Custom catalogs
- Lightweight deployment pack
- Bootable Linux ISO
- Custom Server Update Utility (SUU)

For more information, see Dell EMC Repository Manager User's Guide available at Dell.com/support/manuals.

Dell Update Packages

Dell Update Packages (DUP) is a self-contained executable supported by Microsoft Windows or Linux that updates a component on a server and applications like OMSA, iSM, and DSET.

DUPs can be executed in GUI or in CLI mode.

For more information, see Dell EMC Update Packages User's Guide available at www.delltechcenter.com/DSU.

Dell Remote Access Controller Administration (RACADM) CLI

The RACADM command-line utility provides a scriptable interface to perform inventory, configuration, update, and health status check of PowerEdge servers. RACADM operates in multiple modes:-

- Local — supports running RACADM commands from the managed server's operating system.
- SSH or Telnet — known as Firmware RACADM; is accessible by logging in to iDRAC using SSH or Telnet
- Remote — supports running RACADM commands from a remote management station such as a laptop or desktop.

RACADM is supported by the iDRAC with Lifecycle Controller and by the Chassis Management Controller of the M1000e, VRTX and FX2 modular systems. Local and Remote RACADM is supported on Windows Server, Windows clients, and on Red Hat, SuSe and Ubuntu Linux.

For more information, see the RACADM Command Line Reference Guide for iDRAC and CMC available at Dell.com/support/manuals.

iDRAC with Lifecycle Controller Embedded Management APIs

iDRAC with Lifecycle Controller provides a range of standards-based applications programming interfaces (APIs) that enable scalable and automated management of PowerEdge servers. Standard systems management APIs have been developed by organizations such as the Institute of Electrical and Electronics Engineers (IEEE) and Distributed Management Task Force (DMTF). These APIs are

widely used by commercial systems management products and by custom programs and scripts developed by IT staff to automate management functions such as discovery, inventory, health status checking, configuration, update, and power management. The APIs supported by iDRAC with Lifecycle Controller include:

- **Redfish** - In 2015, the DMTF Scalable Platforms Management Forum published Redfish, an open industry-standard specification and schema designed to meet the needs of IT administrators for simple, modern, and secure management of scalable platform hardware. Dell is a key contributor to the Redfish standard, acting as co-chair of the SPMF, promoting the benefits of Redfish, and working to deliver those benefits within industry-leading systems management solutions. Redfish is a next generation management standard using a data model representation inside a hypermedia RESTful interface. The data model is defined in terms of a standard, machine-readable schema, with the payload of the messages expressed in JSON and the OData v4 protocol.
- **WSMan** - The Web Services For Management (WSMan) API, first published by the DMTF in 2008, is the most mature and robust API provided by iDRAC with Lifecycle Controller. WSMan uses a Simple Object Access Protocol (SOAP) with data modeled using the Common Information Model. WSMan provides interoperability between management applications and managed resources, and identifies a core set of web service specifications and usage requirements that expose a common set of operations central to all systems management.
- **IPMI** - The Intelligent Platform Management Interface (IPMI) is a message-based, hardware-level interface specification that can operate over both LAN and serial interfaces. IPMI is supported broadly by server vendors, systems management solutions, and open source software.
- **SNMP** - The Simple Network Management Protocol (SNMP) helps in standardizing the management of network devices. SNMP allows commercial management consoles created for monitoring network switches and routers to also monitor X86 servers. SNMP is primarily used to deliver event messages to alert administrators of problems on their systems but can also be used to discover, inventory and configure servers.

To assist automating system management tasks and simplify API integration, Dell provides PowerShell and Python libraries and script examples utilizing the WSMan interface. The iDRAC with LC pages of Dell Techcenter offer a library of technical white papers detailing the use of the embedded management APIs. For more information, see delltechcenter.com/iDRAC and delltechcenter.com/LC.

Integration with third-party consoles

Dell EMC OpenManage provides integration with several leading third-party consoles, including:

OpenManage Integration Suite for Microsoft System Center

The combination of Dell OpenManage Integration Suite and Microsoft System Center simplifies and enhances deployment, configuration, monitoring and updating of Dell servers and storage in physical and virtual environments. Our agent-free and agent-based plug-ins deliver a unique level of integration and efficiency when managing Dell hardware within a System Center environment.

The OpenManage Integration Suite for Microsoft System Center includes: Dell Server and Storage Management Packs for System Center Operations Manager (SCOM); Dell Server Deployment Packs and Update Catalogs for System Center Configuration Manager (SCCM); and tools for optimizing management of Dell PowerEdge servers in virtual environments using System Center Virtual Machine Manager (SCVMM).

OpenManage Integration for VMware vCenter

The OpenManage Integration for VMware vCenter allows you to monitor, provision, and manage PowerEdge server hardware and firmware. You can perform these tasks through a dedicated Dell menu that can be accessed directly through the VMware vCenter console. OMIVV also allows granular control and reporting for the hardware environment using the same role-based access control model as vCenter. The OpenManage Management Pack for vRealize Operations Manager is available with OMIVV v4.0 onwards. This helps in checking hardware health and alerting into vRealize operations, which also includes dashboard and reporting on the server environment.

You can manage and monitor Dell hardware within the virtualized environment

- Alerting and monitoring environment for servers and chassis
- Monitoring and reporting for servers and chassis
- Updating firmware on servers

- Deploying enhanced options

For more information, see delltechcenter.com/omivv

NOTE: The Dell EMC Repository Manager integrates with OpenManage Integration for VMware vCenter. The Dell EMC Repository Manager provides advanced functionality, simplifies the discovery, and deployment of new updates.

BMC Software

Dell EMC and BMC Software work together to simplify IT by ensuring tight integration between Dell EMC server, storage, and network management functionality and the BMC Software process and data center automation products.

OpenManage connections with third-party consoles

Dell EMC OpenManage Connections gives you an easy path to adding support for third-party devices, so you can continue to use your existing management tools while easily adding Dell EMC server systems to your existing IT environment. Integrate new systems at your own pace. Manage new Dell EMC servers and storage with your legacy management tools, while extending the useful life of your existing resources. With OpenManage Connections you can add monitoring and troubleshooting of Dell EMC assets to your IT infrastructure.

- OpenManage Connection for Nagios Core and Nagios XI
- OpenManage Connection for HPE Operations Manager i (OMi)

For more information on these OpenManage Connections, visit Dell.com/openmanage.

Dell EMC server management operations

Dell EMC OpenManage systems management is centered on automating the server management lifecycle — deploy, update, monitor and maintain. To manage an infrastructure properly and efficiently, you must perform all of these functions easily and quickly. iDRAC9 with Lifecycle Controller technology provides you with these intelligent capabilities embedded within the server infrastructure. This allows you to invest more time and energy on business improvements and less on maintenance.

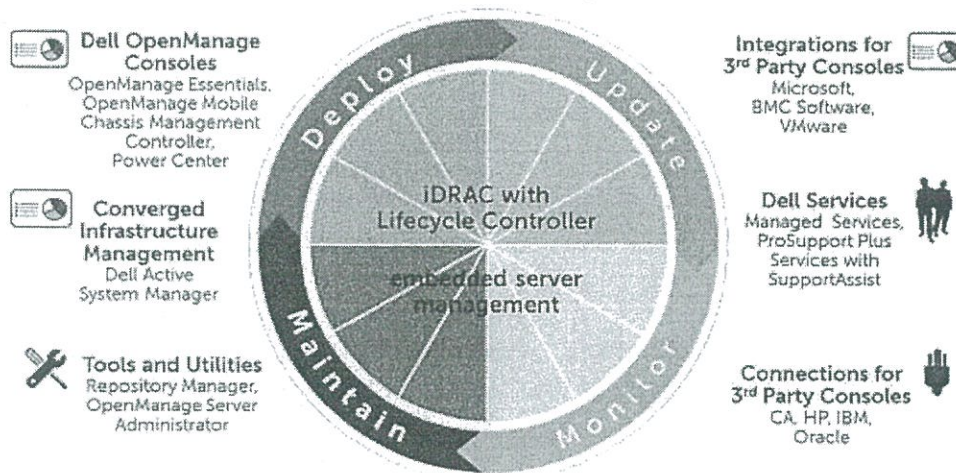


Figure 26. Systems management server lifecycle

Table 22. One-to-one and one-to-many operations

Operation	One-to-one	One-to-many
Deploy	<ul style="list-style-type: none"> • Lifecycle Controller GUI 	<ul style="list-style-type: none"> • OpenManage Integration for VMware vCenter • OpenManage Integration for BMC BladeLogic

	<ul style="list-style-type: none"> • DTK 	<ul style="list-style-type: none"> • OpenManage Integration for Microsoft System Center Configuration Manager
Update	<ul style="list-style-type: none"> • iDRAC9 with Lifecycle Controller • Repository Manager • DUP • SUU • OpenManage Integration for VMware vCenter 	<ul style="list-style-type: none"> • Dell EMC OpenManage Essentials • OpenManage Integration for Microsoft System Center Configuration Manager
Monitor	<ul style="list-style-type: none"> • iDRAC9 with Lifecycle Controller • OMSA 	<ul style="list-style-type: none"> • Dell EMC OpenManage Essentials • Dell EMC OpenManage Power Center • OpenManage Integration for VMware vCenter • OpenManage Integration for Microsoft System Center Operations Manager
Maintain	<ul style="list-style-type: none"> • iDRAC9 with Lifecycle Controller • IPMI 	<ul style="list-style-type: none"> • Lifecycle Controller Remote Services Remediate and replace parts: • OpenManage Integration for Microsoft System Center Virtual Machine Manager (SCVMM) • Server Pro Management Pack and Lifecycle Controller Integration (DLCI)

For additional detailed information on Dell EMC systems management portfolio, visit Dell.com/OpenManage.

Appendix A. Additional specifications

PSU specifications

The PowerEdge R740 system supports up to two AC or DC power supply units (PSUs).

Table 23. PSU specifications

PSU	Class	Heat dissipation (maximum)	Frequency	Voltage	Current
495 W AC	Platinum	1908 BTU/hr	50/60 Hz	100–240 V AC, autoranging	6.5 A–3 A
750 W AC	Platinum	2891 BTU/hr	50/60 Hz	100–240 V AC, autoranging	10 A–5 A
750 W AC	Titanium	2843 BTU/hr	50/60 Hz	200–240 V AC, autoranging	5 A
750 W Mixed Mode HVDC (for China only)	Platinum	2891 BTU/hr	50/60 Hz	100–240 V AC, autoranging	10 A–5 A
	N/A	2891 BTU/hr	N/A	240 V DC, autoranging	4.5 A
1100 W AC	Platinum	4100 BTU/hr	50/60 Hz	100–240 V AC, autoranging	12 A–6.5 A
1100 W DC	N/A	4416 BTU/hr	N/A	–(48–60) V DC, autoranging	32 A
1100 W Mixed Mode HVDC (for China and Japan only)	Platinum	4100 BTU/hr	50/60 Hz	100–240 V AC, autoranging	12 A–6.5 A
	N/A	4100 BTU/hr	N/A	200–380 V DC, autoranging	6.4 A–3.2 A
1600 W AC	Platinum	6000 BTU/hr	50/60 Hz	100–240 V AC, autoranging	10 A
2000 W AC	Platinum	7500 BTU/hr	50/60 Hz	100–240 V AC, autoranging	11.5 A
2400 W AC	Platinum	9000 BTU/hr	50/60 Hz	100–240 V AC, autoranging	16 A

- NOTE: Heat dissipation is calculated using the PSU wattage rating.
- NOTE: This system is also designed to connect to the IT power systems with a phase to phase voltage not exceeding 240 V.
- NOTE: If a system with 2400 W AC PSU operates at low line 100–120 V AC, then the power rating per PSU is derated to 1400 W.
- NOTE: If a system with 2000 W AC PSU operates at low line 100–120 V AC, then the power rating per PSU is derated to 1000 W.
- NOTE: If a system with 1600 W AC PSU operates at low line 100–120 V AC, then the power rating per PSU is derated to 800 W.
- NOTE: If system with 1100 W AC PSU or 1100 W Mixed Mode HVDC PSU operates at low line 100–120 V AC, then the power rating per PSU is derated to 1050 W.

Chassis dimensions

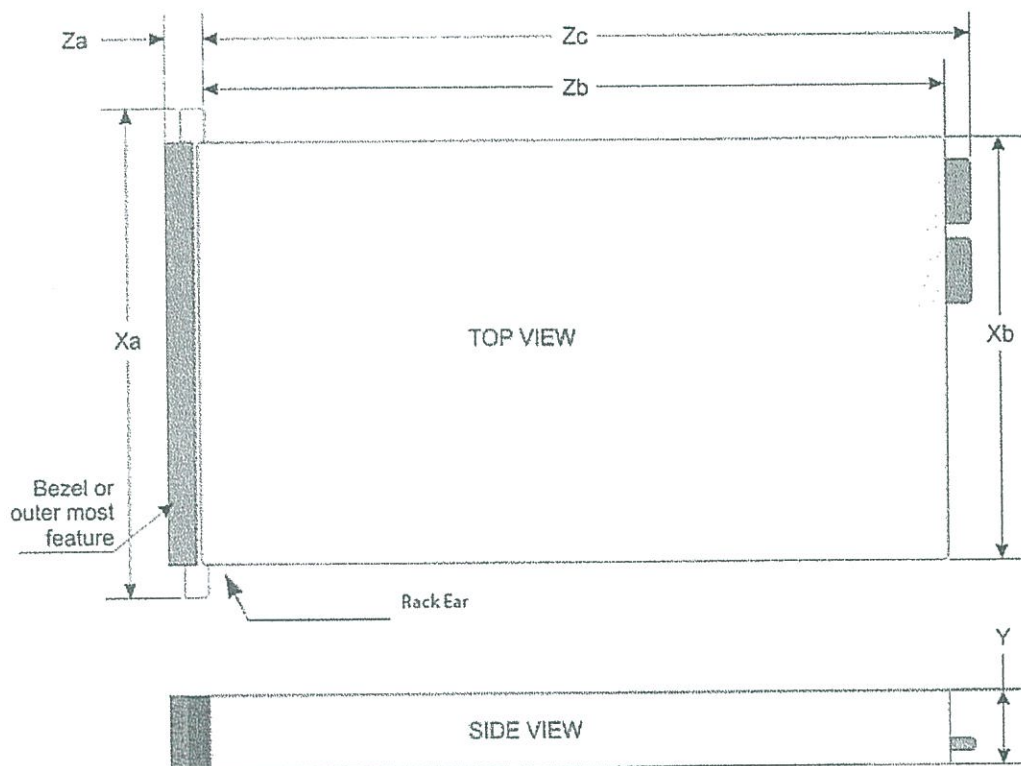


Figure 27. Chassis Dimensions for R740 and R740xd

Table 24. Chassis dimensions (cm)

Chassis dimensions (cm)						
Xa	Xb	Y	Za bezel	Za without bezel	Zb	Zc
482.0 mm	434.0 mm	86.8 mm	35.84mm	22.0 mm	678.8 mm	715.5 mm

Table 25. Chassis weight

Configuration	Maximum Weight
2.5" HDD for R740	26.3Kg
3.5" HDD for R740	28.6Kg
2.5" HDD for R740xd	28.1Kg
3.5" HDD for R740xd	33.1Kg

Environmental specifications

See Dell EMC PowerEdge R740 and R740xd installation service manuals on Dell.com/Support/Manuals for detailed environmental specifications.

Video specifications

The PowerEdge R740 system supports integrated Matrox G200eW3 graphics controller with 16 MB of video frame buffer.

Table 26. Supported video resolution options

Resolution	Refresh rate (Hz)	Color depth (bits)
1024 x 768	60	8, 16, 32
1280 x 800	60	8, 16, 32
1280 x 1024	60	8, 16, 32
1360 x 768	60	8, 16, 32
1440 x 900	60	8, 16, 32
1600 x 900	60	8, 16, 32
1600 x 1200	60	8, 16, 32
1680 x 1050	60	8, 16, 32
1920 x 1080	60	8, 16, 32
1920 x 1200	60	8, 16, 32

 NOTE: 1920 x 1080 and 1920 x 1200 resolutions are only supported in reduced blanking mode.

USB peripherals

USB peripherals are supported through the front and back USB ports on the R740 and R740xd. The front USB ports are USB 2.0 compliant, only the back ports are USB 3.0 compliant. The R740 offers an upsell option to add an additional USB 3.0 port to the front of the chassis but this option is not available in R740xd.