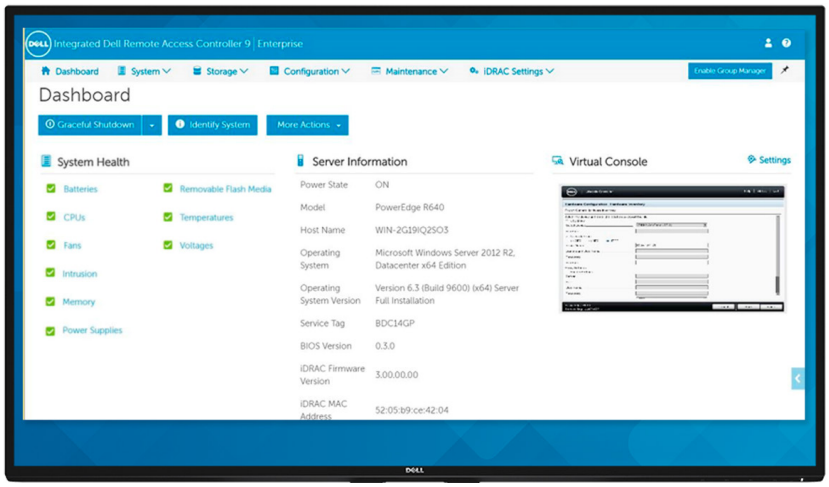
DELL EMC

THE INTEGRATED DELL REMOTE ACCESS CONTROLLER 9 (IDRAC9) WITH LIFECYCLE CONTROLLER

COMPLETE AGENT-FREE MANAGEMENT OF POWEREDGE SERVERS

Dell iDRAC9 provides security and intelligent automation.



Modernize with the Dell EMC PowerEdge portfolio

The integrated Dell Remote Access Controller 9 (iDRAC9) delivers advanced, agent-free local and remote server administration. Embedded in every PowerEdge server, iDRAC9 provides a secure means to automate a multitude of common management tasks. Because iDRAC9 is embedded in every PowerEdge server, there's no additional software to install; just plug in power and network cables, and iDRAC9 is ready to go. Even before installing an operating system or hypervisor, IT administrators have a complete set of server management features at their fingertips: Maximize storage performance with up to 12 NVMe drives and ensure application performance scales easily.

- Configuration
- OS deployment
- Firmware updates
- Health monitoring
- Automation of other routine management activities

Scalable Architecture

With iDRAC9 in place across the PowerEdge portfolio, the same IT administration techniques and tools can be applied throughout This consistent management platform allows easy scaling of PowerEdge servers as an organization's infrastructure needs grow. Customers will be able to use the iDRAC RESTful API for the latest in scalable administration methods of PowerEdge servers. With this API, iDRAC9 enables support for the Redfish standard and enhances it with Dell EMC extensions to optimize at-scale management of PowerEdge servers. Regardless of size though, the entire OpenManage portfolio of systems management tools allows every customer to tailor an effective, affordable solution for their environment. This portfolio includes tools, consoles and integrations.

Each component leverages iDRAC9 to make management easy. By extending the reach of administrators to larger numbers of servers, that staff becomes more productive and drives down costs.

Intelligent Automation

Dell's agent-free management puts IT administrators in control. Once a PowerEdge server is connected to power and networking, that system can be monitored and fully managed, whether you're standing in front of the server or remotely over a network. In fact, with no need for software agents, an IT administrator can:

- Monitor
- Manage
- Update
- Troubleshoot and remediate Dell EMC servers

With features like zero-touch deployment and provisioning, iDRAC Group Manager, and System Lockdown, iDRAC9 is purpose-built to make server administration quick and easy. For those customers whose existing management platform utilizes in-band management, Dell EMC does provide iDRAC Service Module, a lightweight service that can interact with both iDRAC9 and the host operating system to support legacy management platforms.

Secure Local and Remote Management

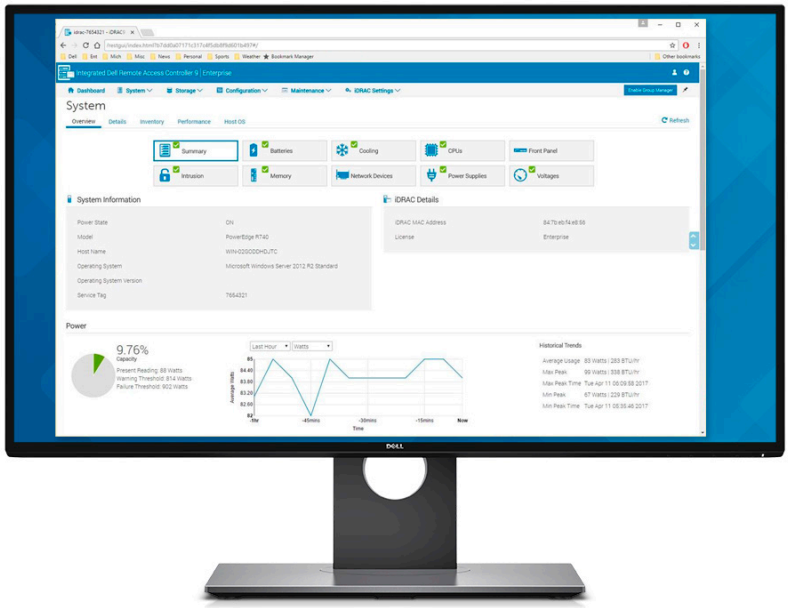
Whether iDRAC9 is used via the updated, HTML5-based web interface, command line interface, or via a set of robust APIs such as the iDRAC RESTful API, security is ensured with HTTPS, SSL, Smart Card authentication, LDAP, and Active Directory integration. The iDRAC9 web interface, remote RACADM utility, and WS-MAN interfaces all support TLS 1.2. Every web page served by the iDRAC9 is delivered with TLS encryption at 256-bit strength (unless configured otherwise). Dell also supports encryption on the virtual KVM (virtual console redirection) and virtual media over TLS. The iDRAC9 virtual console and media also benefit from SSL encryption. Additionally, the iDRAC9 firmware is equipped with a default security certificate, which can be replaced by one of a customer's choosing. By providing secure access remote servers, administrators can carry out critical management functions while maintaining the integrity and security of their data.

The Heart of PowerEdge Manageability

The iDRAC9 provides common, embedded management across the PowerEdge family of servers, automation that lets your organization grow, and ensure security for peace of mind. This is why iDRAC is the core of managing Dell EMC servers. From the variety of tools and technologies in the OpenManage portfolio, a customer can build a management solution that matches their needs, and by leveraging iDRAC9, ensures optimal server management.

Key iDRAC9 Features and Specifications	
BIOS Recovery	Detect an invalid, untrusted BIOS image when a boot is attempted and recover to an authenticated, trusted BIOS image.
Connection View	Quickly check if server LOMs/NDCs and iDRAC are connected to the correct switches and ports via the GUI or by command line interface. This helps prevent costly remote dispatch of technicians to remediate cabling errors.
Full Power Cycle	By utilizing the iDRAC Service Module (iSM), DC power, including AUX power, can be temporarily removed via local or remote control to reset all power nodes in a server, saving time when troubleshooting.
iDRAC Direct	Secure front-panel USB connection to iDRAC web interface which eliminates the need for crash carts or a trip to the hot aisle of your data center. You can use the same port to insert a USB key to upload new system profile for secure, rapid system configuration
iDRAC Group Manager	Provides built-in, one-to-many monitoring and inventory of local iDRAC9s with no software to install. Ideal for customers who don't want to install and maintain a separate monitoring console. This feature does require iDRAC Enterprise licenses.
iDRAC RESTful API	With this API, iDRAC enables support for the Redfish standard and enhances it with Dell extensions.
Multi Vector Cooling	Airflow for each PCIe slot can be fine-tuned to ensure proper cooling. This allows for greater power efficiency and more precise cooling within each server for accessory cards.
OpenManage Mobile and Quick Sync 2	Use the OpenManage Mobile 2.0 (or higher) app on your handheld device to securely retrieve critical health data and easily perform bare-metal server configuration tasks via BLE/Wi-Fi connectivity. Compatible with various iOS and Android devices.
System Erase	With proper authentication, administrators can securely erase data from local storage (HDDs, SSDs, NVMs) and embedded flash devices.
System Lockdown	Helps to prevent configuration or firmware changes to a server when using Dell tools. Requires iDRAC Enterprise License.
Zero touch deployment and provisioning	When ordered with DHCP enabled from the factory, PowerEdge servers can be automatically configured when they are initially powered up and connected to your network. This process uses profile-based configurations that ensure each server is configured per your specifications. This feature requires an iDRAC Enterprise license.

iDRAC Licenses / Server Model	200-500 Series Rack / Tower	600+ Rack/Tower	Modular
Basic	Standard	n/a	n/a
Express	Optional	Standard	n/a
Express for Blades	n/a	n/a	Standard
Enterprise	Upgrade	Upgrade	Upgrade



Learn more at
dell.com/poweredge and
delltechcenter.com/idrac

New features in yellow

iDRAC 9 License Levels and Features				
License Type	**Basic**	**Express**	**Express for Blades**	**Enterprise**
Interfaces / Standards				
Redfish	✓	✓	✓	✓
IPMI 2.0	✓	✓	✓	✓
DCMI 1.5	✓	✓	✓	✓
Web-based GUI	✓	✓	✓	✓
Racadm command line (local/remote)	✓	✓	✓	✓
SMASH-CLP (SSH-only)	✓	✓	✓	✓
Telnet	✓	✓	✓	✓
SSH	✓	✓	✓	✓
Serial Redirection	✓	✓	✓	✓
WSMAN	✓	✓	✓	✓
Network Time Protocol		✓	✓	✓
Connectivity				
Shared NIC	✓	✓	N/A	✓[1]
Dedicated NIC	✓	✓	✓	✓[2]
VLAN tagging	✓	✓	✓	✓
IPv4	✓	✓	✓	✓
IPv6	✓	✓	✓	✓
DHCP (new default; not static IP)	✓	✓	✓	✓
DHCP with Zero Touch				✓
Dynamic DNS	✓	✓	✓	✓
OS pass-through	✓	✓	✓	✓
iDRAC Direct - Front panel USB	✓	✓	✓	✓
Connection View	✓	✓		✓
NFS v4	✓	✓	✓	✓
SMB3.0 with NTLMv1 and NTLMv2	✓	✓	✓	✓
Security				
Role-based authority	✓	✓	✓	✓
Local users	✓	✓	✓	✓
SSL encryption	✓	✓	✓	✓
IP blocking		✓	✓	✓
Directory services (AD, LDAP)				✓
Two-factor authentication				✓
Single sign-on				✓
PK authentication		✓	✓	✓
Secure UEFI boot - certificate management	✓	✓	✓	✓
Lock down mode				✓
Unique iDRAC default password	✓	✓	✓	✓
FIPS 140-2	✓	✓	✓	✓
Customizable Security Policy Banner - login page	✓	✓	✓	✓

iDRAC 9 License Levels and Features				
License Type	**Basic**	**Express**	**Express for Blades**	**Enterprise**
Quick Sync 2.0 - optional auth for read operations	✓	✓	✓	✓
Quick Sync 2.0 - add mobile device number to LCL	✓	✓	✓	✓
System Erase of internal storage devices	✓	✓	✓	✓
Remote Presence				
Power control	✓	✓	✓	✓
Boot control	✓	✓	✓	✓
Serial-over-LAN	✓	✓	✓	✓
Virtual Media			✓	✓
Virtual Folders				✓
Remote File Share				✓
Virtual Console			✓	✓
HTML5 access to Virtual Console			✓	✓
VNC connection to OS				✓
Quality/bandwidth control				✓
Virtual Console collaboration (6 users)[2, 3]				✓
Virtual Console chat				✓
Virtual Flash partitions				✓
Group Manager				✓
HTTP / HTTPS support along with NFS/CIFS	✓	✓	✓	✓
Power & Thermal				
Real-time power meter	✓	✓	✓	✓
Power thresholds & alerts		✓	✓	✓
Real-time power graphing		✓	✓	✓
Historical power counters		✓	✓	✓
Power Capping				✓
OpenManage Power Center integration (view only)		✓	✓	✓
Temperature monitoring	✓	✓	✓	✓
Temperature graphing		✓	✓	✓
Health Monitoring				
Full agent-free monitoring	✓	✓	✓	✓
Predictive failure monitoring	✓	✓	✓	✓
SNMPv1, v2, and v3 (traps and gets)	✓	✓	✓	✓
Email Alerting		✓	✓	✓
Configurable thresholds	✓	✓	✓	✓
Fan monitoring	✓	✓	✓	✓
Power Supply monitoring	✓	✓	✓	✓
Memory monitoring	✓	✓	✓	✓
CPU monitoring	✓	✓	✓	✓
RAID monitoring	✓	✓	✓	✓
NIC monitoring	✓	✓	✓	✓
HD monitoring (enclosure)	✓	✓	✓	✓
Out of Band Performance Monitoring				✓
Alerts for excessive SSD wear	✓	✓	✓	✓

iDRAC 9 License Levels and Features				
License Type	**Basic**	**Express**	**Express for Blades**	**Enterprise**
Customizable settings for Exhaust Temperature	✓	✓	✓	✓
Update				
Remote agent-free update	✓	✓	✓	✓
Embedded update tools	✓	✓	✓	✓
Sync with repository (scheduled updates)				✓
Auto-update				✓
Improved PSU firmware updates	✓	✓	✓	✓
Deployment & Configuration				
Local configuration via F10	✓	✓	✓	✓
Embedded OS deployment tools	✓	✓	✓	✓
Embedded configuration tools	✓	✓	✓	✓
Auto-Discovery		✓	✓	✓
Remote OS deployment		✓	✓	✓
Embedded driver pack	✓	✓	✓	✓
Full configuration inventory	✓	✓	✓	✓
Inventory export	✓	✓	✓	✓
Remote configuration	✓	✓	✓	✓
Zerotouch configuration				✓
System Retire/Repurpose	✓	✓	✓	✓
Server Configuration Profile in GUI	✓	✓	✓	✓
Diagnostics, Service & Logging				
Embedded diagnostic tools	✓	✓	✓	✓
Part Replacement		✓	✓	✓
Server Configuration Backup				✓
Server Configuration Restore	✓	✓	✓	✓
Easy Restore (system configuration)	✓	✓	✓	✓
Easy Restore Auto Timeout	✓	✓	✓	✓
Health LED / LCD (requires optional bezel)[5]	✓	✓	N/A	✓
Quick Sync (require NFC bezel, 13G only)				
Quick Sync 2.0 (requires optional BLE/WiFi hardware)	✓	✓	✓	✓
iDRAC Direct (front USB management port)	✓	✓	✓	✓
iDRAC Service Module (iSM) embedded	✓	✓	✓	✓
Alert forwarding via iSM to inband monitoring consoles	✓	✓	✓	✓
Crash screen capture		✓	✓	✓
Crash video capture [4]				✓
Boot capture				✓
Manual reset for iDRAC (LCD ID button)	✓	✓	✓	✓
Remote reset for iDRAC (requires iSM)	✓	✓	✓	✓

iDRAC 9 License Levels and Features				
License Type	**Basic**	**Express**	**Express for Blades**	**Enterprise**
Virtual NMI	✓	✓	✓	✓
OS watchdog [4]	✓	✓	✓	✓
SupportAssist Report (embedded)	✓	✓	✓	✓
System Event Log	✓	✓	✓	✓
Lifecycle Log	✓	✓	✓	✓
Enhanced Logging in Lifecycle Controller Log	✓	✓	✓	✓
Work notes	✓	✓	✓	✓
Remote Syslog				✓
License management	✓	✓	✓	✓
Improved Customer Experience				
iDRAC -Faster processor, more memory	✓	✓	✓	✓
GUI rendered in HTML5	✓	✓	✓	✓
Add BIOS configuration to iDRAC GUI	✓	✓	✓	✓
iDRAC support for SW RAID licensing	✓	✓	✓	✓

footnotes:
1 Not available with blade servers.
2 500 series and lower rack and tower servers require a hardware card to enable this feature; this hardware offered at additional cost.
3 Requires vFlash SD card media.
4 Requires iDRAC Service Module (iSM) or OpenManage Server Administrator (OMSA).
5 Requires optional bezel.