

Dell Systems Management Overview Guide

Notes, cautions, and warnings

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

 **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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Dell Systems Management

Dell delivers management solutions that help IT Administrators effectively deploy, update, monitor, and manage IT assets. OpenManage solutions and tools enable you to quickly respond to problems by helping them to manage Dell servers effectively and efficiently; in physical, virtual, local, and remote environments, operating in-band, and out-of-band (agent-free). The OpenManage portfolio includes innovative embedded management tools such as the integrated Dell Remote Access Controller (iDRAC), Chassis Management Controller and Consoles like OpenManage Enterprise, OpenManage Power Manager Plugin, and tools like Repository Manager.

Dell has developed comprehensive systems management solutions based on open standards and has integrated with management consoles that can perform advanced management of Dell hardware. Dell has connected or integrated the advanced management capabilities of Dell hardware into offerings from the industry's top systems management vendors and frameworks such as Ansible, thus making Dell platforms easy to deploy, update, monitor, and manage.

The key tools for managing Dell PowerEdge servers are iDRAC and the one-to-many OpenManage Enterprise (OpenManage Enterprise) console. The OpenManage Enterprise has all the key features of OpenManage Essentials to help manage the PowerEdge servers. OpenManage Enterprise helps the system administrators in complete lifecycle management of multiple generations of PowerEdge servers. Other tools such as Repository Manager, which enables simple yet comprehensive change management.

OpenManage tools integrate with systems management framework from other vendors such as VMware, Microsoft, and BMC Software. This enables you to use the skills of the IT staff to efficiently manage Dell PowerEdge servers.

The four main pillars of Dell systems management closely align with the issues and business challenges that are faced by many IT departments.

- Automating IT management
 - Dell offers comprehensive automation management for reducing OPEX and increasing uptime and overall efficiency.
 - Comprehensive suite of tools to automate according to your needs.
- Management made simple
 - Simple but powerful tools for managing your Dell servers
 - Built-in tools that streamline support engagements
 - Innovative at-the-box management features
- Secure by default.
 - Dell servers offer robust security defenses to prevent the next generation of malicious attacks.
 - Security is designed deep into the hardware and firmware architecture for optimal protection.
- Smarter infrastructure management
 - It offers a next generation 1-to-many console to manage your IT and server infrastructure.
 - Embedded intelligence that is *infrastructure-aware* to optimize troubleshooting and deployment

This document provides an overview of the OpenManage Systems Management offerings to help IT administrators choose the appropriate tools to completely manage Dell PowerEdge servers.

Topics:

- [Dell Systems Management Offerings](#)

Dell Systems Management Offerings

Dell's suite of Systems Management offerings consist of a wide variety of tools, products, and services. The strategy is to use an existing systems management framework that you may be currently using.

However, if you do not have a framework, Dell provides in-house tools or tools from our partners. Dell also offers professional services to install or train on any of the Dell products and tools. All the solutions are centered on PowerEdge server hardware management featuring iDRAC.

Dell OpenManage Enterprise automates the full span of server lifecycle management activities along with powerful RESTful APIs to script or integrate with your choice of frameworks. It helps in discovery, configuration, deployment, updates, and remediation.

These tasks are performed within a single console that unifies management of tower, rack, and modular platforms. OpenManage Enterprise helps in standardizing and supporting IT management policies and practices.

OpenManage portfolio

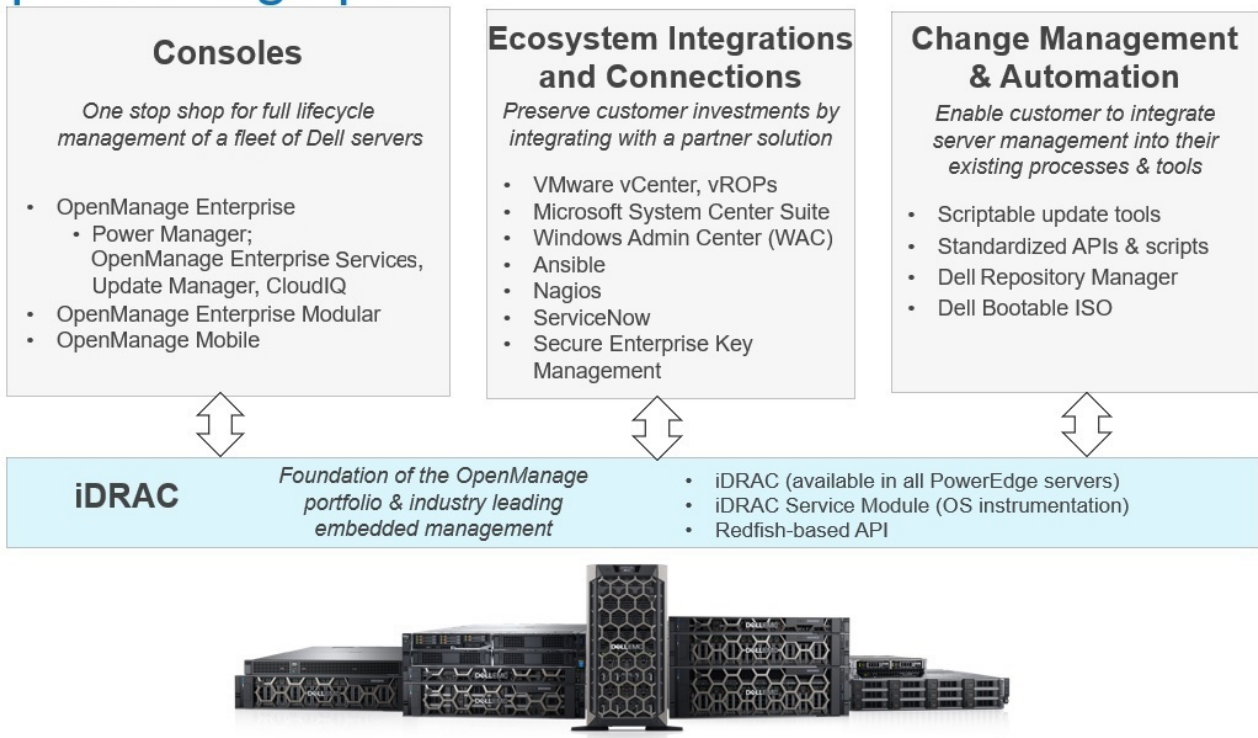


Figure 1. Dell OpenManage Portfolio

Chassis and Server Managers

- Integrated Dell Remote Access Controller (iDRAC)
- iDRAC Service Module (iSM)
- Dell OpenManage Enterprise Modular (OME-M)
- Chassis Management Controller (CMC)

Dell Consoles

- Dell OpenManage Enterprise
 - Dell OpenManage Enterprise Power Manager Plugin
 - CloudIQ for PowerEdge
 - Dell OME Services Plugin
 - Dell UpdateManager Plugin (UMP)
- Dell Repository Manager (DRM)
- Dell OpenManage Mobile (OMM)

Automation Enablers

- Dell System Update
- OpenManage Ansible Modules
- iDRAC RESTful APIs (Redfish Standards based)
- Other Embedded Management Automation Interfaces
- RACADM CLI
- OpenManage RESTful APIs

- GitHub Scripting Libraries

Integration with third-party consoles

- Dell OpenManage Integration for Microsoft System Center (OMIMSSC) for System Center Operations Manager (SCOM)
- Dell Windows Server Agent-based and iDRAC7, iDRAC8 SNMP Management Packs for SCOM
- Dell OpenManage Integration for Microsoft System Center (OMIMSSC) for Microsoft Endpoint Configuration Manager (MECM) formerly System Center Configuration Manager (SCCM)
- Dell Server Deployment Pack for Microsoft System Center Configuration Manager (SCCM) - End of Life
- Dell OpenManage Integration for Microsoft System Center (OMIMSSC) for System Center Virtual Machine Manager (SCVMM)
- Dell Server PRO Management Pack for Microsoft System Center Virtual Machine Manager (SCVMM)
- Dell OpenManage Integration with Microsoft Windows Admin Center (WAC)
- Dell OpenManage Integration for VMware vCenter (OMIVV)
- Dell OpenManage Integration with ServiceNow
- BMC Software
 - iDRAC with BMC Software BladeLogic Server Automation (BSA)
 - OpenManage Server Administrator with BMC ProactiveNet Performance Management Suite

Connections for third-party consoles

- Micro Focus
 - Dell OpenManage Operations Connector for Operations Bridge Manager (formerly Operations Manager i)
- IBM
 - OpenManage Connection for IBM Tivoli Netcool/OMNibus (ITNO)
- Nagios
 - OpenManage Plugin for Nagios Core
 - OpenManage Plugin for Nagios XI

Dell Update Utilities

- Dell Repository Manager (DRM)
- Dell Update Packages (DUP)
- Dell Server Update Utility (SUU)
- Dell System Update (DSU)
- Dell Update Manager Plugin (UMP)

Dell Resources

For additional information about white papers, videos, blogs, forums, technical material, tools, usage examples, and other information, go to the OpenManage page at <https://www.delltechnologies.com/en-us/solutions/openmanage/index.htm> or the following product pages:

- For OpenManage Enterprise page, see <https://www.delltechnologies.com/en-us/solutions/openmanage/index.htm>
- For Integrated Dell Remote Access Controller (iDRAC) page, see <https://www.delltechnologies.com/idrac>
- For iDRAC Service Module (iSM) page, see <https://www.dell.com/support/kbdoc/000178050>
- For OpenManage Ansible Modules page, see <https://www.dell.com/support/kbdoc/000177308/>
- For OpenManage Enterprise Modular page, see <https://www.dell.com/support/home/product-support/product/openmanage-enterprise-modular>
- For OpenManage Mobile (OMM) page, see <https://www.dell.com/support/kbdoc/000176046>
- For OpenManage Integration for VMware vCenter (OMIVV), see <https://www.dell.com/support/kbdoc/000176981/>
- For OpenManage Integration for Microsoft System Center (OMIMSSC), see <https://www.dell.com/support/kbdoc/000147399>
- For Dell Repository Manager (DRM) page, see <https://www.dell.com/support/kbdoc/000177083>
- For Dell System Update (DSU) page, see <https://www.dell.com/support/kbdoc/000130590>

- For Dell Platform Specific Bootable ISO (PSBI) page, see <https://www.dell.com/support/kbdoc/000178586>
- For Chassis Management Controller (CMC) page, see https://www.dell.com/support/home/en-us/products/software_int/software_ent_systems_mgmt/remote_ent_sys_mgmt/rmte_ent_sys_chassis_mgmt_cntrlr
- For OpenManage Connections for Partner Consoles page, see <https://www.dell.com/support/kbdoc/000146912>
- For OpenManage Enterprise Power Manager page, see <https://www.dell.com/support/kbdoc/000176254>
- For OpenManage Integration with ServiceNow (OMISNOW) page, see <https://www.dell.com/support/kbdoc/000177827>
- For OpenManage Secure Enterprise Key Manager page, see <https://www.delltechnologies.com/en-us/solutions/openmanage/secure-enterprise-key-manager.htm#accordion0>

Systems Management Product Overview

This section provides an overview for the Dell Systems Management suite of products.

Topics:

- [Chassis and Server Managers](#)
- [Dell Consoles](#)
- [Automation Enablers](#)
- [Integration With Third-Party Consoles](#)
- [Connections For Third-Party Systems Management Consoles](#)
- [Dell Update Utilities](#)

Chassis and Server Managers

Integrated Dell Remote Access Controller

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 iDRAC is embedded in every PowerEdge server, there is no additional software to install; just plug in power and network cables, and iDRAC is ready to go. Even before installing an operating system (OS) or hypervisor, IT administrators have a complete set of server management features at their fingertips.

With iDRAC9 in place across the Dell 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 to grow. Customers will be able to use the iDRAC RESTful API for the latest in scalable administration methods of PowerEdge servers. With this API, iDRAC enables support for the Redfish standard and enhances it with Dell extensions to optimize at-scale management of PowerEdge servers. By having iDRAC at the core, the entire OpenManage portfolio of Systems Management tools allows every customer to tailor an effective, affordable solution for any size environment.

iDRAC performs firmware update, backup and restore, lifecycle log, and hardware inventory export. For more information, see the iDRAC documents at <https://www.dell.com/idracmanuals>.

iDRAC Service Module

This module complements iDRAC with monitoring and configuration information from the operating system(OS). You can also access a limited version of the iSM interface from the OS. You can enable and disable features on iSM by the iDRAC interfaces to control the CPU and memory consumed on the server's operating system.

The iDRAC Service Module provides the following key features:

- View operating system (OS) information.
- Replicate Lifecycle Controller logs to operating system logs.
- Perform automatic system recovery.
- Populate Windows Management Instrumentation (WMI) information.
- Integration with SupportAssist Collection (SAC).
- Use the Prepare to Remove option on a NVMe class PCIe SSD.
- Access iDRAC interfaces using host IP.
- Remote full power cycle.
- Smart alerts from drives.
- iDRAC GUI launcher from host OS (Windows OS only).
- Use remote iDRAC hard reset for 13th and 14th generation of PowerEdge servers.
- Access iDRAC MIB compatible SNMP traps from the host operating system.
- TLS protection enabled for iSM to iDRAC communication over OS-BMC Passthru.

- Single sign-on (SSO) to access iDRAC GUI from Host OS Administrator's desktop (Windows and Linux).
- IPv6 communication between iSM to iDRAC over OS-BMC Passthru (Windows and Linux).

For more information, see <https://www.dell.com/support/kbdoc/000178050/> and <https://www.dell.com/support/kbdoc/000178016>.

Dell OpenManage Enterprise—Modular Edition

The Dell OpenManage Enterprise—Modular Edition (OME-Modular Edition) helps to transform how you manage the infrastructure and enable the business quickly. It is a unified web/RESTful API interface that manages all the nodes including compute, storage, and networking. It helps reduce costs and consolidates multiple tools for ease of access and monitoring. The simplified administration helps deploy and monitor at scale, from one to many chassis, with the support for remote management. The Agile and intelligent automation drives faster hardware rollouts and reduces repetitive tasks for accelerated lifecycle management.

It runs on the PowerEdge M9002m management module (MM) firmware. OME-Modular facilitates configuration and management of a stand-alone PowerEdge MX7000 chassis or group of MX7000 chassis from one Graphical User Interface (GUI). You can use OME-Modular to deploy servers and update firmware. You can also manage the overall health of the chassis and its components such as compute sleds, networks, input or output modules (IOMs), and storage devices. OME-Modular also facilitates hardware enabling:

- Connectivity of management network
- Discovery, inventory
- Monitoring and power control operations and thermal functions

You can use OME-Modular to manage key workloads on the MX7000 platforms.

- Large and unstructured data and analytics
- Hyper converged and traditional workloads
- Database workloads
- Software defined storage
- HPC and performance workloads

The lead chassis in the Multi Chassis Management (MCM) enables you to perform the following tasks across up to 20 chassis:

- Manage servers across multiple MX chassis.
- Deploy or update servers from lead chassis without launching the member chassis web interface.
- Manage fabric switch engines in SmartFabric mode using the OME-Modular web interface.
- Manage alert log and actions.
- Manage virtual MAC/WWN identity pools.
- Deploy compute sleds using server profiles and templates.

OME-Modular offers simple and static roles such as the chassis administrator, compute manager, fabric manager, storage manager, and viewer roles while, OpenManage Enterprise offers static and dynamic groups with role-based access control (RBAC).

For more information about OME-Modular Edition, see <https://www.dell.com/support/home/product-support/product/openmanage-enterprise-modular>.

Chassis Management Controller

The Chassis Management Controller is an embedded systems management hardware and software solution for managing multiple servers, I/O modules, and shared power or cooling using either a web interface or a command-line interface.

The CMC uses the iDRAC technology to update BIOS or component firmware and configure BIOS settings in a one-to-many operation.

CMC is available for the following chassis:

- PowerEdge M1000e— It provides the infrastructure for companies who choose to deploy blade-based server solutions. A single Chassis Management Controller interface with multichassis management capability can manage and see up to nine chassis, 288 servers, 54 power supplies, and 81 fans with no additional cabling. The chassis has slots for two, redundant CMC modules, so that administrators can connect to the chassis even if one Chassis Management Controller module is not working.
- PowerEdge VRTX—The chassis is a revolutionary, easy-to-manage, remote, and office-optimized platform that converges servers, storage, and networking into a compact package. One of the key features is that it provides *shared storage across*

multiple server nodes and the on-board RAID controller. It can hold up to four server nodes, up to 48 TB of integrated, shared storage, and network switching. The PowerEdge VRTX offers the ability to use the PCIe slots that no other blade server solution provides. By combining the density of blade servers with the flexibility of rack server I/O options with PowerEdge VRTX, Dell gives you the flexibility to use less expensive PCIe cards while still being managed through shared chassis management.

- PowerEdge FX2/FX2s—The FX2 enclosure enables servers and storage to share power, cooling, management, and networking. It includes redundant Power Supply Units (1100 W, 1600 W, 2000 W, and 2400 W) and eight cooling fans. With a compact highly flexible design, the FX2 chassis lets you efficiently add resources to your infrastructure when and where you need them, so you can let demand and budget determine your level of investment. The FX2 enclosure also offers I/O modules to several IO aggregators that can simplify cabling, improve East/West traffic within the server, and enable LAN/ SAN convergence—reducing cost and complexity.

For more information about CMC, see <https://www.dell.com/support/home/en-us/product-support/product/poweredge-m1000e/drivers>.

Dell Consoles

The following consoles help in monitoring, managing the infrastructure, and the Lifecycle management of the PowerEdge servers:

OpenManage Enterprise

OpenManage Enterprise is the next generation of OpenManage Essentials. It simplifies, centralizes, and automates the full span of server lifecycle management activities. It helps in discovery, configuration, deployment, updates, and remediation. These tasks are performed within a single console that unifies management of tower, rack, and modular platforms. OpenManage Enterprise helps in standardizing and supporting IT management policies and practices.

The OpenManage Enterprise console simplifies and strengthens the current capability of OpenManage Essentials in the following areas:

- Reduced time and effort that is required to manage small and large-scale IT environments using HTML5 user interface.
- Simplified GUI workflow to provide a single management layer that unifies the management of PowerEdge tower, rack, and modular platforms.
- Packaged and delivered as virtual appliance and supports ESXi, Hyper-V, and KVM.
- Redesigned architecture on CentOS with the PostgreSQL database. Operating system and database license are no longer required..
- Centralized user management with role-based access control.
- Enabled with customer automation and solution integration using Northbound API.
- Enhanced policy-driven management.

Table 1. OpenManage Enterprise feature and benefits

Feature	Description	Benefits
Server initiated discovery	The new servers in a data center can notify OpenManage Enterprise and can get automatically discovered. Servers should have a iDRAC version of 4.00.00.00 or later.	Decrease deployment time and prevent costly human errors by automating and securely discovering and onboarding PowerEdge servers.
In-band Windows driver compliance and update	Check for Windows 64-bit drivers compliance from OpenManage Enterprise, and update them if needed.	Simplify system maintenance by tracking/ updating firmware and Windows 64-bit drivers.
Configuration management with profiles	This feature enables precreating profiles with device-specific settings (including virtual identities) for deployment to devices later.	Profile management allows for easy migration of settings from one device to another.
Packaged as a virtual appliance	OpenManage Enterprise is readily deployable as a virtual appliance in ESXi, Hyper-V, and KVM hypervisors.	Enables quick and easy deployment while gaining the benefits of virtualization, including the migration of the application from one physical server to another.

Table 1. OpenManage Enterprise feature and benefits (continued)

Feature	Description	Benefits
Discovery and Inventory on the IPv4 or IPv6 network	Discovery and inventory data center hardware up to 8000 devices.	Provides data-center visibility for IT administrators. Improves security and provides a management solution for customers no longer using IPv4.
Automatic device onboarding	The "make ready for management" step is automated for iDRAC during the device discovery and inventory process.	Minimizes human errors during the process of discovery and setup. Helps in getting the environment ready for on-going management.
Device level role-based access control (RBAC)	The scope of IT administration responsibilities can be assigned to specific groups of devices.	Helps ensure IT Admin workload balance and skill-set alignment.
Scope Based Access Control (SBAC)	Administrators can limit OME users (user type: Device Manager) to specific groups of devices	Scoped users are able to fully manage their devices but will not be able view or manage devices that don't belong to them. This provides as additional layer of security.
Server single sign-on	Use of credential caching is employed to avoid further password prompts when IT administration perform management tasks or launch the iDRAC virtual console.	Delivers fast and seamless management across the PowerEdge server lifecycle while enabling management from a single level.
Monitoring and Event Processing	Monitoring system health for discovered devices and create event policy to dispatch hardware events.	Provides IT admin real-time feedback for the health of their environment and enables automated responses through automation policy.
Comprehensive API	All product features are accessible from a new RESTful API that is conformant to the new popular Redfish standard.	Enables IT Admins to automate features and functions of OpenManage Enterprise through tools such as PowerShell and Python. It also allows them the flexibility of integrating OpenManage Enterprise into their existing IT processes.
Custom reports	IT administrators can use a powerful reporting engine to create customized reports.	Provides IT Admins rapid and easy access to specific device information.
Modern UI with elastic search capabilities	OpenManage Enterprise uses the modern HTML5 standard for its UI while enabling an elastic search engine that allows IT administrators to find anything in the console in a single search	Minimizes training time and maximizes efficiency by delivering quick results on searches involving devices, hardware and software inventory, features, functions, and so on. Also provides access from various browsers, and mobile devices.
Firmware compliance policies and updates	Firmware compliance policies allow IT administrators to establish one or more firmware baselines for groups of the PowerEdge servers in their environment. Selectively update firmware that is not compliant with the customer defined baselines.	Provides a simple method of enforcing minimum firmware levels for the PowerEdge servers that eliminates human error and minimizes downtime. Reinforces security by enabling customers to stay current with the firmware recommended by Dell.
Configuration compliance policies	Configuration compliance policies allow IT Administrators to establish one or more configuration baselines for groups of the PowerEdge servers in their environment.	Enables a simple method to monitor the PowerEdge servers against an established baseline. Helps in enforcing security standards and ensuring management consistency across server BIOS, RAID, network, and the iDRAC settings.
Bare-metal server deployment	Automate server HW configuration deployment to a bare-metal PowerEdge server and kick off unattended operating system installation process.	Saves time and relies less on local IT Administrators for provisioning and configuring PowerEdge server hardware in a reliable and consistent manner.

Table 1. OpenManage Enterprise feature and benefits (continued)

Feature	Description	Benefits
Custom Template Edit	Edit the deployment template attributes by using: <ul style="list-style-type: none"> • Guided view • Advanced view 	Provides ability to control template editing by "guided view" for specific attributes, such as BIOS, boot sequence and so on, to avoid human error. Granular control for <i>sophisticated</i> users by the "advanced view" template editing
Support for MX-series	Support for discovery, inventory, configuration compliance and remediation of MX7000 chassis-as a stand-alone chassis and as a lead chassis in a Multi Chassis Management (MCM) group.	Provides unified support for rack, blades, chassis from a single choice of console for our customer
Stateless Deployments and virtual Identity management	You can assign virtual identities to servers and perform stateless deployment.	Stateless deployments enable to create a server environment that is dynamic and flexible by automatically generating and assigning virtual identity attributes to the I/O interfaces of a server.
New Platform Support	Support for the latest 14th generation PowerEdge servers including the new blade servers of MX7000 chassis.	Provides unified support for multigenerational rack, blades, chassis from a single choice of console for our customer.
OpenManage Enterprise RESTful API	REST API enhancements for network configuration, identity pool creation, device template configuration, and profile management	Helps customer script from higher-level frameworks to enable enhanced automation in a data center environment.
Configuration Remediation	Remediation of a server config that has drifted against a defined baseline.	Helps keep data center in compliance to configuration standards..

For more information, see <https://www.dell.com/support/kbdoc/000175879/> .

CloudIQ for PowerEdge

CloudIQ is Dell's cloud-based AIOps application that provides intelligent insights for quickly and proactively resolving issues with Dell server, storage, data protection, and networking products. Through its OpenManage Enterprise (OME) plug-in, CloudIQ provides the advantages of a single user interface for monitoring all PowerEdge servers enterprise-wide, including servers located in different locations and supported by different OME instances. It leverages telemetry, machine learning and other algorithms for proactively monitoring and analyzing server health and performance to speed troubleshooting and time-to-resolution.

CloudIQ is available at no additional charge for products with a valid ProSupport (or higher) contract. Servers use secure networking to send telemetry from OME to CloudIQ, which is hosted on Dell Technologies' secure private cloud. Each CloudIQ instance provides its users with an independent, secure portal and ensures that they only see their own environment. Individual users can only see the systems in CloudIQ which are part of their site access as defined in Dell Service Center.

The CloudIQ for PowerEdge plug-in to OME allows monitoring of the following key features:

- Overview Dashboard
 - Consolidated view of all OME monitored servers, including their health, alert, performance, and warranty status.
 - Number of servers with health issues, so you can prioritize actions and drill down to get details.
 - Also indicates storage, SAN, data protection, and HCI system's health issues.
- Component Health
 - Server health issue details, so you can quickly identify and resolve server hardware issues.
 - Opt-in health emails notifications and daily/weekly digest emails, so you're continuously aware of issues anytime, anywhere.
- Cybersecurity Risk
 - Assesses if PowerEdge security settings are misconfigured (i.e., if they do not match the user's desired settings) and recommends how to remediate.
- Performance visualization
 - CPU, memory, IOPs, thermal, and power metrics, so you can see easily see the key performance indicators that matter.

- Performance anomaly detection, so you immediately see unusual performance and can quickly troubleshoot to limit impact to your applications.
- Hardware alerts
 - Server alerts via OME, so you can see all servers' alerts on one screen.
- Server Inventory
 - Hardware, firmware, Dell licenses, for each PowerEdge servers, so you can easily keep ahead of renewals.
- Warranty status
 - Warranties entitlement and expiry for each PowerEdge servers, so you can easily keep ahead of renewal.
- REST API and Webhook
 - Simplify integration with other IT tools, so you can leverage CloudIQ's intelligent insights in broader IT processes, such as escalation, IT service management, and automated remediation.

Dell OpenManage Enterprise Power Manager Plugin

Dell OpenManage Enterprise Power Manager is a Plugin for OpenManage Enterprise V3.2 and later. Power Manager provides power and thermal monitoring and management at a one to many levels. The features of Power Manager are:

- **Measure and manage power consumption and monitors thermal readings**—OME Power Manager provides greater insight into a data center's energy usage through detailed measurement of energy consumption throughout a data center. Power Manager gives administrators the ability to measure and manage the power consumption of up to 8,000 servers and track both short-term and long-term historical data.
- **Create and implement multiple usage policies**—Power Manager simplifies implementation of power policies across a data center. When it is used with the 12th generation or later versions of the PowerEdge servers, OpenManage Enterprise Advanced license and an iDRAC Enterprise license, administrators can control power consumption to each row, rack, or group of PE servers. In addition, administrators can create reports on energy usages, including VM Power Mapping and thermal readings on a group-by-group basis.
- **Reduce consumption during low-load hours**—Power Manager helps administrators to save power by allowing management of a server room according to business needs. Power Manager allows administrators to implement policies that reduce the power consumption when the demand on the systems is lower. It can also assign maximum power to the servers that run the most important applications.
- **Calculate and report carbon emissions**—OME Power Manager calculates and reports carbon emissions as related to PowerEdge usage. Power Manager also reports on low usage servers so they may be uninstalled or repurposed.

For more information, see *OpenManage Power Manager Plugin User's Guide* available at <https://www.dell.com/support/home/en-us/product-support/product/openmanage-enterprise-power-manager/docs>.

Dell OpenManage Enterprise Services Plugin

OpenManage Enterprise Services, previously known as OpenManage Enterprise SupportAssist, is a Plugin for OpenManage Enterprise v3.5 and later. It integrates with OpenManage as a Plugin, streamlining your services experience. It is Dell's auto case creation and remote monitoring technology that enables Dell Technologies support to resolve issues with minimal effort from your team, replacing manual routines and downtime with automated support.

Once connected, OME Services Plugin helps with the power to:

- Prevent outages with secure remote monitoring—The best time to solve a problem is before it happens. OME Services Plugin monitors system health proactively by detecting future failures. Help systems stay up and running without unplanned downtime.
- Active troubleshooting—OME Services Plugin automates case creation and sends diagnostic information to Dell Technologies support which enables to resolve issues with minimal effort.
- Get the best performance with actionable recommendations—Your data center must perform efficiently to support your remote workforce. Equip your team with on-demand reporting and recommendations to help them make data-driven decisions.

OME Services Plugin securely collects only system state information. System state information includes configuration, event notifications, and system diagnostic information. For more information about how OME Services Plugin securely monitors your enterprise environment.

Dell Update Manager Plugin

Dell Update Manager Plugin (UMP) brings Dell Repository Manager functionality to OpenManage Enterprise v3.5. UMP streamlines the custom repository creation, baseline creation, catalog creation, and downloads of update packages to a single easy workflow. UMP allows for easy management of the repository, including; delete, import, and schedule refreshes. With UMP, you get an overview screen that shows key information, including Repository Name, Catalog used for creation, version, and color-coded criticality. UMP does not require a license to use.

You can use Dell Update Manager Plugin to:

- Update repository, catalog, or baseline creation in a single workflow.
 - Using solution catalogs such as ESXi, Azure Stack, and Validated MX Stack.
 - Using DRM created catalog and Server Update Utility (SUU) catalogs that are at a network location.
 - Adding baselines automatically to the OME Firmware and Compliance page.
- Automate downloading of DUP packages to OME that allows efficient deployment of updates.
- Delete or import DUPs into custom repositories.
- Schedule refresh of custom updates for repository, catalog, and baseline .
- UMP v1.1 and above supports OME 3.6 Scope Based Access Control.

UMP	OME
UMP 1.0	OME 3.5
UMP 1.1	OME 3.6 and 3.7
UMP 1.2	OME 3.8
UMP 1.3	OME 3.9

For more information, see *Update Manager Plugin User Guide* available at <https://www.dell.com/support/home/product-support/product/openmanage-enterprise-update-manager/docs>

Dell Repository Manager

Dell 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 Enterprise, 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 Repository Manager can create the following deployment tools:

- Custom catalogs
- Smart Bootable ISO
- Smart Deployment Package
- Custom Server Update Utility (SUU)

For more information, see *Dell Repository Manager User's Guide* available at <https://www.dell.com/support/home/product-support/product/repository-manager/docs>.

Dell OpenManage Mobile

Dell OpenManage Mobile (OMM) is a mobile application for managing servers and related devices from Android and iOS mobile devices. OMM enables IT administrators to perform a subset of server configuration, monitoring, and remediation tasks from anywhere and anytime.

Advantages of using OpenManage Mobile

- View inventory, monitor health status, and perform basic setup of servers, MX7000 chassis, and its sleds.
- Streamline monitoring and troubleshooting of PowerEdge MX7000 modular infrastructure through Augmented Reality view of chassis components.

- Discover any server issues by signing up for proactive notifications from OpenManage Enterprise.
- View the server information about a large screen and get the equivalent of a large LCD display on the mobile device.
- Reduce the need for cumbersome crash carts by using a mobile device to access system console.
- Scan the iDRAC credentials that are stored in QR code for ease-of-use and faster first-time login.
- Batch update factory default iDRAC passwords for Dell PowerEdge 14th generation servers.

Accessing PowerEdge servers from OpenManage Mobile

There are three ways OpenManage Mobile can access and manage the Dell PowerEdge servers:

- **Access iDRAC at-the-server or MX7000 at-the-chassis**

On 14th generation of the PowerEdge servers or MX7000: OMM can access PowerEdge 14th generation servers or MX7000 through Quick Sync 2 module. After it gets connected, IT administrators can configure IP addresses and BIOS settings, share Dell OME Services Plugin reports, view server inventory, health status and logs, or power cycle a server.

Quick Sync 2 is supported on many PowerEdge rack and tower servers, such as R940, R940xa, R840, R740, R740xd, R640, R540, R440, R6415, R6515, R6525, R7515, R7425, R7415, and T640.

On 13th generation of the PowerEdge servers: OMM can access PowerEdge 13th generation servers through the Quick Sync bezel. After connected, IT administrators can configure IP addresses, view server inventory, health status and logs, or power cycle a server.

Quick Sync bezel is supported on PowerEdge R730, R730xd, and R630 servers.

NOTE: For **at-the-server** access, you must install the Quick Sync 2 module or the Quick Sync bezel.

NOTE: For **at-the-chassis** access, you must install the Quick Sync 2 module on MX7000.

- **Access iDRAC or MX7000 remotely**

OMM can access 12th, 13th, and 14th generation of the PowerEdge servers remotely over a secure, internal network from anywhere. After connected, IT administrators can configure IP addresses and BIOS settings, share Dell OME Services Plugin reports, view server inventory, health status and logs, or power cycle a server.

When you access an MX7000 lead chassis remotely, you automatically get access to any of the member chassis and sleds. The access to MX7000 remotely happens through OpenManage Enterprise Modular running on that MX7000.

NOTE: Features vary by server-model and generation. To access iDRAC, OpenManage Enterprise remotely, there is no additional hardware required other than the Android or IOS devices.

- **Access servers remotely through OpenManage Enterprise console**

OMM can connect to the PowerEdge servers through the OpenManage Enterprise—3.1. IT administrators can monitor all systems-managed using OpenManage Enterprise including Dell chassis, servers, storage, networking, and firewall appliances and other OME-supported third-party hardware. OMM can also receive proactive notifications from OME console.


Automation Enablers

- Dell System Update
- OpenManage Ansible Modules
- iDRAC RESTful APIs (Redfish Standards based)
- Other Embedded Management Automation Interfaces
- RACADM CLI
- OpenManage RESTful APIs
- GitHub Scripting Libraries

Dell System Update

Dell System Update (DSU) is CLI optimized application used to distribute the Dell PowerEdge server updates for Linux and Microsoft Windows operating systems. DSU is a script optimized tool, that provides enhanced ease of use, automation and flexibility. DSU works on a wide range of operating systems, including RHEL, SLES, Ubuntu, and Windows Server.

Dell System Update v1.7 or higher allows performing update to remote systems using either in-band through Windows and Linux or out-of-band through iDRAC9.

 **NOTE:** DSU v1.4 and higher has been enhanced to facilitate the creation of Smart bootable ISO.

For more information, see <https://www.dell.com/support/kbdoc/000130590>.

Dell OpenManage Ansible Modules

Dell OpenManage Ansible Modules enable data center and IT administrators to use Red Hat Ansible to automate and orchestrate the provisioning, configuration, deployment, and update of PowerEdge Servers. It uses the management automation capabilities in-built into the iDRAC, OpenManage Enterprise, and OpenManage Enterprise Modular. Ansible is an automation tool that can configure systems, deploy software, and perform more advanced IT tasks such as continuous deployments or zero downtime rolling updates. With OpenManage Ansible Modules for PowerEdge servers, data center and IT administrators can rapidly deploy their infrastructure, change server configurations, and manage configuration drift against a known baseline.

For more information, see <https://www.dell.com/support/kbdoc/000177308/>.

iDRAC Restful APIs (Redfish Standards based)

iDRAC provides a range of standards-based applications programming interfaces (APIs) that enable scalable and automated management of the 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 include:

- **iDRAC RESTful API:** It provides a RESTful interface that expands upon the DMTF Redfish standard with the Dell operations. It includes the RESTful server configuration, modular server feature support, and detailed OS networking inventory and status.
- **iDRAC RESTful API—with Redfish support:** In 2015, the DMTF Scalable platforms Management Forum published iDRAC RESTful API—with Redfish support. It is 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 iDRAC RESTful API standard, acting as cochair of the SPMF, promoting the benefits of iDRAC RESTful API, and working to deliver those benefits within industry-leading systems management solutions. iDRAC RESTful API 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.

For more information, see <https://developer.dell.com/>

Other Embedded Management Automation Interfaces

- **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. 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.

 **NOTE:** WSMan has been deprecated and no longer supported.

- **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.

Dell Remote Access Controller Administration CLI

The Remote Access Controller Administration (RACADM) command-line utility provides a scriptable interface to perform inventory, configuration, update, and health status check of the 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 iDRAC and by the Chassis Management Controller of the M1000e, VRTX, and FX2 modular systems. Local and remote RACADM is supported on Windows Server, the Windows clients, and on Red Hat, SuSe, and Ubuntu Linux.

Using a text-based interface for all iDRAC functions, RACADM supports the viewing and changing of all server attributes. This includes BIOS, iDRAC, PERC, NIC, and HBA settings as well as server cooling and power-status and settings. RACADM also supports profile-based server configuration management, detailed hardware and firmware inventory, and access to server logs.

For more information, see the *RACADM command line Reference Guide for iDRAC* and *RACADM command line Reference Guide for CMC* available at <https://www.dell.com/manuals>.

OpenManage RESTful APIs

There is a strong need for well-supported APIs for minimizing or eliminating human errors from operational processes which drive innovation since it reduces TCO and frees up resources, for rapid scale up and down of the infrastructure based on the organizational needs by creating replicable scripting and DevOps, for integrating new solutions to the existing ones and also managing a heterogenous HW environment.

To achieve this flexibility, scalability, consistency, and unified experience OpenManage products support northbound RESTful APIs.

The embedded management APIs or the iDRAC APIs are conformant to the Redfish DMTF standards and are responsible for automating end to end server management functionalities. Other value added capabilities like Telemetry streaming, and Server configuration Profiles use the Dell proprietary RESTful APIs.

The console APIs for OpenManage Enterprise and all the plugins to OME like PowerManager Plugin or the OME Services Plugin or the Update Manager Plugin and also the OpenManage Enterprise Modular and OMIVV products are modeled after the Redfish standards and are Dell proprietary RESTful APIs.

For more information, see <https://developer.dell.com/>

GitHub Scripting Libraries

To help in automating system management tasks and simplify API integration, Dell provides the PowerShell and Python libraries and script examples using the OpenManage RESTful APIs and iDRAC RESTful API with Redfish and WSMAN interfaces. These libraries and examples are available in the Dell GitHub repository at <https://www.github.com/dell>. The iDRAC pages offer a library of technical white papers detailing the use of the embedded management APIs. For more information, see <https://www.dell.com/support/kbdoc/000178016>.

Integration With Third-Party Consoles

The Dell integrations are:

- Dell OpenManage Integration for Microsoft System Center (OMIMSSC) for System Center Operations Manager (SCOM)
- Dell Windows Server Agent-based and iDRAC7, iDRAC8 SNMP Management Packs for SCOM
- Dell OpenManage Integration for Microsoft System Center (OMIMSSC) for Microsoft Endpoint Configuration Manager (MECM) formerly System Center Configuration Manager (SCCM)
- Dell Server Deployment Pack for Microsoft System Center Configuration Manager (SCCM) - End of Life
- Dell OpenManage Integration for Microsoft System Center (OMIMSSC) for System Center Virtual Machine Manager (SCVMM)
- Dell Server PRO Management Pack for Microsoft System Center Virtual Machine Manager (SCVMM)
- Dell OpenManage Integration with Microsoft Windows Admin Center (WAC)
- Dell OpenManage Integration for VMware vCenter (OMIVV)
- Dell OpenManage Integration with ServiceNow

- BMC Software

Dell OpenManage Integration for Microsoft System Center (OMIMSSC) for System Center Operations Manager(SCOM)

Dell OpenManage Integration for Microsoft System (OMIMSSC) for System Center Operations Manager(SCOM) appliance, the Dell Windows Server Agent-based and iDRAC7, iDRAC8 SNMP Management Packs for SCOM helps you to discover, monitor, and accurately depict the status on a defined network segment in agent-free and agent-based, SNMP Management Pack approach.

- Dell PowerEdge Servers, Integrated Dell Remote Access Controllers (iDRAC)
- Dell Chassis Management Controller (CMC)
- OpenManage Enterprise - Modular Edition (OME-M)
- Dell PowerVault NX NAS Storage Array
- Dell Network Switches

The OMIMSSC appliance and management packs provide Dell-specific views that you can use to observe and analyze the system status in a defined network environment. Synchronization of all supported Dell devices that are discovered within the enrolled Operations Manager console. For the detailed list of monitoring features applicable with the agent-free and agent-based solution refer to the product documentation.

For more information, see *Microsoft System Center Operations Manager Server Management Pack User's Guide* available at <https://www.dell.com/esmmanuals> and for KB article see <https://www.dell.com/support/kbdoc/000188820>.

Dell OpenManage Integration for Microsoft Endpoint Configuration Manager (MECM) formerly System Center Configuration Manager

Dell OpenManage Integration for Microsoft System Center (OMIMSSC) for Microsoft Endpoint Configuration Manager (MECM) formerly System Center Configuration Manager provides agent-free, operating system and hypervisor agnostic configuration, OS deployment, and firmware updates for PowerEdge servers. Automated processes reduce the steps, time, and cost in configuring servers from a bare-metal state and also in preparing remote one-to-many operating system deployments within multivendor operating system and hypervisor environments.

For more information, see *Dell OpenManage Integration for Microsoft System Center (OMIMSSC) for Microsoft Endpoint Configuration Manager (MECM) formerly System Center Configuration Manager User's Guide* available at <https://www.dell.com/esmmanuals> and for KB articles, see <https://www.dell.com/support/kbdoc/000147399/>.

Dell Server Deployment Pack for Microsoft Endpoint Configuration Manager formerly Microsoft System Center Configuration Manager

NOTE: This integration is deprecated and End of Life from Dell.

Dell server Deployment Pack uses OpenManage Deployment Toolkit (DTK) and PxE-based OS deployment to automate bare-metal configuration and deployment of various Microsoft operating systems on PowerEdge servers across your network.

NOTE: DTK is End of Life from Dell.

NOTE: Dell Server Deployment Pack is end of life, v4.1A02 is the last release of the product as the dependent DTK is already end of life. **Recommended Product:** Dell OpenManage Integration for Microsoft System Center (OMIMSSC) for Microsoft Endpoint Configuration Manager (MECM) formerly System Center Configuration Manager (SCCM) and System Center Virtual Machine Manager (SCVMM).

For more information, see the latest documentation of *Dell Server Deployment Pack User's Guide* available at <https://www.dell.com/esmmanuals>.

Dell OpenManage Integration for Microsoft System Center for System Center Virtual Machine Manager

Dell OpenManage Integration for Microsoft System Center (OMIMSSC) for System Center Virtual Machine Manager helps to automate and simplify hardware configuration and OS deployment.

It helps in:

- Hardware configuration
- OS deployment
- Hypervisor deployments
- Cluster deployments
- Repurposing of supported Dell PowerEdge servers
- Automated Cluster Deployment of Dell Microsoft Storage Spaces Direct Ready Nodes [S2D Ready Nodes]
- Simplified Lifecycle Management that includes the Cluster Aware Firmware Update capabilities

By using OpenManage Integration for Microsoft System Center (OMIMSSC), you can do the following:

- Using Update Center for a simplified, and enhanced experience to achieve multistep workflow in a single window.
- Automatically group rack and modular servers into virtual groups based on cluster, chassis, hosts, and unassigned server groups at discovery phase.
- Managing hosts by synchronizing SCVMM hosts with OpenManage Integration for Microsoft System Center (OMIMSSC) appliance.
- Installing as a Virtual Appliance (software model) for a simplified implementation and initial configuration with SCVMM.
- Checking the PowerEdge server compliance to ensure that the required firmware revision is installed.
- Performing auto-discovery and handshake to enable iDRAC with LC on bare-metal servers. This helps to locate the SCVMM console through the OpenManage Integration for Microsoft System Center (OMIMSSC) appliance.
- Discovering unassigned PowerEdge servers manually while using static IP for the iDRAC with LC network.
- Viewing key inventory details of discovered servers, which help IT Administrators to select appropriate servers to deploy in the datacenter.
- Preparing an ideal server configuration, also known as a Golden Configuration, based on the IT Administrator defined standards to enable rapid and consistent replication of the same configuration on servers that are targeted for deployment into the virtual environment.
- Enabling IT Administrators in developing and maintaining policy and profile-based configuration templates to reduce repetitive management tasks and time consumption.
- Deploying OS and hypervisor by using the following options:
 - iDRAC with LC, which contains driver packs for all supported operating systems for OS deployments.
 - Prepare customized Microsoft Windows Pre-installation Environment (WinPE) images with OS drivers optionally available from Dell OpenManage Server driver pack.
 - ⓘ **NOTE:** DTK is End of Life, use OpenManage server driver pack for bare metal deployments.
 - Replicate hypervisor deployments with or without utilizing the LC driver packs based on the selected Golden Configuration and also replicate BIOS, RAID, and Boot Order settings.
- Installing server operating systems remotely.
- Viewing data logs of jobs and tasks that are performed within the DLCI appliance.
- Using Active Directory credentials for authentication and access to iDRAC/LC.
- Automating the S2D cluster deployment on bare-metal Dell Ready Nodes Servers in SCVMM environment.
- Performing Cluster Aware Firmware Update from pre-validated solution catalog
- Using precanned operational templates for S2D ready nodes
- Automating Logical Switch and Logical Network
- Performing compliance check for servers with operational template before deployment.
- Simplifying End to End deployment with 3-step process - Discovery, Logical Switch, and Deploying Cluster.

For more information, see *Dell OpenManage Integration for Microsoft System Center (OMIMSSC) for System Center Virtual Machine Manager User's Guide* available at <https://www.dell.com/esmmanuals> and for KB articles, see <https://www.dell.com/support/kbdoc/000147399>.

Dell Server PRO System Center Management Pack for Microsoft System Center Virtual Machine Manager

Dell server PRO Management Pack integrates PowerEdge server knowledge on temperature, memory, and power supplies with Microsoft System Center Virtual Machine Manager (SCVMM) and Operations Manager (SCOM) to efficiently manage servers that host virtual workloads running on Microsoft Hyper-V. Remedial actions can be quickly implemented if a system is compromised.

For more information, see *Dell server PRO Management Pack for Microsoft System Center Virtual Machine Manager User's Guide* available at <https://www.dell.com/esmanuals>.

Dell OpenManage Integration with Microsoft Windows Admin Center

Dell OpenManage Integration with Microsoft Windows Admin Center (OMIMSWAC) extension empowers customers to break down information silos that threaten their TCO, IT operations. The Dell OpenManage WAC extension enables streamlined lifecycle management of :

- PowerEdge servers that are supported on Microsoft Windows Server
- Hyper-V, Failover clusters based of PowerEdge servers running on-premises and Azure hybrid environments.
- HCI clusters based of AX nodes part of the Dell-Integrated System for Microsoft Azure Stack HCI - new hyperconverged infrastructure (HCI) operating system that is delivered as an Azure service.
- HCI clusters based of AX nodes, storage spaces direct ready nodes part of the Dell HCI Solutions for Microsoft Windows server.

Customers looking for a modern, easy to use in-box tool, browser-based console to manage servers, clusters, and hyperconverged infrastructure could take advantage of Microsoft Windows Admin Center console. When combined with the Dell OpenManage Integration offers deep hardware monitoring and enhanced lifecycle management of the servers, nodes, clusters, and hyperconverged infrastructure.

For more information, see the KB article available at <https://www.dell.com/support/kbdoc/000177828>

Dell OpenManage Integration for VMware vCenter

The Dell OpenManage Integration for VMware vCenter (OMIVV) 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.

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

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, including with vSAN clusters and vSphere Lifecycle Manager
- Deploying enhanced options

For more information, see <https://www.dell.com/support/kbdoc/000176981/>.

OpenManage Integration with ServiceNow

Dell OpenManage Integration with ServiceNow helps enterprise organizations in improving their operations efficiency. It bridges the gap between their service and operations management processes. It is a native application within the ServiceNow platform that provides interface between OpenManage Enterprise infrastructure management capabilities and ServiceNow service and operations management capabilities. The integration provides automation capabilities to transfer data between these two platforms, helping operations and service management teams in faster detection, diagnosis and resolution of issues that impacts the business services and the IT infrastructure health. Also, OpenManage Integration with ServiceNow also integrates with OME

Services Plugin for viewing and tracking the support cases that are raised with Dell Support right from within the ServiceNow platform. With this integration, operation and service management teams can keep themselves abreast of the technical support tickets that have been raised with Dell support and track their progress from incident to resolution.

With this integration, you can:

- Synchronize PowerEdge server information between OpenManage Enterprise and ServiceNow Configuration Management Database (CMDB).
- Monitors alerts for servers
- Create incidents automatically for a critical and warning alerts for servers.
- View and monitor the support tickets that are raised with Dell Support.

For more information, see <https://www.dell.com/support/article/sln310720>

BMC Software


Dell, along with BMC Software, servers, storage and network management functionality with the BMC Software's process and datacenter automation products. Dell and BMC Software's partnership helps to ensure that Dell and BMC Software-based IT infrastructure and services provide the highest level of datacenter and business services manageability. The integration between Dell and BMC Software products is highlighted by Dell's own IT organization; BMC Software helps Dell IT automate key processes and accelerate responsiveness by deploying multiple BMC Software solutions.

For more information, see *The combined power of BMC and Dell* available at i.dell.com/sites/doccontent/shared-content/data-sheets/en/Documents/The_Combined_Power_of_BMC_and_Dell.pdf

Connections For Third-Party Systems Management Consoles

Dell OpenManage Operations Connector for Operations Bridge Manager

OpenManage Operations Connector for Micro Focus Operations Bridge Manager (OBM) provides capabilities to integrate the OpenManage Enterprise and OpenManage Enterprise with Micro Focus OBM. The OpenManage Operations Connector (OpsCx) helps system and IT administrators to get a comprehensive view of Dell devices in a data center. It collects the events and topology data of OpenManage Enterprise and transfers them to Micro Focus OBM console. It also supports web console launch of OpenManage Enterprise directly from the Micro Focus OBM environment to perform further troubleshooting, configuration, and management activities for Dell devices.

 **NOTE:** HPE Operations Bridge/Operations Manager i (OMi) / Operations Manager are now part of Micro Focus.

For more information, see <https://www.dell.com/support/article/sln310709>.

OpenManage Connection for IBM Tivoli Netcool/OMNIbus

OpenManage Connection for IBM Tivoli Netcool/OMNIbus provides agent-free (out-of-band) monitoring of PowerEdge servers, iDRAC, modular infrastructure, workstation, storage arrays, and networking devices. It includes event or alert autocorrelation from within the IBM Tivoli Netcool/OMNIbus console. It also supports launching of one-to-one device consoles such as iDRAC web console and one-to-many Dell tools such as OpenManage Enterprise from within the Netcool/OMNIbus console. It helps in configuration, troubleshooting, and other system management activities on Dell devices

For more information, see the *OpenManage Connection for IBM Tivoli Netcool/OMNIbus User's Guide* available at <https://www.dell.com/esmanuals>.

OpenManage Plugin for Nagios Core

OpenManage Plugin for Nagios Core uses agent-free (out-of-band) method to discover inventory and monitor the following Dell devices in the data center environments that are managed by Nagios Core:

- PowerEdge Servers

- iDRAC
- Dell Modular Infrastructure
- Dell Storage Arrays
- Dell Networking devices
- Hyper-Converged Infrastructure (HCI)

With this Plugin, you have comprehensive hardware-level visibility and health monitoring information of the Dell devices including both overall and component-level health monitoring for quicker fault detection and resolution.

For more information, see the *OpenManage Plugin for Nagios Core User's Guide* available at <https://www.dell.com/esmmanuals>.

OpenManage Plugin for Nagios XI

OpenManage Plugin for Nagios XI uses agent-free (out-of-band) method to discover inventory and monitor the following Dell devices in the data center environments that are managed by Nagios XI:

- PowerEdge Servers
- iDRAC
- Dell Modular Infrastructure
- Dell Storage Arrays
- Dell Networking devices
- Hyper-Converged Infrastructure (HCI)

With this Plugin, you have comprehensive hardware-level visibility and health monitoring information of the Dell devices including both overall and component-level health monitoring for quicker fault detection and resolution.

For more information, see the *OpenManage Plugin for Nagios XI User's Guide* available at <https://www.dell.com/esmmanuals>.

Dell Update Utilities

The following table lists the update utilities and the supported operating systems.

Table 2. Dell Update Utilities

Product	Windows	Linux
Dell Repository Manager	Yes	Yes
Dell Update Packages	Yes	Yes
Dell Server Update Utility	Yes	Yes
Dell System Update	Yes	Yes
Dell Update Manager Plugin (OpenManage Enterprise)	N/A	N/A

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.

DUPs can be executed in GUI or in CLI mode.

For more information, see *Dell Update Packages User's Guide* available at <https://www.dell.com/support/home/product-support/product/dell-update-packages/docs>.

Dell Server Update Utility

Dell Server Update Utility (SUU) is an application that contains a collection of updates, inventory collector, and update applicator. When you run SUU on a target system, it determines which updates are appropriate and applies the ones that are applicable.

SUU can be downloaded from a supported platforms Drivers and Download page on <https://www.dell.com/support> or a custom SUU can be created using Dell Repository Manager (DRM).

For more information, see *Dell Server Update Utility User's Guide* available at <https://www.dell.com/support/home/product-support/product/server-update-utility/docs>.

Dell Update Manager Plugin

Dell Update Manager Plugin (UMP) brings Dell Repository Manager functionality to OpenManage Enterprise v3.5. UMP streamlines the custom repository creation, baseline creation, catalog creation, and downloads of update packages to a single easy workflow. UMP allows for easy management of the repository, including; delete, import, and schedule refreshes. With UMP, you get an overview screen that shows key information, including Repository Name, Catalog used for creation, version, and color-coded criticality. UMP does not require a license to use.

Legacy — Dell Hardware Management Tools

Topics:

- [OpenManage Server Administrator](#)
- [Baseboard Management Controller Management Utilities](#)
- [Dell Remote Access Configuration Tool](#)
- [OpenManage Deployment Toolkit](#)
- [Dell IPMI Tool](#)

OpenManage Server Administrator

The OpenManage Server Administrator provides a comprehensive one-to-one systems management solution for both local and remote servers and their storage controllers and Direct Attached Storage (DAS). It can communicate using following interfaces - GUI, WMI, SNMP and CLIView system configuration, health, and performance. Use Server Administrator to:

- View system configuration, health, inventory and Asset information of the system and provide functions to shut down the server remotely from OMSA GUI console
- Perform monitoring and configuration functions for all the supported RAID and non-RAID controllers and enclosures without using the Option ROM utilities.

For more information, see the *OpenManage Server Administrator Storage Management User's Guide* available at <https://www.dell.com/esmmanuals>.

Baseboard Management Controller Management Utilities

The Baseboard Management monitors the system for critical events by communicating with various sensors on the system board and sends alerts and logs events when certain parameters exceed their preset thresholds. The Baseboard Management Controller supports the industry-standard Intelligent Platform Management Interface (IPMI) specification, enabling you to remotely configure, monitor, and recover systems.

For complete information, see the *Baseboard Management Controller Management Utilities User's Guide* available at <https://www.dell.com/esmmanuals>.


Dell Remote Access Configuration Tool

Dell Remote Access Configuration Tool is a one-to-many application that discovers and configures iDRAC from a single console. It helps to:

- Discover or import the iDRAC IP addresses on the network.
- Update firmware for the selected iDRAC.
- Configure standard or extended schema-based Active Directory settings for selected iDRAC.
- Create the iDRAC objects on the Active Directory server for extended schema-based Active Directory.

For complete information, see *Dell Remote Access Configuration Tool User's Guide* available at <https://www.dell.com/esmmanuals>.

OpenManage Deployment Toolkit

 **NOTE:** This tool is deprecated.


The OpenManage Deployment Toolkit includes a set of utilities for configuring and deploying PowerEdge systems. It is designed for customers who want to build scripted installations to deploy large numbers of servers without making many changes to their current deployment process.

In addition to the command-line utilities used to configure various system features, the Deployment Toolkit also provides sample scripts and configuration files to perform common deployment tasks. These files and scripts describe the use of Deployment Toolkit in Microsoft Windows Preinstallation Environment (Windows PE), and embedded Linux environments

The OpenManage Deployment Toolkit (DTK) along with the associated tools and capabilities will be deprecated for version 6.0.1 and later:

- Redundant Array of Independent Disks Configuration (RAIDCFG) Utility
- System Configuration (SYSCFG) Utility
- ELI tool
- Utility Partition (UPINIT)

It is recommended to use the RACADM Command Line (CLI) as a replacement for the RAIDCFG and SYSCFG utilities. For more information on downloading RACADM, see <https://www.dell.com/support>.

 **NOTE:** DTK is not supported on future platforms beyond the current 14th generation of Dell PowerEdge Servers. DTK will be sustained for current and earlier supported platforms until those platforms pass their end of support life (EOSL) threshold. The last release for DTK is the version 6.3. The end of support for DTK will coincide with the end-of-support-life (EOSL) date for PowerEdge 14th generation platforms.

For more information, see the *Dell OpenManage Deployment Toolkit User's Guide* available at <https://www.dell.com/esmmanuals>.

Dell IPMI Tool

The Dell IPMI Tool are scriptable-console-application programs used to control and manage remote systems using the IPMI version 2.0 protocol.

For complete information, see the *Dell Baseboard Management Controller Management Utilities User's Guide* available at <https://www.dell.com/esmmanuals>.


Accessing support content from the Dell support site

Access supporting content related to an array of systems management tools using direct links, going to the Dell support site, or using a search engine.

- Direct links:
 - For Dell Enterprise Systems Management and Dell Remote Enterprise Systems Management—<https://www.dell.com/esmmanuals>
 - For Dell Virtualization Solutions—www.dell.com/virtualizationsolutions
 - For Dell OpenManage—<https://www.dell.com/openmanagemanuals>
 - For iDRAC—<https://www.dell.com/idracmanuals>
 - For Dell OpenManage Connections Enterprise Systems Management—<https://www.dell.com/OMConnectionsEnterpriseSystemsManagement>
 - For Dell Serviceability Tools—<https://www.dell.com/serviceabilitytools>
- Dell support site:
 1. Go to <https://www.dell.com/support>.
 2. Click **Browse all products**.
 3. From the **All products** page, click **Software**, and then click the required link.
 4. Click the required product and then click the required version.

Using search engines, type the name and version of the document in the search box.

Contacting Dell

 **NOTE:** If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues, see <https://www.dell.com/contactdell>.