Dell Systems Management Overview Guide

Version 13.0

Notes, cautions, and warnings

(i) **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.**

Contents

Dell Systems Management

Dell delivers management solutions that help IT Administrators effectively deploy, update, monitor, and manage IT assets. OpenManage solutions and tools allow you to quickly respond to problems by helping them to manage Dell EMC 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) with Lifecycle Controller.

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, thus making Dell platforms easy to deploy, update, monitor, and manage.

If you have standardized offerings from industry leaders such as BMC Software, Microsoft, VMware, or other vendors, you can extend the existing systems management framework and the skills of the IT staff to efficiently manage Dell servers, storage, business-client PCs, and networking equipment using Dell's Systems Management tools, utilities, and consoles.

Dell's systems management solution consists of software products that help you to discover, monitor, manage, update, and deploy software or firmware on Dell servers. The products focus on:

- Reducing complexity and saving time

  - Eliminating need for additional utilities
  - Eliminating tasks that increase time required to perform tasks
- Achieving efficiency and controlling costs

  - Improving asset management
  - Optimizing resource utilization
- Increasing productivity by connecting to major systems management consoles and protecting investments

  - Providing features in tools that customers choose, thus adapting to customers' mode of operation
  - Automating to reduce downtime and human error

These software products are useful for administrators to control and manage Dell servers, storage, network, and client devices from a single workstation.

This document provides a list of Dell Systems Management offerings using the OpenManage Suite of products and the OpenManage Connections. It also provides overview for different products and a feature matrix that helps you choose the appropriate tools to manage your Dell systems.

Topics:

- Dell Systems Management Offerings

Dell Systems Management Offerings

Dell's suite of Systems Management offerings extend a wide variety of tools, products, and services. Dell's 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 with Lifecycle Controller. For an interactive tool to see the best OpenManage tools for your datacenter environment, see online *OpenManage Advisor Tool*. This tool covers a wide range of topics regarding your datacenter and provides a detailed output based on your information. The following figure shows the Dell systems management offerings that are used in the Advisor tool.

OpenManage systems management portfolio

Featuring industry leading iDRAC with Lifecycle Controller

Dell OpenManage Consoles
- OpenManage Essentials
- Chassis Management Controller
- OpenManage Power Center

Dell Mobile Applications
- Dell OpenManage Mobile (OMM)

Tools and Utilities
- Dell EMC Repository Manager
- OpenManage Server Administrator
- Dell EMC System Update
- Dell EMC Server Update Utility
- Dell EMC License Manager

Integrations for Partner Consoles
- Microsoft System Center
- VMware vCenter
- BMC BladeLogic

Connections for 3rd Party Consoles
- HP
- IBM
- Oracle
- Nagios
- CA
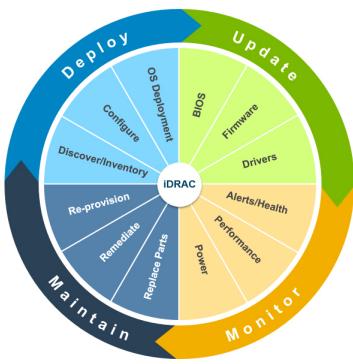
Deploy — Update — Monitor — Maintain

OS Deployment · Configure · Discover/Inventory · BIOS · Firmware · Drivers · Alerts/Health · Performance · Power · Replace Parts · Remediate · Re-provision · iDRAC

Dell Hardware Management Tools

- Integrated Dell Remote Access Controller (iDRAC) with Lifecycle Controller (LC)
- Dell Chassis Management Controller (CMC) for blade servers
- iDRAC Service Module (iSM)
- Remote Access Controller Administration (RACADM) CLI
- Embedded Management APIs: Redfish, WSMan, IPMI, SNMP

Dell Consoles

- OpenManage Essentials (OME)
- OpenManage Power Center (OMPC)

Dell Mobile Applications

- OpenManage Mobile (OMM)

Dell EMC Update Utilities

- Dell EMC Repository Manager (DRM)
- Dell EMC Update Packages (DUP)
- Dell EMC Server Update Utility (SUU)
- Dell EMC Linux Repository

Integration With Third-Party Consoles

- Dell EMC Deployment Pack for Microsoft System Center Configuration Manager
- Dell EMC PRO Management Pack for Microsoft System Center Virtual Machine Manager (SCVMM)
- Dell EMC Management Pack Suite for Microsoft System Center Operations Manager
- Lifecycle Controller Integration for Microsoft System Center Virtual Machine Manager
- Lifecycle Controller Integration for Microsoft System Center Configuration Manager
- OpenManage Integration for VMware vCenter
- BMC Software
- iDRAC with BMC Software BladeLogic Server Automation (BSA)
- OpenManage Server Administrator with BMC ProactiveNet Performance Management Suite.

Connections For Third-Party Consoles

- Hewlett Packard Enterprise (HPE)

- Dell EMC OpenManage HPE Operations Manager i (OMi) Operations Connector
- Dell Smart Plug-in (SPI) for HP Operations Manager (HPOM) for Windows
- IBM
  - OpenManage Connection for IBM Tivoli Netcool/OMNIbus (ITNO)
  - OpenManage Connection for IBM Tivoli Network Manager (ITNM) IP Edition
- Nagios
  - OpenManage Plug-in for Nagios Core
  - OpenManage Plug-in for Nagios XI
- Oracle
  - OpenManage Plug-in for Oracle Enterprise Manager (OEM)
- CA Technologies
  - OpenManage Connection for CA Network and Systems Management (CA NSM)
  - CA Spectrum and CA Unified Infrastructure Management (Native Integration)

Dell Resources

For additional information about white papers, videos, blogs, forums, technical material, tools, usage examples, and other information, visit the OpenManage page at www.dell.com/support/article/sln310664 or the following product pages:

- For general information and interactive graphics for Systems Management Products, see www.dell.com/support/article/sln310664 .
- For Integrated Dell Remote Access Controller (iDRAC) page, see www.dell.com/support/article/sln311300.
- For Lifecycle Controller (LC) page, see www.dell.com/support/article/sln311809 .
- For OpenManage Ansible Modules page, see www.dell.com/support/article/sln310720.
- For OpenManage Essentials (OME) page, see www.dell.com/support/article/sln312494.
- For OpenManage Mobile (OMM) page, see www.dell.com/support/article/sln310980.
- For OpenManage Integration for VMware vCenter (OMIVV), see www.dell.com/support/article/sln311238.
- For OpenManage Integration for Microsoft System Center (OMIMSSC), see www.dell.com/support/article/sln312177.
- For Dell EMC Repository Manager (DRM) page, see www.dell.com/support/article/sln312652 .
- For Dell EMC System Update (DSU) page, see www.dell.com/support/article/sln310654.
- For Chassis Management Controller (CMC) page, see www.dell.com/support/article/sln311283.
- For OpenManage Connections for Partner Consoles page, see www.dell.com/support/article/sln312320.
- For OpenManage Power Center page, see www.dell.com/ompc.
- For OpenManage Server Administrator page, see www.dell.com/support/article/sln312492.
- For iDRAC Service Module (iSM) page, see www.dell.com/support/article/sln310557.

Systems Management Product Overview

Dell Hardware Management Tools

Integrated Dell Remote Access Controller With Lifecycle Controller

The integrated Dell Remote Access Controller 9 (iDRAC9) with Lifecycle Controller 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 with Lifecycle Controller 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 EMC 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 EMC 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 shares Lifecycle Controller features such as firmware update, backup and restore, lifecycle log, and hardware inventory export. For more information, see the iDRAC with Lifecycle Controller documents at www.dell.com/idracmanuals.

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 with Lifecycle Controller 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—This chassis is Dell's first blade server solution. It provides the infrastructure (industry-leading power and cooling, networking, and blade manageability) 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 EMC gives you the flexibility to use less expensive PCIe cards while still being managed through shared chassis management.
- PowerEdge FX2/FX2s—The FX2 enclosure allows servers and storage to share power, cooling, management, and networking. It includes redundant Power Supply Units (1100 W, 1600 W, 2000W, and 2400 W) and eight cooling fans. With a compact highly flexible design, the FX2 chassis lets you simply and 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 www.dell.com/support/article/sln311283.

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 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.
- Use the Prepare to Remove option on a NVMe class PCIe SSD.
- Access iDRAC interfaces using host IP.
- Use remote iDRAC hard reset for 13th generation of PowerEdge servers.
- Access iDRAC MIB compatible SNMP traps from the host operating system.

For more information, see the *iDRAC User's Guide* available at www.dell.com/idracmanuals.

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 www.dell.com/idracmanuals.

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 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 with Lifecycle Controller include:

- **iDRAC RESTful API**: It provides a RESTful interface that expands upon the DMTF Redfish standard with the Dell EMC 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 EMC 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.
- **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 severs. 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 help in automating system management tasks and simplify API integration, Dell EMC provides the PowerShell and Python libraries and script examples using the 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 with Lifecycle controller pages offers a library of technical white papers detailing the use of the embedded management APIs. For more information, see www.dell.com/support/article/sln311300 and www.dell.com/support/article/sln311809.

Dell Consoles

OpenManage Essentials

OpenManage Essentials is the one-to-many management console for monitoring Dell EMC HW infrastructure including server, storage and networking, and for lifecycle management of PowerEdge servers. It supports Windows, Linux, VMware, and HyperV environments. OME provides a simple and easy interface for system administrators to maximize the uptime and health of Dell EMC 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, and so on.
- Integrate with the following Dell EMC solutions:

    - Dell EMC 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 EMC technical support for intelligent analysis and diagnosis to optimize availability and reduce manual intervention. This solution is available as part of Dell EMC 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 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 www.dell.com/support/article/sln312494.

OpenManage Mobile

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

Advantages of using OpenManage Mobile

- Perform basic server setup like plug the power cable, connect mobile device to server, assign IP address, change credentials, and update key BIOS attributes.
- Discover any server issues by signing up for proactive notifications from OpenManage Essentials console.
- View the server information on 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 Android tablet or an iPad to access system console.
- Scan the iDRAC credentials stored in QR code for ease-of-use and faster first-time login.
- Batch update factory default server passwords for Dell EMC PowerEdge 14th generation servers.

Accessing PowerEdge servers from OpenManage Mobile

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

Access iDRAC at-the-server

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

Quick Sync 2 is supported of multiple 14th generation PowerEdge rack and tower servers.

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.

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

Access iDRAC 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 EMC SupportAssist reports, view server inventory, health status and logs, or power cycle a server.

> (i) **NOTE: Features vary by server, model and generation. To access iDRAC or OpenManage Essentials remotely, there is no additional hardware required other than the Android or iOS devices.**

Access servers remotely through OpenManage Essentials (OME) console

OMM can connect to the PowerEdge servers through the OpenManage Essentials (OME) Console—v 2.1 and later. IT administrators can monitor all systems managed using OpenManage Essentials including Dell EMC servers, storage, networking, and firewall appliances, and other OME-supported third party hardware. OMM can also receive proactive notifications from OME console.

More information about OpenManage Essentials and a download link is available at www.dell.com/esmmanuals.

Key features of OpenManage Mobile

Key features of OpenManage Mobile are:

Access methods

OpenManage Mobile helps you to connect to various devices and perform tasks.

- Connects to multiple OpenManage Essentials consoles from a single mobile device.
- Connects to multiple PowerEdge servers remotely.
- Connects to 14th generation of the PowerEdge servers through Quick Sync 2 module using Android and iOS.
- Connects to 13th generation of the PowerEdge servers through the Quick Sync bezel using Android only.

Manage notifications

OpenManage Mobile helps you to manage notifications from your mobile device.

- Receive critical alert notifications from OME.
- Acknowledge, forward and delete alerts.

Monitor

OpenManage Mobile helps you to monitor systems using your mobile device.

- Browse server details, health status, firmware inventory, system event logs, and LC logs of individual servers. Share or forward details as needed.
- Access and share SupportAssist reports or crash screens and videos.
- Access server warranty information.

Basic server setup and configuration

OpenManage Mobile allows you to do basic server setup and configuration.

- Configure one server manually or multiple servers simultaneously. You can even update the AutoUpdate flag in server from OMM.
- Run RACADM commands, and get output directly on the mobile device.
- Access system console to view server OS desktops.

  (i) **NOTE: To use this feature, you must download a third-party app. For more details, see the OMM app.**

- Perform server management functions such as power-on, power cycle, reboot, or shutdown from the mobile application.

Demo mode

Learn the features of OpenManage Mobile by accessing the "Demo Mode". OpenManage Mobile users like customers, technicians, sales, and so on, can preview the capabilities of OpenManage Mobile using an offline, prepopulated "demo database" included in the app.

Batch update

OpenManage Mobile allows you to batch update factory default server passwords for the Dell EMC PowerEdge servers.

(i) **NOTE: You must have Dell EMC License Manager v1.5 to use this feature. It is available only on 14th generation of the PowerEdge servers.**

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 www.dell.com/esmmanuals.

Dell EMC Update Utilities

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

Table 1. Dell EMC Update Utilities

Product	Windows	Linux
Dell EMC Repository Manager (i) **NOTE: Dell EMC Repository Manager can create Windows or Linux-based update tools and it can run on Windows Virtual Machines.**	Yes	-
Dell EMC Update Packages	Yes	Yes
Dell EMC Server Update Utility	Yes	Yes
Dell EMC Linux Repository	-	Yes

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 www.dell.com/esmmanuals.

Dell EMC Update Packages

Dell EMC 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 and iSM.

DUPs can be executed in GUI or in CLI mode.

For more information, see *Dell EMC Update Packages User's Guide* available at www.dell.com/esmmanuals.

Dell EMC Server Update Utility

Dell EMC 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 www.dell.com/support or a custom SUU can be created using Dell EMC Repository Manager (DRM). The SUU available on www.dell.com/support includes all the updates for all currently supported PowerEdge platforms. With DRM you can create a custom SUU with only the updates for systems in your data center.

For more information, see *Dell EMC Update Utility User's Guide* available at www.dell.com/esmmanuals.

Dell EMC System Update

Dell EMC System Update (DSU) is CLI optimized application used to distribute the Dell EMC 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.

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

For more information, see www.dell.com/support/article/sln310654.

Integration With Third-Party Consoles

The Dell plug-ins are:

- Dell EMC Management Pack Suite for Microsoft System Center Operations Manager
- Lifecycle Controller Integration for Microsoft System Center Configuration Manager
- Dell EMC Deployment Pack for Microsoft System Center Configuration Manager
- Lifecycle Controller Integration for System Center Virtual Machine Manager
- Dell EMC PRO Management Pack for Microsoft System Center Virtual Machine Manager (Hyper-V)
- OpenManage Integration for VMware vCenter
- BMC Software

Dell EMC Server Management Pack Suite for Microsoft System Center Operations Manager

Dell EMC server Management Pack offers both in-band and out-of-band (agent-free) options that enable System Center Operations Manager to discover, monitor, and accurately depict the status of the following systems on a defined network segment:

- PowerEdge servers
- Converged platforms
- iDRAC
- CMC

For more information, see *Microsoft System Center Operations Manager Server Management Pack User's Guide* available at www.dell.com/esmmanuals.

Dell EMC OpenManage Integration for Microsoft System Center for System Center Configuration Manager

Dell EMC OpenManage Integration for Microsoft System Center (OMIMSSC) for 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 EMC OpenManage Integration for Microsoft System Center (OMIMSSC) for System Center Configuration Manager User's Guide* available at www.dell.com/esmmanuals.

Dell EMC Server Deployment Pack for Microsoft System Center Configuration Manager

Dell EMC 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.

For more information, see the *Dell EMC Server Deployment Pack for Microsoft System Center Configuration Manager User's Guide* available at www.dell.com/esmmanuals.

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

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

Advantages of using OpenManage Integration for Microsoft System Center (OMIMSSC) are as follows:

- Reduces amount of time and effort required for one-to-many OS deployments.
- Agent-free and out-of-band hardware configuration, patching and deployment through the System Center Virtual Machine Manager console, by using iDRAC/LC.

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

- Use the Update Centre for a simplified, and enhanced experience to achieve multi-step 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.
- Providing credentials for integrated Dell Remote Access Controller (iDRAC), Chassis Management Controller (CMC), and Proxy servers that are used for multiple workflows.
- Accessing Microsoft System Center Virtual Machine Manager.
- 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 helps 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 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 the Dell Deployment Toolkit (DTK).
  - 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 the inventory information and performing troubleshooting tasks by launching to the iDRAC and LC user interface.
- Viewing data logs of jobs and tasks performed within the DLCI appliance.
- Using Active Directory credentials for authentication and access to iDRAC/LC.

For more information, see *Dell EMC OpenManage Integration for Microsoft System Center (OMIMSSC) for System Center Virtual Machine Manager User's Guide* available at www.dell.com/esmmanuals.

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

Dell EMC 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 EMC server PRO Management Pack for Microsoft System Center Virtual Machine Manager User's Guide* available at www.dell.com/esmmanuals.

Dell EMC OpenManage Integration for VMware vCenter

The Dell EMC 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 EMC 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.

(i) **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.**

You can manage and monitor Dell EMC 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 www.dell.com/support/article/sln311238.

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 http://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

The following table lists the connections products and the management station operating systems they are supported on.

Table 2. Connections For Third-Party Consoles

Vendor	Product	OpenManage Connection for Third-Party console	Windows	Linux	ESXi
Hewlett Packard Enterprise (HPE)	Operations Manager (OM) for Windows	OpenManage Smart Plug-in (SPI) for HPE Operations Manager for Windows	Yes	-	Yes

Vendor	Product	OpenManage Connection for Third-Party console	Windows	Linux	ESXi
		ⓘ NOTE: **Use Dell Connections License Manager for managing licenses and licensable features available with Smart Plug-in.**			
	Operations Manager i (OMi) for Windows	Dell EMC OpenManage HPE OMi Operations Connector	Yes	-	Yes
IBM	Tivoli Netcool / OMNIbus	OpenManage Connection for IBM Tivoli Netcool/OMNIbus (ITNO)	Yes	Yes	Yes
Nagios Oracle	Tivoli Network Manager IP Edition	OpenManage Connection for IBM Tivoli Network Manager (ITNM) IP Edition	Yes	Yes	Yes
		ⓘ NOTE: **Use Dell Connections License Manager for managing licenses and licensable features available with OpenManage Connection for ITNM IP Edition.**			
	Nagios-Core	OpenManage Plug-in for Nagios Core	-	Yes	Yes
	Nagios-XI	OpenManage Plug-in for Nagios XI	-	Yes	Yes
	Enterprise Manager	OpenManage Plug-in for Oracle Enterprise Manager (OEM)	Yes	Yes	Yes
CA Technologies	Network and System Management (NSM)	OpenManage Connection for CA NSM	Yes	-	-

Dell EMC OpenManage HPE OMi Operations Connector

The Dell EMC OpenManage HPE OMi Operations Connector provides capabilities to integrate the Dell EMC OpenManage Essential (OME) with Micro Focus Operations Manager i (OMi). The Operations Connector for OME helps system and IT administrators to get a comprehensive view of Dell EMC devices in a data center by collecting the systems management data about the events and topology from OME, and transferring it to OMi. It also supports web console launch of OME directly from the Micro Focus OMi environment to perform further troubleshooting, configuration, and management activities for Dell EMC devices.

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

For more information, see the *Dell EMC HPE Operations Manager i (OMi) Operations Connector User's Guide* available at www.dell.com/esmmanuals.

Dell EMC Smart Plug-in for HPE Operations Manager for Windows

Dell EMC Smart Plug-in (SPI) for Micro Focus Operations Manager provides both agent-free (out-of-band) and agent-based (in-band) options for discovery, classification, and monitoring of the following Dell EMC devices in the datacenter environments managed by the Micro Focus Operations Manager:

- PowerEdge servers
- iDRAC
- Dell EMC Modular infrastructure
- Dell EMC Storage arrays
- Dell EMC Networking devices
- Dell EMC Workstation

You can also launch one-to-one Dell EMC device consoles (such as iDRAC web console) as well as one-to-many Dell EMC tools (such as OpenManage Essentials) from within the OM console to perform configuration, troubleshooting, and other system management activities on Dell EMC devices.

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

For more information, see *Dell Smart Plug-in For HP Operations Manager For Microsoft Windows User's Guide* available at www.dell.com/support.

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 Essentials from within the Netcool/OMNIbus console. It helps to perform 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 www.dell.com/esmmanuals.

OpenManage Connection for IBM Tivoli Network Manager IP Edition

OpenManage Connection for IBM Tivoli Network Manager (ITNM) IP edition provides both agent-free (out-of-band) and agent-based (in-band) options for discovery, classification and monitoring of the systems in the datacenter environment.

- PowerEdge servers
- iDRAC
- Dell EMC Modular Infrastructure
- Dell EMC Storage Arrays
- Dell EMC Networking

Along with the OpenManage Connection for IBM Tivoli Netcool/OMNIbus, it can also provide event monitoring and auto-correlation for quicker fault detection and solution. You can also launch One-to-One device consoles (such as iDRAC web console) and One-to-Many Dell tools (such as OpenManage Essentials) from within the ITNM console to perform configuration, troubleshooting and other system management activities on Dell EMC devices.

For more information, see the *OpenManage Connection for IBM Tivoli Network Manager IP Edition User's Guide* available at www.dell.com/esmmanuals.

OpenManage Plug-in for Nagios Core

OpenManage Plug-in for Nagios Core uses agent-free (out-of-band) method to discover inventory and monitor the following Dell EMC devices in the datacenter environments managed by Nagios Core:

- PowerEdge Servers
- iDRAC
- Dell EMC Modular Infrastructure
- Dell EMC Storage Arrays
- Dell EMC Networking devices

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

For more information, see the *OpenManage Plug-in for Nagios Core User's Guide* available at www.dell.com/esmmanuals.

OpenManage Plug-in for Nagios XI

OpenManage Plug-in for Nagios XI uses agent-free (out-of-band) method to discover inventory and monitor the following Dell EMC devices in the datacenter environments managed by Nagios XI:

- PowerEdge Servers
- iDRAC
- Dell EMC Modular Infrastructure
- Dell EMC Storage Arrays

- Dell EMC Networking devices

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

For more information, see the *OpenManage Plug-in for Nagios XI User's Guide* available at www.dell.com/esmmanuals.

OpenManage Plug-in for Oracle Enterprise Manager

OpenManage Plug-in for Oracle Enterprise Manager (OEM)12c enables customers who manage their data centers using OpenManage Essentials (OME) to integrate with Enterprise Manager. It helps them to discover inventory and monitor the following Dell devices directly from within the Enterprise manage console:

- PowerEdge servers
- iDRAC
- Dell EMC Modular Infrastructure
- Dell EMC Storage Arrays
- Dell EMC Networking

It also provides features for automatic and manual mapping of the Oracle database workload to underlying Dell infrastructure. You can also launch the one-to-one device consoles (such as the iDRAC web console) and one-to-many Dell tools (such as OpenManage Essentials) from within the Enterprise Manager console to perform configuration, troubleshooting, and other system management activities on the Dell devices.

For more information, see the *OpenManage Plug-in for Oracle Enterprise Manager User's Guide* available at www.dell.com/esmmanuals.

OpenManage Connection for CA Network and Systems Management

The OpenManage Connection for CA Network and Systems Management (NSM) provides integrated monitoring of PowerEdge servers and PowerVault storage arrays. It helps in real-time health and alert monitoring, from within CA NSM console.

For more information, see *OpenManage Connection for CA NSM User's Guide* available at www.dell.com/esmmanuals.

CA Spectrum and CA Unified Infrastructure Management

Dell partners with CA technologies to enable native monitoring of Dell EMC and network switches using the CA Spectrum and CA Unified Infrastructure Management (Native Integration).

CA Spectrum supports monitoring of PowerEdge servers and network switches, whereas CA UIM (formerly CA Nimsoft Monitor) supports monitoring of PowerEdge servers. Dell's partnership with CA Technologies provides highest level of datacenter and business services manageability to our joint customers and helps in optimizing their Total Cost of Ownership (TCO).

For more information, see the http://en.community.dell.com/techcenter/systems-management/w/wiki/4105.dell-openmanage-connections-for-partner-consoles available at www.dell.com/esmmanuals.

Legacy — Dell Hardware Management Tools

Topics:

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 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 www.dell.com/esmmanuals.

OpenManage Client Instrumentation

Client Instrumentation refers to software applications that enable remote management of a client system. The OpenManage Client Instrumentation (OMCI) software enables remote management application programs to access the Dell Enterprise Client system information, monitor the status, or change the state of the system such as remotely shutting down the system. OMCI uses key system parameters through standard interfaces allowing administrators to manage inventory, monitor system health, and gather information of deployed Dell Enterprise client systems.

For more information, see the *OpenManage Client Instrumentation User's Guide* available at 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 www.dell.com/esmmanuals.

OpenManage Deployment Toolkit

ⓘ **NOTE: This feature 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 www.dell.com/support.

ⓘ **NOTE: DTK will continue to support any new hardware or operating system for the *14th* generation of PowerEdge servers. However, support for later generations of PowerEdge servers are deprecated. For more information about features supported by DTK, see the latest User's Guide available at www.dell.com/openmanagemanuals .**

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

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Accessing documents from the Dell EMC support site

You can access the required documents using the following links:

- For Dell EMC Enterprise Systems Management documents — www.dell.com/esmmanuals
- For Dell EMC OpenManage documents — www.dell.com/openmanagemanuals
- For Dell EMC Remote Enterprise Systems Management documents — www.dell.com/esmmanuals
- For iDRAC and Dell Lifecycle Controller documents — www.dell.com/idracmanuals
- For Dell EMC OpenManage Connections Enterprise Systems Management documents — www.dell.com/esmmanuals
- For Dell EMC Serviceability Tools documents — www.dell.com/serviceabilitytools
- 1. Go to www.dell.com/manuals.
  2. Click **Choose from all products**.
  3. From **All products** section, click **Software & Security**, and then click the required link from the following:
     - **Enterprise Systems Management**
     - **Serviceability Tools**
     - **Dell Client Command Suite**
     - **Connections Client Systems Management**
  4. To view a document, click the required product version.
- Using search engines:
  - Type the name and version of the document in the search box.

Contacting Dell EMC

ⓘ **NOTE: If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell EMC 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 EMC for sales, technical support, or customer service issues, see www.dell.com/contactdell.