

Dell Systems Management Overview Guide

Version 12.0

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.

Copyright © 2017 Dell Inc. or its subsidiaries. All rights reserved. Dell, EMC, and other trademarks are trademarks of Dell Inc. or its subsidiaries. Other trademarks may be trademarks of their respective owners.

Contents

1 Dell Systems Management	5
Dell Systems Management Offerings.....	5
Dell Hardware Management Tools.....	6
Dell Consoles.....	6
Dell Mobile Applications.....	6
Dell EMC Update Utilities.....	6
Integration With Third-Party Consoles.....	6
Connections For Third-Party Consoles.....	7
Dell TechCenter.....	7
2 Systems Management Product Overview.....	8
Dell Hardware Management Tools.....	8
Integrated Dell Remote Access Controller With Lifecycle Controller.....	8
Chassis Management Controller for Servers.....	8
iDRAC Service Module.....	9
Dell Remote Access Controller Administration (RACADM) CLI.....	9
iDRAC with Lifecycle Controller Embedded Management APIs.....	9
Dell Consoles.....	10
OpenManage Essentials.....	10
OpenManage Mobile.....	10
OpenManage Power Center.....	11
Dell EMC Update Utilities.....	11
Dell EMC Repository Manager.....	12
Dell Update Packages.....	12
Dell EMC Server Update Utility.....	12
Dell EMC System Update	13
Integration With Third-Party Consoles.....	13
Dell EMC Server Management Pack Suite for Microsoft System Center Operations Manager.....	13
Lifecycle Controller Integration for Microsoft System Center Configuration Manager.....	13
Dell EMC server Deployment Pack for Microsoft System Center Configuration Manager.....	14
Dell Lifecycle Controller Integration for System Center Virtual Machine Manager	14
Dell EMC Server PRO System Center Management Pack for Microsoft System Center Virtual Machine Manager.....	15
OpenManage Integration for VMware vCenter.....	15
BMC Software.....	15
Connections For Third-Party Systems Management Consoles.....	16
Dell Smart Plug-in for HPE Operations Manager for Windows.....	16
OpenManage Connection for IBM Tivoli Netcool OMNIBus.....	17
OpenManage Connection for IBM Tivoli Network Manager IP Edition.....	17
OpenManage Plug-in for Nagios Core.....	17
OpenManage Plug-in for Nagios XI	18

OpenManage Plug-in for Oracle Enterprise Manager.....	18
OpenManage Connection for CA Network and Systems Management.....	18
CA Spectrum and CA Unified Infrastructure Management (Native Integration).....	19
3 Legacy — Dell Hardware Management Tools.....	20
OpenManage Server Administrator.....	20
Baseboard Management Controller Management Utilities.....	20
OpenManage Client Instrumentation.....	20
Dell Remote Access Configuration Tool.....	21
OpenManage Deployment Toolkit (Deprecated).....	21
Dell IPMI Tool.....	21
4 Accessing documents from the Dell EMC support site.....	22
5 Contacting Dell.....	23

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.

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

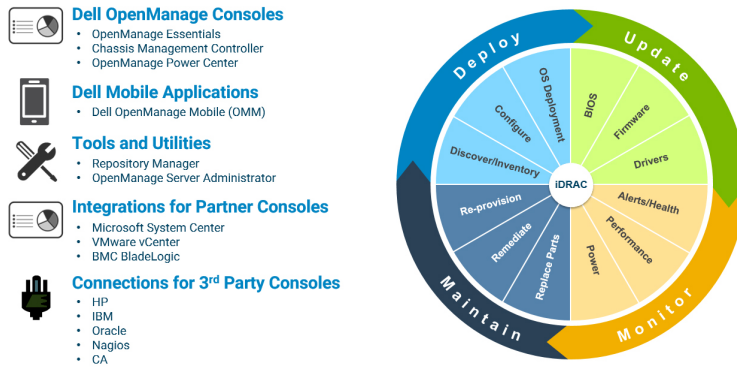


Figure 1. Dell Systems Management Offerings

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

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

Dell TechCenter

For additional information about white papers, videos, blogs, forums, technical material, tools, usage examples, and other information, visit the OpenManage page at delltechcenter.com/OpenManage or the following product pages on Dell TechCenter:

- For general information on Systems Management Products, see delltechcenter.com/systems-management.
- For Integrated Dell Remote Access Controller (iDRAC) page, see delltechcenter.com/idrac.
- For Lifecycle Controller (LC) page, see delltechcenter.com/lc.
- For OpenManage Essentials (OME) page, see delltechcenter.com/ome.
- For OpenManage Mobile (OMM) page, see delltechcenter.com/omm.
- For OpenManage Integration for VMware vCenter (OMIVV), see delltechcenter.com/omivv.
- For Dell EMC Repository Manager (DRM) page, see delltechcenter.com/repositorymanager.
- For Chassis Management Controller (CMC) page, see delltechcenter.com/cmc.
- For OpenManage Connections for Partner Consoles page, see en.community.dell.com/techcenter/systems-management/w/wiki/4105.dell-openmanage-connections-for-partner-consoles.
- For OpenManage Power Center page, see en.community.dell.com/techcenter/power-cooling/w/wiki/3534.dell-openmanage-power-center.
- For OpenManage Server Administrator page, see delltechcenter.com/omsa.
- For iDRAC Service Module (iSM) page, see en.community.dell.com/techcenter/systems-management/w/wiki/11434.idrac-service-module.

Systems Management Product Overview

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

Dell Hardware Management Tools

Integrated Dell Remote Access Controller With Lifecycle Controller

The Integrated Dell Remote Access Controller (iDRAC) is designed to enhance the productivity of server administrators and improve the overall availability of systems. iDRAC alerts administrators about server problems, enabling remote server management and reducing the need for an administrator to physically visit the server.

iDRAC with Lifecycle Controller allows administrators to deploy, update, monitor, and manage Dell EMC systems from any location without the use of agents in a one-to-one or one-to-many method. This out-of-band management allows updates to be sent from Dell or appropriate third-party consoles directly to iDRAC with Lifecycle Controller on a PowerEdge server, whether an operating system is installed or not.

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 dell.com/idracmanuals.

Chassis Management Controller for Servers

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

The CMC leverages 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 multi-chassis 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 converge 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 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 allows servers and storage to share power, cooling, management and networking. It includes redundant power supply units (1100W, 1600W, and 2000W) 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 I/O aggregators that can simplify cabling, improve East/West traffic within the server, and enable LAN/ SAN convergence — reducing cost and complexity.

For more information on CMC, see www.dell.com/cmmanuals or delltechcenter.com/CMC.

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 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 dell.com/support/manuals.

iDRAC with Lifecycle Controller Embedded Management APIs

iDRAC with Lifecycle Controller provides a range of standards-based applications programming interfaces (APIs) that enable scalable and automated management of PowerEdge servers. Standard systems management APIs have been developed by organizations such as the Institute of Electrical and Electronics Engineers (IEEE) and Distributed Management Task Force (DMTF). These APIs are widely used by commercial systems management products and by custom programs and scripts developed by IT staff to automate management functions such as discovery, inventory, health status checking, configuration, update, and power management. The APIs supported by iDRAC with Lifecycle Controller include:

- **Redfish:** In 2015, the DMTF Scalable Platforms Management Forum published Redfish, an open industry-standard specification and schema designed to meet the needs of IT administrators for simple, modern, and secure management of scalable platform hardware. Dell is a key contributor to the Redfish standard, acting as co-chair of the SPMF, promoting the benefits of Redfish, and working to deliver those benefits within industry-leading systems management solutions. Redfish is a next generation management standard using a data model representation inside a hypermedia RESTful interface. The data model is defined in terms of a standard, machine-readable schema, with the payload of the messages expressed in JSON and the OData v4 protocol.

- **WSMan:** The Web Services For Management (WSMan) API, first published by the DMTF in 2008, is the most mature and robust API provided by iDRAC with Lifecycle Controller. WSMan uses a Simple Object Access Protocol (SOAP) with data modeled using the Common Information Model. WSMan provides interoperability between management applications and managed resources, and identifies a core set of web service specifications and usage requirements that expose a common set of operations central to all systems management.
- **IPMI:** The Intelligent Platform Management Interface (IPMI) is a message-based, hardware-level interface specification that can operate over both LAN and serial interfaces. IPMI is supported broadly by server vendors, systems management solutions, and open source software.
- **SNMP:** The Simple Network Management Protocol (SNMP) helps in standardizing the management of network devices. SNMP allows commercial management consoles created for monitoring network switches and routers to also monitor X86 servers. SNMP is primarily used to deliver event messages to alert administrators of problems on their systems but can also be used to discover, inventory and configure servers.

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

Dell Consoles

OpenManage Essentials

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

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

For more information, see delltechcenter.com/OME.

OpenManage Mobile

OpenManage Mobile(OMM) is a software application that enables easy, convenient, and secure monitoring and management of PowerEdge servers remotely, or at-the-server. With OpenManage Mobile, IT Administrators can securely perform several data center

monitoring and remediation tasks using an Android or iOS mobile device. The OpenManage Mobile app is available as a free software download from the Apple Store and the Google Play Store.

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

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

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

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

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

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

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

OpenManage Power Center

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

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

Dell EMC Update Utilities

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

Table 1. Dell EMC Update Utilities

Product	Windows	Linux
Dell Repository Manager	Yes	-
NOTE: Dell EMC Repository Manager can create Windows or Linux-based update tools and it can run on Windows Virtual Machines.		
Dell Update Packages	Yes	Yes
Dell Server Update Utility	Yes	Yes
Dell 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 dell.com/support/manuals.

Dell Update Packages

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

DUPs can be executed in GUI or in CLI mode.

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

Dell 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/support.

Dell EMC System Update

Dell EMC System Update (DSU) is a CLI optimized tool that ensures that the PowerEdge systems are up-to-date with the latest BIOS, firmware, and software. DSU contains BIOS and firmware updates for server platforms.

For more information, see <http://en.community.dell.com/techcenter/systems-management/w/wiki/12233.dell-emc-system-update-dsu>

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 dell.com/manuals.

Lifecycle Controller Integration for Microsoft System Center Configuration Manager

Lifecycle Controller Integration for Microsoft System Center Configuration Manager provides agent-free, operating system and agnostic hypervisor configuration, BIOS 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 preparing remote one-to-many operating system deployments within multivendor operating system and hypervisor environments.

For more information, see *Lifecycle Controller Integration for Microsoft System Center Configuration Manager User's Guide* available at dell.com/manuals.

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 Deployment Toolkit User's Guide* available at dell.com/manuals.

Dell Lifecycle Controller Integration for System Center Virtual Machine Manager

Dell Lifecycle Controller Integration (DLCI) for Microsoft 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:

- Install the product without configuring DCLM (Dell Connections License Manager) for license key enforcement. Purchase the licenses as proof of compliance.
- 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 *Lifecycle Controller Integration for Microsoft System Center Virtual Machine Manager User's Guide* available at dell.com/support/manuals.

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 dell.com/manuals.

OpenManage Integration for VMware vCenter

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

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 hardware within the virtualized environment

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

For more information, see delltechcenter.com/omivv.

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
		i NOTE: Use Dell Connections License Manager for managing licenses and licensable features available with Smart Plug-in.			
IBM	Tivoli Netcool / OMNIBus	OpenManage Connection for IBM Tivoli Netcool/OMNIBus (ITNO)	Yes	Yes	Yes
	Tivoli Network Manager IP Edition	OpenManage Connection for IBM Tivoli Network Manager (ITNM) IP Edition	Yes	Yes	Yes
		i NOTE: Use Dell Connections License Manager for managing licenses and licensable features available with OpenManage Connection for ITNM IP Edition.			
Nagios	Nagios-Core	OpenManage Plug-in for Nagios Core	-	Yes	Yes
	Nagios-XI	OpenManage Plug-in for Nagios XI	-	Yes	Yes
Oracle	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 Smart Plug-in for HPE Operations Manager for Windows

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

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

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

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

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 dell.com/support/manuals.

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 Modular Infrastructure
- Dell Storage Arrays
- Dell 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 devices.

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

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 devices in the datacenter environments managed by Nagios Core:

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

With this plug-in, 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 Plug-in for Nagios Core User's Guide* available at dell.com/support/manuals.

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 devices in the datacenter environments managed by Nagios XI:

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

With this plug-in, 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 Plug-in for Nagios XI User's Guide* available at dell.com/support/manuals.

OpenManage Plug-in for Oracle Enterprise Manager

OpenManage Plug-in for Oracle Enterprise Manager (OEM) 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 Modular Infrastructure
- Dell Storage Arrays
- Dell 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 dell.com/support/manuals.

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 dell.com/manuals.

CA Spectrum and CA Unified Infrastructure Management (Native Integration)

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

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 **delltechcenter.com**.

Legacy — Dell Hardware Management Tools

Topics:

- [OpenManage Server Administrator](#)
- [Baseboard Management Controller Management Utilities](#)
- [OpenManage Client Instrumentation](#)
- [Dell Remote Access Configuration Tool](#)
- [OpenManage Deployment Toolkit \(Deprecated\)](#)
- [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 dell.com/openmanagemanuals.

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 *Dell Baseboard Management Controller Management Utilities User's Guide* available at 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 dell.com/OMConnectionsClient.

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 dell.com/esmmanuals.

OpenManage Deployment Toolkit (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 support.dell.com.

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 will be deprecated. For more information about features supported by DTK, see the latest User's Guide available at dell.com/openmanagemanuals.

For more information, see the *Dell Deployment Toolkit User's Guide* available at dell.com/support/manuals.

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 dell.com/esmmanuals.

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 — [Dell.com/SoftwareSecurityManuals](https://www.dell.com/support/manuals)
- For Dell EMC OpenManage documents — [Dell.com/OpenManageManuals](https://www.dell.com/support/manuals)
- For Dell EMC Remote Enterprise Systems Management documents — [Dell.com/esmmanuals](https://www.dell.com/support/manuals)
- For iDRAC and Dell EMC Lifecycle Controller documents — [Dell.com/idracmanuals](https://www.dell.com/support/manuals)
- For Dell EMC OpenManage Connections Enterprise Systems Management documents — [Dell.com/OMConnectionsEnterpriseSystemsManagement](https://www.dell.com/support/manuals)
- For Dell EMC Serviceability Tools documents — [Dell.com/ServiceabilityTools](https://www.dell.com/support/manuals)
- For Client Command Suite Systems Management documents — [Dell.com/DellClientCommandSuiteManuals](https://www.dell.com/support/manuals)
- a Go to [Dell.com/Support/Home](https://www.dell.com/support/home).
- b Click **Choose from all products**.
- c From **All products** section, click **Software & Security**, and then click the required link from the following:
 - **Enterprise Systems Management**
 - **Remote Enterprise Systems Management**
 - **Serviceability Tools**
 - **Dell Client Command Suite**
 - **Connections Client Systems Management**
- d 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

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, go to <https://www.dell.com/contactdell>.