Dell EMC PowerEdge Server Systems Management Overview
A differentiated approach to IT management

Simple
Agent-free embedded server management

Efficient
Automated and replicable processes

Available
Continuous uptime and reliability

Standard-based management solutions for maximum flexibility and choice

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# Common management paradigms

**Operation**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
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</table>
| We frequently do some management locally at the server | “We have a team that does rack/stack/deploy”  
“We just work right at the server” |
| We manage primarily from a central console | “We need simple, automated server deployment through a console” |
| We manage primarily using scripts | “We operate at scale – need something automated within our ops framework” |

**HW Configuration & Deployment**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>“We monitor servers based on amber lights”</td>
<td>“We’ve been burned by failure events in the past – we need a console that provides comprehensive monitoring”</td>
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<tr>
<td>“We bring our systems down and do updates at the server.”</td>
<td>“We need non-disruptive mechanisms for BIOS and firmware updates.”</td>
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<tr>
<td>“I need alerts integrated into my current monitoring architecture – MS, BMC, etc”</td>
<td>“We need to build our ops to be OS agnostic”</td>
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</table>

**Change Management**

<table>
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<tr>
<td>“We need a console that enables us to provide scalable, reliable, consistent, and efficient IT services.”</td>
<td>“API’s are mandatory, don’t show me something in the GUI if it can’t be automated”</td>
</tr>
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iDRAC with Lifecycle Controller is an IT Admin’s “best friend”

Next-generation Embedded Automation relieves IT of tedious server maintenance operations

PowerEdge servers are the first to offer “Embedded Intelligence & Management Automation”

• iDRAC with Lifecycle Controller is the “brains” behind the automation features built into PowerEdge 12 & 13G servers

• Automates key server management operations:
  - Deploy and configure bare-metal servers
  - Update firmware
  - Monitor component health, receive alerts
  - Perform maintenance, expedite remediation
Dell OpenManage Systems Management Portfolio

- **Consoles**: OpenManage Essentials, Mobile & Power Center
- **Integrations**: Microsoft, VMware, & BMC Software
- **Connections**: CA, Nagios, Oracle, HP, and IBM
- **Converged HW management**: Chassis Management Controller
- **Tools and utilities**: Repository Manager, Standards based APIs & OpenManage Server Administrator
- **Support services**: SupportAssist & ProSupport Plus

iDRAC with Lifecycle Controller

Deploy

Maintain

Monitor

Update

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Server Management makes an impact…

Dell PowerEdge R630 Review

In our lab, iDRAC has been one of our favorite remote management platforms to work with on and ongoing basis…many rivals still require users to download updates themselves, attach to the iKVM as an ISO (or upload software to the device web GUI) and load in a semi-automated fashion.

Dell takes that a step further…This makes the process of maintaining servers over their lifetime incredibly easy…streamlining this process takes away a lot of stress.

Dell iDRAC8 Enterprise Overview:

Excellent Server Management

…Within a minute or two it is apparent Dell has a team keen on innovating with their server management …Other solutions on the market generally will fail showing a generic error or re-displaying a page. The extra level of troubleshooting detail is a great feature…The vast majority of management interfaces do not have hard drive data, let alone are they able to show RAID controller operations …Dell is taking a leadership position in terms of agent-less configuration and monitoring, Redfish support and HTML5 iKVM support …we liked the solution so much that we will be requesting the Enterprise edition on future Dell servers
Customer-inspired innovations in 13G Systems Mgmt

**iDRAC Quick Sync**
Retrieve server inventory and status using your Android mobile device

**“Zero Touch” Auto Configuration**
Eliminate time-consuming manual configuration steps along with possible errors

**iDRAC HTML5 Virtual Console**
Virtual console for more secure remote management w/o the need for Java plugins

**iDRAC Direct**
Connect a laptop via a USB cable to access the iDRAC GUI for easier “at-the-box” server troubleshooting

**OOB, Agent-free Performance Monitoring**
Monitor CPU, I/O and memory usage metrics w/o OS-based agents

**Agent-free, Real-time RAID Mgmt**
Perform server storage management directly from iDRAC

**Easy Restore**
Automatically restores customer’s HW settings after a motherboard replacement

**“At-the-box” Configuration**
Completely and easily configure your server locally via an XML file on a USB key
Profile-based automated server configuration

Serve Configuration Profile

1. Configure  2. Capture  
3. Clone  4. Re-provision  
5. Maintain Baseline

Multiple usage models

Integrate with existing processes

Apply profiles “at the server”

“Zero Touch“ during network setup

Use OpenManage Essentials v2.2 to capture, configure and detect configuration drift for 1:M
Dell Repository Manager

- Create a baseline of updates
- Create Custom Deployment Packages
- Leverage Dell tools for server inventory
- Wizard-based configuration
- Find and Notify when newer updates are identified
- Integrated and leverage by Dell Consoles and tools
Automated firmware updates with iDRAC/LC and OME

Use iDRAC/LC to perform comprehensive firmware updates…

…according to the method that suits the datacenter

OME is an option when a 1:Many modality, via GUI, is desired

Schedule updates via iDRAC/LC

Script via remote interfaces

Interactively through iDRAC/LC or OME

Single image (ex: NIC FW)

Catalog (ex: all R630)

Rollback N->N-1

Synchronize with Repository Manager
## OpenManage connections for 3rd party consoles

<table>
<thead>
<tr>
<th>IBM Tivoli Netcool / OMNibus</th>
<th>IBM Tivoli Network Manager IP Edition</th>
</tr>
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<tbody>
<tr>
<td>IBM Tivoli Smart Plug-in (SPI) for HP Operations Manager for Windows</td>
<td></td>
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<tr>
<td>OpenManage Plug-in for Nagios-Core and Nagios XI</td>
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<tr>
<td>OpenManage Plug-in for Oracle Enterprise Manager (OEM)</td>
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<tr>
<td>OpenManage Plug-in for CA NSM</td>
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<tr>
<td>CA UIM* &amp; Spectrum*</td>
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### Key Benefits

- **Enable** Dell servers, storage & N/W platforms to be monitored within **leading systems management environments**
- **Protect** existing investments in 3rd party system management tools
- **Improve** **operational efficiency** and flexibility in managing large heterogeneous data center environments
- **Extract** **Richer Information** about the health and behavior of Dell Servers, Storage & Networking
- **Link & Launch** of Dell 1:1 and 1:M Consoles for configuration management, updates and further troubleshooting

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* Native integrations done by the CA Engineering team
OpenManage integrations for 3rd party Management Consoles

Enjoy the benefits of agent-free management via iDRAC with Lifecycle Controller from your existing console

BMC Software BladeLogic
Microsoft System Center
VMware vCenter
OpenManage vRealize Operations Management Pack

The vRealize Operations Management Pack delivers Dell EMC hardware context into vRealize Operations (vROps) analytics.

- **Monitoring and alerting**: Adds hardware health metrics, performance data, and events from managed servers / chassis into vROps.

- **High level reporting**: Provides detailed reports and views of server and chassis information across the OMIVV v4.0 managed environment.

- **Hardware contextual mapping**: Maps physical relationships with vROps objects to streamline and speed trouble shooting processes.

- **Incremental OpenManage functionality**: Includes OpenManage vROP Management Pack with the licensing of Integration for VMware vCenter.

New in OMIVV v4.0!

Recent Launch
New 14G Enhancements
14G Systems management themes

Automating IT Management

Management Made Simple

Secure by Default

Smarter Infrastructure Management
Dell EMC’s 14th generation PowerEdge with iDRAC9 will give you:

- A true cockpit experience for remotely managing servers
- Automated common management task
- Modern HTML-5 Graphical User Interface (GUI)
- Java/ActiveX & plug-in free consoles
- Powerful API scripting to automate remote management
- Improved Quick Sync 2 trouble-shooting
- Hi-Res monitoring reports with detailed health status
- Embedded SupportAssist options for automated analysis & resolution support by Dell EMC Services
- Innovated agent-free systems management
Introducing the world - industry leading embedded management solution

A New Cockpit for Remotely Managing your 14G PowerEdge Servers

**iDRAC9 with Lifecycle Controller**

- Automate common management tasks
- Agent-free architecture
- HTML5-based GUI
- Powerful scripting APIs and iDRAC REST API with Redfish 2016 additions
- Quick Sync 2 for Android or Apple mobile device
- “Hi-Rez” monitoring
- Embedded SupportAssist tools
OpenManage Mobile 2.0

New Quick Sync 2

- Optimized mobile device based server management for Dell EMC’s 14th generation PowerEdge
- Optional feature for all rack mount servers
  - Wireless circuits part of the module for security environments
- Module as integrated part of the server
- Ease of use
- Improved performance with Bluetooth Low Energy (BLE) and Wi-Fi, replacing current NFC bezel options
- Supports both Apple iOS and Android devices
- “Touch and Roam” operation, no need to hold mobile device at the server front, up to approx. 5m reach
- Simplified at-the-server setup and basic configuration with the new Dell EMC OpenManage Mobile 2.0 app
Next-generation Server Automation: Redfish

- Dell EMC offers the industry’s leading server automation API’s including IPMI, WS-MAN and the new DMTF Redfish standard
  - The iDRAC RESTful API with RedFish support is built upon HTTPS, JSON, and OData v4, enabling management automation by remote client applications and user scripts
  - Dell EMC was one of the original founders of Redfish and our implementation today offers comprehensive server inventory, monitoring and even configuration
  - Redfish advantages: easy to script, robust security, scalable, multi-vendor support

- Enhancements planned for 14G
  - Support for newest Redfish 2016 standards (R1 and R2)
  - Automate and standardize BIOS and secure boot configuration, firmware update, server asset inventory, health monitoring, and power/reset control
  - Dell Redfish OEM extensions also enable complete server configuration and firmware update for BIOS, iDRAC/LC, PERC, NICs and HBAs in XML or JSON formats
Trouble-shoot servers 70% faster with Quick Sync 2

Eliminate **costly wiring** fixes with Connection View

Navigate 60% faster with the new secure HTML5 iDRAC GUI

Simple, **“No installation”** server monitoring with iDRAC Group Manager

Reduce service interactions by 90% with built-in SupportAssist

OpenManage Enterprise: Next-gen console for managing your PowerEdge servers

Prevent **“configuration drift”** with System Lockdown

Erase server storage in minutes rather than hours using System Erase

**iDRAC9**

**Embedded SupportAssist**

**OpenManage Enterprise:** Next-gen console for managing your PowerEdge servers

**Prevent “configuration drift”** with System Lockdown

**Erase server storage in minutes rather than hours** using System Erase
“IDC believes that security should be baked into datacenter servers from the start, not smeared on later as an afterthought. This means that security is embedded in the core hardware and firmware below the operating system and applications.” —IDC Report.
Dell EMC Server Consoles
OpenManage Power Center 4.0 (OMPC)

Key Benefits

- Measure, manage and report power usage.
- Create and implement policies for power and thermal.
- Reduce power consumption during low-load hours.
- Maximize allocation of resources.
- Simplify cost itemization.
- Mitigate risk.

New and Enhanced for 14G (v4.0):

OMPC 4.0 will map power for VM usage
- Facilitate workload balancing based on power consumption.
- Enable fact-based charges for applications running on VMs.
- New reports that will show power usage by VM

RedFish API support
- RedFish API support for managing servers (rather than with IPMI)
Dell EMC OpenManage Essentials
Easy to install, and simple to use, systems management solution for administrators…
now with automated server provisioning

- Comprehensive monitoring
- Automated SupportAssist
- Template-based bare-metal server configuration
- Stateless Configuration and Migration
- Configuration drift detection
- Agent-free firmware updates
- Chassis Network/vLAN Management
Use OpenManage Essentials to simplify and automate your most essential IT management tasks

**Easy server updates, access, and maintenance**
- Perform agent-free updates of BIOS, firmware and drivers for 9-13G PowerEdge servers
- Automate Tech Support case generation and data collection through Dell Support Assist
- Use “mapping views” to quickly locate and access management information for VRTX and FX2 systems

**Server Configuration Management ($)**
- Monitor and enforce server configuration settings in production environments and remediate with a single click
- Deploy an entire HW and OS stack automatically by using template-based configurations.
- Support deploying stateless computing in boot from SAN Environment
- Simplify IOA/IOM and vLAN management for modular servers

**Comprehensive monitoring for enterprise hardware**
- Quickly discover devices with the Guided Discovery Wizard
- Monitor availability of servers, storage, networking, firewall appliances and 3rd party HW
- Receiving and processing hardware alerts to generate email notification, integrate with helpdesk or automate remediation tasks.
Dell EMC OpenManage Essentials (OME)

New v2.3 with 14th generation

- SNMP v3 support for secure alerting
- Windows 2016 Support
- Simplified and Enhanced Server Configuration Management
- Configuration profile capture for backup
- Auto-discover new iDRAC’s after IP provisioning
- Manage the entire chassis infrastructure configuration as a whole including the IOA/IOM fabric inside
- Wizard-based guides to quickly build server templates to simplify boot options and NIC configuration
- Discover Dell EMC hyper-converged solutions
Dell EMC next generation Data Center management

Codename “Lexington”

- Post 14G launch (late 2017)
- A fresh look and ultra simple Data Center management
- Built for the next-generation IT professional who refuses to be limited by management complexity and wants to add more value to the business

- Simple
  - Packaged as a virtual appliance
  - No specialized training required
  - Worry-free firmware updates
  - Simplified configuration

- Unified
  - Racks and modular under the same management paradigm
  - Less tools, more productivity
  - Single layer of management

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Tenets of OpenManage Enterprise

A fresh look at what it means to be simple

Built for the next generation IT professional who refuses to be limited by management complexity and wants to add more value to the business

✔️ SIMPLE
- Hide unnecessary dependencies
- No specialized training required
- Manage dependencies so customer doesn’t have to

☐ UNIFIED
- Racks and modular under the same management paradigm
- Less tools, more productivity
- Single, secure layer of management that offers both depth & breadth

🔒 AUTOMATED
- Worry-free automation of mundane management tasks
- Reduce the time needed to manage large scale environments