



Dell Solutions Tour 2014

Share ideas, discuss trends and discover
IT solutions of tomorrow.

Titel på Break-out
Dit navn
Din Mail + Twitter@

#DellST14

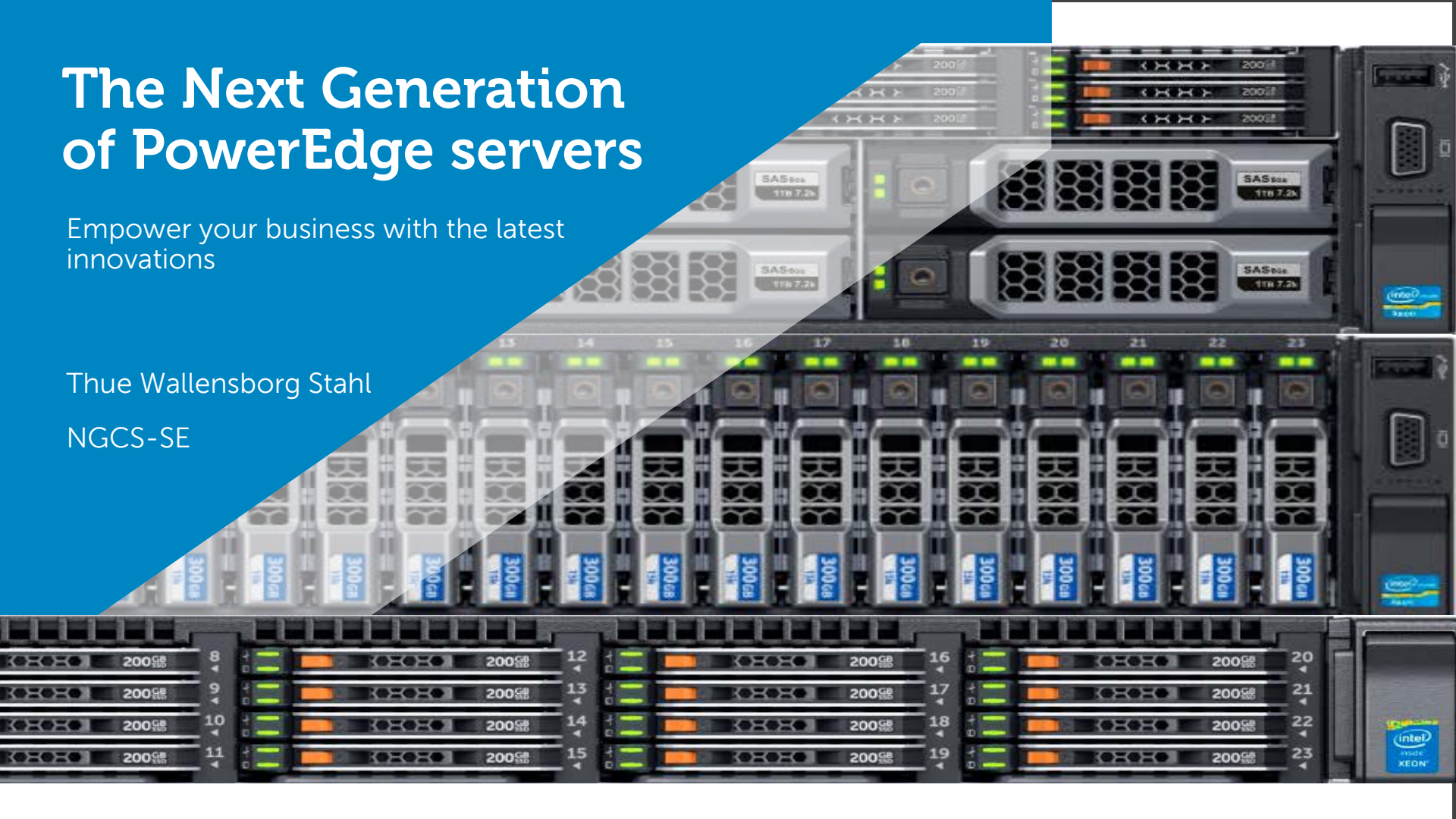


The Next Generation of PowerEdge servers

Empower your business with the latest innovations

Thue Wallensborg Stahl

NGCS-SE



Dell Servers

Addressing the full spectrum of computational needs

Home Office

Small Business

Remote & Branch Offices

Small Datacenters

Medium to Large Datacenters

Hyperscale

Shared Infrastructure



PowerEdge VRTX
Dense 2S/4S, Storage & Networking
for SMB & ROBO

M-Series Blades



M420, M520, M620, M820, M915, M1000e
Dense 2S to scalable 4S

Rack-optimized



R220
Entry 1S (1U)

R320
Mainstream 1S (1U)

R420, R415
Mainstream 2S (1U)

R520, R515
Mainstream 2S (2U)

R620
Performance 2S (1U)

R720, R720xd, R715
Performance 2S (2U)

R820, R815
Dense 4S (2U)

R920
Highly Scalable 4S (4U)

Towers



T20
SOHO 1S

T110 II
Entry SMB 1S

T320
Mainstream 1S

T420
Mainstream 2S

T620
Scalable 2S

PowerEdge C



C5220, C6015, C6145, C6220, C8000 series
Cloud & multi-node optimized

Data
Center
Solutions

Tailored
hyperscale
solutions
for
extremely
large data
centers




Compute solutions from office scale to hyperscale

#1 in **Americas** in **x86** server units

#2 in **EMEA** in **x86** server units


#2 in **APJ** in **x86** server units¹



2014 Server of the Year²

Dell PowerEdge VRTX

1st integrated solution for **ROBO & SMB**




World's **most power-efficient blade server**³



2x density of any other blade system⁴

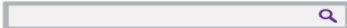
1st quarter-height blade for dense computing



4 out of 5 top search engines worldwide


3 out of 4 top social media websites

Powered by **Dell**⁵



Industry firsts⁶

- Express Flash PCIe SSD
- Comprehensive agent-free management
- Titanium power efficiency



¹IDC Worldwide Quarterly Server Tracker, Q1, 2014

²<http://www.infoworld.com/slideshow/135876/infoworlds-2014-technology-of-the-year-award-winners-234225#slide26>

³The Dell PowerEdge M520 is the world's most power efficient blade server based on SPEC testing. SPEC and the benchmark name SPECpower_ssj are trademarks of the Standard Performance Evaluation Corporation. Based on benchmark results based on best SPECpower_ssj2008 results published as of July 2014. For the latest SPECpower_ssj2008 benchmark results, visit http://www.spec.org/power_ssj2008/results/power

ssj2008.html. Actual performance will vary based on configuration, usage and manufacturing variability.

⁴PowerEdge M420 quarter-height server compared to half-height servers.

⁵

⁶AD#G12000810.



Dell continues to evolve server infrastructures based on feedback from you...

Enhanced manageability

- Improve operations and recover lost time by utilizing pervasive automation and embedded capabilities
- Maximize uptime with simplified interactions and enhanced serviceability

Improved efficiency

- Reduce resource consumption and enhance performance per watt
- Deploy versatile performance using scalable and agile platforms optimized for specific workloads

General purpose

Distributed applications

Scale ↑

Design philosophy

- Consistent
- Versatile

- Reliable
- Workload-focused

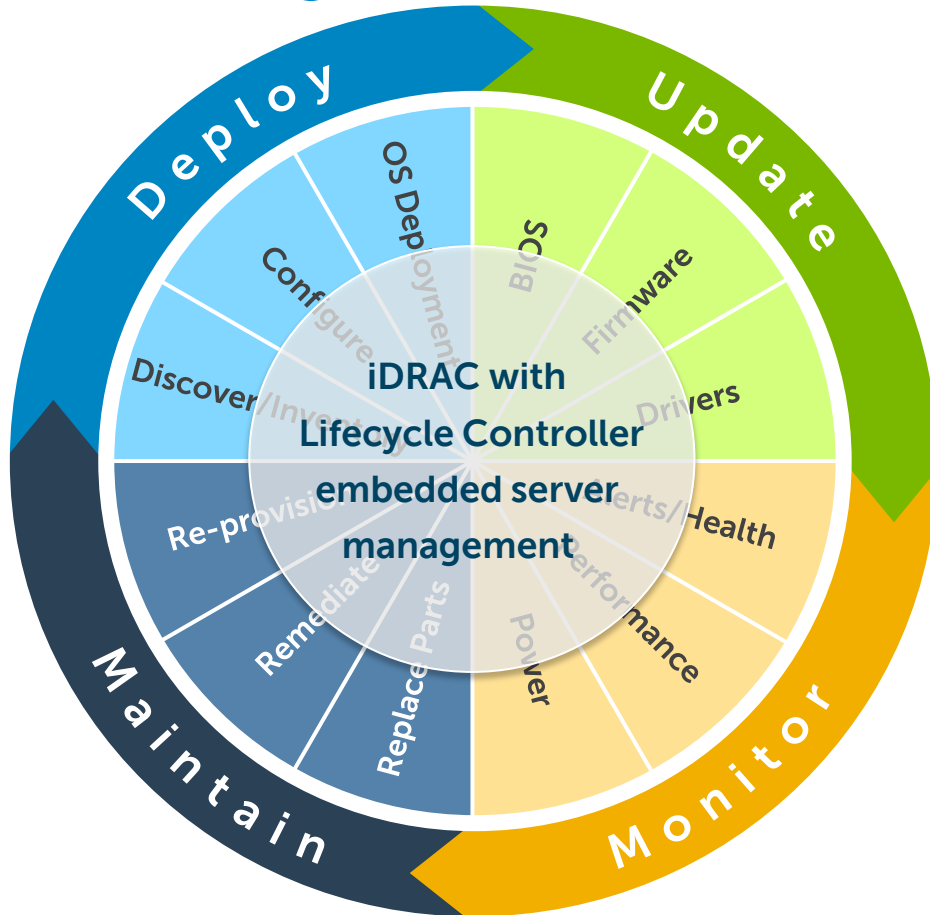
- Scalable
- Virtualization-optimized

13G Embedded Systems Management

iDRAC8 with Lifecycle Controller



Intelligent **embedded** lifecycle management



- Industry's first truly agent-free server lifecycle management solution: leveraging **iDRAC with Lifecycle Controller**
- Provides a choice of agent-free or agent-based operations
- Automates server lifecycle management tasks – **deploy, update, monitor, and maintain**
- Integral to the Dell OpenManage portfolio and integration with 3rd party management consoles



Systems Management for Dell's 13th generation PowerEdge Servers



Datacenter Automation and Management

- Comprehensive and scalable management
- Unified, consistent management
- Managing in XaaS environments
- "Best in class" remote management



Simplified Management

- Simple to use interfaces and tools
- Faster operation for booting, GUIs, and APIs
- Automate key repetitive tasks (configuration, update, etc.)
- Manage from mobile devices



Enhanced Serviceability

- Automate service and support to reduce remediation time
- Diagnose problems remotely, preferably without server downtime
- Easy to understand alerts and warnings



Console Management

- Integrate with OpenManage Essentials as well as the latest partner consoles (MSFT, VMware)
- Expanded device support (storage, networking, PDUs, etc.)
- Management APIs to integrate with higher level consoles



Security

- Secure server retirement
- Ensure authentic firmware updates
- Robust access protection
- UEFI Secure Boot

Dell's Innovation Automates and Simplifies Server Management



"ZeroTouch" Deployment

- Dell servers are discovered and **auto-configured over the network from XML files** stored on network shares
- **Benefits**
 - No need for manual configuration, reducing deployment time and entry errors
 - Rack, cable and walk away! No special technician training required.



Automatic Updates

- Dell servers synchronize themselves to **firmware baselines** stored on network shares
- **Benefits**
 - Greatly simplifies keeping your server firmware up-to-date
 - Latest updates are always staged in the server, ready to be applied, reducing maintenance windows



Embedded Support Tools

- iDRAC maintains now offers **Tech Support Report**, a continuously updated health and status report that monitors over 5,000 key system parameters
- **iDRAC Service Module (iSM)** included to help gather OS logs
- **Benefits**
 - Far less IT admin time needed to identify and resolve server issues



New Simplified Management When "At-the-Box"

- **"Tap"** the server with your smart device to get comprehensive status and error logs
- Insert a **USB key** to configure the server
- Connect a laptop or tablet to manage and diagnose **from the iDRAC console**
- **Benefits**
 - Deploy, upgrade and troubleshoot servers with all the information you need at your fingertips!



Expanded Agent-Free Management with iDRAC8

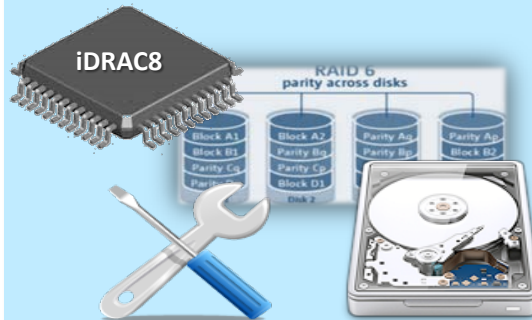
OOB Performance Monitoring and Alerting

iDRAC8 provides customers a real-time view of server performance w/o agents



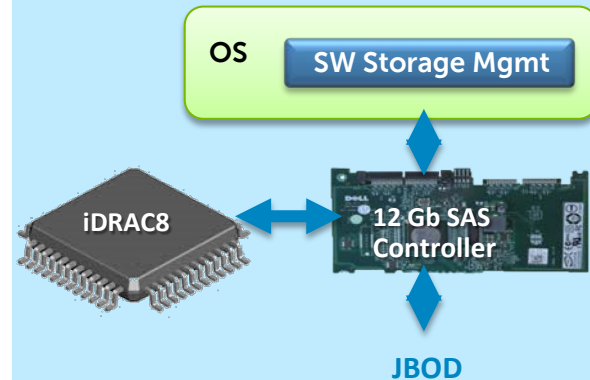
Agent-free, Real-time RAID Mgmt

Allows customers to manage PERC9 RAID Controller from iDRAC8 w/o OMSS agent



Agent-free SAS Monitoring

Allows customers to monitor new 12 Gb SAS controller and storage devices OOB via iDRAC8

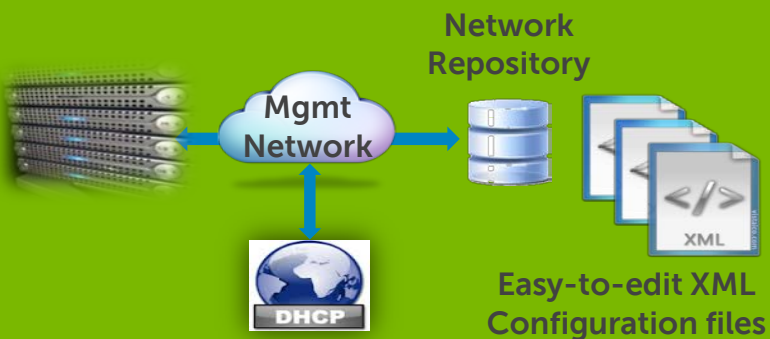


Datacenter Automation and Management



Enhanced at 13G: Servers That Deploy Themselves

Rack and cable then walk
away! Everything else is
automated!



- **“Zero Touch” Automatic Configuration Deploys Servers Faster**
 - iDRAC automatically retrieves the server’s entire configuration from the repository that the customer maintains
 - Includes BIOS, iDRAC, RAID and LOM/NIC configuration settings
- **iDRAC can be programmed to get location of configuration repository from DHCP server**
 - No local manual interaction by technicians needed and no manual entry errors!
- **Uses easy-to-edit XML configuration files**
 - No complex APIs or console GUIs to learn
- **Scales to 1,000s of servers**
- **13G Enhancement:**
 - Secure hashing to protect passwords in XML configuration files



New for 13G: Simple Server Configuration via a USB Key

Configure your Server's Hardware Using New iDRAC Direct Feature



XML
Configuration
File



New iDRAC Direct Feature Lets Customers Configure Servers Right "At-The-Box"

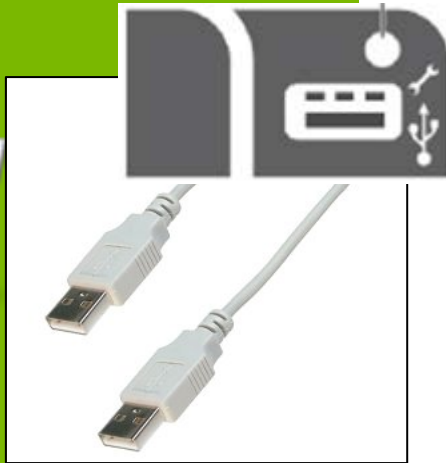
- Offers the convenience of USB keys to install new HW configurations to your Dell 13G Server
- Uploads configuration of BIOS, iDRAC, PERC and NICs to iDRAC in less than a second
- Will add at RTS+ support for uploading and applying FW updates
- Normal USB access by Host OS preserved
- **Requirements**
 - Industry standard USB key
 - Correctly formatted Server Configuration Profile
 - 13G rack servers, towers and blades*
- **Use cases**
 - Quickly change server configurations when at the server or in lab and test environments
 - Enable remote technicians to perform error-free complex server configurations in seconds

* Not supported on 200-500 servers that are ordered without the LCD panel



New for 13G: Connect to iDRAC GUI via Local Laptop

iDRAC Direct also supports
connecting a Laptop via a USB
cable to access the iDRAC GUI



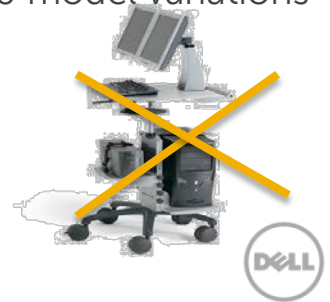
New iDRAC Direct Feature Also Allows Interconnection to Laptop/PC

- Interact directly with iDRAC GUI for advanced server management and servicing (even if iDRAC networking has not been configured)
- Convenient front access via front USB port
- Inspect detailed log files for faster server remediation
- Enforces robust iDRAC credentials for access

• Requirements

- Type A/A USB cable
- No special software or drivers needed
- Supported iDRAC browser on Laptop OS
- Not supported on some 200-500 model variations that are ordered w/o LCD panel

Get Rid of your Crash Cart!



New for 13G: Servers are BYOD Savvy!

Get vital server information with a tap of a mobile smart device with iDRAC Quick Sync



New for 13G: Industry's First Server with Integrated NFC Support

- With **iDRAC Quick Sync**, you can tap your NFC-enabled smart device to the server to quickly get critical inventory, health and diagnostic information
- Also can configure iDRAC networking and credentials as well as server boot order
- Secure, proximity-based NFC communication only to iDRAC, **not** the host OS
- **Requirements:**
 - R630/730 Server
 - New Dell NFC-enabled server bezel
 - Free OMM Android app on mobile device to manage the data link and setup configurations
 - NFC-enabled smart tablet or phone
- **Must order at POS! APOS option is under review and will be available **post RTS****



Simplified Management



New for 13G: Agent-free Storage Management

Allows customers to manage PERC9 RAID Controller from iDRAC8 w/o OMSS agent



• Feature Summary

- iDRAC8 expands its Agent-free management to include direct configuration of the new PERC9 RAID controller
- Performs management functions of legacy OMSS OS agent including real-time (**no reboot**) configuration commands (**Create Virtual Disk** for example)

• Customer Benefits

- Comprehensive RAID management without installing an OS agent like OMSS

Integrated Dell Remote Access Controller 8

Overview
-Server
-iDRAC Settings
-Hardware
-Storage
-Physical Disks
-Virtual Disks
-Controllers
-Enclosures

Properties Setup Troubleshooting

Configure RAID Controller

RAID Mgmt directly from iDRAC without using OMSS

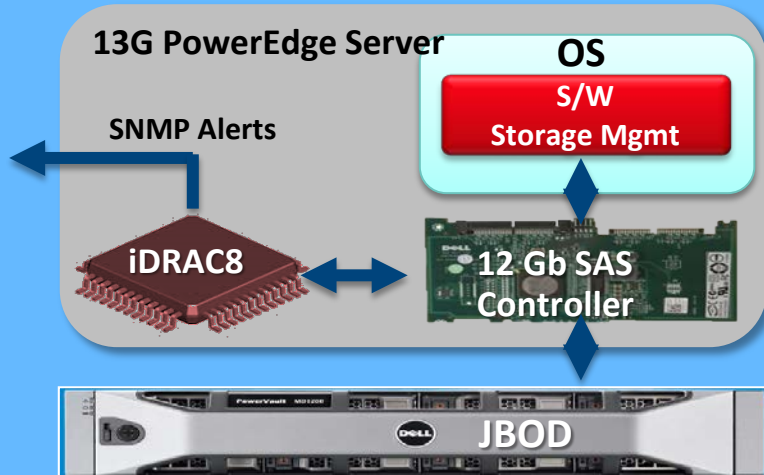
Configure Controller Properties

| Attribute | Current Value |
|--------------------------------|----------------------|
| Controller: | PERC9 Slot 1 |
| Patrol Read | Manual |
| Manual Patrol Mode Action | Auto |
| Patrol Read Unconfigured Areas | Enabled |
| Check Consistency Mode | Normal |
| Check Consistency Rate | 30% |
| Security Key | Security Key Enabled |



New for 13G: Agent-free SAS Monitoring

Allows customers to monitor new 12 Gb SAS controller and storage devices OOB via iDRAC8



- **Feature Summary**

- iDRAC8 expands agent-free management to include monitoring and reporting of a Dell SAS controller and attached storage devices and JBOD enclosures

- **Customer Benefits**

- Full systems management monitoring of non-RAID storage devices by iDRAC
- Monitors external attached JBODs including HDD health, thermals, PSU & Fans
- OOB SNMP alerts via iDRAC
- Important for new non-RAID Software Defined Storage (SDS) solutions like Windows Storage Spaces, Hadoop, VMware Virtual SAN or CEPH

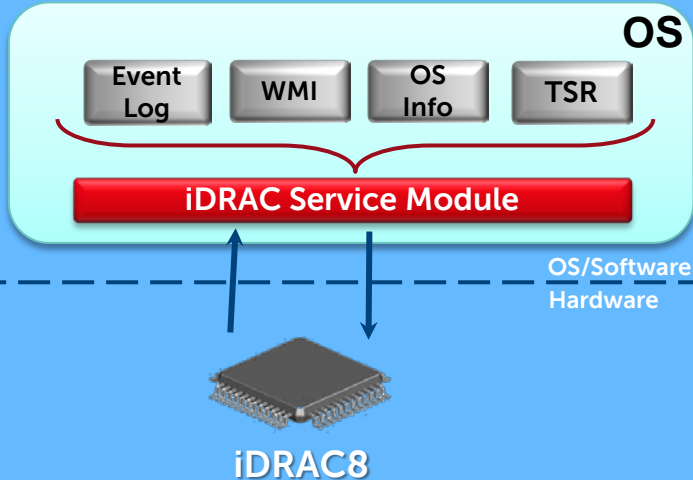
 Windows Server 2012
Storage Spaces

VMware®
Virtual SAN™



Enhanced at 13G: Expanded OS Management from iDRAC

iDRAC Service Module (iSM)
expands iDRAC management
into the host OS



- **Some customers want more OS integration with iDRAC**
 - Want to know what OS type, version, and host name is being used on the server
 - Many customers scrape OS event logs to report on hardware health to their custom tools
 - WMI is a popular way to manage Windows-based servers and populating hardware health is vital
- **Description**
 - iDRAC Service Module is an optional feature that customer installs in the OS which expands iDRAC's management capabilities
 - Very lightweight compared to legacy "heavy" agents like OMSA/OMSS
 - *Key enhancements at 13G:*
 - Reporting of host OS IP addresses
 - WMI integration with new storage reporting
 - **Integration of iSM with Tech Support Report**
- **Customer benefits**
 - Easier troubleshooting of servers by adding key OS information
 - Adds OS context to SNMP traps for more intelligent alert processing
 - Comprehensive WMI support for Windows Server customers
 - Seamless remote support and servicing via TSR with less customer involvement



Enhanced for 13G: Servers with Embedded Support tools

Your time is valuable, why
waste it on troubleshooting
complex server problems?



Dell Support Team



Tech Support
Report

- **Tech Support Report Speeds Problem Diagnosis and Resolution**
 - iDRAC maintains now offers Tech Support Report, a continuously updated health and status report that monitors over 5,000 key system parameters
 - **13G key enhancement:** adds OS and application log reporting to the 12G HW reporting for complete system diagnostic information
- **Report Delivery Options**
 - Open web browser to iDRAC GUI and save TSR locally and then email to Dell Support
- **Customer Benefits**
 - Addresses huge pain point of having to download and install DSET diagnostic program manually for Dell support



New for 13G: Agent-Free Performance Monitoring

iDRAC8 provides customers a real-time view of server performance w/o agents



- **Feature Summary**

- iDRAC8 expands our Agent-free monitoring story with the ability to monitor server performance including CPU, Memory Bandwidth and I/O utilization
- Reports near real-time and historical performance, including graphing
- Can send performance alerts to the customer's monitoring console
 - *Example: Alert me if the CPU utilization exceeds 90% on a server.*

- **Customer Benefits**

- Performance monitoring is highly desired by customers to identify application bottlenecks and then move workloads or upgrade HW accordingly
- Many customers prefer monitoring data like performance without the need for installing OS agents, particularly if they have a variety of OS types



Enhanced Serviceability



New for 13G: Making Servers Easier to Service

Easy Restore automatically
reapplies previous system
settings to a new
motherboard

Restores

- Service Tag
- iDRAC License
- BIOS, iDRAC and LOM configuration
- Diagnostics

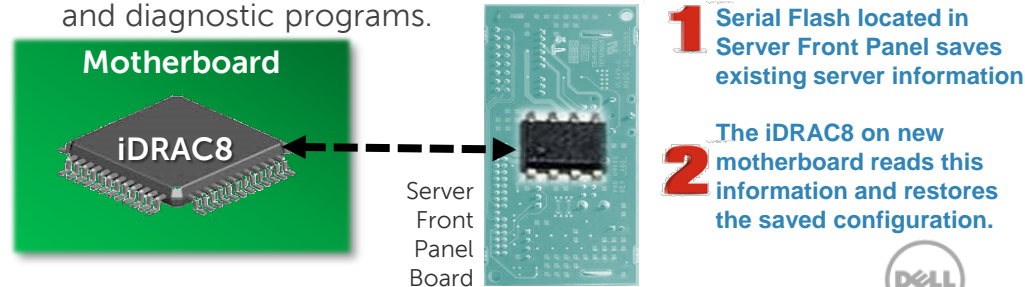


Today's motherboard replacement servicing has several pain points

- Reapplying the Service Tag requires a separate program to be carried to customer site
- Reapplying the iDRAC License is difficult and requires customer to locate his license and give it to the Dell on-site Tech
- Restoring configuration settings is not possible unless customer saved them off and then gives them to the Dell Tech
- Diagnostics program is sometimes not even on the new motherboard

Easy Restore Automates the Entire Motherboard Replacement Process

- After tech replaces the motherboard and reinstalls memory, HDDs, etc., he gets a special boot screen that gives him option to restore all saved configuration, service tag and license settings and diagnostic programs.



New for 13G: Servers Boot up to 60% Faster

Minimize Server
Downtime, Speed
Dynamic Provisioning and
firmware updates



- **Faster Server Booting**
 - Enhancements in BIOS and Lifecycle Controller **reduce boot times up to 40-60%** over 12G servers (fastest when using UEFI boot mode)
 - OS patches and FW updates usually require server reboot; shorter boot times speeds these processes
 - Includes faster to booting to Lifecycle Controller GUI (**F10**) and System Configuration (**F2**) GUI screens
- **Customer Benefits**
 - **Less downtime:** Reduces downtime significantly for tasks like firmware updates, OS patches, or reboots caused by power failures
 - **Less waiting:** Customers like faster booting when they are doing local management tasks at the server or applying changes in test and lab environments



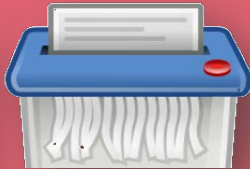
Security




New and Enhanced for 13G: Raising the Security Bar



Hackers are becoming bolder and smarter; you need a more secure server to thwart them!



- **New for 13G: Protect your SNMP Alerts from Prying Eyes**
 - 13G servers now offer SNMP v3 Traps which encrypt the message content (SNMP v3 GETs supported today)
- **New for 13G: More Secure Access**
 - XML configuration files can use hashed passwords so sensitive credentials are not stored in cleartext
- **Enhanced for 13G: Signed FW updates**
 - Prevents rogue code from being installed on embedded devices like BIOS or RAID controllers
 - Locks down BIOS image to prevent unauthorized FW access
 - **UEFI Secure Boot** support 
- **13G RTS: Retire or Repurpose Servers Quicker with System Erase**
 - New embedded “Digital Shredder” provides a more secure solution for removing users, passwords, and more
 - Coming in RTS+ support for HDD’s and SSD’s erase

OpenManage

Remote management



Dell systems management solutions



Dell OpenManage Consoles

OpenManage Essentials 2.0
Power Center



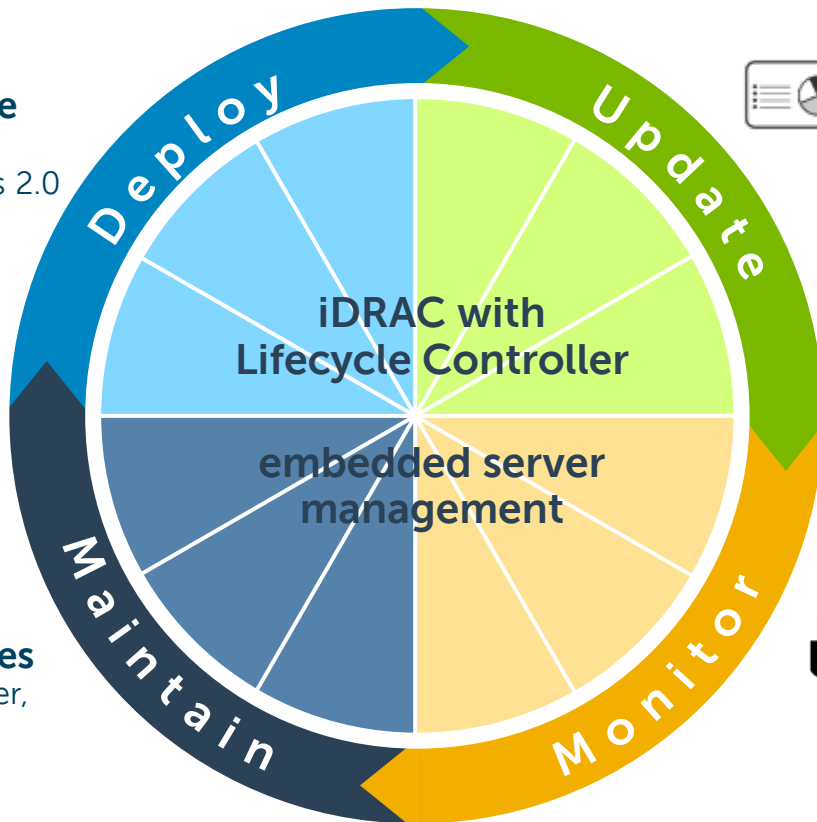
Converged Infrastructure Management

Dell Active System Manager



Tools and Utilities

Repository Manager,
RacAdm
WSman



Integrations for 3rd Party Consoles

Microsoft
SCOM, SCCM, SCVMM
Vmware vCenter



Dell Services

Managed Services,
ProSupport Plus Services
with SupportAssist



Connections for 3rd Party Consoles

CA, HP, IBM,
Oracle Enterprise
Manager

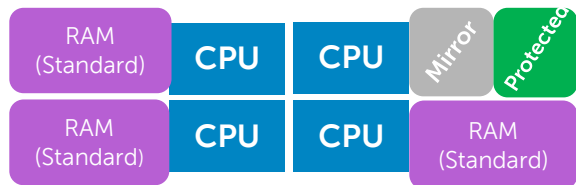


Dell PowerEdge Exclusive Features



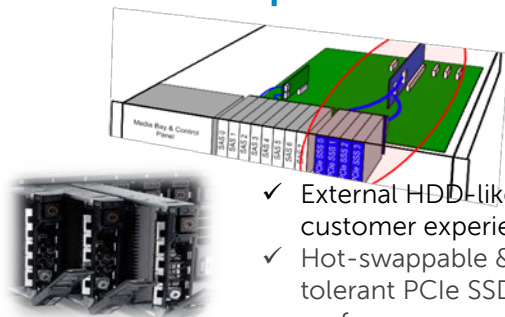
Dell Exclusive Features for E5-2600v2 launch

Dell Fault Resilient Memory



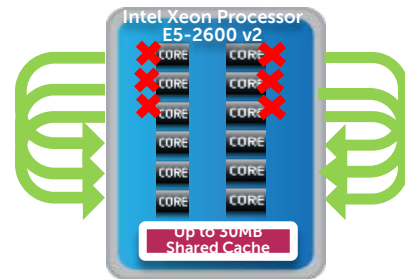
- ✓ Protected memory zone for a hypervisor
- ✓ Doesn't consume half of system RAM

Dell Express Flash



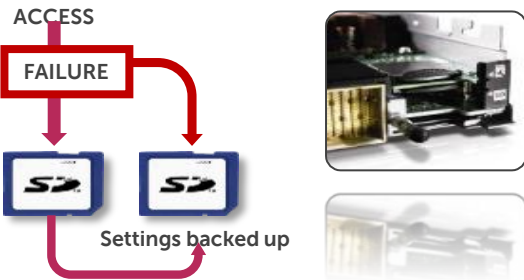
- ✓ External HDD-like customer experience
- ✓ Hot-swappable & fault tolerant PCIe SSD performance

Dell Processor Acceleration Technology



- ✓ Allows tuning of Intel Turbo capabilities
- ✓ Shutdown and focus socket-level core resources to throttle GHz and reduce jitter

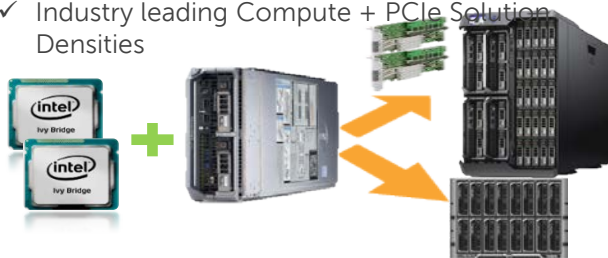
Fail-Safe Virtualization



- ✓ In combination with FRM, provides unsurpassed industry protection for virtual machines!

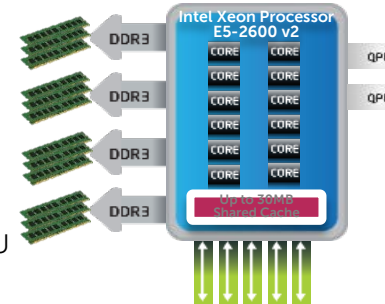
PowerEdge VRTX

- ✓ Deployment flexibility into converged infrastructures designed for both Small and Medium Business (VRTX) as well as Large Datacenters (M1000e)
- ✓ Industry leading Compute + PCIe Solution Densities



Leading Blade Memory Densities

- ✓ All the density, none of the compromises with 24 DIMMs of DDR3 memory
- ✓ 3xDIMMs per channel & a 10U chassis? Only with Dell!





Dell Solutions Tour 2014

Share ideas, discuss trends and discover
IT solutions of tomorrow.

Tak - fortsat god dag

