The science behind the report:

# Dell server management tools can help improve security, sustainability, and management efficiency

This document describes what we tested, how we tested, and what we found. To learn how these facts translate into real-world benefits, read the report Dell server management tools can help improve security, sustainability, and management efficiency.

We concluded our hands-on testing on May 13, 2024. During testing, we determined the appropriate hardware and software configurations and applied updates as they became available. The results in this report reflect configurations that we finalized on May 13, 2024 or earlier. Unavoidably, these configurations may not represent the latest versions available when this report appears.

## System configuration information

Table 1: Detailed information on the systems we tested.

| System configuration information | Dell™ PowerEdge™ R760 | Vendor K systems |
|---|---|---|
| BIOS name and version | Dell 1.8.2 | Undisclosed |
| Non-default BIOS settings | Intel® Turbo Boost enabled, Virtualization enabled | Intel Turbo Boost enabled, Virtualization enabled |
| Date of last OS updates/patches applied | 04/29/2024 | 05/15/2024 |
| Power management policy | Balanced (initial) / Performance (post-test) | Balanced (initial) / Performance (post-test) |
| Processor | | |
| Number of processors | 2 | 2 |
| Vendor and model | Intel® Xeon® Gold 6454S CPU @2.20 GHz | Intel Xeon Gold 6454S CPU @2.20 GHz |
| Core count (per processor) | 32 | 32 |
| Core frequency (GHz) | 2.20 | 2.20 |
| Stepping | 8 | 8 |

| System configuration information | Dell™ PowerEdge™ R760 | Vendor K systems |
|---|---|---|
| Memory module(s) | | |
| Total memory in system (GB) | 256 | 256 |
| Number of memory modules | 16 | 16 |
| Vendor and model | Hynix SYS-221H-TNR | Undisclosed |
| Size (GB) | 16 | 16 |
| Type | DDR5 | DDR5 |
| Speed (MHz) | 4,800 | 4,800 |
| Speed running in the server (MHz) | 4,800 | 4,800 |
| Storage controller | | |
| Vendor and model | Dell PERC H965i Front (Embedded) | Undisclosed |
| Cache size | - | 8 GB |
| Firmware version | 17.15.08.00 | Undisclosed |
| Local storage | | |
| Number of drives | 6 | 6 |
| Drive vendor and model | Samsung MZILG1T6HCJRAD3 | Undisclosed |
| Drive size (GB) | 1,500 | 1,600 |
| Drive information (speed, interface, type) | 24 Gbps, SAS, SSD | 24Gb SAS SSD |
| Network adapter | | |
| Vendor and model | 1x Broadcom Gigabit Ethernet BCM5720, 1x Broadcom Adv Dual 10GBASE-T Ethernet, 1x Broadcom BCM57504 4x25G SFP28 PCIE | Broadcom BCM5719 1Gb 4-p OCP Adapter<br><br>Broadcom NetXtreme-E Dual-port 10GBASE-T Ethernet PCIe Adapter |
| Number and type of ports | 2 x 1GbE, 2 x 10GbE, 4x25GbE | 4 x 1 GbE, 2x 10GbE |
| Driver version | 22.31.6, 22.31.13.70, 22.31.13.70 | 20.24.41, 223.1.96.0 |
| Cooling fans | | |
| Vendor and model | Dell Silver | Vendor K |
| Number of cooling fans | 6 | 6 |
| Power supplies | | |
| Vendor and model | Dell 06C11WA02 | Vendor K |
| Number of power supplies | 2 | 2 |
| Wattage of each (W) | 1,400 | 1,000 |

# How we tested

In our testing, we compared Dell Technologies Integrated Dell Remote Access Controller 9 (iDRAC9) to Vendor K baseboard management controller (BMC) and Dell Technologies OpenManage Enterprise (OME) to Vendor K's enterprise management console. In order to prevent the identification of Vendor K, we have omitted the detailed steps to complete the Vendor K testing. We took every measure to ensure a fair comparison between the competing management tools.

## Enabling dynamic USB ports

### iDRAC9

1. Log into iDRAC.
2. Navigate to Configuration → System Settings.
3. Expand Hardware Settings → Front Ports. Toggle Front USB port to Enabled/Disabled from iDRAC9. Click Submit.
4. To confirm, click OK.

## Completing system lockdown

### iDRAC9

1. Log into iDRAC9.
2. On the Dashboard, use the More Actions menu to select Turn on the System Lockdown Mode. A banner message will appear indicating the inability to make changes while lockdown in turned on.

## Changing a BIOS configuration item

### iDRAC9

1. Log into iDRAC.
2. Navigate to Configuration → BIOS Settings.
3. Expand System Profile Settings and select Performance from the pull-down menu beside System Profile. Click Apply, and click OK to confirm.
4. Scroll down and click At Next Reboot. Click OK to confirm.

## Setting up alert-based actions

### OME

1. Log into OME.
2. Click Alerts→Alert Policies.
3. Click Create.
4. Provide a name and description of the policy, and check the Enable checkbox. Click Next.
5. Select Built-in→iDRAC→System Health→Temperature. Click Next.
6. To skip the message IDs, click Next.
7. Click Select Devices.
8. Check the box next to the server or servers to which you want the policy applied, and click OK.
9. Click Next.
10. To accept the date defaults, click Next.
11. Check the box for Critical, and click Next.
12. Check the box for Power Control, and select Graceful Shutdown. Click Next.
13. To create and apply the policy, click Finish.

## Scheduling power action jobs in APEX AIOps Infrastructure Observability (formerly CloudIQ)

1. Log into CloudIQ.
2. Expand Monitor, and click Systems.
3. Click Server.
4. Select a server to open the system details page.
5. At the top left of the Details page, click Actions, and select a power job.
6. Click Ok to confirm job submission.

## Scheduling firmware updates in APEX AIOps Infrastructure Observability (formerly CloudIQ)

1. Log into CloudIQ.
2. Expand Manage, and click System Updates.
3. Click Server.
4. Select any compliance reports.
5. Select the systems or components you want to update, and click Update.
6. Select Schedule Update.
7. Click the date, and choose the date and time you want to set the update schedule. Click Next.
8. Choose either Reset iDRAC or Clear Job Queue. Click Next.
9. Review the summary, and click Finish.

**Read the report at https://facts.pt/1rcS9FH** ▶

This project was commissioned by Dell Technologies.

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