



Complete system lockdown in **91% less time** with iDRAC9 vs. HPE iLO



Deploy configuration templates in **52% less time** with Dell OME vs. HPE OneView



Customize reports with **over 15x the metrics** with Dell CloudIQ for PowerEdge vs. HPE InfoSight

Simplify administrator tasks and improve security and health monitoring with tools from the Dell management portfolio vs. comparable tools from HPE

Choosing management tools that reduce hands-on time for administrators with demanding responsibilities should be a consideration of any server purchase. In the Principled Technologies data center, we compared capabilities of the management portfolios from Dell and HPE to see how they could help or hinder administrators. We compared:

Table 1: The management tools we tested.

	Dell	HPE
Embedded/remote server management	iDRAC9 (Integrated Dell Remote Access Controller)	iLO5 (Integrated Lights Out)
One-to-many device and console management	OpenManage Enterprise (OME)	OneView
Cloud-based management/monitoring	CloudIQ for PowerEdge	InfoSight

We found that across the features and use cases we tested, these tools from the Dell management portfolio provided more granular control and increased flexibility for administrators, while reducing time and effort to complete common tasks.

Ease administrator hassles with tools that are easier to use

As IT administrators face ongoing challenges in their environments, more easily managing the infrastructure—through more automation, fewer task steps, and more intuitive interactions—is key to admin productivity. Table 2 provides an overview of some of the ways we found tools from the Dell management portfolio were easier to use than comparable tools from the HPE portfolio. (Note: We dive into these wins in more depth in the following pages.)

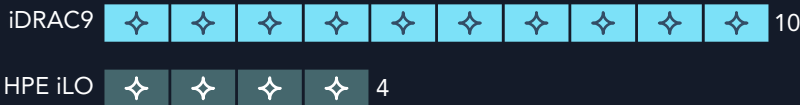
Table 2: Summary of our comparison between Dell and HPE management tools. Source: Principled Technologies.

	What's different with Dell management tools	How much better
More remote management features <i>iDRAC vs. iLO</i>	More HTML5 console and BIOS configuration features for more remote functionality in iDRAC	2.5X the HTML5 console features and 13X the BIOS features
Easier server deployment <i>OME vs. OneView</i>	One-to-many profile deployment with OME	52% less time to deploy a server than with OneView
Easier firmware updates <i>OME vs. OneView</i>	Automated online updates with OME	Update multiple servers by connecting to Dell.com, saving the time it takes to update servers by manually uploading bundles with OneView
Easier alerting <i>OME vs. OneView</i>	Set up alert policies in OME and execute automated actions based on alerts	Automating this process saves time and reduces potential for errors vs. executing actions manually each time you receive an alert in OneView
Easier to use security features (system lockdown and dynamic USB) <i>iDRAC vs. iLO</i>	Fewer steps, less time, no reboots using iDRAC	¼ steps, 91% less time for System Lockdown
More robust analytics <i>CloudIQ for PowerEdge vs. InfoSight</i>	Customizable reports, more health metrics for better admin control with CloudIQ for PowerEdge	Over 15x more metrics to choose from compared to InfoSight

Number of remote features each management tool offers

Higher is better

2.5X the HTML5 remote features



13X the BIOS remote features



Figure 1: Comparison of the HTML5 and BIOS remote features each management tool offers. More features are better. Source: Principled Technologies.

Ease-of-use features

REMOTE MANAGEMENT

We assessed the HTML5 and BIOS features that the solutions offer to make remote management easier (see Figure 1). iDRAC9 offers 2.5 times as many HTML5 remote console features as HPE iLO provides, with ten total features compared to just four. iDRAC9 also offers 13 times as many BIOS configuration features as HPE iLO (52 features vs. just 4 features), which gives administrators more granular control.

For the one-to-many management/console capabilities, Dell OpenManage Enterprise eased some common deployment tasks compared to HPE OneView.

EASIER SERVER DEPLOYMENT

Using Dell OME for deployment cut time in half and took fewer administrator steps compared to using HPE OneView. Admins can deploy configuration templates to groups of servers in OME, while in OneView, admins must deploy configurations to each server individually. Multiply that by tens or hundreds of servers, and it results in significant time savings for administrators: hours or even days.

According to documentation from Dell and HPE, one instance of Dell OME can scale to 8,000 devices, while HPE OneView scales to 1,024, which means Dell OME scales almost eight times more—saving the need to set up multiple instances of OneView.

About iDRAC9

Dell PowerEdge servers include the Integrated Dell Remote Access Controller 9 (iDRAC9) to provide systems administration functions that include system alerts and remote management capabilities. According to Dell, key benefits of iDRAC include:

- **Increased server availability** due to early notification of issues that can prevent downtime or reduce recovery time
- **Environment security** via secure remote access capabilities
- **Ease of administration** through simplified deployment and serviceability¹

To learn more about the features of iDRAC9, including white papers and videos, visit www.dell.com/support/iDRAC.

EASIER FIRMWARE UPDATES

Keeping track of and implementing firmware updates is a key pain point for administrators. OME enables users to automate one-to-many firmware updates (connecting to Dell.com to update the packages) that help ensure environment security and full firmware capability. See page 7 for details.

EASE OF SETTING UP ALERTS

We found that Dell OpenManage Enterprise offered more options for monitoring infrastructure. OME enables users to set up alert policies once and then automatically assign them for future alerts. While the one-time setup process for automating alerts takes longer (1 minute 8 seconds) than using HPE OneView (36 seconds), OneView has no automated options for alerts, so administrators must set these policies manually every time. This means that that Dell OME solution ultimately saves time and effort by automating actions based on alerts after admins have created a policy.

Time and steps to deploy configuration templates

52% less time

Time (m:ss) | Lower numbers are better

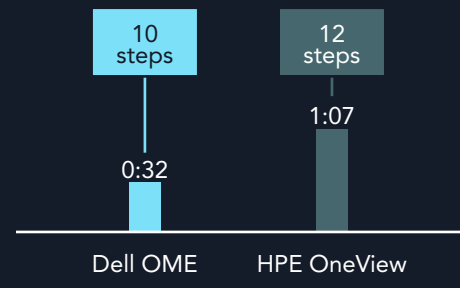


Figure 2: Comparison of the time and steps it took to deploy configuration templates with Dell OME vs. HPE OneView. OME can apply a template to many servers at once, increasing time savings even more. Less time and fewer steps are better. Source: Principled Technologies.

End-to-end security features

SECURITY EMBEDDED IN THE SERVER

The Dell management portfolio offers built-in security features for every server through iDRAC. Through hands-on testing, we compared security key features embedded in the system:

- **Dynamic System Lockdown:** System Lockdown prevents unintended or malicious activity from changing settings or accessing data on the server. (Note: This feature is available with iDRAC9 Enterprise or Datacenter licenses.)
- **Dynamic USB port enabling/disabling:** Disabling and enabling USB ports give administrators control over access to the server via a USB port. Dynamic refers to the ability to set up these capabilities once, and then deploy as needed without configuration changes. Until the admin provides access, no one can plug in a zip drive or keyboard to modify any configuration settings of the system/OS/BIOS.

Using iDRAC, we found that administrators could lock down a system remotely in just three steps and 18 seconds. In contrast, locking down a system with HPE iLO requires administrators to reboot the system and go into the BIOS configuration, taking 3 minutes 40 seconds and 15 administrator steps. System lockdown using the HPE iLO solution required server downtime.

With iDRAC, we were able to lock down a system in 91 percent less time and one quarter of the steps of iLO—without taking the server out of production with a reboot.

Similarly, with iDRAC, we were able to enable or disable USB ports in 78% less time and one third of the steps of iLO. If an admin wants to use these features on multiple servers, the time will add up quickly. Not only are these features easier and faster to access with iDRAC than with HPE iLO, but with iDRAC, users can keep the servers in production (no downtime) while enabling or disabling these features. HPE iLO requires both changing the BIOS configuration and a reboot each time.

Time and steps to complete the System Lockdown use case

91% less time and ¼ the steps

Time (m:ss) | Lower numbers are better

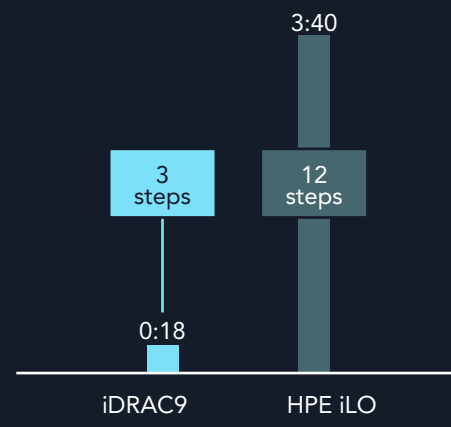


Figure 3: Comparison of the time and steps it took to complete the System Lockdown use case with iDRAC9 vs. HPE iLO. Less time and fewer steps are better. Source: Principled Technologies.

Time and steps to complete the Dynamic USB use case

78% less time and ⅓ the steps

Time (m:ss) | Lower numbers are better

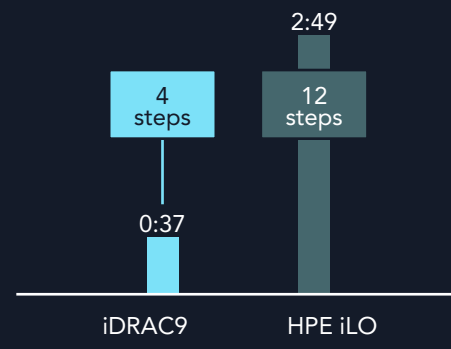


Figure 4: Comparison of the time and steps it took to complete the Dynamic USB use case with iDRAC9 vs. HPE iLO. Less time and fewer steps are better. Source: Principled Technologies.

SECURITY IN THE CLOUD

More frequent cybersecurity data collection, policy-based security configurations, and detailed risk assessment set Dell CloudIQ for PowerEdge apart from HPE InfoSight.

Comparing security with cloud-based management and monitoring management and monitoring platforms—Dell CloudIQ for PowerEdge vs. HPE InfoSight—we found that Dell CloudIQ for PowerEdge offered four times more frequent cybersecurity data collection than HPE InfoSight. More frequent data collection can hasten the response from administrators to security threats.

While CloudIQ for PowerEdge provides security risk specifics, InfoSight notifies admins of a general risk state and directs them to check the iLO of the affected sever. Dell CloudIQ for PowerEdge has a policy-based security configuration view that shows servers with deviations from their assigned security template. HPE InfoSight doesn't offer this view, but instead requires admins to use the iLO network to check settings manually for a system with configuration deviations.

In addition, Dell CloudIQ for PowerEdge has a policy-based security configuration view that shows servers with deviations from their assigned security templates/policies after a one-time admin effort of just 2 steps and 43 seconds. With HPE InfoSight, admins must manually check that settings are in place for each server. We found this takes an admin approximately 17 seconds per HPE server just to find the settings they need to verify and does NOT include verifying the differences from the template, which Dell does automatically.

Steps to set up a policy-based security view

It takes a one-time cost of 43 seconds to set a policy for alerting for all CloudIQ servers. With InfoSight, it would take an admin 17 seconds for EVERY server they need to verify; this does NOT include verifying the differences from the template, which Dell does automatically.

Lower numbers are better

Dell CloudIQ for PowerEdge



HPE InfoSight



Figure 5: Comparison of the steps it took to set up a policy-based security view with Dell CloudIQ for PowerEdge vs. HPE InfoSight. Source: Principled Technologies.

About Dell OpenManage Enterprise

For more advanced one-to-many server administration features, Dell offers OpenManage Enterprise. OpenManage Enterprise simplifies IT management by unifying servers for management from a single console and automating tasks to increase efficiency. According to the OpenManage solution brief, administrators can use it to manage up to 8,000 devices (regardless of form factor), manage the entire configuration lifecycle through editable templates, and streamline remote management through batch scheduling.²

To learn more about the features OpenManage Enterprise offers, visit <https://www.dell.com/en-us/dt/solutions/openmanage/enterprise.htm#scroll=off>.

Number of built-in reports that each tool offers

Higher is better

Over 3X more built-in reports available

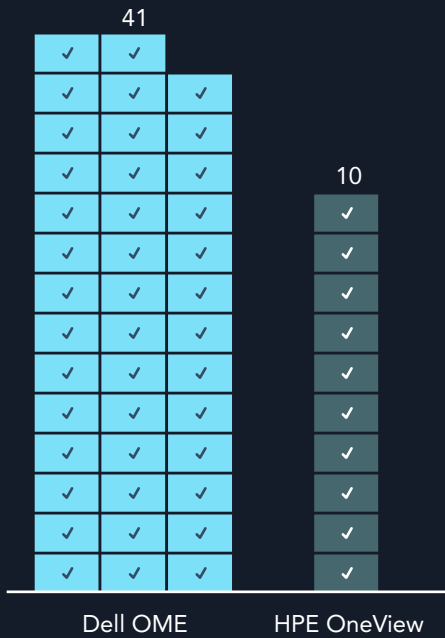


Figure 6: Comparison of the built-in reports that Dell OME and HPE OneView offer. Higher numbers are better. Source: Principled Technologies.

Analytics and reporting features

In our comparison of analytics, we found that OME provided more granular insights into infrastructure health compared to HPE OneView, and Dell CloudIQ provided more granular insights into infrastructure health and performance vs. InfoSight.

For example, Dell OME includes four times as many built-in reports as HPE OneView does—41 report options vs. 10 (see Figure 4).

In addition to more reporting options, OME also offers a custom report builder that admins can use to granularly select the most important data for their purposes. HPE OneView does not have a custom report builder, and limits administrators to choosing one of its ten built-in reports. As Figure 5 shows, Dell CloudIQ provides reports in PDF and CSV format for five categories and 66 metrics, while HPE InfoSight offers only four metrics—exportable only in CSV format (still in Beta as of October 2022).

The reporting capabilities give administrators the flexibility to keep tabs on their environment using metrics that match their requirements.

Dell iDRAC provides detailed real-time analytics data from individual servers into Dell OME, and OME allows admins to send telemetry data directly to CloudIQ. (Note: This feature is available with iDRAC9 Enterprise or Datacenter licenses.) HPE OneView does not offer this capability. Admins of HPE infrastructures must install an extra tool to send data to HPE InfoSight.

About Dell CloudIQ for PowerEdge

In conjunction with Dell OME, administrators can leverage Dell CloudIQ for PowerEdge for a single cloud-based portal to monitor system health and performance across multiple data centers. According to Dell, CloudIQ for PowerEdge utilizes artificial intelligence (AI) for monitoring and predictive analytics to quickly surface issues anywhere in your environment, providing faster time to insight.³ According to Dell, CloudIQ for PowerEdge delivers insights to:

- **Reduce Risk** with proactive health notifications and predictive analytics that pinpoint deviations and performance impacts to speed troubleshooting and resolution
- **Improve productivity** of staff and collaborate better with a single view of your IT environment, custom reports and third-party software integrations.⁴

To learn more about Dell CloudIQ for PowerEdge, visit <https://www.dell.com/en-us/dt/storage/cloudiq.html>.

Number of customizable report metrics that each tool offers

Higher is better

Over 15X more metrics to choose from

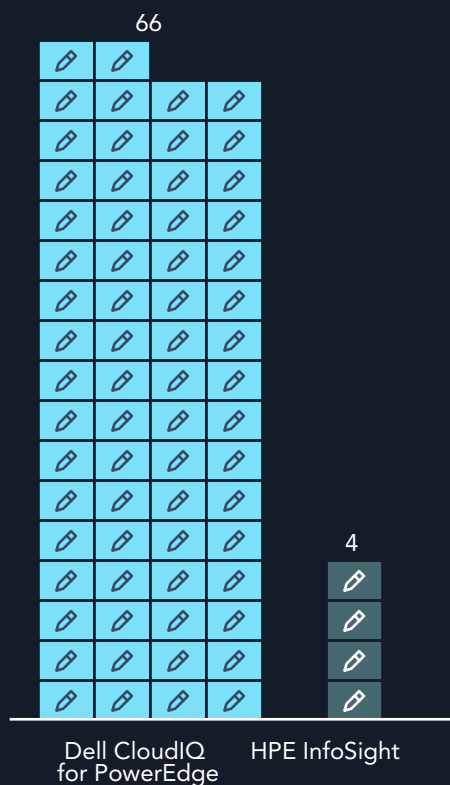


Figure 7: Comparison of the customized report metrics that Dell CloudIQ for PowerEdge and HPE InfoSight offer. Higher numbers are better. Source: Principled Technologies.

Table 3 compares the features and options of Dell OME and HPE OneView. Notably, Dell OME makes admins' tasks easier by giving them more monitoring options and automates frequent tasks, such as keeping up with firmware updates that help ensure environment security. Dell OME provides the ability to import third-party MIB files into OME, and utilize the third party's alert definitions to add SNMP monitoring traps for their specific hardware. This allows OME be monitor third-party gear within a single console.

Table 3: Comparison of features in Dell OME and HPE OneView. Source: Principled Technologies.

Capability Comparison	Dell OpenManage Enterprise	HPE OneView
Scalability	Manage up to 8,000 devices ⁵	Manage up to 1,024 devices ⁶
Third-party device monitoring	Yes: Monitor Dell and third-party devices through one console	No: OneView doesn't monitor servers from other vendors (Requires additional and separate OneView console for the Synergy platform)
Mobile monitoring	Monitor via the OpenManage Mobile app	Mobile app is through iLO (not OneView, and lacks the functionality of OpenManage Mobile)
Viewing power use	Detailed thermal management, including metrics on power usage, power consumption, and carbon emissions	No views for power use, consumption, or carbon emissions
Firmware updates	Firmware and Windows driver updates with the base OME appliance. Using the Update Management plugin, create custom repositories and use automatic online synchronization for firmware updates ⁷	No automation: admins must download updates from the HPE website and upload them to the OneView console

As Table 4 shows, compared to HPE InfoSight, Dell CloudIQ for PowerEdge offers a wider range of performance metric views to give administrators a more complete view of system health across the infrastructure.

Table 4: Performance metric views available in Dell CloudIQ for PowerEdge and HPE InfoSight. Source: Principled Technologies.

Performance metric	Dell CloudIQ for PowerEdge	HPE InfoSight
CPU usage	✓	✓
Memory usage	✓	✓
SYS usage	✓	✗
System board IO	✓	✓
CPU temperature	✓	✗
System inlet temperature	✓	✗
System net airflow	✓	✗
Power consumption	✓	✓



Conclusion

Management tools that reduce hands-on time and effort for recurring tasks provide real benefits to administrators with demanding responsibilities. In our comparison of the management portfolios from Dell and HPE, we found that the Dell tools we tested offered better ease-of-use than their HPE counterparts, with many additional features and views that can streamline administrator tasks. Plus, the Dell management portfolio offered features that increase data security and allow admins to make changes without infrastructure downtime. By reducing time and effort for tasks like monitoring system health or updating firmware, your admins can focus their time on supporting key business initiatives.

1. Dell, "Integrated Dell Remote Access Controller 9 (iDRAC9) Version 3.00.00.00 User's Guide," accessed September 15, 2022, https://www.dell.com/support/manuals/en-us/idrac9-lifecycle-controller-v3.0-series/idrac_3.00.00.00 Ug/overview?guid=guid-a03c2558-4f39-40c8-88b8-38835d0e9003&lang=en-us.
2. Dell, "OpenManage Enterprise Solution Brief," accessed September 15, 2022, https://www.dell.com/en-us/dt/solutions/openmanage/enterprise.htm#pdf-overlay=//www.delltechnologies.com/asset/en-us/products/servers/briefs-summaries/dell_emc_openmanage_enterprise_solution_brief.pdf.
3. "Dell CloudIQ – AIOps for Intelligent IT Infrastructure Insights," accessed September 16, 2022, <https://www.dell.com/en-us/dt/storage/cloudiq.htm>.
4. Dell, "Dell CloudIQ – AIOps for Intelligent IT Infrastructure Insights," accessed September 16, 2022, <https://www.dell.com/en-us/dt/storage/cloudiq.htm>.
5. Dell, "Dell EMC OpenManage Enterprise 3.9 Support Matrix," accessed September 27, 2022, <https://dl.dell.com/content/manual57108123-dell-emc-openmanageenterprise-3-9-support-matrix.pdf?language=en-us&ps=true>.
6. HPE, "HPE OneView 7.0 Support Matrix," accessed September 27, 2022, https://support.hpe.com/hpesc/public/docDisplay?docId=sd00001703en-us&page=s_server-config-limits-fusion.html.
7. Dell, "Dell EMC OpenManage Enterprise 3.9 User's Guide," accessed November 11, 2022, <https://dl.dell.com/content/manual56903993-dell-emc-openmanage-enterprise-3-9-user-s-guide.pdf?language=en-us&ps=true>.

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