



BUILDING INTELLIGENT SERVER MANAGEMENT

Technical Note by:

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SUMMARY

Server Management is a critical part of a successful IT solution. No matter how a server is utilized – single workload, cloud, general infrastructure, or in a remote or branch office – how it is managed will have a direct impact on the effectiveness and value of the solution.

Dell PowerEdge servers are designed with management intelligence in mind, with a focus on simplicity, efficiency, and availability:

- Intelligent, agent-free embedded management
- Efficient, automated workflows across the entire server lifecycle
- Low-touch maintenance and support capabilities

By some estimates, up to 75% of system downtime is from manual processes and user error. Dell's systems management solutions can help eliminate this risk and bring stability to any IT environment.

After more than two decades in the IT industry, Dell EMC has become known for providing leading server solutions. Dell EMC seeks to provide great hardware solutions. Once a user receives the solution, Dell EMC wants each customer to have a great user experience. Dell's systems management product development starts with goals of providing users the simplest, most efficient, highly available, and most automated tools to make the life cycle of the server as worry-free as possible.

From comprehensive management capabilities embedded directly in the server to robust consoles and 3rd party integrations, Dell EMC's management solutions can reduce deployment times by 40%, system updates by 64%, and troubleshooting time by 73%. The result is a much more agile and robust environment that can respond to changing IT needs.

Removing complexity

PowerEdge server management begins with a comprehensive embedded management controller (the integrated Dell Remote Access Controller, or iDRAC) that can manage 100% of the server without the need for complex operating system agents. It accomplishes this by communicating directly with the various components of the system through hardware connections. All server components can be configured, monitored, and updated through a single "out of band" interface. The result of this agent-free design is simplicity: no more searching for the right agent for the right operating system. Dell's design reduces complex, multi-tool workflows down to a single interface and a single tool, saving time and resources.

This approach extends into management consoles as well, whether it is through third party software from Microsoft, VMware, and others, or from Dell EMC management consoles such as OpenManage Essentials. These consoles communicate directly with the server through agent-free interfaces. For example, a Microsoft management environment does not require yet another console to perform server management.

Plugins to Microsoft System Center speak directly to servers, thereby maximizing the investment in the existing management solution and removing complexity from the datacenter. In other words, users can "use what they know", leveraging their skills with their existing management console but gaining the additional capabilities of OpenManage solutions.

Pervasive Automation

Manual processes no longer keep pace with resource constraints brought on by data center expansion. By some estimates, up to 75% of system downtime is the result of the lengthy time taken to perform tasks manually or unintended downtime caused by error while performing the tasks. To overcome these issues, every product within the OpenManage portfolio is designed with automation in mind. The result is a rich set of capabilities that reduce the number of steps taken to perform tasks, helping users to save time and reduce potential for error:

- Profile-based discovery and deployment through consoles or through APIs
- Automated and scheduled firmware updates
- Automatic phone-home capabilities with embedded health reports directly from the server

An independent IT consultancy, Principled Technologies, found that this automation can save users significant amounts of time by reducing the number of steps taken to perform tasks by 99%. See link at bottom of page for their white paper.

Next generation APIs

Dell believes in helping our customers by driving towards a common framework for all server management. Dell has been a leader in defining and driving standards for systems management and continues to drive the next generation of scalable systems management. As one of the founding members of the Redfish standard, Dell is building a common management interface that can be implemented across all x86 servers, thereby simplifying management automation for customers. This new standard, designed to replace aging standards such as IPMI, is maintained by the Distributed Management Task Force (DMTF), which is currently chaired by a Dell distinguished engineer. The Redfish interface delivers a single point of integration for all x86 management.

Reducing Downtime

Server maintenance can lead to unexpected downtime in any environment, from the cloud to the branch office. The goal of Dell systems management is to increase server availability as much as possible by reducing maintenance downtime. Replacing a server component (network card, motherboard, etc), can lead to configuration and firmware mismatches. The Dell EMC OpenManage suite can automatically restore these items to the new component, creating an exact replica of the original config. When Dell support is needed, the embedded SupportAssist features in the OpenManage suite can automatically send health reports to Dell support staff. For the customer, this means no more downloading diagnostic tools and installing them in the environment. Features such as these increase server uptime, enhance user productivity, and reduce the need for additional training.

Direct Results

Customers see immediate benefits in adopting Dell's server systems management strategy. For example, high-performance car maker Shelby American's business infrastructure runs predictably and requires minimal administration thanks to Dell's management products. Richard Sparkman, IT Director, relies on the Dell EMC OpenManage Essentials console to identify and proactively address potential performance bottlenecks. "With Dell EMC OpenManage Essentials, I can take care of our IT needs in about 20 percent of the time it took previously," he says. "It helps me spend less time actively managing all my servers and more time on strategic tasks that may not relate directly to IT."