Highlights from a recent webcast on software-defined management for virtual infrastructures

MORE VISIBILITY, LESS COMPLEXITY FOR ENTERPRISE VIRTUAL INFRASTRUCTURES

Virtualized, software-defined data centers benefit from management solutions that optimize, right-size and root out waste in today's heterogeneous data infrastructures. That paves the way for enterprises to realize true flexibility, agility, resiliency, scalability and ease of use.

IT is living in the age of the software-defined data center, where infrastructure is virtualized and control over it is automated. Excitement clearly is growing over the opportunity to create a world where IT resources are efficiently delivered as a service to achieve business objectives, drive productivity and increase cost-effectiveness: Gartner says that the SDDC is crucial to the long-term evolution of an agile digital business, and the market is expected to reach over $77 billion by 2020.

At the heart of the SDDC is the data infrastructure: the servers, storage, I/O, networking hardware and software and operating systems that span physical, virtual and cloud environments, conforming to best practices and policies to optimally support critical information systems and business infrastructure applications. Software-defined management is the key that unlocks what typically have been siloed technology pools and transforms them into the multi-tenant data infrastructures required for SDDC success. Under that umbrella, the journey to flexibility, agility, resiliency, scalability and ease of use can come to fruition, as infrastructure is automatically and intelligently configured, defined, managed, and rolled out for business enablement.

Management Complexity Challenges

The vision is grand. But many enterprises still experience challenges making management technologies live up to the promise of seamlessly supporting virtualized environments, especially given that the consolidation taking place in the SDDC may be quite hybrid in nature.

Complexity rears its ugly head amidst a tangle of different hypervisors and containers—along with the tools enlisted to support them—and the operating systems and applications running on them that have their own performance, availability, capacity, and economic requirements. Other components, from databases to variable hardware configurations, need effective monitoring, reporting, and assessment, too, if the data infrastructure is to be effective in supporting applications, whether that means assuring they receive the resources they need or that problems are found and fixed fast. But does enabling this introduce yet another layer of tools to wrangle with?

Enterprises not only face the issue of wading through proliferating tools whose use may be limited to one platform, operating system or other solution. They also confront the astounding fact that among this wealth of tools, they may yet experience gaps in coverage related to maintaining a dynamic, optimized and resilient data infrastructure.

Knowledge Drives Effective Management

There's no managing that which one doesn't know about or fully understand because there's no streamlined way to view the often heterogeneous virtualized environment, or that which is having an impact on its data infrastructure and applications. There's room to spare for uncertainty when IT lacks the ability to have an end-to-end, big-picture sense of all resources, a topology view of their relationships to each other, and a drill-down perspective into components.

Software-defined management is designed to resolve complexity by addressing those missing pieces. It offers the instrumentation IT needs to avoid flying blind when it comes to understanding the organization's data infrastructure across multiple layers, from application to file system, and the information factory that that infrastructure powers across hybrid ecosystems. Rather than going through different dashboards to determine whether some infrastructure resources are being ineffectively used, or whether some applications are suffering because they are highly utilized but not appropriately

provided for, IT can rely on one platform and one interface to increase visibility for greater insight.

The technology provides both baseline data for comparisons to make these determinations on a daily basis, and avoid creating new software-defined bottlenecks. By removing the complexity of managing disparate platforms and tools, it also helps to reduce costs.

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A Strong Take on Software-Defined Management

IT leaders may want to ask themselves a few questions to determine their need for a better virtualization management solution. For example, can their staff today tell when a cluster in a multi-flavor virtualization ecosystem will run out of capacity and resources, with the help of an environment overview dashboard? Is it possible to expose bottlenecks and identify heavy-bandwidth consumers by analyzing network traffic at the packet level and exploring the relationship from virtual machine to physical disk array? Can staffers monitor the aggregated resource utilizations managed by a Microsoft Hyper-V SCVMM and drill down to individual components in search of problem root causes?

If not, it may be time to explore Dell Foglight for Virtualization, Enterprise Edition 8.4, which makes it possible to answer to all those questions with a resounding yes. Built-in, but customizable, domain expertise shapes rules and templates so that IT receives alerts when resource, capacity and other issues arise. The solution can provide data related to these questions to all stakeholders involved in monitoring every facet of the environment, to help them collaboratively conduct troubleshooting and diagnostics. Changes to objects in some virtualization environments are also closely tracked, giving IT access to an audit trail of these events and their impact. Their impact can be ranked according to their adverse effect on performance, so staff can investigate and address the issue even before end users complain.

A defining theme of Foglight for Virtualization is its optimization capability for the data infrastructure in the form of Rightsizer and Wastefinder for Microsoft Hyper-V and VMware environments. Rightsizer gives IT tools to automate allocation of VM resources to ensure optimal performance of fluctuating workloads, based on how aggressive or conservative it needs to be in terms of CPU, memory and storage. Wastefinder helps keep the dream of virtual environments—the ability to quickly create VMs and carve up resources among them—from turning into a nightmare, as it could if virtual machines continue to run after a project completes, or the storage attached to them remains in that state even after the VMs are shut down, or snapshot copies live on long after the need for them is gone. With Wastefinder, those powered off or unused resources can be returned to the resource pool.

A key goal for Foglight for Virtualization revolves around assuring that a fully optimized environment remains that way. That means proactively addressing all phases of capacity management and forecasting to deal with the demands of a dynamic data infrastructure environment. To that end, its robust capacity planner functionality not only supports IT's need to know information, such as which cluster is poised to handle a new VM at that moment, but what-if scenarios, as well. In the case of a merger with another company, IT can explore issues about the impact of, for example, adding 50 more VMs to the infrastructure. Scalability is also a highlight of the solution, with a single instance of Foglight for Virtualization able to monitor thousands of VMs.

With software-defined data management as performed by Dell Foglight for Virtualization, IT no longer will have to guess what is being managed in organizations' complex data infrastructures. Instead, there will be a strong and unified approach to fully understanding the environment, and optimizing it for maximum business productivity in the SDDC.