Enabling In-Depth IT Monitoring of Hybrid Cloud Environments

ScienceLogic delivers outstanding performance, scalability, and reliability of its hardware appliance with Intel® Xeon® processors and Intel® Solid-State Drives

Improved performance enables organizations to scale the environments they are monitoring without having to expand their monitoring appliance. A single ScienceLogic database can now manage 40,000 devices compared to approximately 15,000 devices using previous-generation hardware.

Across industries, organizations are increasingly looking to the cloud as a way to expand IT resources, capitalize on the latest technologies, and improve the agility and flexibility of the enterprise, all while controlling costs. In many cases, these organizations are adopting a hybrid IT approach—integrating on-premises infrastructure with public cloud services such as Amazon Web Services (AWS) to take advantage of cloud benefits, maintain tight security for sensitive data, and make the most of existing on-premises investments.

Hybrid IT is a new approach that requires new IT tools. Organizations need ways to monitor the health, performance, and availability of all the applications, servers, networks, and services running across the hybrid IT environment. Unfortunately, many existing IT operations management (ITOM) solutions are not up to the task.

Offering Next-Generation Monitoring with ScienceLogic

ScienceLogic offers a next-generation IT monitoring platform designed to accommodate the challenges of managing cloud and hybrid IT environments. Its comprehensive capabilities enable organizations to identify the right environment for each workload and monitor the performance of numerous workloads across all environments—including on-premises and external cloud environments. As a result, organizations optimize resource utilization and maximize the benefits of cloud services.

For many organizations, the value of the ScienceLogic solution is immediately evident as they begin planning to move workloads to a public cloud. The solution can help identify the best candidates for the public cloud while taking into account the interdependencies of workload components. Mapping interdependencies allows organizations to make better decisions about which workloads should be moved to the cloud by helping IT managers understand how each change will affect other elements of their IT environment.

Once workloads have been migrated to the cloud, organizations can monitor cloud workloads alongside the workloads running on-premises. For AWS, ScienceLogic offers a comprehensive set of performance, availability, and billing information across multiple Amazon accounts, services, and regions. In addition, ScienceLogic provides comprehensive monitoring for Microsoft Azure®, VMware vCloud Air®, and IBM SoftLayer® services. Administrators monitor all their hybrid workloads using comprehensive, intuitive dashboards (Figure 1). They can see how all elements are performing no matter where they reside, and they can identify potential trouble spots before serious problems arise.
Refreshing the Hardware Appliance
The ScienceLogic solution can be deployed as a software-as-a-service (SaaS) offering, Amazon Machine Instance, or hardware/virtual appliance (in several possible configurations). The company recently decided to make a change in its hardware appliance to improve performance and scalability. The solution must provide a responsive experience even as organizations continue to expand the environments they need to monitor.

ScienceLogic wanted to continue working with Dell OEM Solutions to produce, distribute, and support the hardware appliance. Dell OEM loads the ScienceLogic software image onto Dell PowerEdge* servers that are customized with ScienceLogic branding. In addition, Dell OEM ships the appliances directly to ScienceLogic customers and provides hardware warranty services through Dell ProSupport*.

In refreshing the appliance, the ScienceLogic team decided to focus on improving both raw compute performance and I/O performance of the Dell PowerEdge servers. Achieving those goals meant refreshing the processor and rethinking the storage used for the appliance.

Updating Intel® Xeon® Processors and Incorporating Intel® SSDs
After comparing and evaluating a variety of processors, the ScienceLogic team decided to move up from a previous generation of Intel® Xeon® processors to the Intel Xeon processor E5 v2 family. These processors offered the right combination of raw compute performance and I/O bandwidth for rapidly accessing the ScienceLogic database application.

To further improve I/O performance, the ScienceLogic team explored alternatives to traditional hard disk drives. The appliance had been equipped with either 10,000 or 15,000 rpm SAS (serial attached SCSI) disks, but the ScienceLogic team decided to move to solid-state drives (SSDs). In defining the requirements for the SSDs, high bandwidth and low latency were top priorities, but ease of deployment and support were also key. Ultimately, the team decided to use 2.5-inch hot-swappable SSDs, which could help deliver a tremendous performance boost while helping to streamline deployment.

Figure 1. Organizations can automatically discover and monitor all of their on-site and off-site infrastructure while also mapping cross-technology dependencies among elements.
The ScienceLogic team tested SSDs from multiple manufacturers before selecting the Intel® Solid-State Drive (Intel® SSD) Data Center S3700 Series. Testing showed that the Intel SSDs delivered superior sustained random write performance compared with SSDs from other vendors. Strong write performance from the SSDs is critical for maximizing performance of the ScienceLogic database. In addition, the reliability of the Intel SSDs helped make these SSDs a clear choice.

The Dell PowerEdge servers used for the ScienceLogic® hardware appliance also use Intel® Ethernet 10 Gigabit Adapters. These adapters help provide high-capacity replication between database instances. Previous experience with other Intel adapters gave the ScienceLogic team confidence that the Intel Ethernet 10 Gigabit Adapters would deliver consistent performance with low failure rates (Figure 2).

**Improving Performance and Scaling Capacity**

The Intel SSDs and the Intel Xeon processors help ScienceLogic deliver significantly better performance for its hardware appliance than previous versions of the appliance. For example, the Intel SSDs achieve random write performance of up to 36,000 IOPs—a 5,000 percent improvement from the previously used traditional disk drives.

Improved performance enables organizations to scale the environments they are monitoring without having to expand their monitoring appliance. A single ScienceLogic database can now manage 40,000 devices compared to approximately 15,000 devices using previous-generation hardware. Organizations can accommodate a large and growing hybrid IT environment while controlling the footprint—and associated operating costs—of the appliance.

**Delivering Solid Reliability**

Moving to Intel SSDs has helped improve reliability by reducing hardware issues. The traditional hard disk drives ScienceLogic previously used had a failure rate of 1 to 3 percent. While drive failures rarely caused complete outages, they could severely impact system performance. Replacing those hard disk drives also introduced risks, since mistakenly replacing the wrong drive could cause an outage.

By contrast, the Intel SSDs have yet to fail. ScienceLogic customers benefit from uninterrupted performance. In addition, they can avoid the costs and risks of replacing drives. ScienceLogic, meanwhile, can cut the costs of service and support.
Enhancing Insight for Hybrid IT

The ScienceLogic solution offers organizations a powerful yet efficient way to monitor on-premises, cloud, and hybrid IT environments. With comprehensive insights into performance, availability, workload dependencies, and more, organizations can take full advantage of public cloud services while continuing to extract value from their existing investments in on-premises infrastructure. By refreshing the company’s hardware appliance with Intel Xeon processors and Intel SSDs, ScienceLogic offers organizations the performance and scalability for rapidly growing environments plus the reliability for mission-critical monitoring, while enabling organizations to control costs.

Learn More
ScienceLogic: www.sciencelogic.com