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The Top 20 Tools Needed for Hybrid IT

IT today is more complex than ever. Public cloud, networks, storage systems, servers, and applications all combine to deliver today's IT services. But how do you manage such a diverse and complex infrastructure? Can legacy tools help after this seismic shift? This document answers these questions and provides 20 tools you need to deliver services in this new hybrid IT world.

Today's IT environment provides greater promise than ever before. New technologies are driving new capabilities and even more opportunities to differentiate. The opportunity for innovation has never been greater: faster compute, more storage, and new applications all working together to drive greater efficiency and greater power. But this wave of innovations has also added greater complexity since one failure in this increasingly complex IT stack means a failure of the entire service. New consumer focused cloud-based applications are setting a high standard – nearly 100% uptime with peak performance all while IT is asked to cut costs even further.

The technology industry responded, first with virtualization. Virtualization promised more efficient use of servers and better control over heat and power costs. However, more efficient use of servers created a proliferation of applications based on the less expensive storage and compute power driving even greater demand. The technology industry again responded, this time with the public cloud and services such as Amazon Web Services (AWS) and Microsoft Azure promising reduced costs for compute and storage as well as support for multiple levels of service from the low-end to the high-end and compute and storage "on-demand."

IT organizations now have the ability to remove the demand on internal resources and transfer the overhead and risk to an external party (such as AWS or Azure). They can now add and subtract capacity in seconds, essentially renting compute and storage without the need to buy. This gives them the ability to reduce costs with the click of a button, however, this is at the cost of greater complexity leaving the organization with a hybrid environment: some resources onsite and some offsite, all meant to work together seamlessly.


This is a potent cocktail: greater expectations from users in availability and performance, reduced budgets, and a completely hybrid infrastructure (private virtual servers, networks, storage, and applications, interweaved with public virtual servers, network, storage, and applications). The stress on IT resources has never been greater. Yet many organizations have infrastructure operations tools built for yesterday's world. Monolithic systems cobbled together and window dressed to look like they come from the same company, requiring expensive resources to manage and hours of expensive service engagements. These systems were not designed for hybrid IT and are leaving organizations with a challenge: do they retrofit their old solutions with the hope of managing a complex environment with an even more complex tool or do they go in a completely new direction?

There are three paths an organization can take to manage this mix of infrastructures: purchase a mixture of tools and integrate them, purchase an all-in-one monitoring solution, or augment an existing legacy solution. We've provided the list

of specific tools an organization should consider when seeking to manage a complex hybrid infrastructure below:

- **Data Center Infrastructure Management** – DCIM solutions monitor the environmentals within a data center as well as monitor some servers and network devices. However, their scope tends to focus on environmentals.
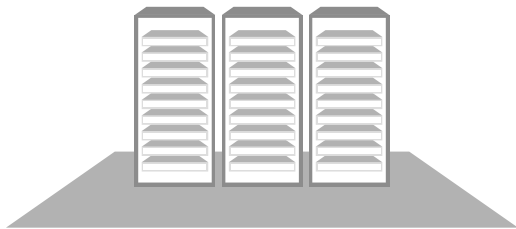
- **Power Distribution Unit (PDU) Monitoring** – At the most basic level, if you don't have power coming to your system nothing else can operate. Understanding the status of the back-up batteries and even environmentals such as the temperature of your PDUs sitting in your internal data center can help to either eliminate or mitigate any possible power issues.

- **Asset Management** – With servers and storage being automatically created and brought down in seconds across both virtual and cloud-based infrastructures, tracking the use of assets has never been more complicated. An IT Asset Management system is designed to help an organization track all of its IT assets, the warranties, the vendors, configurations, etc. and is a must in this hybrid IT world.
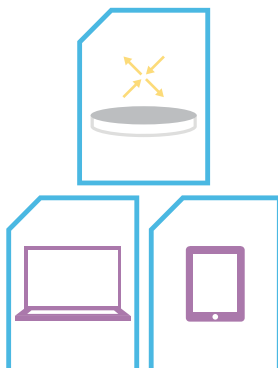
- **Discovery** – An asset management system is only as good as the data within it. A discovery solution is designed to automatically discover any onsite and offsite resources that appear, and automatically load them into your asset management system. This becomes even more necessary in a world where any employee with a credit card can purchase compute and storage capacity in a matter of minutes.

- **Device and Dependency Mapping** – With complexity only increasing, the ability to understand how all of the different elements in an IT environment relate, is becoming impossible. A device and dependency mapping solution takes care of that concern, by automatically mapping the dependencies across different technologies and elements.

- **Network Monitoring** – Understanding the health of the most basic elements within your infrastructure, such as switches and routers, is vital to ensure your services can deliver as needed. Without the network functioning, your interdependent systems have no way of communicating and your services simply stop operating.

- **Server Monitoring** – While virtual technologies get most of the attention in IT environments today, the underlying hardware that provides the platform for the virtualized technologies is equally important.

- **Storage Monitoring** – With compliance and data retention guidelines becoming even more strict, understanding whether you have enough storage capacity and that your storage is available is crucial.

- **Operating System Monitoring** – Few organizations are strictly tied to one server operating system. Understanding the CPU performance and memory from an OS perspective can be important when using public cloud based resources, as the public cloud provider may report one CPU performance number, while the OS may experience quite a different performance level.
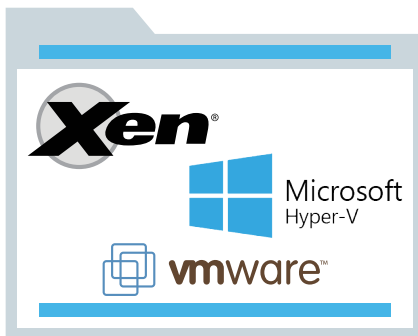
- **Hypervisor Monitoring** – Sitting on top of your physical infrastructure are a number of virtualized servers. Understanding the health, availability, and location of these hypervisors is a complex task, with virtual resources spinning up and down in seconds.

- **Application Monitoring** – Understanding the basic level of infrastructure is vital for ensuring the best in service performance. But application performance is also an important factor and should be included in a holistic monitoring framework. Application performance along with operating system level performance and server based monitoring can give a truly holistic view of a service.

- **Cloud Management and Monitoring** – With the world increasingly moving to multi-cloud environments, having a solution to manage and monitor across different public and private cloud environments is the new basis for the ability to operate as an IT organization.

- **Service Level Management** – In the end, whether you are an enterprise or a service provider, you are delivering a service to your customers. Most organizations have multiple services with different service levels assigned. Keeping track of those service levels and ensuring you meet them can be a challenge, which is where a product with service level management abilities will help.

- **Ticketing** – Keeping track of actions performed on equipment as well as incoming help desk requests and actions performed against those requests is one of the most basic aspects of IT service support. Any ticketing solution you examine should be able to either automatically log incidents based upon events happening in the infrastructure or have an integration with a monitoring solution that provides this capability.

- **Runbook Automation** – IT operations professionals face continual pressure to do more with less. An automation platform can help by reducing the need for human involvement, ultimately freeing up staff to take on more strategically important issues.

- **Knowledge Management** – Another way to speed up operations and reduce overall costs, is to implement a knowledge management system. By providing context sensitive information to IT staff when they need it, you can enable your more junior staff and free up the time of your senior staff members.

- **Monitor of Monitors** – Often organizations with multiple different monitoring solutions, need one consolidated view of what is happening in their environment. A monitor of monitors does just that. It acts as a central hub pulling in the data gathered by the disparate monitoring solutions in your environment.

- **Analytics** – Each device within your environment produces its own set of data. Multiply that across your entire infrastructure, and there is a mountain of information that needs to be managed and collated. That is exactly what an analytics solution can provide for you and your team. It takes the multiple pieces of data, and helps to tell a story, bringing to light various concerns and trends that should be noted and addressed.

- **Open API** – Technologies are rarely static and tend to migrate over time. While early network-centric monitoring systems were based on SNMP, modern systems address a broader base of technologies and can also leverage rich APIs to consume data from other systems. Today's operations tools need to be able to consume data via multiple APIs, enabling rapid integration of multiple tools for greater productivity.

- **Dashboarding** – A picture is worth a thousand words or, in this case, a thousand pieces of data. For service providers, the ability to offer an attractive and useful dashboard to customers is key. For enterprises, senior management wants to be able to see, in one view, the health of IT and the best way to do this is dashboards. Yet, both customers and internal users often have their data consumption needs/preferences change. They expect you to be able to turn around custom dashboards in minutes. To solve this you should look for a solution with the flexibility to respond to clients request for dashboards in minutes using drag-and-drop tools.

As discussed in the beginning of this paper, an alternative to purchasing multiple solutions and integrating them is to either use a next generation monitoring platform with all of the above included as one solution or retrofit an old solution. Other whitepapers produced by ScienceLogic explore what to look for in a single hybrid IT monitoring and management solution as well as key characteristics to consider when evaluating an infrastructure monitoring software vendor.

About ScienceLogic

ScienceLogic delivers the next generation IT monitoring platform for the network of everything. Over 15,000 global Service Providers, enterprises, and government organizations rely on ScienceLogic every day to significantly enhance their IT operations. With over 1,000 dynamic management Apps included in the platform, our customers are able to intelligently maximize efficiency, optimize operations, and ensure business continuity. We deliver the scale, security, automation, and resiliency necessary to simplify the ever-expanding task of managing resources, services, and applications that are in constant motion.

ScienceLogic won InfoWorld's 2013 Technology of the Year award, Red Herring's Global 100 Award, Deloitte's Technology Fast 500™, and MSPmentor 250, among other worldwide recognitions of excellence. For more information, visit www.sciencelogic.com.

Contact Us

Americas
+1.800.724.5644
info@sciencelogic.com

Europe
+44 (0) 203.603.9889
info-eu@sciencelogic.com

Asia-Pacific
+61 2 9959 2426
info-apac@sciencelogic.com