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# Hitachi IT Operations Analyzer Streamlines Infrastructure Availability and Performance Management

Sponsored by: Hitachi Data Systems

Mary Johnston Turner
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## IDC OPINION

As corporate IT environments become more dynamic, heterogeneous, and virtualized, datacenter managers and administrators find it increasingly difficult to monitor and analyze infrastructure availability and performance on an end-to-end basis. In complex environments, spanning network, server, and storage resources, it can be time consuming to diagnose root cause. This results in poor end-user service levels, as well as delays in remediating infrastructure availability and performance problems.

Integrated performance monitoring and analytics tools are needed to help corporate IT managers maintain service levels and hold down costs across these complex, interdependent environments. Investments in integrated availability and performance management tools can help reduce complexity, streamline operations, and increase IT staff efficiency in heterogeneous and virtualized datacenter environments.

The Hitachi IT Operations Analyzer offers a high-level view into the status of server, storage, and network infrastructure performance, availability, and interdependencies. This type of product can help IT staff better identify service degradations before they impact end users. It can also speed up root cause analysis and problem resolution processes by helping staff more quickly discover cross-tier dependencies, assess business impact, and identify the root cause of the problem.

## SITUATION OVERVIEW

Datacenter managers and IT administrators face a number of challenges as they work to maintain service levels, control costs, and support the ever-changing needs of their business users. These forces include:

- Increasingly widespread use of virtualization to support production, business-critical applications across heterogeneous hardware platforms
- The need to integrate and streamline management processes across network, storage, and server resources to maintain consistent service levels and deliver new resources to business users more quickly than ever
- Shrinking windows for downtime and increasing end-user expectations that business applications will be available and accessible anytime, anywhere regardless of the device or network used to access them

Global Headquarters: 5 Speen Street Framingham, MA 01701 USA P.508.872.8200 F.508.935.4015 www.idc.com

- Pressure to embrace cloud computing services and architectures to reduce operational costs and improve business agility
- Demands to hold headcount flat and minimize training costs even as business requirements and datacenter operations requirements escalate

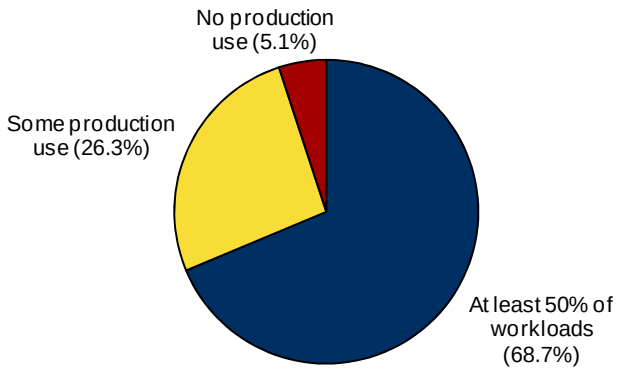
A look at how virtualization is transforming corporate datacenter infrastructure management requirements illustrates these trends.

## Virtualization Drives Utilization Improvements, But Operational Efficiency Lags

In a recent IDC survey of 250 North American IT decision makers, the majority of respondents (68.7%) stated that they expect to see at least half of their organization's production workloads supported by virtualization by 2013 (see Figure 1). These decision makers represent a mix of enterprise and midsize businesses that are rapidly turning to virtualization to support a wide range of production applications and workloads. Virtual servers are now the default environment for most new applications and workloads.

**FIGURE 1**

Expected Percentage of Production Workloads That Will Be Supported by Virtualization in 2013




**n = 250 North American IT decision makers**

Source: IDC, 2010

Virtualization has been widely embraced because it provides an opportunity to reduce hardware, facilities, and energy costs by allowing a single physical server to be used by multiple applications and users simultaneously. Many organizations have experienced these benefits.

However, in terms of day-to-day operations, most organizations have seen fewer improvements in terms of IT staff productivity, particularly with regard to their ability to proactively prevent availability and performance problems, diagnose the root cause of errors and incidents, and remediate and resolve issues rapidly. The dynamic nature of heterogeneous physical and virtual environments and the proliferation of SOA and rich media applications have combined to create an environment where change is constant and every business transaction and workflow depends on a cascade of interrelated hardware and software resources spanning servers, storage, networks, and applications. In many organizations, 60%, 70%, and even 80% of the time needed to resolve a problem is related to finding the source of the problem.

## Increasing Need for Integrated Availability and Performance Management Processes and Tools

As the numbers of physical and logical servers and the volume of stored data and network transactions increase, IT organizations are recognizing that traditional manual availability and performance management processes are not adequate. Individual IT administrators can no longer resolve critical service-level problems by visually reviewing logs to probing individual element management systems on a reactive basis after users have reported problems.

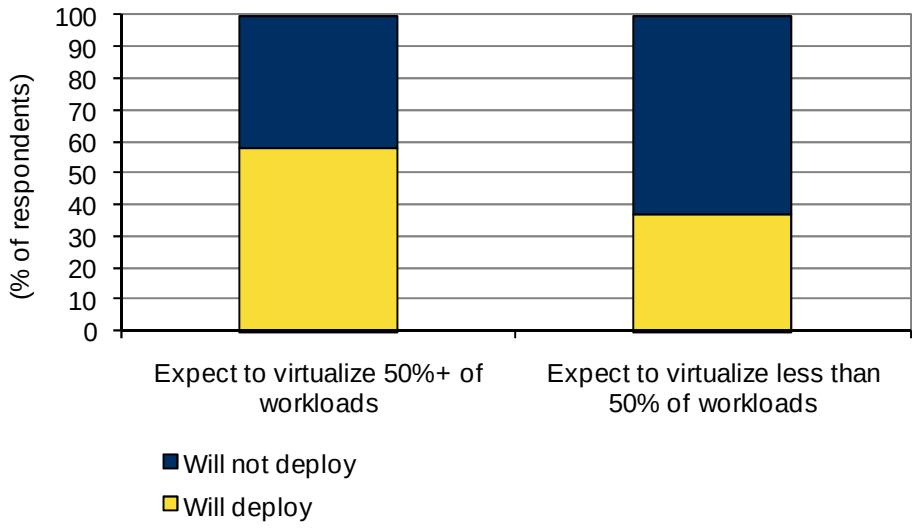
Today's business environment demands that IT organizations take a proactive approach to monitoring, analyzing, and optimizing infrastructure availability and performance. IT administrators need monitoring and analytics tools that can take an end-to-end view across server, network, storage, and application resources and understand how configuration changes and cross-tier dependencies impact the end user's experience. Management priorities need to focus on business impacts, and responses need to be coordinated across different technology domains.

IDC's research indicates that more and more IT decision makers are recognizing the need for integrated, end-to-end availability and performance management solutions. Typically, organizations that have more complex, more virtualized environments have been the first to turn to these types of tools. As an example, among organizations that expect to virtualize the majority of workloads by 2013, 58% of IT decision makers also expect to implement end-to-end performance management tools in that time frame. By comparison, just 37% of those who have more limited (or no) virtualization plans are looking to deploy end-to-end performance management solutions by 2013 (see Figure 2).

**FIGURE 2**

Impact of Virtualization Plans on Deployment of End-to-End Performance Management Solutions by 2013

*Q. Do you expect your organization to implement end-to-end performance management solutions by 2013?*




n = 250 North American IT decision makers

Source: IDC, 2010

IDC expects that as the level of heterogeneity and complexity increases in corporate datacenters, more and more IT decision makers will recognize that traditional siloed availability and performance management tools and ad hoc processes must be replaced with more integrated analytics and workflows.

## Required Attributes of Integrated Availability and Performance Monitoring Solutions

Traditionally, IT administrators have relied on device- and role-specific analytics and monitoring tools to provide detailed event and alert information about each resource in the datacenter. While this type of approach provides solid insight into the state of the specific device or system, it makes it difficult to assess the end-user and business impact of a fault or an event. In complex virtualized environments, even knowing which set of network, storage, and server resources supported a specific workload can be challenging.

Yet, as IT infrastructure environments have become more complex, many organizations have continued to rely on manual log reviews and ad hoc processes to diagnose and resolve availability and performance problems.

What many organizations are missing is a cost-effective way to analyze end-to-end performance across these diverse resources in a manner that allows them to be able to quickly identify issues and get to the root cause of the situation.

For IT organizations that support heterogeneous environments and need IT staff to multitask across various vendor solutions and technology platforms, a unified end-to-end view of resource availability and performance can help reduce the time required to identify the business impact and root cause of problems.

These types of all-in-one solutions should have the following attributes to simplify operational environments and deliver value quickly across heterogeneous environments:

- Broad out-of-the-box visibility across major vendor server, storage, and network resources
- The ability to integrate additional vendor-specific devices and/or gain greater levels of insight as needed
- Rapid, easy installation and discovery
- Unified intuitive user interface and visualization capabilities
- Automated root cause analytics
- Integration with major third-party reporting tools used by IT analysts

Solutions with these attributes are typically easy to install and require minimal IT administrator training. They deliver value quickly as business users see improved service levels and IT organizations are able to streamline many day-to-day reporting, monitoring, and problem management processes and workflows.

The Hitachi IT Operations Analyzer solution, part of a suite of lightweight infrastructure management tools for heterogeneous environments, offers IT organizations many of these capabilities.

## Hitachi IT Operations Analyzer Targets Integrated Availability and Performance Management Priorities

The Hitachi IT Operations Analyzer is an integrated, lightweight availability and performance monitoring tool created with the needs of heterogeneous IT environments in mind. By design, the tool takes a broad rather than deep view of the availability and performance of network, storage, and server infrastructure elements and provides automated discovery and root cause analytics to help IT administrators detect and resolve problems more quickly.

The IT Operations Analyzer is vendor agnostic and targets heterogeneous environments where IT staff need near-real-time access to infrastructure performance status and root cause analysis. IT Operations Analyzer does not replace device-specific management tools, which are still needed to collect event data and to administer the individual systems.

By comparison, IT Operations Analyzer uses agentless polling technology to collect performance data from a number of different vendors' network, storage, and server resources. The product's open platform feature supports the use of Java and XML plug-ins, which can be written by Hitachi Data Systems (HDS) and possibly by its partners as well to quickly add support for additional types of resources and devices. This information is then forwarded to the tool's correlation and analytics engine for analysis.

Hitachi's internally developed analytics and correlation engine identifies connections and dependencies across the infrastructure and maps availability and performance data into visual performance monitoring dashboards and topology maps. A unified dashboard and visually intuitive topology maps enable IT administrators to quickly identify where availability and performance degradations exist and to isolate which element in the infrastructure is the root cause of the problem. Standalone device-specific tools are then used to diagnose and remediate the issue on the individual physical and logical resources that are the source of the problem.

Hitachi has designed the IT Operations Analyzer for easy and rapid start-up. The product is designed to self-install in 10–15 minutes and has built-in auto-discovery capabilities that allow the tool to populate the database in a few hours. Wizard-driven GUI templates enable IT staff to set up dashboard and topology maps quickly. Out-of-the-box integrations with third-party reporting tools such as Crystal Reports provide those tools with read-only access to IT Operations Analyzer data to help generate reports in formats that are consistent with the organization's established IT performance reporting processes.

## FUTURE OUTLOOK

IDC's research indicates that corporate IT environments will continue to become more complex and dynamic in the coming years as use of virtualization ramps up and more organizations embrace public and private cloud computing strategies. By definition, cloud shifts the focus of IT operations away from individual technology silos and components. Rather than prioritizing the availability and performance of specific IT infrastructure resources, cloud architectures demand that IT managers focus on end-to-end service levels, automated workload optimization, and integrated service delivery and provisioning strategies. Cloud computing will increase the need for IT administrators to have an easy-to-use view of performance, availability, and root cause dependencies across complex, heterogeneous network, storage, and server environments.

## CHALLENGES/OPPORTUNITIES

Both the Hitachi IT Operations Analyzer and its sister product for security and asset management, the Hitachi IT Operations Director, are developed and marketed by HDS, the storage-oriented arm of Hitachi outside Japan. The initial IT Operations Analyzer product, released in 2009, had limited scalability because it focused on IT generalists in medium-sized businesses.

Since the initial IT Operations Analyzer launch, HDS has significantly increased the scalability of the product to the point where it is now capable of monitoring larger-scale datacenters. It has also improved the analytics and user interface.

To be successful, HDS needs to continue to make customers and channel partners aware of the IT Operations Suite's commitment to heterogeneous, multivendor coverage across network, storage, and server resources. The firm needs to continue to educate channel partners and customers about this extended set of capabilities.

In today's tight economy, IT decision makers will make investments only to the extent that they will deliver rapid payback and business value. IDC's research consistently shows that the introduction of any new integrated management tool, along with the shift to shared, virtualized infrastructure, requires IT organizations to rethink and streamline processes to derive maximum benefit from their investments.

It will be important for Hitachi and its partners to provide customers with advice and best practices about how to best evolve performance and problem management processes to realize the full benefit of this type of integrated, end-to-end availability and performance management solution.

## ESSENTIAL GUIDANCE

Increasing datacenter complexity impacts IT organizations of all sizes. Organizations that have traditionally relied on resource-specific monitoring tools and ad hoc problem management processes will increasingly discover that they cannot keep up with the rate and pace of change that surrounds them. End-user service levels will drop if IT managers fail to upgrade management and monitoring tools, integrate workflows, and improve their ability to detect and remediate availability and performance problems more seamlessly — regardless of the actual source of the problem.

To address rising levels of operational complexity, these organizations must invest in tools that provide an end-to-end view into the availability and performance of all types of infrastructure assets and that simultaneously enable IT administrators to identify the interdependencies and root cause of problems across these environments.