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WHITE PAPER

Hitachi IT Operations Analyzer Delivers Performance and Availability Reporting for IT Generalists

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IDC OPINION

Datacenter infrastructure environments are becoming more virtualized and integrated. The delivery of consistent business and application service levels depends on the interplay of connected server, storage, and network elements. Larger, enterprise-class datacenter managers have long struggled with understanding the interdependencies and isolating the root cause of problems in these highly connected environments. Medium-sized datacenters that are frequently staffed by IT generalists are now feeling the pain as well.

Many medium-sized organizations have not yet invested in integrated monitoring tools to provide a comprehensive view into the status of the infrastructure. They are typically put off by the cost and complexity of the tools and their internal lack of the specialized skills need to populate and maintain these products. Lack of insight in infrastructure performance, availability, and interdependencies results in IT playing a reactive support role that negatively impacts both IT staff and business end-user productivity.

Hitachi's recently released IT Operations Analyzer offers IT generalists 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 problem resolution and incident management processes by helping staff to more quickly isolate the root cause of an issue.

IN THIS WHITE PAPER

This white paper describes the challenges facing IT administrators as datacenter environments become more complex, heterogeneous, and interconnected. It describes how integrated infrastructure performance and availability monitoring tools can help IT managers improve service levels and staff productivity. The paper identifies a set of important attributes IT buyers should look for when evaluating these types of products and discusses how the Hitachi IT Operations Analyzer product addresses these requirements.

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SITUATION OVERVIEW

Medium-sized datacenters, defined as those that contain several hundred network, server, and storage infrastructure entities, are typically managed and operated by a lean staff of IT generalists who must simultaneously administer and troubleshoot a complex and interdependent set of IT resources. Traditionally, these IT teams rely on management tools optimized for the needs of specific vendor implementations and operational domains (e.g., networks, servers, storage). Each of these tools can detect events and issue performance and availability alerts with respect to its own span of control, but the tools provide little insight into how the performance of a specific device impacts the end-to-end service levels experienced by the end user. Getting a comprehensive view of the overall health and well-being of the datacenter and finding the root cause of interconnected system and application performance problems is very difficult in this type of siloed monitoring environment.

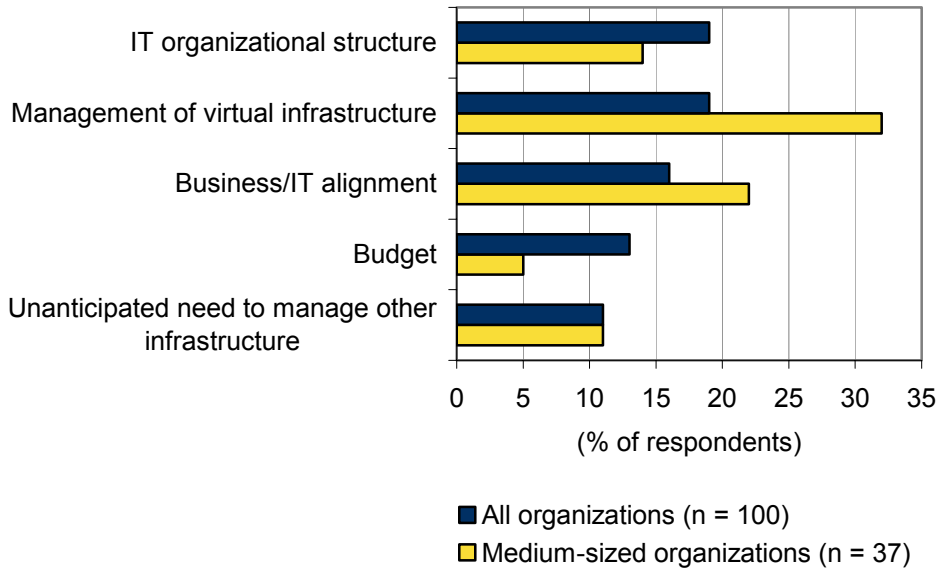
Changing Business and Technology Landscape Places New Demands on IT Generalists in the Datacenter

Medium-sized datacenters increasingly experience the same types of operational complexity challenges that beleaguer larger-scale datacenters. Specifically, expanding use of virtual servers, networked storage, and Web 2.0 applications has dramatically escalated the volumes of server, storage, and network management events and alerts.

Simultaneously, business user service-level requirements are becoming progressively more exacting and demanding. Mergers, acquisitions, and business restructurings occur frequently and can dramatically shift the mix of IT assets in use, causing datacenter environments to become more and more heterogeneous. As shown in Figure 1, when respondents at medium-sized organizations were asked to identify the number 1 challenge resulting from implementation of virtual infrastructure, they selected management issues, followed by concerns about business/IT alignment, IT organizational structure, and the emergence of unanticipated management requirements for IT staff.

FIGURE 1

Number 1 Challenge Created by Use of Virtualization



Source: IDC's Virtual Infrastructure Management Survey, 2008

The issue of management is a much greater concern for medium-sized organizations than it is for larger IT teams because many enterprise-scale datacenters already use a wide range of tools and have specialists available to focus on each new technology that comes along. By comparison, medium-sized datacenters must ask their already overtaxed generalists to take on still more responsibilities, often without any increase in headcount and with little or no specialized training.

Larger datacenters typically deploy integrated management consoles and visualization tools to coordinate communication across the IT team and technology silos. These integrated tools pull event and status data from device-specific element management systems and then filter and analyze the data to identify the root cause of overlapping incidents and alerts and display an assessment of business impact and system availability metrics. Most often, these enterprise-scale datacenter management solutions are aligned around a comprehensive service management framework. The frameworks typically encompass extensive workflow automation and customized integrations between specific technology domains, individual devices, the service desk, the configuration management database (CMDB), change control boards, and other processes and tools.

For medium-sized organizations, the dollars and time needed to deploy, integrate, and customize broad management tool frameworks offset the potential benefits from improved operational efficiency and better business insight. When a datacenter is managed by 5–15 IT generalists who share roles and responsibilities and are physically colocated, ad hoc processes and verbal coordination often make up for a lack of sophisticated tools. As long as the environment is relatively

homogeneous and changes are infrequent, these somewhat incomplete and inefficient approaches can be adequate.

However, a number of forces are converging to stress these traditional infrastructure management approaches beyond what they can handle. These trends include:

- IT teams that are feeling substantial economic pressures to do more with less and are being asked to spread thin IT resources against an ever-widening array of projects and technologies
- Increased deployment of technologies, such as virtualization, with the goal of reducing costs and increasing capital IT asset utilization
- Rising awareness of the business costs associated with application performance problems, whether they impact ERP systems, ecommerce, email, internal data analysis tools, or network connectivity

More and more IT organizations are discovering that a lack of robust, integrated performance monitoring tools is standing in the way of their organizations' ability to fully realize the benefits of virtualization. This lack of visibility and control across the infrastructure makes it nearly impossible for IT staff to operate efficiently and proactively. IT's credibility with business leaders is undermined when IT operates reactively and is unable to detect end-user service-level problems on its own.

Required Attributes of Integrated Performance and Availability Monitoring Solutions for IT Generalists

To improve visibility into the performance and availability of system resources, in environments facing budget and staff constraints, IT generalists need tools with the following attributes:

- Broad visibility across heterogeneous server, storage, and network resources
- Rapid, easy installation and discovery
- Intuitive user interface and visualization capabilities
- Automated root cause analysis
- Cost-effective with a clear ROI

Visibility across diverse technology silos and vendor-specific implementations is critical to enabling efficient IT operations. Some of the most time-consuming activities in many medium-sized datacenters relate to determining the root cause of a performance problem. In cases where IT is unaware of the issue until after end users begin to report problems, there can be significant negative business impacts in terms of downtime, lost employee productivity, and potentially lost revenue and damaged customer relationships.

IT's inability to fund or staff specialized performance management tools may unintentionally put the entire business at risk. These business concerns escalate as the IT infrastructure becomes more complex, dynamic, and interconnected, and it becomes more difficult to isolate problems and restore service levels quickly.

Medium-sized datacenters staffed by IT generalists represent an attractive, emerging — yet still underserved — performance monitoring software market that IDC expects will become increasingly active in the coming years. One new entrant, Hitachi, has recently launched a product designed to provide these types of datacenters with an affordable first step on the road to attaining integrated insight into performance and availability.

Hitachi IT Operations Analyzer Targets the Integrated Performance and Availability Monitoring Needs of Medium-Sized Datacenters

The Hitachi IT Operations Analyzer is an integrated performance and availability monitoring tool created with the needs of IT generalists 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.

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. Rather, IT Operations Analyzer uses an agentless polling technique to collect data from each device and forward it to the tool's correlation and analysis engine. Hitachi's internally developed analytics and correlation engine identifies connections and dependencies across the infrastructure and maps performance and availability data into visual performance monitoring dashboards and topology maps.

IT generalists can scan these dashboards and visually intuitive topology maps to quickly identify where performance and availability degradations exist and to isolate which element in the infrastructure is the root cause of the problem. Unlike many tools designed for IT generalists, IT Operations Analyzer provides insight into the availability of storage systems as well as server and network elements. Standalone device-specific tools are then used to diagnose and remediate the issue on the device in question. The initial IT Operations Analyzer release is optimized to monitor a maximum of 250 devices per license instance. Development is under way to increase the number of devices each license can monitor.

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.

FUTURE OUTLOOK

IDC expects the majority of medium-sized and enterprise-scale datacenters to continue to experience increases in operational complexity and infrastructure interdependence in the coming years. The cost of managing these types of environments will continue to escalate unless IT decision makers invest in tools to help IT staff become more effective and efficient.

Integrated infrastructure performance and availability monitoring is an important capability required to keep up with the operational needs of heterogeneous and virtualized datacenters. Medium-sized organizations that rely on IT generalists to manage these environments will need to invest in these types of tools to maintain required service levels.

CHALLENGES/OPPORTUNITIES

Hitachi is a new entrant in the infrastructure performance and availability monitoring market. The initial IT Operations Analyzer offering is optimized for medium-sized organizations and is expected to be taken to market by Hitachi's worldwide channel partners. In many cases, IDC expects the deployment and support of integrated infrastructure performance monitoring may require some of Hitachi's storage-oriented channel partners to step outside their comfort zone. Likewise, potential customers may find that the introduction of an integrated tool will require them to rethink many day-to-day operations, monitoring, and reporting processes and workflows.

In today's tight economy, IT decision makers will make investments only in tools that will deliver rapid payback and help them to do more without needing to add headcount. 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 in order to derive maximum benefit from their investments.

It will be important for Hitachi and its partners to address the need to adapt processes and skill sets and to help customers quantify how a new set of performance and availability monitoring and reporting tools can take time and cost out of problem and incident management and remediation activities as well as improve IT's accountability and credibility with business decision makers.

ESSENTIAL GUIDANCE

Increasing datacenter complexity affects organizations of all sizes. Organizations that rely on IT generalists to manage and monitor a wide array of server, storage, and network infrastructure are particularly hard-pressed to keep up with the demands of virtualization and the sharing of infrastructure across multiple business services.

To address rising levels of operational complexity, these organizations must invest in tools that provide a real-time view into the performance and availability of infrastructure assets as well as identify interdependencies among these

infrastructure elements. These tools can help IT teams identify service degradations before they impact end users and can reduce overall mean time to repair (MTTR) while freeing IT staff to support more strategic business priorities.