JP1 SYSTEM MANAGEMENT SOFTWARE

eGUIDE

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Introduction

The productivity and reliability benefits of virtualization lie ultimately in solid systems management capable of automating process execution within a highly adaptive IT environment. That's where you get profound improvements in productivity and consistency. And that's where you'll begin to tap on exciting possibilities, such as cloud computing, to fulfill business growth or transformation.

As a prevailing trend with corporate IT transitions, the route to success in virtualization lies in solid, standardized processes and the management software to automate and govern the execution of these processes, according to industry analyst Forrester Research.

As businesses begin to evaluate tools to help manage their virtual environment, Forrester recommends focusing on four key system management capabilities: Configuration management, capacity planning and VM placement, performance monitoring, and real-time automation.

"Keep in mind that each earlier step is a prerequisite of the next, making the priority of the list important," said Glenn O'Donnell and Rachel Dines, analysts at Forrester Research. "For example, attempting real-time automation without first conquering the challenges of capacity management will prove frustrating and ultimately futile."

To help companies overcome the challenges of managing an adaptive IT infrastructure, system management suites like Hitachi's Job Management Partner 1 (JP1) offer availability and integrated management capabilities that enable IT teams to respond quickly to dynamic business needs and protect IT systems with cost-efficient, centralized management.

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The 5 critical tasks after server consolidation and virtualization

Your data center may be vastly more efficient after consolidating and virtualizing your physical servers but it doesn't end there. Here are 5 critical tasks you must handle to ensure reliable performance and high availability across your entire virtual environment.

JP1 Advantage 1

"We desire to help the Administrator to [proactively] identify the potential risks in our [Group's internal IT] system, and then adapt and reinforce the system to improve accuracy in system capacity planning."

Fei Ye, an IT department official at Shanghai a-shi (Group) Industrial Co. Ltd. (Bus Group), China's first public-listed transportation provider, which is tapping on JP1's performance management capabilities.

Task 1

Deploy suitable virtual performance and management tools

Traditional server management tools and products may not work as effectively in virtual environments because they are not aware of the underlying hypervisor layer of the virtual host. As a result, the performance metrics of your Virtual Machines (VMs) may not be accurate because of products that are not designed to work in virtual environments.

From the basic nature of virtualization, the guest is fooled into thinking the host is a physical server and that it has exclusive access to all of its resources. For example, a guest with 2 GB of RAM simply sees 2 GB of RAM. But in reality, the host server is managing the memory and may be using advanced techniques such as memory page sharing and memory ballooning to make more efficient use of it. Additionally, if a host runs out of physical memory it may start using virtual swap files to provide the necessary memory to its VMs.

As a result, it is important that Hitachi's Job Management Partner 1 (JP1) provides an integrated holistic view of your enterprise's entire system operation, including what is happening in the virtual layer, something that traditional performance tools are not even aware of. More importantly, JP1 Version 9 (JP1 V9) allows enterprises to monitor and manage mixed environments and optimize assets without exacting a heavy administrative burden.

Task 2

Monitor your environment for proactive problem detection and capacity planning

JP1 not only monitors the activity of servers and processes, but also the status of specific services and applications as well as items provided by other monitoring and management tools.

JP1 V9 features agent-less monitoring that provides enterprises with immediate access to remote server operational status. Agent-less monitoring and conventional agent-based monitoring can be flexibly combined according to the specific needs of the server. For example, you can opt for agent-less monitoring to check basic performance while the agent captures detailed information.

Enhanced alarm monitoring and reporting functions allow you to detect problem symptoms and conduct root-cause analysis of the problem based on the utilization information collected from long-term monitoring reports. On a strategic scale, you can use the information to identify potential bottlenecks and develop accurate capacity plans for future IT systems.

Task 3

Implement a holistic disaster recovery and backup plan

Backing up virtual environments with traditional methods is often inefficient and time consuming. Installing a backup agent on each VM and backing the server up through the guest OS is resource intensive on a host server and can negatively affect all the VMs running on that host.

With JP1 V9, differential backups at specified intervals help to reduce the workload of backing up operational information . This results in efficient storage of large amounts of data simultaneously and allows backups while current data continues to be monitored in real time. You can extract whatever data you like from the accumulated backup files and use it in creating reports. At the same time, preset actions can be executed to enable prompt recovery when a failure occurs.

Task 4

Ensure proper training of IT Administrators

Most virtual host system Administrators are typically Windows or Linux systems Administrators who take on the additional responsibility of running the virtual host servers. Virtual hosts are different from traditional operating systems and require a specific skill set to administer them properly. Therefore,

JP1 Advantage 2

"Previously, when a support call came in, an IT staff member would need to go on-site to do a check, come back to the IT Department, check documents, look for the appropriate CD, and then go back and do a reinstallation, update or whatever is necessary. Now, with detailed configuration and software information at hand, we can diagnose problems online and remotely, and resolve them quickly."

Tamizarasu N. S., CIO of MIS Department & IT Shared Services at Hitachi Electronic Products (Malaysia) Sdn. Bhd. where JP1 solutions has not only improved IT process and business efficiency but also provide more and new value to its businesses at lower cost.

Virtualization Administrators must be properly trained to handle the job.

You may find that installation and setting up of the virtual environment are fairly straightforward, and the first time you encounter a critical problem, it may turn out that the Administrators do not have the proper knowledge or skills to correct the problem quickly. Problems in virtual environments are amplified because they can affect several VMs and require Administrators to be able to pinpoint and resolve them fast.

One key advantage of JP1 is that it centrally manages the execution status of systems on various platforms, as well as a wide range of events occurring in networks, servers, applications and virtual environments. Centralized visual management of all events with simple handling reduces management workload.

Still, proper training ensures that your Administrators are able to resolve virtualization problems effectively and efficiently.

Task 5

Continue to optimize resources and minimize waste

Stay vigilant against virtual machine sprawl and look for ways to prevent it in your environment. As VMs do not have a physical presence, Administrators can easily create them.

Every VM consumes host resources, and the more VMs you have, the more your host resources are strained. If VM sprawl isn't controlled, it can result in a lack of host resources and bottlenecks that may severely impact the performance of all of your VMs. As a result, you may end up having to purchase more host servers and add additional shared storage, which costs money.

JP1 simplifies capacity planning by utilizing the data gathered through long-term monitoring and report results to help identify potential bottlenecks. In addition, Administrators can easily create monitoring trees that help to manage "VM sprawl", improve efficiency and reduce costs.

Alternatively, you can limit who can create VMs. Devising a formal process for requesting new VMs is a more effective method than allowing every Administrator in the data center the access to create VMs at will.

Finally, now that you have virtualized your environment, you should continue seeking opportunities to virtualize additional physical servers, as virtual servers have a number of advantages (snapshots, for example).

JP1 collects utilization information from a wide range of sources including operating systems, databases, internet services and various applications on distributed IT systems running Windows Unix or Linux, including those in virtual environments. The centralized management and analysis of this information supports system performance and shows the virtual environment's effective use of resources on physical servers.

You should aim to use at least 70% of the capacity of your virtual hosts. Anything less and you're defeating the purpose of virtualization, which is to use all available resources on the server and minimize waste.

However, if your CPU utilization is less than 50% on your hosts but the memory consumption is at 90%, for example, add more memory if possible so that you are able to fully utilize other resources.

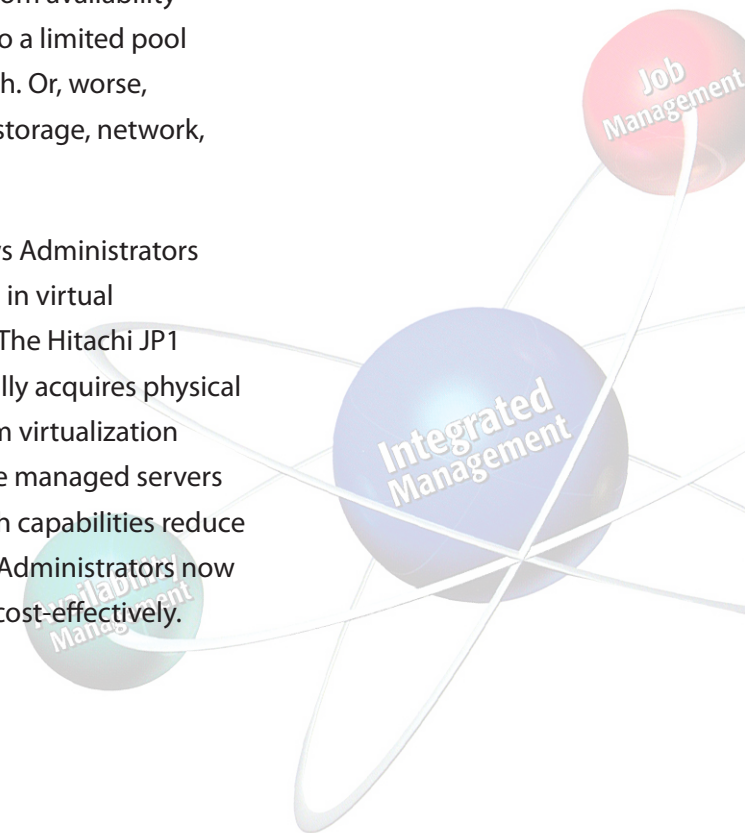
How integrated system management improves performance and availability

It's easy to look only at the benefits of virtualization technology and ignore the crucial importance of an integrated systems management tool that can centrally manage the entire IT environment. When virtualization is deployed with a robust system management suite like Hitachi's Job Management Partner 1 (JP1), you can:

1 Manage physical/virtual server configurations easily

Performance may be affected, and end users may suffer from availability and downtime problems, as new VMs are over-allocated to a limited pool of physical resources such as CPU, memory and bandwidth. Or, worse, configuration mistakes fail to connect VMs properly with storage, network, server or desktop resources.

JP1's easy-to-operate Graphical User Interface (GUI) allows Administrators to see, set manage server configurations, including those in virtual environments, helping to simplify the management task. The Hitachi JP1 product -- Agent Option for Virtual Machine -- automatically acquires physical server and virtual machine configuration information from virtualization software. The Administrator can also create profiles for the managed servers to control access by operators to specific parameters. Such capabilities reduce IT operation workloads for virtual environments because Administrators now manage physical/virtual server configurations easily and cost-effectively.



2 Monitor and prioritize tasks across OS platforms and database servers

Administrators maintain system stability by proactively analyzing the operational performance of the entire system across OS platforms and database servers. Through JP1's critical region analysis, for example, Administrators can predict when performance will deteriorate to critical levels and use the information to prioritize which parts of the system to focus on.

Furthermore, JP1's Remote Monitor software does away with the need for software agents when monitoring Windows and Unix variant-based platforms, and Oracle and Microsoft SQL Server database servers. These platforms and database servers can be monitored individually, as a group or on a consolidated basis.

In consolidated environments in which tasks are performed automatically, JP1 V9 displays the progress of each task on real-time basis and predicts when a task will be completed.

Such information allows Administrators to prioritize tasks and proactively configure business-critical assets such that they deliver maximum value.

JP1 Advantage 3

"The Hitachi JP1 solutions best matched our needs. What we found most attractive and which the other vendors didn't have is the operation log acquisition capability, the features for protecting company confidential information, and the ability for us to manage IT assets over their lifecycles."

Narongchai Saeung, Assistant IT Manager at Yokogawa (Thailand) Limited where information leakage was a prime concern.

3 Ensure that IT security and compliance are not compromised

Security and compliance can be compromised when VMs are deployed without controls, software licenses are used up without any contractual checks, systems are configured in ways that open up exposures like Web or FTP servers and dormant virtual system images are unpatched against viruses and exploits.

Complementing performance monitoring, the IT Compliance functions of Hitachi JP1 also takes advantage of the central management of corporate-wide IT asset information. These functions include internal compliance and security that eliminate various security risks and information leaks. They are carried out without organizations needing a full-time system expert in-house.

Beyond constructing a secure environment, you can even build a quarantine system to reinforce the internal controls of the IT systems.

JP1 Advantage 4

"Previously, problems with the warehouse server could take up to an hour to diagnose from the time the warehouse manager raised the alert. Now, with all the necessary information readily at hand, the duration has been slashed to a mere five minutes."

Angie Ng, Shiseido Singapore's IT & Systems Executive who now has more time to spend on planning how else the company can further leverage IT for business benefit.

4 Minimize cost of deploying new VMs

Uncontrolled virtual machine deployment, or VM sprawl, add to incremental costs for additional software licenses, human and IT costs for system administration, storage allocation for the virtual drives and data, management tools, performance measurement, security administration, etc.

JP1 prevents this by promoting capacity planning not based on intuition but based on collected operational information. Operation status data reports provide invaluable information for tuning systems or allocating resources.

Changes in system operation status are correlated for evaluation and comparison with baseline historical data. This contributes to more concrete capacity planning.

Coupling strategic capacity planning with centralized management of client PC inventory information and efficient automatic distribution of software, updates and patches, you not only control VM sprawl but also minimize the cost of deploying new VMs.

5 Increase the benefits of virtualization through effective consolidation

Server consolidation using virtualization technologies helps companies reduce costs and improve operational efficiency. In these virtual environments, however, optimizing computer resources to maintain overall performance is essential.

The enhanced capability of JP1 V9 centrally manages, analyzes and monitors the utilization information gathered from operations of all systems, including both physical servers and virtual machines. Apart from proactively detecting potential performance issues, Administrators will know the virtual environment's use of resources on physical servers, aiding future capacity planning to ensure stable system operations.

6 Boosts IT Administrators' ability to add value to strategic tasks.

Automation of tasks that used to be done manually is now possible. With JP1, tasks like detecting, inspecting and judging system events, then taking the appropriate corrective action can be set as automated actions to be used whenever matching error conditions are discovered. Those actions can be executed without manual intervention.

For Administrators, the potential increase in productivity across multiple departments is critical as the number of VMs they need to manage increases. Automation multiplies their ability to handle day-to-day activities and frees them to add value to strategic project work.

JP1 Advantage 5

"The IT function is now trimmer and more productive, we're able to spend more time on end-user training and other value-added tasks, and we now can achieve our quarterly plans and meet targets more efficiently. More importantly, we now have much more time to work together with the business units on how the MIS Department can enable and support their future plans."

Tamizarasu N. S., CIO of MIS Department & IT Shared Services at Hitachi Electronic Products (Malaysia) Sdn. Bhd. which, together with two sister companies, enjoys the business and process efficiencies offered by JP1.

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