**Case study**

**NEC ensures high availability of mission critical systems**

**HP GlancePlus takes the central role in solving performance problems**

**Industry**
Systems integration

**Objective**
Ensure high availability of customers' mission critical systems

**Approach**
Combine advanced technologies into an effective management system

**IT matters**
- Uses several thousand monitoring metrics for deep information gathering
- Improves system performance tuning to prevent trouble
- Supports rapid fault detection through drill-down analysis

**Business matters**
- Enables NEC to rapidly identify and rectify problems in target systems
- Allows Linux performance metrics to be measured without deep knowledge of Linux standard commands
- Improves NEC's profile and competitiveness

"Highly reliable operations management, born from the close relationship between NEC and HP, is unprecedented. We will continue to develop this valuable partnership and support customers' mission critical business systems."

– Yoshinaga Seki, Senior Manager, Cloud Operations Management Group, NEC System Software Division

**Performance monitoring is key**
NEC in Japan builds and operates large scale, mission critical systems for high profile clients. High availability is vital and to ensure that the lights stay on, NEC uses its resource management software WebSAM* in conjunction with the performance monitoring tool HP GlancePlus.

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* WebSAM is branded as "MasterScope" outside Japan.
Challenge

Need for performance monitoring
NEC is a system integrator with years of experience in the construction and operation of large scale mission critical environments. The critical nature of these systems means any issues have to be resolved quickly and efficiently. System performance tuning is essential to prevent issues caused by a drop in performance.

As a result, NEC needed a performance monitoring solution that delivers rapid analysis of any causes of trouble. The solution must be able to make sense of a wide variety of monitoring information.

Solution

Mix of technologies
NEC’s principal solution is the integrated operation management software WebSAM. This is combined with the UNIX® system performance monitoring and diagnostic capabilities of HP GlancePlus software.

Yoshinaga Seki, Senior Manager of the Cloud Operations Management Group in NEC System Software Division, says the long-standing partnership with HP has played an important role in the construction of these systems.

“This all started in 1995. At the time NEC was engaged in large scale mission critical work for major companies from the mainframe era, we partnered with HP, which provided HP-UX, a high reliability UNIX for commercial use.”

Since then, NEC’s NX servers using HP-UX have made innovations in many mission critical systems. Through the construction and operation of these systems, NEC has achieved a level of availability of UNIX systems comparable to mainframe systems.

“The basis of this is the operations management software WebSAM,” adds Seki. “WebSAM supports diverse operational management needs such as improving the business system service level, making the operations work more efficiently, and optimizing IT resources. It is worth noting that multiple HP products are incorporated in that portfolio. We complement each other.”

HP products play an important role within WebSAM. Among these, HP GlancePlus is a performance monitoring tool that holds the key to operations management for mission critical systems.

With HP GlancePlus, it is possible to show the system level, application level, and process level data in real-time as well as various types of device data for CPU, memory, disk and network. With several thousand monitoring metrics, an advantage is being able to perform wide ranging information gathering that cannot be obtained with OS standard commands. Also, using the adviser function, interval and threshold can be set. It will alert the operator when the system performance goes below the threshold. The output can be automatically transferred to a CSV file as well.

Benefit

Swift fault diagnosis
Takahisa Tanaka, Assistant Manager in the Cloud Operations Management Group, System Software Division of NEC, says HP GlancePlus showed its effectiveness on performance improvement during the development stage.

“For development of mission critical systems, system performance tuning is essential for preventing trouble in advance due to a decrease in performance. HP GlancePlus makes this work more efficient.”

HP GlancePlus can also be used to determine the cause of performance degradation, as Tanaka adds: “With actual cause analysis, we use a drill-down method of narrowing the subject scope by repeating deductions based on multiple pieces of performance information and verifying those.

“HP GlancePlus is able to measure system call level performance information that cannot be measured with OS commands or normal monitoring software. Based on those measurement results, for example, it is possible to determine if the true cause of the performance problem is on the application side and to identify the most likely location of the fault. By using HP GlancePlus, there is a dramatic increase in the precision of these deductions.”
With HP GlancePlus, operations can be performed simply by having a wide variety of performance information displayed as a list, sorting by specific items and using a graphical display with a simple GUI screen. The HP GlancePlus user-friendly interface improves the efficiency of root cause analysis. Its performance improvements also reduce the introduction costs.

“There was even a case where HP GlancePlus reduced the number of servers by 20 percent. One hundred servers were planned to be delivered, but only 80 servers were actually delivered,” adds Tanaka. “HP GlancePlus plays an important role in avoiding wasted resources and optimizing system investment.”
HP GlancePlus is also useful for identifying the cause of problems during the operational stage.

"By setting monitoring metrics according to the system characteristics, it is possible to reliably catch system abnormalities," says Tanaka.

If the adviser function is used, it is possible to select appropriate items from several thousand monitoring metrics and to freely set the measurement intervals and thresholds. "Especially with large scale networks, there are cases when unexpected troubles arise due to concentration of user access, but with HP GlancePlus, searching for the cause of this kind of trouble can also be performed quickly," adds Tanaka.

Analysis of time series data is important for finding the cause of unexpected trouble. At NEC, information gathering is performed at intervals of five seconds using the HP GlancePlus function.

"The information can be graphed using Excel and problem points can be identified quickly by visually analyzing the data before and after the problem occurred," explains Tanaka.

This accumulated data is also used for system capacity planning. The performance monitoring data provided by HP GlancePlus is useful for implementing accurate measures for the timing and scale of system expansion.

With increasing cost pressures, the Linux environment is rapidly becoming more popular. To address this situation, NEC and HP have moved forward with functional enhancements for a Linux version of HP GlancePlus.

“This functional enhancement is based on the feedback from NEC customers. With the ‘Metrics desired by Linux Users’ investigated by NEC, there was a significant addition of items that can be measured such as metrics relating to system call, to logical volume and to CPU core. With the most recent version, 90 percent or more of the major functions of the HP-UX version of HP GlancePlus are available on Linux environment (Red Hat™ 6.x),” says Tanaka.

There are great advantages of using HP GlancePlus within the Linux environment. Comprehensive performance information can be gathered without the expertise in Linux standard commands. HP GlancePlus can now be used as a trump card for solving performance problems on Linux-based mission critical systems.

Shigeo Yoshida, Assistant Manager, Cloud Operations Management Group, NEC System Software Division, commented about the evolution of operations management for cloud environment:

“Operations management of mission critical cloud infrastructure directly links to a company’s competitiveness. We will keep providing cloud era operations management solutions together with HP, including innovative WebSAM products such as HP GlancePlus.”

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