

**JP1 updates operation management of NKK's UNIX-based mission critical system
10,000 jobs executed, and job processing time reduced**

In the summer of 1999, EXA Co., Ltd., which is an integrated-solution provider, updated the operations-management system of Nippon Kokan K.K. (NKK)'s UNIX-based system. Hitachi's Job Management Partner 1 (JP1) integrated systems management software centrally manages execution of about 10,000 jobs, which includes both online and batch jobs. Although the initial motive behind the upgrade had been Y2K compliance, the company ended up significantly reducing job-processing time as a result.

USER PROFILE

Company name:	EXA Co., Ltd.
Headquarters:	Solid Square East Building, No. 580 Horikawa-cho, Saiwai-ku, Kawasaki-city, Kanagawa-prefecture
Established:	October 1, 1987
Capital:	1.25 billion yen
Revenue:	40.8 billion yen (FY1998)
Number of employees:	1,564
URL:	http://www.exa-corp.co.jp/
Business operations:	In October 1987, NKK's Information System Division was spun off and established as an integrated information service company. Subsequently, Nippon Kokan System Service Co., Ltd. and NKK's electronics business were merged into EXA. Since then, the company has established a solid reputation as an integrated-solution provider by expanding services in a wide range of applications, including the fields of business, engineering, science, networking, and multimedia.

Y2K compliance efforts leading to replacing the operations-management system

Twenty-four hours a day, 365 days a year—the blast furnace at a steel mill cannot be stopped. Therefore, demands on operations management—an extremely mission-critical application—have been absolutely stringent since the early days when computers introduced into the steel industry.

EXA was founded based on the technologies and know-how for performing "around-the-clock operations," which NKK's Information System Division had accumulated over many years. As an integrated-solution provider, the company has been providing high-quality solution services to a broad range of client corporations.

NKK began installing UNIX systems in 1989, and has been operating its mission critical system by linking these UNIX systems to a mainframe. EXA has been responsible for operations management of complex system linkages and massive jobs.

"Because the number of UNIX systems had been increasing year after year, in 1995, we established a system for centrally managing the entire company by installing integrated UNIX operations-management software," explains Mr. Shigeru Otomo.

However, this operations-management software was not Y2K ready, and even if it had been replaced with a Y2K-ready version, it would not have supported the domestically made UNIX servers that NKK was using. Because it became clear that this software could not centrally manage the entire system, EXA began looking into installing a new operations-management system.

Automatic conversion of schedule information for 10,000 jobs

The following four selection criteria were established:

"First, it had to be possible to build everything down to monitoring consoles using UNIX only. This was an essential requirement, because ours was a mission-critical system," says Mr. Eiichi Inoda.

Second, it had to be possible to automatically transfer the existing job-schedule information.

The targets of operations management included as many as seven UNIX mission critical systems, one of which was the Production Control System. Also, the number of jobs involved was massive. For Example, a single application in the Production Control System may have been running 3,000 jobs. It would have been nearly impossible to manually reenter the schedule information from scratch for a total of 10,000 jobs.

"We were looking for a vendor who could provide us with carefully thought-out support, including creating a program for converting our operations-management software to that of another company," explains Mr. Inoda.

Third, the vendor had to have a development operation in Japan.

"We wanted to avoid a system that would require us to contact an overseas engineer just for fixing a bug, which might take as long as six months or a year," Mr. Inoda continues.

And, the fourth requirement was stability.

"Because the operations-management servers themselves were configured in clusters, stable operation in this cluster configuration was very important. We created a test environment using a minimum cluster configuration, and carefully tested and evaluated all of the details. For example, we tried to find out whether or not an application script would be lost if the system went down in the middle of the application," says Mr. Kazuya Okuma.

Of the five kinds of products compared and evaluated, including a reference product, Hitachi's JP1 integrated systems management software was the only product that fully satisfied all of the conditions.

Support for cluster configuration of operations-management servers

After the decision to use JP1 in October 1998, migration of seven UNIX mission critical systems began. By the summer of 1999, the migration of the operations-management system was completed as scheduled.

For migrating the schedule information, Hitachi developed and provided a conversion program. Automatic conversion of the schedules for approximately 10,000 jobs was successfully achieved.

"We may have made many unreasonable requests, but Hitachi really supported us well. Thanks to the automatic conversion program, we were able to eliminate data entry work and rest assured that there was no human error," notes Mr. Okuma.

For example, in an application in production control, JP1's job operation by JP1 use the flow described as follows.

First, when the mainframe finishes a job operation, it sends a file to the UNIX system using MQ (Message Queue). JP1 detects this file and instructs the TP monitor to start a job. From then on, JP1 manages and monitors all of the operations of the TP monitor.

Should an error occur, JP1 receives an alert from the TP monitor and displays it on the management console. For automatic system operation, JP1/Automatic Operation Monitor, JP1/System Event Service, and JP1/Cm2/Extensible SNMP Agent are used.

JP1 has also been smoothly supporting cluster configuration, which was the greatest concern during system building.

"Operation servers and communication servers are configured into clusters. Therefore, should a system go down, another automatically takes over to continue normal service. In other words, if an operation server goes down, JP1 itself must migrate as a cluster," explains Mr. Okuma.

If an application is running when the system goes down, JP1 must migrate to the communication server while maintaining the status of that application.

"Although I think this is the toughest requirement for a backup system, JP1 is equipped with the facilities necessary for supporting it," says Mr. Okuma.

Fast job processing: 750 jobs easily processed within one hour at peak performance

Replacing the UNIX operations-management software with JP1 has resulted in two major changes.

First, the job-processing speed over the course of a day has visibly accelerated.

"'Visible improvement' is not an exaggeration. As a matter of fact, the event information displayed on the monitoring console used to change about every 30 seconds. However, after JP1 was installed, the event information changes so fast that the human eye cannot keep up with it," comments Mr. Okuma.

Although JP1 is integrated systems management software, it is also "light software" that does not overtax the system. Boot-up time also has become visibly shorter.

Furthermore, while other distributed system operation management software used to take 1.5 hours or longer to process 750 jobs, JP1 can finish the same task in much less than one hour.

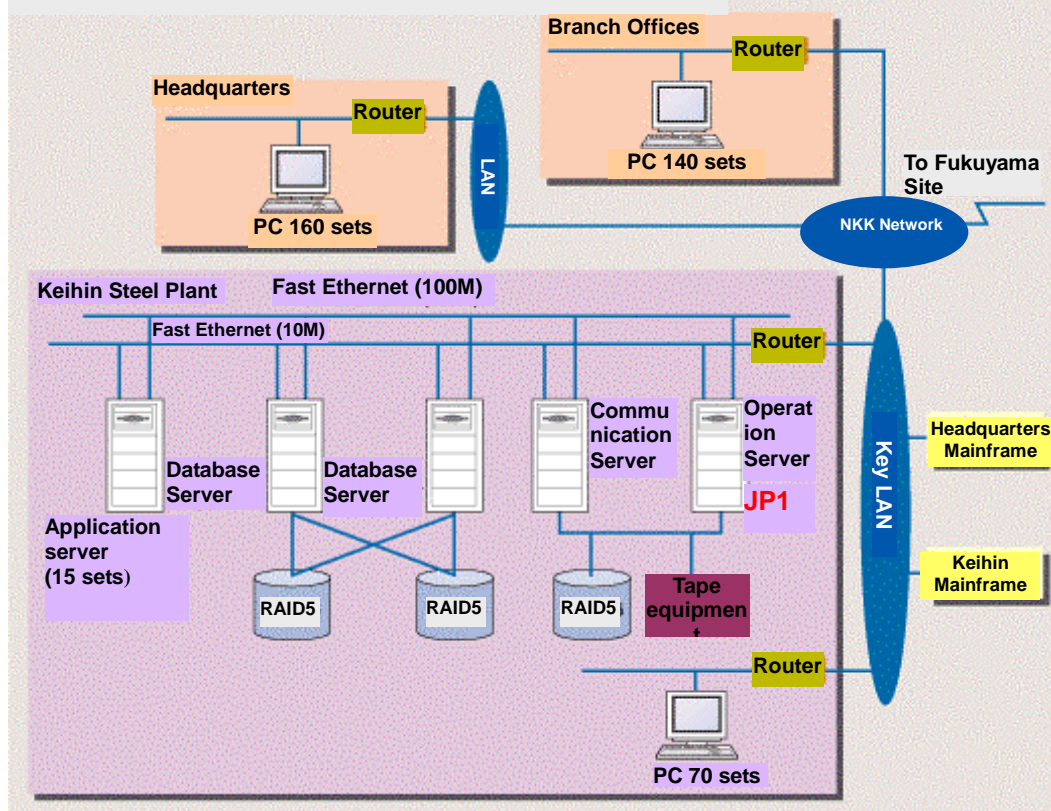
Another benefit is the reduction in the number of times engineers are called during the middle of the night because of system errors.

"We used to get calls about once a week, mainly because of bugs in the operation management software," says Mr. Okuma.

JP1 has a reputation for an extremely small number of bugs. Operation managers at EXA have been freed from the task of rushing to the computer center because of bugs in the operations-management software.

JP1 has been solidly supporting around-the-clock, mission-critical job operations. From now on, EXA plans to actively recommend JP1, which has been proven to provide stable operation, to other customers besides NKK.

System Configuration Image that runs an Application of NKK Production Management System.



JP1 Operation Management Systems

System name	Name/Number of machine
Production Control System	2 sets of R5-SP2, 12 sets of GP
Accounting System	1 set of R56000
Personnel System	1 set of HP9000, 1 set of R5-SP2
Cost Accounting Managing System	1 set of R56000
Facilities/Maintenance System	1 set of R56000
Procurement System/Management Support System	3 sets of R56000

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