



Sun Microsystems

- California



Profile:

Sun Microsystems, a world leader in networked workstations and Internet technology, and the designer of the Java programming language, is growing worldwide at an astonishing rate. With building, equipment and technology assets expanding into the billions of dollars, the implementation of an access control and integrated security management solution became a high priority.

The campuses, comprising four million square feet, presented a challenge for any system. More than 1,300 card readers connected directly to a head end computer; even more readers connected through dial-up phone lines; and 14,000 alarm points were monitored-many linked through the access control system and switchers to 500 cameras. The Diamond system, manufactured by GE Interlogix, InfoGraphics of Garden Grove, California, was adapted to accommodate several requirements specific to Sun's network requirements, and had been modified to utilize card readers and field devices from

another access control system which had been installed previously.

To keep Sun's security needs in step with their worldwide growth, Mike Milligan, Manager of the Security Technology Group at Sun Microsystems, recognized that multiple server technology offered universal control. Such architecture would allow the system to communicate over Sun's wide area network, with a large number of independently operated systems in Sun offices around the world. All systems needed database sharing capabilities, alarm routing between systems while monitoring alarms, and administrative access to any system from workstations located anywhere in the world.

Performance Challenges

With no lapses in security allowed, the system had to offer a hot redundant, head-end server configuration, which provided automatic switch over of field devices and workstations in the event of a computer failure. The system also needed the capability to handle more than 40 communication ports at each central server, without causing the administrative terminals to slow down.

Additionally, because of the high volume of cardholder additions, modifications and deletions, plus the immediate need to grant access to brand new employees and contractors, Sun needed a system whereby the head-end could instantly handle transactions in the event any new data had not yet been downloaded to the field panels. Only a combination architecture which featured both distributed computing-to avoid a central point of failure-and centralized computing-so that the head-end could allow Instant Access in the event the field panels

- Mike Milligan
Manager - Security Technology Group

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technology

hadn't received the latest data entry, could guarantee Sun Microsystems a foolproof security system.

The system had to communicate and support approximately 100 field panels from a previous supplier. The panels had limited access levels available, and their current capacity was insufficient.

"We were able to find everything we needed to implement our sophisticated security system with one vendor," explained Mike Milligan. "Not only did we receive scalable software that could be customized to meet our rapidly expanding security needs, but all of the necessary hardware from a single manufacturer."

Installation

Since breaches in round-the-clock security needs were out of the question at Sun, dual-redundant head-end servers were installed at Sun's Palo Alto campus. Two industrial PCs with uninterruptible power supplies, hot-swappable RAID configuration hard drives, and JAZ drives for backup and archiving, rounded out the measures taken to ensure non-stop operation. Supervision of the two computers was accomplished via an GE Interlogix, InfoGraphics' dual system controller, which monitors the performance of both computers and initiates a switch over to the healthy secondary system in the event that an error is detected in the primary computer. Each of the systems was provided with 60 communication ports, with expansion capability of up to 127 ports each. The field and network communications were switchable between the two computers using a T-Bar switcher.

Installation included 12 workstations communicating over Sun's own Ethernet LAN, and each workstation came equipped with printers.

The final installation hurdle involved configuring approximately 100 panels to meet the minimum number of access groups. Despite having no access to the source code for the firmware in these panels made by a previous vendor, engineers at GE Interlogix, InfoGraphics devised a method of associating the access groups to the communications ports. They were able to double the number of access groups available through these foreign panels and managed to save Sun the expense of replacing them.

GE Interlogix, InfoGraphics designed a Mifare contactless, Smart Card with magnetic stripe reader to replace the existing magnetic-stripe readers. When the card is issued to the user, it can be used in either existing magnetic stripe card readers or the new Mifare readers.

Going Global

Sun has now installed a large number of servers in many parts of the world. Each server supports card readers and alarm monitoring devices in a large number of remote Sun offices using dial-up modems, although more recently the ACU2 field panels are being directly connected to Sun's WAN.

Over 200 Sun locations worldwide are currently controlled by the GE Interlogix, InfoGraphics' security system. When worldwide installation is complete, the multiple server system will support over 40 workstations, over 5,000 card readers and more than 60,000 alarm points.

"This system now allows the worldwide security team at Sun to access any location from any workstation, run reports, monitor alarms, make database changes and broadcast selected cardholder data to any

system when required," added Milligan. "Sun's worldwide security department now possesses the most powerful security tool available anywhere in the world. The system has proved its flexibility in adapting to all of our requirements, and has allowed us to stay at the leading edge of technology."

Challenges and Solutions

Challenge: Several locations needed to share a common database.

Solution: Diamond allowed sharing over a WAN providing control at each location.

Challenge: Needed immediate card activation.

Solution: Diamond's Instant Access feature allowed new cardholders immediate access.

Specifications:

Diamond - access control system
100 panels
Over 5,000 readers
60,000 alarm points
Over 40 workstations

