# OmniCenter Helps IT Administrators at the University of California, Irvine Reduce the Cost and Complexity of Managing Campus-Wide Systems and Networks

> "OmniCenter is a highly reliable way of keeping track of the health of all of our infrastructure services. It allows us to quickly notice and respond to problems with our systems and our networks. OmniCenter is a real workhorse for us."
>
> — John Mangrich, Manager, Central Computing Services
> Network and Academic Computing Services (NACS)
> University of California, Irvine

**Organization**
University of California, Irvine

**Industry**
Education, Academic Research

**Location**
Irvine, Orange County, CA

**Applications**
Mission-Critical Network Management
24x7x365 IT Systems Monitoring
Performance Monitoring
Notification and Alerts
Central Email Monitoring
Network Traffic Analysis
Wireless Network Monitoring
Cost-Benefit Analysis
Network Capacity Planning
Data Center Environmental Monitoring

**Netreo Products**
OmniCenter® Pro

## > High Performance for Higher Education

Founded in 1965, the University of California, Irvine is a major research university committed to cutting-edge research, teaching, learning and creativity. It's among the fastest-growing campuses in the University of California system with more than 27,000 students, 1,100 faculty members and 9,200 staff members, making it Orange County's largest employer and generating an annual economic impact $4.2 billion on the Southern California economy. UCI is also home to the UCI Medical Center, the world-class UCI Arboretum and a portion of the University of California Natural Reserve System.

Netreo OmniCenter® Pro is used by a number of working groups across the campus, including Network Operations, Network and Support Programming, Central Computing Services, a contract support group for servers on campus, the educational learning management systems group, Web technologies, campus email delivery systems, directory services systems and a group that manages IT security.

UCI is mostly a Cisco shop with central core routers, distribution routers and a border router connecting dozens of campus buildings and offices to the outside world. Most of the network infrastructure on campus is operated and maintained by the University's Network and Academic Computing Services (NACS) Group, which employs about 85 professionals.

As is common on academic campuses, NACS previously used shareware tools and homegrown solutions to monitor and manage campus systems, but senior IT managers determined that there were significant care and feeding costs and inconveniences associated with keeping those tools live, updated and relevant. As a result, they implemented OmniCenter as a more cost-effective solution.

## > Monitor Virtually Any Device, Anywhere

NACS' Manager of Central Computing Services, John Mangrich, indicated that OmniCenter is now used to monitor more than 3,000 mission critical network components, including core routers, switches, distribution level routers and switches and wireless access points.

"All of our system administrators use OmniCenter to monitor most of our servers and services. They get a heads up whenever something goes wrong and needs attention. Our network operations people use it to monitor network devices and all of our edge equipment. If anything stops responding or is responding improperly, OmniCenter raises alerts so that they can track down the problem," Mangrich said.

Border routers, core routers, building routers, distribution routers and distribution switches are all monitored by OmniCenter. It also helps manage servers that support central services like Web services, central e-mail services, central directory services, authentication services, VPN services, and other assets connected to the network such as LAN servers, print servers and central applications.

## > Greater Reliability = Better Productivity

UCI's Director of Network Operations, Brian Buckler, described how OmniCenter is implemented in the network operation center.

"We call this facility our 'Response Center.' We have several large displays with various OmniCenter screens running 24x7 giving us instant views of all our network components. Then we have various threshold notifications set up for OmniCenter to page different sys admins or send emails to people responsible for various services."

Faculty and staff members are highly dependent on the UCI network for connectivity and daily work productivity, and thus they can be significantly impacted by network performance issues. The work of students in the various campus computing labs would be affected if a portion of a network they were using went down.

"We also use OmniCenter to monitor our wireless access points," Buckler added. "Everyone on campus, faculty, staff and students, use our wireless network, so it's critical that we keep that monitored and maintained at all times."

## > Financial Decision Support

For budgetary planning and cost justifications, Buckler's team relies on management information and metrics generated by OmniCenter.

"We use historical data from OmniCenter to analyze network traffic over time and do capacity planning. We watch for network bottlenecks, and, for example, we might look closely at a 100 meg uplink to see whether it's time to replace a router or switch or upgrade to a gigabit or 10 gig uplink. This helps us justify new equipment purchases by using OmniCenter metrics as hard data to prove that we really have a pressing need."

UCI's investment in OmniCenter has produced noticeable performance improvements.

"It's hard to assign an ROI dollar amount to improved productivity, client satisfaction and other soft factors in an academic environment. But we know for sure that OmniCenter adds a lot of value to the performance of our systems and networks. For decades, the only way we knew that a system was down was when a user reported it. But now, with OmniCenter, we're instantly alerted to network problems and we can often get them resolved before our users notice that anything is wrong," Buckler explained.

Cost avoidance is another area where OmniCenter has definitely paid a return on investment.

"A recent example was a 'denial of money attack' where someone off campus hacked into a few of our systems on campus and made them spew out so much traffic that our ISP bills we're driven up. Now we have OmniCenter monitoring traffic on our border router and when it hits a certain threshold IT staff and managers are paged, including me. We can start blocking ports or shutting down certain hosts. By getting an early warning from OmniCenter, we can take immediate action before the situation gets out of hand."

## > Flexibility and Usability

The openness and flexibility of OmniCenter have allowed Buckler and his team to think out-of-the-box and find some creative ways to leverage OmniCenter's ubiquitous monitoring capabilities.

"We installed temperature sensors in our data centers and core sites, which house our main network nodes and our main telephone switches. We did this because we had problems in the past when some cooling systems failed and caused us to lose some servers. Now we have OmniCenter monitoring the temperature sensors in the core sites. When the temperature thresholds reach a certain level, it pages us to send someone over there and adjust the air conditioning before a room gets too hot. We're also planning to connect the SNMP reporting modules from our UPS devices to OmniCenter, to monitor backup power resources."
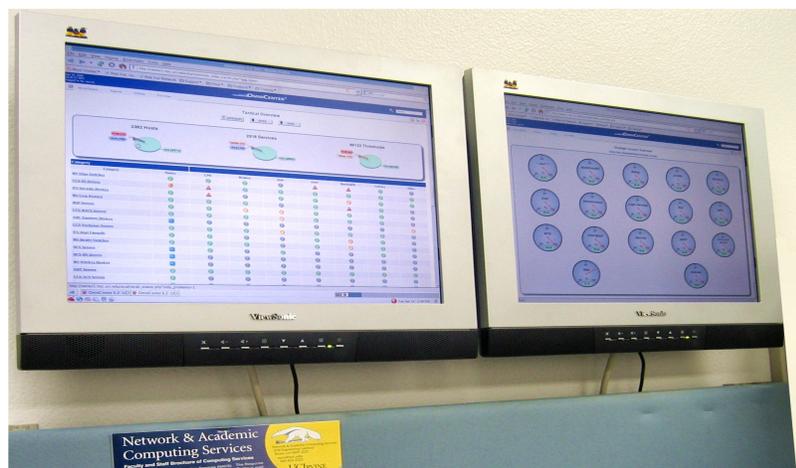
In the past, UCI made several unsuccessful attempts to install other network monitoring solutions that failed because of their complexity. OmniCenter was easy to implement and is now UCI's IT monitoring solution of choice.

"A lot of network management platforms are very complicated and require highly sophisticated system administration to install them, tweak them, tune them and keep them running. That's why OmniCenter is ideal for our environment. It's an enterprise level management solution that's easy to install, easy to maintain and affordable to use," Buckler said.

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## > OmniCenter Benefits to UCI

· Compared to other IT products evaluated, OmniCenter provides more operational flexibility, easier implementation and a better value for dollars invested.

· 24x7x365 campus-wide monitoring of the up/down status of the entire network and ~3,000 attached devices, including mission critical network components, core routers and switches, distribution level routers and switches, central e-mail services, central directory services, authentication services, VPN services, wireless access points, LAN servers, print servers and applications.

· Performance threshold levels and device failures are configured to trigger OmniCenter to automatically alert sys admins, network administrators and other technical response resources via email, pagers or phone when anything needs attention.

· Network managers can use historical data tracked in OmniCenter to display capacity over time for capacity optimization and planning, and for troubleshooting if there's an issue with any component or subsystem that affects any part of the network.

· Finance people can review metrics provided by OmniCenter to perform cost-benefit analyses to justify new network equipment or service level upgrades.

· While other network management platforms are very complicated, labor intensive, difficult to install and manage, OmniCenter is easy to implement and use by technical people across the campus.

· Help desks, network operation centers and the technical response center have full time displays that continuously show network and device status.

**24x7 OmniCenter Displays in UCI's Technical Response Center**

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