

Telecom uses HP software to keep its network on

HP IT Performance Suite solutions offer lowest-cost option for standardized network management platform



"HP NNMi software gives us 'first strike' capabilities. If devices start to experience problems, we're able to address them before they affect the business or our customers."

—Principal Engineer for System Design and Strategy, Leading Telecommunications Provider

HP customer case study
HP network management solutions help keep telecom provider operational

Industry
Telecommunications

Objective

Support the convergence of corporate IT and IP networks; improve the efficiency and productivity of network operational staff; reduce risk to business of network outage

Approach

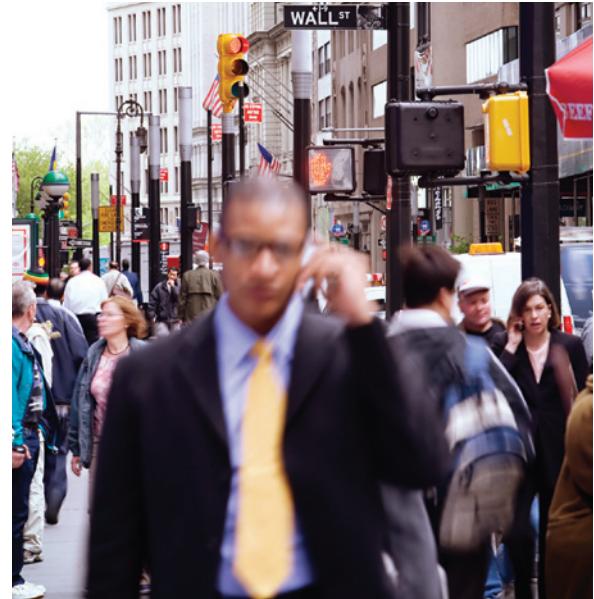
Establish a standard enterprise network management platform

IT improvements

- Tasks that took 45 minutes per device can now be done in minutes, across thousands of devices
- Reduced risk of operator error when configuring devices
- Zero problems with the operating system or hardware since implementation

Business benefits

- Network operations able to detect, address issues before they impact the business or its external customers' access to telecom services
- HP NNMi cost less than \$1 million—less than 1/3 the cost for competitor's solution
- Automation of network management tasks allows company to manage its networks with fewer staff—resulting in labor cost savings, and allows operations staff to focus on higher-value work



No company today can operate effectively without a robust and highly available datacommunications network.

For a leading telecommunications company, however, the stakes are even higher: it must also manage the networks its customers depend on for their telecom services. "We can't afford network outages," notes the provider's Principal Engineer for System Design and Strategy. "We need 'soup to nuts' fault management and reporting for both our internal IT network as well as our external telecom network devices."

Converging telecom engineering and IT

The U.S. telecom industry has undergone tremendous changes over the past decade, driven in large part by the maturation of Internet technology. At one time, the telecom provider's technology organization had two discreet components. The engineering group was responsible for its Time Division Multiple Access (TDMA) systems: traditional telephone technology that pre-dated the Internet. The IT group managed the provider's internal technology—its servers, networks, and business software applications.

Today, that division no longer makes as much sense. “We now have a common set of needs within both divisions,” the engineer explains. “We’re gradually moving toward a common carrier backbone as we merge everything onto an IP [Internet Protocol] infrastructure.”

“We are better equipped, today, to keep the network operational. And when the network is operational, the business is operational.”

Principal Engineer for System Design and Strategy,
Leading Telecommunications Provider

The convergence of the provider’s engineering and IT functions, in turn, presented the company with an opportunity to revise its network management processes. For many years, the engineering side of the house had used a legacy version of HP Network Node Manager (NNM). The IT group used different tools from other third party vendors. However, notes the engineer, “We realized that we needed to pick one platform and standardize on it for both departments.” This converged platform would comprise 12,000 network devices: 1,000 on the engineering side, 9,000 on the IT side, and another 2,000 devices that a subsidiary company uses to deliver wireless access points to hotels and airports. The subsidiary’s devices were also managed by a legacy version of HP NNM.

The provider began by issuing an RFP to HP and another of the incumbent vendors. Because the hardware used to host the existing network management platforms had reached end-of-life, the RFP covered hardware as well as the network management solution itself.

HP solution less than 1/3 the cost

Once the vendors had submitted pricing, the provider compared the functionality and cost of HP NNMI and another vendor. This evaluation revealed that the functionality of the two solutions was comparable in some respects, but in others HP NNMI appeared to be a better fit. “The technology on the back end was the same,” the engineer notes, but he had some concerns about the front end, because the other solution was deployed as a Java application. “We’ve seen custom Java UIs create conflicts on the client side.”

Another issue was scalability. “With the other product, we would have needed ten mid-range servers to host the solution,” the engineer says. “HP NNMI required only a single backend database to handle the devices we need to manage.”

But the “final nail in the coffin,” the engineer says, was cost. “If we’d deployed the other solution, we would have needed to budget \$3.5 million per year for servers, support, and software.” The price tag for the HP NNMI solution was less than \$1 million.

So the telecom provider decided to implement the HP software solution.

Efficient device management

Based on the hardware specifications devised by the provider’s enterprise platform support group, the company deployed the HP NNMI instance on two HP ProLiant DL380 G6 servers running Red Hat 5.4, configured as a VERITAS cluster. A third HP ProLiant DL380 system hosts HP Network Node Manager iSPI Performance for Metrics, a plug-in to collect, store, and report network performance-related metrics.

It’s been a rock-solid hardware platform: “We’ve had zero problems with the operating system or hardware since implementation,” the engineer notes.

The provider engaged HP Professional Services to assist with the HP NNMI planning and deployment. “We had the expertise to design the backend hardware and operating system, but lacked the application-specific experience we needed to migrate from the old version of the HP software to the current version.” The HP consultant worked with the provider for three months, one of them on-site. “He set up the HP NNMI initial discovery seed files and migrated our traps. He was very helpful in correlating traps on our IT network from the old version of the HP software to the current version.”

When the engineer’s team “flipped the switch” and the HP NNMI instance went live, it was “like night and day,” he says, compared to the old network management technologies. “The operations staff that had been babysitting the old tools suddenly found they could turn their attention to other tasks that provided additional business value.”

HP NNMI software also allows the provider to manage its network devices with fewer people, which saves the telecom provider a significant amount in labor costs.

The provider uses HP NNMI software to validate new devices. “When we add new devices to our network, we use HP NNMI to validate the alarming,” the engineer said. This task used to take weeks. With the HP solution, the team can finish in about an hour.



Automating network management tasks

HP NNMI is not the only HP software solution that the provider leverages within its technology infrastructure.

It also uses two other HP Network Management Center solutions. The first is HP Network Automation (NA), which automates tasks like changing device configurations. Many of these tasks are very time-consuming to do manually. “It’s very labor intensive to manually change four lines of code in the configuration file of a particular model router,” the engineer notes. “You have to log in, provide your credentials, get into configuration mode, make a backup copy of the configuration, type the changes, compare the changes to the work order, and then validate that the changes work.”

With a network of 12,000 devices, automation is of critical importance. “We have four people providing 24-hour network operational support. There aren’t enough hours in the day for them to manually configure all of the devices on our network.” With HP NA software, tasks that once took 45 minutes per device can now be done in minutes, across thousands of devices. “You can change passwords or identify what device software versions are on the network with a few clicks of a mouse.”

Automating device configurations with HP NA software also helps lower the risk of operator error. “I can remember when someone would make a change to a device and it would bring down the entire network,” the engineer says. “We don’t see that any more today.”

The other HP Network Management Center solution the provider uses is HP Route Analytics Management software (RAMs), which supports its network routing and traffic flow management. “HP RAMs gives us real time information about the network,” says the engineer. “We get link state information coming from SNMP [Simple Network Management Protocol] traps at almost line speed.”

HP RAMs is complemented by the iSPI Performance for Metrics component of the HP NNMI software. “The iSPI software creates a map of the network based upon an edge perspective while RAMs looks at it based on routing,” the engineer explains.

The data captured by these tools populates a dynamic virtualized network topology over the physical topology tracked within the HP NNMI dashboard. This gives the network operations team a comprehensive and real-time view into the health of the network environment. They know immediately if there is an issue not only with a physical device but with the data transmission functionality of the network itself.

The provider also uses HP NNM iSPIs for Performance, which has delivered tremendous benefit in terms of scalability, and has made it easy to introduce custom performance polling, using SNMP polling.

“HP NNMI software is easy to use. It’s not necessary to understand the topology, and alarms are reduced below the noise level. Even an operator who has never seen the software before can be ready to run it within a day, especially if they use the online help.”

Principal Engineer for System Design and Strategy,
Leading Telecommunications Provider

The combined solution of HP NNMI, HP NA and HP RAMs software not only helps the operations team do its job, but also drives value to the telecom’s business. “The HP technology gives us the tools to fix issues before they affect the business,” says the engineer. Improved management means a more robust network—including the network infrastructure that serves the company’s external customers. “We’ve reduced the risk that an outage could interrupt our telecom services,” the engineer says. HP NNMI software therefore helps ensure the provider meets its service agreements and maintains its standards as a mobile, phone, and data service provider.

Customer solution at a glance

Primary hardware

- HP ProLiant DL380 G6 servers

Primary software

- HP IT Performance Suite—IT Operations Management
 - HP Network Management Center
 - HP Network Node Manager i software
 - HP Network Automation software
 - HP iSPI Performance for Metrics
 - HP NNM iSPIs for Performance
 - HP Route Analytics Management System software
 - HP Operations Manager software
 - Red Hat Enterprise Linux 5.4

HP Services

- HP IT Performance Suite—Services and Support
- HP Professional Services

Toward an enterprise, integrated solution

As the telecom provider matures its technology management framework, it will also integrate HP NNMi with other HP software solutions. The provider has plans in place to integrate its HP NA and HP NNMi software. It will also further integrate HP NNMi with its HP Operations Manager (OM) software which serves as our “manager of managers.”

HP NNMi functionality supports the filtering by parsing and correlating alerts. “At the end of the correlation pipeline, the HP Operations Manager dashboard displays root cause incidents.” So if, for example, a failed gateway router triggers a larger outage affecting multiple nodes,

HP NNMi reports only the router failure. “We get an actionable event, so the NOC knows where to send a technician.” This raises the likelihood that issues will be resolved quickly and with the least amount of cost from a labor perspective.

Leveraging and integrating HP IT Performance Suite software to manage the provider’s infrastructure on an enterprise basis will one day drive new efficiencies within its IT operations organization. But even deployed as standalone products, HP NNMi and HP NA software have delivered significant value. “We are better equipped, today, to keep the network operational,” the engineer says. “And when the network is operational, the business is operational.”

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