



Customer Case Study

## State Government Improves Delivery of Services to Agencies

The State of Oregon has undertaken a major consolidation of its information infrastructure using Cisco Integrated Services Routers to create a robust platform for shared services delivery.

EXECUTIVE SUMMARY
<b>STATE OF OREGON</b> <ul style="list-style-type: none"> <li>Government</li> <li>Eugene, Oregon, United States</li> </ul>
<b>BUSINESS CHALLENGE</b> <ul style="list-style-type: none"> <li>Consolidate information infrastructures of the 12 largest state agencies</li> <li>Improve network management</li> <li>Create a foundation for delivering future voice services</li> </ul>
<b>NETWORK SOLUTION</b> <ul style="list-style-type: none"> <li>The State of Oregon expanded its existing MPLS network and upgraded its data center using Cisco Catalyst switches. To connect up to 1200 agency locations and deliver high-performance concurrent data and voice services, the state chose Cisco Integrated Services Routers.</li> </ul>
<b>BUSINESS RESULTS</b> <ul style="list-style-type: none"> <li>Saved more than \$500,000 in audio conferencing costs using voice over IP</li> <li>Migrated approximately 400 locations without impact to users or services</li> <li>Simplified network manageability</li> </ul>

### BUSINESS CHALLENGE

The state of Oregon has undertaken a massive project to consolidate the information infrastructures of 12 of the state’s largest agencies. Known as Computing and Networking Infrastructure Consolidation (CNIC), the project will deliver shared services that provide all agencies with the technology services that they require to fulfill their missions while enabling each agency to be accountable for the services it actually uses. The state expects to achieve many benefits from CNIC, including significant gains in efficiency, reducing costs, improving service levels, enabling 24-hour operations, enhanced operational continuity and disaster recovery, and increased security. When full consolidation is complete in 2009, CNIC is expected to deliver tens of millions of dollars in annual savings.

Agencies’ existing data centers will be consolidated to a main State Data Center, which will support the statewide information infrastructure and network-delivered services for the state departments of Administrative Services, Consumer and Business Services, Housing and Community Services, Corrections, Education, Employment, Forestry, Human Services, Revenue, the Oregon State Police, Transportation, and Veterans Affairs. Many of these agencies also support smaller agencies throughout the state. The State Data Center also supports Oregon cities and counties by providing Internet service.

“The network is an integral element of CNIC,” says Mark Reyer, administrator for the State Data Center. “By streamlining the network and processes, we can realize significant economies of scale while improving budgeting and support. As we upgrade our

infrastructure, we view it as a foundation on which to build service and technology projects that will improve government operations and create additional savings going forward.”

The state already used networking equipment from Cisco Systems® and had an experienced IT team in place to provide support. As 12 agencies’ network operations were consolidated into the main data center, an important criteria for a new network solution was manageability. Oregon’s population is either highly concentrated in several urban centers or broadly dispersed in rural areas, which makes it difficult to deliver consistent support across the entire state with limited resources. The solution had to significantly simplify technical, administrative, and support processes to deliver the projected cost savings.

The new network solution had to preserve agencies’ existing IP addresses and security measures to minimize impact to users. As CNIC progresses, the state will develop a consistent security posture for all agencies across the state, so in addition to preserving existing security perimeters, the solution had to provide advanced security services that can extend through the network to all locations.

Approximately 1200 locations would be connected over the WAN, and with future requirements in mind, the state of Oregon required that they be able to easily connect securely to services over a Multiprotocol Label Switching (MPLS) network infrastructure, support quality of service (QoS) for different applications, and eventually support survivability for IP telephony solutions.

## NETWORK SOLUTION

The state of Oregon's new infrastructure expands its original MPLS network, which was first deployed in 2002. Connectivity to applications and services will soon be completely consolidated to the data center over the MPLS network. The state took advantage of the Cisco Technology Migration program to replace its existing routers with Cisco 2811 Integrated Services Routers, which support high-performance delivery of secure, concurrent data, security, and voice services. Agency locations connect to the network using Cisco 2811 Integrated Services Routers with advanced voice capabilities. When CNIC is complete, IP Communications services will be available to all agencies that want them. Several hundred of the routers are currently deployed, and deployment to all agency locations is ongoing.

**“The Cisco Integrated Services Routers are an important element of our service delivery model. However, the value of Cisco transcends the equipment itself to include service, support, and trust, which is equally important to the actual boxes themselves.”**

—Mark Reyer, Administrator for the State Data Center

## BUSINESS RESULTS

With applications and services consolidated into the new data center, the state of Oregon is already experiencing the benefits of streamlined management. Team members can focus on specific areas of expertise to improve service quality and responsiveness to agency needs. In addition to applications, the data center will be able to deliver consistent network services such as security, patching, device and cabling management, and Internet access efficiently to all agency locations—regardless of whether they are in Portland or a remote rural area.

Using the Cisco Catalyst® 6500 Series Network Analysis Modules (NAM), the team can easily monitor network traffic, troubleshoot, and identify specific applications classes traveling across the network—eliminating the need to dispatch people out to individual locations.

Reyer and his team were able to begin bringing agencies onto the new network while preserving their existing IP addresses and security measures, using MPLS to overlay the agency infrastructure over the core infrastructure. Agencies have been moved over to the new network with almost no impact to users or services, preserving their investments in existing systems and further increasing return on taxpayer dollars.

“The transition has gone extremely smoothly,” says Dwayne Smith, a network engineer for the state. “We were able to make the transition in a single evening, using the same equipment with only a small configuration change. Some agencies noticed a performance increase. One agency CIO wanted to know when his agency's network was going to be transitioned, and it had been on the new network for a week already.”

The state also expects to significantly improve utilization of transport links and resources. A single Cisco Integrated Services Router can replace two or three existing routers, accommodate either T1 or Frame Relay interfaces, and route traffic intelligently so that additional costly circuits are no longer required.

The Oregon Employment Department is using Cisco Unified Communications for an audio conferencing solution. Judges who hear employment disputes simply call in, and the citizen involved in the hearing calls in. A voice conference is created using voice over IP, and the hearings are recorded and archived. This solution enables judges to refer back to specific hearings at their convenience and with approximately 45,000 hours per year in conference time, the state estimates that it has saved at least \$500,000. The new data center is also completely based on Cisco Unified Communications solutions. Voice capabilities will eventually be available to all agencies over the infrastructure.

“The Cisco Integrated Services Routers are an important element of our service delivery model,” says Reyer. “However, the value of Cisco transcends the equipment itself to include service, support, and trust, which are equally important to the actual boxes themselves.”

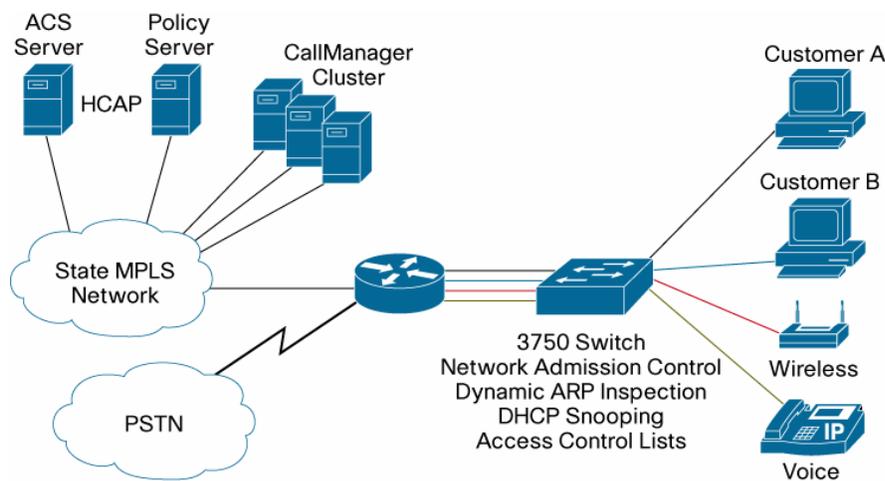
PRODUCT LIST
<ul style="list-style-type: none"> <li>• Cisco 2811 Integrated Services Routers</li> <li>• Cisco 7200 Series Routers</li> <li>• Cisco Catalyst 6500 Series Switches with FlexWAN and Network Analysis Modules</li> <li>• Cisco CallManager</li> </ul>

#### NEXT STEPS

The ongoing CNIC project is expected to be complete by 2009. The next steps include standardizing router and switch configurations, consolidating the Frame Relay connections wherever possible, developing QoS policies, and standardizing management tools. A comprehensive security policy initiative is under way, with the goal of defining a security baseline for all agencies, while enabling the flexibility for each agency to employ additional measures where required. Extending Cisco IP Communications solutions to agencies is also

on the horizon. The final stage of the project will be dedicated to optimization—focusing in more detail on best practices and resource management.

#### TECHNICAL IMPLEMENTATION



The state of Oregon’s MPLS network was originally deployed in 2002, and the new data center functions as the central point in the network with its own MPLS cloud. Agency locations route traffic to the network core over a second MPLS WAN, using Frame Relay or T1 links, and it is separated into different virtual routing and forwarding instances for delivery to the proper device or server, no matter where it resides on the network. This arrangement eliminates the need to build multiple networks through the data center to correctly route traffic for each agency. Using external Border Gateway Protocol, the team connects the two MPLS clouds to pass through traffic.

The state of Oregon deployed Cisco Catalyst® 6500 Series Switches, providing the data center network with the highest levels of availability, superior operating efficiency, and support for converged applications. Cisco 7200 Series Routers provide WAN services aggregation with the industry’s widest range of connectivity options, high scalability, and support for integrated services, such as advanced QoS and security. The state also uses Cisco Catalyst 6500 Series Switches for aggregating Frame Relay connections.

The state of Oregon deployed Cisco 2811 Integrated Services Routers, which support high-performance delivery of secure, concurrent data, security, and voice services. Approximately 500 of the routers are already deployed, with an expected goal of 1200 by 2009. Cisco CallManager is deployed for the Oregon Employment Department, which uses voice over IP for audio conferencing hearings. Cisco PIX® Security Appliances are already in place and the data center team will continue to use them as one element in a comprehensive security plan that will encompass all 12 agencies.



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To learn more about Cisco switching solutions, visit: <http://www.cisco.com/go/switching>

To learn more about Cisco security solutions, visit: <http://www.cisco.com/go/security>

To learn more about Cisco IP Communications solutions, visit: <http://www.cisco.com/go/ipc>

To learn more about the Computing and Networking Infrastructure Consolidation (CNIC) project, visit:  
[http://egov.oregon.gov/DAS/IRMD/cnic\\_welcome.shtml](http://egov.oregon.gov/DAS/IRMD/cnic_welcome.shtml)

This customer story is based on information provided by the state of Oregon Department of Administrative Services State Data Center and describes how that particular organization benefits from the deployment of Cisco products. Many factors may have contributed to the results and benefits described; Cisco does not guarantee comparable results elsewhere.

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