

## Cisco Achieves High Availability for Global Backbone WAN

*Network design changes, standard configurations, and improved processes produce 99.998% availability.*

Cisco Systems® requires high availability throughout its internal network, including the Cisco® All-Packet Network (CAPNet), the company's global backbone WAN. CAPNet connects more than 40,000 Cisco employees and contractors through nodes at 15 locations on four continents.

A minimum network availability of 99.99% is required for Cisco to function effectively as a company. This level is the equivalent of one minute downtime per week. The goal for Cisco IT is to achieve 99.999% (five nines) network availability, or 6 seconds downtime per week. This increases employee productivity while decreasing operating costs and streamlining business processes.

### Business Benefits

- **Increased WAN availability to 99.998%.**
- **Reduced CAPNet support staff to a single engineer.**
- **Freed other support engineers to work on new programs.**
- **Improved network design, standard equipment and configurations, and processes for management and support.**

To achieve its availability goals, Cisco IT implemented network changes in two phases. The first phase required reliable availability measurements to quantify improvement progress. The next involved identifying key design and procedural gaps. The last required closing these gaps in all areas:

- **Design:** Consistent standards, especially by creating a new IP addressing plan for better route summarization and hardware and IOS standards to simplify operations and minimize interoperability issues
- **Operations:** Consistent processes for IOS selection, changes and upgrades
- **Management:** Configuration templates and proactive fault and performance management reduce failure rates and time to repair
- **Support:** Enhanced training, stocking of spare parts, and better

training of troubleshooting processes

- **Infrastructure:** Standardized hardware and Cisco IOS® software configurations

Upon completion of these phases, Cisco IT increased availability on the CAPNet WAN to 99.998%. Operational improvements made it possible to reduce the CAPNet support staff to a single engineer. Cisco IT was then able to reassign the other five engineers to new network programs.

### Best Practice:

[http://www.cisco.com/web/about/ciscoitnetwork/white\\_papers/wan\\_high\\_availability\\_white\\_paper.html](http://www.cisco.com/web/about/ciscoitnetwork/white_papers/wan_high_availability_white_paper.html)

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[www.cisco.com/go/ciscoitatwork](http://www.cisco.com/go/ciscoitatwork)

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