



SRST in Operations Command Center

How Cisco Built Survivable
Remote Site Telephony into IT
Operations Command Center



A Cisco on Cisco Case Study: Inside Cisco IT

Overview

- Challenge

Convert the IT Operations Command Center (OCC) from TDM-based private branch exchange (PBX) switches to an IP telephony network and improve reliability by adding backup capability.

- Solution

Layered redundant architecture based on Cisco SRS Telephony within the Cisco global network. Survivable Remote Site Telephony (SRST), a feature of Cisco IOS Software, provides added backup capabilities.

Overview (Cont.)

- Results

 - SRST provides a greater level of backup and the IP telephony system delivers continuous availability

- Next Steps

 - Extend the solution to support wireless phones and Cisco IP SoftPhone Software

Challenge: Operations Command Center

- The Cisco IT OCC group facilitates problem resolutions for infrastructure issues that could affect business continuity.
- The OCC group monitors 24,000 resources in the Cisco network; 10,000 are considered to be P1 and P2 issues, including hosts, network devices, applications, and databases.

When a failure occurs, the OCC staff provides communication, escalation, coordination, and documentation.

Phone and paging systems are Cisco's most critical communications tools.

Challenge: IP Telephony Network Conversion

- In 2000 a pair of TDM-based PBX switches supported the entire San Jose campus. The OCC group used the same system **without** any additional form of backup.
- When Cisco transitioned to an IP telephony network, the OCC group was the last to transition from its TDM-based PBX switches to the IP telephony network and needed a backup strategy.
- Although IP telephony was a reliable architecture for voice, there was no additional backup feature.
 - SRST, a feature of Cisco IOS Software, provided the backup capability.
- In mid-2002, Cisco began planning the OCC transition to IP telephony.

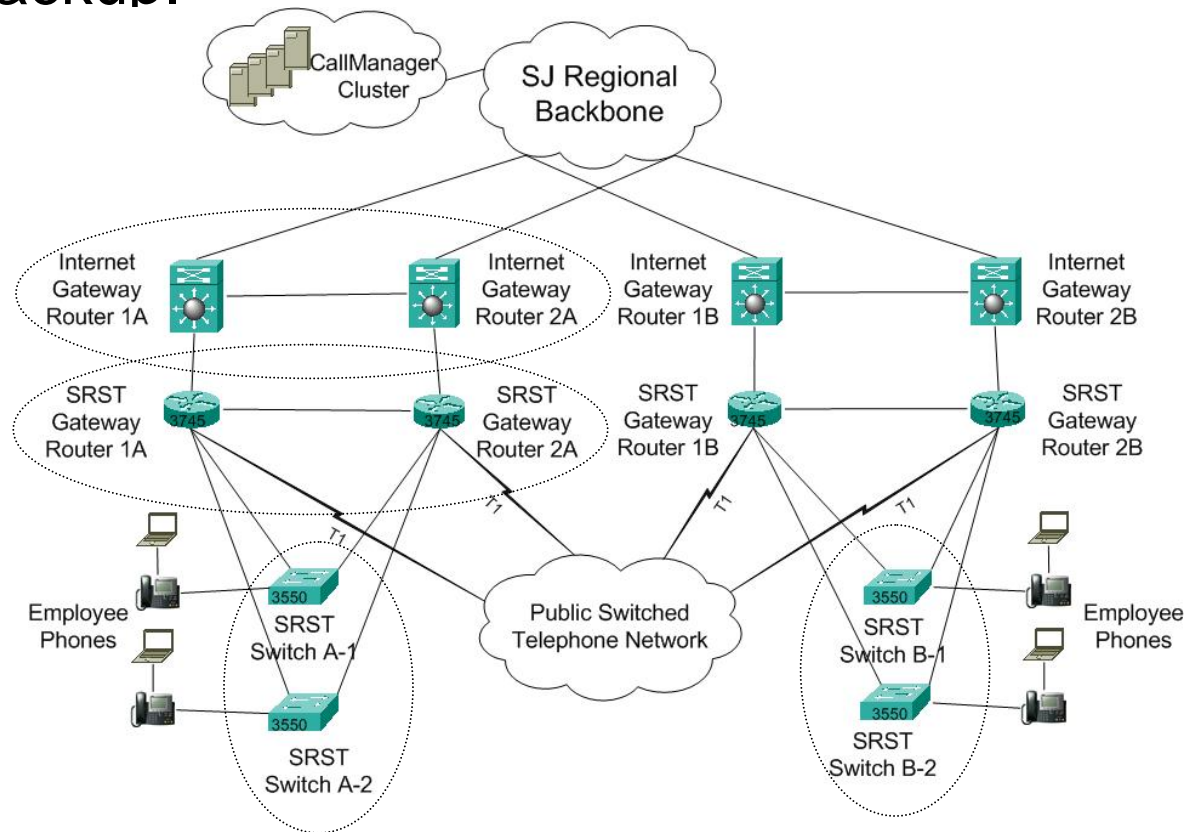
Solution: Architecture

- Best solution was a redundant architecture based on Cisco SRS Telephony, a feature of Cisco IOS Software.

SRS Telephony automatically detects a failure in the network, and uses Cisco Simple Network Automated Provisioning (SNAP) capability to initiate a process to intelligently autoconfigure the router to provide call-processing backup redundancy for IP phones.

Solution: Architecture (Cont.)

- The SRS Telephony deployment in the OCC helps ensure business continuity through no fewer than four levels of backup.



Solution - Backup Process

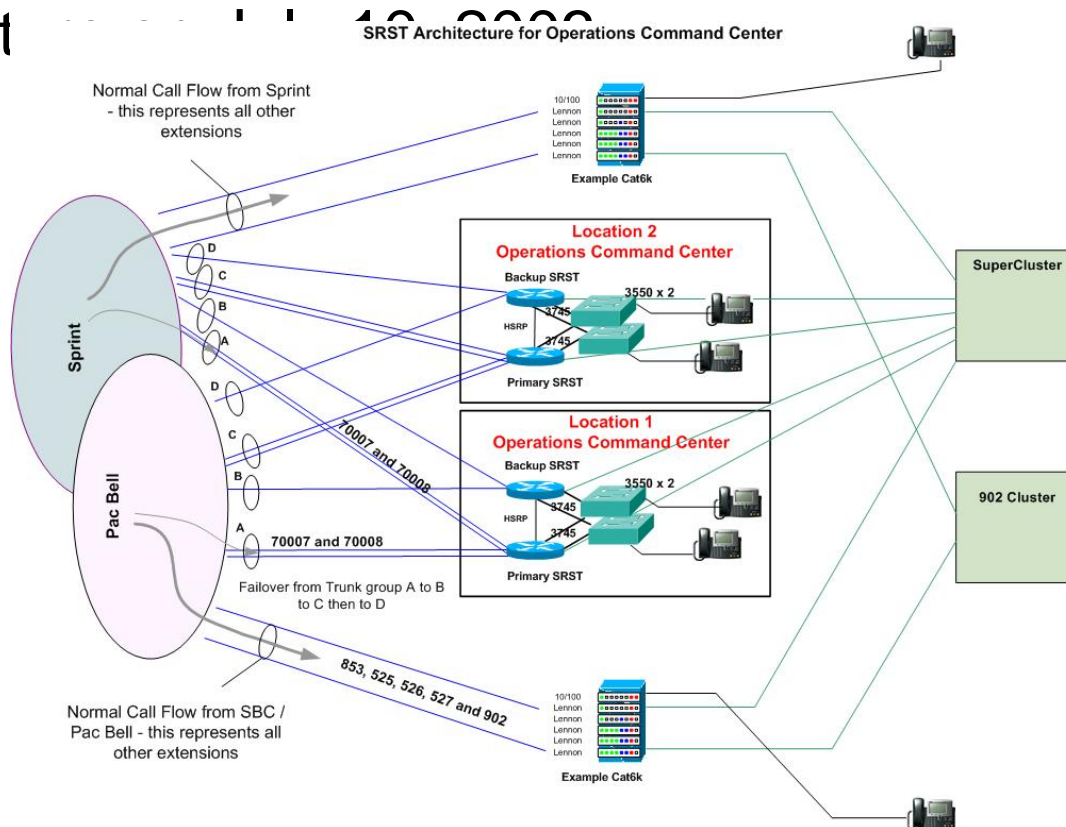
- Calls received over the PSTN flow into the Cisco networks through the primary SRS Telephony router
 - which passes the call to the Cisco Unified Communications Manager supercluster
 - which directs the call to the intended phone
- If the Cisco Unified Communications Manager supercluster or an incoming PSTN gateway becomes available, the router does not pass the call to the Unified Communications Manager cluster, but sends it directly to the recipient's telephone.

Solution: Backup Process (Cont.)

- If the primary and backup routers go down in addition to the Cisco Unified Communications Manager cluster, the call automatically flows to the backup system in the redundant OCC location.
- If a manual switchover is necessary, switchover takes just minutes.

Solution: Implementation

- The OCC transitioned to the Cisco Unified Communications Manager and SRS Telephony architect



Results: SRS Telephony

- The OCC is confident that its IP telephony network will continue to operate even if the general Cisco network has problems.
- Cisco deployment of SRS Telephony ensures availability even in extreme scenarios (e.g., simultaneous failure of multiple network components).
- Numerous large enterprise customers are interested in this specialized application of SRS Telephony, primarily for their operations command centers and critical call centers.

Next Steps: Showcase Site

- Based on the successes of SRS Telephony for operations requiring highly redundant IP telephony systems, the OCC will become a Cisco Showcase site for SRS Telephony.
- Explore the possibility of supporting wireless phones and Cisco IP SoftPhone Software.
- Scale our operation with staff worldwide by monitoring the phones that answer the OCC phone number.

Survivable Remote Site Telephony

“We use SRS Telephony in a different way than originally intended; that is, not for survival at the edge, but for business continuity at the core.”

Ian Reddy

IT Project Manager, Data Center Operations

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