Nationwide CSP Improves Services, Slashes Network Complexity with Automated Assurance

ABOUT THE CLIENT

Industry: Telecommunications

Product: VMware Telco Cloud Operations

Challenge: Network operations could not maintain SLAs and had to pay penalties due to prolonged outages. Outages could not be diagnosed quick enough due to lack of visibility and too many alarms.

RESULTS

Reduced 250,000 alarms per day to 110

Automated root cause analysis to quickly pinpoint problems

Prioritized response for critical customers and SLAs

Automated closed-loop actions via integration with customer databases and ticketing systems

Saved thousands of hours by avoiding manual updates

The problem: Staying afloat in an ocean of network alarms

One of the world's leading communications service providers (CSPs) delivers a complete range of enterprise IT solutions—wide area network (WAN) connectivity, multiprotocol label switching (MPLS), virtual private networks (VPNs), Ethernet circuits, hosted voice-over-IP (VoIP), managed cloud and security services, and more. But with customers consuming so many diverse services, the CSP was struggling to effectively monitor its services. One of its biggest issues was the management of its IP backbone, Metro Ethernet and transport networks, which was integral in providing the majority of its services. It lacked the ability to quickly diagnose and respond to issues across the sprawling MPLS and IP infrastructure. The size and complexity of the multi-vendor network made up of Cisco, Juniper, Ciena and Nokia solutions—in addition to a number of other vendor's routers and switches—made ongoing operations and management a challenge.

The network team was overwhelmed by as many as 250,000 alarms every day, making it impossible to quickly zero in on the real, serious issues versus the symptoms. Worse, even when the true problem was identified, they couldn't tell which customers were impacted without manually comparing the network topology with customer management databases. This made it difficult to immediately recognize which problems were likely to result in expensive service-level agreement (SLA) violations. Additionally, the CSP's network management system (NMS) rules had to be updated each time the network topology changed or a new service was deployed—a huge manual effort that took thousands of hours annually.

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99.9%

fewer network alarms

Thousands

of personnel hours freed from manually updating NMS rules

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For additional information about VMware Telco Cloud Operations:

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The solution: Automated diagnosis, correlation and prioritization

With VMware Telco Cloud Operations, the CSP drastically simplified network operations, making life much easier for its network operations teams while improving the service experience of its customers. Telco Cloud Operations automatically discovered the topology of the network via standard protocols, directly interfacing with thousands of physical and virtual devices from a multitude of vendors. It also was able to identify the label-switched paths (LSPs) and virtual routing functions (VRFs) and automatically relate the MPLS infrastructure to the configured VPNs, layer 2 services and the associated subscribers. Telco Cloud Operations continuously maintains a view of the service providing objects, their inter-relationships, the configured services and consuming subscribers to automatically determine the root cause of issues. The benefits of this comprehensive view resulted in a reduction of network alarms from 10,000 to 1 for scenarios such as a simple fiber cut. Troubleshooting time was reduced from hours to minutes, and unnecessary truck rolls eliminated.

When issues arise, Telco Cloud Operations ingests data directly from the devices and element management systems (EMS), automatically correlating all symptoms and status of devices. It then compares this information against signatures in the Codebook engine to identify the root cause of the problem. Now the operations teams can quickly see the real issues and respond, without having to sift through thousands of low-priority alerts. Telco Cloud Operations can also trigger automated actions to remediate routine issues without requiring any human intervention. Together, these capabilities have reduced the CSP's daily alarms from 250,000 to just 110 authentic issues.

Impact analysis via API integration with customer databases

Telco Cloud Operations also integrates directly with the CSP's customer databases via application programming interfaces (APIs) to get tenant information, allowing the network team to quickly see which customers are impacted by any issue. The solution leverages a scoring algorithm that calculates the value of impacted customers and services to assess the criticality of each problem. For example, if a card fails on a router, Telco Cloud Operations will show which VPNs (and which internal and external customers using them) are affected, so the team can prioritize its response according to the business need. The system can also output information to external support systems and automatically issue trouble tickets.

Additionally, unlike the CSP's previous NMS (and many others), Telco Cloud Operations is not rules-based. This means the CSP doesn't have to dedicate multiple full-time engineers to continuously update rules and scripts, freeing up thousands of personnel hours per year that can be devoted to more strategic and revenue-generating efforts.

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