



Connected Analytics for Network Deployment

What Is Network Consistency, and Why Does It Matter?

Network consistency measures the degree that devices in the same network role are aligned in terms of hardware, software versions, and features enabled. Low device consistency can introduce subtle interactions and errors that are difficult to troubleshoot. It's often overlooked as a source of problems, yet low consistency is a reliable indicator of network disruptions.

On average, disruptions in the data center cost more than \$600,000 per incident, and nearly \$8000 per minute*. To control disruptions, enterprises invest in a broad portfolio of solutions, such as performance, fault, or configuration management. However, failing to account for device consistency leaves a gap that can result in unexpected disruptions.

Benefits

- **More time for strategic IT projects, less on investigating issues:** CAND's visual analytics quickly reveal network anomalies and outliers on which to drill down to device hardware, software, and feature utilization choices.
- **More resilient networks for complex initiatives such as video and big data:** CAND shows where to improve network configuration to increase service availability.
- **Prioritized remediation:** CAND scores and prioritizes devices based on their potential to affect network disruption, focusing attention on the highest-effect devices instead of thousands.
- **Validation of changes before roll-out:** CAND enables network engineers to simulate the effect of software configuration changes before committing time and resources.

What Is Connected Analytics for Network Deployment?

Cisco® Connected Analytics for Network Deployment (CAND) is the only analytics solution specifically focused on managing network consistency. CAND is analytics software as a service for Cisco network devices that helps IT executives, engineers, and analysts increase network deployment consistency and reduce disruptions. It correlates information about device deployment choices (hardware, software, and technologies enabled) and service call data in order to:

- Identify the effects of device deployment decisions on network disruption risk
- Promote a cycle of continuous improvement
- Manage network consistency proactively, instead of reacting to disruptions

How Does CAND Work?

CAND enables customers to control network deployment risk proactively, instead of reacting to unexpected issues. Its analytics show where in the network disruption risk is concentrated. It measures disruptions by analyzing massive volumes of data about support case incidents from a Cisco Technical Assistance Center or customer-managed systems. CAND calculates the effects of disruptions based on severity of the issue, time to resolution, number of escalations, and outages associated with incidents.

**Cost of Data Center Outages," Ponemon Institute, December 2013

How is CAND different?

- CAND was developed by Cisco network experts. Its analytics use 25 years of network plan, design, manage, and operate intellectual capital from global leadership.
- CAND is built on Cisco's big data platform. It's able to analyze vast quantities of network data previously impossible with scripts and spreadsheets and more quickly than with traditional business intelligence systems.
- Unlike network configuration and change management systems or network management systems, CAND analyzes service request data to focus deployment and change efforts on the devices most affecting service availability.

CAND correlates this disruption data with network deployment data (hardware, software, and feature choices) and applies visualization analytics to cluster devices according to their network role and effects on network risk. With CAND, network operations teams can:

- See where disruption risk exists in the network
- Highlight the effect of deployment changes in the network
- Model the effects of changes before committing to them
- Prioritize devices to be fixed based on their contribution to network risk

This saves network experts' time, uses IT spend efficiently, and promotes available networks.

CAND communicates network deployment posture using three indexes created by Cisco network experts, shown in Figure 1.

Figure 1. CAND Indexes



- **Network disruption index:** Measures the severity of network disruptions (outages, degradation, and so on). Higher score/volatility indicates unwanted service outages and/or degradation. Viewable by type of insight (for example, hardware, software, and operations).
- **Network consistency index:** Shows how consistently devices supporting similar functions in the network are deployed (or, how closely devices in a network role conform to a policy master if one exists). Higher score indicates increasing drift from policy and similar devices in a role.
- **Feature utilization index:** Measures network sophistication using weighted score of device technologies and features. A higher score indicates the network is delivering increasingly complex business services and is sensitive to risk from the other indexes.

With CAND, customers can drill down into hardware, software, and features to promote a structured process for resolving network disruptions (Figure 2):

- Create baselines for network deployment and support case KPIs and trends

Why Cisco?

With the number of connected devices and the amount of data rapidly increasing, networks are more complex and dynamic than ever before, creating optimization challenges. Cisco is uniquely qualified to deliver analytical solutions that promote the delivery of complex network services on a global scale. We combine data at the edge and data in motion with the power of our networking expertise to create analytics solutions that lead to better outcomes for you and your customers.

For More Information

For more information about the Connected Analytics for Network Deployment, [visit our website](#). To request a private briefing, contact us at sales-connectedanalytics@cisco.com.

- Compare KPIs against those of peers and industry
- Analyze network changes over time
- Identify potential causes of disruptions
- Simulate the effects of software changes
- Prioritize remediation and network improvement planning

Figure 2. CAND Structured Process for Resolving Network Disruptions



CAND automatically clusters devices by network role. The device clusters are color-coded to show which devices have the highest disruption risk. User-configurable benchmarks can be overlaid in order to show how the current network state compares to the target state. CAND also shows how network KPIs compare with others in an industry and indicates whether an organization is leading, lagging, or tracking its peers and competitors. (See Figure 3.)

Figure 3. CAND Deployment Analysis Summary

