

# Cisco Crosswork Planning

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## Cisco Crosswork Planning: Optimize Your Network Performance and Reliability

### Product overview

Cisco® Crosswork Planning empowers you to proactively manage your network infrastructure. It provides a comprehensive suite of tools for network discovery, analysis, simulation, and optimization. This data sheet outlines the key features and benefits of Crosswork Planning, helping you achieve:

- **Improved Network Visibility:** Gain a deep understanding of your network topology, traffic patterns, and health.
- **Enhanced Reliability:** Proactively identify potential network issues and optimize configurations for optimal performance under various failure scenarios.
- **Streamlined Network Capacity Planning:** Automate network planning tasks.

### Key Crosswork Planning features

- **Automated Network Discovery:** Automatically discover multivendor, multiprotocol network devices, topology, and traffic statistics.
- **Advanced Simulation and Modeling:** Visualize and model network behavior under various conditions, including IGP, MPLS, Segment Routing, QoS, BGP, VPN, and Multicast.
- **AI-Powered What-if Analysis:** Predict network behavior in response to potential failures or changes using advanced "what-if" scenarios.
- **Demand Deduction:** Derive accurate end-to-end traffic flows from various sources for better capacity planning.
- **Network Optimization Recommendations:** Receive data-driven recommendations to optimize traffic flow, balance network load, and improve overall performance.
- **Comprehensive Capacity Planning:** Plan for future network demands with insights into network engineering, capacity needs, and traffic engineering strategies.

### Benefits

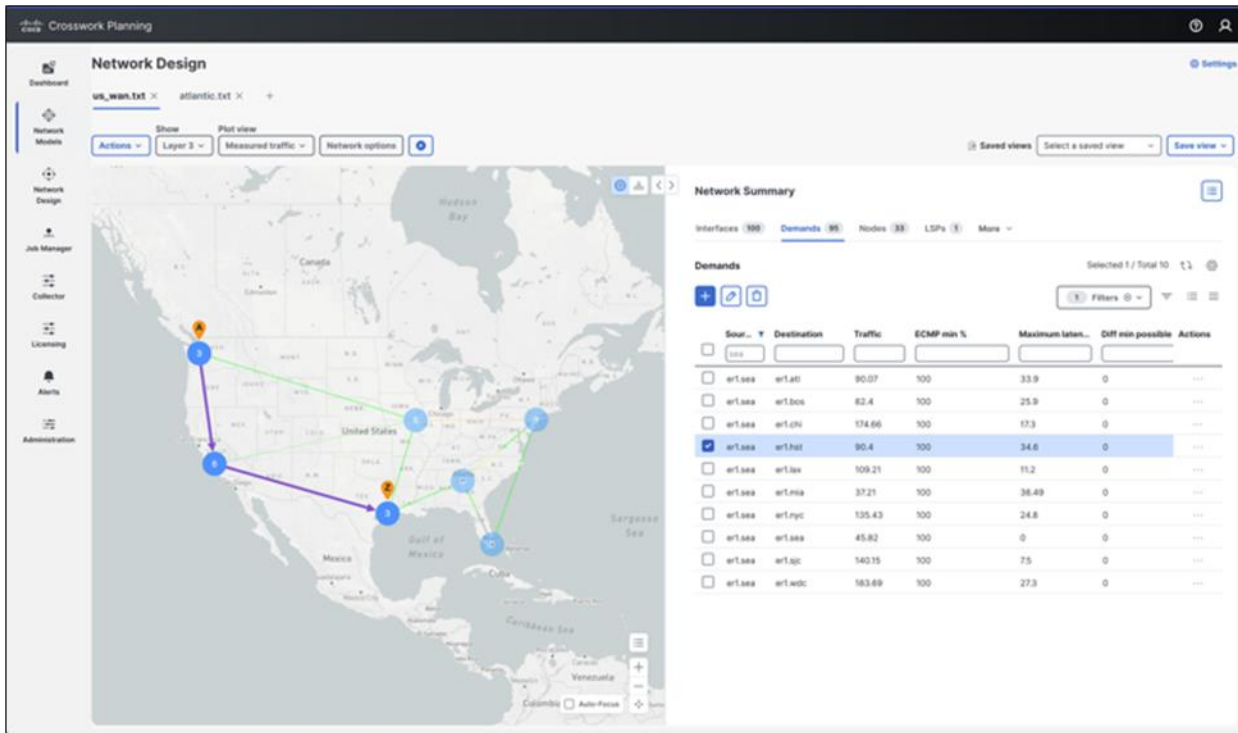
- **Reduced Downtime:** Proactive identification and mitigation of potential network issues.
- **Improved Network Performance:** Optimize traffic flow and network utilization for better user experience.
- **Enhanced Network Reliability:** Identify and mitigate network vulnerabilities.
- **Capacity Planning Recommendations:** Automate tasks and streamline network planning processes.
- **Informed Decision Making:** Gain data-driven insights to make strategic network investments.

# Use Case Examples Using Predictive Analysis to Power AI Operations

## What-if Scenarios

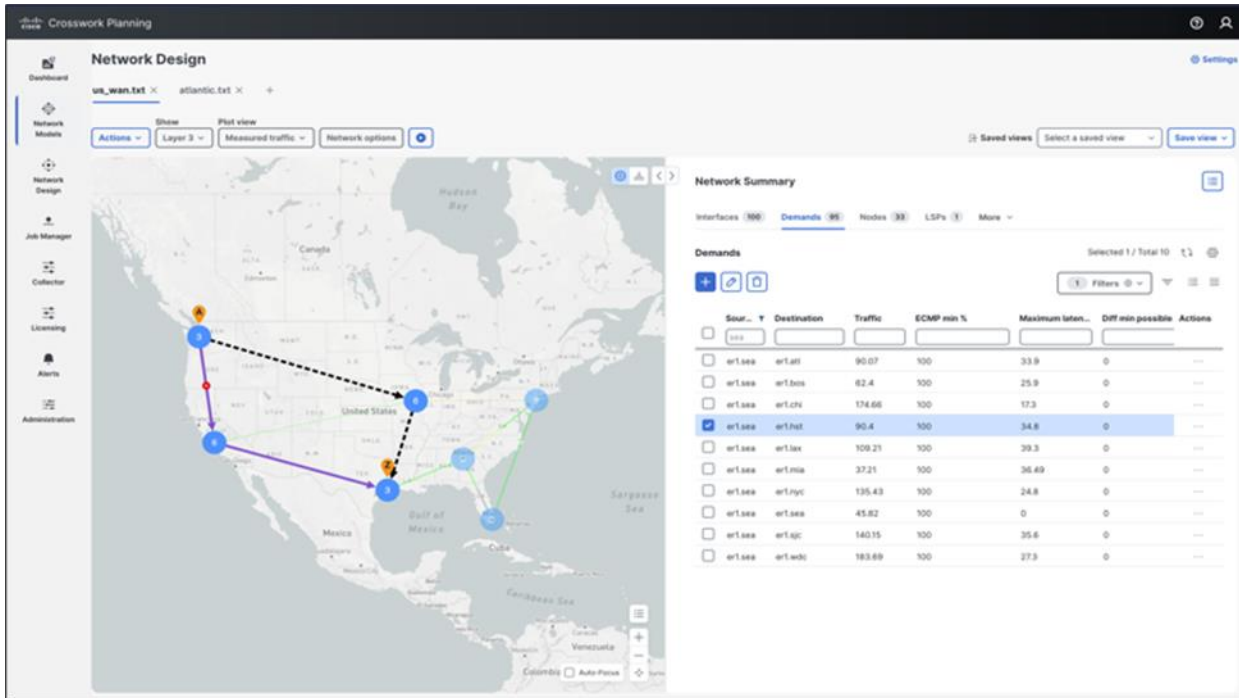
Using a “What-if” scenario, Crosswork Planning predicts the utilization in the event of an object (SRLG, Circuit, Node) failure and how traffic would reroute.

In the following example, a demand (representing a traffic flow) from the Seattle region is observed, colored purple, and routed across the network to Houston. See Figure 1.



**Figure 1.**  
Demand between Seattle and Houston

In the event of a circuit failure, between Seattle and San Jose, the predicted reroute of the demand is shown. Observe the dotted line below in Figure 2.



**Figure 2.**  
Rerouted demand after a link failure

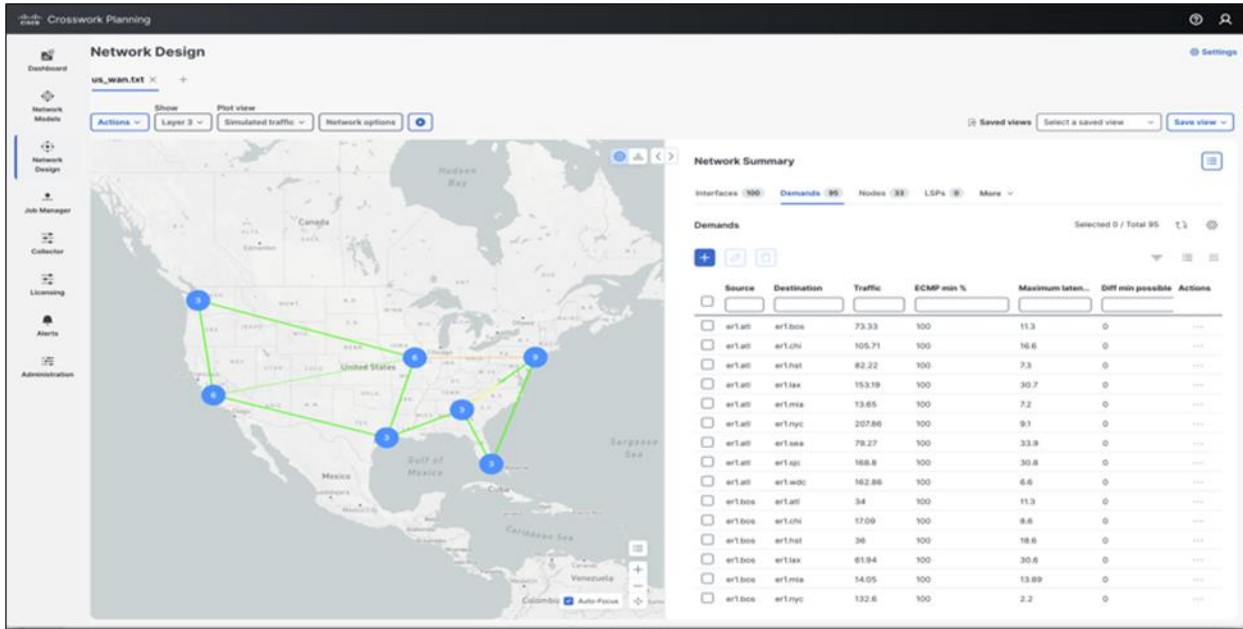
## Simulation Analysis

The Simulation Analysis tool combines the simulation results of a large set of failure scenarios. These results are useful for determining how vulnerable a network is to congestion and high latencies under failures, allowing you to plan sufficient capacity for any given failure scenario.

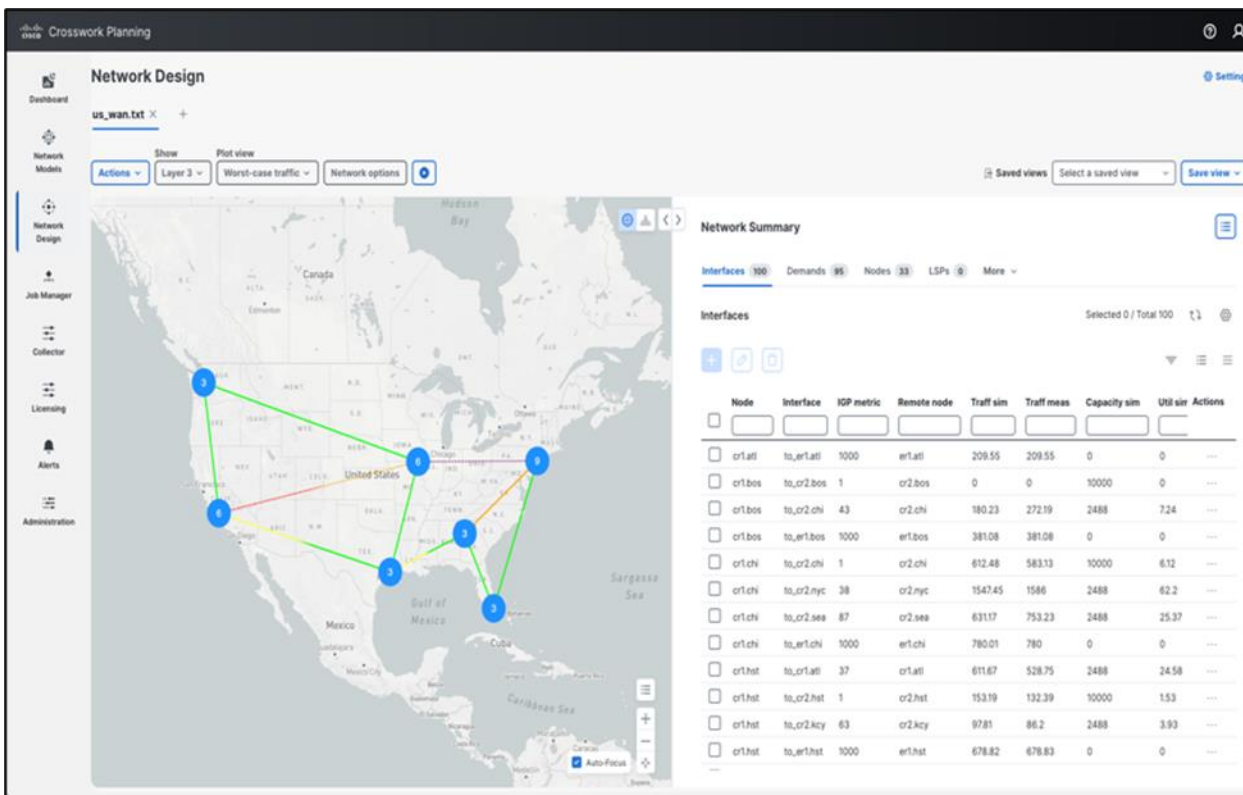
Simulation Analysis runs across a set of failure scenarios that can include selected objects, circuits, and traffic levels. Cisco Crosswork Planning calculates these failure scenarios across all service classes.

The “worst case” is the highest utilization that a particular interface experiences over all the failure sets and traffic levels you selected. Cisco Crosswork Planning determines which combination of failures would cause this worst-case utilization.

Using the Sample WAN.txt plan file in Figure 3 below, the “worst case” or simulation analysis of circuit failures is executed. Crosswork Planning returns the detailed results and views (Figure 4) of the analysis. Operators and planners can now review the results and take steps to mitigate each failure.



**Figure 3.** Abstract network view before “worst-case” analysis



**Figure 4.** Abstract network “worst-case” view—please note link color changes

## Platform support

**Table 1.** Standard protocol support: Key protocols

Protocol	Title
<a href="#">RFC 5440</a>	Path Computation Element (PCE) Communication Protocol (PCEP)
<a href="#">RFC 8231</a>	Path Computation Element Communication Protocol (PCEP) Extensions for Stateful PCE
<a href="#">RFC 8281</a>	Path Computation Element Communication Protocol (PCEP) Extensions for PCE-Initiated LSP Setup in a Stateful PCE Model Through Cisco SR-PCE
<a href="#">RFC 3209</a>	RSVP-TE: Extensions to RSVP for LSP Tunnels
<a href="#">RFC 3630</a>	Traffic Engineering Extensions to OSPF Version 2
<a href="#">RFC 3784</a>	(IS-IS) Extensions for Traffic Engineering (TE)
<a href="#">RFC 7752</a>	North-Bound Distribution of Link-State and Traffic Engineering (TE)
<a href="#">RFC 8402</a>	Segment Routing Architecture
<a href="#">RFC 8660</a>	Segment Routing and MPLS Data Plane
<a href="#">RFC 8667</a>	IS-IS Extensions for Segment Routing
<a href="#">RFC 8570</a>	IS-IS Traffic Engineering (TE) Metric Extensions
<a href="#">RFC 8665</a>	OSPF Extensions for Segment Routing
<a href="#">RFC 7471</a>	OSPF Traffic Engineering (TE) Metric Extensions
<a href="#">RFC 4657</a>	Path Computation Element (PCE) Communication Protocol Generic Requirements
<a href="#">RFC 4655</a>	A Path Computation Element (PCE)-Based Architecture
<a href="#">RFC 5440</a>	Path Computation Element (PCE) Communication Protocol (PCEP)
<a href="#">RFC 3414</a>	User-Based Security Model (USM) for Version 3 of the Simple Network Management Protocol (SNMPv3)
<a href="#">RFC 3416</a>	Version 2 of the Protocol Operations of the Simple Network Management Protocol (SNMP)
<a href="#">RFC 3954</a>	Cisco Systems NetFlow Services Export Version 9

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## Licensing

Crosswork Planning software licenses are available as Smart-enabled software subscriptions. For more information, contact your Cisco account representative.

## Cisco and partner services

Cisco offers a wide range of services to help accelerate your success with Cisco Crosswork Planning. The innovative Cisco Services offerings are delivered through a unique combination of people, processes, tools, and partners and are focused on helping you increase operational efficiency and improve your network control.

Cisco Services uses an architecture-led approach to help you align your network infrastructure with your business goals and achieve long-term value. Cisco Crosswork Planning can be combined with the Cisco SMARTnet™ service to help you resolve mission-critical problems with direct access at any time to Cisco network experts and award-winning resources. Spanning the entire network lifecycle, Cisco Services offerings help increase investment protection, optimize network operations, support migration operations, and strengthen your IT expertise. For more information, please visit [www.cisco.com/go/services](http://www.cisco.com/go/services).

## Cisco Capital

### Flexible payment solutions to help you achieve your objectives

Cisco Capital® makes it easier to get the right technology to achieve your objectives, enable business transformation, and help you stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services, and complementary third-party equipment in easy, predictable payments.

[Learn more.](#)

## Learn more

- To discover more about Cisco Crosswork Planning, please sign up on our DevNet site: <https://developer.cisco.com/docs/wan-automation-engine/#overview>.
- Also available are detailed tutorials within Cisco Crosswork Planning documentation: [www.cisco.com/c/en/us/td/docs/](http://www.cisco.com/c/en/us/td/docs/) TBD
- To experience a Cisco Crosswork Planning solution in the dCloud, please register at: [https://dcloud-cms.cisco.com/help/get\\_started\\_steps](https://dcloud-cms.cisco.com/help/get_started_steps).

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