

Forecasting and Capacity Planning Assessment

Service Overview

This assessment is targeted at network providers supporting an IP infrastructure. It provides for design of an optimized topology with link routing and bandwidth for a converged network that meets customer demand as well as resiliency requirements. This allows for an approach that optimizes investment without compromise to availability and network performance.

Customers requiring optimized forecast and capacity planning capability, across multi-vendor environments, will benefit from this service, which is delivered via a workshop on the customer premises.

Service Description

Service and content providers are increasingly seeking strategies that will enable them to continue providing exceptional levels of service while improving the cost per bit equation. One such strategy is careful forecasting and capacity planning.

Many networks have grown on their own inertia without full consideration of the return on investments made. In today's business climate, IP networking requires a more cost effective way of meeting aggressive growth targets fueled by increases in mobile radio speeds, consumer and business bandwidth demand and step increases in bandwidth as legacy backbones are retired. New services with high expectations of premium customer experiences add new levels of complexity to the existing network.

Ad hoc upgrading congested links is one approach, however it often overlooks the complexities of richly connected networks. Further, consideration of the behavior of the network under failure conditions is also required. Today's networks, demanding better than five nines reliability, require examination of performance while experiencing multiple points of failure, all while considering QoS performance. This is almost impossible to accurately perform manually without the assistance of sophisticated tools and experienced staff to use them.

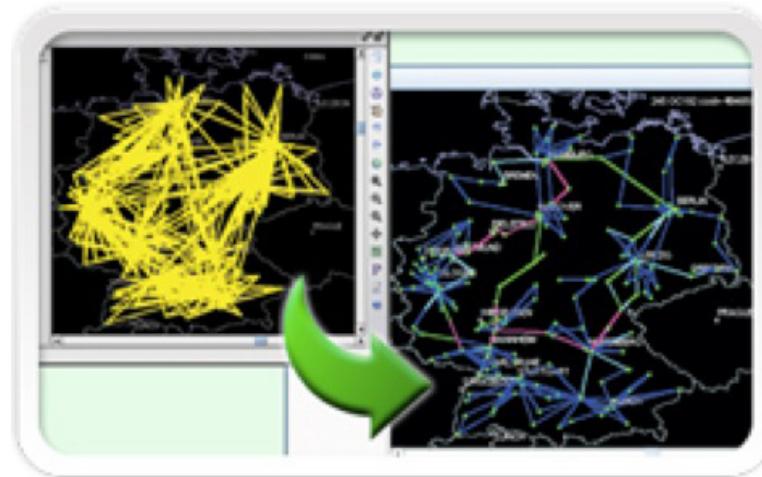


Figure 1: Capacity planning with WANDL allows simplification of infrastructure saving capital and operational expenses.

The overall goal of this assessment is to enable you to optimize the network costs while meeting traffic and capacity requirements. For example requirements that mandate the client network be able to survive any single router outage, any single link outage, and/or any Shared Risk Link Group outage.

Juniper Networks Professional Services consultants bring skill and experience that are results of working with the world's largest infrastructure providers. Our consultants use industry-leading tools such as WANDL or IP/MPLSView, which are Juniper's multi-vendor, multi-protocol, and multi-layer Traffic Management and Traffic Engineering solutions for IP and/or MPLS networks. Using these modeling tools, hundreds if not thousands of topologies are considered and optimized to meet the specified demands and infrastructures.

Features and Benefits

Feature	Feature Description	Benefit
Optimized Design Design Optimization	Design/review/ optimize the physical topology for a cost-effective IP transport	Understand the best route to handle traffic through the network infrastructure and optimized places to add trunk capacity
Optimized Growth	Simulation of traffic demands based on forecast to provide an optimized future topology	Plan your investment to meet need where you need it, when you need it with confidence.
Failure simulation	Validation of design showing impact of link and node failure	Understand the expected impact to applications should a failure occur, congestion points and QoS performance.

Outline Methodology

We take the following steps to perform an assessment of a multilayer converged network:

1. Understand your cost and technical requirements
2. Perform a focused review of the pertinent areas of your current network including:
 - a. Collection of data to build IP/MPLS traffic matrix
 - b. Inclusion of costing inputs, equipment locations and fiber span technology
3. Analyze and evaluate (via failure simulations) options for Multilayer design and optimization
4. Develop recommendations and potential impact on capacity and costs

Using industry-leading network modeling tools, multiple topologies are considered and cost compared for optimization of infrastructure required to meet the specified demand.

Examples of the data used to develop a robust model include:

- Locations, and number of P and PE routers
- Core routed topology
- Locations and number of IP Trunks
- Traffic Statistics
- Relative per port / link costs

Service Deliverables

Specific deliverables will be defined for your requirements. However, a basic assessment, includes:

- Up to three scenarios shall be considered under this assessment
- Analysis of the current network including:
 - IP routed topology
 - Resulting link utilization (based on normal utilization and worst-case utilization) per QoS
 - Impact of growth based on forecast
 - Topology (new links, ports, chassis)
 - Recommended next steps

Service Scope

The basic assessment service is applicable to a single IP/MPLS over transport network only. It considers PE to PE routed network only and excludes PE-CE links, Metro, backhaul or other last mile facilities.

Juniper Professional Services

As leaders in networks and security, Juniper Networks Professional Services consultants and engineers are uniquely qualified to assist service providers in designing, implementing, and optimizing security solutions. Our team appreciates the complexities and the subtleties inherent in large-scale internetwork design and can assist service providers and enterprises, plus provide customized and integrated "turn-key" solutions. Juniper Networks Professional Services helps accelerate your network's time to value and enhanced security, bringing revenue generating capabilities online faster for bigger productivity gains, faster rollouts of new business models and ventures, and higher levels of customer satisfaction. Your onsite staff will work closely with Juniper specialists, building operational capabilities and reducing your exposure to IT risks. As a result of our previous experience involving hundreds of customers around the world, Juniper Networks Professional Services is uniquely qualified to help you design, implement, and optimize your network for confident operation and rapid returns on infrastructure investments. These professionals understand today's network and security demands and those that are just around the corner—for bandwidth efficiency, best-in-class security, solid reliability, and cost-effective scaling.

Additional Services to Optimize Your Network

Juniper Networks provides additional consulting services to consider along with this assessment service. In addition to engagements that are customized for individual customers, a broad range of consulting and packaged implementation services is available to help you enhance your network design and optimize your production environment.

- **Assessment Service:** Leverages the breadth and depth of Juniper Networks experience to identify your technology options and develop your network and security plans for the future
- **Design Service:** Provides a design and technology recommendations for a network that will meet your business and technical needs
- **Migration Service:** Delivers an end-to-end risk-managed migration of your network or security environment

Juniper Networks Services and Support

Juniper Networks is the leader in performance-enabling services that are designed to accelerate, extend, and optimize your high-performance network. Our services allow you to maximize operational efficiency while reducing costs and minimizing risk, achieving a faster time to value for your network. Juniper Networks ensures operational excellence by optimizing the network to maintain required levels of performance, reliability, and availability. For more details, please visit www.juniper.net/us/en/products-services.

Ordering Information

To order the Forecasting and Capacity Planning Assessment service or for additional information, please contact your Juniper account manager. Before the service begins, a statement of work (SOW) will be established outlining the scope of effort to be performed.

Model Number	Description
PRO-ASSESS	Capacity Planning Service

About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at www.juniper.net.

Corporate and Sales Headquarters
 Juniper Networks, Inc.
 1133 Innovation Way
 Sunnyvale, CA 94089 USA
 Phone: 888.JUNIPER (888.586.4737)
 or +1.408.745.2000
 Fax: +1.408.745.2100
www.juniper.net

APAC and EMEA Headquarters
 Juniper Networks International B.V.
 Boeing Avenue 240
 1119 PZ Schiphol-Rijk
 Amsterdam, The Netherlands
 Phone: +31.0.207.125.700
 Fax: +31.0.207.125.701

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