

# Efficient Management for Profitable Ethernet Services

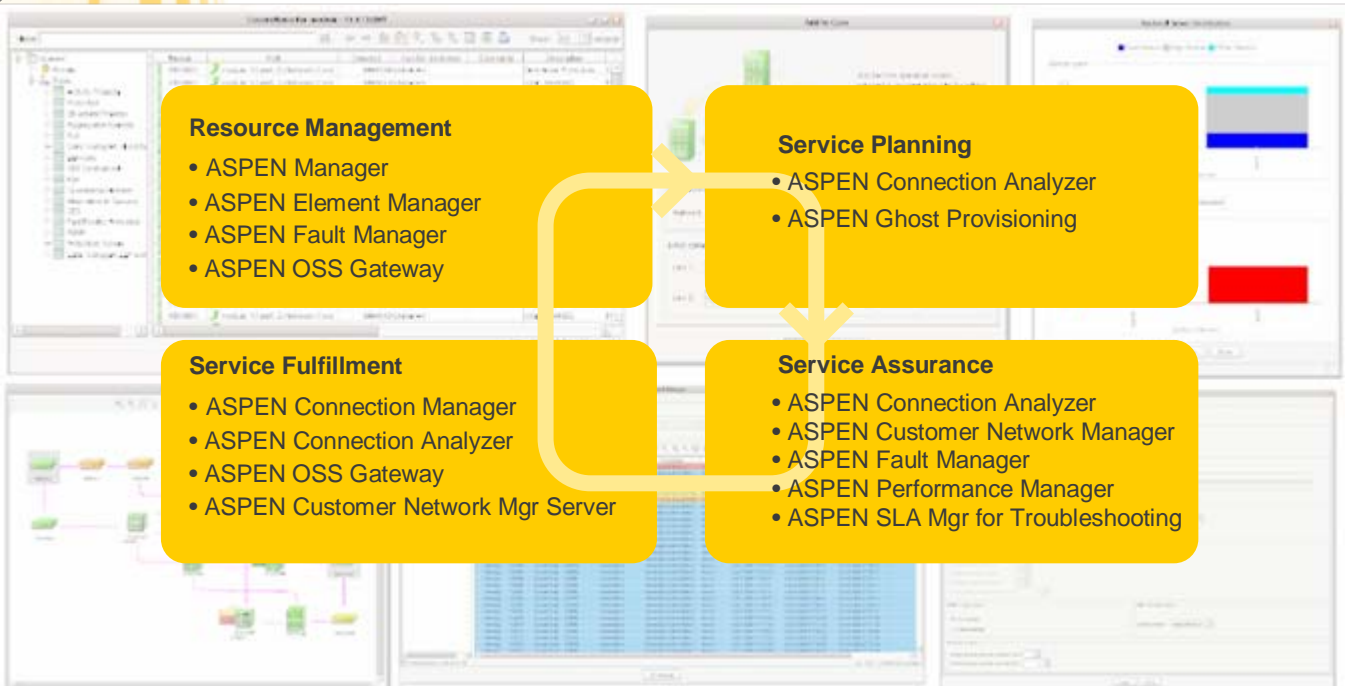
**ASPEN**, Nokia Siemens Networks Service Management for Carrier Ethernet Networks, delivers enhanced service management capabilities for rapid service provisioning, comprehensive network and element management, performance and fault management, and seamless integration with existing Operation Support System (OSS) applications.

## Product Highlights

- Offering End-to-End Carrier Ethernet Service Management Turnkey System
- Delivering a Carrier Grade NMS
- Supporting Carrier Ethernet Service SLA Management
- Enabling End Customer Self Care Management
- Promoting a Carrier Ethernet Management Ecosystem

ASPEN software allows carriers and service providers to manage all network elements to deliver the most reliable, scalable and cost-effective Carrier Ethernet transport solution. Using a multi-layered modular architecture, ASPEN software supports large, dynamic carrier-class networks and is ideal for minimizing hardware deployment time, service planning, provisioning and monitoring.

## End-to-End Management of Carrier Ethernet Networks

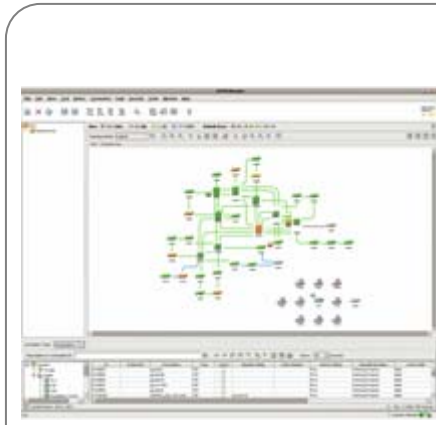


# The ASPEN Application Suite

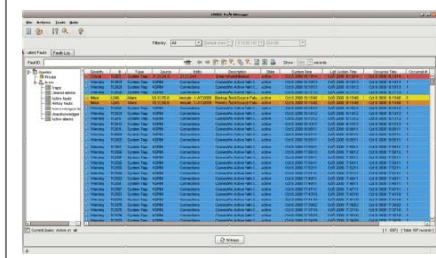
## Main Features

- Integrated End-to-End Carrier Ethernet service planning and provisioning
- Element and network management
- Fault & performance management
- Service Level Agreement (SLA) Management
- Security management
- Rich set of API for Northbound OSS integrations
- “Plug and play” management of multi-vendor network elements

ASPEN software delivers an end-to-end turnkey Carrier Ethernet service management solution for the service provider's Network Operation Center (NOC). Based on common telecom network management standards, ASPEN products support full FCAPS-based element and network management features together with a rich set of service management features for its Carrier Ethernet networks. With ASPEN, service providers can manage small networks, as well as large networks using different topology variations.



ASPEN Manager



ASPEN Fault Manager

## ASPEN Manager

ASPEN Manager software delivers a comprehensive Carrier Ethernet service management user interface for service providers. Based on Java infrastructure, the ASPEN Manager is a Graphical User Interface that provides a visual and intuitive user interface for the network, and service management of the Nokia Siemens Networks network. All network data and operations are accessible using the ASPEN Manager GUI, enabling centralized visual management for the entire network.

Main features include integrated service provisioning and monitoring applications, as well as element (through invocation of the web element manager) and network management of topology and inventory, faults, performance, service level agreement (SLA) measurement and security.

## End-to-End Service Provisioning

ASPEN's Service Provisioning tool, the Connection Manager, is a powerful service, creation and activation tool to provision end-to-end Carrier Ethernet services. Users can rapidly and simply provision P2P, P2MP and MP2MP services using an intuitive 'point-and-click' process, and the optional usage of pre-defined templates. Bandwidth rates can be easily configured supporting both Committed Information Rate (CIR) and Excess Information Rate (EIR). Routing paths are automatically computed or can be manually configured. ASPEN's service path calculation algorithms also support VLAN and MPLS-based Label Switched Paths (LSPs) traversing both Nokia Siemens Networks Carrier Ethernet Switches and non-Nokia Siemens Networks routed interconnections between metro networks (using VLAN handoff).

## Intuitive Topology, Inventory and Fault Management

The ASPEN Network Topology and Inventory Management provides an overall real-time view of network elements (Nokia Siemens Networks as well as third party network elements), Nokia Siemens Networks links, non-Nokia Siemens Networks inter-metro paths, and both physical and logical WDM links.

Network alarms and events are sent to the ASPEN Fault Manager, processed and then correlated to determine which network resources and service are affected.

### ASPEN CNM

The ASPEN Customer Network Management (CNM) allows the service providers end-users to manage their own network services in a self-care mode, resulting in decreased operational costs to these service providers. Nokia Siemens Networks offers an SDK (Service Development Kit) that enables service providers to create, with their own "Look & Feel", self-care management applications for their customers and allows these end-users to view, monitor and even update their own purchased services.

### ASPEN OSS Server

ASPEN's Northbound OSS Server offers an open API providing fast and flexible integration between ASPEN and third-party northbound Operation Support Systems (OSS) applications. The offered API is CORBA/XML-based and covers all ASPEN functions and features with a comprehensive set of well-documented operations.

### ASPEN Element Manager

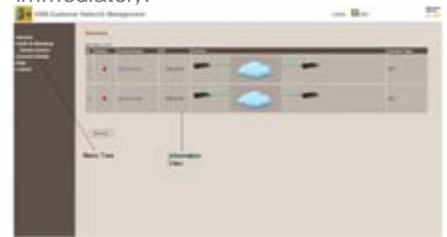
ASPEN's Web-based Element Manager software offers a rich interface for configuration and monitoring of individual Nokia Siemens Networks network elements. The Element Manager presents to the operator an on-line status of the device with an internal topology hierarchy in a graphical interface that fully represents the device's physical configuration. Using the ASPEN's Web-based Element Manager, operators can both view and configure all attributes of the network element.



ASPEN Element Manager

### ASPEN Ghost Provisioning

Ghost provisioning is the pre-provisioning of point-to-point and CES connections even if the access rings or the access Network Edge ports which are intended to serve as the connection's endpoints do not yet exist. The service, which lacks real endpoints, can be created as a 'ghost' connection. When the requisite Network Edge ports are deployed in the network, the connection can be turned into a regular service by 'realizing' the endpoints. Service planning is often performed by a service provider before the deployment of the devices and links required for the planned services. By creating ghost connections, service planning and provisioning can be performed without the pressure of getting deployed equipment into use immediately.



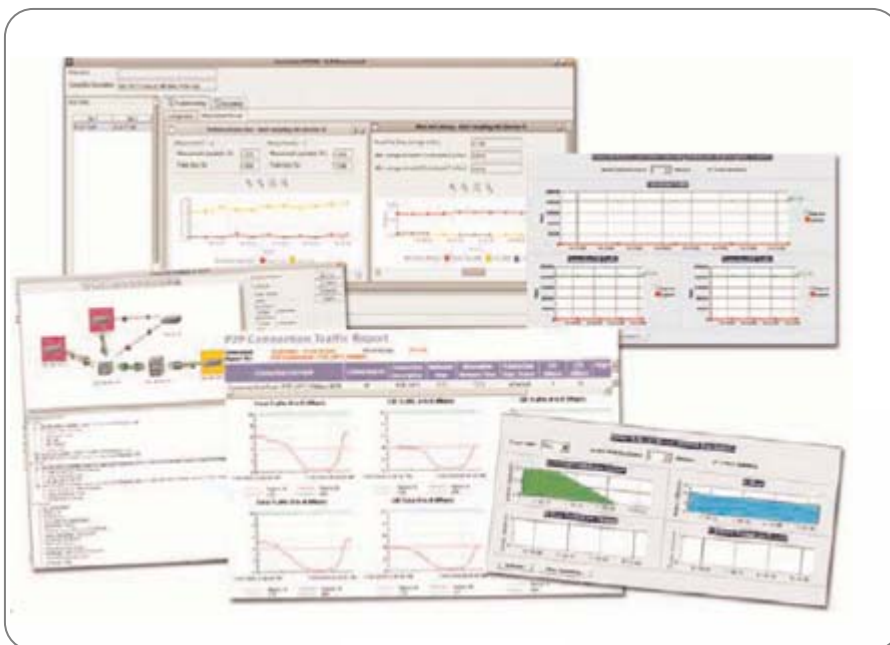
ASPEN Customer Network Manager

The operator can generate different inventory reports, including equipment connections and link capacity reports. Such reports can be invoked from the ASPEN Manager and can be exported to either a CSV or XML format.

The ASPEN Device Configuration Manager enables the operator to perform the scheduled and bulk actions on network elements including configuration files backup/restore and remote SW updates.

### Extensive Security Management

The ASPEN Security Manager tool performs all administrative security actions related to ASPEN. Using the Security Manager, the administrator can Add, Delete, and Update users and configure user profiles (access rights). The Security Manager logs all user actions that occurred in the management system.



### Performance Management and SLA Monitoring

ASPEN offers both a real-time SLA Management tool for monitoring and troubleshooting of real-time network traffic status and also a long-term SLA Management reporting tool used for SLA assurance to determine that end-user SLA s are being met. Using Nokia Siemens Networks' rich network OA&M facilities, ASPEN's Performance Manager generates real-time and offline reports and graphs in different time intervals (hourly, daily, weekly and monthly).

## Features and Specifications

### System Interfaces

- CORBA/XML
- Java™ API
- SNMP V1, V2C, V3
- Telnet/CLI
- FTP/TFTP
- SYSLOG

### Software

- Java-based Network Management GUI software
- Web-based Element Management GUI software
- C++ and Java-based server components
- Sybase® ASA database
- Tomcat web server

### OSS Partners

- Micromuse Netcool®
- InfoVista™

### Minimum Hardware Requirements

- CPU
- Memory
- Networking
- Free Disk Space

### Server Platform Requirements\*

Sun SPARC IIIi or Fujitsu SPARC-64v Dual 1.32 GHz processors

2 GB RAM (minimum)

100Base-T Ethernet card

40 GB for full ASPEN engine  
1 GB for every other server

### Client Platform Requirements

Intel Pentium® D processor 1.7 GHz or Sun SPARC III, single 900 MHz CPU

1 GB RAM (minimum)

100Base-T Ethernet card

10 GB

### Software

- |   |   |   |
|---|---|---|
| <ul style="list-style-type: none"> <li>• OS</li> </ul>      | <p>Sun Solaris™ 10 base installation with recommended patches</p> | <p>Windows XP Professional (SP2 or later) or<br/>Sun Solaris™ 10 base installation with recommended patches</p> |
| <ul style="list-style-type: none"> <li>• Java</li> </ul>    | <p>Java standard edition environment V6</p>                       | <p>Java standard edition environment V6</p>   |
| <ul style="list-style-type: none"> <li>• Browser</li> </ul> | <p>Mozilla</p>  | <p>Microsoft Internet Explorer 6.x or Mozilla 1.7 with Java standard edition environment</p>                    |

\* Depending on network scale