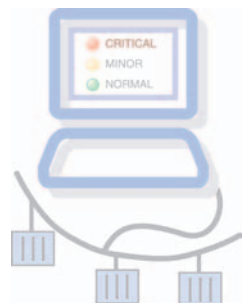




Nokia NetAct™ for Broadband

Bringing Operations Solutions To Broadband

NOKIA
CONNECTING PEOPLE



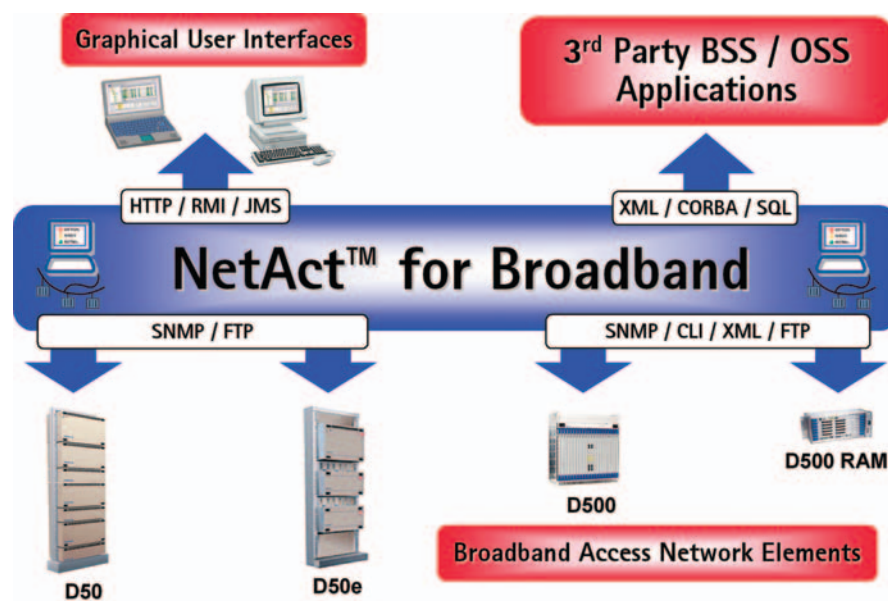
Nokia NetAct™ for Broadband offers broadband access network operators a scalable, carrier-class broadband element aggregation and mediation solution.

Integrated Management System

Nokia NetAct™ for Broadband provides broadband access network operators with a carrier-class management system that meets their scalability, reliability, performance, and ease of use requirements. NetAct™ For Broadband's Java-based client-server architecture easily adapts to any size broadband access network including any combination of Nokia D50, D50e, D500, D500 Remote Access Module. In addition to its network-to-port drill-down and rapid profile-based provisioning capabilities that provide a user-friendly management interface for all Nokia broadband network element types, NetAct™ for Broadband's standards-based XML and CORBA northbound interfaces allow for fast integration with existing operations support systems.

Simplifying Network Operations

NetAct™ For Broadband helps reduce the cost of running and operating a broadband access network. A complete, integrated element management system, NetAct™ for Broadband features topology, fault, inventory, configuration, performance and security management as well as cut-through command line interfaces.



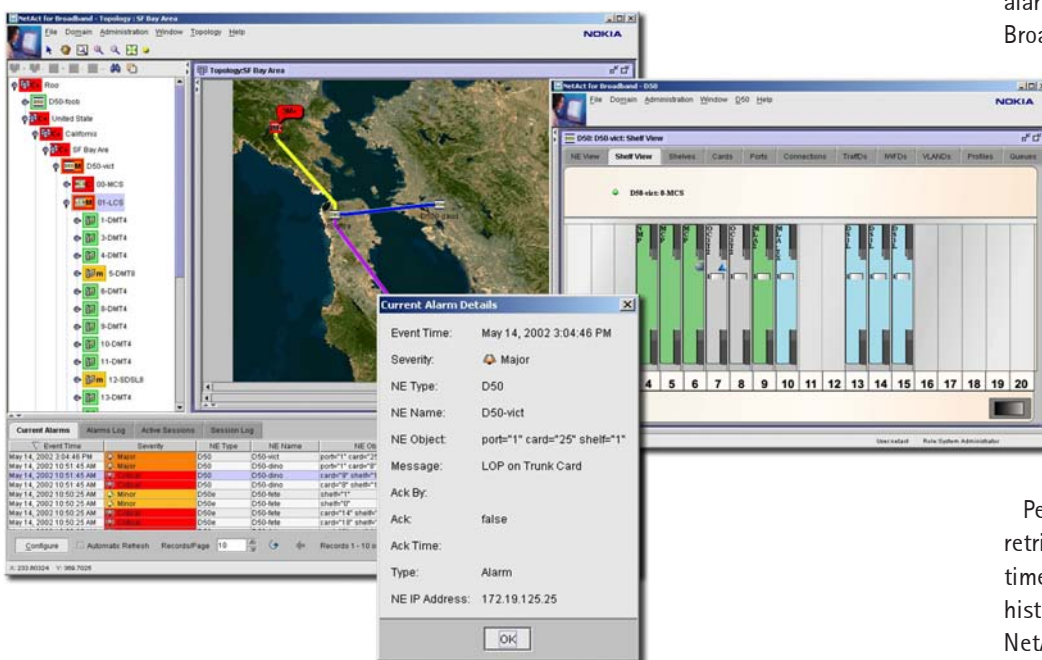
Deployed as a stand-alone system in a network operation center or similar environment, NetAct™ for Broadband's intuitive graphical user interface provides access network operators with a way to rapidly and easily drill down from a high level network view to the port and/or connection level, giving access to all configuration, fault and performance information supported by the network element. NetAct™ for Broadband is a centralized, scalable and user friendly

alternative to other management interfaces such as command line interfaces and/or web-based embedded craft terminal applications which provide access to a single node at a time and may require extensive training before using them.

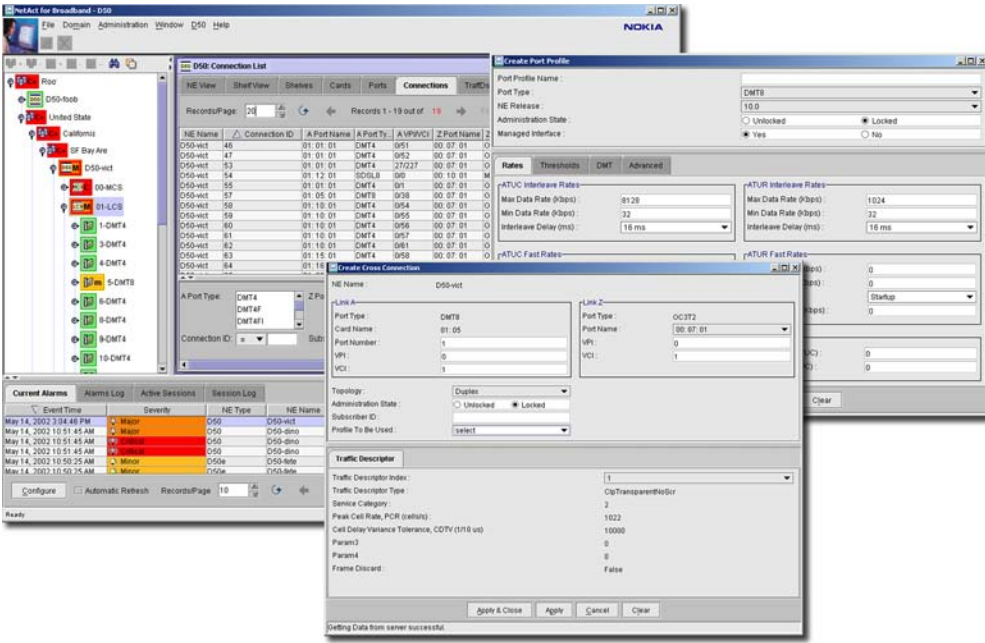
NetAct™ for Broadband's topology management allows operators to partition their networks into one or many management domain(s). Managed network links, navigation tree with color-coded alarm state propagation, current alarm list and alarm history are some of the NetAct™ for Broadband's fault management features that allow for efficient network troubleshooting.

NetAct™ for Broadband's centralized database offers a single management information repository for physical (hardware equipment) and logical (connections and services) inventory management. NetAct™ for Broadband provides support for craft-like object attribute setting as well as rapid hardware and service provisioning using nested profile levels.

Performance management data are retrieved from network elements for real-time performance monitoring as well as historical performance management. NetAct™ for Broadband collects performance management data and stores them in its



Network to Port Drill-Down



Rapid Profile-Based Provisioning

database for later access via its SQL interface by specialized reporting or service assurance applications.

NetAct™ for Broadband also offers flexible security management with customizable user roles and network management domains, as well as centralized network element access control.

Java-based Distributed Architecture

NetAct™ for Broadband's Java-based architecture allows a single logical server to be distributed over several physical servers, one Master server and one or more Slave server(s), increasing significantly the overall management capacity and allowing support for virtually any size networks. NetAct™ for Broadband's distributed architecture meets several key customer requirements:

- **Performance.** A distributed architecture provides support for load balancing across multiple physical servers, eliminating performance bottlenecks due to a single hardware platform and therefore improving the overall system performance.
- **Scalability.** As multiple physical servers get combined into a single logical management system, thousands of nodes can be accessed and managed by a large number of network operators.

- **Increased availability.** Having multiple physical servers combined into a logical system eliminates many points of failure. For example, the workload handled by a failed physical server can be manually reassigned to another active server until the failed server gets repaired or replaced.
- **Geographical distribution.** In environments where NetAct™ for Broadband must be distributed across multiple geographical locations, its distributed architecture allows to have multiple physical servers while providing a single logical view of the network to its users.

- **Investment protection.** As the network grows in size and number of network elements, so does the management system. NetAct™ for Broadband grows as the network grows by just adding new server hardware to an existing configuration to form a larger management system configuration.

Standards-based Northbound Interfaces

NetAct™ for Broadband offers an XML-based fault management interface for easy integration with any centralized network monitoring application. All alarms supported by NetAct™ for Broadband can be forwarded to an upper level management application using this interface.

NetAct™ for Broadband features a comprehensive CORBA northbound interface based on the following international standards:

- **DSL Forum TR-041 – CORBA Specification for ADSL EMS-NMS Interface**
- **DSL Forum TR-035 – Protocol Independent Object Model for ADSL EMS-NMS Interface**
- **ITU-T M.3100 – Generic Information Model**
- **ITU-T X.721 – Structure of Management Information: Definition of Management Information**
- **ATM Forum fb-nm-0166.000 – M4 Network View Interface**

This interface provides support for fault, inventory and configuration management as well as for real-time performance monitoring for all Nokia broadband access network elements.



OSS Integration

NetAct™ for Broadband can be tightly integrated with network management and Operations Support Systems (OSS) using its standards-based northbound application programming interfaces based on proven XML, CORBA and SQL technologies. In that case, NetAct™ for Broadband acts as a mediation layer between specialized applications (network fault and performance monitoring, inventory management, service creation and activation, service assurance) and an increasingly diverse number of network elements. Providing a higher level of abstraction, NetAct™ for Broadband

implements industry standard information models allowing service providers to reduce the time and cost of adding support for new network elements to their integrated operation support system (OSS).

OSS Partners

Nokia Broadband Systems is a member of Micromuse Alliance Program. NetAct™ for Broadband has been integrated with Micromuse's Netcool®/OMNibus™ to provide a multi-vendor network



surveillance solution. A Netcool Probe™ for NetAct™ for Broadband is available directly from Micromuse.

Nokia Broadband Systems is a Synthesis Technology Partner. NetAct™ for Broadband has been integrated with Synthesis NetProvision™ to provide a multi-vendor and multi-technology service provisioning solution. A Synthesis® Equipment Module for NetAct™ for Broadband is available directly from Synthesis.

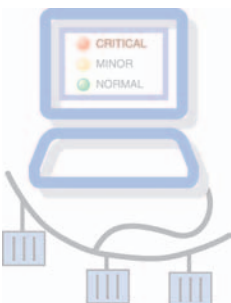


Nokia NetAct™ for Broadband Minimum System Requirements

Server

Hardware Platform	Sun Microsystems hardware platform
Operating System	Sun Solaris 8
Hard Disk Space	Two 9 GB Disks
Random Access Memory	2 GB
Processor	One 750 MHz Ultra SPARC III CPU
Options	One PGx64 Graphic Adapter with One 17-inch Monitor with 1024 x 768 Resolution 1 CD-ROM Drive for Software Installation 1 Tape Drive for System Backup

Client	Solaris	Windows
Hardware Platform	Sun	Any Intel Compatible PC Platform
Operating System	Sun Solaris 8	Windows NT/2000
Hard Disk Space	100 MB Available	100 MB Available
Random Access Memory	512 MB	512 MB
Processor	One 750 MHz Ultra SPARC III CPU	One 450 MHz Pentium III
Monitor	1024 x 768 Resolution	1024 x 768 Resolution



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