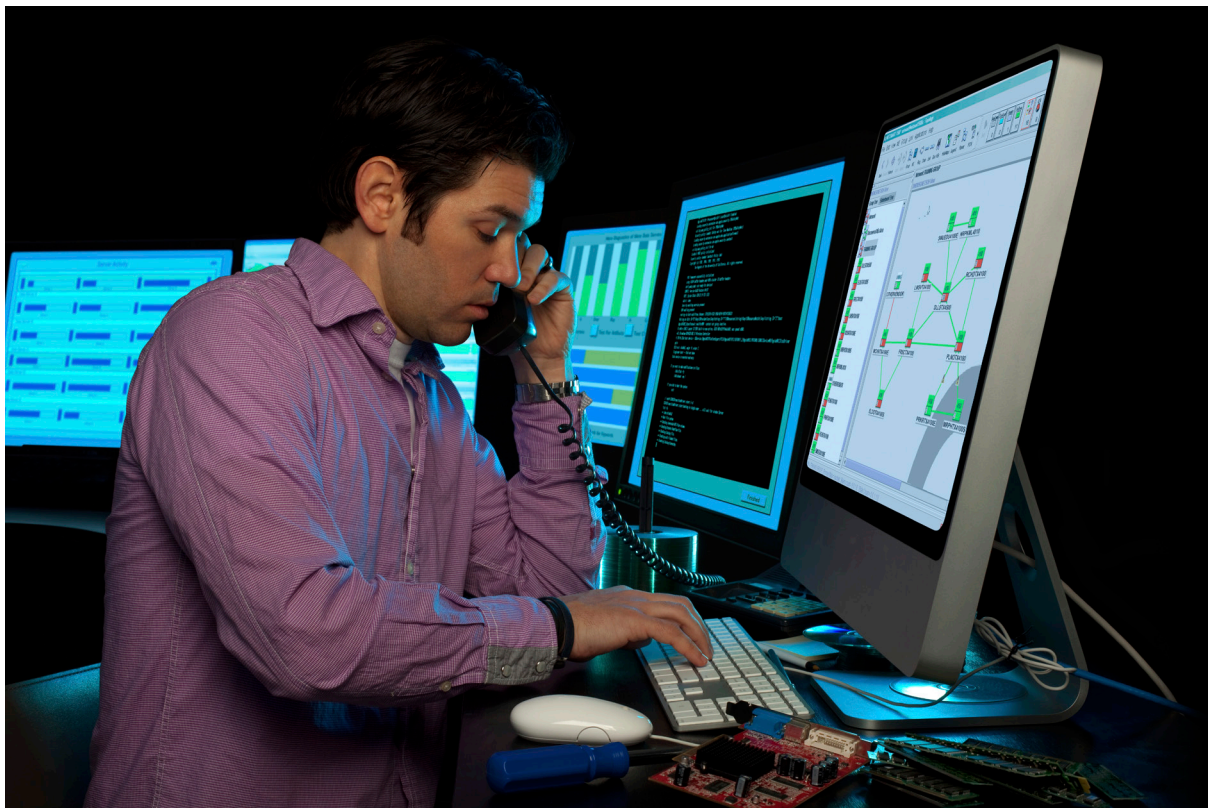


NETSMART® Network Management Solutions



NETSMART management solutions simplify maintenance, provisioning and surveillance.

NETSMART® Network Management Solutions

Unify Your Network

As new and legacy services coexist to support a widening variety of customers, network support presents more technical challenges. This complex, competitive environment needs a feature-rich software system that simplifies network management.

For managing your Fujitsu network, NETSMART® software is the answer. These powerful software systems deliver a targeted solution to get the best possible performance, keep costs under control and use resources efficiently. NETSMART management solutions simplify maintenance, provisioning and surveillance of the Fujitsu FLASHWAVE® family of networking solutions, as well as legacy Fujitsu Network Elements (NEs).

Customizable Network Management Software

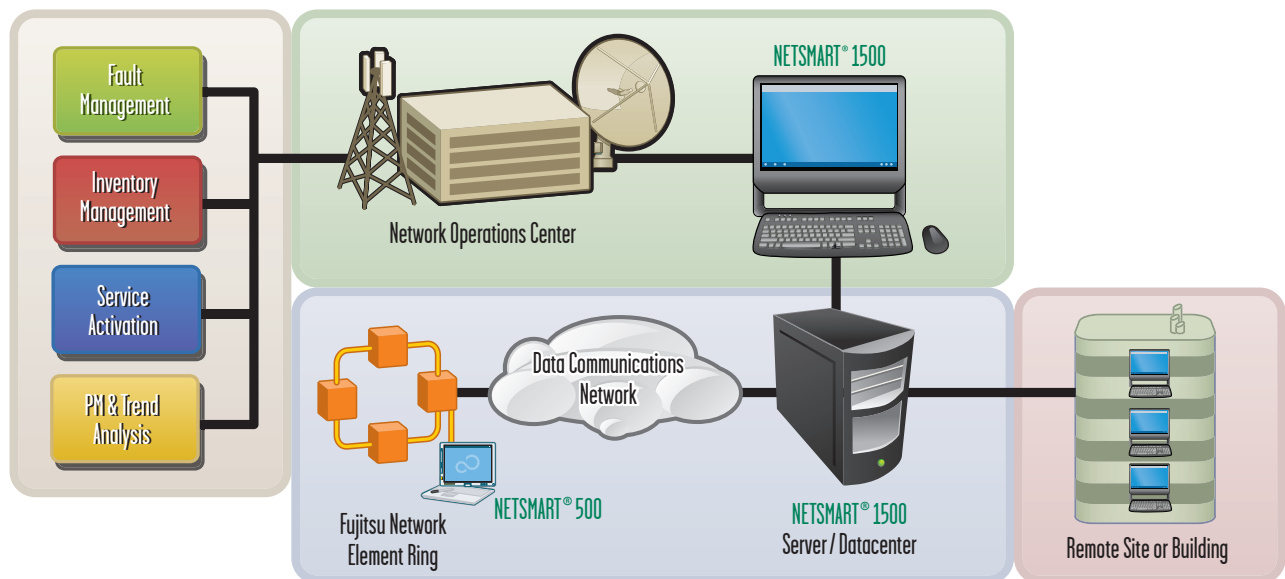
Network maintenance needs vary depending on the type and size of your network. Fujitsu offers two complementary software systems that enable customized solutions to suit individual business needs.

NETSMART 1500 Management System

This carrier-class management solution delivers simplified point-and-click control to enable network-wide provisioning, maintenance and surveillance from a centralized location.

NETSMART 500 Element Manager

This robust craft interface supports the Fujitsu FLASHWAVE product line and locally or remotely manages NEs.



Managing the Evolution to Packet-Based Services

The NETSMART 1500 system simplifies network management and handles mature technologies such as TDM in combination with emerging packet-based technologies such as Connection-Oriented Ethernet (COE). The NETSMART 1500 Management System supports and manages the Fujitsu FLASHWAVE product family and all current and legacy Fujitsu NEs. The system also accommodates networks of any size.

Single Interface for Layer 1 and Layer 2 Networks

NETSMART 1500 software provides a single interface for the Layer 1 transport network (cross-connects, circuits and paths) and the Layer 2 data network (such as Ethernet Virtual Circuits, tunnels and protection domains). The ability to view multiple network technologies in a single management application enables operations personnel to view relationships among layers, improve fault isolation, and reduce training time.

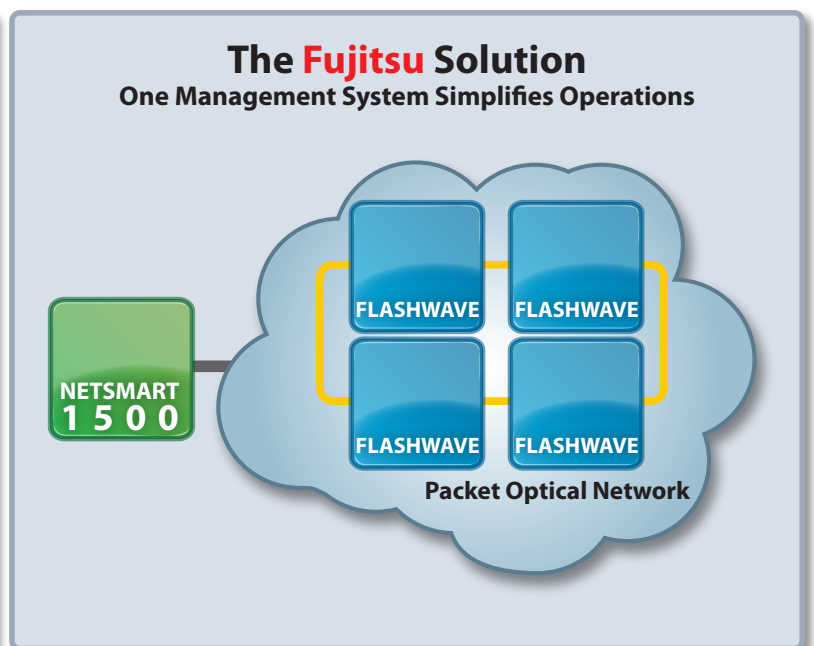
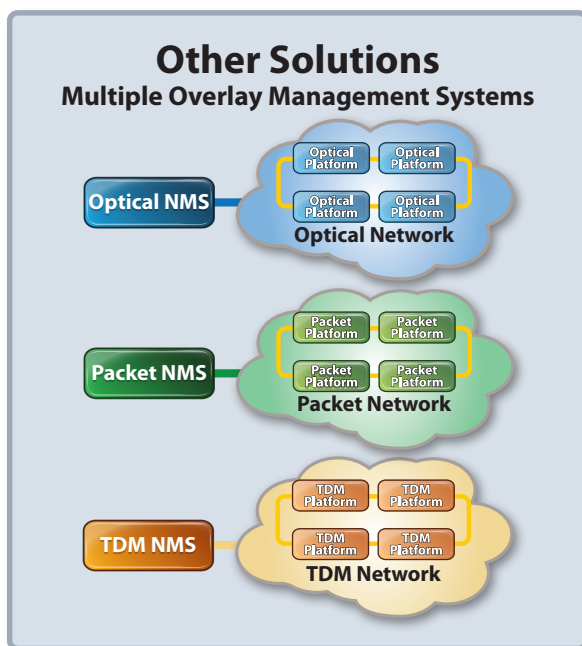
Simplified Management for Complex Services

Managing complex COE services is dramatically simplified with the end-to-end flow provisioning features of the NETSMART 1500 Management System. Centralized A-to-Z management and end-to-end service provisioning enable consistent application of traffic and bandwidth profiles, a unified database of service inventory, and end-to-end service views and maintenance operations. The NETSMART

1500 software manages switched VLAN services delivered on Fujitsu Packet Optical Networking Platforms (Packet ONPs), avoiding the need for custom in-house software development. The data service management interface provides the tools to provision Ethernet circuits, tunnels, protection domains, and service OAM.

Point-and-Click Provisioning for MEF Ethernet Services

With NETSMART 1500 software, provisioning new Ethernet services requires no in-depth knowledge of Carrier Ethernet parameters. NETSMART 1500 software uses Metro Ethernet Forum (MEF) terminology and default settings for commonly used MEF Ethernet service attributes, enabling users to configure their customers' unique Ethernet service attributes, such as bandwidth and Class of Service (CoS) identification. Now, when users need to define bandwidth and Quality-of-Service (QoS) terms, NETSMART 1500 software implements the associated profiles across all FLASHWAVE® Packet ONPs, automatically accounting for the different functionality and release levels of these NEs. This eliminates operator errors that normally arise when configuring different platforms. NETSMART 1500 software can fully provision an MEF-compliant E-Line or E-Access service in less than one minute. The data service management interface provides the tools to provision Ethernet tunnels, protection domains, and service OAM (SOAM) Y.1731 monitoring.



NETSMART® Network Management Solutions

NETSMART 1500 Management System

Operations Made Simple

The NETSMART 1500 Management System is a powerful software system that supports and manages the Fujitsu FLASHWAVE product family and all current and legacy Fujitsu NEs. Its intuitive Graphical User Interface (GUI) makes provisioning, maintenance and troubleshooting a simple, efficient process. The system can scale to support hundreds of users and thousands of NEs—securing your existing investment and supporting future growth.

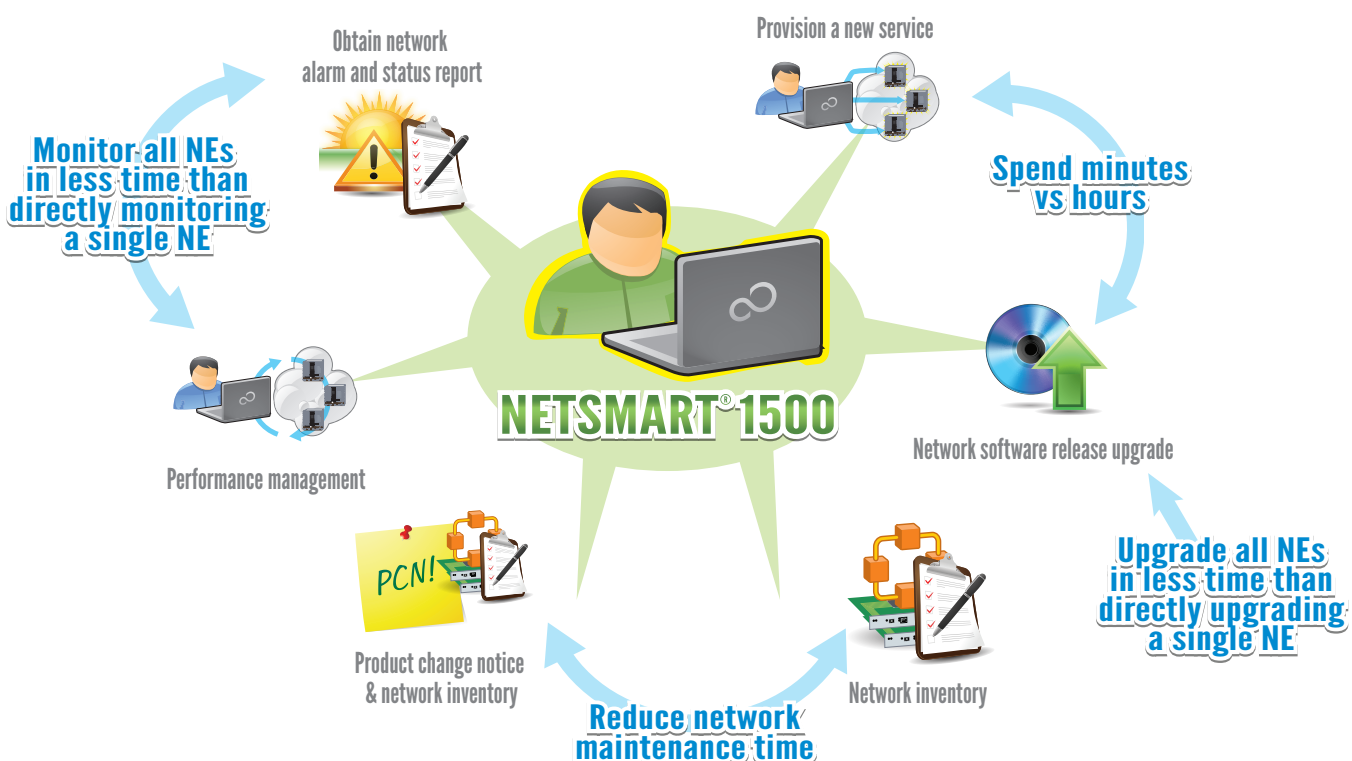
The NETSMART 1500 software integrates with your existing and future Operations Support System (OSS) architecture, supporting up to 8,000 NEs and 200 concurrent client sessions per system. The software protects network integrity by restricting user roles, manages upgrades of NE software remotely and performs disaster recovery of NE software and databases.

Enhanced Security through Two-Factor Authentication

The NETSMART 1500 system can authenticate users to a level of security approved by the Department of Defense's Joint Interoperability Test Command (JITC). This authentication system is Public-Key Infrastructure (PKI), using a combination of a physical authentication key and a password.

Key Features of the NETSMART 1500 Management System

- *Provision MEF-compliant services in minutes*
- *Centralized network management for:*
 - Provisioning
 - Maintenance
 - Alarm monitoring
 - Survivability
 - Troubleshooting
- *End-to-end* Layer 1 and 2 service provisioning
- *Dynamic* network-wide topology view
- *Intelligent* auto-discovery of network elements and their physical links
- *Per-link or per-network* capacity and growth monitoring
- *Real time* network updates via software download
- *Remote disaster recovery* and restore capabilities
- *Fast service turn-up* with end-to-end circuit provisioning
- *Multiple interface* options for linking to higher level OSS
- *Redundant*, geographically diverse server configuration with automatic failover



Keep Your Network Up-To-Date

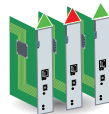
Real Time Network Monitoring

The NETSMART 1500 software keeps you up-to-date on network conditions through real time fault management. The software monitors your network, displaying alarms and conditions as they occur, while remote notification alerts you to events during off hours.

The software also supports the capability to login and monitor alarms on other vendors' TL1-based equipment. Faults are tracked and logged in fault reports and forwarded through supported Northbound Interface (NBI) uplinks.



Around the clock monitoring / analysis



Quickly correlate faults to affected circuits



Improve fault resolution time by **50%***

Dedicated Custom Access

Network partitioning subdivides a system into smaller sections with the ability to grant access to designated user groups. This capability provides custom views for individual user groups or end customers, enabling targeted access to specific parts of the network. This feature can also eliminate the cost of having a separate server administrator at each site.

Control Operational Costs

Managing equipment inventory is quick and easy with a dynamic network-wide inventory reporting tool. The inventory reporting capabilities eliminate the need for manual and spreadsheet-based management by providing the most up-to-date information on your Fujitsu equipment. You get the information you need when you need it, so you can identify the hardware release and installed equipment information. You can create, customize, and filter inventory reports according to specific criteria you define.



Save person-hours and truck rolls



Improve network update speed by **85%***

Capacity management features of the NETSMART 1500 software enable you to track and optimize bandwidth utilization. Use these features to maximize network resources by tracking port utilization and locating unused cards and ports.

Reduce Capital Costs

Product Change Notice (PCN) management proactively prevents problems before they occur by identifying hardware affected by PCNs. Alerts are posted when a PCN affects your network.

The NETSMART 1500 system also reduces costs by performing remote NE software upgrades to multiple NEs in parallel, without service interruption. This ability eliminates the need to dispatch technicians to perform upgrades locally at individual NEs.

Rapid Service Activation

Automated connection management minimizes design and circuit activation time within even the most complex networks. This feature finds routes automatically, or you can actively design circuits with powerful include/exclude routing and time slot assignment options. You can also provision services such as Gigabit Ethernet and 10/100Base-T Ethernet, using High- and Low-Order Virtual Concatenation (VCAT) as easily as a T1 or T3.



Eliminate manual record keeping



Need-based decision making



Improve record keeping time by **75%***



Create revenue-generating services in minutes



Increase service deployment speed by **75%***

NETSMART® Network Management Solutions

Versatile Systems Integration

Systems Integration Increase Efficiency

The NETSMART 1500 management system has the versatility needed to integrate precisely with your OSS via a variety of standards-based Northbound Interface (NBI) modules:

- SNMP
- CORBA
- XML
- CSV FTP
- TL1
- MTOSI

Fujitsu Professional Services can assist with northbound integration and customization to meet individual needs. By optimizing data exchange between your management software and your OSS, you realize important business and operational benefits:

- *Improve overall efficiency* and flow-through
- *Rapid service activation* with flow-through provisioning
- *Reduce fault resolution time* by sharing alarm data with helpdesk systems
- *Maximize network utilization* with accurate inventory data
- *Analyze performance* data to predict trouble spots

Server Requirements for NETSMART 1500 Management System

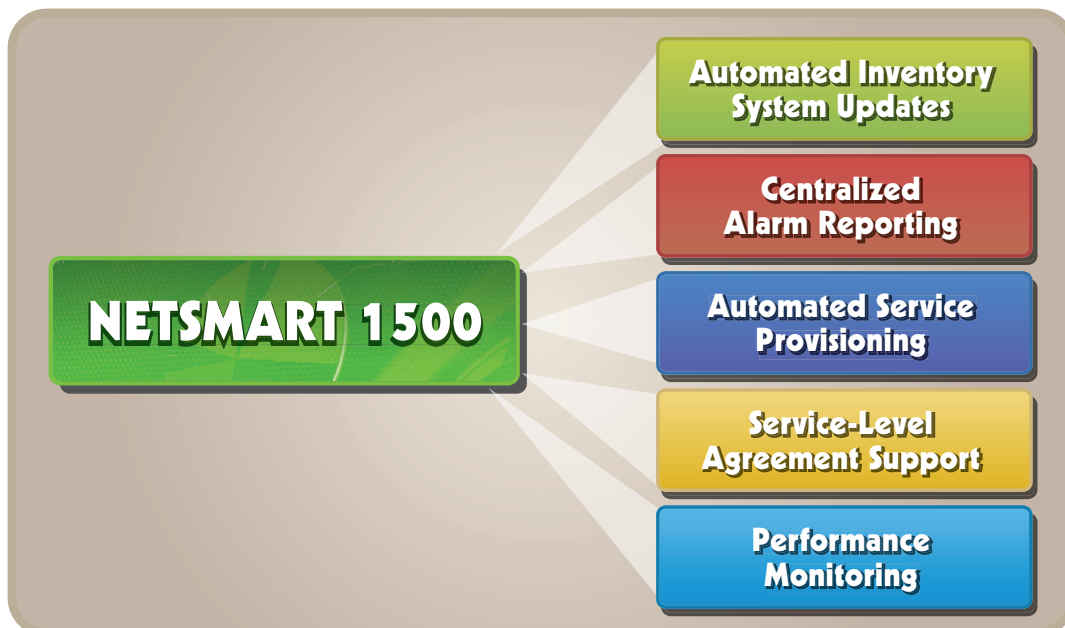
Fujitsu offers several tested server platforms for small, medium and large networks. Contact your sales representative for specific hardware offerings.

Built with Industry-Standard Infrastructure

- Server application supported on:
 - Oracle Solaris (using Solaris 10 OS)
 - Linux 64-bit hardware (using Red Hat OS)
- Clients are supported on Solaris, Linux, Windows XP, Windows Vista and Windows 7

Software Licensing Options

Some features of the NETSMART 1500 system are licensed separately. To discuss the right network management and software maintenance options for your network, including support packages and custom integration, contact your Fujitsu sales representative.



NETSMART 500 Element Manager

The NETSMART 500 Element Manager is a separate, complementary system from the NETSMART 1500 Management System. The application is used for equipment turn up, installation, and field troubleshooting. The NETSMART 500 software supports graphical shelf views, equipment and facility provisioning, alarm surveillance, software download, remote memory backup/restore capabilities and cross-connect provisioning.

No TL-1 Knowledge Needed

With the NETSMART 500 Element Manager, support personnel can provision, maintain and upgrade Fujitsu networks without the need for TL1 knowledge. The software is supported on a Windows PC, connecting to NEs through a data communications network (DCN), or directly to individual NEs via an Ethernet interface, RJ45, or RS-232 serial cable.

Ease-of-Use Boosts Productivity

The NETSMART 500 Element Manager is easy to learn and use. The software uses common operation dialogs, making provisioning tasks easy and consistent among different products and types of services. This translates to lower operational costs and a minimal learning curve when introducing new technologies or NEs. By using this software at a centralized location, you can troubleshoot remotely and greatly reduce truck rolls.

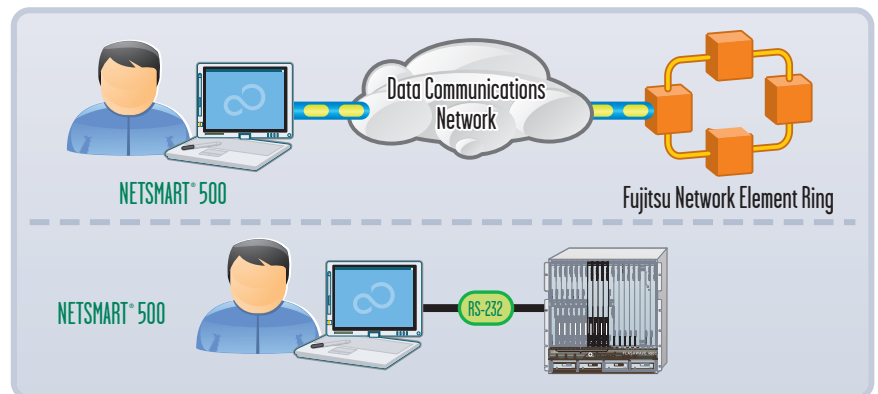
The NETSMART 500 system provides rich, context-sensitive documentation, such as the Unit Description and Alarm Troubleshooting Guides.

Multiuser Version

A server-resident multiuser version of NETSMART 500 is also available. Running on a Windows 2008 server, this separately licensed application supports up to 10 users logged in concurrently. This application is centrally managed, which saves time and effort during software upgrades.

NETSMART 500 System Requirements

Single User	Multiuser
<ul style="list-style-type: none"> • Windows XP Professional (SP 2), and Windows 7 Professional. • 2.4 GHz CPU • 500 MB available hard disk space • CD-ROM drive • LAN card and/or serial craft interface port and connection cable • 1024 x 768 resolution • Internet Explorer 8.0 or above, or Mozilla Firefox 3.0 or above. 	<ul style="list-style-type: none"> • Windows Server 2008 • 2.4 GHz CPU recommended • 4 GB RAM recommended • 4 GB available hard disk space • CD-ROM drive • 10/100 LAN card



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