TransNav
Management System

Key Features

- The TransNav architecture supports up to seven secondary TransNav servers that are synchronized to the primary TransNav server to maintain business continuity in the event of a failure of the primary server.
- TransNav server and client software are supported on Sun® Solaris and Microsoft® Windows®-based platforms
- Auto-discovery of network elements and services
- TL1 northbound interface for interoperability with popular TDM circuit fault management and test tools such as Spirent® REACT®, MegaSysTM TeleniumTM, and JDSU T3AS and CT650 CENTEST
- SNMP northbound interface for interoperability with Ethernet service performance management tools such as IBM® Tivoli® (NetCool®).

Security Management

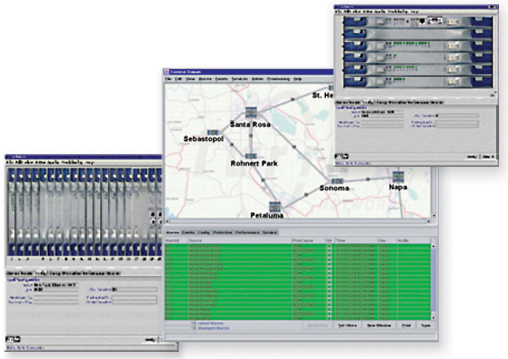
The TransNav system incorporates a role-based access control methodology enabling network operators to partition NE and network access privileges based on the role that the various network operations personnel have. In addition to full administrative access, users can be given restricted access to equipment or service configuration, fault management, report management or the ability to view all management functions without the ability to make changes.

TransNav™ Management System is a client/server-based advanced element and network manager that provides Fault, Configuration, Accounting, Performance and Security (FCAPS) management functions and supports end-to-end provisioning of both high-order and low-order services. Designed to comprehensively manage theTraverse® and TraverseEdge® multiservice transport platforms and the networks within which they operate, the TransNav system integrates smoothly into service providers' operations support system (OSS) infrastructure.

Intuitive Graphical User Interface (GUI)

The TransNav graphical user interface (GUI) supports operators and administrators who are located in a Network Operations Center (NOC) or in a remote location. This intuitive GUI supports point and click end-to-end provisioning leveraging an intelligent GMPLS-based control plane and provides several views that communicate network status:

- Map View is the start-up screen which displays all the nodes in a Traverse and TraverseEdge domain
- Shelf View displays all the cards in Traverse and TraverseEdge nodes and their associated ports
- Context-sensitive tabs provide information on alarms, events, configuration information, protection, and services. These tabs provide individual network elements or domain-wide information in Map View, and individual node, card or port information in Shelf View.



TransNav is a comprehensive fault, configuration, accounting, performance and security management system. The TransNav management system supports end-to-end service provisioning and manages aspects of Traverse, TraverseEdge and TransAccess® platforms.

Integrated Management

The TransNav system integrates into service provider network operations that include multi-vendor, multi-technology network elements and both third-party OSSs or internally developed OSSs. The TransNav system provides two key functions:

- Comprehensive management functionality for network elements and for the connectivity between them via GMPLS-based control plane
- Interoperability with third-party OSSs that provide fault management, alarm management and performance monitoring via TL1 and SNMP

TransNav enables the pre-provisioning of "virtual" nodes and services so individual network elements can be pre-provisioned prior to service activation. It also provides a persistent database on the Traverse nodes for stability and auto-discovery of both equipment and services. An intuitive, menu-driven command line interface (CLI) delivers command auto-complete with scripting capability.

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TransNav Management System

System Log Collection and Storage

The TransNav system collects a broad array of information that is stored in the TransNav database for reporting and analysis. These include:

- Service affecting user actions performed at the TransNav GUI, node-level CLI, or domain-level CLI
- Alarm and event history including performance management threshold crossing alerts
- Security logs denoting user's profile, sign-on and sign-off logs, and failed log-on attempts
- Performance management logging for both services and resource utilization per customized templates

TransNav Robust Support

TransNav leverages Intelligent, GMPLS-based Control Plane to support end-to-end service provisioning/activation and performance monitoring. TransNav provides an SNMP and TL1 northbound interface to connect to 3rd-party OSS tools. TransNav provides a service-centric view of the SONET/SDH, PDH (T1/T3, E1/E3), Wideband DCS, and Ethernet services.

Platform Support

Traverse	Full FCAPS management
TE-100	Full FCAPS management
TA-200	Alarms and PM collection
TE-50	Alarms and PM collection

Supported Standards

IETF	RFC 2863, RFC 2819, RFC 2665

Fault Management

Alarms
Link Fault Management
Enables user to provide facility and terminal loopbacks on PDH, SONET and SDH circuits

Service Fault Management
Reports connection failure between Ethernet ports for Ethernet Private Line services

Configuration Management

Service and Circuit Provisioning
Ability to pre-provision network elements and service before commissioning. Point and click graphic user interface (GUI) for hop-by-hop provisioning of high order (N x STS or N x STN) and low order (N x VT1.5) circuits as well as DS3/E3, DS1 and PDH services. Ability to configure NE and services via local NE CLI or GUI.

NE and Network Views
Ability to view NE shelf. Ability to create hierarchical views of NEs on a user provided geographical maps with ability to zoom in and out to see more or less NE details

Templates
Ability to create standard templates for Ethernet traffic management, alarms and performance monitoring that can be applied to any network elements or card in the network. Template configurations apply to relevant objects by default and are user configurable.

Traffic Engineering
Ability for user to let control plane find the best path for an end-to-end service (Loose Provisioning) or specify

Accounting Management

Inventory
Alphanumeric customer identification at the facility or service level Inventory collection and reporting for NE shelf and its cards, CLEI codes, software revision installed, NE location and contact name.

Software Rev. Control
Ability to schedule software upgrades immediately or based on time of day. Ability to revert

Performance Management

Collection and Reporting
PM history collected and reported in 15 minute and 24 hour intervals customizable in service templates

Security Management

Role Based Access Control
Provides the ability to define NE access privileges based on organizational functional roles such as Administrator, Configuration Manager, Fault Manager , Service Configuration Manager, Report Manager and Viewer

SNMP Access Security
ACLs used to restrict SNMP access to NE

Security Monitoring
Ability to provision and non-intrusively monitor circuit and service traffic for applications such as lawful intercept

TransNav Client System and Software Requirements:

The TransNav client can be installed on the TransNav server platform or on a separate Windows or Sun Solaris workstation:

Platform
Sun SPARC workstation or PC with network connection

Operating System (OS)
Sun Solaris 9 or 10, Windows Vista Windows XP Professional with service pack 1 or 2

CPU
1.8 GHz Intel® Celeron® or faster

RAM
4GB minimum

Drive Space
80GB minimum

TransNav Server Requirements

The TransNav server software is supported on Sun Solaris and Windows-based servers.

Small
Up to 50 NEs (Network Elements) or 10 users Unix Server: SUN SPARC Based Processor Windows Server: Dual Core Pentium Class Processor – 2.8GHz 80 GB Hard Drive, 4 GB RAM

Medium — Up to 100 NEs or 20 users
Unix Server: SUN SPARC Based Processor Windows Server: Dual Core Pentium Class Processor – 3.0GHz 80 GB Hard Drive, 4 GB RAM

Large — Up to 200 NEs or 30 users
Unix Server: SUN SPARC Based Processor Windows Server: Quad Core Xeon Class Processor – 2.0GHz 160 GB Hard Drive, 8 GB RAM

Extra Large — Over 200 NEs or 40 users
Unix Server: SUN SPARC Based Processor Windows Server: Quad Core Xeon Class Processor – 2.8GHz 160 GB Hard Drive, 16 GB RAM

Network Connection
One 10/100BaseT Ethernet card connection to DCN Ethernet port on shelf. Optional second Ethernet card connect to LAN or IP network for client connectivity

Database Backup
Local backup. Backup to remote storage recommended

Disaster Recovery
Support for up to 7 secondary TransNav servers that are synchronized to primary server

Operating System (OS)
Solaris: 9 or 10 Windows: XP Professional, Windows 2003 server

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