What is an Element Manager for Optical Networks?

- Fault Management –
  Alarm and Event capture and storage
- Configuration Management –
  Inventory and configuration capture, and storage
- Performance Management (PM) –
  PM data collected periodically
  PM data stored in association with NE
  PM data displayed in table
- Security Management –
  Wizard for adding new users
  Partitioning correlated with Domain Browser
  Audit Trail logs Client actions
The CTM Charter

- Manage all optical transport technologies
  - SONET
  - SDH
  - Metro DWDM
- Long Haul DWDM
- Manage complete end-to-end optical transport network
  - Access
  - Transport
  - Core

Operations Support System
(Order Management, Customer Care, Trouble Management, Billing, etc.)

- SNMP
- TL1
- CORBA
- SQL

Cisco Transport Manager
(Optical Transport Domain Manager)

CORBA, HTTP, TL1, SNMP, IOS CLI

Cisco Optical Transport Network

- ONS 15454
- ONS 15454
- ONS 15200

Cisco Management Portfolio

- Manage all networking technologies
  - Transport
  - IP
  - ATM
  - DSL
  - Wireless
  ...

Cisco Info Center
(Network Fault Management)

Cisco Provisioning Center
(Network Provisioning)

VPN Solution Center
(VPN Management)

Cisco Transport Manager
Cisco GSR Manager
Cisco WAN Manager
CiscoWorks 2000

Cisco IP + Optical Network

CORBA, HTTP, TL1, SNMP, IOS CLI

Cisco Provisioning Center
(Network Provisioning)

Cisco Info Center
(Network Fault Management)

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Presentation_ID.scr
Typical CTM R2.1 Application

CTM Product Structure
What Does CTM Consist of?
CTM Product Modules

- Cisco Transport Manager is a software product
  Based on industry-standard off-the-shelf platforms
  Sun, Oracle, Windows
- Cisco Transport Manager consists of
  CTM Client Software
  CTM Server Software
- CTM GateWay interface functions included in the server
  GateWay/TL1 and GateWay/SNMP

CTM Client

- A GUI application for all CTM functions
  Operator and server administrative functions
  Element management functions
- Typically installed on operator/technician machine
  Install as many instances as desired
  Number of concurrent sessions limited by software key
CTM Server

- Set of server application modules
- Provides the communications, processing, and storage functions of CTM
  - Listening for notifications
  - Polling for data updates
  - On-demand command/response processing
  - On-demand data storage and retrieval
  - Maintains information image of managed network
- Concurrent client communications

CTM GateWay

- “Northbound” EMS-to-NMS interface
  - Consistent with TMN/TMF layered architecture
  - Vehicle of integration with NMS/OSSs
- GateWay protocol options
  - GateWay/SNMP
    - Trap forwarding to SNMP managers
  - GateWay/TL1
    - Alarms, events, and PM forwarding to up to 4 TL1 OSs
CTM 2.1 Client GUI

Quick Tour

Domain Explorer

- Familiar Windows Explorer look-and-feel
- Tree control for rapid navigation and fault localization
- Icons for alarm status, operational state, and connectivity
- “Bubble up” alarm propagation
- Auto-discovered NEs placed in separate group
- Properties sheet details
- Launch remote console
Domain Map

- Geographic views of network
- Nested maps support "drill down" capabilities
- "Bubble-up" alarm status across groups and NEs
- Library of gif-based maps and icons provided
  
  - Customer can use own .gifs for maps and icons
- Selectable pre-/post-truncation of NE IDs

New NE Explorer
NE Explorer for ONS 15454 and ONS 15327

- NE Explorer menu item seamlessly launches Cisco Transport Controller
- CTC is also launched from Shelf View menu item

Alarm Browser

- Summary line provides network or nodal view
- “Legal pad” provides detailed alarm info
- Customizable view
- Filter on key criteria (Time, severity, NE ID, Port)
  - Toolbar buttons for quick filtering (Status, ACK)
- Flexible Acknowledgement
- Records exportable in TSV/CSV formats or HTML
Memory and Software Management

CTM Dashboard

- Hide all CTM open windows
- Management domain status “at a glance”
- “One-click“ access to
  - Domain Explorer
  - Alarm browser
  - All open CTM windows
- Animated alarm/event button
- Launch filtered alarm browser from alarm count field on dashboard
CTM EMS Benefits

• Raises network availability and quality
  Continuous surveillance; minimize network downtime
  Collects performance data for QoS/SLA assessment

• Lowers cost of operating optical network
  Facilitates workforce distribution
  Increases workforce productivity

• Enables full OSS automation
  Enables information and command flow-thru