

Ensemble Controller

Combining network management
with domain control

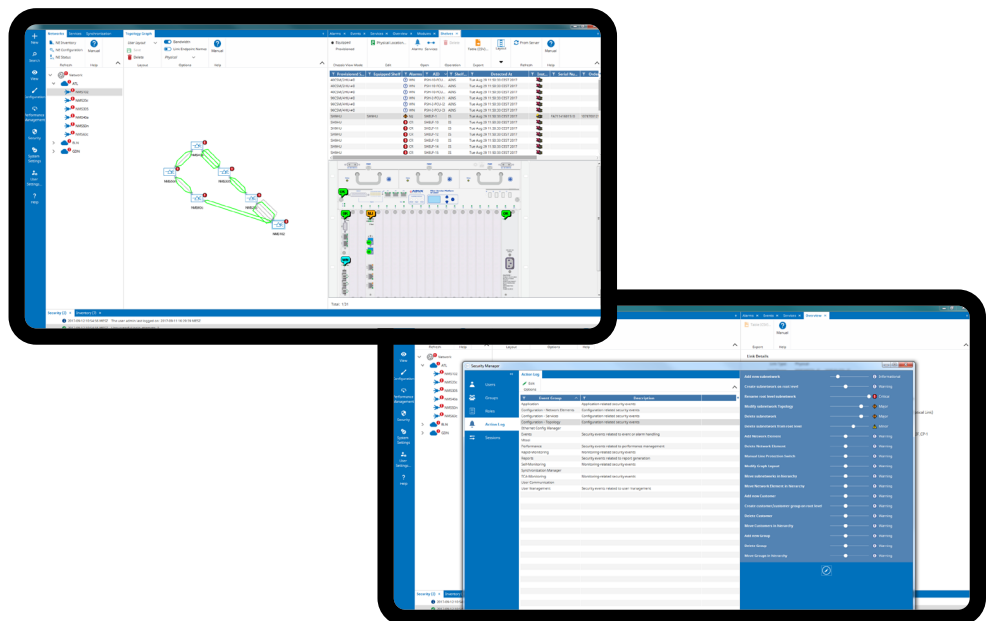
Benefits

- **Multi-technology management**
One field-proven tool for optical transport systems, packet networks and synchronization solutions
- **Performance management**
Collecting, storing and displaying of performance data for best quality and ensured SLAs
- **Fault management**
Simplified fault management resolving problems instantly by sophisticated sorting and filtering options
- **Technology-specific extensions**
Extensible with Ensemble "Directors" for enhanced operational efficiency
- **Open standardized northbound interfaces**
Simplifying integration with open-source and commercial multi-domain controllers
- **Proven, reliable and scalable**
Applied with more than 800 customers and designed to manage more than 100,000 network elements

Overview

With ever-increasing network complexity, communication service providers need management tools for intuitive and barrier-free operation, while open control interfaces need to enable simple integration into end-to-end orchestrators. A common solution for network management and domain control is a prerequisite for seamless migration from manual operations to automated control. Our Ensemble Controller provides value-adding modules for simplifying the planning and operation of multi-technology networks.

Our Ensemble Controller is a comprehensive network management solution for advanced operation and control of multi-technology networks. With a rich set of sophisticated features, it streamlines operational processes, helps to isolate faults, gathers performance data and delivers comprehensive reporting. Thanks to an intuitive graphical user interface (GUI) and multitude of sorting and filtering options, operational staff can easily and efficiently manage the network, no matter how big or complex it is. With our Ensemble Controller's automated procedures, even tedious and long processes, such as network element backups or software downloads, become child's play. Open SDN interfaces simplify the integration into overarching orchestrators for automated dissemination of abstracted resource information and network health as well as automated service activation.



ENSEMBLE CONTROLLER

High-level technical specifications

Visualization

- Intuitive, barrier-free point-and-click GUI
- Network topology view with automated topology detection
- Photo-realistic shelf display
- Multi-layer service display

Fault and alarm monitoring

- Automatic synchronization with network elements
- Alarm correlation and filtering
- User-friendly browsing, sorting, and filtering
- Trap flood protection

Network automation

- Resource discovery and service activation
- Simplified OSS/BSS integration using ONF T-API, MEF Presto, among others
- Data collection for AI/ML applications

Security

- Radius and TACACS+ authentication
- Extensive use of secure protocols with encryption
- User activity logging
- Optional four-eyes principle for critical actions

Housekeeping

- Extensive analysis tools
- Centralized software download to network elements
- Automatic backup and restoration of network element configuration
- Automatic backup of management data

Operational environment

- Server runs on Microsoft Windows, RedHat Linux OS, and virtualized servers
- Geographically redundant configuration
- Wide range of northbound interfaces

Applications in your network

- Advanced management and control for manual and automated service activation and assurance
- Centralized visibility and management of network infrastructure
- Integrated cross-layer management view for WDM/OTN and packet layer as well as synchronization network
- Controlling Adtran network domain through standard northbound SDN control interface

