

Ensemble Activator

Carrier-grade disaggregated network operating system

Benefits

- **Carrier-grade NOS**
Changing bare-metal switches into high-performance multi-layer packet switches, leveraging scale and economics of high-volume ODMs
- **Comprehensive Ethernet and IP protocols**
Combining Adtran competence in CE services with a proven and comprehensive set of IP and MPLS protocols for a wide range of underlay and overlay applications
- **Open standardized northbound interfaces**
Simplifying integration with open-source and commercial multi-domain controllers and end-to-end orchestrators
- **From data centers to public networks**
Leveraging data-center NOS technology in public transport networks with sophisticated OAM capabilities and automation
- **Applying open source tools**
Benefit from proven and well-established open source tools for efficient operation and maintenance of packet transport networks
- **Designed for high-growth markets**
Aligned with TIP Distributed Cell Site Gateway project requirements for demanding mobile transport networks

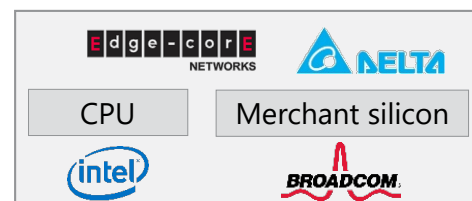
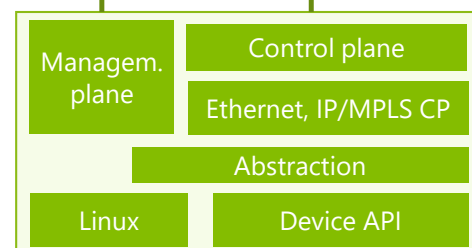
Overview

As innovation and growth in packet networks continues to accelerate, communication service providers (CSPs) no longer have time to wait for their vendors to come up with higher capacity devices that meet the latest feature requirements. Now there's a new way to grow networks that combines the agility of software-based feature development with the performance and economics of bare-metal switches. Scaling a network is now as simple as selecting a hardware component with higher capacity and installing the network operating system (NOS).

Our Ensemble Activator is a carrier-grade NOS for bare-metal switches, extending our comprehensive Ensemble software suite with a solution for open, scalable and agile packet networks. Built on Adtran's experience in the design and operation of transport networks, this solution is optimized for the operational needs of CSPs connecting customers to regional and central data centers. A rich set of CE 2.0- and MEF 3.0-compliant network interfaces is complemented with proven IP and MPLS protocols for the first true carrier-grade NOS. Our Ensemble Activator enables CSPs to grow their packet networks quickly and efficiently, closing distance and feature gaps between access networks and their data centers. This disaggregated NOS is managed by Adtran Ensemble Controller but can also easily be integrated through open SDN interfaces into standards-compliant orchestrators, networking and virtual hosting functionality at the customer premises, in the gateway between network clouds, and in the data center.



Secure NBIs



ENSEMBLE ACTIVATOR

High-level technical specifications

Ethernet connectivity

- CE 2.0- and MEF 3.0-compliant interfaces and services
- Comprehensive set of OAM and resilience capabilities
- QoS assurance with hierarchical policing and deep buffers

IP and MPLS protocols

- Highly scalable IPv4/IPv6 routing
- Supporting various IGP and EGP routing protocols
- MPLS signaling with LDP and RSVP
- L2 and L3 VPNs

HW compatibility

- Verified with Broadcom StrataDNX family for deep-buffer applications
- Open software architecture for adoption of other merchant silicon technologies
- Operated with bare-metal switches from industry-leading ODM vendors

Security and synchronization

- MACsec for securing data and management plane
- Access control and protected management communication using Radius and TACACS+, SSH
- Synchronization with SyncE and 1588

Open management & control

- Standardized NETCONF/YANG simplify integration into orchestrators
- Zero touch provisioning and mass ZTP installation with ONIE
- Prepared for intelligent control with telemetry streaming using gRPC / gNMI

Application domains

- Connecting regional data centers supported by comprehensive set of networking protocols
- Meeting scale, sync and security requirement of disaggregated cell site gateway

Applications in your network

Carrier Ethernet and IP networking on bare-metal switches

- Disaggregated cell site gateway, compliant with TIP DCSG specifications
- Connectivity to and among edge data centers
- Multi-tenant edge aggregation

