

Next Generation Hybrid Network Visibility Solution

Series 4000 Platform



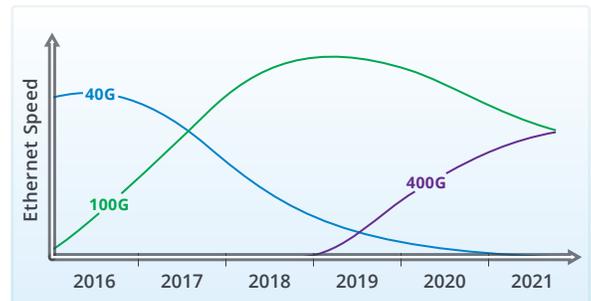
APCON's Series 4000 platform is designed to grow and accommodate unprecedented levels of bandwidth and enable network visibility for hybrid workloads running in all environments, including private cloud, public cloud, and on-premise infrastructure.

High Speed / High Density Network Visibility Challenges

Networks are increasingly complex and dense. Therefore maintaining visibility is a major challenge. Network traffic, speeds and capacity grow every year and network analysis tools proliferate. Tools that can't scale with throughput or handle diverse traffic flows don't maintain their ROI costing enterprises even more. Many data centers were designed to support 1-gigabit or 10-gigabit pathways between servers, routers and switches, but today's Ethernet road-map extends from 40-gigabit up through 100-gigabit, and 400-gigabit and even 1-terabit Ethernet loom within a few years.

Customers are requiring more ports and higher throughput to meet their imminent digital business goals.

Network Throughput Adoption



Challenges Driving the Need for Better Network Visibility



Migration to 40/100G architectures enabling exponential traffic flow



Large data throughput overwhelms current security tools potentially leading to exposure



Adoption of 400G is driving network monitoring innovations & challenges

Hybrid Visibility for Digital Business Transformation

C-level executives cite a number of roadblocks that were driving a feeling of confusion about Digital Business Transformation, such as a lack of alignment on digital priorities, difficulties integrating with existing infrastructure and processes, and a perceived lack of relevant skills. However, customers are still moving forward with both public and private cloud initiatives.



72%

72% pursuing a hybrid cloud computing strategy in 2018

40%

40% of organizations responded that cloud was a top investment¹

Bringing On Premise and Cloud Together

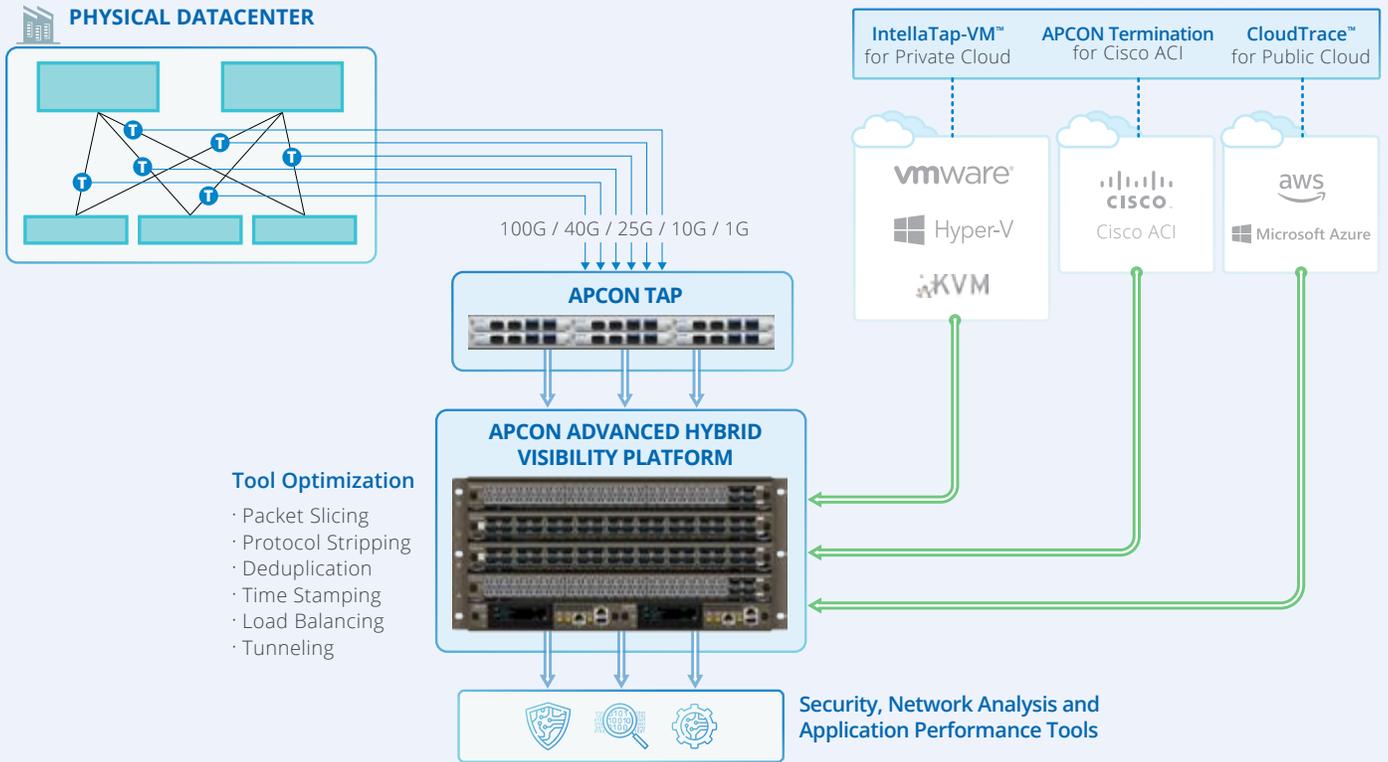
One of the difficulties integrating hybrid infrastructures is ensuring both the fidelity of the network traffic from all sources (on-premise, public & private cloud) and the clarity (filtering) of that traffic to the various security and performance monitoring tools.

Many workloads are being moved to public cloud services for geographic efficiencies, deployment speed and controlling up-front investment costs, but still need to be visible and monitored by the current security tool infrastructure and investment. Network visibility of east-west traffic is especially challenging for hyperscale datacenter architectures that expand and contrast with the needs of the business.

These dynamics introduce complexities in maintaining packet-level visibility to closely monitor the network for application performance, network stability and security threats.

1. Gartner (Infrastructure, Operations Management, and Data Center Operations Conference 2018)

The APCON Series 4000 Hybrid Visibility Solution



The APCON Series 4000 Solution Capabilities



Optical TAPs

Complete line of 1G, 10G, 40G and 100G optical TAPs enabling 100% visibility without impact to network device performance.



Series 4000 Network Visibility Platform

Introducing the world's highest capacity visibility platform offering unprecedented scale and access to critical Enterprise monitor data.



Virtual TAPs

Capture network traffic from Virtual Private Cloud and Public Cloud environments.



APCON Management Interface

The intuitive user interface allows you to easily maintain control and visibility over your hybrid network environment.

Introducing the World's Highest Capacity Visibility Platform

The **Series 4000 Platform** provides a fully meshed network greatly increasing port density and bandwidth over previous generation technologies. Customers require a visibility infrastructure that can keep up with the additional bandwidth needed for video streaming, electronic commerce, social networking and other advanced applications. The APCON Series 4000 Platform delivers higher port densities optimizing IT efficiencies, maximizing ROI and existing network infrastructure. APCON's Series 4000 also delivers instant data access and virtual/cloud monitoring integration for visibility to secure critical workloads.

It Delivers

- **End-to-end infrastructure** that enables monitoring, securing and analyzing of physical, virtual and cloud networks.
- **Intuitive software** for configuration and management.
- **Advanced features** — aggregate, filter, load balance, and perform packet processing.
- **Chassis** with expandable network fabric cards for up to 400G across the backplane.
- **Blades** — 36 ports at 100G and 52 ports at 48 × 25G and 4 × 100G.

Series 4000 Platform



3RU Series 4000 Chassis

Up to 2 blades



5RU Series 4000 Chassis

Up to 4 blades

Series 4000 Chassis

The **APCON Series 4000 Chassis** consist of the ACI-4020-AC 3RU and the ACI-4040-AC 5RU chassis, the next generation of APCON network visibility appliances. Up to two front-facing controller cards with touchscreen can be installed to provide

fail-over operation for uninterrupted continuity. Both the ACI-4020-AC and the ACI-4040-AC can be configured with up to six next-generation switch fabric cards (minimum one included in

ACI-4020-AC chassis and two included in ACI-4040-AC chassis), providing full mesh connectivity with the blades through the backplane, and offering a dramatic increase in bandwidth potential, up to five times over that achieved in previous generation products. The more fabric cards you install, the higher the blade-to-blade traffic bandwidth.



Series 4000 Blades

The APCON Series 4000 consist of the ACI-4030-E36 and the ACI-4030-E52 Blades, IntellaView monitoring blades' aggregation and filtering technology make it easy to monitor high-speed networks. With the broadest range of advanced features including time stamping, packet slicing, multi-stage filtering, data rate conversion, protocol stripping and load balancing, network engineers are confident the right traffic is delivered to the right tools all the time.

40G and 100G Port Density

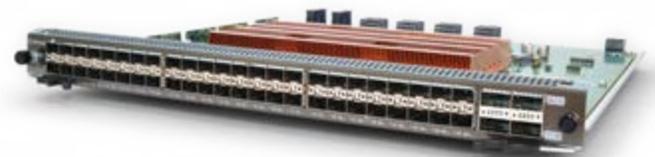
The E36-1 blade is a highly flexible packet aggregation switch that includes port and density options.



- The E36-1 blade support $36 \times 40/100G$ front panel ports capable of supporting 40G and 100G QSFP28 fiber modules.
- The QSFP28 ports also support port breakout. Port breakout breaks one 40G port into $4 \times 1/10Gbps$ ports or one 100G port into $4 \times 25G$ ports.

1/10/25G and 100G Port Density

The E52-1 blade is a highly flexible packet aggregation switch that includes the following port and density options.



- 48 SFP+ ports capable of supporting 1G, 10G, or 25G.
- 4 QSFP28 ports capable of supporting 40G or 100G.
- The QSFP28 ports also support port breakout. Port breakout breaks a 40G port into $4 \times 10Gbps$ ports or a 100G port into $4 \times 25Gbps$ ports using breakout cables.

IntellaView™ Management Console

Intuitive Network Visibility Management Software

Advanced Features

Access Control Lists (ACL) Filtering

The E36 & E52 blades support filtering utilizing access control lists (ACL) filters. An ACL filter works by selectively permitting or denying traffic based on specified criteria. Filtering of the following is supported:

- Layer 2: MAC, VLAN, MPLS, or Ethertype
- Layer 3: Source and Destination IPv4 and IPv6 sessions, DSCP, or IP Protocol
- Layer 4: Port Number or TCP Control

Flows

The E36 & E52 blades can be configured to supports the following types of flows between ports:

- One-to-One
- One-to-Many
- Many-to-Many
- Many-to-One
- One-to-load balance group (LBG)
- Many-to-load balance group (LBG)

The following modes are supported in each of the above flow types:

- Standard flows
- Aggregated TAP flows
- Duplex flows

Forward Error Correction (FEC)

FEC is supported on a per port basis, in compliance with:

- 802.3bj Draft 1.3 clause 91 Reed-Solomon for 100GE
- 802.3bj Draft 1.3 clause 91 Reed-Solomon FEC with adjustments made by 25G Ethernet Consortium for 25GE

Enabling, disabling, and choosing which FEC mode is available and is performed through either the CLI or GUI.

Load Balancing

The E36 & E52 blades support egress load balance groups (LBGs) of up to 36 ports.

Applications

The following applications are supported, through either the CLI or GUI:

- Time Stamping – The on-board processor can do time stamping on incoming packets.
- Tunnel Termination/De-Encapsulation – tunneling can be configured through either the Series 4000 CLI or IntellaView.
- Protocol Header Stripping – All ports are able to strip the following protocol header types:
 - VLAN
 - Fabric Path
 - VNTag
 - GTP
 - MPLS
 - VXLAN
 - GRE
 - ERSPAN for Cisco ACI
- Pipeline is programmable to allow expansion to other protocols.

IntellaView™ Management Console

Intuitive Network Visibility Management Software

IntellaView delivers remote enterprise management of the entire APCON infrastructure from a single screen. View the entire network, including system status and summary of any events. The best-in-class, easy-to-use IntellaView Graphical User Interface (GUI) saves IT resources by notifying designated users of alert conditions, analyze network traffic using RMON statistics, schedule and implement firmware updates in batch mode, and managing user accounts.

Features

The IntellaView GUI software provides the following set of features:

- **Traffic Maps**

Simply visualize your entire network, identify traffic patterns and quickly update access control lists.

- **Traffic Flows**

Promptly address network traffic to the appropriate security and monitoring tools.

The following flow types are supported:

- One-to-One
- One-to-Many
- Many-to-Many
- Many-to-One
- One-to-load balance group (LBG)
- Many-to-load balance group (LBG)

- **Port Statistics**

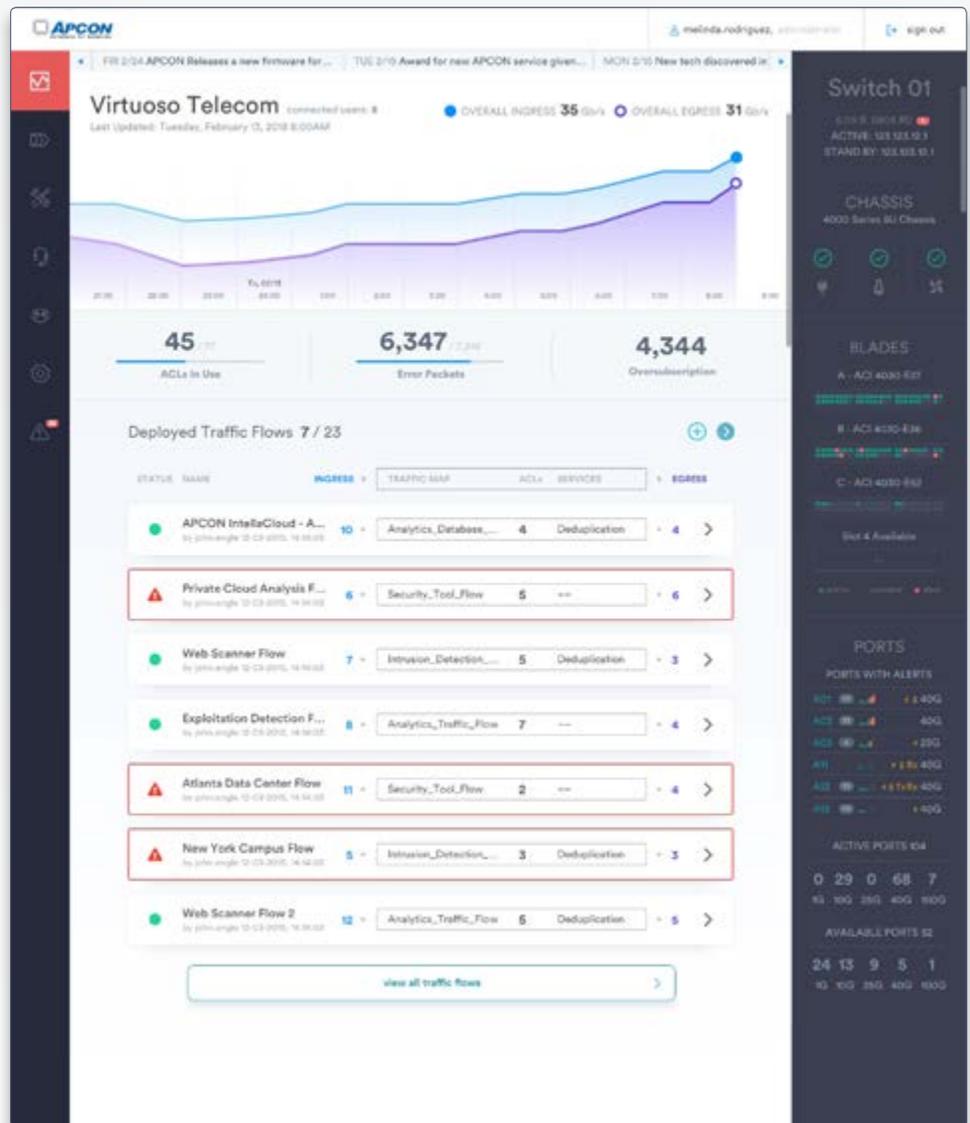
View statistics from all or specific ports on all or specific blades installed in the switch in one screen.

- **Access Control Lists (ACL) Filtering**

Easily and selectively permit or deny network traffic by individual ingress or egress ports or to an entire ingress or egress traffic flow.

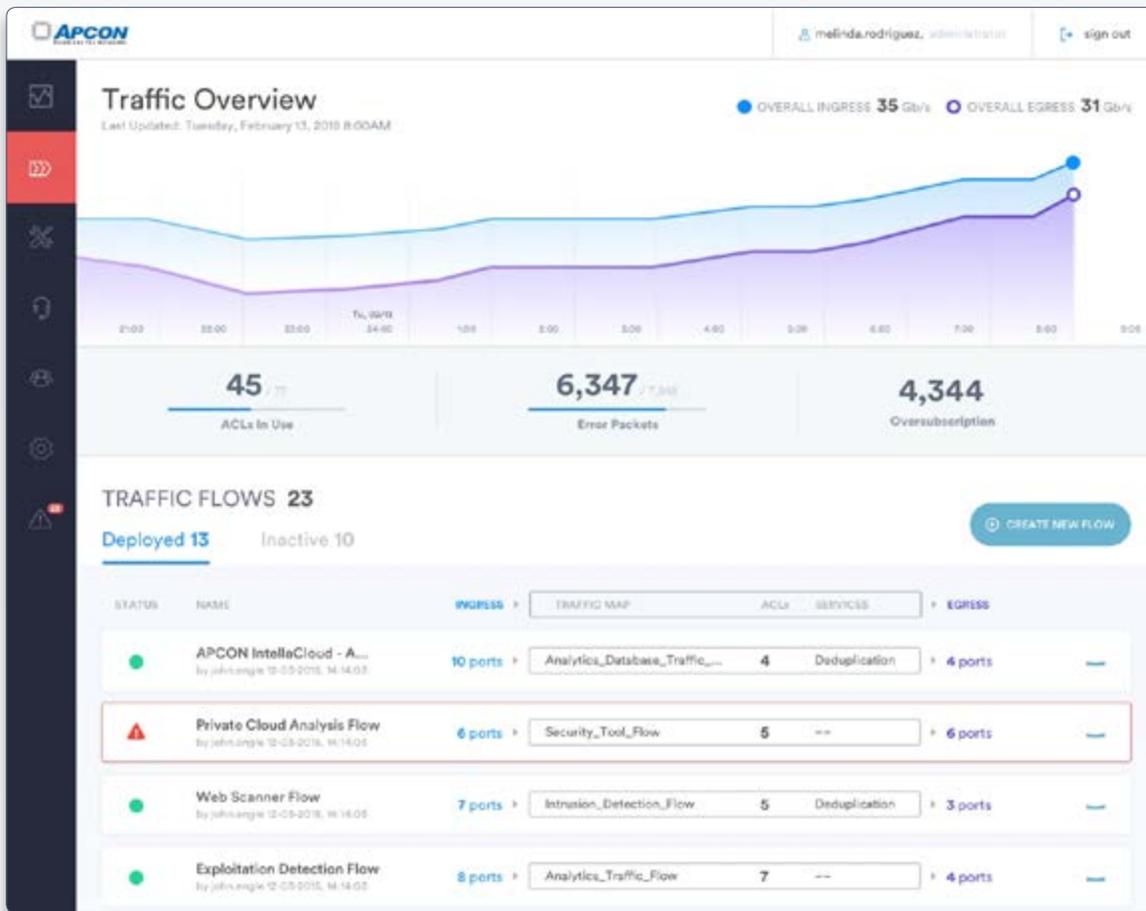
- **Port Properties**

Identify overall port health, port configurations, and port tags for maximum control over traffic flow.



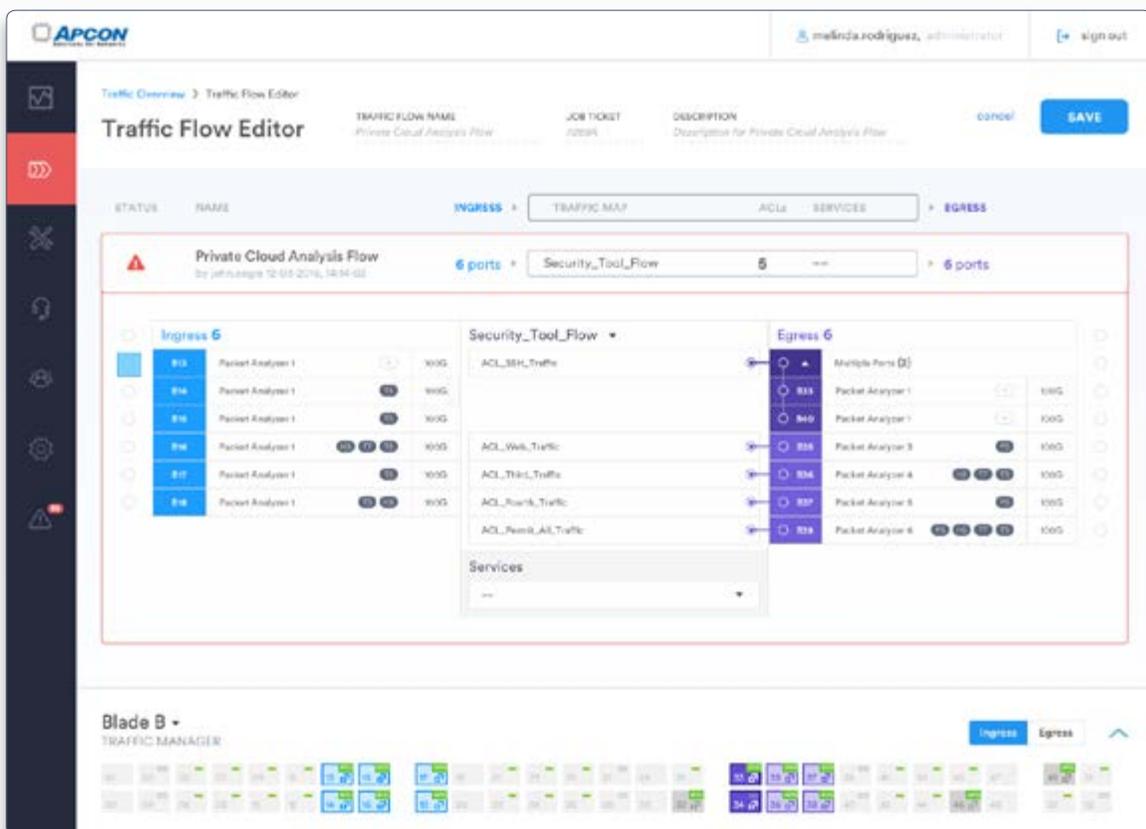
Dashboard

Provides a graphical representation of the overall Ingress and Egress bandwidth, as well as a list of Deployed and Inactive Traffic Flows configured on the switch.



Traffic Flows

Provides a list of Deployed and Inactive Traffic Flows.



Traffic Flow Customization and ACL Filtering

Access Control Lists (ACLs) filter network traffic by controlling whether packets are forwarded or blocked. The Series 4000 platform examines each packet to determine whether to permit or deny the packet, based on criteria specified within the ACL.



The APCON Difference

APCON leverages its proprietary IP and deep expertise to provide flexible, focused solutions across

- Government
- Healthcare
- Higher Education
- Financial Services
- Manufacturing
- Telecommunications

APCON solutions provide the flexibility and means to gain visibility to their data more efficiently, resulting in savings across the board – including time, resources and maintenance.



Service and Support

APCON's professional services team of certified engineers have years of experience optimizing network visibility strategies for businesses across the globe. In addition to providing installation assistance of existing analysis tools, this team proudly provides around the clock troubleshooting services and support.



About APCON

A privately held corporation, APCON is headquartered near Portland, Oregon, where it has operated since 1993. APCON's in-house staff manages product design and development, manufacturing, quality assurance and final testing, customer training and long-term servicing of its solutions – whether for a system with a single switch or a global installation that spans across multiple geographical or cloud locations.

