

IntellaView Platform

NEXT-GENERATION HYBRID NETWORK VISIBILITY SOLUTION



THE INTELLAVIEW PLATFORM

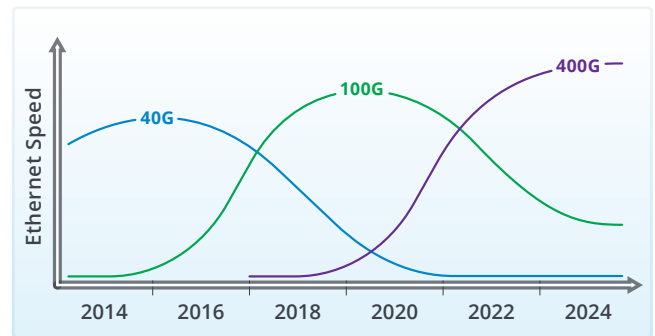
APCON's next-generation hybrid network visibility solution is designed to accommodate unprecedented levels of bandwidth and enable network visibility for hybrid workloads running in all environments, including private cloud, public cloud, and on-premises infrastructures.

HIGH SPEED / HIGH DENSITY NETWORK VISIBILITY CHALLENGES

Networks are increasingly complex and dense. Therefore maintaining visibility is a significant 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 1G or 10G pathways between servers, routers, and switches, but today's Ethernet roadmap extends to 40G and 100G, while 400G and even one terabit Ethernet loom within a few years.

Customers today require 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



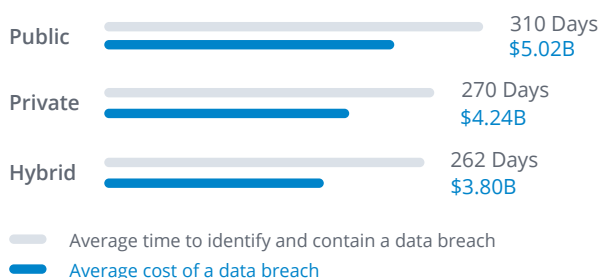
Large data throughput overwhelms current security tools, potentially leading to exposure



Adoption of 400G is driving network monitoring innovations and challenges

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

Data Breach Averages for Cloud-Based Models¹



1. IBM Security (Cost of a Data Breach Report 2022)

HYBRID VISIBILITY FOR DIGITAL BUSINESS TRANSFORMATION

C-level executives cite many roadblocks that drive 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.

Bringing On-Premises and Cloud Together

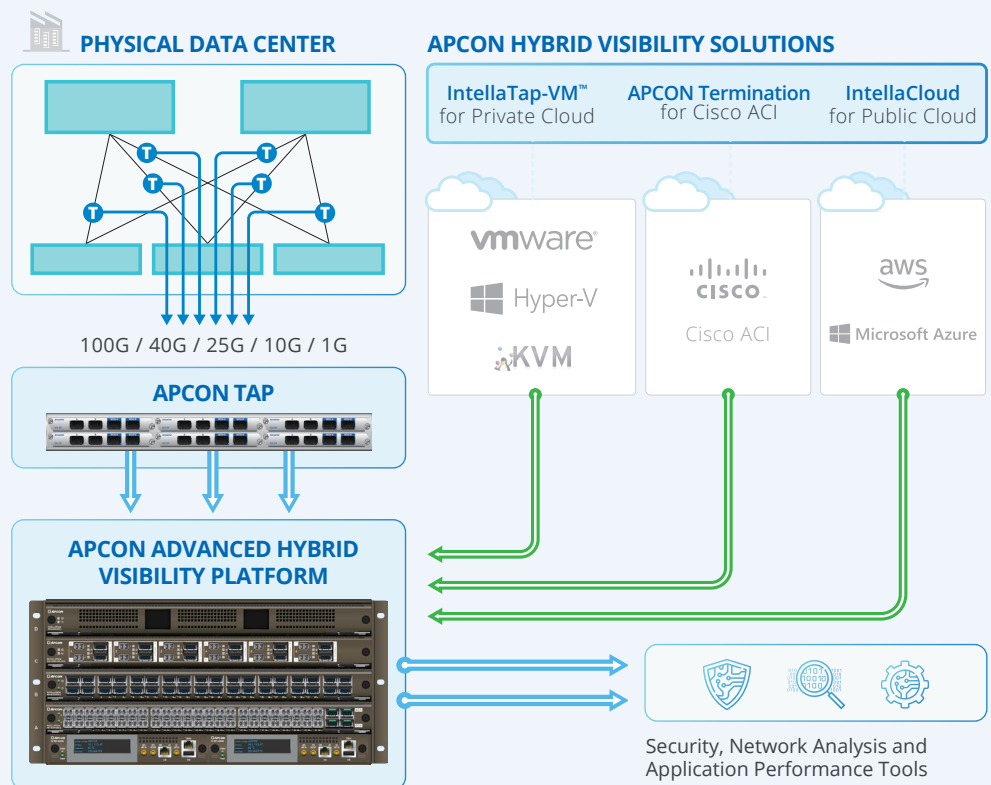
One challenge of integrating hybrid infrastructures is ensuring both the fidelity of the network traffic from all sources (on-premises, public & private cloud) and the clarity (filtering) of that traffic to the various security and performance monitoring tools. Many workloads are moved to public cloud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

The network visibility of east-west traffic is especially challenging for hyperscale data center architectures that expand and contract with business needs. Challenges such as these can lead to costly and timely vulnerabilities, which is why a hybrid visibility model is recommended.

INTELLAVIEW PLATFORM

Hybrid Visibility Solution

The IntellaView Platform provides fully meshed connectivity that greatly increases 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 IntellaView Platform delivers high port density that optimizes IT efficiencies and maximizes ROI of existing network infrastructure. The IntellaView Platform also delivers instant data access and virtual/cloud monitoring integration for visibility to secure critical workloads.



The APCON IntellaView Solution Capabilities



Optical TAPs

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



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.

World's Highest Capacity Visibility Platform

The APCON IntellaView 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 data-intensive applications (such as IoT, AI, and Big Data).

- **End-to-end infrastructure** — enable monitoring, securing and analyzing of physical, virtual, and cloud networks.
- **Intuitive software** — configure and manage blades/switches.
- **Chassis** — high availability, high capacity, and fabric cards for high blade-to-blade traffic bandwidth.

The APCON IntellaView Platform delivers higher port densities, that optimize existing network infrastructure, IT efficiencies and ROI. IntellaView also delivers instant data access and virtual/cloud monitoring integration for visibility to secure critical workloads.

- **Easy Management and Integration** — SNMP support for traffic statistics and REST API for custom integrations.
- **Advanced features** — aggregate, filter, load balance, and advanced packet processing such as deduplication, protocol header stripping, packet slicing, tunnel termination, tunnel initiation, and NetFlow Generation (with HyperEngine Blade installed).

INTELLAVIEW CHASSIS

APCON provides affordable and scalable technology solutions for IT teams looking to efficiently aggregate, filter, and send traffic to monitoring tools.

The Intellaview platform consists of three multi-slot chassis the **ACI-4020-AC 3RU**, **ACI-4040-AC 5RU**, and **ACI-4080-AC 9RU** which all include the options for multiple controller cards and fabric cards. The two front-facing controller cards come with touchscreens and provide fail-over operation for uninterrupted continuity.

These chassis can also be configured with up to six next-generation switch fabric cards, providing full mesh connectivity between the blades and offering a dramatic increase in bandwidth potential — up to five times over the previous-generation products. By installing more fabric cards, you gain more blade-to-blade traffic bandwidth.

The IntellaView platform also features a single-slot chassis, **ACI-4010-AC 1.5RU**, that is capable of utilizing any of the IntellaView blade options. It has the controller function integrated into the chassis for maximum space efficiency in those off-site locations or top-of-rack settings.



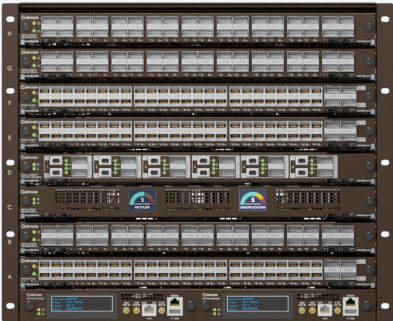
1.5RU | ACI-4010-AC
(Up to 1 blade)



3RU | ACI-4020-AC
(Up to 2 blades)



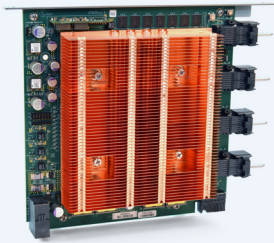
5RU | ACI-4040-AC
(Up to 3 blades)



9RU | ACI-4080-AC 9RU
(Up to 8 blades)



Controller Card
(Available on 3RU, 5RU, 9RU)



Fabric Card
(5RU example)

TOP-OF-RACK SOLUTION

The **IntellaView EdgeSwitch** is a cost-efficient and small footprint solution that organizations of any size can deploy for essential network visibility technology. Whether there is a need to reduce cabling costs, improve traffic aggregation efficiency to security tools, or both, the IntellaView EdgeSwitch scales to meet your business needs.

The IntellaView EdgeSwitch is a high-density 1RU switch system with 32 ports of 40G/100G Ethernet capability that IT teams can use as either a standalone or end-of-row solution to enable efficient traffic aggregation, filtering, load balancing, and port tagging.



ACI-4432-EDG-1

Port Density

32 x QSFP28 ports capable of supporting 40G/100G
Breakout Mode: Supports up to 128 x 10G/25G ports
The QSFP28 ports also support port breakout.
A 40G port breaks into 4 x 10G ports or a 100G port breaks into 4 x 25G ports using breakout cables.

Features

Aggregation; Filtering; Port Tagging;
Load Balancing; Trunking to IntellaView

Management

- 10/100/1000 BASE-T Ethernet Port
- RJ45 Serial Console Port
- IntellaView GUI
- CLI, REST, SNMP

INTELLAVIEW BLADES

The IntellaView blades lineup consists of the **ACI-4030-E52**, **ACI-4030-E36**, **ACI-4033**, and **ACI-4034** blades with aggregation and filtering technologies that make it easy to monitor high-speed networks. With the broadest range of advanced features including packet slicing, filtering, data rate conversion, protocol stripping, load balancing, port tagging, tunnel termination, and packet deduplication (ACI-4030-E36-2 only), network engineers are confident the right traffic is delivered to the right tools at all times.

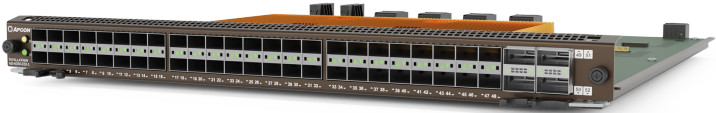
The IntellaView E52 Aggregation Blade is a highly-flexible packet aggregation switch capable of multiple configurations and speeds to meet your port density needs.

The E52 blade boasts a robust menu of services like packet processing, packet slicing, and protocol stripping—all supported at full line rate on every port. With options like tunnel initiation/termination and Access Control Lists (ACLs) that help filter traffic as needed, network operators can direct optimized traffic of interest to the specific tools that maintain network functionality and safety.

The IntellaView E36 Aggregation Blade delivers 400G of packet deduplication with the mezzanine card. Port tagging, packet slicing, and protocol stripping occur at full line rate on every port (10G / 25G / 40G / 100G speeds). With the packets optimized for the receiving appliances, operators can mitigate issues like oversubscription and dropped packets.

The IntellaView HyperEngine Blade delivers advanced features for ultra-high-speed network infrastructure. It adds superior, industry-leading processing power (600Gbps) to the IntellaView platform for real-time packet processing and enhanced network visibility with significantly increased efficiency and effectiveness of the network security, analytics, and performance monitoring solutions.

The IntellaView Optical Bypass TAP Blade allows users to tap six 10G / 25G / 40G / 100G segments. The blade instantly bypasses non-functioning tools, helping IT teams eliminate network downtime and improve performance. Heartbeat monitoring detects tool failover in milliseconds to highlight the health of security appliances. Additionally, tool life spans are extended by balancing their data loads through load balance groups (LBGs).



ACI-4030-E52

Ports Availability	48 x SFP+ ports capable of supporting 1G/10G/25G
	4 x QSFP28 ports capable of supporting 40G/100G
	Breakout Mode: Supports up to 64 x 10G/25G ports
The QSFP28 ports also support port breakout. A 40G port breaks into 4 x 10G ports or a 100G port breaks into 4 x 25G ports using breakout cables.	



ACI-4030-E36

Ports Availability	36 x QSFP28 ports capable of supporting 40G/100G
	Breakout Mode: Supports up to 144 x 10G/25G ports
	The QSFP28 ports also support port breakout. A 40G port breaks into 4 x 10G ports or a 100G port breaks into 4 x 25G ports using breakout cables.



ACI-4033

Performance	Up to 6 service engines; total up to 600Gbps
Memory	64GB of DDR4 per service engine
Advanced Features	Deduplication: ACI-9330-002; NetFlow Generation: ACI-9330-004



ACI-4034

Network Links	Six Optical Bypass Taps
Network Ports	Six pairs of 40G or 100G ports Fixed Multimode (MPO or LC) or Single mode (LC) connectors (model specific)
Appliance Ports	Six pairs of 40G/100G QSFP28 ports Breakout Mode: Supports up to 24 pairs of 10G/25G ports

INTUITIVE WEB-BASED GUI FOR NETWORK VISIBILITY

Access Control Lists (ACL) Filtering	<p>The E36, E52, and Optical Bypass 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:</p> <ul style="list-style-type: none"> • 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
Connections	<p>The E36 & E52 blades can be configured to support the following types of connections between ports:</p> <ul style="list-style-type: none"> • One-to-One • One-to-Many • Many-to-One • Many-to-Many • One-to-load balance group (LBG) • Many-to-load balance group (LBG) <p>The following modes are supported in each of the above connection types:</p> <ul style="list-style-type: none"> • Standard connections • Aggregated TAP connections • Duplex connections
Forward Error Correction (FEC)	<p>FEC is supported on a per port basis, in compliance with:</p> <ul style="list-style-type: none"> • Reed-Solomon for 100GE • Reed-Solomon and Fire Codes for 25GE <p>Enabling, disabling, and choosing which FEC mode is available and performed through either the CLI or GUI.</p>
Load Balancing	<p>The E36, E52, and Optical Bypass blades support egress load balance groups (LBGs).</p>
Features	<p>The following features are supported through either the CLI or GUI:</p> <ul style="list-style-type: none"> • Tunnel Initiation – GRE • Tunnel Termination/De-Encapsulation – ERSPAN, GRE, and VxLAN • Packet Slicing • Packet-Aware Slicing with optional Deduplication (available on the ACI-4030-E36-2 blade) • Session-Aware Slicing (available on the HyperEngine Blade) • Deduplication • Port Tagging • Netflow (with HyperEngine Blade installed) • Pattern Matching (with HyperEngine Blade installed) • Traffic Shaping (with HyperEngine Blade installed) • Application Filtering (with HyperEngine Blade installed) • Protocol Header Stripping – All ports can strip the following protocol header types: <ul style="list-style-type: none"> – GRE – NVGRE – VxLAN – VLAN – ERSPAN for Cisco ACI – Fabric Path – MPLS – MPLS over GRE – MPLS PWE (Pseudo Wire Emulation)

IntellaView: Single-Switch Management Interface

IntellaView, a best-in-class, easy-to-use Graphical User Interface (GUI), offers IT resources an easy way to build, save, view, and recall various SPANS/TAPs connections to the IntellaView platform.

Users also control the connections between the IntellaView blades and chassis and the network performance monitoring and security tools. The interface delivers intuitive provisioning of large, high-port-count network monitoring architectures.

Access Control Lists (ACLs) filter network traffic by controlling whether packets are forwarded or blocked based on criteria specified within the ACL analytics and performance monitoring solutions.

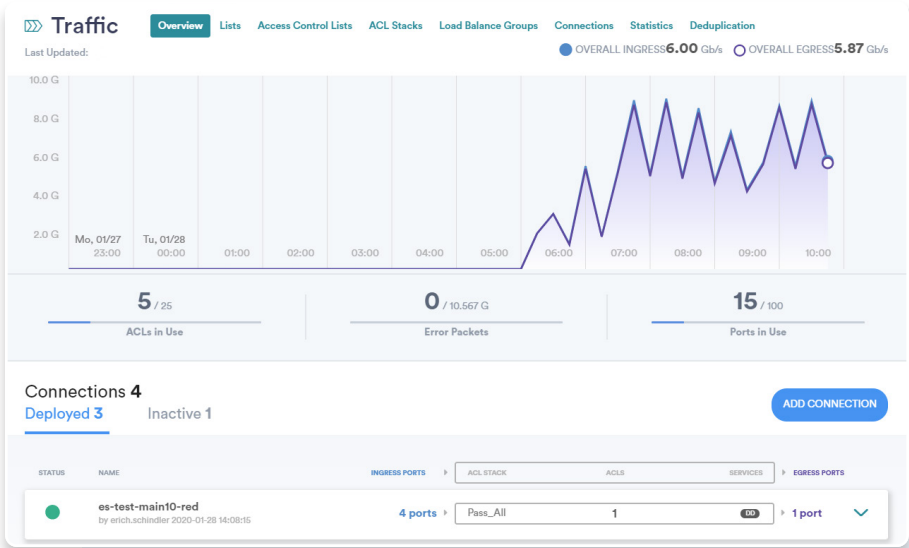
IntellaView Advanced: Multi-Switch Management Interface

IntellaView Advanced adds the capability to manage various settings of up to five IntellaView switches with a single user login. It allows users to clone settings and permissions to multiple IntellaView blades and chassis for easy setup. This intuitive software offers streamlined switch-level maintenance including routine tasks such as backing up and restoring switch settings, and pushing a scheduled software upgrade to a maximum of five IntellaView switches.



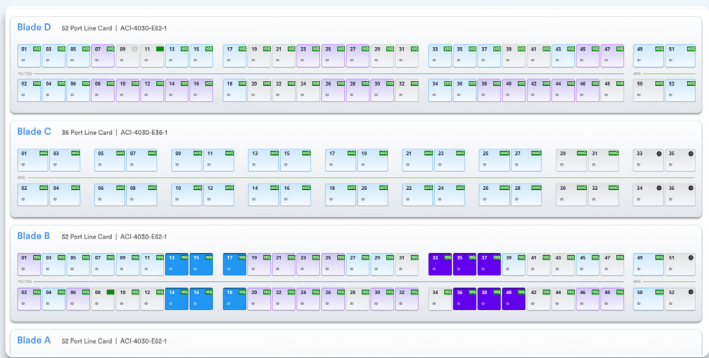
WiFi Compatible

With a WiFi connection enabled, users also have the flexibility to quickly configure and manage their IntellaView platform with a laptop or tablet through the IntellaView management interface.



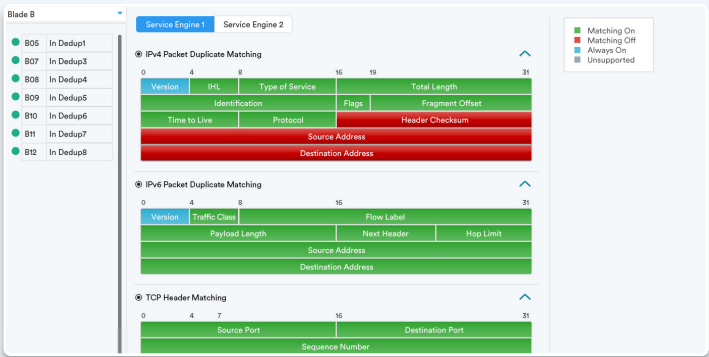
Traffic Overview

Provides a list of Deployed and Inactive Traffic Connections



Connections

Flexible configuration of traffic connections of the blades



Deduplication

Full customization of duplicate match conditions and configurable window size in milliseconds



INTELLAVIEW ENTERPRISE NEW MULTI-SWITCH MANAGEMENT SOFTWARE

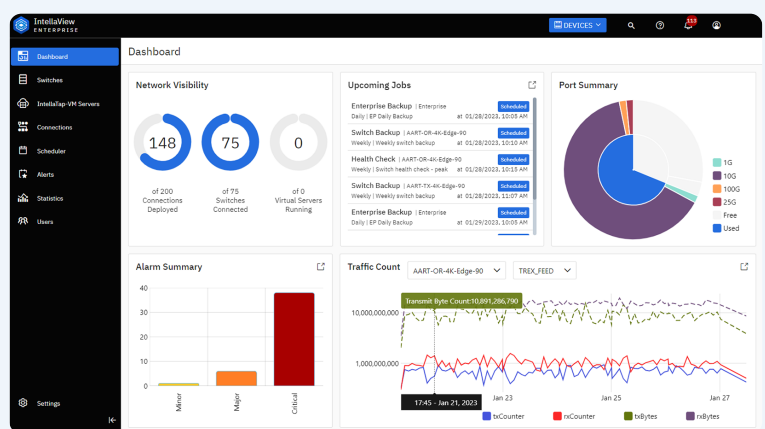
APCON introduces the IntellaView Enterprise platform, a secured HTML5-based graphical user interface that enables centralized visibility and network management — including total access to every APCON switch. IntellaView Enterprise includes the features that our customers have grown to know, and have made leaps in adding new features and enhancements.

The advanced dashboard is dynamic and constrains the information displayed to the switches selected in the Devices selection set. The Dashboard includes widgets that provide a graphical, high-level overview of important activity, including:

- **Network Visibility** (Active Connection, Switches, Virtual Server)
- **Upcoming Jobs** (Scheduler Widget)
- **Port Summary** (Port Availability Widget)
- **Alarm Summary** (Alarm Graphic Widget)
- **Traffic Count** (Traffic Graphs Widget)

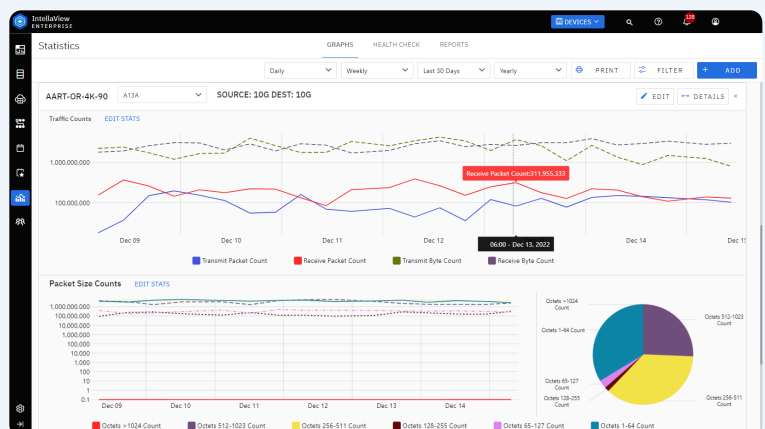
IntellaView Enterprise comes with numerous enhancements and new features. On the Alerts screen, customers can **acknowledge and/or mask** (dismiss) an active alarm for a specific instance on the network. A new Statistics page provides real-time and historical data that are accessible topically and graphically, and workflows are completed navigationally. Users have access to a collection of customizable, statistical graph templates for frequently needed data graphs.

A new Devices drop-down at the top-right of every menu bar lists all switches in the network and is demonstrative to the information displayed, control, and switch management within Enterprise.



The screenshot shows the IntellaView Enterprise Alerts screen. It displays a table of active alarms with columns for Device, Alarm Type, Date & Time, Severity, Group, Alarm Description, Acknowledge, and Mask. The table lists various alarms such as 'IntellaView Server lost', 'Power Supply failed or', 'Bypass switch blade fr', and 'IntellaView Server lost'.

Device	Alarm Type	Date & Time	Severity	Group	Alarm Description	Acknowledge	Mask
A1040-WFQ-SHS-4K	IntellaView Server lost	12/06/2022, 4:13 AM	Critical	Enterprise	Enterprise 10.37.60...	<input type="checkbox"/>	<input type="checkbox"/>
AART-OR-4K-SRU-80	Power Supply failed or	12/06/2022, 4:13 AM	Major	Chassis	Power Supply 1	<input type="checkbox"/>	<input type="checkbox"/>
TX08-5874-XR-597...	Power Supply failed or	12/05/2022, 10:56 AM	Major	Chassis	Power Supply 4	<input type="checkbox"/>	<input type="checkbox"/>
SR-0994-XR-645-4...	Power Supply failed or	12/05/2022, 10:56 AM	Major	Chassis	Power Supply 3	<input type="checkbox"/>	<input type="checkbox"/>
AART-OR-3072X...	Bypass switch blade fr	12/05/2022, 10:56 AM	Major	Port	Port D3N3	<input type="checkbox"/>	<input type="checkbox"/>
UPR8-3144-XR-180...	Bypass switch blade fr	12/05/2022, 10:56 AM	Major	Port	Port D3N1	<input type="checkbox"/>	<input type="checkbox"/>
AART-OR-4K-SRU-80	Bypass switch blade fr	12/05/2022, 10:56 AM	Major	Port	Port D3N2	<input type="checkbox"/>	<input type="checkbox"/>
SHB-TX-4K-5455...	Bypass switch blade fr	12/05/2022, 10:56 AM	Major	Port	Port D3N5	<input type="checkbox"/>	<input type="checkbox"/>
TXUPR-2310-612W	IntellaView Server lost	12/05/2022, 9:08 AM	Critical	Enterprise	Enterprise 10.36.11...	<input type="checkbox"/>	<input type="checkbox"/>
ALY-AND-9805-4K-Q	Power Supply failed or	12/05/2022, 9:15 AM	Major	Chassis	Power Supply 4	<input type="checkbox"/>	<input type="checkbox"/>



COMPARING MULTI-SWITCH MANAGEMENT SOFTWARE

Features	Titan 4.05	Enterprise 5.0	Enterprise 5.01 (Coming June 2023)
Switch Firmware Management	✓	✓ +	✓ +
Dynamic Dashboards (New)	Static Only	✓	✓ +
Alarm & Event Management (New)	View Only	✓	✓ +
Connections - Advanced Views	Basic Only	✓	✓
HyperEngine Services	✓	✓ +	✓ +
Advanced Scheduler (New)	— Basic Only	✓ Yes (REST Templates)	✓ + Yes (REST Templates, Reports, Connections)
Connection Statistics (New)	—	✓	✓
Port Statistics	✓	✓ +	✓ +
Port Management	✓	✓ +	✓ +
Port Groups Reconciliation (New)	—	✓	✓
Reports	✓	—	✓
Health Check	✓	✓ +	✓ +
Filter Manager	✓	✓	✓
SSL Certificate Management (New)	—	✓	✓
License Manager (New)	—	✓	✓
Centralized Internal User Management	3K and IntellaView (Limited)	3K and IntellaView	3K and IntellaView
High Availability	✓	✓	✓
IntellaTAP-VM	✓	—	✓ +
OS Support	Windows, Linux, CentOS, and RHEL 7.X	Windows	Windows, Linux, Alma, and RHEL 8.X
Embedded Database Support	✓	✓	✓
Remote Database Support	✓	—	— Projected for 5.02
Tool Support	—	—	— Projected for 5.02

— Feature Not Available

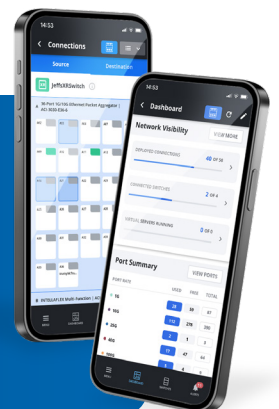
✓ Feature Available

✓ + Significant Update

ON-THE-GO SOLUTION

INTELLAVIEW MOBILE APP

With Bluetooth enabled, the IntellaView blades and chassis can be accessed and configured using tablets or smartphones through the IntellaView Mobile App. Users can view various IntellaView chassis information at a glance. IPv4 and IPv6 settings (including IP addresses, mask, and gateway) are editable on the LAN Settings screen.





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 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 has 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.