



# POWERING NETWORK PACKET BROKERS WITH NEXT-GEN DPI FOR DATA CENTER NETWORKS

Deployment of DPI engine R&S®PACE 2 in APCON's IntellaView HyperEngine addresses traffic visibility challenges and improves network performance and security

**ROHDE & SCHWARZ**

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Deep traffic visibility is crucial in shaping intelligent data center networks. R&S®PACE 2's real-time application awareness enhances traffic visibility and security filtering capabilities of APCON's IntellaView Platform, enabling application-based traffic management for optimized and high-performing data center networks.

## SUMMARY

### Business area

- ▶ Network visibility and security services by a leading data center solutions provider

### Challenge

- ▶ Real-time, accurate insights at protocol and application level for intelligent traffic control and effective security management for data centers

### Solution

- ▶ Deployment of DPI engine R&S®PACE 2 in the service engine of APCON's network visibility and monitoring solution, the IntellaView HyperEngine, to deliver real-time application classification to intelligently steer and distribute network traffic.

### Benefits

- ▶ The deployment of R&S®PACE 2 enables APCON to manage data center traffic intelligently and at scale while driving performance, improving efficiencies, and meeting regulatory requirements. R&S®PACE2 also enables APCON's IntellaView HyperEngine to step up network threat detection with improved predictive analysis, thereby helping data centers continuously optimize their networks and reduce unnecessary overhead costs for staffing and additional third-party tools.

## CHALLENGE

### Intelligent traffic management requires advanced Layer 7 visibility

Migration to the cloud and the popularity of 'as-a-service' IT models have led to massive growth in data center traffic. To connect application, web, database and file servers and to ensure each incoming IP packet is steered and delivered to its destination, data centers rely on a host of functions such as routers, switches, IP probes and NATs.

As traffic volumes rise and as new applications are introduced, the mix of routes and network functions become more complex than ever, impacting data center performance and security. Addressing these challenges requires intelligent traffic management where network policies and rules are aligned closely and optimized to the nature and requirements of the underlying applications.

APCON is a US-based manufacturer and provider of scalable network visibility and monitoring solutions for data centers, with over 30 years of experience supporting midsize to Fortune 500 enterprises primarily in the banking, government, healthcare, education, architecture, building materials, and IT industries. APCON's IntellaView Platform is deployed to filter, route and distribute traffic flows via IntellaView series switches and the HyperEngine blade, which performs Layers 2-7 filtering and threat detection. With power options of two, four or six service engines that can run the application filtering feature, the HyperEngine blade processes up to 600Gbps of traffic. Information provided by the service filtering engine is then used to determine and assign the processing requirements for each packet.

To enable intelligent traffic management, the HyperEngine's Application Filtering Engine requires deep packet inspection (DPI) with advanced Layer 7 visibility. A suitable DPI solution will deliver real-time identification of traffic flows at cloud scale, thus supporting the IntellaView HyperEngine in enhancing and optimizing its packet processing and forwarding functions across unlimited traffic flows.

The DPI solution must also ensure classification accuracy and speed, while being sufficiently lightweight to ensure it integrates seamlessly into the Application Filtering Engine. The selected DPI solution, additionally, must feature extended coverage of applications, allowing its inputs to support downstream functions such as a CDN server or an intrusion prevention system in executing application-based actions such as caching and blocking, respectively.

## SOLUTION

### Next-gen DPI technology for real-time application awareness

APCON selected ipoque's DPI engine, R&S®PACE 2 to deliver real-time application awareness for its IntellaView HyperEngine blade, with the DPI module integrated as its Application Filtering Engine. R&S®PACE 2 boasts cutting-edge traffic classification techniques comprising statistical, behavioral and heuristic analysis. The engine also features encrypted traffic intelligence (ETI), which is based on machine learning, deep learning and high-dimensional data analysis as well as advanced caching methods. Other methods used by R&S®PACE 2 include pattern matching, metadata extraction and first packet classification.

R&S®PACE 2 enables Application Filtering to distinguish hundreds of protocols such as RTP and HTTP(S), and identify thousands of applications such as Microsoft Teams, SAP ERP and Outlook, alongside service types such as audio, video and messaging. These are identified in real-time and accurately, with virtually zero false positives. R&S®PACE 2, additionally, detects packets that exhibit suspicious, malicious and anomalous behavior.

Application identification by R&S®PACE 2 allows the IntellaView HyperEngine to segregate incoming traffic into distinct streams based on application tags. These streams are then distributed based on traffic routing and processing rules defined by clients using the platform's GUI. This supports fine-grained policies, paving the way for intelligent traffic management. For example, Zoom traffic is directed to the video optimization server, while Gmail applications are filtered through the anti-phishing software. Similarly, packets from high-priority applications are accorded premium pathways, while standard web traffic is offloaded to default routes. R&S®PACE 2 also supports dynamic rules across downstream functions such as CDNs or next-gen firewalls.

### The benefits of licensing R&S®PACE 2

- ▶ Highest classification accuracy in the market
- ▶ Weekly updated signature library
- ▶ Encrypted traffic intelligence
- ▶ Super-high throughput and low memory footprint
- ▶ Platform-agnostic, supporting x86, ARM, Cavium, Octeon, Power PC and others
- ▶ Support for custom-defined protocols and applications
- ▶ First packet classification
- ▶ Adjustable SLAs

## RESULT

### Driving performance and efficiency gains for modern data centers

Insights provided by R&S®PACE 2 allow APCON's IntellaView HyperEngine to offer extended routing and network service configurations built on applications and service types, creating new levels of network agility and customization. This paves the way for efficient abstraction of data center resources to meet the diverse needs of clients.

Across key industries, enterprises using the IntellaView HyperEngine can affect business-critical, application-aware network policies that ensure applications meet their performance and security SLAs, while data-sensitive applications adhere to regulatory standards. R&S®PACE 2-based filtering optimizes traffic streams that flow through the network, reducing bandwidth and storage requirements. Shared intelligence from R&S®PACE 2 also eliminates redundant filtering layers in downstream network functions, cutting down overheads and boosting data center ROI.

Single point of filtering by R&S®PACE 2 expedites threat detection as malicious activity and network abuse become more apparent, even for applications that are encrypted, obfuscated or anonymized. These insights enable APCON's IntellaView HyperEngine to pre-empt security subsystems on cyber attacks, fraud and unauthorized or malicious activities such as shadow IT.

R&S®PACE 2's software form-factor and low-memory footprint allow APCON to scale its filtering capacity rapidly with no additional latency, thus supporting low-latency edge computing use cases and ensuring that application QoE remains intact. Clean data filtered through R&S®PACE 2 also facilitates predictive analysis, allowing timely adjustments to network capacity and functionalities.

With R&S®PACE 2, APCON can continue strengthening its value proposition of creating networks that are closely aligned to clients' needs, delivering a high-performance platform that is built for the data centers of tomorrow.

*"Leveraging deep traffic analysis from R&S®PACE 2, we are able to propel data center networks towards greater performance, security and responsiveness, while improving efficiencies and addressing compliance issues in highly-regulated industries."*

Senior Engineering Team, APCON

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