USE CASE - Inband Network Telemetry

Exploring the Significance of Inband Network Telemetry

Inband Network Telemetry (INT) is revolutionizing the landscape of network monitoring and management by providing real-time, granular insights into network behavior and performance. Unlike traditional out-of-band monitoring techniques, INT embeds telemetry information directly into data packets as they traverse the network infrastructure. This approach enables operators to collect fine-grained telemetry data without additional hardware or network overhead.

One of the key advantages of INT is its ability to deliver highly accurate and timely performance metrics at various points within the network. By embedding telemetry information directly into packet headers, INT allows operators to monitor packet latency, loss, and throughput with unparalleled precision. This level of visibility empowers network administrators to quickly identify and troubleshoot performance bottlenecks, ensuring optimal network efficiency and reliability.

Furthermore, INT facilitates the implementation of advanced network analytics and control mechanisms. By leveraging the telemetry data provided by INT, operators can gain deeper insights into network traffic patterns, application behavior, and security threats. This enhanced visibility enables proactive network optimization and security measures, such as dynamic traffic engineering, congestion management, and anomaly detection.

Moreover, INT plays a crucial role in supporting emerging network technologies, such as Software-Defined Networking (SDN) and Network Function Virtualization (NFV). By providing real-time telemetry data, INT enables SDN controllers and NFV orchestrators to make informed decisions about network resource allocation, routing policies, and service chaining.

Inband Network Telemetry represents a paradigm shift in network monitoring and management. Its ability to deliver granular, real-time telemetry data empowers operators to optimize network performance, enhance security, and support the deployment of next-generation networking technologies. As the demand for high-performance, reliable networks continues to grow, INT will undoubtedly play a central role in shaping the future of networking.

Use Case

Why APS Networks?

Security by Design
Our switches are designed based on the security by design principles. We have full control of our hardware supply chains and have Software Bill of Materials (SBoMs) in place for all software used. Further security features all for use of our products in Critical National Infrastructure (CNI).

Programmability with P4
The innovative technology of the Intel Tofino chipset offers unlimited open networking possibilities by the use of P4 programming language, featuring in-band telemetry and mega scale data center switching. P4 is easy to access, it enables hardware offloading of protocols, arbitrary tagging of packets, and controlling behavior based on individual data pattern matches. The switch has a non-blocking switching capacity of 2.0 Tb/s and is capable of complex protocol processing at wire speed.

Innovative Designs
Our technologies provide the ultimate, stable and supported platform for open network innovation. And our dedicated hardware solutions are built around enabling the latest open technologies to serve vertical industry needs. Open technology enables hardware and software diversity: reducing risk and lock-in to tardy vendor roadmaps.

Made in Europe
Our switches are produced in Europe, as the final manufacturing will be done in Belgium, and most of the components are provided by European suppliers. The printed circuit boards (PCBs) come from Austria and most of the design is done in The Netherlands.

We Deliver!

Modularity
All our new models can be upgraded with a daughter board, supporting a full range of Precision Timing Protocol (PTP) profiles. For the CPU you have the choice of AC or DC power supplies with front to back (port to power) and back to frond (power to port) airflow. The PSUs are of Titanium-grade, to provide the highest possible power efficiency levels.

PTP Timing & Synchronization
Our advanced programmable switches are the first to deploy the Tofino chipset with a time synchronization function, which is an essential capacity in the field of telecommunications as well as in media and entertainment. This feature enables

Efficient Power Consumption
The switches are equipped with low-consumption CPUs and energy-efficient PSUs and Fans. The intelligent automatic control system recognizes and manages the operating mode to reduce the power consumption to an optimized minimum, in particular when not in use.

Certification/Traceability
APS Networks and its design partners have invested in simulation tools to augment our capabilities and our engineers have a high level of expertise in designing products that not only meet but exceed requirements in these areas and most importantly we have a track record of largely passing the first time. That saves time, avoids rework and ultimately cuts costs.

Contact our Design Experts to help you choose your switch: +31 35 689 1689