

# Today's Data Centers Need Visibility That Only a Network Packet Broker Can Provide

AN ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) WHITE PAPER

PREPARED FOR APCON

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## EXECUTIVE SUMMARY

Network packet brokers are essential to network visibility in today's data center. EMA research has found a strong correlation between packet broker adoption and network operations success. This white paper draws on cutting-edge industry research to explain why these devices are so important to the modern network operations team.

## NETWORK PACKET BROKERS ARE ESSENTIAL TO NETOPS SUCCESS

Today's network managers need deep visibility into traffic, especially in modern data centers. Network packet brokers are essential to that visibility.

A network packet broker (NPB) is a device that aggregates, grooms, modifies, and streams packet data from a distributed set of mirrored network ports to a collection of performance monitoring and security analysis tools. Enterprise Management Associates (EMA) research found that using NPBs to direct traffic to these tools is an industry best practice.

Only 46% of network operations teams have NPBs installed today, but NPB adoption is more common among successful network operations teams (54%).<sup>1</sup> Enterprises that are only somewhat successful (42%) or somewhat unsuccessful (33%) are less likely to use these essential devices.

Why is NPB adoption a best practice? Some network teams primarily monitor the network by collecting device metrics via Simple Network Management Protocol (SNMP). This technique can reveal the health and performance of individual devices, but offer limited insight into actual network traffic. Others might supplement that visibility with flow data (e.g., NetFlow or IPFIX), but these technologies only present a summary of traffic.

Packets are the best source of truth on the network, but they are difficult to collect. The network operations team will need to mirror multiple ports on the network to get a broad view of network activity in a data center, especially if there are modern applications in the environment generating east-west traffic.

An NPB can aggregate these mirrored ports. It can also deduplicate this traffic, filter for specific types of traffic, and modify the packets to assist with analysis. Then, the NPB can stream customized flows of packets tuned to the specific requirements of analysis tools. If the packet stream is too much for a single instance of a tool to handle, engineers can load balance flows across multiple tool instances to ensure visibility. EMA's research has found that users of NPBs tend to find packet data more valuable for operational network monitoring, network troubleshooting, and network capacity planning.

## HOW DOES A NETWORK PACKET BROKER HELP?

### Supports Data Center Transformation

EMA believes that NPBs are essential for data center modernization. EMA's research found that data center refresh projects, data center consolidation, and server virtualization are all more likely to influence the network operations strategies of enterprises that use NPBs. As these enterprises modernize their data centers, traffic patterns become more complex. The network team has to monitor more ports. NPBs can mitigate this complexity by aggregating mirrored ports and providing a central point of traffic data access to all analysis tools.

<sup>1</sup> All data cited in this research was originally published in the EMA research report "Network Management Megatrends 2020: Enterprises Embrace NetSecOps, the Internet of Things, and Streaming Network Telemetry" in April 2020.

Modernized data centers also generate more traffic, which can lead to the oversubscription of packet analysis tools. NPBs can mitigate this issue by filtering and load balancing packet flows. In fact, EMA research found that enterprises that plan to install 400 Gigabit Ethernet switches in 2020 are more likely to use NPBs, too.

## Facilitates Cloud Migration

EMA research found that cloud initiatives demand improved visibility in the on-premises data center. Enterprises with NPBs installed are more likely to cite public cloud initiatives, multi-cloud architecture, and cloud-native application modernization as influential projects for the network operations team.

As enterprises move applications to the public cloud, they need enhanced on-premises visibility. Good packet-flow analytics allow the IT organization to assess applications before they migrate to the cloud. They can see how those applications behave in the data center and use that information to build the right public cloud environment to support the applications.

Hybrid and multi-cloud architecture also add operational complexity, which creates a need for improved visibility everywhere. NPBs provide strong visibility into the on-premises data center. With good visibility in the data center, the network operations team is able to eliminate it as a source of IT service trouble. This allows the network team to be more focused when the source of a service problem is in the public cloud, where visibility may be more limited. EMA research confirms this notion. Enterprises with NPBs installed in their data centers are more likely (50%) than those without NPBs (25%) to say their network management tools are excellent at supporting public cloud networks.

## Enables NetSecOps Collaboration

Network operations teams are increasingly collaborating with security teams. Packet visibility can support this collaboration. For instance, enterprises with NPBs installed are more likely to say this collaboration has increased over the last couple of years. They are also more likely to have a formal approach to this collaboration, with the two teams sharing tools and processes. Enterprises without NPBs installed tend to have a more ad hoc, informal approach to network and security team collaboration.

This collaboration isn't easy, but NPBs can help. Many enterprises find that network and security teams struggle to work together because they lack cross-team skills. One team doesn't understand the tools and processes that the other team uses. Network managers with NPBs installed struggle with this issue less often, according to EMA research. In fact, with the right management controls in place, network and security teams can use the NPB-based visibility fabric as a point of collaboration, with the two teams working directly to share packet data across tools.

## Enhances NetOps Effectiveness

Network operations teams are more likely to be successful when they have NPBs installed. In fact, enterprises that use NPBs are more likely to say their network management strategy is heavily focused on network operations optimization.

EMA research found that network operations teams with NPBs installed are more responsive to new business initiatives and better at complying with internal service-level agreements. Users of NPBs are also less likely to struggle with a shortage of skilled networking personnel, suggesting that the network team is able to do more with its limited resources with improved access to packet data.

## EMA PERSPECTIVE

Not long ago, reduced downtime was the sole mission of network operations. It's still a top-level goal, but today's network operations team can support the success of a digital enterprise, in which application performance and end-user experience determine whether a business can deliver products and services, generate revenue, and find customers. EMA's research found that network operations success correlates with improved end-user and customer satisfaction, reduced operational expenses, and even reduced security and compliance risks. An NPB provides network managers with the packet data they need to ensure these outcomes.

However not all NPBs are the same. Enterprises should set some business requirements for these essential tools. Ease of use is at the top of the list, because a broad constituency of admins and engineers will need to configure these devices for their individual tools. If an NPB is hard to use, they won't be able to get the visibility they need.

EMA is aware that an NPB represents a new line item in many budgets, so affordability is another critical business requirement. Look for opportunities to limit costs without sacrificing quality. Pooling budgets between network operations, security, and application management might help with this issue.

Enterprises should look for NPBs with resilient, high-availability architecture to ensure they don't crash when operational visibility is needed most. Finally, NPBs should be integrated into the network team's toolset. This means that an NPB should have a modern and well-documented set of REST APIs to support this integration.

## ABOUT APCON

APCON's technology solutions provide network and security professionals with total visibility into their physical and virtual environments. As a network packet broker, we know how important visibility is to network management and data security. APCON supports IT teams worldwide with modern approaches and modular products that help them successfully monitor and secure their data centers and cloud environments.

### Network operations, security, and performance success with packet-level visibility

The core of APCON's mission is to empower network management and security operations with products that enable their success. APCON helps technology teams optimize network reliability and performance with products that provide aggregation, tunnel initiation and termination, load balancing, deduplication, filtering, protocol header stripping, and packet slicing. APCON also offers deep packet inspection and inline bypass to improve network security.



## Traffic from anywhere, to any tool

Performance monitoring and security tools contain insight and information for analysis needed to protect data and meet government regulations and compliance requirements. APCON's network visibility solutions allow IT operations to capture, aggregate, and channel relevant data to the appropriate monitoring tools so no relevant data is missed or dropped. APCON's network packet broker products also ensure the security team doesn't miss critical data, so they can troubleshoot and quickly resolve problems that impact security tools.

## Data center transformation to modernize the digital enterprise

As a technology company laser-focused on providing solutions for networks, APCON understands the constant challenges NetOps teams confront. With the emergence of cloud computing, container technologies, increased network traffic, and modern applications, it's more important than ever to have total visibility into network infrastructure. APCON solutions provide visibility no matter where data lives—cloud, virtualized, or on-premises—or whether your traffic speed grows to 400G and beyond. APCON builds products to help IT address today's network monitoring challenges and modernize and future-proof the enterprise for tomorrow.

## Collaboration for NetSecOps success

As IT teams deal with increased network complexity that comes with emerging technologies, cloud migration, and exponential traffic growth, their responsibilities extend beyond traditional technology support—end-user and customer satisfaction and adhering to compliance regulations. Having access to shared packet data across the infrastructure provides the insight required for NetSecOps team success. APCON improves network visibility, so the operations team can collect traffic where it resides and deliver to performance tools, which reduce blind spots and anything that might compromise performance or impact end-users. For the security team, APCON improves data traffic visibility, which accelerates the identification and resolution of cyber threats and data breaches.

## Modular, resilient products with affordable pricing options

APCON is like no other network packet broker in the market today. APCON builds products that mitigate potential network and performance issues, but are easy to maintain and upgrade. With APCON's straightforward pricing model and modular products, APCON provides complete, affordable solutions for total network visibility.

Learn more about how APCON's network monitoring and security solutions provide superior packet processing and visibility technology for the end-to-end network infrastructure at [APCON.com](https://www.apcon.com).

## About Enterprise Management Associates, Inc.

Founded in 1996, Enterprise Management Associates® (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help EMA's clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals, and IT vendors at [www.enterprisemanagement.com](http://www.enterprisemanagement.com) or [blog.enterprisemanagement.com](http://blog.enterprisemanagement.com). You can also follow EMA on [Twitter](#), [Facebook](#), or [LinkedIn](#).

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