

Cisco Application Visibility and Control



What Is the Value of Cisco Application Visibility and Control?

Cisco® Application Visibility and Control (AVC) provides a powerful pervasive, integrated service management solution based on stateful deep packet inspection (DPI). With the Cisco AVC, instead of processing packets as individual events the Cisco ASR 1000 Aggregation Services Router fully reconstructs flows and the Layer 7 state of each application flow for application- and session-based classification and management of IP traffic.

With the Cisco AVC, customers can:

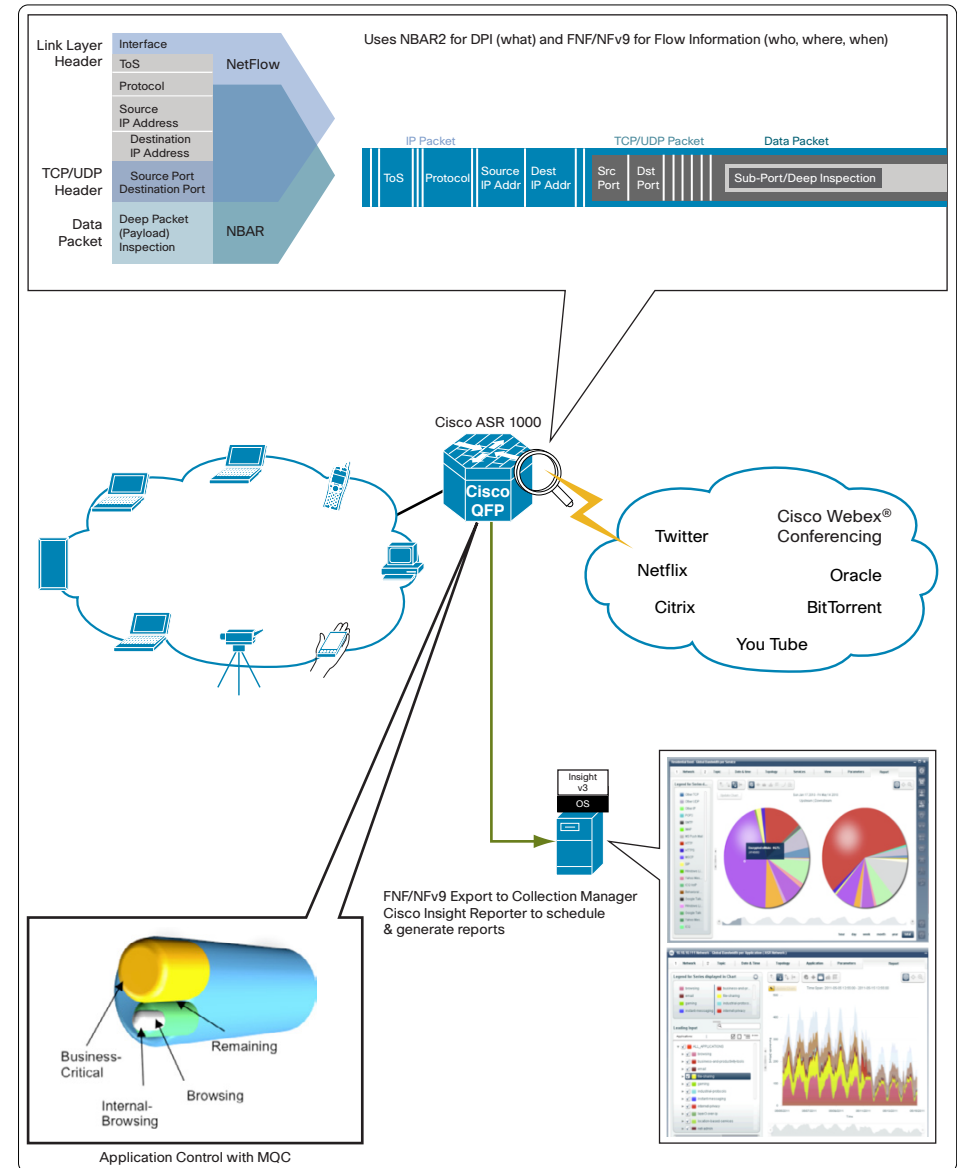
- Discover network traffic with application-level insight with deep packet visibility into web traffic
- Analyze and report on application usage
- Classify and manage application sessions (including web browsing, multimedia streaming, and peer-to-peer applications)
- Monitor application usages and anomalies
- Build reporting for capacity planning and compliance
- Enforce quality-of-service (QoS) policies and service guarantees for latency-sensitive applications (such as voice over IP [VoIP] and interactive gaming)
- Implement fair-use policies and manage network congestion by optimizing application-level traffic

What Problems Does It Help Solve?

With millions of users worldwide connecting to an array of media from many sources, enterprises and service providers have not been able to accurately and completely monitor, report on, and manage service and performance levels of all of these services. To reduce network congestion and increase operational efficiency and overall profits, customers must be able to:

- Accurately identify and control application traffic in the WAN, metropolitan-area network (MAN), and the Internet and enterprise edge demarcation boundaries
- Improve application responsiveness and adhere to ever-more-stringent service-level agreements (SLAs) in enterprise and service provider networks
- Monitor, report, and manage customer traffic in enterprise edge and service provider edge environments and managed services topologies

Figure 1. Cisco AVC Solution





Cisco Application Control and Visibility

The Cisco ASR 1000 is deployed at the network access or aggregation layer (Figure 1). In the Cisco AVC solution, the Cisco ASR 1000 views packets and flows at the application level. It exports traffic records to the Cisco Service Control Collection Manager, which provides data to the reporting tool. Cisco Insight presents reporting data in a graphical form showing application distribution and popularity, traffic consumption, peak flows, etc.

The solution ecosystem includes the following:

- **Cisco Service Control Collection Manager:** This solution performs real-time collection of usage data exported by the Cisco ASR 1000. It aggregates usage data collected by the Cisco ASR 1000 and stores it in a Structured Query Language (SQL) database or text files for further processing. When the data is stored in the database, the Cisco reporting tool can be used to easily generate a wide range of reports about network activities and application usage. Operators can use the Cisco Service Control Collection Manager for a simple and efficient solution or integrate the Cisco AVC solution with existing usage-management, mediation, and billing solutions.
- **Cisco Insight:** This powerful and easy-to-use web-based reporting solution for the Cisco Service Control Engine (SCE) and Cisco AVC platforms provides business intelligence and effective visualization of network usage patterns for marketing, planning, and network management purposes.

What Are the Benefits of Cisco Application Visibility and Control?

The intelligent inspection and management of IP packets with the Cisco ASR 1000 gives customers the ability to classify end-user applications and determine application semantics. Actions can be taken (from allowing the session to proceed or throttling back bandwidth) based on network conditions to ensure network and application performance.

Cisco Application Visibility and Control provides:

- Greater visibility of application usage and subscriber behavior to improve customer intimacy and insight
- Network capacity management and planning through predefined, customized, and personalized reports

- Prioritization of business-critical applications using techniques such as QoS priority and shaping
- Reduced operational costs through network optimization (for example, limiting bandwidth-intensive applications such as peer-to-peer)
- Improved quality of experience (QoE) for all users by implementing fair-use policies

Cisco Application Visibility Control Options

The performance and scaling for this solution on the Cisco ASR 1000 Series Router are determined by the type of Cisco ASR 1000 Series Embedded Services Processor (ESP) installed. The throughput numbers based on service provider traffic profile are detailed in Table 1.

Table 1. Cisco ASR 1000 Series Embedded Services Processor Throughput

	Maximum ¹ Bandwidth (Gbps)	Maximum Sessions (Million)
5-Gbps Cisco ASR 1000 Series Embedded Services Processor (ESP5)	2.5	0.75
10-Gbps ESP (ESP10)	5	1.5
20-Gbps ESP (ESP20)	10	3
40-Gbps ESP (ESP40)	10	3

Why Cisco?

The Cisco AVC solution eliminates the need for expensive upgrades and installs for new application-aware services and traffic monitoring and control solutions. Only the integrated Cisco AVC solution can fully reconstruct data flows while analyzing the Layer 7 state of each application for true application awareness at Gigabit throughput rates by simply enabling the service on the Cisco ASR 1000 Router. This capability can now be enabled anywhere in the network where the service is required: the Internet edge, enterprise edge, or WAN aggregation or service provider edge, making it a powerful and pervasive technology.

The Cisco AVC solution offers a truly innovative service to optimize operations, maximize network investments, and extend the intelligence of the IP Next-Generation Network (IP NGN) while also reducing the total cost of ownership to enable the next-generation application-aware networks.

¹ Derived from the maximum sessions assuming a typical broadband traffic profile