Cisco Application Performance Assurance Engine 1.0

Today, customers face a growing need to track application use, manage network bandwidth resources, identify and dispose of malicious and otherwise unwanted traffic, and prioritize mission-critical applications and, increasingly, to perform all these tasks on a per user basis.

Unlike controlled Systems Network Architecture (SNA) environments, IP-based environments lack the structure to ensure appropriate application behavior. Mission-critical applications contend for available bandwidth with non-critical or unwanted applications, and many applications are subjected to network latency and jitter characteristics that impede their ability to function appropriately. With between 50 percent and 60 percent of enterprise bandwidth now being consumed by peer-to-peer (P2P) and Flash-based video traffic, network performance is significantly compromised. In other environments, the problem can be even more pronounced. Up to 80 percent of network traffic in uncontrolled higher education environments can be P2P traffic, recreational video traffic, or traffic generated from gaming applications.

In such environments, the IT department requires a solution that is able to prioritize application traffic and to control the behavior of the network traffic to make sure that the performance of each individual application reflects its importance to business operations. Cisco® Application Performance Assurance (APA) Engine is designed to provide that capability, offering per application, per user control in a self-contained appliance form factor.

Features and Benefits

Stateful Deep Packet Inspection

Instead of processing packets as individual events, Application Performance Assurance Engine fully reconstructs individual traffic flows and the Layer 7 state of each individual application flow. Using Layer 7 signatures and attributes in addition to behavioral classification algorithms, the Application Performance Assurance Engine readily identifies applications that employ dynamically assigned port numbers and tracks applications that involve multiple interrelated or spanned flows commonly found in voice-over-IP (VOIP) or multimedia streaming protocols. Behavioral classification provides the ability to identify and control new applications for which application signatures have not been created.

Application-level classification of IP traffic helps ensure real-time analysis and control traffic for a given user or group of users. Real-time advanced control functions include granular bandwidth policing and redirection that use protocol-specific, state-based traffic flow analysis.

Programmability

Cisco Application Performance Assurance Engine is programmable and extensible, helping to ensure that the solution can be readily adapted to new protocols and IP traffic management requirements. As new protocols emerge, their signatures are added to APA Engine, ensuring that APA Engine is able to identify and control applications as new protocols emerge. Once the applications are identified, they are controlled using a series of policies that dictate the manner in

which the application traffic will behave on the network. These policies can be so specific that they can control application behavior globally, for groups of users, or individual users on the network.

Analysis and Reporting

Cisco Application Performance Assurance Engine provides granular analysis and reporting of application traffic on a per user basis. Data records generated over a 24-hour period are stored locally on the resident hard drive. Although the nature of the records and frequency with which they are generated are largely dependent on the type of information being collected, the device can store 30 days worth of data records collected at one-minute increments for the full 24-hour period. Provisions for data archiving and retrieval are available in the event of device failure.

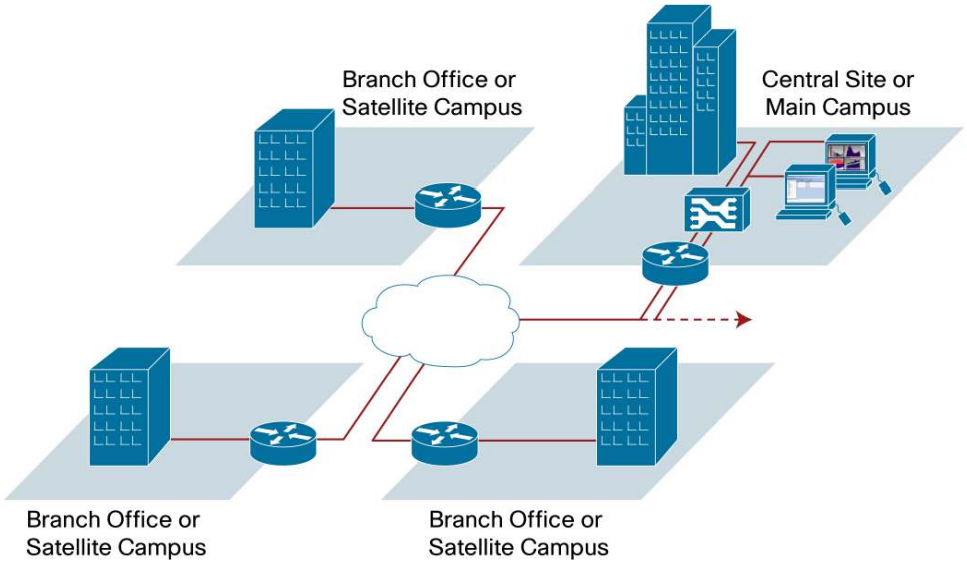
Management and Integration

Management of Cisco Application Performance Assurance Engine is facilitated through a dedicated GUI-based application, the Application Performance Assurance Device Console (APA DC). This application facilitates full device configuration and management, service and policy management, user management, and report generation through a single interface.

Product Architecture

Deployed in a small data center or on an Internet link in front of student housing, the APA Engine facilitates the detection of virtually any network application, including enterprise resource planning (ERP) applications, multimedia streams, broadband voice, Web browsing, instant messaging, distance learning, and forms of unwanted and malicious traffic such as P2P (See Figure 1). Once this traffic has been identified, the network administrator is able to apply control policies to control and prioritize the traffic. The result is overall reduction of network congestion, improved application performance, and the ability to plan more effective network bandwidth upgrades.

Figure 1. Topology



Product Specifications

Table 1 gives specifications for Cisco APA Engine. Table 2 lists Management Station requirements.

Table 1. Product Specifications

Processor	
Processor (CPU)	Intel Xeon E5320 Quad-Core
Processor internal clock speed	1.86 GHz
Level 2 cache	2x4 MB (4 MB per core pair)
Basic input/output system (BIOS) type	Flash memory
Memory	
Memory	2 GB
Memory interface mega transfers per second	667 MT/s
Memory technology	PC2-5300 DDR2 SDRAM
Bit-error mitigation	Error Checking and Correction (ECC)
Hard-Disk	
Hard-disk RPM	10,000
Hard disk I/O transfer rate	3.0 gbps
Hard-disk interface type	Serial-SCSI
Hard disk capacity	147 GB
MTBF of hard drives	1.0 Mhours (40C)
Power-on hours	24 hours/7 days (70–80 percent duty cycle)
Hot swappable	No
Optical Storage	
DVD-ROM	1, front accessible (8X DVD read, 24X CD read)
Interfaces	
Ethernet	1 management port 2 data ports
Serial ports	1 (mutually exclusive alternate connectors for this port at front and at back of chassis)
USB 2.0 ports	3 (1 at front and 2 at back of chassis)
Keyboard port	1 PS/2
Mouse port	1 PS/2
Power	
Maximum power consumption	600W (maximum output, power supply rating)
Input power rating	979/990W (@ 110/220 Vrms) 984/1230W (@ –48/–60 VDC)
Auto-ranging AC input	Yes
POWER FACTOR CORRECTION	Yes
Input low range	90 to 127 (nominal) VAC; 47–63Hz
Input high range	200 to 240 (nominal) VAC; 47–63Hz
DC Input range	–48 to –60 VDC
Environmental	
Air temperature – Server on	50 to 95℉ (10 to 35℃)
Air temperature – Server off	–40 to 158℉ (–40 to 70℃)
Humidity	Server Off: 90 percent, noncondensing at +35℃
Cooling system	3 fans installed (two are in power supply) 2 blowers installed
Dimensions	
Form factor	Rack-mount 2RU
Rack-mounting	2 post, 4 post rack mounting options available

Weight	35 lb (15.8 kg), standard configuration
Height	3.45 in. (8.8 cm)
Width	17.0 in. (43.2 cm)
Depth	20.0 in. (50.8 cm) without bezel or mounting hardware
Approvals and Safety	
Regulatory compliance is based on the final configuration of the system and associated product IDs (PIDs). Please contact the CAM Compliance program manager for details of country requirements and approvals for your specific configuration.	

Table 2. Management Station Requirements

Hardware	Personal Computer or terminal device with 10/100 Ethernet NIC
Software	Internet Explorer 6.x or Firefox 2.x

Ordering Information

To place an order, visit the Cisco Ordering Homepage. To download software, visit the Cisco Software Center. Table 3 gives ordering information.

Table 3. Ordering Information

Product Name	Part Number
Cisco Application Performance Assurance Engine	CAM-APA-100

Service and Support

Using the Cisco Lifecycle Services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment. This approach defines the minimum set of activities needed, by technology and by network complexity, to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

For More Information

For more information about Cisco Application Performance Assurance Engine, visit http://www.cisco.com/go/apae or contact your local account representative.

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