DATA SHEET

# **CISCO APPLICATION ANALYSIS SOLUTION VERSION 1.0**

Cisco<sup>®</sup> Application Analysis Solution (AAS) provides a visual and quantitative breakdown of the complex interactions among applications, servers, and networks to help you cost-effectively troubleshoot and confidently deploy networked applications. Cisco AAS rapidly pinpoints the source of application performance issues.

# **PRODUCT OVERVIEW**

The Cisco Application Analysis Solution (AAS) enables you to visualize end-to-end application transaction dynamics graphically, from the view of both the network and application layers (Figure 1). Cisco AAS can diagnose whether application performance problems are caused by the application, server, or network. Automatically pinpoint the root cause for application-related issues in complex, multi-tier transactions. Assess proposed solutions, accurately predicting the performance that could be achieved with alternative approaches. Cisco AAS bridges organizational gaps between application development and IT infrastructure teams, accelerating new application deployment, and reducing the blame that often accompanies end-to-end performance troubleshooting.





## **Profile Application Transactions**

Cisco AAS parses an application trace and analyzes it at the application-message level and network-packet level, with their interdependency presented graphically. Problematic application messages, including requests and responses between the server and the client, can be analyzed in further detail through an extensive library of application decodes. Standard reports provide a broad range of critical application statistics, including processing delays, network delays (Figure 2), response times, number of application turns, and number of application messages.

# Figure 2. Diagnose Root Cause of Delay

Summary of Delays Executive Summary Diagnosis Statistics HTTP					
Total	DB Server Client	App Server	_		
Processing Bottleneck Bottleneck No Bottleneck					
	Total	Client <-> App Server	App Server <-> DB Server		
Protocol Overhead	Potential Bottleneck	Bottleneck	Potential Bottleneck		
Chattiness	Bottleneck	No Bottleneck	Bottleneck		
Vetwork Effects of Chattiness	Bottleneck	No Bottleneck	Bottleneck		
Effect of Latency	Bottleneck	No Bottleneck	Bottleneck		
Effect of Bandwidth	No Bottleneck	No Bottleneck	No Bottleneck		
Effect of Protocol/Congestion	No Bottleneck	No Bottleneck	No Bottleneck		
Connection Resets	No Bottleneck	No Bottleneck	No Bottleneck		
Retransmissions	No Bottleneck	No Bottleneck	No Bottleneck		
Jut of Sequence Packets	No Bottleneck	No Bottleneck	No Bottleneck		
CP Windowing (A -> B)	Not Applicable	No Bottleneck	No Bottleneck		
CP Windowing (A <- B)	Not Applicable	No Bottleneck	No Bottleneck		
CP Frozen Window	No Bottleneck	No Bottleneck	No Bottleneck		
CP Nagle's Algorithm	No Bottleneck	No Bottleneck	No Bottleneck		
1					
•			•		
The application is incurring significant network delays due to many application turns. Consider View value sending fewer, larger application messages. Threshold: 0.300, Value: 0.425 - lower values are better. Click on "Help" for detailed explanations and recommendations.					
Export to Spreadsheet					

## **Diagnose End-to-end Performance Problems**

Cisco AAS breaks down multi-tier applications into component flows, automatically determining dependencies among application messages. Performance statistics for individual tiers are presented graphically to aid quick problem source identification (Figure 3). Summary reports clearly indicate the factors that contribute to end-to-end response time, including transmission, propagation, network congestion, protocol overhead, and processing. Application decodes provide a more detailed diagnosis for many protocols and applications.

#### Figure 3. Understand Sources of End-to-End Delay



#### **Assess Alternative Solutions**

Cisco AAS provides the ability to "test" a proposed solution to an end-to-end application performance problem, measured in end-to-end response time (Figures 4 and 5). Poorly designed applications can be "virtually" recoded using an intuitive graphic interface. Quickly predict the impact of changes to system and network parameters, including latency, bandwidth, packet loss, congestion, and TCP window sizing. Model conditional application logic. Recommendations are provided for improving overall performance. Cisco AAS incorporate advanced simulation technology to enable response time studies in various "what if" scenarios.

## Figure 4. Test Changes to Infrastructure Variables

👖 QuickPredict Control - Ecom_App_Problem				
Choose network path to modify: App Server <-> DB Server				
Graph Properties X axis: Bandwidth	The current graph shows the impact of bandwidth on overall application response time. The X-axis shows varying bandwidths between "App Server" and "DB Server".			
Y axis: Response time Min Bandwidth 10Mbps Max Bandwidth 1Gbps	Parameters: Use the sliders to set values. To change a parameter range, click on the min/max fields under the slider.			
Number of data points: 20 5 100	Latency is one-half the total round trip (ping) time. Bandwidth is the minimum line rate (i.e., the capacity of the slowest link between two tiers).			
Parameters				
Bandwidth: 10Mbps				
10Mbps 1Gbps				
Latency: 0.9ms				
Oms 300ms				
Packet loss: 0%				
0% 10%	,			
Link utilization: 0%				
0% 98%				
TCP window size: 17KB				
4KB 170KB				
	Update Graph Add Curve(s) Compare			
Save Template Load Template Iable View Close				

Figure 5. Predict the Impact of Changes on Response Time



#### **Plan Application Deployment**

Assess the ability of the infrastructure to support new applications. Cisco AAS can derive a simple baseline model of the network infrastructure from application traces, capturing critical performance characteristics to support "what if" simulations. Project the impact of increasing usage of the application over time, as well as changes in the infrastructure topology and capacity. Cisco AAS reduces risks and delays associated with new application deployment.

# **Flexible Data Capture**

Cisco AAS is provided with remote Capture Agents to acquire application traces from your desktop. Capture Agents are easy to install from a CD, from the Web, or from an e-mail attachment sent to a remote location. Multiple trace files of the same transaction that are captured from multiple network segments can be merged to automatically calculate delays. Trace data from the Cisco Network Analysis Module (NAM) can also be used as input, as well as output from many third-party tools.

# SYSTEM REQUIREMENTS

Table 1 lists the system requirements for the Cisco Application Analysis Solution.

# Table 1. System Requirements

	<b>Cisco Application Analysis Solution</b>	Application Capture Agent
Disk space	20 GB	• 4 MB (Windows)
		• 8.5 MB (Solaris; Linux; HP UX; AIX)
Hardware	Intel Pentium 3, 4, or equivalent 1.5+ GHz	Intel Pentium 3, 4, or equivalent (Windows, Linux)
		Sun SPARC Family, such as UltraSPARC (Solaris)
		HP PA7000 v1.1c or later (HP UX)
		• IBM RS/6000 (AIX)
Memory	1 GB (minimum)	2 MB when idle; 5 MB during capture (Windows)
		4.5 MB when idle; 9.0 MB during capture (Solaris; Linux; HP UX; AIX)
Software	Only English language versions are supported:	Only English language versions are supported:
	Windows XP Professional	Windows 95
	Windows 2000 Professional	Windows 98/ME
		Windows NT 4.0
		• Windows 2000 (32 bit)
		Windows Server 2003 (32-bit)
		Windows XP (32 bit)
		Solaris 7
		Solaris 8
		Solaris 9
		Linux Kernel 2.2
		Linux Kernel 2.4
		• HP UX 11.0 (32-bit)
		• AIX 4.3.3 (32-bit)
		• AIX 5.x (32-bit)

# **ORDERING INFORMATION**

Cisco AAS 1.0 is available for purchase through regular Cisco sales and distribution channels worldwide. To place an order, visit the <u>Cisco Ordering</u> <u>Home Page</u>.

Cisco AAS 1.0 licensing options are described in the Cisco AAS 1.0 product bulletin, viewed at: http://www.cisco.com/en/US/prod/collateral/netmgtsw/ps6341/ps6362/prod\_bulletin0900aecd802c80a6.html

#### SERVICE AND SUPPORT

Cisco Systems<sup>®</sup> offers a wide range of services programs to accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco services help you to protect your network investment, optimize network operations, and prepare the network for new applications to extend network intelligence and the power of your business. For more information about Cisco Services, see <u>Cisco Technical Support Services</u> or <u>Cisco Advanced Services</u>.

#### FOR MORE INFORMATION

For more information about the Cisco Application Analysis Solution, visit <u>http://www.cisco.com/en/US/products/ps6362/index.html</u> or contact your local account representative.



#### **Corporate Headquarters**

Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134-1706 USA www.cisco.com Tel: 408 526-4000 800 553-NETS (6387) Fax: 408 526-4100 European Headquarters Cisco Systems International BV Haarlerbergpark Haarlerbergweg 13-19 1101 CH Amsterdam The Netherlands www-europe.cisco.com Tel: 31 0 20 357 1000 Fax: 31 0 20 357 1100

#### **Americas Headquarters**

Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134-1706 USA www.cisco.com Tel: 408 526-7660 Fax: 408 527-0883

# Asia Pacific Headquarters

Cisco Systems, Inc. 168 Robinson Road #28-01 Capital Tower Singapore 068912 www.cisco.com Tel: +65 6317 7777 Fax: +65 6317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia • Cyprus Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland • Israel Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden • Switzerland • Taiwan Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

Copyright © 2005 Cisco Systems, Inc. All rights reserved. CCSP, CCVP, the Cisco Square Bridge logo, Follow Me Browsing, and StackWise are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn, and iQuick Study are service marks of Cisco Systems, Inc.; and Access Registrar, Aironet, ASIST, BPX, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Empowering the Internet Generation, Enterprise/Solver, EtherChannel, EtherFast, EtherSwitch, Fast Step, FormShare, GigaDrive, GigaStack, HomeLink, Internet Quotient, IOS, IP/TV, iQ Expertise, the iQ logo, iQ Net Readiness Scorecard, LightStream, Linksys, MeetingPlace, MGX, the Networkers logo, Networking Academy, Network Registrar, *Packet*, PIX, Post-Routing, Pre-Routing, ProConnect, RateMUX, ScriptShare, SlideCast, SMARTnet, StrataView Plus, TeleRouter, The Fastest Way to Increase Your Internet Quotient, and TransPath are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0502R) 205379.N\_ETMG\_KW\_7.05

© 2005 Cisco Systems, Inc. All rights reserved. Important notices, privacy statements, and trademarks of Cisco Systems, Inc. can be found on cisco.com. Page 7 of 7