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Overview Presentation: Cisco Branch Routers Series Network Analysis Module



November 2006

Customer Challenges

- Networks have become increasingly complex
- It's no longer enough to ensure traffic flow from one point to another—now you must also ensure optimum performance
- Need clarity on how to tie user and business needs together
- Need to move beyond reactive management





The Solution: Cisco Network Analysis Module (NAM)

Cisco[®] NAM Feature

 Traffic analysis integrated in the network

Critical points, Web-based GUI

 Real-time and historical monitoring

Applications, hosts, conversations

• Application response time monitoring

User's experience of the network

Troubleshooting

Packet capture and decode

Benefits

- Eases deployment, management, and support
- Detects how applications and users use the network and receive services
- Reveals how applications are performing
- Isolates problems before they affect users



Cisco Branch Routers Series NAM

Features and Functions

Embedded Traffic Analyzer Software

- Configuration of the NAM Network parameters
 Selection of traffic to monitor
 Types of statistics to gather
- Real-time and historical reports

MIB-II monitoring

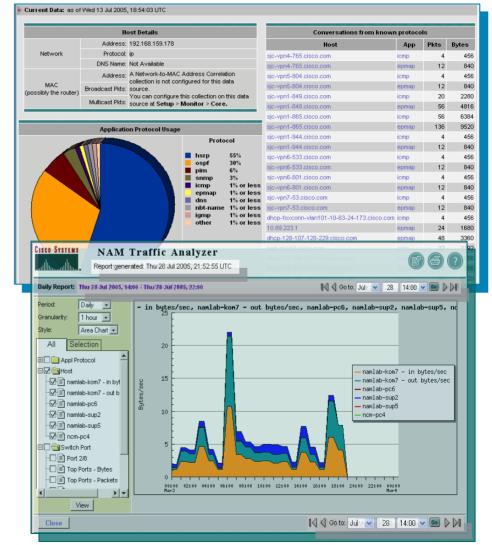
Application, hosts, and conversation monitoring

Packet capture and decode

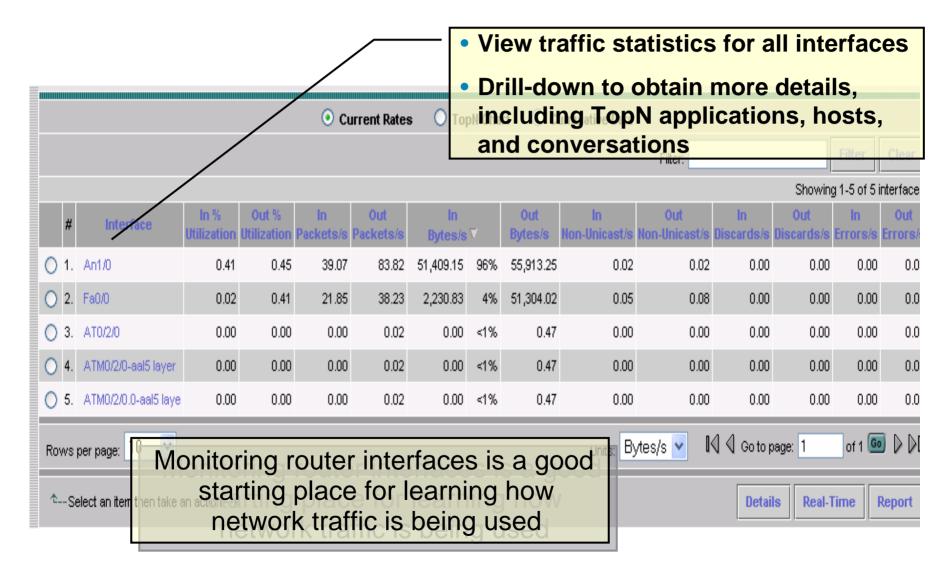
Application response time monitoring

Voice over IP (VoIP) and video monitoring

Differentiated Services (DiffServ) monitoring

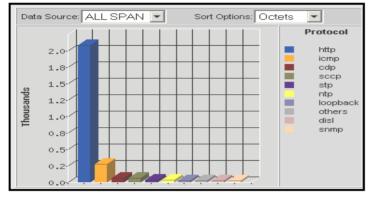


Interface Monitoring



Application, Host, and Conversation Monitoring

Protocol Distribution



Host Details					Conversations from known protocols				
	Address:	192.168.159.178			Host	Арр	Pkts	Bytes	
Network	Protocol:	: ip : Not Available			sjc-vpn4-765.cisco.com	icmp	4	45	
	DNS Name:				sjc-vpn4-765.cisco.com	epmap	12	84	
	Address:	A Network-to-MAC A			sjc-vpn5-804.cisco.com	icmp	4	45	
MAC	Broadcast Pkts:	You can configure this collection on this data			sjc-vpn5-804.cisco.com	epmap	12	84	
possibly the router)					sjc-vpn1-849.cisco.com	icmp	20	228	
Multicast Pkts: source at Setup > Monitor > Core.					sjc-vpn1-849.cisco.com	epmap	56	481	
					sjc-vpn1-865.cisco.com	icmp	56	638	
	Applicatio	on Protocol Usage		sjc-vpn1-865.cisco.com	epmap	136	952		
Protocol					sjc-vpn1-944.cisco.com	icmp	4	458	
					sjc-vpn1-944.cisco.com	epmap	12	84	
			hsrp	55% 30%	sjc-vpn6-533.cisco.com	icmp	4	456	
			ospf	30% 6%	sjc-vpn6-533.cisco.com	epmap	12	84	
			snmp	3%	sjc-vpn6-801.cisco.com	icmp	4	45	
			icmp epmap	1% or less 1% or less	sjc-vpn6-801.cisco.com	epmap	12	84	
			dns	1% or less	sjc-vpn7-53.cisco.com	icmp	4	45	
				1% or less	sjc-vpn7-53.cisco.com	epmap	12	84	
			igmp other	1% or less 1% or less	dhcp-foxconn-vlan101-10-63-24-173.cisco.com	icmp	4	45	
			ouler	176 OF IESS	10.89.223.1	epmap	24	1680	
					dhcp-128-107-128-229.cisco.com	epmap	48	3360	
					peiti-sb150.cisco.com	icmp	32	339	
	/				dhcp-171-69-126-192.cisco.com	icmp	8	65	
					dhcp-171-69-126-209.cisco.com	icmp	8	656	

Detailed Host and Conversation Statistics

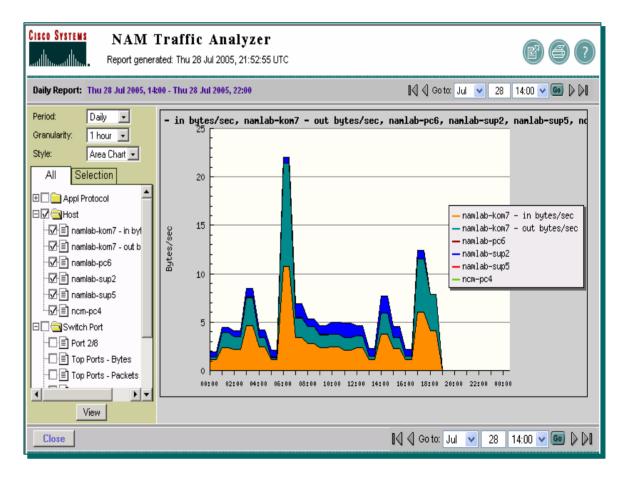
Conversation Pair Statistics

#	Source	Via	Destination	Pkts	Octets $ abla$
1	namlab-pik2.cisco.com	ip	static-10-24-2-108.cisco.com	1	151
2	dhcp-171-69-69-92.cisco.com	ip	namlab-shared.cisco.com	1	42
3	static-10-24-2-108.cisco.com	ip	namlab-pik2.cisco.com	1	27
4	10.0.0.22	ip	namlab-pc5.cisco.com	1	10
5	namlab-pc5.cisco.com	ip	10.0.0.22	1	10
6	namlab-sup1.cisco.com	ip	cbucci-u10.cisco.com	< 1	
7	cbucci-u10.cisco.com	ip	namlab-sup1.cisco.com	< 1	
8	172.20.98.129	ip	namlab-sup1.cisco.com	< 1	
9	172.20.98.129	ip	namlab-sup2.cisco.com	< 1	
10	172.20.98.129	ip	namlab-sup3.cisco.com	< 1	

NAM detects the applications, the bandwidth they consume, and the hosts using costly WAN resources

Historical Reporting

- Select and monitor network performance over time
- 100-day historical reports for preselected variables
- Detailed information to support planning activities and to aid postevent troubleshooting

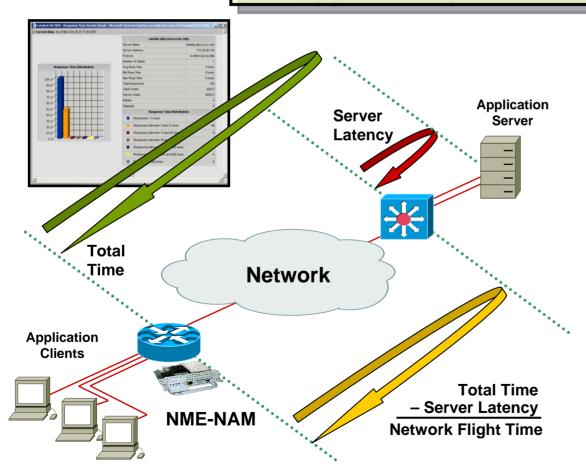


Packet Capture and Decode

			Se	etup	Monitor	Reports	Capture	Alarms	Admin		
	🔹 🔶 Seti	tings 🔹	Decode	🔹 Down	nload 🔹 C	ustom Filters 🔸					
ou Are H	lere: 🔶 Captu	ire 🔹 De	code								
Packet	s: 1-1000	of 1756		Stop	Prev	Next 1000	Go to 1	Protocol	•	Filter	
Pkt	Time(s)	Size	Sa	ource	D	estination	Protocol		Info		_
1	0.000	387	sjc-vpn3-2	55.cisco.co	om nam-6	6506.embu-mlab	HTTP	GET /capture/o	etstatus.php HT	TTP/1.1	
2	0.367	100 P 100 P			100000000000000000000000000000000000000	6506.embu-mlab		1157 > http [A0	CK Seq=317462	281 Ack=1416670	D4
3	10.227	10.101			100000000000000000000000000000000000000	6506.embu-mlab			etstatus.php HT	A REAL PROPERTY AND A REAL PROPERTY AND A	
4	10.703	68	sjc-vpn3-2:	55.cisco.co	om nam-6	6506.embu-mlab	TCP	1157 > http [A0	CK Seq=317466	606 Ack=141667(08 💌
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Application Response Time (ART) Monitoring

Learn how users experience application performance



 Statistics include Client-Server Network Round Trip Time, Application Response Time, Total Transaction Time

- Displays the data in intuitive tables and graphs
- Historical viewing and reporting

Voice Monitoring

- Active IP telephony monitoring Track active call attributes Identify call quality degradation via packet loss and jitter statistics See call details for individual phones
- Voice-application monitoring View distribution of VoIP protocols
- Application response time (ART) Measure Cisco[®] CallManager response times

QoS

Monitor voice traffic for QoS violations Verify that voice traffic is receiving the appropriate priority

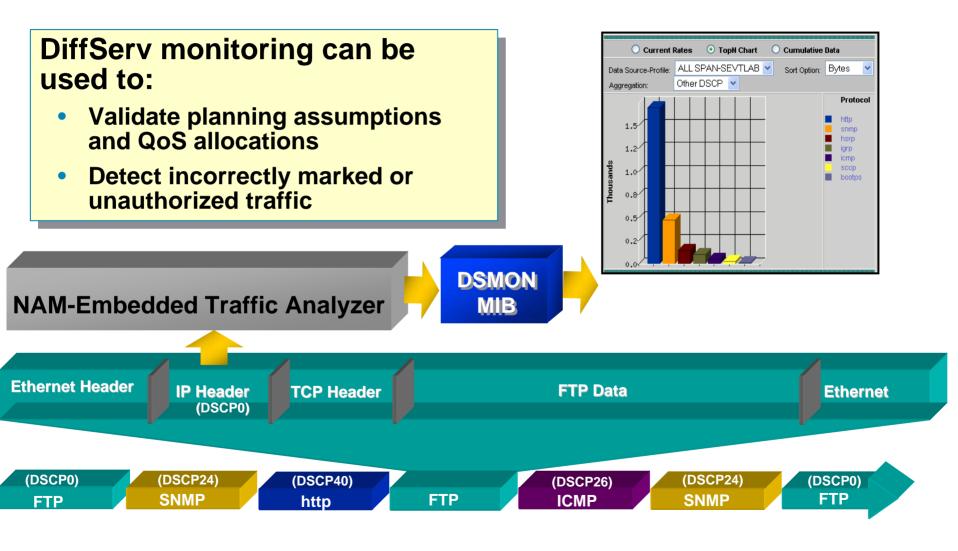
Video telephony

Identify active video calls

Anticipate infrastructure improvements needed to support increased demand in voice services

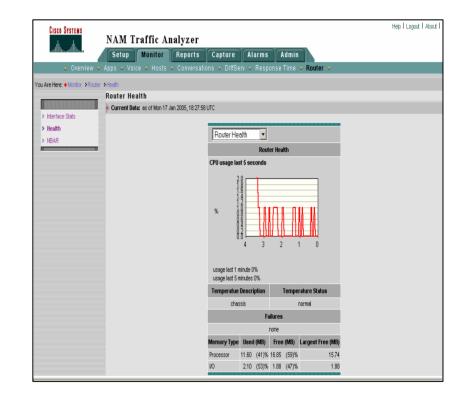


Differentiated Services Monitoring (DSMON)



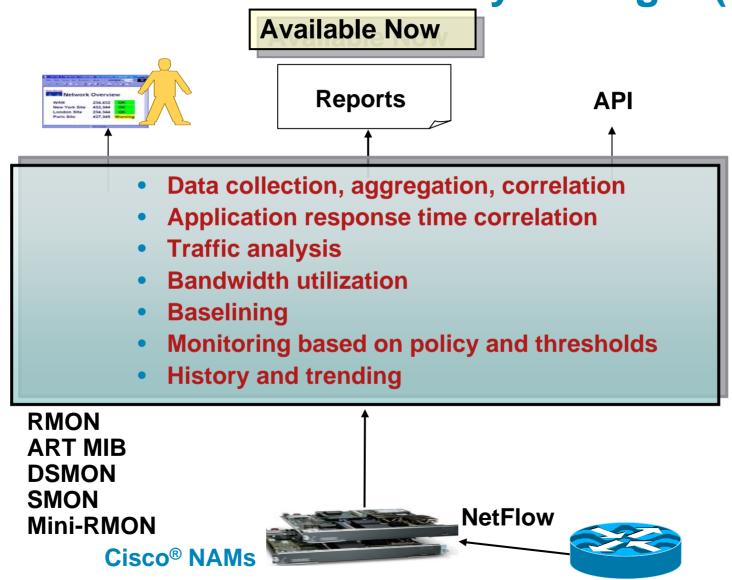
Router Health Monitoring

- Monitor vital router resources such as CPU usage, memory usage, temperature and fan status, sysUpTime, hardware revisions, and power-supply status
- Provides the network manager with immediate information on the health of critical network devices



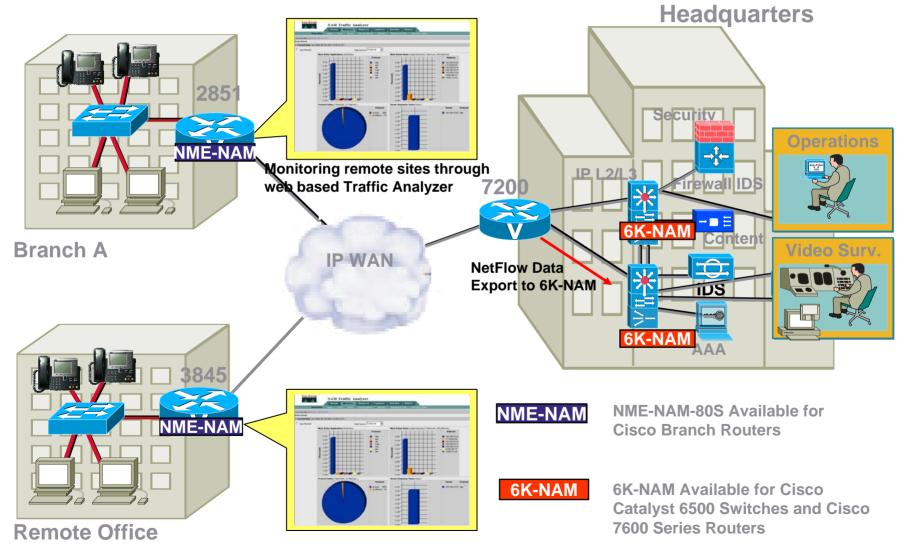
Tight integration with the router permits the NAM to monitor and track important infrastructure health diagnostics

Managing NAM— Cisco Performance Visibility Manager (PVM)



Cisco Confidential – NDA Use Only

Deployment Scenario: NAMs in LAN and WAN



Business Benefits

 Gain visibility into the network services and applications that make up the business

Monitor how applications and users utilize the network and receive services

Improve network performance

 Better visibility enables enterprises and service providers to optimize IT investments and enhance network security

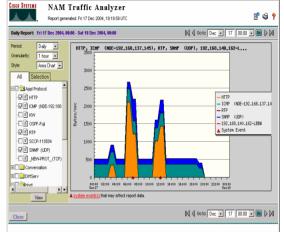
Prevent unauthorized or frivolous use of network resources

Reduce downtime and failures

 "Right-size" the network to reduce network spending

Determine services trends to anticipate infrastructure improvements that will be needed to support increased demand

Tie network usage to business need





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