

NetMRI™

Improving Your Network



PREVENTION

ANALYSIS

DIAGNOSIS

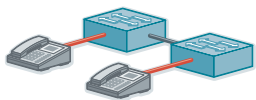
TREATMENT

NetMRI analyzes:

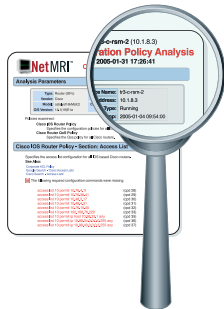
VLANs



VOIP



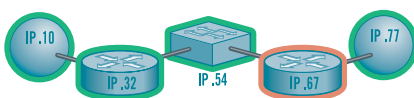
Network Device Configuration



Wireless Access Security



Video / Time-Sensitive IP Paths



IP Routes and Subnets



Switch & Router Security



NetMRI is a network analysis appliance that scans the complete network infrastructure, analyzes the health of all the key systems-level areas, prevents problems and provides improvement- like an MRI.

Based on best practices

NetMRI's analysis rules are based on hundreds of best practices and expert techniques recommended by Cisco and other leading manufacturers. Thousands of hours of networking experience, from hundreds of substantial networks have been captured and instantiated into our software. NetMRI's rules database is updated continuously by our software developers as new technology is introduced and best practices are identified.

Network Expert in a box

NetMRI brings additional depth, breadth and updated experience to your network engineering team. Each day it collects volumes of data across the network, performing repetitive, detailed, and compute-intensive tasks at high speed. Then the correlation engine analyzes the data as a CCIE or other network expert would, linking together complex associations, ignoring irrelevancies, zeroing in on real issues affecting the network and presenting the network's health in a one page Network Scorecard™ and a task list of actionable issues.

Improving your network

Your network engineering effectiveness is enhanced dramatically, as the information for optimal configurations and improvements is now made available clearly and quickly, even in complex networks. Significant time and resources are saved by avoiding troubleshooting dead-ends, and keeping the focus instead on the real issues affecting your infrastructure.

NetMRI Complements NMS systems such as HP Openview and CiscoWorks

Monitoring and network management tools typically capture statistics from interfaces, links and protocols, draw maps and graphs, and send real-time alerts about fault conditions.

NetMRI takes the next step by correlating the statistics, and applying rules of logic for troubleshooting at the system-level functional areas, such as root bridge placement in VLANs, security setting in Wireless LANs, routing protocol stability, etc. NetMRI complements real-time systems with in-depth root-cause analysis presented daily in an understandable, useful browser-based view or report.

NetMRI is a fully integrated appliance with a 30 minute installation and self-running maintenance free operation, a key distinction from complex multi-component frameworks.

Prevention — Analysis — Diagnosis — Treatment

By analyzing the correctness and stability of infrastructure devices, subnets, routes, VLANs, WAPs, and HSRP groups using our extensive knowledge base, NetMRI can actually predict, and therefore prevent, a wide variety of network problems before they occur. If problems develop, NetMRI will be there to provide the network engineer with in-depth diagnoses to help treat and solve the situation.

Network Scorecard

6.0

Component	Correct	Stable
Devices	6.7	7
Interfaces	3.8	5.4
Routing	4.4	7
Security	0	5
Subnets	10	10
VLANs	4.6	6.4
VoIP	10	0
Wireless	6	10



Network Scorecard™ daily assessment

On a daily basis NetMRI prepares a summary Network Scorecard of the network's health, with a single overall Index between 0-10. Key systems-level areas are subtotaled, such as VLANs, Routing, Wireless, etc.

Status and Trends at a Glance

Your infrastructure health is summarized in one screen view and compared with your own recent history. The Index is based upon Cisco's and other leading manufacturer's best-practices.

All Issues		Period	Component
2003/12/24		Daily	All
The following issues were generated on the day of 2003/12/24:			
2003-12-24 00:16:00	Device Memory Utilization Increasing [1]		
2003-12-24 00:16:00	Device Free Memory Low [1]		
2003-12-24 03:05:06	Device Issue Limit Exceeded [2]		
2003-12-24 00:53:10	HSRP Not Recognizing Peer [4]		
2003-12-24 00:45:11	VLAN Member Priority [6]		
2003-12-24 00:42:25	VLAN Topology Change [2]		
2003-12-24 00:42:22	Bad IOS - SNMP Memory Leak [3]		
2003-12-24 00:32:24	Router Interface Down [1]		
2003-12-24 00:32:23	Vlan Trunk Port Down [351]		

Selecting and clicking a highlighted issue displays expanded relevant details about that issue, and can include built-in recommendations and links to the manufacturer's specific technical web resources.

Actionable Issues

Accompanying the daily Network Scorecard are actionable issues classified by severity; Error, Warning, and Informational. These identify the type of system-level problem and all of the associated devices or interfaces.

VLAN Member Priority [6]

Severity: Error Component: VLANs
 Correctness Penalty: -1 Generated: 2003-12-24 00:45:11.0
 Stability Penalty: 0 Modified: 2003-12-24 00:45:11.0

The bridge priority of all switches in the following VLANs were the same during the day of 2003-12-23. The root bridge will be the switch with the lowest MAC address, typically an older switch. The bridge priority of the preferred root bridges should be modified (decreased) to force root bridge selection to the desired switches.

See Also: [Cisco Search - Configuring VLANs](#)
[Cisco Search - Understanding and Configuring Spanning Tree Protocol](#)
[Cisco Search - Bridge Priority](#)
[Cisco Search - UplinkFast](#)

Rows 1-6 of 6					
VLAN Name	VLAN ID	Root Bridge	IP Address	Priority	VLAN Members
1 VLAN0420	420	t34-dist-6506-2	10.20.8.5	16384	2
2 default	1	b3-dist-6513	10.4.8.4	32769	2
3 Management	30	b3-dist-6513	10.4.8.4	32798	2
4 VLAN0090	90	b3-dist-6513	10.4.8.4	32858	2
5 Wash-Net	627	b3-dist-6513	10.4.8.4	33395	2
6 Wash	990	b3-dist-6513	10.4.8.4	33758	2

[CSV Data](#)

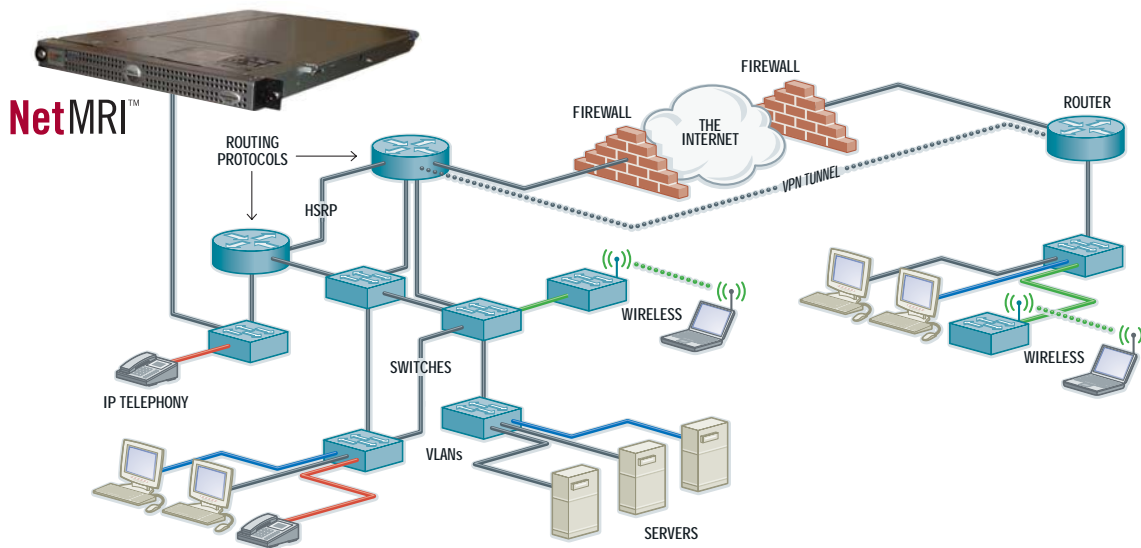
All OSs		Device Type
Version	Count	ALL
Cisco 11.21(0)		
APC 2.2	2	
Cisco 11.21(0)	32	
Cisco 12.0(5)WC8	3	
Cisco 12.1(11)E4	2	
Cisco 12.1(12c)E1	1	
Cisco 12.1(12c)EW2	2	
Cisco 12.1(13)AY	2	
Cisco 12.1(13)E9	2	
Cisco 12.1(13)EV1	1	

OS Summary Example- the OS versions on the network are identified and subtotaled automatically, quickly providing a daily audit for integrity and control, with significant router and switch issues noted by NetMRI.

Some of the many Issues tested by NetMRI:

- VLAN Member Priority
- Device No Route
- VLAN Topology Change
- Device No IP address
- VLAN Inconsistent Member Name
- IP Routing Discards
- VLAN Spanning Tree Protocol Timers Differ
- OSPF Stability Error
- VLAN Trunk Port Down
- Switch Port Duplex Mismatch
- Wireless AP WEP Encryption Weak
- Config Running Not Saved
- Wireless AP Broadcasting SSID
- Config Policy Failure
- Wireless AP Key Length Not Set
- Config Retrieval Error
- Wireless AP Hot Standby Active
- Device Free memory Low
- Wireless AP Hot Standby Ethernet Failure
- Device CPU Utilization High
- Wireless AP Hot Standby Radio Failure
- Device With Web Interface Open
- VPN Tunnel MTU Mismatch
- Weak Community String

Spanning your organization and supporting multiple network services



A single NetMRI appliance can span multiple subnets, VLANs, and media across a Campus or Enterprise, collecting data and analyzing the key network system-level functional areas. The daily reports and issue list are produced and hosted on its internal web server, available via secure HTTP.

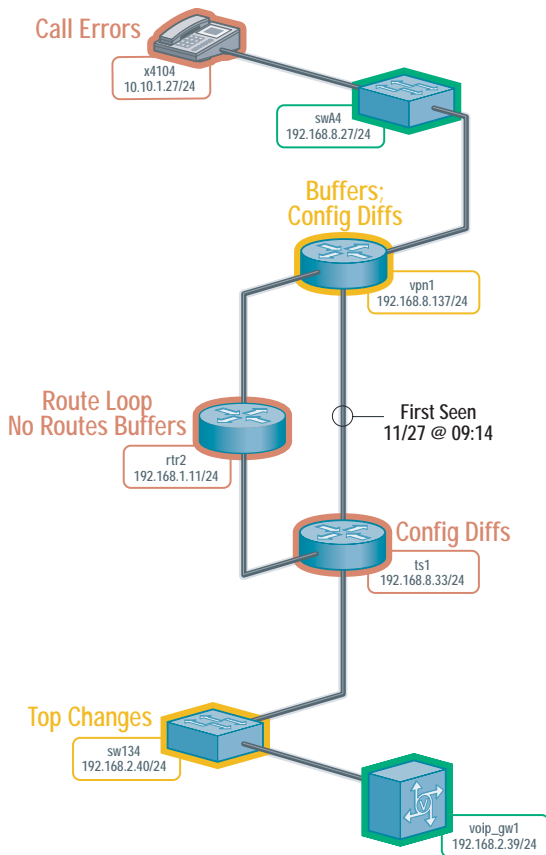
Path Diagnostic Chart

NetMRI's Path Diagnostic Chart allows technicians and engineers to easily see all of the existing problems associated with all of the network devices along a given path between a given source and destination IP address, over a given time period.

Configuration Policy Analysis

NetMRI provides a powerful mechanism, called Configuration Policy Analysis, that allows engineers to automatically verify the correctness of each and every configuration file against one or more network configuration policies. This feature can be used for daily configuration management or periodic network auditing purposes.

Examples include testing for Access Control Lists for inclusions or exclusions, Interface parameters or names, Telnet vs SSH access, RIP settings, or any other configuration parameters to be verified daily as on or off.



NetMRI™ tr3-c-rsm-2 (10.1.8.3)
Configuration Policy Analysis
 2005-01-31 17:26:41

Cisco IOS Router Policy - Section: Access List

Specifies the access list configuration for all IOS based Cisco routers.

See Also:

[Corporate ACL Policy](#)

✘ The following required configuration commands were missing:

access-list 10 permit 10.76.4.11	(cpd 28)
access-list 10 permit 10.76.36.41	(cpd 29)
access-list 10 permit 10.48.3.17	(cpd 30)
access-list 10 permit 10.48.4.31	(cpd 31)



SPECIFICATIONS

Administration

Secure HTTP with multi-level access

Browser

Internet Explorer, Netscape or Mozilla with JavaScript, Java and cookie support

Reports

HTML or PDF

Exports

CSV for many display tables

Dimensions

Campus Model (shelf mount)
2.9" x 5.9" x 10" (HxWxD)

Enterprise Model (rack mount)
1.7" x 18.5" x 30" (HxWxD), 1 U high

Weight

Campus 8 lbs., Enterprise 35 lbs.

Interface

Campus 10/100 Ethernet
Enterprise 10/100/1000 Ethernet

Power

Campus 120-240 V, 1.5 Amp, 50-60Hz
Enterprise 120-240 V, 3.3 Amp, 50-60Hz

Environmental

0-35 degrees C
Humidity, non-condensing:
5% to 90%

30 Minute installation

Installation typically takes 30 minutes or less with a five step process, using a configuration wizard.

NetMRI is a fully integrated appliance, so there is no additional hardware, software or peripherals to purchase. All that is needed is power and an ethernet port. Access is via a web browser.

The internal operating system, database, web server and expert rules software come preinstalled and optimized, designed for maintenance-free operation.

Self-running operation

NetMRI auto-discovers the network daily, automatically correlates the data, applies the built-in best practices thresholds and rules, and generates daily HTML and PDF reports by 6 am each morning.

NetMRI adds to your expert network analysis without requiring valuable engineering time to maintain the system or identify and apply numerous thresholds. You focus on improving your network, not maintaining the tools.

Low Network impact

When collecting data, NetMRI typically uses less than half of one percent of a 100 meg Ethernet segment by using efficient collection techniques and appropriate sampling intervals.

NetMRI Appliance Models

NetMRI Campus 200-Capacity of up to 5,000 interfaces/ports, or up to 200 routers and switches

NetMRI Enterprise 500-Capacity of up to 15,000 interfaces/ports, or up to 500 routers and switches

NetMRI Enterprise 1000-Capacity of up to 30,000 interfaces/ports, or up to 1000 routers and switches

NetMRI Enterprise 2000-Capacity of up to 60,000 interfaces/ports, or up to 2000 routers and switches

Supports Leading Infrastructure Vendors

NetMRI collects data from the leading infrastructure vendors including a range of routers, switches, Wireless Access Points, VPN Concentrators, switch/routers, and VoIP gateways from Cisco, Nortel, Avaya, Foundry, Extreme, Juniper, Enterasys/Cabletron, and Riverstone.



NetMRI™
is a product of **Netcordia, Inc.**

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