

Network Management Tools



Network Management Tools

- The catalog of network management tools is extensive,
 - And we cannot do justice to the full range of these tools.
 - They are necessary for trouble shooting of problems in networks and supplement system tools that detect problems or failures and notify the various alarms.

Network Operation Center(NOC) Tools

■ Network Management Tools

— Functional Role

▲ Examples

- ✦ Alarm (NetMetrix™ Protocol Analyzer)
- ✦ Manager (MIB Manager™)
- ✦ Security (SNMP Libraries and Utilities™)
- ✦ Traffic (for monitoring Packet Flow. E.g. tcpdump)

— Network Resources and Components

▲ Examples

- ✦ Bridge (Monitoring LAN Bridges (XNETMON™)
- ✦ Ethernet (Controlling and monitoring network Components on Ethernet Lan, i.e. ARP)
- ✦ IP (TCP/IP Protocol Suite, e.g. ARP)
- ✦ NFS (Network File System, etherfind or tcpdump)

— Mechanism

▲ Examples

- ✧ NMS (component of NMS)
- ✧ Ping (ICMP Echo messages)
- ✧ SNMP (Network Management Protocol)
- ✧ X (X is a tool that uses X-Window)

— Operating Environment

▲ Examples

- ✧ DOS
- ✧ Window NT
- ✧ SUN
- ✧ UNIX
 - Unix and Window NT are two popular platforms for Network management Systems.

— Acquisition (characteristic of product availability)

▲ Examples

- ✦ Free (Free of charge, such as Freeware that can be downloaded from a public source)
- ✦ Library (APIs)
- ✦ Sourcelib (Keyword for a collection of source code from which developers may construct other tools).

Functional Role of Management Tools

Function	Description
Alarm	A reporting/logging tool that can be triggered by specific events with a network
Analyzer	A traffic monitoring tool that reconstructs and interprets protocol messages that span several packets
Benchmark	A tool used to evaluate the performance of network components
Control	A tool that can change the state or status of a remote network resource
Debugger	A tool that, by generating arbitrary packets and monitoring traffic, can drive a remote network component to various states and record its responses
Generator	A traffic generation tool
Manager	A distributed network management system or system component
Map	A tool that can discover and report a system's topology or configuration
Reference	A tool for documenting MIB structure or system configuration
Routing	A packet route discovery tool
Security	A tool for analyzing or reducing threats to security
Status	A tool that remotely tracks the status of network components
Traffic	A tool that monitors packet flow

Resource and Component Manager by Tools

Resource/ Component	Description
Bridge	A tool for controlling or monitoring LAN bridges
CHAOS	A tool for controlling or monitoring implementations of the CHAOS protocol suite or network components that use it
DECnet	A tool for controlling or monitoring implementations of the DECnet protocol suite or network components that use it
DNS	A domain name system debugging tool
Ethernet	A tool for controlling or monitoring network components on Ethernet LANs
FDDI	A tool for controlling or monitoring network components on FDDI LANs or WANs
IP	A tool for controlling or monitoring implementations of the TCP/IP protocol suite or network components that use it
OSI	A tool for controlling or monitoring implementations of the OSI protocol suite or network components that use it
NFS	A Network File System debugging tool
Ring	A tool for controlling or monitoring network components on token ring LANs
SMTP	An SMTP debugging tool
Star	A tool for controlling or monitoring network components on StarLANs

Mechanism used in Management Tools

Mechanism	Description
CMIS	A network management system or component based on the Common Management Information System and Protocol (CMIS/CMIP)
Curses	A tool that uses the "curses" tty interface package
Eavesdrop	A tool that silently monitors communications media (e.g., by putting an Ethernet interface into "promiscuous" mode)
NMS	The tool is a component of or queries a Network Management System
Ping	A tool that sends packet probes such as ICMP echo messages; to help distinguish tools, we do not consider NMS queries or protocol spoofing as probes
Proprietary	A distributed tool that uses proprietary communications techniques to link its components
RMON	A tool that employs the RMON extensions to SNMP
SNMP	A Network Management System or component based on the Simple Network Management Protocol (SNMP)
Spoof	A tool that tests operation of remote protocol modules by peer-level message exchange
X	A tool that uses X-Windows

Keyword used for Operating Environment

Operating Environment	Description
DOS	A tool that runs under MS-DOS
HP	A tool that runs on Hewlett-Packard systems
Linux/FreeBSD	A tool that runs under Linux/FreeBSD operating systems
Macintosh	A tool that runs on Macintosh personal computers
OS/2	A tool that runs under the OS/2 operating system
Standalone	An integrated hardware/software tool that requires only a network interface for operation
Sun	A tool that runs on Sun Microsystems platforms (Solaris 1.x/SunOS 4.x, Solaris 2.x).
UNIX	A tool that runs under 4.x BSD UNIX or related OS
Windows 95	A tool that runs under Microsoft Windows 95
Windows NT	A tool that runs under Microsoft Windows 98
VMS	A tool that runs under DEC's VMS operating system

Network Status Monitoring Tools

Name	OS	Description
ifconfig	UNIX	Obtains and configures networking interface parameters and status
ping	UNIX/Window	Check the status of node/host
nslookup	UNIX/Window	Looks up DNS fro name-IP address translation
dig	UNIX	Quries DNS server
host	UNIX	Display information on internet hosts/domains

Traffic Monitoring Tools

Name	OS	Description
ping	UNIX/Window	Used for measuring round trip packet loss
bing	UNIX	Measure point to point bandwidth of a link
etherfind	UNIX	Inspects Ethernet Packets
snoop	UNIX	Captures and inspects network packets
tcpdump	UNIX	Dumps traffic on a network
getethers	UNIX	Acquires all host addresses of an Ethernet LAN segment.
iptrace	UNIX	Measure performance of gateways

Route Monitoring Tools

Name	OS	Description
netstat	UNIX	Displays the contents of various network related data structures.
arp/rarp	UNIX/Window 95/NT	Displays and modifies the Internet-to-Ethernet Address translation tables
tracert/traceroute	UNIX/Windows	Traces route to a destination with routing delays.

Top ten Network Monitoring Tools, visit the following link

<https://www.pcworld.com/best-network-monitoring-tools-and-software>

