WebNMS Simulation Toolkit

A comprehensive set of agent simulator and network simulator tools to simulate SNMP, TL1, TFTP, FTP, Telnet and IOS device networks.

Testing a network management application in realistic and peak-load environments with multi-vendor network devices is critical to its commercial success. Sales demos are essential to demonstrate the capabilities of the software in large, complex, network scenarios, or at customer premises. Users need to evaluate the tool exhaustively before buying.

However, in real life, the testing, demonstration and evaluation of NMS applications involve the following hurdles.

**Challenges in Building and Testing Management Applications**

♦ Procurement of complex multi-vendor network devices for testing is prohibitively expensive.

♦ Complete and reliable testing is not possible due to the various types of agents in the devices and their different versions.

♦ Critical test scenarios, such as device failures and agent crashes are difficult to reproduce with live devices.

♦ Trained people with expertise on various devices and technologies are required to evaluate the network management tools.

♦ Networks are complicated and extremely expensive, and most vendors cannot afford to set up a demo network in every sales office.

WebNMS Simulation Toolkit, a software suite which comprises SNMP and TL1 agent and network simulator tools is designed to overcome the above hurdles. WebNMS Simulation Toolkit offers,

♦ An integrated network design studio to create a virtual multi-vendor network environment with SNMP, TL1, TFTP, FTP, Telnet and IOS manageable devices, on a single PC.

♦ Simulation of any type of device by adding vendor specific MIBs/TCS and simulating values for the same.

♦ Creation of realistic and flexible networking scenarios for effective testing, training and evaluation.

♦ A portable simulation environment, enabling easy demonstration of management applications.
**Uses**

**Portable Product Demonstrations**

Simulation Toolkit helps to create different network scenarios instantly. The network configurations are portable across all OS. This enables marketing and sales to set up powerful "live" demonstrations of their network management products at trade shows or at customer premises, easily and effectively. Reduced demo set up time and absence of bulky equipments results in reduced cost of sales.

**Evaluation before Purchase**

Users can easily yet exhaustively evaluate new management products prior to purchase and customize them after purchase. The Jython script APIs bundled with the product can be used to evaluate the capability of the management products.

**Quick and Efficient Support**

With Simulation Toolkit, the support staff do not have to visit the customer premises for problem reproduction. Its recording tool can record the customer's network environment and reproduce the problem quickly to provide fast and efficient support.

**Virtual Multi-Vendor Network Environment on a Single PC**

Developers and testing departments can test management applications by simulating large, complex network environments with SNMP, TL1, TFTP, FTP, Telnet and IOS devices. Full control over the values returned by the SNMP and TL1 agents and the ability to generate SNMP traps and TL1 autonomous messages on demand, enable thorough testing of applications. This ensures greater product quality.

**Efficient Training**

Simulations can be used to train network operators, administrators, and technicians. Training groups can create realistic and flexible networking scenarios by setting up user defined Jython script.

**Benefits**

**Reduces Product Development Costs**

Simulation Toolkit has a positive impact in reducing the cost of developing, testing, and delivering management applications. It reduces the investment in equipment, support infrastructure, and testing. By facilitating easy demonstrations, it reduces the cost of selling and enhances profitability of the business.

**Reduces "Time-to-Market"**

Management application developers can develop their applications in parallel with agent development through simulation of device prototypes. This enables quick implementation of the management products, thus significantly shortening the "time-to-market" and the associated costs.

**Efficient Network Management Staff**

Customized simulations can be used to train network operators, administrators, and technicians. Efficient training results in well trained network management staff with better understanding of the network management products and protocols.

**Delivers High Quality Management Applications**

Simulation of complex network scenarios enables complete testing of network management applications. This enhances product quality and results in a reliable and rugged management applications.

**Enables Easy and Successful Demonstrations**

Portable device configurations ease the task of setting up customer demos to show the capabilities of the management application. With options to enable different permutations and combinations of network configurations rapidly, the Simulation Toolkit helps in such presales activities at trade shows and customer locations.
Simulation Toolkit creates the complete virtual network environment that can run on any industry-standard Intel-based PC or Sun Sparc with a variety of network interfaces. It can even run on the same machine that runs the management application. Large scale enterprise networks can run simultaneously on a single PC.

Simulating Real Networks

The Network Recorder records real time network devices simultaneously. The recorded network can be replayed instantly in the Network Designer. The recorded configuration can also suitably be modified to create test configuration variations.

The Trap Recorder records SNMPv1 and SNMPv2c traps by listening for traps at the specified port. The output of the trap recorder will give you the traps in the order they were received, with timestamps and the variables included in the trap PDU. The recorded traps can be stored in XML files and replayed in the SNMP agent simulator and network simulator as request-based, threshold-based or time-based traps.

Simulating Dynamic Network Behavior

Simulation Toolkit can simulate addition of new devices (including bulk additions), start and shutdown of devices, change of read-only and read-write variables, generation of traps and autonomous messages, addition and deletion of rows dynamically for provisioning. These simulations can be enabled dynamically without disrupting the simulation process and thus helps to create a real-life scenario with high scalability. The toolkit enables querying of the same simulated device by multiple network management applications.

Automated Network Simulation

The Network Automation Wizard offers the ability to automate the most common tasks performed by the network devices. You can configure tasks to be performed on any device in the network and set triggers to instigate each task. Based on the tasks configured, the simulator automatically generates scripts that schedule and trigger the activities. The automated network can be started from command line.

Simulation of Cisco IOS Software

Simulation Toolkit supports Cisco IOS Software Simulation as part of its existing Network Simulation suite. It allows you to simulate Cisco routers and Cisco Switches. CLI support is provided to access the Cisco IOS Software.

TFTP, FTP and Telnet Support

Simulation Toolkit supports TFTP client and server and FTP client implementation to facilitate transfer of files between the manager and agents using TFTP and FTP protocols respectively. This facility can be used for testing the managers' statistics collection, software download, upload and download of configuration and event files etc.

Simulation Toolkit enables execution of telnet commands on the simulated devices. Extensive script APIs are provided for customization of Telnet commands. The Telnet script editor and command configurator can be used to edit telnet scripts and define new Telnet commands.

Fault Management Testing Using Trap Stormer

Simulation Toolkit offers the Trap Stormer, an exclusive tool to storm SNMPv1/v2c traps at burst and normal modes. Trap storms can be generated to validate the effective event handling of the manager application. In addition, the Trap and Inform configuration wizard in the simulator supports request-based and timer-based SNMPv1,v2,v3 Traps and SNMP v2, v3 Informs.
Capabilities

Jython Scripting Support

Simulation Toolkit provides an intuitive GUI to model and define inter-relationship among MIB variables, among TL1 commands, and across devices in the network.

The toolkit offers powerful built-in SNMP, TL1, CLI and Telnet script APIs to automate a complete network environment. The intuitive UI and powerful script APIs, combined with the flexible scripting capabilities of Jython, offers a highly versatile environment in simulating advanced network behavior and trap generation. This enables complete control of the virtual network environment.

Pack and Play

Any network created in Simulation Toolkit can be packaged and installed in any other system where Simulation Toolkit has been installed. This is useful to give demonstration of management applications at customer premises or during trade shows without the need for configuring and carrying of devices.

Enhanced Performance

Simulation Toolkit provides performance tuning options and registration of selected OIDs for effective utilization of memory. This ensures maximum network performance, especially in case of large enterprise networks.

Agent and Network Management through RMI Interface

RMI (Remote Method Invocation) is implemented in Simulation Toolkit to manage the simulated SNMP and TL1 agents and network behavior from a remote client program. RMI’s unique capabilities to load and execute user-defined tasks at runtime, helps in test case automation of manager applications.

Dynamic Configuration of IP Address

Simulation Toolkit provides the facility to dynamically configure IP addresses when starting each agent instance in the network. This facility is supported in Windows NT, 2000, XP and Linux / Solaris OS.

Design and Play: The Simulation Experience

Simulation Toolkit offers a sophisticated yet simplified simulation experience in just two steps: Design the virtual network in the Network Designer and play the simulation. To accomplish this task, the toolkit provides a complete range of easy-to-use visual tools that make simulation simple right from specifying the input for simulation until packaging and installing the simulated agent.
**Product Suite**

**Network Simulator**

To design and simulate a network with SNMP, TL1, TFTP, FTP, Telnet and IOS devices, on a single PC. Supports Jython-based scripting to model agent behavior and express inter-relationship among MIB variables and across devices.

**SNMP Agent Simulator**

To simulate an SNMPv1/v2c/v3 agent (or device) with user configured data or recorded agent values. Supports Jython-based scripting to model agent behavior and express inter-relationship among MIB variables.

**TL1 Agent Simulator**

To simulate a TL1 Network Element with user configured data. Supports Jython-based scripting to model agent behavior and express inter-relationship among TCS commands.

**SNMP Trap Stormer**

To configure and send traps, to test the reliability of your management application for receiving any number of traps at the specified interval.

**Network Recorder**

To record real SNMP networks. The recorded network can be instantly replayed in the network simulator.

**Trap Recorder**

To record real traps. The recorded traps can be replayed in the trap configuration dialog of the SNMP Agent Simulator and Network designer tools.

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**About Zoho Corporation**

Zoho Corporation provides affordable software for database migration, management and provisioning of complex networks, systems, and IT applications. With a broad product portfolio and an active customer base ranging from enterprises, equipment vendors, and service providers, Zoho Corporation has emerged as a very affordable and high-quality alternative to expensive software that is common in this industry.

Zoho Corporation has offices in CA, Austin, New Jersey, Chennai, Singapore, Tokyo and Beijing. It has a well-trained partner base around the globe and thousands of customers world-wide. It has a well-trained partner base around the globe and thousands of customers world-wide. For more information, call 925-924-9500 or visit our Web site at: www.webnms.com.

**Support and Training**

WebNMS offers extensive support and training to ensure the success of your solutions. 24x7 hotline to our developers will ensure your questions are answered in real time and issues resolved quickly. Our product services team provides onsite assistance and regular training programs.

Our support organization is unique in the industry with a wealth of experience in handling a high volume of change requests from developers. This capability is an important aspect of supporting development teams in an efficient way.

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