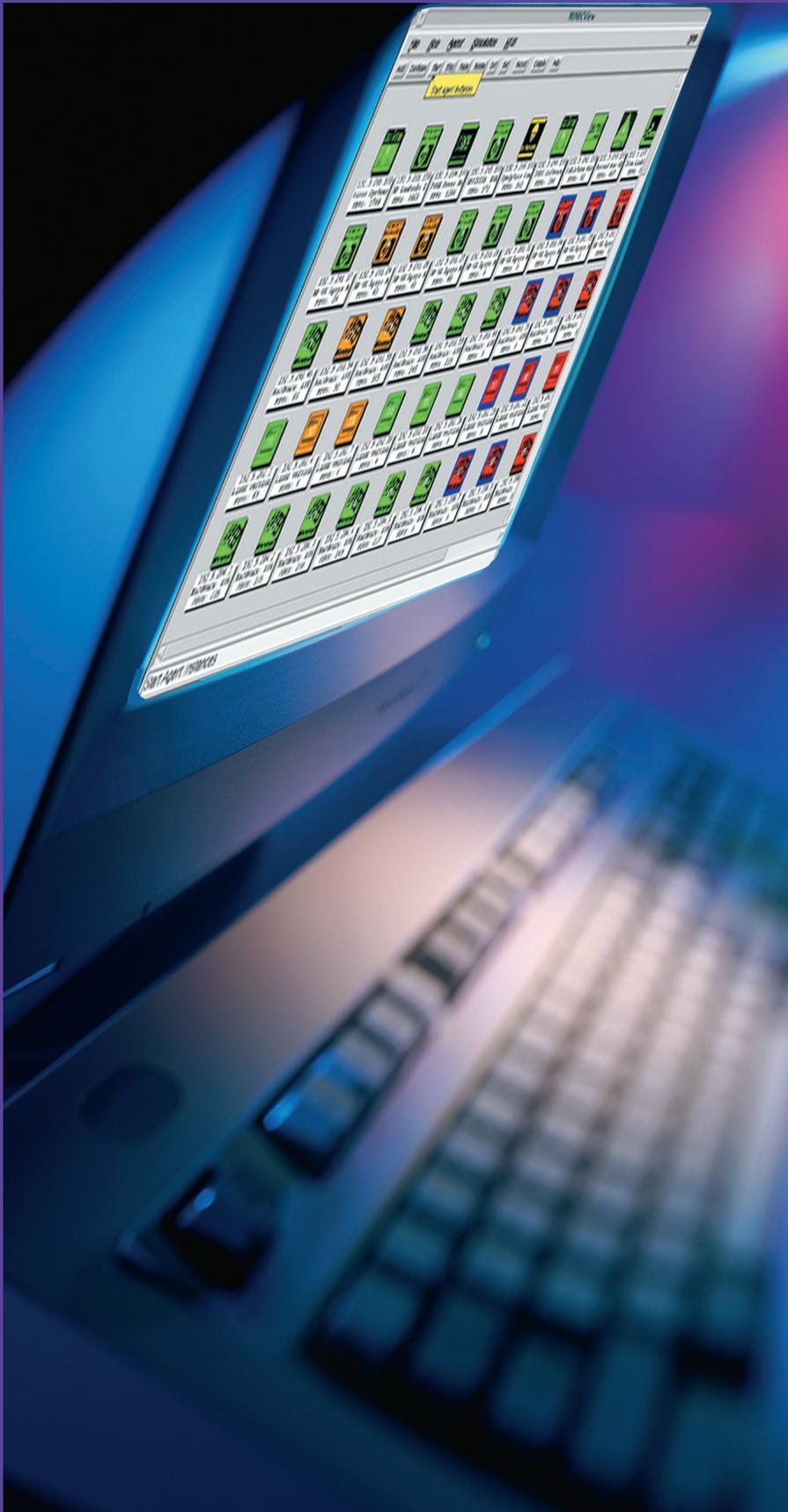# MIMIC−SNMP-Based Simulation of Enterprise Networks

Since the advent of SNMP as a defacto "standard" management protocol, enterprise management tools have achieved great strides in capability. Yet product complexity and scalability remain significant barriers to the effective use of these products in mid-size and large enterprise NMS environments. Why?

⚠ End-users lack the time to properly learn the features of their NMS.

⚠ Shortage of training facilities required to learn, test, and utilize NMS tools.

⚠ Management application manufacturers face difficulty accessing proprietary MIBS, limiting their software.

⚠ Complex multi-vendor network topologies are cost prohibitive for training and testing.

⚠ Lack of hardware in the support lab for problem reproduction and resolution.

MIMIC SNMP AGENT SIMULATOR, a software-only suite of SNMP-based network simulation tools was designed to overcome these limitations in NMS deployment.

✔ MIMIC resolves many of the difficult development, support, and training issues facing management vendors and network managers alike.

✔ MIMIC creates a complete "virtual" multi-vendor network environment on a single PC or workstation eliminating complex hardware setups.

✔ MIMIC provides a controlled "lab" environment where network management tools can be easily, safely, and effectively taught, demonstrated, or tested.

Whether in R&D, customer support, training, or sales, all network management tools reach the same conclusion: **MIMIC IS THE NETWORK!**

Uses of MIMIC
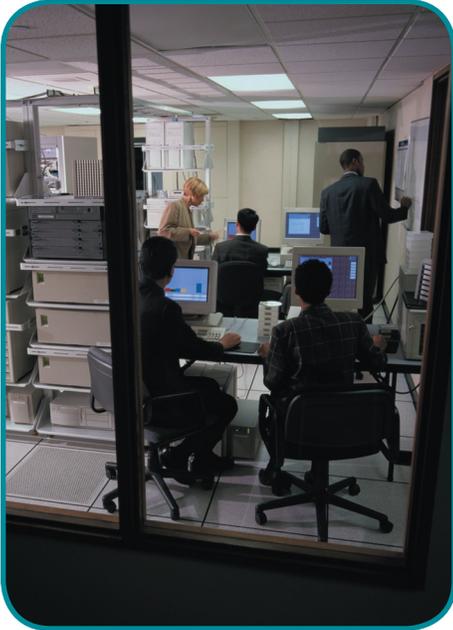
Virtual "test network" environment.

Developers can simulate QA test cases or recreate customer environments. MIMIC enhances product reliability by simulating large, complex, multi-vendor network environments, thus ensuring greater product quality and more responsive customer service.

Flexible training facility.

Instructors will deliver more effective network management training. MIMIC is a portable enterprise network in-a-box, enabling students to investigate routine and unforeseen network management scenarios.

Portable product demonstrations.

Marketing and sales will demonstrate network management product capabilities easily, reliably and effectively. Simplify demo setup time, enhance portability, and reduce cost-of-sales.

More thorough product evaluations.

End-users can easily yet exhaustively evaluate new management products prior to purchase, and customize them after purchase. MIMIC scripts automate testing by simulating network conditions in the virtual MIMIC environment.

MIMIC Benefits

More productive network management staff.

MIMIC facilitates a better understanding of SNMP-based management through more complete and effective training.

Greater revenue with lower cost-of-sales.

MIMIC enables more realistic and compelling network management product demos, at far lower effort and cost compared to hardware purchase and administration.

Faster product time-to-market.

Simulation of device prototypes during the development phase facilitates parallel development and quicker time-to-market.

More reliable network management products.

MIMIC simulates the complexity and scope of an enterprise network to enable faster and more complete Quality Assurance (QA) testing prior to product release. The determinism of MIMIC simulations enables formalized regression testing.

Lower customer support costs.

MIMIC enables greater product quality throughout the life cycle, from development, to QA, to customer support. This translates into reduced customer support calls and faster customer service. Moreover, a significant portion of customer support efforts are spent in recreating the customer's problem at the vendor lab.

MIMIC easily captures the exact customer configuration for duplication at the vendor's facility, resulting in speedier problem isolation and diagnosis.

Greater ROI for network management products.

With MIMIC, network managers can easily manage and configure an entire "virtual" enterprise network, safely putting complex network management products through their paces without impacting their end-users. Off-the-shelf products can be customized to site-specific policies.

MIMIC Capabilities

Real-time monitoring and management.

Quickly instantiate new devices or entire network segments, singly or in groups. Schedule network "scenarios" that change SNMP variables, start or shut down devices, or generate traps. Multiple network management tools can query the same MIMIC simulated devices, each with its own unique simulated network view.
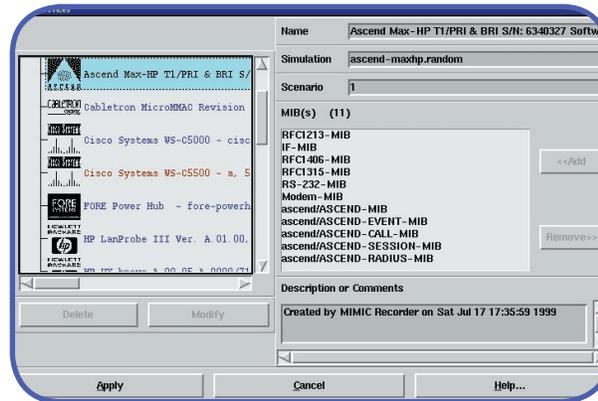
◄ **MIMIC Device Library:** Select ready-simulated devices from different manufacturers. Customize simulations by adding/removing MIBs.

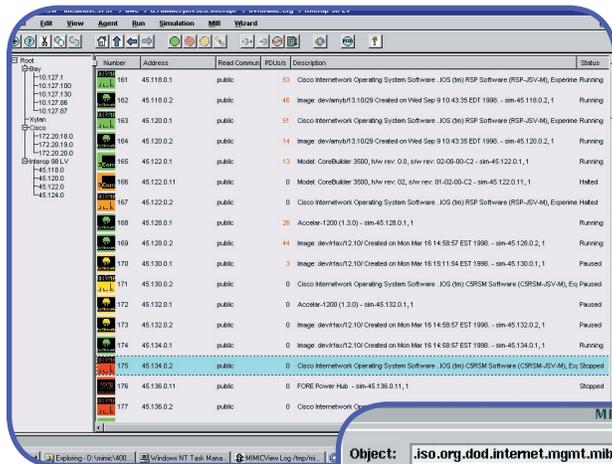## Network configuration "capture and playback."

Easily reproduce actual network configurations. Use MIMIC Recorder to take a snapshot of the device MIB. Then "replay" it instantly in the lab, or make controlled adjustments to SNMP variables to recreate problems or to test configuration variations. With MIMIC, you can recreate your production network in the lab!

Custom simulation.

With the intuitive graphical interface or the flexible scripting language, you get complete control of the virtual network environment. Change variable values, such as status, arrival rate, and utilization rate, for a single device or an entire group. You can even extend the MIB structure itself, to create prototypes of brand-new "devices."

Extensibility.

MIMIC's extensive MIB library provides out-of-the-box support for all leading data network equipment vendors. In addition, MIMIC Compiler easily imports new and custom MIBs to provide complete simulation of any SNMP-compatible device management agent.

Scalability.

MIMIC supports up to ten thousand agents on a single server, thus enabling simulation for large enterprise networks. Of course, multiple MIMIC servers can supply unlimited scalability.

◄ **MIMICView Explorer:** Easily configure agents individually or in a group, each with its own device type, IP address, port and community.

Ease of use.

MIMIC provides both a graphical user interface (GUI) and scripting. Several application wizards in the GUI facilitate initial setup of the simulation, while scripting automates regression testing and demos.

▶ **MIB Browser: Get or set any MIB public or private variable by traversing the MIB tree. Easy to identify object type, access mode and value range.**
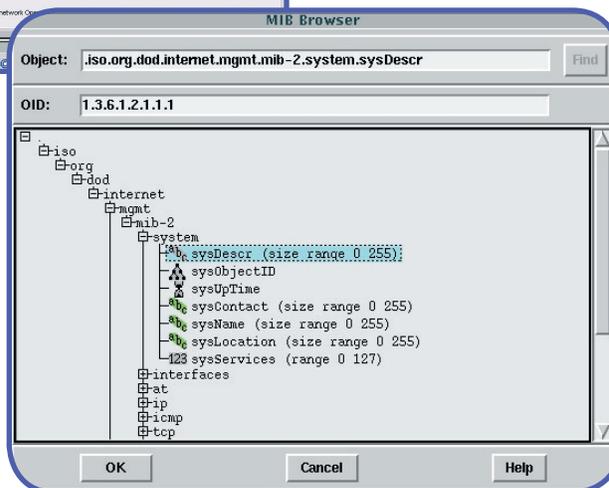
The MIMIC Product Suite

The three components of the MIMIC product suite work together to provide a complete SNMP-based network simulation capability on a single PC computer.

MIMIC Simulator

MIMIC SNMP Agent Simulator allows you to simulate an entire enterprise network on one Intel-based PC or Sun Sparc. With support for any SNMP-based device you can run a variety of device configurations with your management application.

Configurations are completely run-time customizable, both on an individual and collective basis. Since MIMIC respond to SNMP v1, v2 and v3 queries on any of its configured IP addresses, it looks to the Network Management Application as if it is talking to actual devices.

MIMIC Compiler

The MIMIC Compiler allows users to import any SMI-compliant MIB and extend the set of defined devices to support proprietary or unique equipment. Vendors use the Compiler to import definitions of new devices in the prototype development phase.

With an intuitive graphical interface or a powerful, flexible scripting language, users can further customize any device in the MIMIC library, to simulate unique network behavior.

MIMIC Recorder

The MIMIC Recorder enables users to automatically simulate the behavior of actual devices on your network, by capturing a "snapshot" of the device MIB in actual operation. The snapshot can then be easily replayed by the SNMP Agent Simulator to simulate an entire network with minimal user effort.

Any number of target devices can be recorded in parallel. Any subset of the device MIB objects can be recorded. For example, if a problem investigation focuses on a small part of the MIB, snapshots can be taken of the relevant MIB subtrees. The recording can be saved in a format for future editing, annotation. Recordings can be exchanged via e-mail and source code-controlled.
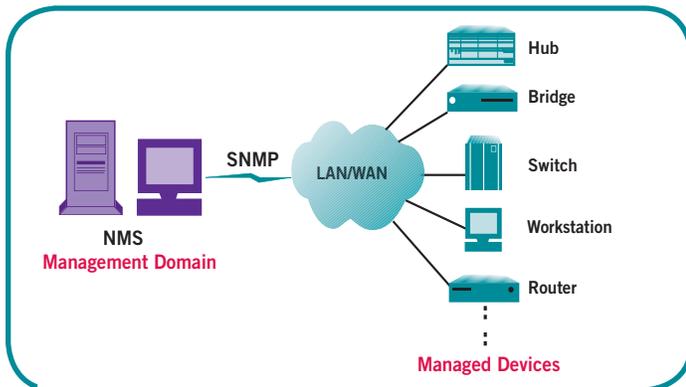
MIMIC Wizards

MIMIC Wizards give a user friendly way to compile, record and simulate huge networks.

The MIB Wizard allows importing new MIBs, the Discovery Wizard records large networks, the Simulation Wizard helps creating simulations for devices under development, the Topology Wizard customizes different network topologies and the Script Generator generates scripts based on actions in the GUI.

MIMIC Device Library

MIMIC ships with a large library of simulated devices, networks and pre-compiled MIBs from the leading networking companies.

Platforms

MIMIC supports Windows, Solaris and Linux operating environments. Visit our web site for complete and up-to-date system requirements.

◀ **A typical scenario of a Network Management System (NMS) managing multiple devices over Local and Wide Area Networks.**
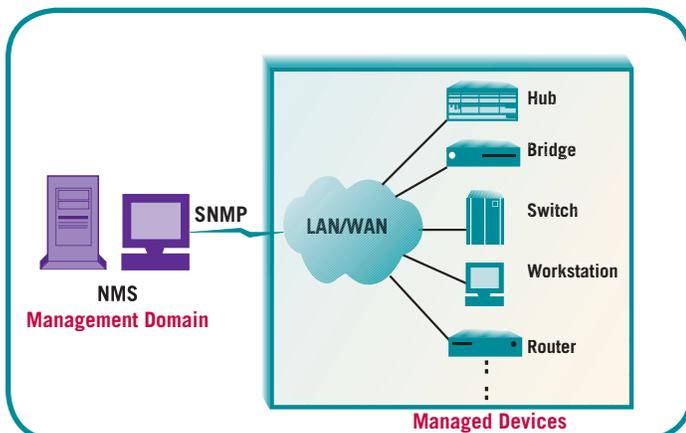
◀ **Virtual Lab: MIMIC simulates all types of managed devices over LAN/WAN.**

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