

Automated SNMP Agent Tester



SimpleSoft

Simplifying
Testing &
Simulation

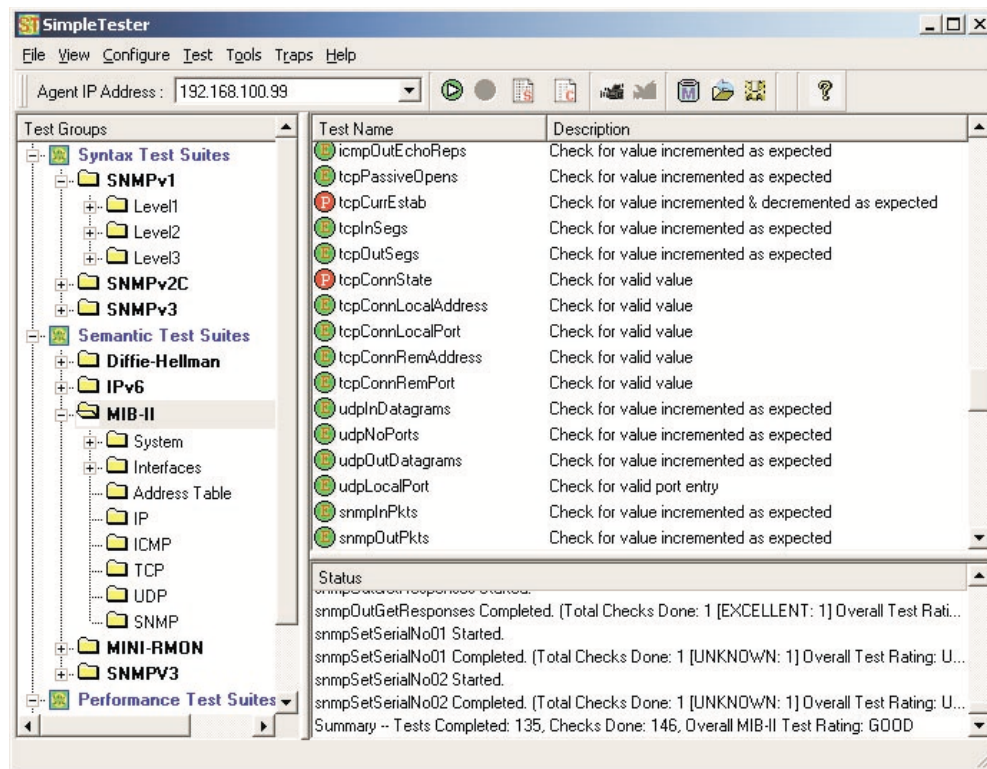


Fig1:
Screen shot of
SimpleTester
running MIB-II
semantic tests.

Overview:

SNMP managers and agents can communicate with one another because they share a common understanding of the data being exchanged (MIBs) and use the same mechanism to exchange that data (SNMP protocol). Hence to ensure interoperability, **an agent must be tested to check if its data matches the MIB definition, and if it adheres to the data exchange mechanisms (Get/GetNext/Set/GetBulk operations) specified in the SNMP protocol.**

SimpleTester is an easy to use test tool that **automatically** exercises SNMP agents. All types of SNMP agents implementing one or more standard, experimental or private MIBs can be exhaustively tested, within minutes.

As the number of MIBs, MIB variables and instances supported by an SNMP agent grows, it can take weeks or even months, to manually test each variable using tools like a typical MIB Browser. This is where the **SimpleTester** is most useful. The **SimpleTester** is an “SNMP Expert” program that will intelligently interpret MIB files, SNMP protocol specifications, and all the MIB objects supported by the agent. Using this knowledge, it automates the testing process to **complete weeks worth of manual testing - in just minutes.**

The SimpleTester contains syntax tests, semantic tests and other utilities. The predefined syntax tests check for MIB and SNMP protocol compliance for any MIB

by sending hundreds of different Get/GetNext/Set/GetBulk requests and analyzing the agent’s responses. The semantic tests contain 1100+ tests (with source code) to validate the implementation of objects in popular MIBs like MIB-II, miniRMON and SNMPv3. The framework for running these tests is expandable to include user defined test suites. The other test utilities include MIB Browser, Trap Checker, Script Generator, Script Runner, and RowStatus tester.

The SimpleTester includes a Tel interpreter with support for SNMP, Telnet and Serial I/O to allow users to test other aspects of their devices. In addition to the user interface, the SimpleTester can also be run in an unattended mode by specifying the tests to be run in a command file.

Features:

- Checks agent responses (and traps) for conformance with MIBs as well as SNMP protocols (v1, v2c and v3).
- Checks MIBs for Syntax Errors.
- Automatically tests each MIB variable for get, getnext, getbulk and set operations.
- Includes 1100+ semantic tests for popular MIBs like MIB-II, miniRMON, SNMPv3 and IPv6. Add-on suite for SAN MIBs is available.
- Creates script files to be used for regression, load and “RowStatus” related testing.
- Provides detailed reports that pinpoint problems.

Label	Data Type	Oid	Instance	Value
1	sysDescr	OctetString	1.3.6.1.2.1.1.1	0 cisco 1538M
2	sysObjectID	ObjectID	1.3.6.1.2.1.1.2	0 1.3.6.1.4.1.9.1.224
3	sysUpTime	TimeTicks	1.3.6.1.2.1.1.3	0 1314 hrs: 31 min: 36.97 sec (473229697)
4	sysContact	OctetString	1.3.6.1.2.1.1.4	0 John Doe
5	sysName	OctetString	1.3.6.1.2.1.1.5	0 Cisco Hub
6	sysLocation	OctetString	1.3.6.1.2.1.1.6	0 Mountain View, CA
7	sysServices	Integer	1.3.6.1.2.1.1.7	0 1

10:31:59	sysUpTime	time increments	Checks	1	0	0	0	0	EXCELLENT
10:31:59	sysContact	Check length of string value	1 Checks	1	0	0	0	0	EXCELLENT

Features (continued):

- Supports IPv4 and IPv6. Includes IPv6 test suite.
- Has HTML based test results for easy viewing.
- Includes Record function for test automation.
- Contains Tcl package for integration into 3rd party test environment/harness.
- Includes MIB Browser and Tcl interpreter with SNMP, Telnet and Serial I/O extensions.
- Supports Diffie-Hellman, MD5, SHA, DES, AES128, AES-192, AES-256, and 3DES.
- Supports functionality to include user defined test suites and Posix test results(IEEE std 2003-1997).
- Includes a test suite builder to ease the burden of creating and organizing user defined test suites.
- Supports a simple, intuitive, easy to use GUI interface as well as command-line batch mode.

Benefits

- Reduced development, testing, and support costs by detection of errors before deployment .
- Shortened “Time to Market”.
- Increased customer satisfaction.
- Improved quality and interoperability.

System Requirements:

SimpleTester runs on:

- Microsoft Windows XP/2003/7/8/2008.
- RedHat Enterprise Linux (5.x,6.x)

Operation:

Only a few simple steps are required to test an agent. They are as follows :

1. Load MIBs supported by agent by using built-in MIB compiler.
2. Specify variables to be tested by using built-in MIB walker.
3. Run any or all of the predefined syntax tests to check for conformance with the MIB definitions and SNMP specifications. Detailed reports pinpoint problem areas.
4. Create test scripts automatically using built-in Script Generator and RowStatus Tester. Run these scripts in built-in Script Runner for regression and load testing.
5. Check the implementation of popular MIBs by using built-in Semantic Checker or use samples provided to write your own semantic scripts.

Current Users Include:

More than 250 networking companies including:

CableLabs	Ericsson	Nokia
Cisco	Fujitsu	Nortel
Broadcom	Juniper	NTT
Brocade	Motorola	Siemens

Related SNMP Tools:

SimpleSleuth: SNMP Vulnerability Tester
SimpleAgentPro: SNMP Network Simulator

SimpleSoft
257 Castro Street
Suite 220
Mountain View,
CA 94041
650.965.4515
650.965.4505 fax
sales@simplesoft.com
www.snmpstest.com
www.simplesoft.com



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