

CENTURY TOOL KIT

Automated Test and Analysis Tools for 10/100 Ethernet Equipment

Product Features

- Provides direct control of up to 16 Shomiti Century Media Modules, Versions 1 and 2, for half- or full-duplex 10/100 Ethernet test and analysis.
- Programmatic Tcl language interface enables customization of network device test suites.
- Scripting capability facilitates automated test environment, which lowers costs while aiding test plan compliance.
- Support for full protocol testing on network devices including both switches and routers.
- Includes the four 10/100 Ethernet network device performance benchmarks specified by RFC 1242 and RFC 1944. All tests available for both MAC and IP layers.
- Includes Spanning Tree tests to verify proper functionality of Spanning Tree network devices such as bridges and switches.
- Provides remote control of Tcl scripts from a Unix or Windows system via a serial port connection.

Century Tool Kit provides direct command-line or scripted control of Shomiti Systems' Century Media Modules, Version 1 or 2. Century Media Modules are silicon-assisted, wire-rate capture and transmit engines for 10 and 100 Mbps Ethernet networks that provide a precise 35 nanosecond timestamp resolution. When combined with Century Media Modules, Century Tool Kit enables extremely accurate, high quality, automated testing and analysis of 10/100 Ethernet equipment.

Century Tool Kit automates network component test suites by enabling the creation of test routines using Tcl, a standard, simple scripting language. Network device tests can be quickly developed since no compilation is required — just write the script and execute with the Tcl interpreter embedded in Century Tool Kit.

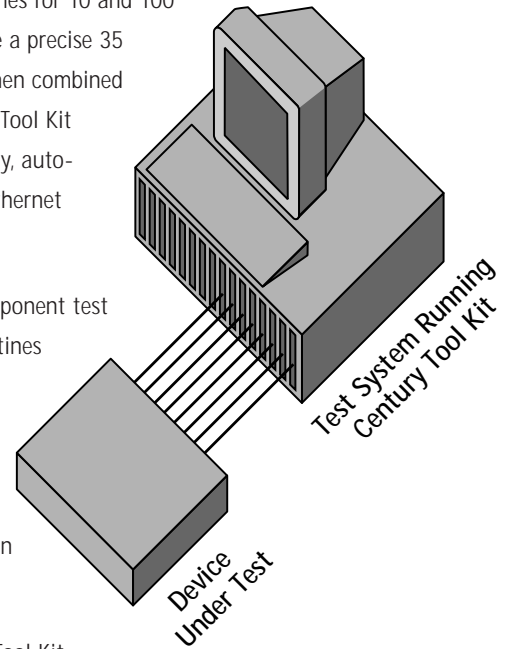
When used with Shomiti Surveyor, Century Tool Kit facilitates complete customization of the test data and methodology. Captured files and tailored data streams can easily be embedded in a test suite to create application layer and network layer benchmarks that mimic a real world setting. The result is a powerful tool to thoroughly test and analyze 10/100 Ethernet equipment before deployment in a production environment.

Century Tool Kit bundles a set of scripts which implement network device tests described in RFC 1242, "Benchmarking Terminology for Network Interconnection Devices", and RFC 1944, "Benchmarking Methodology for Network Interconnect Devices". Tests function at either MAC or IP layer.

For 10 or 100 Mbps Ethernet network devices, RFCs 1242 and 1944 specify four tests; Shomiti has added a full-duplex option to the first three:

- **Back-to-back:** The maximum number of fixed length frames with minimum inter-packet gap which can be received and forwarded without loss by the switch.
- **Packet Loss Rate:** Percentage of packets sent to a switch that were not forwarded due to lack of resources.
- **Throughput:** The maximum transmission rate at which none of the offered packets are dropped by the switch.
 - **Latency:** *Store-and-forward:* The time interval starting when the *last* bit of the input frame reaches the input port and ending when the first bit of the output frame is seen on the output port. *Cut-through:* The time interval starting when the *first* bit of the input frame reaches the input port and ending when the first bit of the output frame is seen on the output port.

The Century Tool Kit RFC 1242 tests employ a user-friendly menu-driven interface making it simple to customize testing parameters such as run times, frame sizes, and network load. Test parameters, data, and results may be viewed on the screen and saved to a file.



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Technical Specifications

System Requirements

System	Pentium class system
Memory	32MB minimum
Disk Space	3MB
Bus	ISA bus slot for each Century Media Module
Operating System	Windows 95/NT 4.x

Test Requirements

One or more Century Media Modules,
Version 1 or 2, required.
Shomiti Surveyor recommended.

For RFC 1242 Latency tests, three Version 2
Century Media Modules and one Century Tap
are required.

Century Tool Kit Performance

The Power of Shomiti Surveyor Plus Century Tool Kit

Shomiti Surveyor is a powerful analyzer that enables the user to create advanced traffic generation scenarios. With its ability to incorporate and edit capture files and create individual data streams, Surveyor can customize traffic patterns. In addition, Surveyor includes a powerful multi-state filtering capability in order to capture only the desired packets. Combined with the scripting capabilities of Shomiti Century Tool Kit, the result is a powerful, automated test and analysis solution.

Industry Leading Precision

Setting the standard for accuracy, the Century Media Module Version 2 (CMM2) provides a 35 nanosecond data timestamp, which enables Century Tool Kit to deliver test results with the industry's highest precision. The bundled high-precision latency test utilizes three CMM2's to deliver nanosecond accuracy to network device latency comparisons.

Enhanced Test Capabilities

When used with Century Media Module 2 (CMM2), Century Tool Kit provides a comprehensive 10/100 Ethernet test environment. Supporting up to 16 CMM2's, Century Tool Kit provides both half-duplex and full-duplex test capabilities, with the ability to start or stop up to 8 pairs of CMM2's simultaneously for precise full-protocol performance testing of multi-port network devices.

Century Tool Kit Sample RFC 1242 Router Test Result

Throughput Test Input Data

Modules used as transmitters	: 4
Modules used as receivers	: 3
Duration of transmit burst	: 30 seconds
Threshold	: 0
List of Packet sizes used	: 64 128 1024 1518
Transmit/Receive Port pairs	: {4 3}
Source Router MAC Address	: 06001023f947
Destination Router MAC Address	: 060010100013
Source Router IP Address	: 192.1.1.1
Destination Router IP Address	: 192.1.2.1
Source CMM IP Address	: 192.1.1.12
Destination CMM IP Address	: 192.1.2.21
Network speed	: 100 (Half Duplex)

Port-pair Throughput Test (as a percentage of total)

Packet size	64	128	1024	1518
Maximum rate	148810	84459	11973	8127
Port Pairs				
4 -> 3	88.35 131473	92.98 78530	96.91 11603	100 8127

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