



TESTING AND DIAGNOSTICS FOR
ETHERNET and IP SERVICE PROVIDERS



Automated, comprehensive
and standards-based
Service Assurance Platform that
saves time and costs

KEY FEATURES

- Automated test libraries
 - L2/L3 (RFC2544, ITU-T Y.1564 and MEF CE 2.0)
 - L4 (TCP benchmarking with RFC 6349)
 - L7 (HTTP/VoIP)
 - Multiple class of service testing
 - Bandwidth profile as per MEF 10.2
- Physical and Virtual (VNF) Test Probes for active testing
- Auto-Diagnostics
- Flexible test profile selection
- Centralized Control
- One-touch execution
- Test Queuing
- Flexible reporting, Birth certificates
- Customer portal

APPLICATIONS

- **Business Services,**
- **Mobile back-haul / front-haul**
- **Wholesale Interconnect**
- **Cloud and Datacenter interconnect**

BENEFITS

- **Ensure and verify high-quality services**
- **Perform testing for new services quickly, confidently and profitably**
- **Isolate partner /interconnect issues**
- **Reduce service activation OPEX**
 - **Eliminate faulty turn-ups**
 - **Minimize truck-roll**
- **Gain market share and maximize customer retention**
- **Compete on quality and build customer loyalty**



Veryx SAMTEST provides comprehensive automated testing, benchmarking and diagnostics for managing Carrier Ethernet & IP networks. SAMTEST provides the efficiency and capability required by service providers to effectively roll-out and manage their Carrier Ethernet network services such as Business Services and Mobile backhaul. It also enables service providers to benchmark specific sections of Access, Metro and Core networks and expedite end-to-end trouble shooting.

SAMTEST deployment includes a centralized controller (in VT-1000 hardware or in a VM), distributed physical (VT-1020 and VT-1004) and virtual test probes (Veryx vProbes). SAMTEST vProbes performs the Virtual Test Agent functionalities as defined by ETSI. SAMTEST can be used in the lab or in the field.

The centralized controller orchestrates Veryx Test Probes (both physical and virtual) to initiate tests, gather logs and generate reports. Veryx Test Probes generate Ethernet/IP data traffic, 802.1ag, or Y.1731Messages to enable active testing of Service Attributes and SLAs as initiated by the SAMTEST controller. The traffic generated by the Veryx test probes can be either received at the other end by a peer Veryx test probe or looped back by a peer Network Element, to perform the required measurements. SAMTEST provides the flexibility of using physical test probes in conjunction with the vProbes or either of them separately.

Figure 1: Veryx SAMTEST Field Deployment

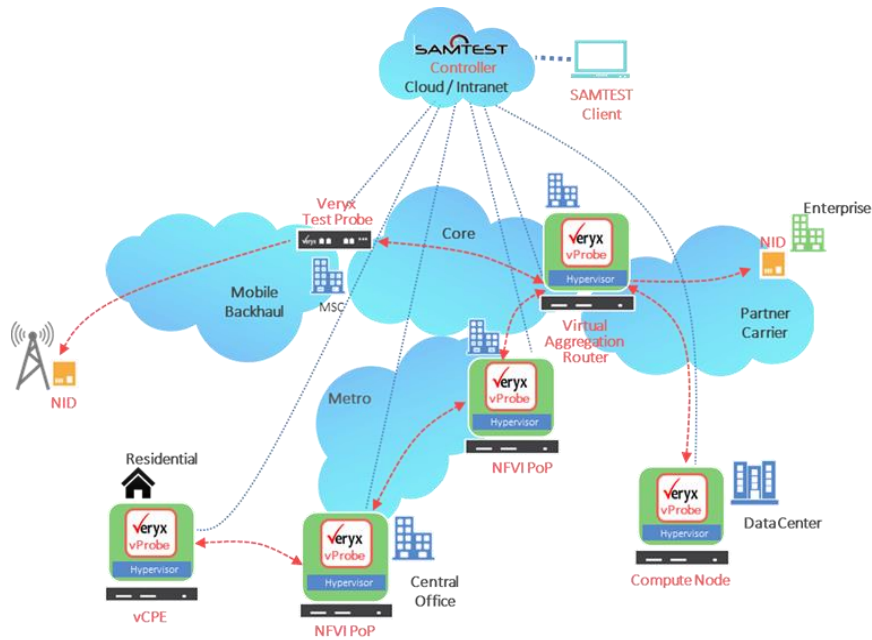


Figure 2: Veryx Hardware Test Probes



Using SAMTEST, users can perform long performance duration test for up to 48 hours. SAMTEST live performance graph shows the measured performance during the course of the test execution.

Users of SAMTEST need not wait for testing of one circuit to complete and test resources to free-up before initiating test for another circuit. SAMTEST's test queuing features helps users to queue tests for several circuits which are executed automatically when the resources become free.

SAMTEST configurations

Peer Probe Testing: In this configuration, SAMTEST performs testing using test probes (physical or virtual) at both the ends. It can be between end to end CPEs or between any two network elements. This variant could be especially useful in the wholesale service scenario, where the service providers do not have control over the access provider network devices to perform the required testing as part of benchmarking the partner network circuit.

Figure 3: SAMTEST Probe to Probe Testing

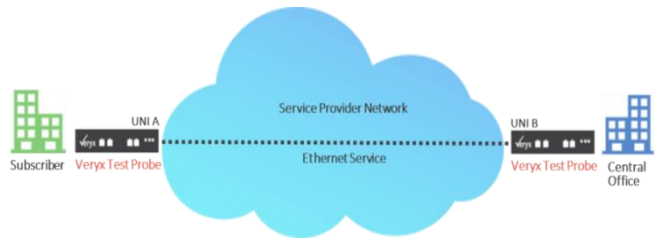
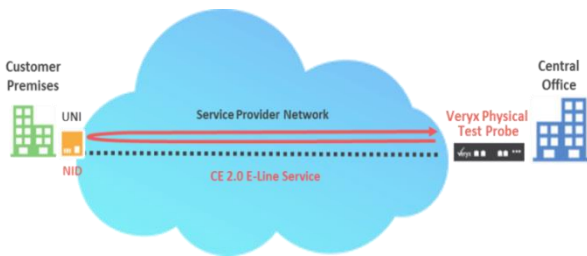


Figure 4: SAMTEST Loopback Testing



Loopback Testing: In this configuration, SAMTEST utilizes test probes (physical or virtual) from a suitable aggregation point and loops back the traffic from third party network elements. Loopback testing would require the Network Element to support either smart loopback (MAC swap) or Y.1731 for L2 testing and L3 loopback for L3 testing. With this option the service provider can reduce OPEX as well as optimize the time taken to ship the test probes to the access network.

Virtual Probe Testing: Veryx vProbes can be deployed as VNF on centralized NFVI PoPs or on distributed NFVI devices such as virtual aggregation router, vCPE, etc.

Figure 5: TCP Benchmarking using SAMTEST vProbes

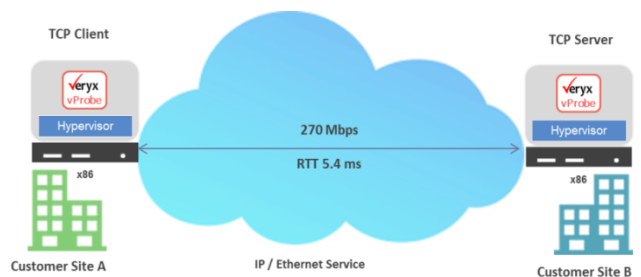


Figure 6: SAMTEST Test diagnostics



SAMTEST reports with detailed test logs facilitates quick interpretation of test results and troubleshooting. SAMTEST birth certificate and customer portal enables per customer based reporting.

SAMTEST's Northbound XML/REST-API interface facilitates easy integration with existing OSS and back office systems.

SAMTEST variants

Test methodology	SAMTEST Lite	SAMTEST Standard	SAMTEST Plus
Automated RFC2544/Y.1564 Tests	Yes	Yes	Veryx Y.1564+
Automated Carrier Ethernet Test Library using L2/L3 Loopback tests.	No	Yes	Yes
Automated MEF CE 2.0 Test Library	No	No	Yes
Automated L4/L7 Benchmarking	No	Optional	Optional
Traffic Generation and Packet Capture	Yes	Yes	Yes

Features

Testing and Troubleshooting

- L2/L3 Tests : RFC 2544, Y.1564, MEF CE 2.0
- L4 Tests: TCP (RFC 6349) Benchmarking
- L7 Tests: HTTP, VoIP
- 802.1ag/Y.1731, Smart Loopback, TWAMP, Ping, Trace route
- CE 2.0 service attribute verifications - VLAN/CoS Transparency, Bundling, MTU, Service Leakage, L2CP/SOAM
- Bandwidth profile and Ethernet/IP SLA measurements such as delay, jitter, loss, etc.
- Burst Testing as per MEF 10.2
- Tagging Support: 802.1q, Q-in-Q
- CoS – VLAN P-bits, DSCP, MPLS Experimental bits
- Multi-Cos Testing
- Auto diagnostics
- Birth Certificate, Customer Portal, Graphical charts and PDF reports.

Hardware Test Probe

Physical

- Dimensions:** 1.75"H x 17.5"W x 8.8"D (44.45mm x 444.5mm x 223.52mm)
- Weight:** 10 Lbs.

Interface and Indicators

- Test port options :**
- 4x1GbE SFP ports,
 - 2x10GbE SFP+ ports

Virtual Test Probe

vProbe System Requirements

- 1G** - 2 vCPUs, 2 GB RAM, 5 GB HDD, Intel SR-IOV enabled NICs
- 10G** - 4 vCPUs, 2 GB RAM, 5 GB HDD, Intel SR-IOV enabled NICs
- Hypervisors:** KVM(Qemu 2.0.0, libvirt 1.2.2) and VMWare ESXi 6.0

Partnerships



Contact sales@veryxtech.com for more information

About Veryx Technologies

Veryx Technologies is a leader in IP and Carrier Ethernet testing and offers comprehensive range of test solutions to enhance the Carrier Ethernet service assurance. Veryx provides innovative testing, automation and monitoring solutions for network service providers, cloud service providers, data centers, Enterprise IT and network equipment vendors. Leading service providers and equipment vendors rely on Veryx solutions for network testing, performance monitoring and equipment testing applications for technologies such as Carrier Ethernet, IP, Cloud, SDN, NFV and Smart Networks.

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