SAMTEST

TESTING AND DIAGNOSTICS FOR ETHERNET and IP SERVICE PROVIDERS

Veryx

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

KEY FEATURES

- Automated test libraries for Carrier Ethernet and IPv4
- Methodologies supported
  - RFC2544
  - ITU-T Y.1564
  - MEF CE2.0 and MEF 3.0 **NEW**
    - Multiple class of service testing
    - Token Sharing and Envelopes **NEW**
    - Bandwidth profile as per MEF 10.3 **NEW**
- Physical and Virtual (VTA) Test Probes for active testing
- Auto-Diagnostics
- Centralized Control
- One-touch execution
- Test Queuing
- Flexible reporting, Birth certificates
- Customer portal

APPLICATIONS

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

BENEFITS

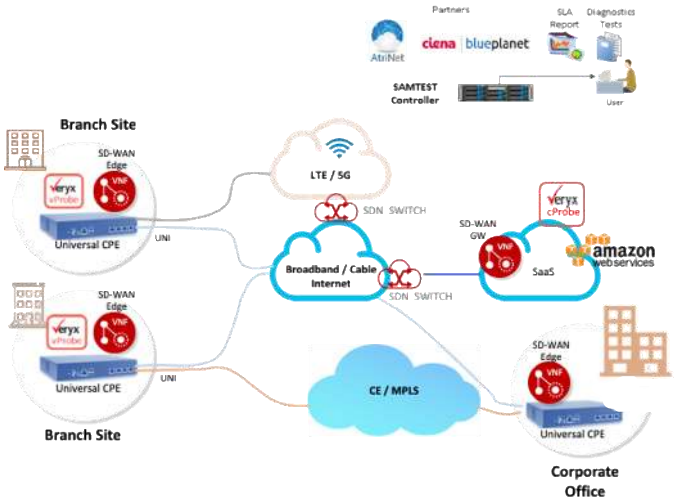
- **Ensure and verify high-quality services**
- **Perform testing for new services quickly, confidently and profitably**
- **Isolate partner /interconnect issues**
- **Reduce service activation OPEX**
  - **Eliminate faulty turn-ups**
  - **Minimize truck-roll**
- **Gain market share and maximize customer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

Veryx SAMTEST provides comprehensive automated testing, benchmarking and diagnostics for managing SD-WAN, Carrier Ethernet & IP networks. SAMTEST provides the efficiency and capability required by service providers to effectively roll-out and manage their Ethernet network services such as SD-WAN, Business Services, Whole-Sale interconnect 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, distributed physical (VT-201/ Xena / UCPE-Whitebox) and software test probes (Veryx virtual probes or Docker probes). SAMTEST soft Probes perform the Virtual Test Agent functionalities as defined by ETSI. SAMTEST can be used in the lab or in the field.

The centralized SAMTEST controller orchestrates Test Probes (both physical and Software) to initiate tests, gather logs and generate reports. 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 test probes can be either received at the other end by a peer 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 soft probes or either of them separately.

Figure 1: Veryx SAMTEST Field Deployment



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

Figure 2a: Physical Test Probes

VT-201 (1x1G) | **Xena Valkyrie (1G / 10G / 100G)** | **x86 - White box / UCPE (1G / 10G)**

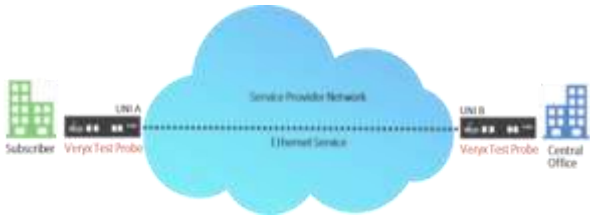
Figure 2b: Soft Test Probes

vProbe (1 / 10G) KVM / EXSi / AWS | **cProbe (1 / 10G) Docker**

SAMTEST configurations

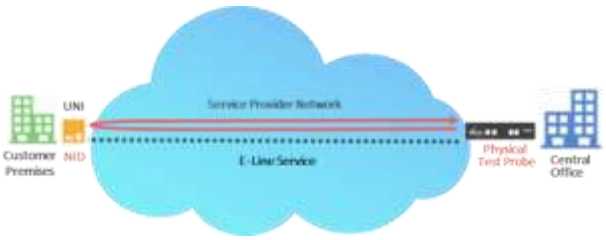
Peer Probe Testing: In this configuration, SAMTEST performs testing using test probes (physical or Software) at both the ends. It can be between end to end CPEs or between any two network elements. This variant could be especially useful in the wholesale service scenario, where the service providers 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



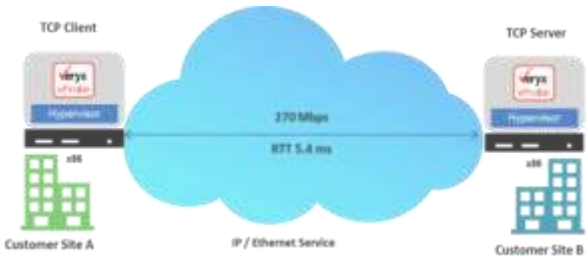
Loopback Testing: In this configuration, SAMTEST utilizes test probes (physical or soft) from a suitable aggregation point and loops back the traffic from third party network elements. Loopback testing would require the Network Element to support either smart loopback (MAC swap) or Y.1731 for L2 testing 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.

Figure 4: SAMTEST Loopback Testing



Soft Probe Testing: Soft probes can be deployed as VNF (either as VM or docker) on centralized NFVI PoPs or on distributed NFVI devices such as virtual aggregation router, uCPE, etc.

Figure 5: Benchmarking using SAMTEST vProbes



Test Results and Reports

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

Figure 6: SAMTEST Test diagnostics

Integration with OSS

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	Yes
Automated Carrier Ethernet Test Library using L2/L3 Loopback tests.	No	Yes	Yes
Automated MEF CE 2.0 and MEF 3.0 Test Library	No	No	Yes
Traffic Generation and Packet Capture	Yes	Yes	Yes

Features

Testing and Troubleshooting

L2/L3 Tests : RFC 2544, Y.1564, MEF CE 2.0, MEF 3.0

802.1ag/Y.1731, Smart Loopback, Ping, Trace route

- MEF CE 2.0 service verification for ELINE, ELAN and ETREE (Ethernet Subscriber Services - MEF 6.1) and Access ELINE services (MEF 33)
- MEF 3.0 service verification for ELINE (Ethernet Subscriber Services - MEF 6.2) and E-Transit services (MEF 51.1 and MEF26.2).
- IP / MPLS service verification using ITU-T Y.1564

CE service attribute verifications - VLAN/CoS Transparency, Bundling, MTU, Service Leakage, L2CP (Tagged & Un-tagged)/SOAM, Source MAC Address Limit, Test MEG, Subscriber MEG MIP

Bandwidth profile (Token Share & Envelopes) and Ethernet/IP SLA measurements such as delay, jitter, loss, etc.

Burst Testing as per MEF 10.3

Tagging Support: 802.1q, Q-in-Q

CE –VLAN P-bits / DEI, DSCP, MPLS Experimental bits

Multi-Cos Testing

Auto diagnostics

Birth Certificate, Customer Portal, Graphical charts and PDF reports.

Test Probe

Physical

VT-201:
1.61"H x 7.7"W x 5.78"D (41mm x 196mm x 147mm), 2.2Lbs
Test port: 1x1 GbE RJ45

Whitebox / UCPE: Lanner NCA-4210B or equivalent:
1.73”H x 17.24”W x 12.64”D (44 mm x 438 mm x 321 mm), 9.68Lbs
Test ports: 4x1 GbE RJ45, 4x10 GbE SFP+

Xena Valkyrie Compact:
1U chassis, 1.7”H x 17.2”W x 9.8”D (43mm x 437mm x 249 mm), 10Lbs
Test ports: 6x1 GbE SFP / 6x10 GbE SFP+ /2 x 100GbE QSFP+

Xena Valkyrie Bay:
4U chassis , 7”H x 19”W x 19.7”D (177.8 mm x 482.6 mm x 500mm), 36.4 lbs
Test ports: 6x1 GbE SFP / 6x10 GbE SFP+ /2x100GbE QSFP+

Virtual / Container System Requirements

1G - 4 vCPUs, 2 GB RAM, 5 GB HDD, DPDK enabled NICs
10G - 4 vCPUs, 4 GB RAM, 5 GB HDD, DPDK enabled NICs

Hypervisors:
KVM(Qemu 2.0.0, libvirt 1.2.2)
VMWare ESXi 6.0 / 6.7

AWS:
1G – t2.micro
10G – t2.medium

MEF3.0 specific features are highlighted in blue color text
+ Available with Virtual probes only

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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