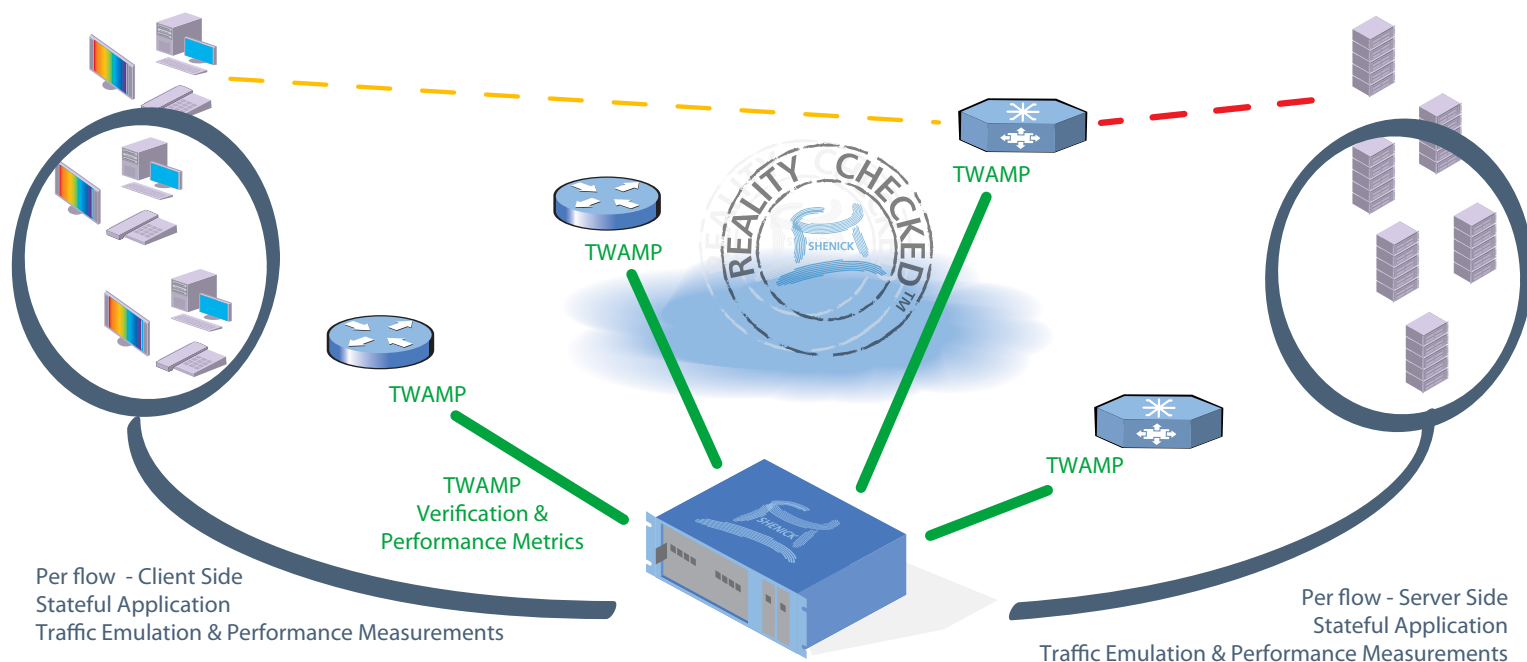




# Testing RFC 5357 TWAMP with diversifEye™

RFC 5357 Two-Way Active Measurement Protocol (TWAMP) is an IP QoS network measurement protocol. TWAMP provides QoS analysis of round-trip performance between two network endpoints. Essentially, TWAMP removes the need for extra and often costly proprietary QoS measurement systems.

TWAMP is made up of two protocols, Control and Test. Control sets up and controls the performance measurement session between the two network measurement endpoints. The Test part is used to define the packet format needed in the round-trip performance measurement.



## diversifEye feature tests for TWAMP

### Configuration -

Verify the configuration of the TWAMP protocol before device deployment in the network. diversifEye tests both the TWAMP Control and Test protocol functionality.

### Vendor Interoperability -

With diversifEye acting as the common test platform ensure the interoperability of each vendor's TWAMP setup.

### Scalability -

diversifEye provides both TWAMP Client/Sender and Server/Responder, scale test vendor's TWAMP capabilities to launch and maintain sessions.

### Performance -

Measure device performance under varying conditions, up to maximum traffic flows. Create multiple TWAMP sessions with varying class of service, measure key statistics such as loss, latency and jitter.



Shenick's Complete TWAMP capabilities give equipment vendors the tools to verify the functionality of their TWAMP implementations prior to customer acceptance testing. For service providers, Shenick's TWAMP capabilities provide a means for conducting vendor interoperability and large scale system testing prior to TWAMP network deployment.

diversifEye per flow architecture is used to validate TWAMP through effective testing of the protocols interoperability, plus measuring the performance and scalability of each vendors implementation. diversifEye provides a Complete or full TWAMP implementation.

diversifEye™ is the only integrated network, application and security attack emulation and performance analysis IP test system that provides granularity on a per flow basis. Mix real flows, along with TWAMP verification tests to determine the true device performance.

The Shenick diversifEye platform & GUI supports per flow test and measurement of :

### Analysis Software Overview

- TWAMP
- DHCP V4 & DHCP V6
- PPPoE
- VLAN & Double Tagging (Q-in-Q) with priority
- Concurrent IPV4, IPV6 and Dual-Stack Lite flows
- IGMP V1, V2, V3, MLD V1, V2
- Voice and Video Quality Metrics
- Telepresence
- RTSP (Video on Demand)
- VoIP (SIP & RTP)
- HTTP
- FTP
- SMTP
- POP3
- P2P
- SSL
- Attack Traffic - Spam / Viruses / DDOS
- PCAP file replay (>1Gb)

### TWAMP Compliance Testing

- **TWAMP Verification** Ensure all deployed TWAMP systems on the IP network operate correctly. Determine that all deployed Session-Sender and Session-Reflector implementations operate exactly and are providing the correct information as per their configurations.
- **Performance Reliability** Emulate multiple TWAMP sessions over unique classes of service. Measure performance across each session, determine consistency among measurement results.
- **Quality of Experience** Ensure in real-time, on a per flow basis that the TWAMP implementation has no impact on revenue generating or delay sensitive applications.
- **Security Attack Mitigation** It is equally important to measure performance under extreme conditions. Emulate a mix of legal and illegal traffic flows, ensure no performance loss.

### diversifEye Summary Features and Benefits

- Network QoS and per flow QoE granularity for individual emulated client users across multiple devices and application traffic flow types.
- Latest protocols supported from Data Applications (HTTP, FTP, POP/SMTP, P2P), IPTV (IGMP/MLD), VoD (RTSP), VoIP (SIP/RTP), Telepresence all in a single test package.
- TCP Replay Substitution automatically varies payloads so no two PCAP sessions are the same.
- Support for SSL, IPV4, IPV6 and Dual-Stack Lite.
- DHCP emulation, PPPoE and IPoE Service Interoperability Scenarios. Emulate per device MAC and IP address assignments.
- Security Attack Mitigation support for DDoS style attacks SYN/RST/UDP/ARP floods, reflective DDoS attacks, Ping of death, etc.
- Large memory space (>1Gb) for PCAP replay for Instant Messaging or Web Mail.
- Client and server support on a single blade within one chassis with complete flexibility on port allocation. Full support for multiple daisy chained chassis all controlled from a single GUI.
- Low cost of ownership and ease of use by avoiding multiple test systems and non integrated software applications.

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(Shenick Version No. - v3.1)