

Solution Overview – Ethernet OAM

Accelerate the Development and Deployment of Carrier Ethernet OAM Solutions

- ▶ Reduce risk by verifying performance under real world network conditions prior to deployment
- ▶ Characterize problems painlessly with dynamic impairments through manual or automated control
- ▶ Reproduce production environment issues easily in a support lab

Overview

Once strictly a LAN technology, Ethernet is now found in access, metro-area and wide-area networks because of its simplicity, range of bandwidth support and multi-point capability. Ethernet OAM (Operations, Administration, and Maintenance) provides connection fault management and performance monitoring, capabilities that are required for carrier-grade application of Ethernet services.

Anue Systems' Network Emulators are essential tools for making EOAM and carrier-class Ethernet services a reality. They provide the ability to emulate real-world conditions on Ethernet links prior to deployment, accelerating time to market, reducing support cost and consequently increasing revenue and competitive advantage.

Challenges

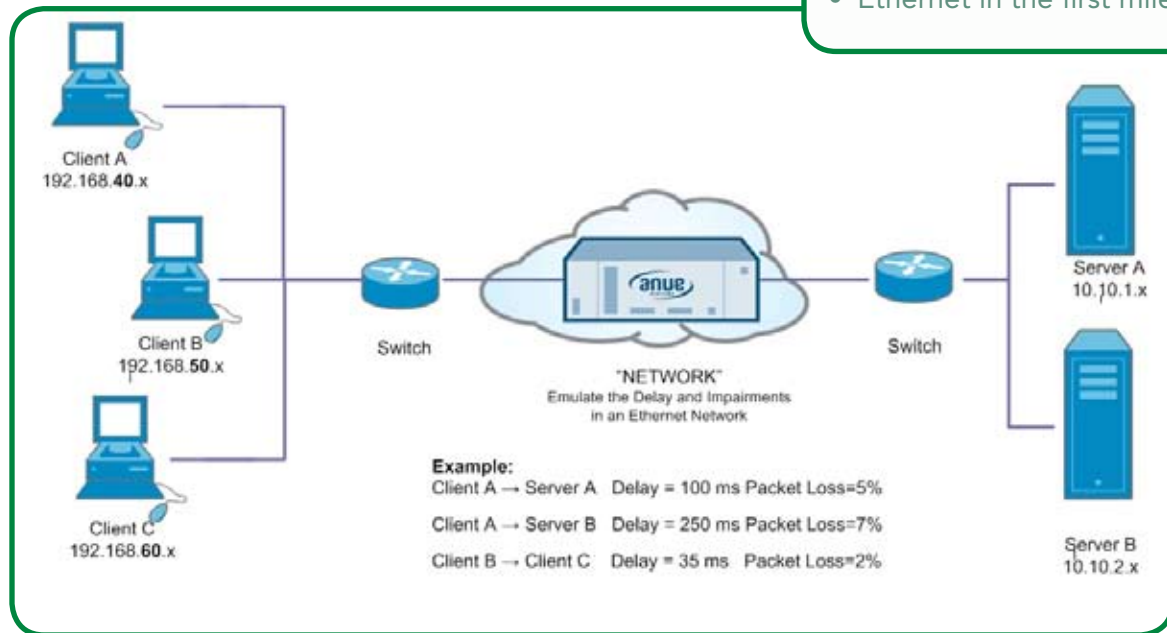
The promise of EOAM is accompanied by significant challenges for those who develop, design and implement the solutions.

- Standards in flux require rapid development and regression testing.
- Real-world network conditions must be duplicated in the lab to test with reproducible, relevant, and efficient methodologies.
- Providers and equipment manufacturers must stage field issues in the test lab for swift troubleshooting and reliable problem resolution.
- Test engineers need to emulate the delay and impairment characteristics of the network with precision to verify error, alarm and performance monitoring features.



Applications

- Carrier Ethernet
- Ethernet Services
- Access Aggregation
- Ethernet in the first mile



The Win

Compatible with ITU-T Y.1731, ITU-T G.8031, IEEE 802.3ah, IEEE 802.1ab, IEEE 802.1ag, and MEF 16.

- Dynamic filtering enables targeted dropping of Connectivity Check (CC) frames, emulating link failure to test Alarm Indication Signal (AIS) notification and upper-layer alarm suppression.
- Precise, user-configurable frame drop allows testing of ITU-T Y.1731 performance monitoring metrics (Frame Loss Ratio).
- Physical-layer bit-error injection facilitates performance testing.
- Filtering on any data in the PDU for impairment or modification enables functional tests and validating features.
- User-defined filters support sophisticated negative protocol testing by targeting any OAM PDU for impairment or modification using MAC/IP address, VLAN, OAM Level and Type, Version, Op Code and other fields.
- A consistent test methodology can be applied to all EOAM specifications.