ValkyrieTimeSynch
One-Way Latency (OWL) tool

VALKYRIE™

TIMESYNCH

ValkyrieTimeSynch is a feature that enables multiple Xena testers to synchronize their local time to each other. This can be used for One-Way Latency (OWL) measurements between two test chassis, synchronized traffic start between multiple chassis and accurate timestamping of captured packets in exported PCAP files.

The timing network consisting of the Xena testers can be flexibly configured to support multiple scenarios. One tester may serve time to the other testers (and any other host on your network) using NTP or PTP. Alternatively, each tester can obtain its own time from an external NTP, PTP or GPS source.

ValkyrieTimeSynch uses an advanced time synchronization solution called TimeKeeper from the company FSMLabs. TimeKeeper synchronizes the local time on each Xena test chassis and must therefore be installed as a separate service on each Xena chassis and is configured and monitored through the ValkyrieManager.

One Way Latency Reveals Hidden Problems

One-way delay and delay variation (jitter) measurements are important parameters for testing the quality of sevice (QoS) of real-time applications such as VoIP, telepresence and transactional services. High-level precision is required for both wireline (Ethernet access) and wireless backhaul networks for 4G (WiMAX / LTE), and typical SLA specifications call for unidirectional jitter below 1-5ms and latency in the 3-10ms range.

Service providers often use one-way measurements to check their SLAs, since round trip delay metrics frequently fail to identify QoS issues in asymmetrical access networks where download speeds typically exceed upload. Since a round-trip delay measurement aggregates send and receive path delays, unidirectional issues can escape detection or exacerbate troubleshooting efforts. One-way measurements can quickly identify and quantify these issues if conducted with sufficient precision and accuracy.

ValkyrieTimeSynch ensures the test modules can measure with micro-second precision. Both the ubiquitous Network Time Protocol (NTP) and the newer, more precise IEEE 1588 Precision Time Protocol (PTP) are supported and can be mixed as appropriate for the network.

TOP FEATURES

- High precision solution for chassis time synchronization
- Used for OWL measurements, synchronized traffic start and timestamping
- Can use any combination of NTP, PTP or RFC 868 TIME
- Legacy Xena testers can be retrofitted with ValkyrieTimeSynch (GPS requires factory refit)
- Compatible with Valkyrie1564 (ITU-T Y.1564) test methodology

Xena's timekeeper feature is managed via ValkyrieManager, the main software application used to generate and analyze gigabit ethernet traffic on Xena's testers.
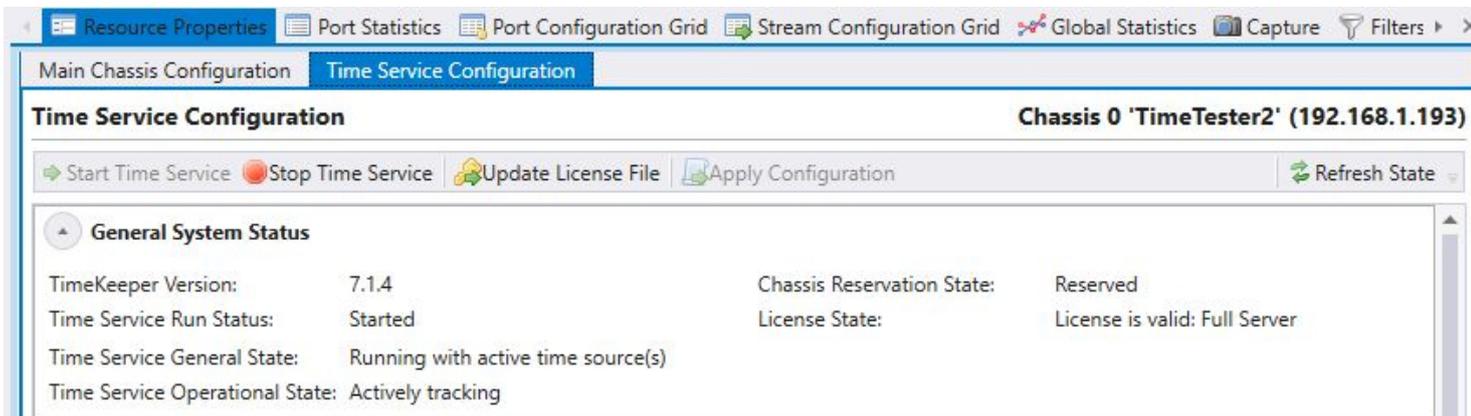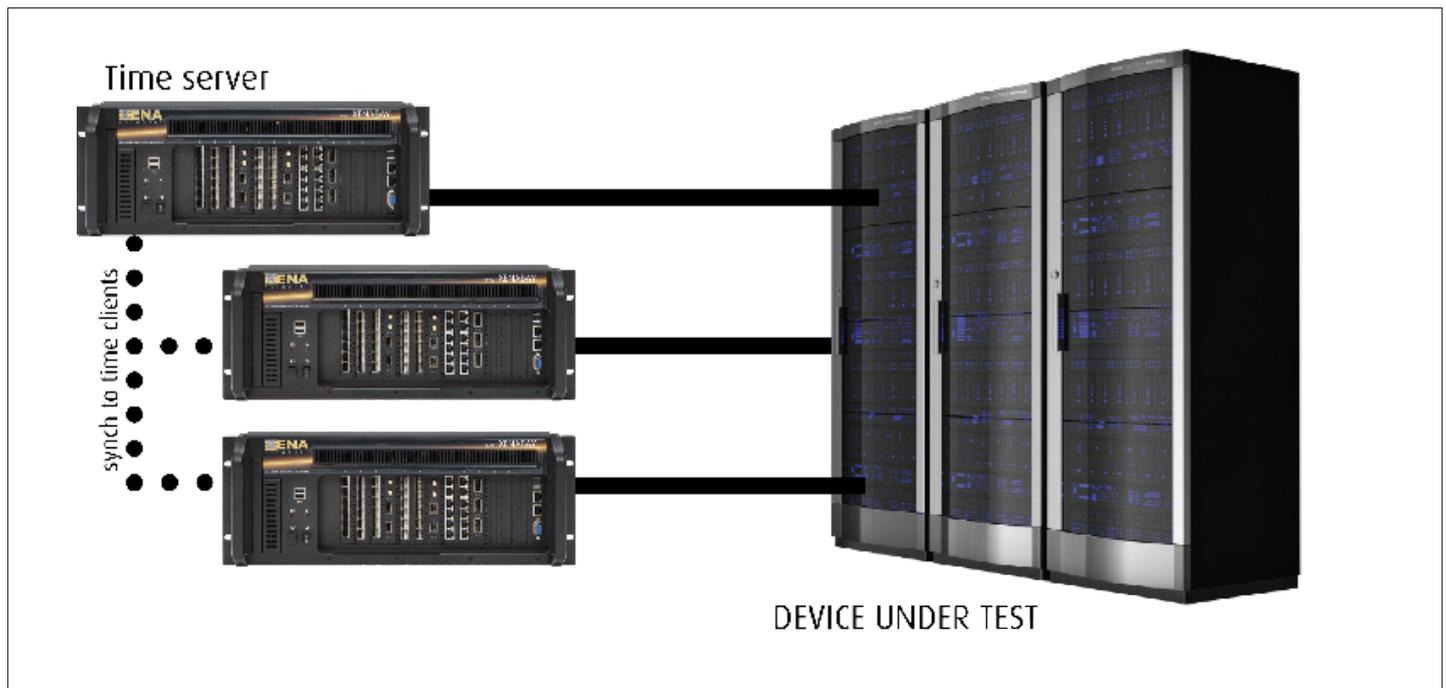
WAN TESTING SCENARIO
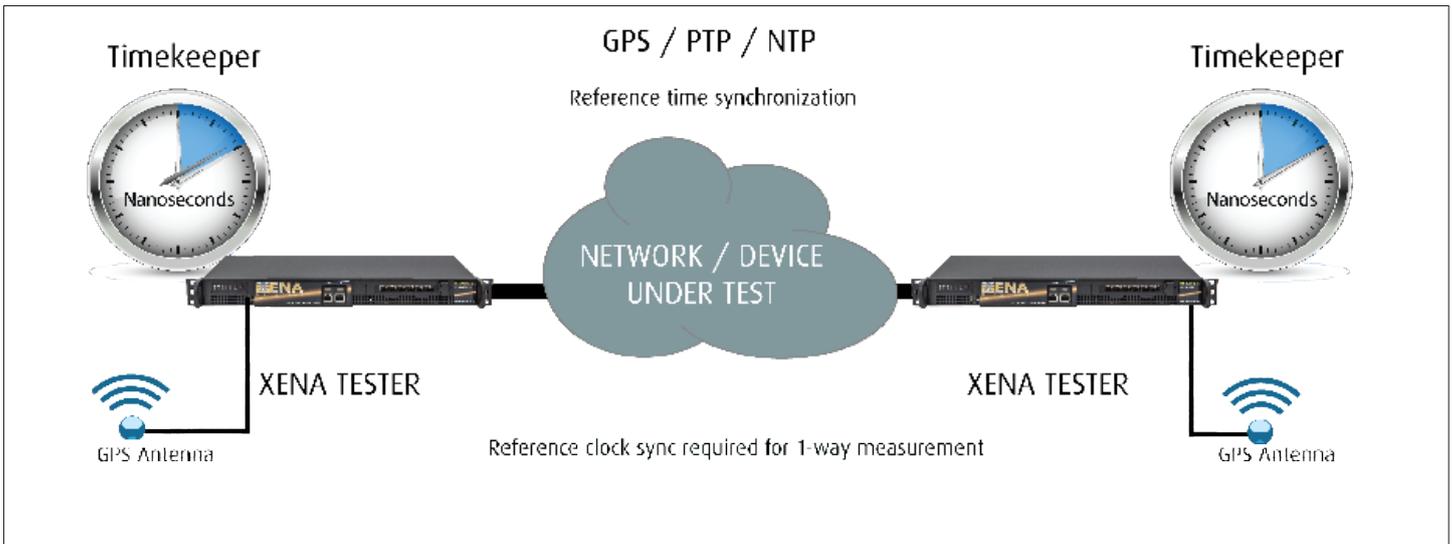
This diagram shows One-Way Latency (OWL) testing over a WAN using ValkyrieTimeSynch .

LAB TESTING SCENARIO

SPECIFICATIONS

Xena offers 12 and 36 month licenses for both client and Server/Client software for synchronization of chassis to a PTP/NTP/GPS reference clock.

For ValkyrieBay:
C4-TK-Client-12: 12-month SW license for Client synchronization of chassis to a PTP/NTP/GPS ref. clock
C4-TK-Server-12: 12-month SW license for Server/Client synchronization of chassis to a PTP/NTP/GPS ref. clock

For ValkyrieCompact:
C1-TK-Client-12: 2-month SW license for Client synchronization of chassis to a PTP/NTP/GPS ref. clock
C1-TK-Server-12: 12-month SW license for Server/Client synchronization of chassis to a PTP/NTP/GPS ref. clock

It is also possible to have an integrated GPS receiver fitted both prior to purchase or in legacy equipment. Contact a local Xena sales partner for details.

XENA™
Test. Improve. Repeat.

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