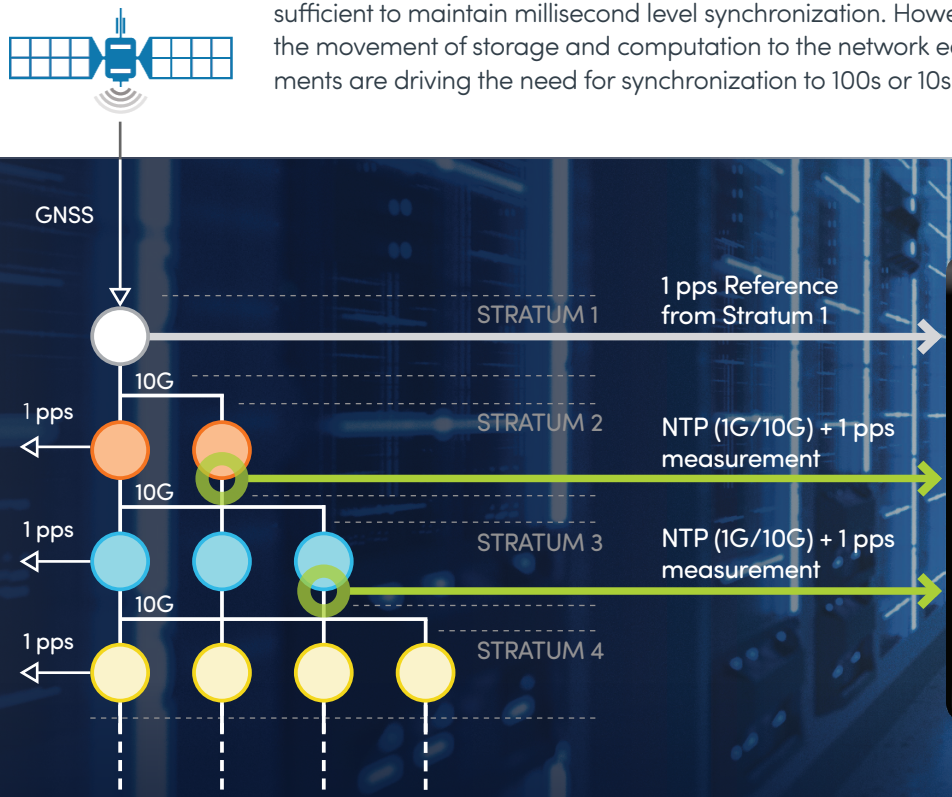
Test PTP and NTP Synchronization in Datacenters

Time synchronization is not new in Datacenters but the required accuracy is increasing – NTP was traditionally sufficient to maintain millisecond level synchronization. However, higher throughput, the need for lower latency, the movement of storage and computation to the network edge, and regulatory and standards body requirements are driving the need for synchronization to 100s or 10s of microseconds and sometimes even tighter.



- GNSS comes into the datacenter to reference Stratum 1 (S1) NTP Server
- Stratum 2, 3, 4, and so on are referenced back to S1 rather than GNSS
- Measure NTP/PTP packet stream or 1pps output from server/client

All measurements can be made simultaneously:

- 2 x packet ports (2 x independent Pseudo NTP Clients or PTP Sub-ordinates)
- 4 x clock ports

One of the Sentinel's key features is that you can test NTP/PTP 2way TE without access to GNSS. Should you need to move Sentinel around the datacenter, simply take a reference from a GM/Stratum 1 Server to discipline the Sentinel's built-in rubidium clock and test in holdover mode.

Sentinel can be set to run fixed duration tests or run continuously. In addition, its API allows you to remotely configure the instrument, start and stop measurements, and check status and download measurements. Sentinel has a large display along with an easy-to-navigate graphical user interface, and provides security features including password protection and screen lock.

Key Features

- RJ45 for 10/100/1000 Base-T, SFP/SFP+ for 100M/1G/10G Optical
- PTP (1588): Layer 2 Multicast and Layer 3 (UDP/IPv4, UDP/IPv6) Multicast/Unicast
- NTP: Layer 3 (UDP/IPv4/IPv6) Multicast/Unicast
- On-board measurements including TE, TIE, MTIE, TDEV
- Highly stable rubidium clock giving excellent holdover performance
- Download data for more detailed analysis in Calnex Analysis Software (CAT)

The Sentinel is powered by technology from Calnex Solutions.

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