

Rock solid time

The most accurate way to distribute time throughout a data centre is the Precision Time Protocol or PTP, also known as IEEE 1588. With hardware timestamping at the receiving network card, it can comfortably achieve time distribution with nanosecond accuracy.

Standard PTP distributes one time across the network. If there are multiple clock sources, a “Best Master Clock” algorithm determines which clock shall distribute time. We choose to add resilience to guard against instances such as network failure, network path asymmetries and signal jamming. At the same time, our resilient approach also allows the receiving server to know and report how accurate it is, which is crucial for MiFID-II compliance verification.

“A man with one watch knows the time. A man with two watches is never sure.” – Segal’s Law

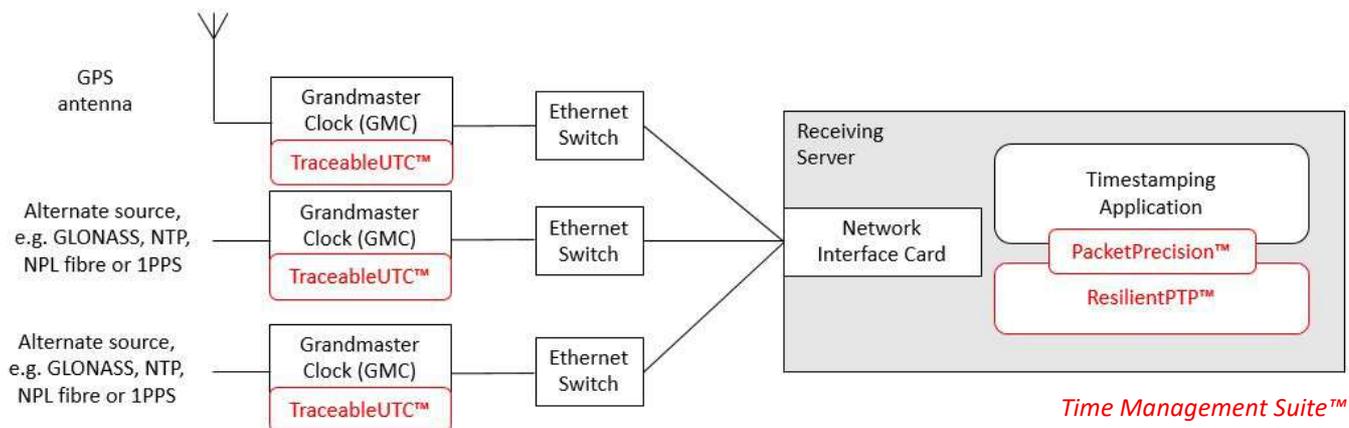
For hundreds of years the British maritime fleet carried three marine chronometers aboard each ship. If one failed or did not keep good time, you knew which one, and you had time to fix it. With its origins in high accuracy watchmaking, Hoptroff London instinctively applied this wisdom to the Precision Time Protocol.

The elegance of ResilientPTP™ is that it implements three grandmaster clocks, where possible each with a different source such as GPS, GLONASS or fibre, and each clock serves PTP time to the receiving servers.

The receiving server then has three sources of time to compare and choose from. In the event of clock or network failure it automatically switches to an alternate source. Any individual clock error or network asymmetry is indicated by a discrepancy between one clock and the two others.

Our Time Management Suite™ software doesn’t just deliver time. It delivers it resiliently, measurably and verifiably right down to the application timestamp.

The ResilientPTP™ software component extends the Precision Time Protocol to provide failover at the receiving server in the event of clock or network failure, and allows timekeeping error to be verifiably measured.



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