



TIMEKEEPER® ACTIVE CLIENT

Secure Sub-Microsecond Client Clock Sync of Critical Enterprise Applications



TK Active Client's Resilient UTC-Traceable NTP/PTP Timing Quality Monitoring, Alerting & Management

BENEFITS

- Lowest cost to upgrade legacy NTP infrastructure with high-precision NTP/PTP clock sync solution
- Secure, trusted, UTC-traceable enterprise clock sync
- Smart monitoring with automatic failover and alerting for high-reliability clock sync
- Lowest TCO across multiple Linux, Windows, and Solaris servers and VMs
- Scalable in the cloud, on servers, and on VMs, without affecting clock sync

FEATURES

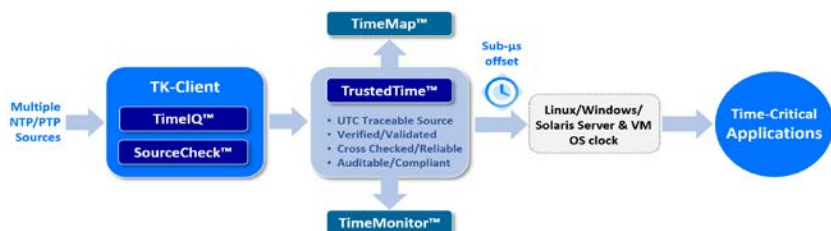
- Uses patented ML *TimeIQ*, with *SourceCheck* that verifies, validates, and cross-checks time sources
- Provides *TimeMap* tool to display the enterprise clock sync chain topology
- *TrustedTime* detects complex clock sync deficiencies such as asymmetry, delay, and broken link and self-heals the enterprise clock sync chain
- Comes with a web management dashboard for performance graphs, configuration, monitoring, alerts, UTC traceability, audit logs, admin, and more
- Exploits hardware-assisted timestamping devices, such as Mellanox, Solarflare, Intel, and Broadcom, for enhanced NTP/PTP precision

TIMEKEEPER ACTIVE CLIENT CLOCK SYNC SOFTWARE

TimeKeeper Active Client (**TK Active Client**) is an intelligent, fault-tolerant network clock sync software system for enterprise or other "must work" applications. **TK Active Client** synchronizes clocks on Linux, Windows, and Solaris application servers and virtual machines to multisource NTP/PTP feeds over the network at up to sub-microsecond precision. **TK Active Client** seamlessly upgrades legacy NTP infrastructure with leading-edge NTP/PTP precision at the lowest TCO, while automatically exploiting available hardware-assisted timestamping for enhanced time precision. **TK-Client** performance exceeds many regulatory requirements, including MiFID II, RTS-25, FINRA, CAT, PSD2, and UTC traceability.

HOW THE ML-BASED MULTISOURCE TIMEKEEPER CLIENT WORKS

The *TimeIQ™* technology is a patented, machine learning (ML)-based clock modeling system, achieving unprecedented NTP/PTP accuracy, rejecting bad time, and assuring security.



TimeKeeper's *TrustedTime™* technology ensures client time sources are fault-tolerant by monitoring and detecting errors in real-time and alerting IT staff via SNMP and email. Time accuracy is monitored and graphed in real-time as well, and a secure auditable log is stored locally and transferred automatically to TimeKeeper Server's (TK-Server) master log of *TimeMonitor™* instances. *TrustedTime* interoperates concurrently and in real-time with the following TimeKeeper integrated systems and with third-party grandmaster time server vendors:

- *TrustedTime* multisource failover
- *SourceCheck™*
- Timing quality graphs
- *TimeMap™*
- Web management dashboard
- Real-time alerts

TIMEKEEPER ACTIVE CLIENT

SPECIFICATIONS

Time sources	<ul style="list-style-type: none"> NTP, PTP, GNSS, CDMA, RS232, IRIG
Time protocols	<ul style="list-style-type: none"> PTP, NTP PTP profiles: Default, Telecom, Hybrid, Enterprise, and others
Networking	<ul style="list-style-type: none"> Ethernet (100M & 25/10/1G) RS232 InfiniBand
Time sensing*	<ul style="list-style-type: none"> NTP, PTP, PPS, TIME (RFC868)
Fault tolerance	<ul style="list-style-type: none"> Multi-time sources over NTP/PTP Failover design TimeIQ clock modeling TrustedTime multisource failover SourceCheck monitoring TimeMap topology
Monitoring	<ul style="list-style-type: none"> Timing quality graphs Time & frequency accuracy
Web management dashboard	<ul style="list-style-type: none"> Text-based CLI Performance monitoring Visual network clock sync topology Clock sync chain traceability to UTC Multi-time source settings NTP/PTP settings Alert settings Configuration settings
Multi-OS servers/VMs supported	
Linux	<ul style="list-style-type: none"> All major distributions (RHEL5 and newer) Most in-house custom distribution
Windows	<ul style="list-style-type: none"> Windows 8.1/10, Windows Server 2012/2016/2019-ready
Solaris	<ul style="list-style-type: none"> Solaris 10/11, 64-bit x86, SPARC

*For optional features, contact us at support@fsmtime.com

TrustedTime Multisource Failover

TK Active Client can receive time from any number of sources over any mix of NTP and PTP protocols, and *TrustedTime* automatically initiates failover when a clock source becomes unreliable, disabled, or broken in the clock sync chain.

SourceCheck

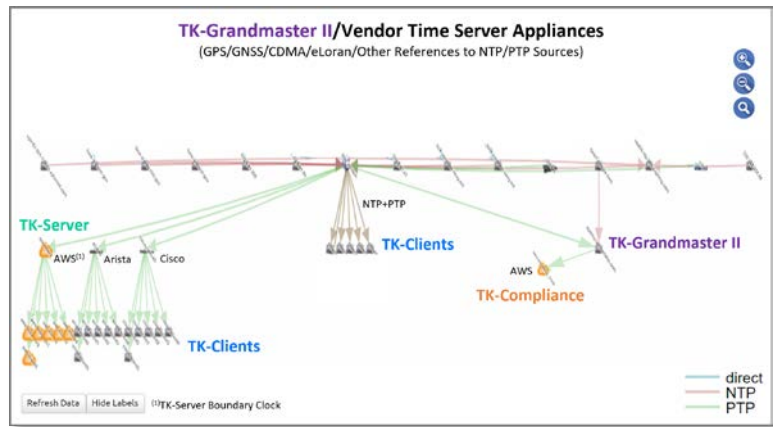
This smart feature monitors time performance to discover and reject compromised time sources, such as errors, attacks, and faults, and to verify and validate reliable time.

Timing Quality Graphs

This analytic tool graphs the UTC-traceable time and frequency accuracy of multiple sources in real-time to provide IT staff with actionable data about clock source reliability and performance, including one-way delay and round-trip time.

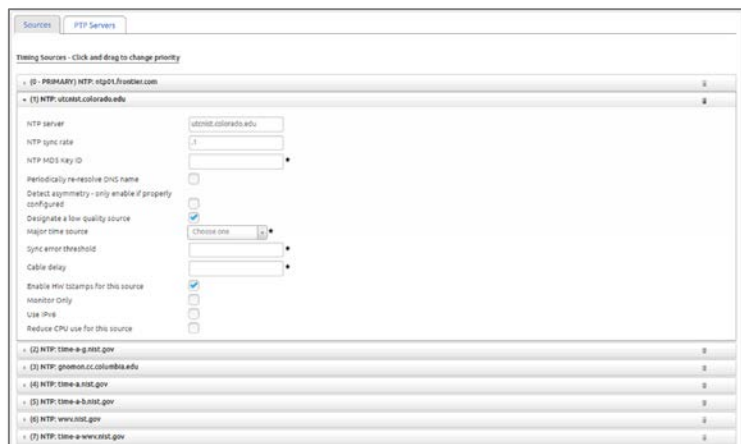
TimeMap

This powerful tool visually displays the topology of the enterprise network clock sync of time feeds from multi-vendor time servers, including the TK-Server, either as time server or boundary clock software, and/or the TimeKeeper Grandmaster II (TK-Grandmaster II) appliance. Users can view or diagnose the time source profile of each *TimeMap* node (IP, hostname, MAC, accuracy, and more).



Web Management Dashboard

TK Active Client is designed with an intuitive web management dashboard, providing comprehensive user control features such as installation, configuration, performance monitoring/analytics, alert notification, fault logs, CLI, support, administration, and more. TK Active Client settings can be changed without affecting the clock sync operation.



TIMEKEEPER ACTIVE CLIENT

WHY USE TIMEKEEPER TO TIME-SYNC YOUR CRITICAL ENTERPRISE APPLICATIONS?

TimeKeeper Platform (TK-Platform) provides secure, resilient, state-of-the-art enterprise clock sync at higher accuracy than competing products, while providing the lowest TCO. Get a [TimeAudit](#) and see the difference.

TK-Platform is the gold standard in secure enterprise clock sync, used by hundreds of large organizations including banks, financial institutions, government agencies, and more.

TK-Platform consists of integrated products for secure clock sourcing, distribution, synchronization, monitoring, management, and administration. Products include:

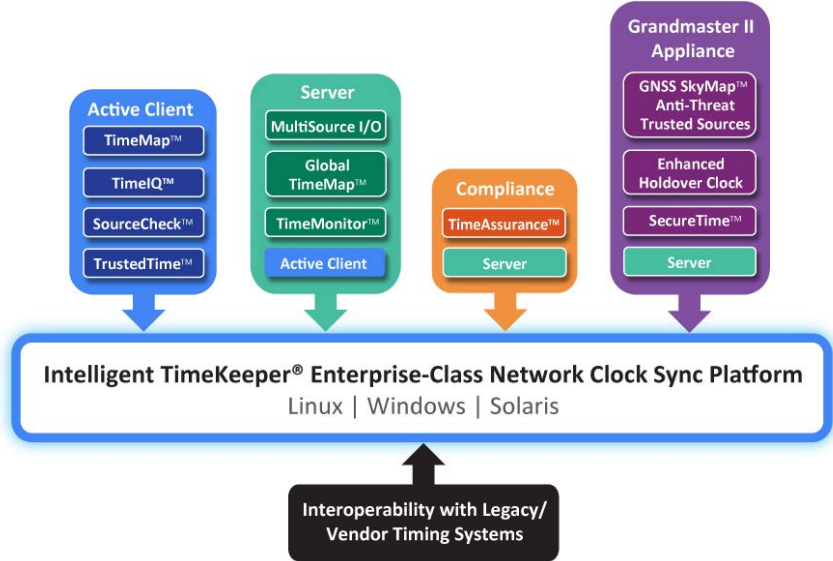
- TK-Platform (includes all products)
- TK Active Client
- TK-Server
- TK-Compliance
- TK-Grandmaster II

TIMEKEEPER ENTERPRISE-CLASS APPLICATIONS

- Financial
- Data center
- 5G IoT
- Cybersecurity
- Automation
- Cloud Database
- Gaming
- Broadcast

TIMEKEEPER PLATFORM

TK Active Client is a component of the intelligent, patented TimeKeeper enterprise-class network clock sync platform. TimeKeeper has the flexibility to operate with any legacy NTP/PTP infrastructure and to be configured with failover capability. TK Active Client is vendor-agnostic, connects to multisource NTP/PTP feeds over the network, is compatible with a mix of timing vendors, and is fault-tolerant by design.



ENTERPRISE-CLASS TIMECARESM SERVICES

Our industry-leading TimeCare line of services ensures that our customers keep their network clocks time-synced 24/7 to run their server applications reliably and in compliance with regulatory requirements.

GET A TIMEAUDIT

Get a TimeAudit today to check your enterprise clock sync performance and compliance by contacting us at timeaudit@fsmtime.com.

GET A DEMO

Contact us at sales@fsmtime.com for a live demo today.

PLACE AN ORDER

Contact us at sales@fsmtime.com to order these product part numbers directly from us or through our global value-added resellers:

TK Active Client	TK-CL-S/M (Single or Multiple)
TK-Server	TK-SV-PN
TK-Compliance	TK-CMPL
TK-Grandmaster II	TK-GM/Rb (Grandmaster GPS/GNSS/XO or with Rb clock)
TK-Platform	TK-SV-PN, TK-CL-S/M, TK-CMPL, and TK-GM/Rb

Intelligent TimeKeeper Platform Products and Services

Secure Enterprise-Class Clock Synchronization for Time-Critical Operations and Business Applications

