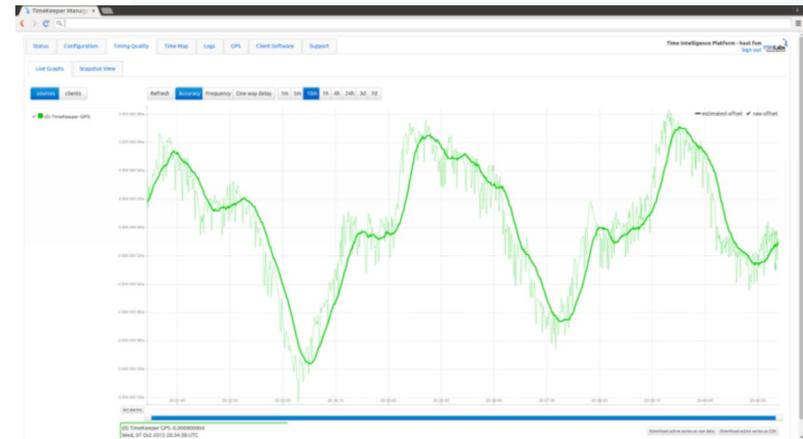# TimeKeeper®
Software

The **TimeKeeper** is client, server, and compliance software that can also manage time distribution enterprise wide and monitor time synchronization quality throughout your network. TimeKeeper is in production use by the worlds largest and most technically advanced financial trading firms.

- PTP, NTP, PPS, GPS – low 100's of nanoseconds accuracy
- No additional hardware required
- Can take advantage of existing hardware assist from:
- Solarflare, Mellanox, Intel, Broadcom
- TimeKeeper Server can act as NTP server, PTP GrandMaster, Boundary clock and client at the same time
- Needs no app changes – standard Linux, Solaris, and Windows time APIs
- Time Intelligence Platform gathers statistics from clients and peers, detects problems
- Auto-discovers the time network topology and displays it for single-pane-of-glass enterprise management
- Multiple simultaneous time sources for redundancy, security
- Detect, alert, self-heal from network failure/spoof attack
- Scalable operation, including support for remote servers and high performance implementation of both PTP and NTP
- Advanced time network administration via web interface
- Integrates with existing NTP/PTP infrastructure
- Detects asymmetric networks that can affect timing and alert
- Includes testing tools to validate sync quality

Security from the ground up
TimeKeeper is able to track multiple sources of time as cross checks and is able to detect spoof attacks and equipment failures.

Flexible Configuration
The web interface simplifies configuration. For example: the clock can be easily setup to use a NTP source as a backup to a GPS backed PTP feed with another NTP source as cross-check.

Transparent Failover
Instances can be setup to back up each other up so that if one has a failure time service continues.

Enterprise Reliability
Testing tools to validate performance, enterprise-wide monitoring, SNMP alerts, audit log trails and security validation of time make for a reliable time management system you can trust.

TimeKeeper® Software

FSMLabs

Why TimeKeeper

TimeKeeper offers better accuracy, precision, resilience, ease of use, management and analytical capability than competing solutions and also provides lower total cost of ownership. TimeKeeper Suite is an integrated system for time synchronization.

- **TimeKeeper Client** synchronizes the local clock and provides comprehensive, human readable logs, visualization, analytics and alerting.
- **TimeKeeper Server** serves PTP (acting as GrandMaster or Boundary Clock) and NTP (as Stratum Server) time, aggregates its own and client logs in a database and provides visualization, monitoring, and system alerts.
- **TimeKeeper Compliance** offers a database of aggregated logs and visualization and report generation for assistance in regulatory compliance efforts.

Features

- Phone/email support
- Complete, all-in-one solution
- End-to-end distribution and management of time
  - Server, client, boundary clock, stratum clock with all protocols
  - No need to mix and match software
- Can bridge existing/legacy NTP network while moving to PTP
- Microsecond level NTP as a drop-in upgrade to NTPd
- Complete IEEE 1588 support: PTP unicast, multicast, telecom and hybrid profiles
- Detects timing errors by monitoring time sources instead of just trusting them
- Provides tools for validating time and testing it before and during deployment
- Cross-checks multiple time sources at runtime to detect GPS spoof/jam attacks
- Detects virtualized systems and can discipline clocks in EC2, VMWare and others
- Alerts on problems or quality tolerances: SNMP, email, web, syslog
- Web based GUI for all operations as well as command line tools
  - Whole network of servers and clients on a single-pane-of-glass
  - Monitors clients and servers for accuracy – alerts on problems

TimeKeeper® Software

Specifications

|	
Linux support	All major modern (RHEL5 and newer) distributions of Linux and support for most in-house custom distributions
Windows support	Support includes Windows 8.1, Windows Server 2008, 2012 and 2016
Solaris support	Solaris 10 and 11, 64-bit x86 and SPARC
Networking	Ethernet (100M/1G/10G), RS232, Infiniband
Time Sources	NTP, PTP, GPS, CDMA, RS232, IRIG
Time Serving *	PTP, NTP, PPS, TIME (RFC868)
IEEE 1588 (PTP) profiles supported	Default, Telecom, Hybrid, others
Fault Detection *	TimeKeeper Multi-Source self-check, threat detection
Monitoring/Management *	Full monitoring of upstream, downstream, peer and other entities with alerting
Protocol Support	PTP, NTP, PTP telecom profile, PTP hybrid mode, more

* optional—please call

TimeKeeper® Software
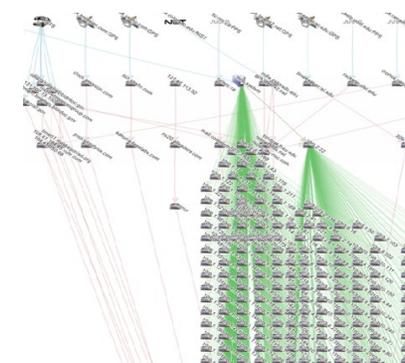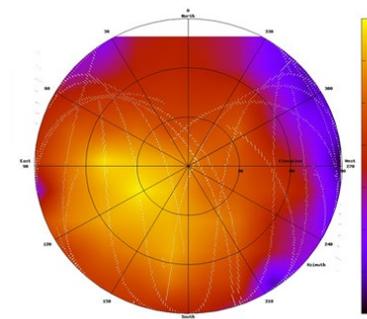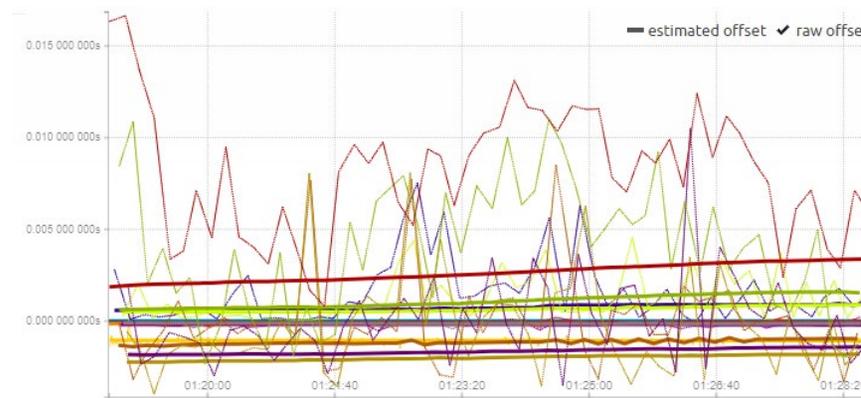
How to Purchase

TimeKeeper, TimeKeeper Server Software, TimeKeeper Client Software, and TimeKeeper Compliance are all available from FSMLabs and FSMLabs' resellers.

For purchase information or for a live demonstration of TimeKeeper please contact FSMLabs at sales@fsmlabs.com

FSMLabs

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