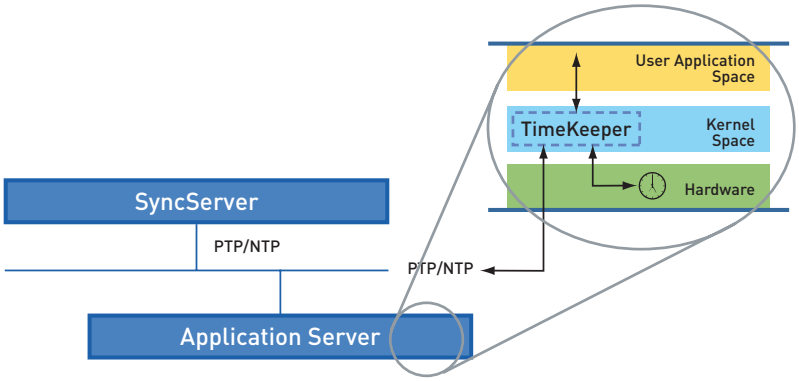
Symmetricom

DATA SHEET

TimeKeeper™

IEEE 1588/PTP/NTP Software for Linux

Software time client for precise synchronization of Linux based computers



Key Features / Benefits

- Kernel level PTP and NTP Linux time client
- Easy plug-and-play installation
- Transparent to applications and legacy timekeeping utilities
- Improves time accuracy and determinism of local clock and system-wide time synchronization
- No application software modifications required
- Minimal impact on system load and throughput
- Improves log file timestamp accuracy
- Easy installation on commercial and in-house Linux distributions
- Multi-core machine friendly

TTimeKeeper™ is a low overhead Linux time synchronization client that very accurately synchronizes the local clock to a remote PTP/NTP time server.

Once started, the TimeKeeper plug-in immediately begins synchronizing the local clock to the remote master. There is no delay or extended adjustment periods as Linux attempts to slew the time. TimeKeeper can smoothly converge (and hold) the offset between a client and server to below 100 microseconds within three minutes and can be below 10 microseconds in five minutes.

Linux applications do not see discontinuous time or jumps in the clock on the system. TimeKeeper provides time through the normal Linux interfaces – *clock_gettime, gettimeofday* and *time*. No special calls or libraries are necessary. No user applications (binaries or source) need to be changed. The entire Linux system sees a single unified and consistent time with nanosecond-scale overhead. Setup is quick and transparent. Applications already running don't even need to be restarted.

With TimeKeeper, time becomes an efficiently-managed resource; so all applications and the operating system itself see the same accurate time with no modifications. The whole system benefits — the file system timestamps, the network logs, and the high-speed low-latency critical business applications, which become faster and more accurate.

TimeKeeper achieves its superior accuracy through underlying deterministic algorithms. Unlike stock NTP for example, TimeKeeper corrects for drift of local CPU clocks, smoothly and predictably, without the "lurching" and overshoot common in stock NTP.

In Red Hat 6, TimeKeeper provides cohesive reported time across the various Linux resources. Applications don't spend time jumping into the kernel and risking expensive context switches. Instead, TimeKeeper creates a fast path directly to the application. System calls, context switches, returns, memory and cache stalls — TimeKeeper avoids them all so the application never has to leave the processor core. Even applications that span multiple processors have fast access to a comprehensive time source. Faster access to time means more throughput for the application.

TimeKeeper — the best software client for using PTP or NTP to assure accurate time at the application layer.

TimeKeeper™

Specifications

OPERATING SYSTEM DISTRIBUTIONS SUPPORTED

Distribution	32 bit	64 bit
Fedora 12		√
RedHat Enterprise 4	√	√
RedHat Enterprise 5	√	√
RedHat Enterprise 6		√
SuSE Linux Enterprise 11		√
Ubuntu Linux 10.04		√

Protocols Supported
- IEEE-1588 2002 (aka PTP v1)
- IEEE-1588 2008 (aka PTP v2)
- NTP, 2, 3, & 4
- SNMP traps (see manual for details)

LICENSE CONFIGURATION

TimeKeeper client is a self-extracting executable. Small configuration files are edited to configure the key parameters. Licensees are sold on a per machine basis or via corporate site license. License configurations include PTP, NTP and/or PTP+NTP.

PRODUCT INCLUDES:

Customized TimeKeeper software ships on CD and includes customer specific license certification.

Symmetricom®

2300 Orchard Parkway
San Jose, California 95131-1017
tel: 408.433.0910 fax: 408.428.7896
www.symmetricom.com