

Production Time Keeper™

- Pure software blade/cluster time solution
- Nanosecond accuracy
- No configuration
- Global, end to end solution
- NTP compatible



World wide operation



If TimeKeeper Server is connected to a time source like GPS, all TimeKeeper networks become synchronized.

- TimeKeeper Server produces a stable reference time from local or satellite time source.
- TimeKeeper clients generate synthetic reference time from Server time.
- Applications see time that tracks Server time within **10 microseconds** – better with better networks and blade hardware.

Hardware required on client blades/clusters



Ethernet
cable

Typical installation for one cluster

Blades run TimeKeeper client software with no OS changes.



TimeKeeper Server for cluster



Applications queries for time to the OS get the reference time – no application changes needed



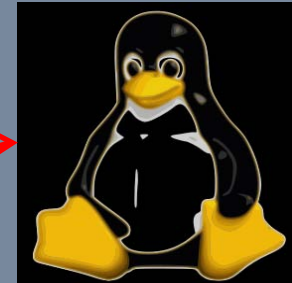
Error sources in other solutions



Server goes out of sync with GPS clock or lurches to recover



Blade clocks go out of sync with estimated reference time



Operating System time drivers lag behind



Network introduces delays and uncertainty



Milliseconds or seconds of timing error accumulate for applications at the end of the long timing chain

TimeKeeper configuration and startup



Time converges in a few minutes at most
(NTP can take hours)

TimeKeeper Server options

1. Pure software – install in your servers
2. or Preconfigured 1U Drop-in Server Box
 - Optional cable for time source device (Spectracom or other)
 - Internal GPS time source with antennae




TimeKeeper is NTP Compatible


- Can be added, incrementally, to an existing NTP based network.
- The system can fallback to NTP at any time as a “soft” failure mode (you won’t ever need to do this, but the option makes IT staff happier).

Public part of technology roadmap

Performance improvements:
Device model improvements
Hardware assists for under 1 microsecond



Windows/Solaris clients
Monitoring tools



PTP implementation

FSMLabs consulting services

We can help you build stable
time distribution solutions
customized to application
requirements and available
hardware/networking





- Profitable, self-funded, privately held over 12 years in business.
- Sold embedded business to WindRiver 2007.
- Customers from Fortune 500 to Government to startups.
- Our expertise: generating high performance, real-world solutions on top of commodity software & hardware

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