TimeKeeper:

Risk mitigation for financial trading time tracking

Financial trading firms are learning from bitter experience that unmanaged technology risk issues can be costly. Time management and synchronization must be part of any effort to manage technology risk. When trades are moving at sub-microsecond speed, equivalent precision in timing networks is a non-negotiable necessity.

Time management risks are magnified both by "time sync client" software that is not designed to any rigorous level of engineering and by weakness or failure in the clocks or communication network.

Timing errors have been covered up by synchronization software that is notorious for: optimistic self-evaluation, weak quality checking and lack of error reporting. And timing problems, especially at the microsecond or lower level, are invisible to standard network management tools.

TimeKeeper® changes all that. As users have discovered, it doesn't just synchronize and distribute time to sub-microsecond accuracy. It also polices the network in the course of monitoring and logging time quality, and providing failover resilience to failing time sources.

Here are examples:

Case 1: *Errors being sent to applications.* In a pilot set-up, TimeKeeper identified significant fluctuation from a time source in the data center. The prospective customer discovered that the old synchronization software was adjusting network time without any checks or warnings and providing incorrect time to applications.

Case 2: *Flawed network performance.* TimeKeeper alerted IT staff to an unreliable time signal over a leased WAN. Trace logs found the WAN was not performing to its SLA.

Case 3: *Hardware breakdown.* TimeKeeper generated alerts of an error condition in the network, leading IT staff to a bad network port in a switch in a data center.

Case 4: *Heat stress.* TimeKeeper alerted to a wildly inaccurate time feed from the data center. Investigation found the cooling turned off in the server room.

Case 5: *Time source failover.* TimeKeeper alerted IT staff and switched to secondary time source when the primary GPS clock provided as an (expensive) service from the data center produced low quality time feed. Investigation found that critical parts of the time protocol had been silently blocked by data center IT staff policies.

Foundations of Risk Reduction

TimeKeeper reduces the trading algorithm errors produced by bad timie data. It is designed to be a key component in risk reduction for financial trading applications by exposing latency, locking in to precise time, and gracefully handling network and time errors

Getting TimeKeeper

Request evaluation software by email by contacting us at sales@fsmlabs.com.