

## **Time Servers**

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Originated from: Rich Findley (RSMAS - Miami) on Fri, 3 Sep 2010

All,

I am looking to replace a Symetrix time server that has failed. Does anyone have a solution they like? I could set the time on one of my Windows servers from a GPS and then use the SNTP but without taking the one second pulse I don't have a lot of confidence in the exact time. So I would like to use a dedicated time server. Any suggestions?

Rich

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### **Reply From: Dale Chayes (LDEO) on Fri, 3 Sep 2010**

Although they are more expensive than simple GPS synchronized network NTP servers there is a mature protocol for precision time over TCP/IP networks call Precision Time Protocol (PTP) IEEE-1588.

PTP very precise timing across a network, even through switches (that support the protocol.) End-user timing across the network can be better than 50 microseconds. Have a look at Brian and Andy's paper referenced below.

Commercial network time servers are starting to be available that support PTP in addition to more traditional NTP services. There are also network switches that support PTP as well.

There is an open source implementation of a PTP daemon (google for ptpd.)

The reason for considering upgrading your choice of station clock to PTP is that the timing is good enough so that for almost any realistic sea-going system, you will be able to time tag off the network and skip the older strategies such as 1PPS and IRIG-B.

Refs:

Ultraprecise Absolute Time Synchronization for Distributed Acquisition Systems Brian R. Calder, Member, IEEE, and Andrew McLeod, IEEE JOURNAL OF OCEANIC ENGINEERING, VOL. 32, NO. 4, OCTOBER 2007

-Dale

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