

Network Time Protocol

Network Time Protocol (NTP) is a protocol designed to synchronize the clocks of computers over a network. CME Group uses NTP to synchronize time for CME Globex and the Clearing systems. The time is derived from several highly accurate and precise radio time sources in several locations. Three gateway time servers are used for time synchronization.

The IP addresses for the CME Group Gateway Time servers are:

- 209.133.24.7
- 205.209.218.172
- 205.209.218.173

Effective time accuracy from these servers depends on several things:

- The long-term latency stability of the WAN link used to access these time sources
- The quality of the software NTP client implementation used to communicate with the servers and provide the necessary clock adjustments
- The clock stability of the host

CME Group strongly recommends that customers using these time servers deploy an NTP client that can point to all three time sources simultaneously. Time clients that use the "simple" SNTP protocol typically only allow the use of one client and will not provide a suitable time source or adequate failure protection.

Getting Started

While CME Group does not recommend or certify any specific time client solutions, two options are listed below:

- **Linux and Unix** - These systems are original sources of the NTP protocol. They include a reference-grade NTP client that can be configured and enabled.
- **Windows** - All Windows versions to date require installation of a third-party NTP service for time stability. The US government's National Institute of Standards and Technology (NIST) provides a list of software companies that may offer suitable services: <http://tf.nist.gov/general/softwarelist.htm>.



Time stability for virtual machines (e.g., VMWare) for guest operating systems is not recommended.