

**Information Technology Policy
Commonwealth of Pennsylvania
Governor's Office of Administration/Office for Information Technology**

ITP Number:	ITP-NET017	
ITP Title:	Network Timing Protocol	
Issued by:	Deputy Secretary for Information Technology	
Date Issued:	October 19, 2007	Date Revised: December 20, 2010
Domain:	Network	
Discipline:	Network	
Technology Area:	Network	
Revision History	Description:	
Date:		
12/20/2010	ITP Refresh	

Abstract:

The purpose of this Information Technology Policy (ITP) is to establish enterprise- wide standards for Network Timing Protocol (NTP).

A reliable network time service requires provisions to prevent accidental or malicious attacks on the servers and clients in the network. Reliability requires that clients can determine that received messages were authentic and were actually sent by the intended server and not manufactured or modified by an intruder.

Web servers, mail servers, and other devices that make use of time sensitive functions such as log files or cron jobs are to be timed accurately with precision to within one-hundredth of a second. If servers are not timed accurately, the usefulness of time sensitive information such as entries in log files is diminished.

NTP is a protocol designed to synchronize the clocks of computers over a network. Typical NTP configurations utilize multiple redundant servers and diverse network paths in order to achieve high accuracy and reliability.

An NTP primary server is called a Stratum 1. It is a computer connected to a high precision reference clock and equipped with NTP software.

The number of computers that can be indirectly synchronized by a single primary is, for all intents and purposes, unlimited. The NTP software continuously monitors the figures of stability and accuracy of all configured servers, switching dynamically to the server with the best figures.

General:

This ITP applies to all departments, boards, commissions and councils under the governor's jurisdiction. Agencies not under the governor's jurisdiction are strongly encouraged to follow this policy.

Policy:

The Commonwealth has designated two official time servers for the Commonwealth. The primary time server is located at the Commonwealth Technology Center,

The secondary time server is located at the disaster recovery site located at Johnsonburg, PA. Both primary and secondary time servers are Stratum 1 servers. Each agency is responsible for obtaining the time from one of these servers for use in its agency network. Agencies are to contact the OA, Enterprise Network Services resource account (ens@state.pa.us) to request NTP access.

All agencies are to synchronize time on all network-attached devices at least once every twenty-four hours, with a recommendation for time synchronization being every twelve hours. Time synchronization is being used to make sure that all logging across the Commonwealth network component is synchronized so that if the information is needed for any reason the entire network path can be evaluated against other components involved.

Definitions of Terms:

Cron job – In computing, **cron** is a time-based scheduling service in Unix-like computer operating systems. Cron is driven by a *crontab*, a configuration file that specifies shell commands to run periodically on a given schedule.

Network Time Protocol is a protocol for synchronizing clocks of computer systems over packet-switched, variable-latency data networks.

Stratum 1 – Primary servers that are synchronized from atomic/global positioning system clocks

Refresh Schedule:

All standards identified in this ITP are subject to periodic review and possible revision, or upon request by the Enterprise Architecture Standards Committee (EASC).

Exemption from This Policy:

In the event an agency chooses to seek an exemption, for reasons such as the need to comply with requirements for a federally mandated system, a request for waiver may be submitted via the Commonwealth of PA Procurement and Architectural Review (COPPAR) process. Requests are to be entered into the COPPAR Tool located at <http://coppar.oa.pa.gov/>. Agency CIO approval is required. Contact your agency [CoP Planner](#) for further details or assistance.

Questions:

Questions regarding this policy are to be directed to ra-itcentral@pa.gov.