

## NTP Support on C-series Controllers

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NTP synchronizes and coordinates time among NTP clients and servers. It uses a returnable-time design in which a distributed subnet of time servers operate in a self-organizing, hierarchical, master-slave configuration. NTP synchronizes time for local clocks within a subnet and to another server or other time source such as a high-precision clock or satellite receiver. NTP clients are also servers that distribute a time synchronized to another NTP server.

NTP is defined in RFC 1305—Network Time Protocol (Version 3) Specification Implementation and Analysis (March 1992)..



**NOTE:** We highly recommend that you use NTP to set the system time to ensure that the SRC software operates correctly.

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For NTP servers on C-series Controllers, if the time difference between the local NTP server and the servers with which it synchronizes time is more than 1000 seconds, the local NTP server stops running. Configure a boot server for NTP so that the software obtains the initial time from the boot server before the NTP server starts.

When you configure NTP, you can specify which system on the network is the authoritative time source, or time server, and how time is synchronized between systems on the network. You can configure NTP to operate in one or more of the following modes:

- Client mode—The local system can be synchronized with the remote system, but the remote system cannot be synchronized with the local system.
  - Symmetric active (peer) mode—The local system and the remote system can synchronize with each other. You use this mode in a network in which either the local system or the remote system might be a better source of time.
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**NOTE:** Symmetric active mode can be initiated by either the local or the remote system. Only one system needs to be configured to do so. This means that the local system can synchronize with any system that offers symmetric active mode without any configuration whatsoever. However, we highly recommend that you configure authentication to ensure that the local system synchronizes only with known time servers.

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- Broadcast mode—The local system sends periodic broadcast messages to a client population at the specified broadcast or multicast address. Typically, you include this statement only when the local system is operating as a transmitter.
- Server mode—The local system operates as an NTP server.

You can also configure NTP to operate as a broadcast client or a multicast client.

### Related Topics

- Configuring NTP on a C-series Controller
- Configuration Statements for NTP on C-series Controllers

