



HPE NonStop Time Synchronization

The HPE NonStop Time Synchronization product synchronizes clocks between NonStop, Linux®, and Microsoft® Windows® systems, as well as NTP sources.

The HPE NonStop Time Synchronization product provides a low-cost solution to your time synchronization needs for many types of HPE NonStop server configurations. Available for HPE Virtualized NonStop, HPE Integrity NonStop X, HPE Integrity NonStop i and hybrid systems, this package allows you to choose a time source and keep your system clocks synchronized throughout your business.

There are many reasons to synchronize time across complex system configurations. You need to have the capability to correlate events and activities across systems as well as have the ability to recognize the time and order in which events have occurred. This is an important consideration in understanding data flow and application behavior, as well as how the sequence of events and operational commands have impacted system behavior. In general, it is necessary to keep all system clocks synchronized when managing hybrid and complex system environments.

The HPE NonStop Time Synchronization product was created to address two separate but related objectives. The first is to synchronize clocks within a network and the second is to synchronize clocks with the outside world. While the first objective is sufficient for many installations because it allows local system activity to be correlated, the second becomes more important in cases where local systems must interact with systems and networks outside of a business.

HPE NonStop Time Synchronization consists of three products—a special edition for each of the NonStop, Linux, and Windows platforms. Any platform or system in a network can be designated as a Time Synchronization Server. This includes establishing the NonStop, Linux, or Windows-based machine as a Time Server. In addition, HPE NonStop Time Synchronization can use any Network Time Protocol (NTP) or Simple NTP (SNTP) server as a Time Server.

The NonStop Edition of the product supports the HPE Integrity NonStop X, HPE Virtualized NonStop, and HPE Integrity NonStop i systems for Guardian and Open System Services (OSS) executables. The Linux Edition supports Red Hat® Enterprise Linux, CentOS, SUSE and most other Linux distributions. The Windows Edition supports Microsoft Windows Server® 2016, Windows Server 2012, Windows Server 2008, Windows Server 2003, Windows 10, Windows 7, and Windows XP.

Key features and benefits:

- Allows NonStop system clocks to be synchronized between all systems within a cluster or Expand network
- Allows system clocks to be synchronized between NonStop, Linux, and Windows systems
- Allows system clocks to be synchronized with an NTP source
- Synchronizes clocks between systems automatically in a cluster or network; requires no user intervention to invoke synchronization
- Helps ensure that time updates occur safely on all platforms, and prevents time from moving backward unless it is configured to do so

General features include:

- Allows any platform to act as a Time Synchronization Server
- Allows any platform to operate as a Time Synchronization Client
- Supports both Guardian and OSS environments on NonStop servers
- Runs as a service on Microsoft Windows and as a daemon on Linux
- Integrates with native event management service on each platform to enable logging of critical events
- Maintains a time synchronization log file of activities
- Involves no system overhead or impact on performance
- Provides the Timecom command interpreter (CI), which can be used to dynamically alter the configuration and obtain status information

Client features include:

- Provides up to microsecond accuracy, depending on the system
- Can be configured to safely update system clocks by preventing both backward time changes and drastic jumps in time
- Includes Multisource mode, which permits clocks averaging from among multiple sources to yield a more accurate reference time
- Provides configurable offset for system clocks not kept in GMT or UTC
- Offers a report-only mode, which can be used to report time differences between the local system and reference sources without updating the local system time

Server features include:

- Provides the ability to act as time source for any system running time synchronization in Client mode
- Has the capability to act as the time source for any system running an NTP or SNTP client
- Allows systems that do not keep system time in GMT or UTC to act as time sources via configurable offset

While time synchronization has always been an issue for computer systems, it is even more critical today because of the increasing number of distributed applications being deployed. This is the case not only on Integrity NonStop servers but also in hybrid environments. In order to effectively understand and manage those applications and systems, it is imperative that system clocks be synchronized. Without such synchronization, it quickly becomes impossible to correlate data from multiple system sources, which, in turn, makes it extremely difficult to understand transaction flow, pinpoint bottlenecks, and resolve problems that arise. HPE NonStop Time Synchronization addresses these issues by providing a robust and reliable mechanism for maintaining synchronization between the system clocks in your enterprise network.

Technical specifications**HPE NonStop Time Synchronization—NonStop Edition**

NonStop system	HPE Integrity NonStop X*, HPE Virtualized NonStop system* HPE Integrity NonStop i systems
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Software	HPE NonStop L- and J-series operating systems
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HPE NonStop Time Synchronization—Linux Edition

Hardware	Intel® or AMD-based Linux system, both 32-bit and 64-bit
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Software	Red Hat Enterprise Linux, SUSE Linux, CentOS
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HPE NonStop Time Synchronization—Windows Edition

Hardware	Intel or AMD-based Linux system, both 32-bit and 64-bit
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Software	Microsoft Windows Server 2016, Windows Server 2012, Windows Server 2008, Windows Server 2003, Windows 10, Windows 7, and Windows XP
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Optimize your IT investment strategy with new ways to acquire, pay for, and use technology, in lock-step with your business and transformation goals.

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* The NonStop edition of the Time Synchronization is included with the NonStop L-series operating system.

Support when and how you need it

HPE Technology Services

HPE Technology Services helps build an infrastructure that is reliable, highly available, and rooted in best practices. We offer a support experience that is proactive, personalized, and simplified—delivering support when and how you need it.

Hewlett Packard Enterprise recommends the following services for HPE NonStop systems:

- **HPE Critical Services**—high-performance reactive and proactive support designed to help minimize downtime. It offers an assigned support team, which includes an account support manager (ASM). This service offers access to the HPE Global NonStop Solution Center, 24x7 hardware and software support, six-hour call-to-repair commitment, enhanced parts inventory, and accelerated escalation management.
- **HPE Proactive 24**—provides proactive and reactive support delivered under the direction of an ASM. It offers 24x7 hardware support with a four-hour on-site response, 24x7 software support with a two-hour response, and flexible call submittal.
- **HPE Support Plus 24**—provides reactive HW and SW support with remote problem diagnosis, 4-hour on-site response, and replacement parts.
- **HPE Installation and Startup Services**—provides efficient and effective deployment of HPE NonStop systems.

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