

# System clock check

*The information on this page refers to LM-X v4.5.2 and newer, which added the ability to use a remote time server for SYSTEMCLOCKCHECK and changed functionality for the LmxResetSystemClock utility. If you are using an older version of LM-X, refer to [documentation for earlier versions](#).*

LM-X can perform a clock check on the client side when calling `LMX_Checkout()` to ensure users have not backdated or tampered with their system clock. If tampering is detected, the user will be unable to check out the license and will be given an error regarding the invalid system clock time. The license server does a background check every 10 minutes, and if the clock has been tampered with, the license server shuts down.

This helps prevent unauthorized use of the software; for example, a user attempting to extend the end date of a trial license. Note that any clock discrepancy of less than 24 hours will not be detected as tampering. For example, a user can change the clock to reflect a different time zone without causing an error.

A system clock check is done using the local file system by default, depending on the license type as shown in the following table. You may change the system clock check to check time on a remote Network Time Protocol (NTP) time server instead of the local file system, or you can disable system clock check. For more information, see [FEATURE settings](#).

License Type	Default System Clock Check Behavior
Local	Check system clock only when end date is set. Otherwise, do not check system clock.
Network	Do not check system clock.
Trial	Check system clock.
Grace	Do not check system clock.
Borrow	Do not check system clock.

The system clock check evaluates several criteria to determine whether the system time has been tampered with. Under some circumstances, the check can return a false positive. For example, a user might accidentally change the clock to a future time. Normally, the user can reset the system clock to the correct time to resolve the issue; however, in some cases this may not work. To resolve such individual cases, you can send the user the [LmxResetSystemClock utility](#) (included in the LM-X distribution). The user can run this utility to fix the problem in most cases.