The Office of the National Coordinator for Health Information Technology

2015 Edition Network Time Protocol (NTP) Reference Document

Version 1.0– Last Updated 1/20/16

Please consult the Final Rule entitled: *2015 Edition Health Information Technology (Health IT) Certification Criteria, 2015 Edition Base Electronic Health Record (EHR) Definition, and ONC Health IT Certification Program Modifications* for a detailed description of the certification requirements. We also encourage developers to consult the Certification Companion Guide as they provide clarifications that may be useful for product development and testing.

Requirements

Network Time Protocol (NTP) Test

The Health IT Module is able to synchronize clocks via the data and time recorded with the RFC 1305 Network Time Protocol (incorporated by reference in § 170.299) or (RFC 5905) Network Time Protocol Version 4, (incorporated by reference in § 170.299).

Standards: § 170.210 (g) **Synchronized clocks**
Tools: NIST Internet Time Service (ITS)

Testing assumes the operating system synchronizes to the NTP server and the Health IT Module then synchronizes to the operating system; however, the Heath IT Module could synchronize directly to the NTP server. The Health IT Module may use either method to demonstrate that the synchronization has occurred. Use of internal NTP servers are allowed, but the Health IT Module must demonstrate that the internal servers are synced to a NIST timeserver for accuracy.

Criteria ¶	System Under Test	Test Lab Verification
NTP	**Configure NTP** 1. The health IT developer chooses a time server from the NIST Internet Time Service (ITS) and adds it to the Health IT Module's software configuration. 2. The health IT developer should ensure the Health IT Module NEVER queries a server more frequently than once every 4 seconds. Systems that exceed this rate will be refused service. In extreme cases, systems that exceed this limit may be considered as attempting a denial-of-service attack. 3. After configuring the NTP, the user shall wait the amount of time necessary to ensure synchronization occurs. **Verify NTP** 4. The user provides an indication that the Health IT Module is accurate within 5 seconds of the NIST time server chosen (using system NTP logs). 5. The user displays, within the Health IT Module, the time from the system clock and Health IT Module time for comparison. These times should be synchronized to within 5 seconds. **Verify Protocol** 6. The health IT developer identifies the protocol used for synchronizing the Health IT Module system clock (i.e., (RFC 1305) Network Time Protocol, or (RFC 5905) Network Time Protocol Version 4).	**Verify NTP** 1. The tester verifies the Health IT Module is accurate within 5 seconds of the chosen NIST time server, using the NTP logs. 2. The tester verifies the Health IT Module displays time from the system clock and the Health IT Module, and that they are both synchronized within 5 seconds. 3. The tester verifies the Health IT Module's display is accurate within 5 seconds of the chosen NIST time server, using the NTP logs. **Verify Protocol** 4. The tester verifies the documentation from the Health IT Module indicating the protocol used for synchronizing the Health IT Module system clock (i.e., (RFC 1305) Network Time Protocol, or (RFC 5905) Network Time Protocol Version 4).

Document History

Version Number	Description of Change	Date
1.0	Final Version	January 20, 2016