NTPv5: Requirements vs. draft RFC
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2022-02-25

Requirements per: draft-gruessing-ntp-ntpv5-requirements-04
draft RFC per: draft-mlichvar-ntp-ntpv5-04

NOTES:
1. All SHALL requirements indicated as MUST in this document.
2. I do not distinguish between SHOULD and should requirements, which are all labeled as SHOULD in this document.
3. Requirements are listed in black, and comments on compliance by draft RFC in blue. If I do not know or can’t tell, then I comment in red.

3.0 High level
Ability to span to span network types from local private network to public internet (SHOULD)
Yes, this is enabled by the exclusion of algorithm specifications from the protocol specification.

Ability to provide time and time synchronization (SHOULD)
Yes

3.1 Resource management
Minimize ntp abuse (MUST)
No, Kiss of death procedure or equivalent is not described

Server identifier (SHOULD)
Yes

Capability notification (MUST)
No

Connection reestablishment interval (SHOULD)
No

NAT support (SHOULD)
Not discussed, but I don’t see why it wouldn’t work, although I don’t know much about NATs.

3.2 Algorithms
Algorithm agility (SHOULD)
Yes, this is achieved by not specifying the algorithms.

Protocol-algorithm separation (SHOULD)
Yes
3.3 Timescales
Linear and monotonic (SHOULD)
One of the choices of timescale is TAI, but the other timescales are either not linear or not monotonic or both. No default timescale is recommended.

No immanent rollover (SHOULD)
Yes, see timestamp64 data type in section 3

Sufficient information to determine UTC and TAI (MUST)
All defined timescales include sufficient information to determine UTC. If TAI or UTC timescales are selected, then sufficient information is available for both UTC and TAI. If UT1 or leap-smeared UTC are selected then TAI cannot be determined.

Indicate timescale in use (MUST)
Yes (see Leap Indicator in section 4)

3.4 Leap seconds
Leap second information at least 24 hours in advance (MUST)
A maximum of 14 days is warning is required but no minimum.

No leap second smearing from server (SHOULD)
One of the allowed timescales is leap-smeared UTC

3.5 Backward compatibility
Do not repeat deployment issues from previous new versions (SHOULD)
Sorry I don’t know about these and no reference or description is given in the requirements document.

Avoid incorrect v4 server response to v5 requests (MUST)
Described in Section 9 but as a SHOULD not a MUST

Servers respond in same ntp version (SHOULD)
Yes, described in Section 9

Data format backward compatibility (SHOULD)
Timestamp format is the same, but epoch is different

3.6 Extensibility
Message extensibility (MUST)
Yes (see Section 5 on extension fields)

Ignore unknown extensions (MUST)
Yes (see Section 5 on extension fields) but not stated using as a MUST
Do not propagate unknown extensions (MUST)
Not explicitly stated, but suggested by server requirement to ignore unknown extension fields

5.0 Threats
Prevent the use of NTPv5 for DDOS amplification (SHOULD)
Yes, this is enabled by padding extension field (section 5.1) and a check for this is included in the description of the server behavior (section 8).