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**Network Time Protocol: TCP Services: Key Exchange
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Abstract

This document describes the Key Exchange commands that are included in the NTP TCP Services protocol, which is used to implement the Secure Network Time protocol.

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[1.](#) Introduction

The NTP Secure Network Time proposal relies on the secure pre-exchange of information to create and validate NTP MACs,

This secure pre-exchange is performed using NTP TCP Services.

This document describes that protocol.

[1.1.](#) Requirements Language

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC 2119](#) [[RFC2119](#)].

[2.](#) NTP TCP Services: Key Exchange

To perform the key exchange for Secure Network Time, one side opens a TCP connection to the other host, performs any initial handshake, and SHOULD issue a STARTTLS directive to create a secure channel between the two processes.

Once that has been done, ...

[RFC 5705](#) [[RFC5705](#)]

[RFC 7301](#) [[RFC7301](#)]

[Show how this works for Client/Server mode]

[Show how this works for symmetric mode]

[Show how this work for multicast/multicast]

[Show how this would work for broadcast mode where the client can open a connection to the server]

3. IANA Considerations

TBD

4. Security Considerations

Additional information TBD

5. Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), DOI 10.17487/RFC2119, March 1997, <<https://www.rfc-editor.org/info/rfc2119>>.
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- [RFC5905] Mills, D., Martin, J., Ed., Burbank, J., and W. Kasch, "Network Time Protocol Version 4: Protocol and Algorithms Specification", [RFC 5905](#), DOI 10.17487/RFC5905, June 2010, <<https://www.rfc-editor.org/info/rfc5905>>.
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- [RFC7301] Friedl, S., Popov, A., Langley, A., and E. Stephan, "Transport Layer Security (TLS) Application-Layer Protocol Negotiation Extension", [RFC 7301](#), DOI 10.17487/RFC7301, July 2014, <<https://www.rfc-editor.org/info/rfc7301>>.

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