NETCONF over TLS

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IETF 86, Orlando, 2013-03-11

Motivation and Status

Motivation

- Alternate transport for platforms that do not support SSH, e.g., embedded systems
- Revision of RFC 5539 to adapt to the new chunked framing
- Defines a mechanism for generating NETCONF usernames from X.509 certificates or pre-shared keys

Status

- Current status in draft-ietf-netconf-rfc5539bis-02
- Last call running (so please read and send comments)

Open Issue #1: Reuse by Copying vs. Groupings

- The identities etc. have been essentially copied from the SNMP configuration model. Are we really happy with this reuse by copying?
- If so, do we keep the SNMP configuration model names or adapt them to the NETCONF context?
- If not, where shall we define a reusable grouping for extracting a user name (security name) from an X.509 certificate?

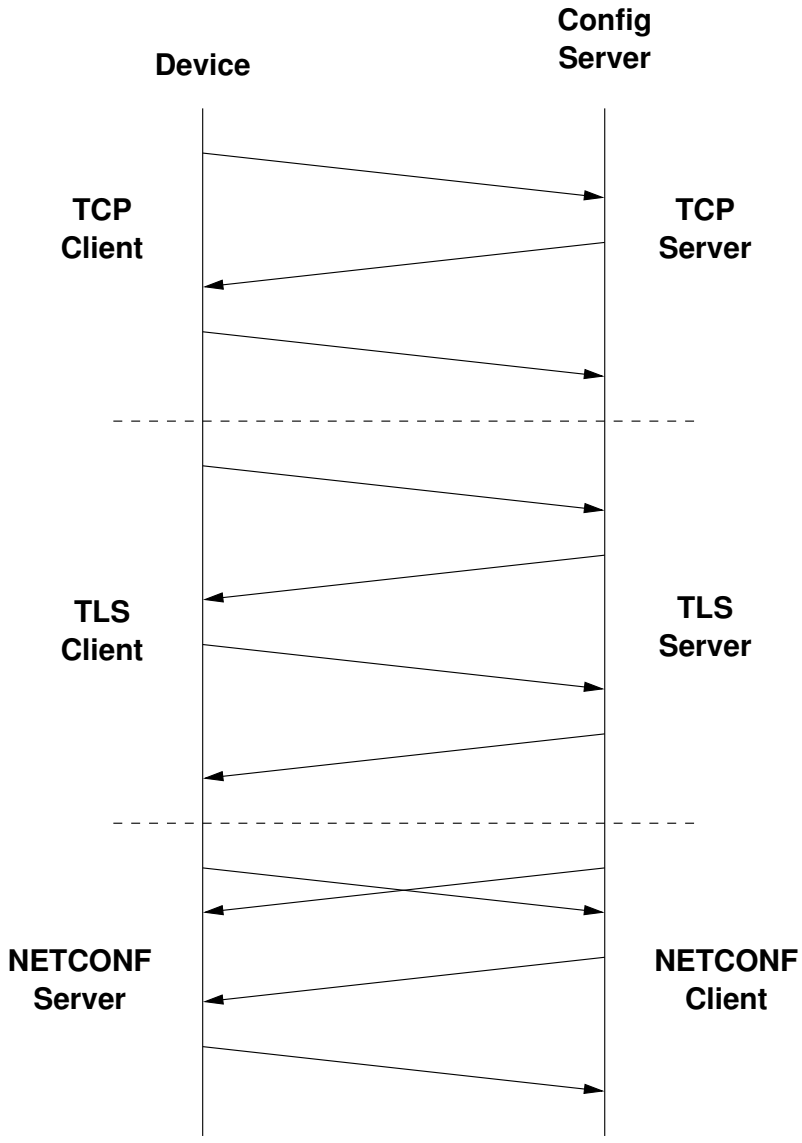
Open Issue #2: Additional Configuration Objects

- Right now, the YANG module focuses on the username mapping only.
- There are certainly more configuration objects for the TLS transport, e.g., which ports to listen on, which CERT to use etc.
- Shall we add additional configuration objects? (The SNMP configuration model covers endpoints to listen on, it does not cover the CERT to be used by the TLS server.)

Open Issue #3: Call Home for TLS

Shall we add support for call home, i.e., a device, after initiating and establishing a TCP connection and executing the TLS handshake, would switch role and subsequently act as a NETCONF server.

Open Issue #3: Call Home for TLS



1. Device initiates TCP connection (based on a certain schedule)
2. Device initiates TLS exchange with pairwise X.509 authentication
3. Device hands connection over to a NETCONF server, config server hands over to a NETCONF client
4. NETCONF `<hello>` exchange ensures proper roles are picked