

NETCONF Light

draft-schoenw-netconf-light-01

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- Constrained devices with limited amounts of memory and processing power can only support a subset of the NETCONF protocol operations.
- Adding full NETCONF support to devices often requires several release cycles (e.g., early releases only support `<copy-config>` but not yet `<edit-config>`).

- NETCONF Light uses the NETCONF message framing as defined in [RFC6241]. In particular, it uses the same XML encoding and XML namespace.
- A NETCONF Light implementation may choose to not support all NETCONF base operations.
- The set of operations supported by a NETCONF Light server is announced to a NETCONF client as features.
- A NETCONF Light implementation may support only a limited number of concurrent sessions.
- The <hello> exchange announces which operations a NETCONF Light server supports.

Example

```
<hello xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <capabilities>
    <capability>
      urn:ietf:params:xml:ns:yang:ietf-netconf-light?
      module=ietf-netconf-light&
      revision=2012-01-12&
      features=get-config,copy-config
    </capability>
  </capabilities>
  <session-id>4</session-id>
</hello>
```

- ⇒ The latest I-D does not require any of the NETCONF operations to be implemented by a NETCONF Light server.
 - This avoids defining yet another (sub)set of required protocol operations and provides the greatest amount of implementation flexibility.
 - The <hello> exchange ensures that clients can determine upfront whether a NETCONF Light implementation supports what is needed.
 - Some WG members feel that this is too much flexibility and they prefer that a minimal set of NETCONF operations must be supported by NETCONF Light implementations.
 - How much NETCONF is needed for NETCONF Light?

- ⇒ NETCONF [RFC6241] requires implementations to support the SSH transport defined in [RFC6242].
 - Some constrained devices do not support SSH and most likely only TLS/DTLS (the security solution for CoAP for example).
 - Adding SSH support on such devices just to support NETCONF is very costly.
 - Proxying over insecure TCP connections is security wise not an acceptable solution.
 - Having different mandatory to implement secure transports for NETCONF and NETCONF Light likely causes interoperability problems.
 - Perhaps a REST interface for NETCONF (compatible with CoAP) could solve this problem?



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