Managing SamKnows Probes using NETCONF

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**Demonstration**

**Configuration**

- Implementation of `ietf-system` module [1].
- Selected items for system management:
  - platform information,
  - timezones settings,
  - `<set-current-datetime>` RPC,
  - `<system-restart>` RPC,
  - `<system-shutdown>` RPC.
- Implemented as `libnetconf` transAPI module.
- Approximately 350 LOC in C.

**NETCONF Clients**

- Open-source NETCONF clients:
  - `ncclient` [2],
  - `Netopeer CLI` [3],
  - `Netopeer WebGUI` [3].

**NETCONF Server**

- Netopeer server [3].

**Measurement Agent (MA)**

- SamKnows probe 3 (TP-Link WDR3600)
- AR9344 (MIPS), 560 MHz, 128 MB RAM
- OpenWRT-based system.

**LMAP Framework**

The Internet Engineering Task Force (IETF) approved a Large-Scale Measurement of Broadband Performance (LMAP) working group in 2013 [5].

**Goals:**

- Standardize interactions between various measurement platform elements.
- Provide measurement capability directly within a Customer Premises Equipment (CPE).
- Strong inclination towards using existing protocols to manage a MA.
- Network Configuration (NETCONF) [6] is one of the candidates of a LMAP control protocol.

**SAMKNOWS Platform**

The SamKnows platform performs active measurements using dedicated hardware-based probes to assess broadband performance [7].

- Probes are off-the-shelf home routers flashed with OpenWrt.
- An open-source OpenWrt-based measurement overlay implemented by SamKnows.
- Around 40K probes deployed all around the globe.

**References**


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