Technische Universität München
Lehrstuhl für Netzarchitekturen und Netzdienste
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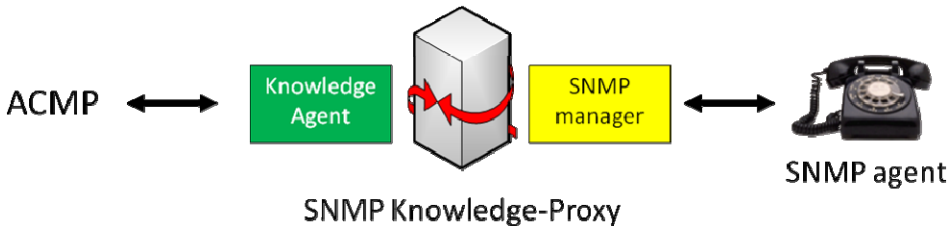
A Knowledge-Proxy towards SNMP

motivation

We are currently developing an **Autonomous Control and Management Platform** (ACMP) with a major focus on home networking. Spanning over all nodes inside a network, the platform creates an information overlay that allows **distributed knowledge-based management**.
All devices connected to the platform can be remotely controlled via their abstraction (model) inside the **Knowledge Plane** (KP) overlay. Through the abstract model it is possible to write high level services that are able to provide functionality (e.g. switching off all devices inside an area of the network without knowing the specific devices when writing the service).
The power of the platform comes from the available services as well as the number of supported devices. The latter will be addressed here.

work description

In this work the platform will be extended towards devices running an **SNMP agent** by implementing a so called Knowledge Proxy.
The Knowledge Proxy acts as SNMP manager on its SNMP side as well as Knowledge Agent (KA) connecting to the KP on the other side.



After studying the functionality of SNMP a useful mapping between SNMP MIBs and the ACMPs Knowledge Trees should be specified. It is necessary to automate the mapping since the Knowledge Proxy should be able to manage all SNMP devices that get connected to the proxy without further configuration. Through this mapping a Model of the SNMP device to be exposed to the ACMP should be provided.
The Knowledge Proxy should be implemented. An appropriate open source implementation for the SNMP side of the proxy (SNMP manager) should be identified. The existing component to connect to the ACMP, the Knowledge Agent, should be used on the other side.
For each SNMP device a Proxy Knowledge Agent should be created. It should provide the functionality of a fully functional node running a Knowledge Agent as well as a Knowledge Store for the SNMP device.

The component should be developed in Java.

Goal of the work is a running Knowledge-Proxy towards SNMP that is able to control devices running a SNMP agent.

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