DIDM Proposal

Name

Device Identification and Driver Management

Repo Name

didm

Description

The Device Identification and Driver Management (DIDM) project addresses the need to provide device specific functionality. Device specific functionality is code that performs a "feature", and the code is knowledgeable of the capability and limitations of the device. For example, configuring VLANs and adjusting Flowmods are features, and there may be different implementations for different device types. Device specific functionality is implemented as Device Drivers. Device Drivers need to be associated with the devices they can be used with. To determine this association requires the ability to identify the device type.

The DIDM project creates the infrastructure to support the following functions:

- **Discovery** - Determination that a device exists in the Controller management domain and connectivity to the device can be established. For devices that support the OpenFlow protocol, the existing "discovery" mechanism in Opendaylight suffices. Devices that do not support Openflow will be discovered through "manual" means such as the operator entering device information via GUI or REST API.

- **Identification** – Determination of the device type.

- **Driver Registration** – Registration of Device Derivers as routed RPCs.

- **Synchronization** – Collection of device information, device configuration, and link (connection) information.

- **Define Data Models for Common "Features"** – Data models will be defined to perform common "features" such as VLAN configuration. For example, applications can configure a VLAN by writing the VLAN data to the data store as specified by the common data model.

- **Define RPCs for Common "Features"** – Configuring VLANs and adjusting Flowmods are example of "features". RPCs will be defined that specify the APIs for these features. Drivers implement features for specific devices and support the APIs defined by the RPCs. There may be different Driver implementations for different device types.

Scope

The purpose of this proposal is to provide a framework that can used to inform the Controller of new devices to be controlled, identity the type of device, register Device Drivers as routed RPCs, collect data from the device, update the inventory model, and invoke Device Drivers.

The framework design is in progress and will be completed as the project progresses.

Where appropriate, this project will work with and consult existing device / protocol teams to help ensure the framework meets the needs of the community as opposed to any specific vendor's devices.

Dependencies

The DIDM Project will use the SNMP Soutbound plugin component which has been proposed by the SNMP project team.

Interacting with devices using protocols such as SNMP requires security credential. The DIDM project envisions a Credential Manager that will be used to manage security credentials. A REST API or GUI will allow the operator to populate the credential store. It is felt that the Credential Manager should be owned by the AAA project team. The DIDM team will work with the AAA project team regarding the Credential Manager.

Resources Committed (developers committed to working)

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Vendor Neutral

This code base contains only the standard ODL copyright notice as it was started with the idea of eventually moving it to open source.

Meets Board Policy (including IPR)

OpenDaylight Lithium

The DIDM project formally joins the OpenDaylight Lithium Simultaneous Release and agrees to the activities and timeline documented on the Lithium Release Plan Page

1. Offset 2
2. Project Lead (elected by committers) - Gunjan Patel
3. Project Contact - Gunjan Patel
4. Test Contact - Gunjan Patel
5. Project Release Plan

Resources

- File:DIDM Project Proposal for TSC Review-v2.pptx