NETCONF: Karaf CLI

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Netconf Karaf Console Feature

Netconf Karaf Console (odl-netconf-console) is a feature that:

- Offers a way to externally administer Netconf through Karaf Command Line Interface. Supports CRUD type of operations on netconf-connector.
- Provides a very user-friendly way to manage Netconf devices.

Gerrit patch details

https://git.opendaylight.org/gerrit/#/q/topic:netconf-cli

Building odl-netconf-console

1. Check out the latest netconf repository (Boron branch) from git
2. Dive into opendaylight/netconf folder
3. Build the netconf project using "mvn clean install" command.

This will build the netconf-console and the netconf-testtool bundles that we shall need for the following instructions.

Prerequisites

In this Wiki we shall be using netconf-testtool to simulate Netconf devices. More details on testtool can be found here testtool. Run the "netconf-testtool" to start of Netconf devices. In this example we start 2 Netconf devices.

```bash
$ cd netconf/netconf/tools/netconf-testtool/target
$ java -Xmx1G -XX:MaxPermSize=256M -jar netconf-testtool-1.1.0-SNAPSHOT-executable.jar --device-count 2
14:06:32.887 [main] INFO  o.o.n.t.tool.NetconfDeviceSimulator - Starting 2, SSH simulated devices starting on port 17830
14:06:34.337 [main] INFO  o.a.sshd.common.util.SecurityUtils - Trying to register BouncyCastle as a JCE provider
14:06:35.687 [main] INFO  o.o.n.t.tool.NetconfDeviceSimulator - All simulated devices started successfully from port 17830 to 17831
```

Running 'odl-netconf-console'

1. After a successful build run karaf from the Netconf project as shown below. Once you have a karaf instance running, the feature that provides Netconf Karaf CLI needs to be installed.
Using 'odl-netconf-console' Help

To display command usage type: <command> --help. For example:

```
opendaylight-user@root>netconf:show-device --help
```

**DESCRIPTION**
netconf:netconf:show-device
Shows netconf device attributes.

**SYNTAX**
netconf:netconf:show-device [options]

**OPTIONS**
- `i`, `--ipaddress`
  IP address of the netconf device
- `id`, `--identifier`
  Node Identifier of the netconf device
- `p`, `--port`
  Port of the netconf device
- `--help`
  Display this help message

CLI description and samples

**List all Netconf devices**

After installing the feature verify if the controller-config connector is up by running "netconf:list-devices" command. This command does not take any arguments and displays basic information (Netconf ID, IP address, Port and the connectivity status of the device) about all the netconf devices connected to the running ODL instance.

```
controller-config | 127.0.0.1 | 1830 | connected
```

**Connect to a Netconf Device**

In order to connect a Netconf device to ODL, use "netconf:connect-device" command and provide the IP, Port, Login credentials - all of which are mandatory arguments for successfully adding a netconf connector. Optionally if you wish to specify the device ID yourself that can also be passed to the CLI as an argument. If no device ID is passed the feature assigns a randomly generated UUID.
opendaylight-user@root>netconf:connect-device -i 127.0.0.1 -p 17831 -U admin -P admin
Netconf connector added successfully
opendaylight-user@root>netconf:connect-device -i 127.0.0.1 -p 17830 -U admin -P admin -id test
Netconf connector added successfully
opendaylight-user@root>netconf:list-devices

<table>
<thead>
<tr>
<th>NETCONF ID</th>
<th>NETCONF IP</th>
<th>NETCONF Port</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>87b31eaad1634bb080025ef35fccc831d</td>
<td>127.0.0.1</td>
<td>17831</td>
<td>connected</td>
</tr>
<tr>
<td>test</td>
<td>127.0.0.1</td>
<td>17830</td>
<td>connected</td>
</tr>
<tr>
<td>controller-config</td>
<td>127.0.0.1</td>
<td>1830</td>
<td>connected</td>
</tr>
</tbody>
</table>

**Show a Netconf device attributes**

Use "netconf:show-device" command to list the attributes of a Netconf device. "netconf:show-device" command accepts either IP and Port OR the device ID to list the attributes. For example:

opendaylight-user@root>netconf:show-device -i 127.0.0.1 -p 17830

<table>
<thead>
<tr>
<th>NETCONF ID</th>
<th>NETCONF IP</th>
<th>NETCONF Port</th>
<th>Status</th>
<th>Available Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>urn:ietf:params:netconf:capability:candidate:1.0</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>urn:ietf:params:netconf:base:1.1</td>
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opendaylight-user@root>netconf:show-device -id test

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</table>

**Update Netconf device attributes**

In order to update device attributes (IP, port, credentials) use the "netconf:update-device" command. Note that, for update command the device ID, username and password are mandatory arguments to pass. For example: to update the username and password specify new username and password as below.

opendaylight-user@root>netconf:update-device -id test -U admin -P admin -nU test -nP test
NETCONF node: test updated successfully.

opendaylight-user@root>netconf:list-devices

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<td>test</td>
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<td>17830</td>
<td>connected</td>
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<tr>
<td>controller-config</td>
<td>127.0.0.1</td>
<td>1830</td>
<td>connected</td>
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Disconnect from a Netconf device

Use "netconf:disconnect-device" command in order to remove a netconf connector. "netconf:disconnect-device" command accepts either IP and Port OR the device ID for disconnection to happen.

```bash
opendaylight-user@root>netconf:disconnect-device -i 127.0.0.1 -p 17830
OR
opendaylight-user@root>netconf:disconnect-device -id test
Netconf connector disconnected succesfully
opendaylight-user@root>netconf:list-devices
```

```
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