NetConf/Yang

Training URLs:
Developing Applications and Automating Workflows using Cisco Core Platforms

Use Chapter 10. Employing Model-Driven Programmability, parts 10.1-10.5

Objectives:
Learn how to configure and troubleshoot NetConf/Yang on IOS-XR based devices

Pre-requisites:
None

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Max Days / Weeks for Completition:
3-4 days

Configuration Requirements:

1. **(5 points)** Select one of IOS-XR based device from CALO RTP or EMEA la, preferably ASR9000 or NCS55xx with IOS-XR release 6.3.3 or later. Complete required SSH server configuration on selected device

2. **(5 points)** Complete required Netconf/Yang configuration on selected device. Verify agent is ready with appropriate CLI command

3. **(5 points)** Install Docker Desktop on laptop using either Docker Desktop for Mac or Docker Desktop for Windows. Verify if Docker Desktop is up and running with appropriate CLI command in Terminal session.

4. **(10 points)** Use either Git to clone GitLab repository or download Zip archive from GitHub. If repository was cloned the directory “led-t-netconf-yang” has been created, if Zip archive downloaded from GitHub then create “led-t-netconf-yang” directory and unzip downloaded files there

5. **(10 points)** Go to the “led-t-netconf-yang” directory Create new Docker image with the tag led-t:latest using provided Dockerfile.

6. **(5 points)** Start new Docker container with created image

7. **(10 points)** Edit “netconf_yang_loopback.py” file in container and add proper target selected IOS-XR device IPv4 address, username and password. Save the file and run it in container with appropriate command.

8. **(10 points)** Verify Netconf capabilities exchange and compare the output from the script with appropriate CLI command.

9. **(10 points)** Verify Netconf statistics on selected IOS-XR device running “netconf_yang_loopback.py” few times and capturing appropriate CLI commands.

10. **(10 points)** Check the Netconf traces on IOS-XR device and compare them with the output from “netconf_yang_loopback.py” file for Loopback interface.

11. **(10 points)** Use pyang CLI in Docker container to see the structure of “openconfig-interfaces.yang” module

12. **(10 points)** Check Netconf client status on selected device, initiate Netconf session form a different terminal session and check Netconf client status on device again while session is opened.