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 [GitHub 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.