Networking Academy

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Lab – NETCONF w/Python: List Capabilities

Objectives

Part 1: Install the ncclient Python module

Part 2: Connect to IOS XE's NETCONF service using ncclient

Part 3: List the IOS XE's capabilities – supported YANG models

Background / Scenario

Working with NETCONF does not require working with raw NETCONF RPC messages and XML. In this lab you will learn how to use the ncclient Python module to easily interact with network devices using NETCONF. You will learn how to identify which YANG models are supported by the device. This information is helpful when building a production network automation system, that requires specific YANG models to be supported by the given network device.

Required Resources

- Access to a router with the IOS XE operating system version 16.6 or higher
- Python 3.x environment

Instructions

Part 1: Install the ncclient Python module

In this part, you will install ncclient module into your Python environment. ncclient is a python module that simplifies NETCONF operations with built in functions that deal with the XML messages and RPC calls.

Explore the ncclient module on the project GitHub repository: https://github.com/ncclient/ncclient

Step 1: Use pip to install ncclient.

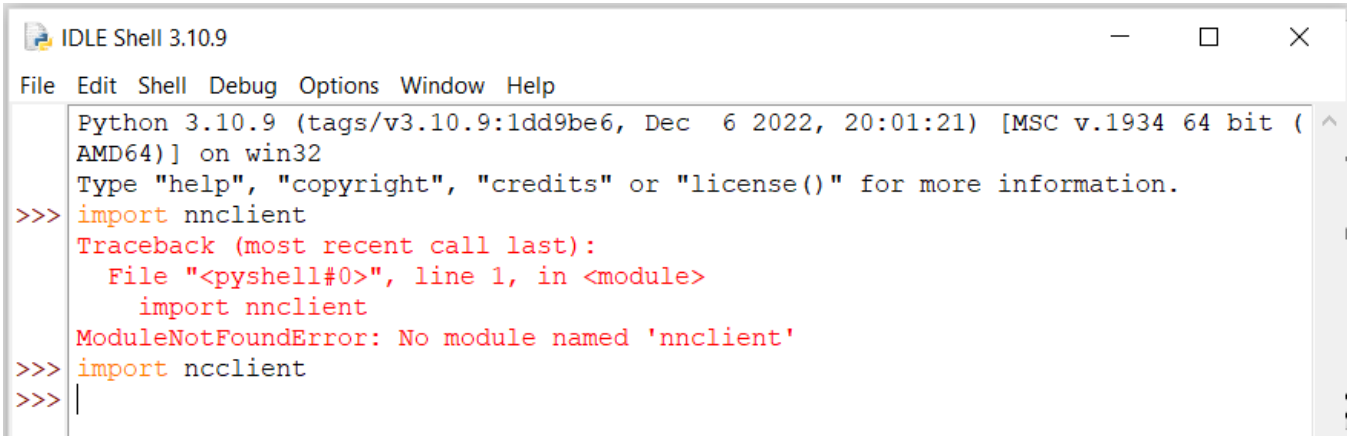
a. Start a new Windows command prompt (`cmd`).

b. Install ncclient using pip in the Windows command prompt:

```
pip install ncclient
```

c. Verify that ncclient has been successfully installed. Start Python IDLE and in the interactive shell try to import the ncclient module:

```
import ncclient
```



Part 2: Connect to IOS XE's NETCONF service using ncclient

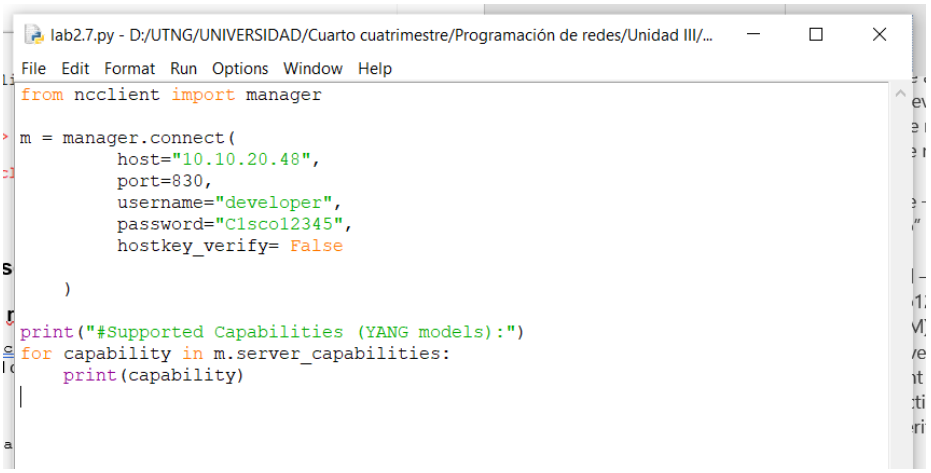
Connect to IOS XE's NETCONF service using ncclient.

The ncclient module provides a "`manager`" class with "`connect()`" function to setup the remote NETCONF connection. After a successful connection, the returned object represents the NETCONF connection to the remote device.

a. In Python IDLE, create a new Python script file:

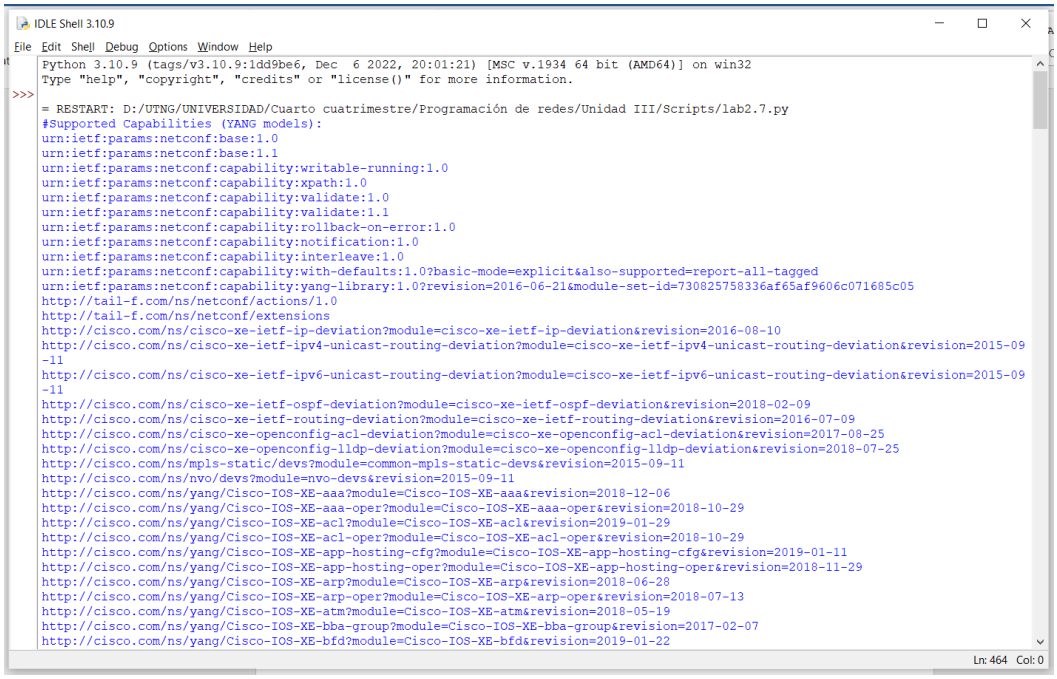
b. In the new Python script file editor, import the "`manager`" class from the ncclient module:

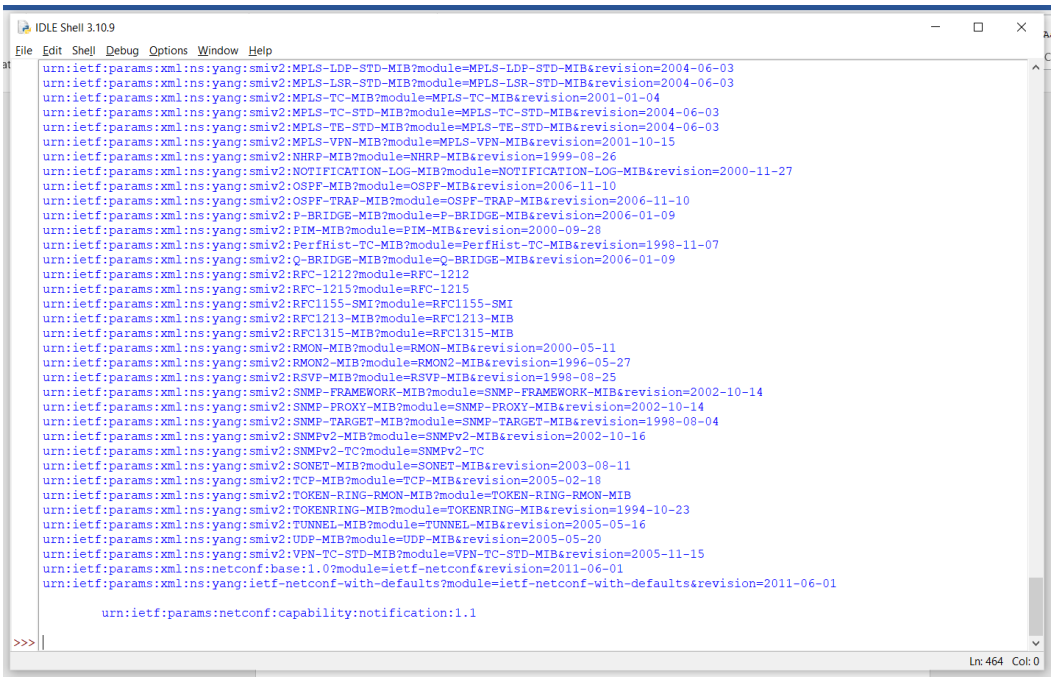
```
from ncclient import manager
```



Part 3: List the IOS XE's capabilities – supported YANG models

Captura de pantalla del script ejecutado 2.7





Conclusiones

ncciente de Python que simplifica la configuración / monitoreo de dispositivos de red que admite Netconf.

Su objetivo es proporcionar una API intuitiva que pueda mapear de manera inteligente la naturaleza de codificación de NETCONF XML facilita la construcción y modismos de Python y facilita la administración de aplicaciones con secuencias de comandos. la red.

Algunos de sus beneficios o caracteristicas son:

- Utilizar la opción get para recuperar la configuración y los datos de estado.
- Utiliza un filtro para especificar la parte de la configuración y los datos de estado que se van a recuperar.
- Utilizar la operación get-config con un filtro para recuperar parte de la configuración.