Lab – Explore YANG Models Using the pyang Tool

Objectives

Part 1: Install the pyang Python module

Part 2: Download YANG models for the IOS XE

Part 3: Use the pyang command line tool to transform the YANG models

Background / Scenario

YANG models define the exact structure, data types, syntax and validation rules for the content of messages exchanged between a managed device and another system communicating with the device. Working with files using the YANG language can be a bit overwhelming for the level of details in these files.

In this lab, you will learn how to use the open source pyang tool to transform YANG data models from files using the YANG language, into a much more easily human readable format. Using the "tree" view transformation, you will identify what are the key elements of the ietf-interfaces YANG model.

Required Resources

- Access to the Internet
- Python 3.x environment

Instructions

Part 1: Install the pyang Python module

In this part, you will install pyang module into your Python environment. Pyang is a python module that simplifies working with YANG files. The Pyang Python module comes with a pyang command line executable that transforms YANG files into a more human readable format (tree, html, etc.).

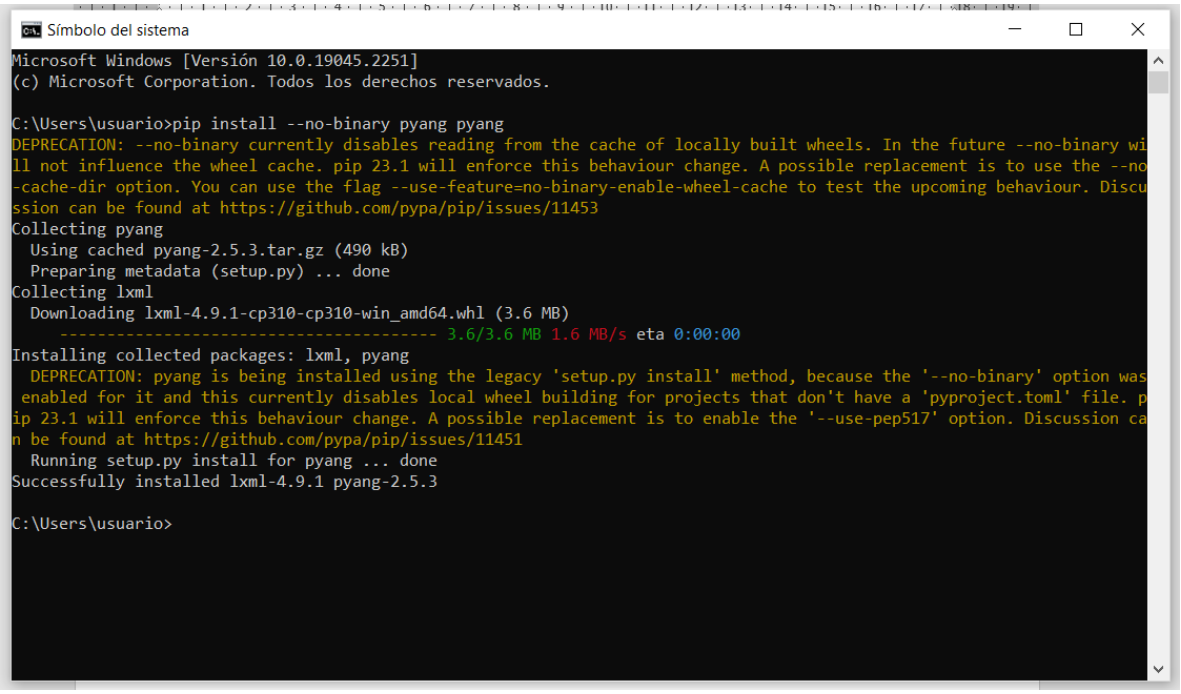
Step 1: Use pip to install pyang.

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

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

```
pip install --no-binary pyang pyang
```

```
NOTE: on mac or linux you can simply "pip install pyang" but temporarily on
Windows the binary WHL file won't include the Windows executable pyang file.
```



c. Verify that pyang has been successfully installed. In the command prompt, type:

   `pyang -v`

   to display the installed pyang version.

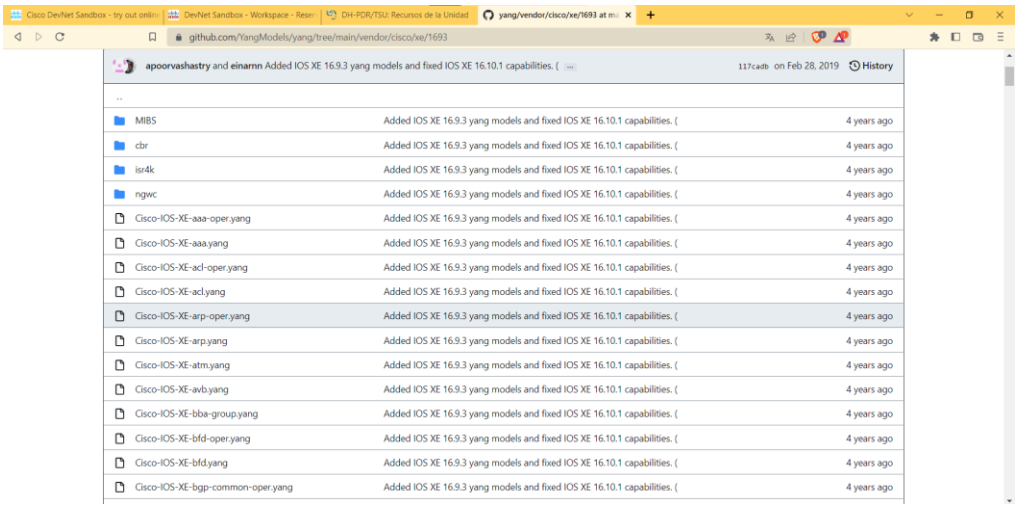
Download YANG models for the IOS XE

Explore YANG models on the YangModels/yang GitHub repository.

a. Using a web browser, navigate to https://github.com/YangModels/yang:

b. Navigate to the vendor -> cisco -> xe -> 1693 directory. This directory represents all the YANG models that are supported in Cisco operating system IOS XE in version 16.9.3.

c. Explore the ietf-interfaces.yang model.

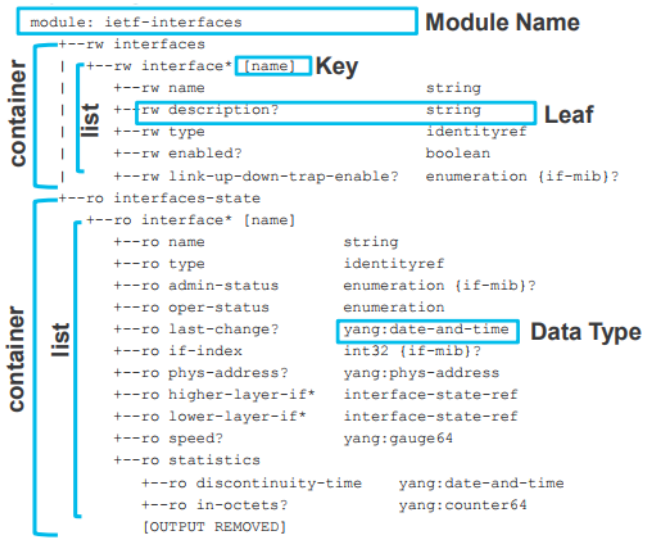


Conclusiones

En este laboratorio lo único que hicimos fue instalar YANG, al principio tuve problemas con la libreria de LXML ya que me pedia tener la version más actualizada de C++, pero al final si pude istalar.

Para ser honesta nunca habia escuchado sobre este lenguaje, pero investigando un poco más pude deducir que es un lenguaje de modelado de datos. Que proporciona una forma estandarizada de modelar los datos operativos y de configuración de un dispositivo de red. YANG, ser un lenguaje es ser independiente del protocolo, luego se puede convertir a cualquier formato de codificación, p. XML o JSON.

Un ejemplo de ello es:



YANG es independiente del protocolo, el modelo de datos YANG puede ser tanto el protocolo de transporte como el protocolo RPC el cual convierte a cualquier formato de codificación compatible con el protocolo de configuración de la red.