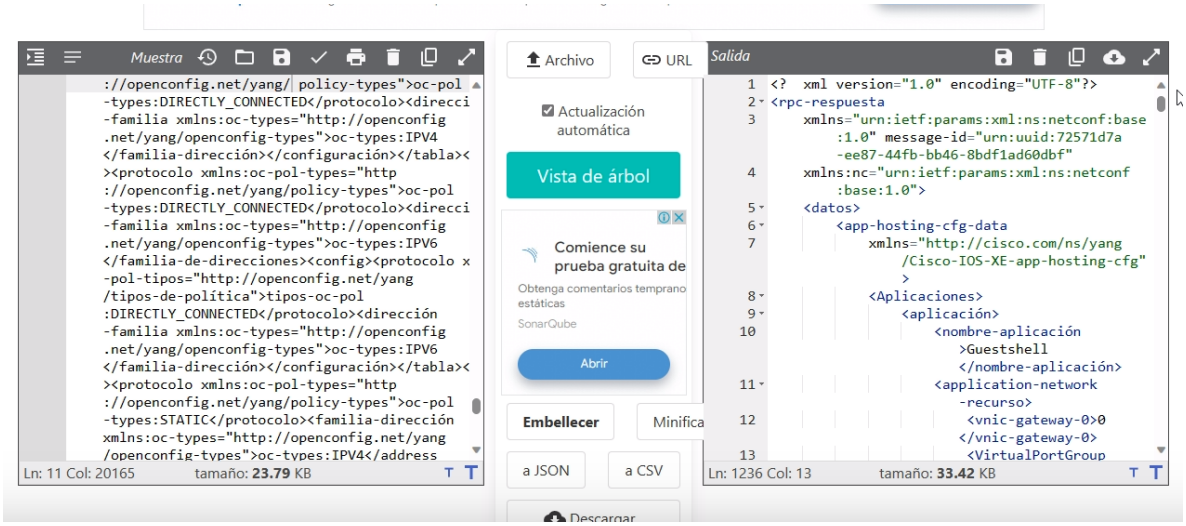
Lab 2.8– NETCONF w/Python: Device Configuration

lab28_sharonolvera.py

```python
#Autor: Sharon Michelle Olvera Ibarra
#Descripción: Configuración NETCONF con Python: Configuración del dispositivo
#Fecha: 05/12/2023

from ncclient import manager

m = manager.connect(
    host = "10.10.20.48",
    port = 830,
    username = "developer",
    password = "C1sco12345",
    hostkey_verify = False
)

netconf_reply = m.get_config(source="running")
print(netconf_reply)
```

TERMINAL

```
<protocol xmlns:oc-pol-types="http://openconfig.net/yang/policy-types">oc-pol-types:STATIC</protocol><address-family xmlns:oc-types="http://openconfig.net/yang/openconfig-types">oc-types:IPV6</address-family></config></table></tables><protocols><protocol><identifier xmlns:oc-pol-types="http://openconfig.net/yang/policy-types">oc-pol-types:STATIC</identifier><name>DEFAULT</name><config><identifier xmlns:oc-pol-types="http://openconfig.net/yang/policy-types">oc-pol-types:STATIC</identifier><name>DEFAULT</name></config><static-routes><static><prefix>0.0.0.0/0</prefix><config><prefix>0.0.0.0/0</prefix></config><next-hops><next-hop><index>GigabitEthernet1_10.10.20.254</index><config><index>GigabitEthernet1_10.10.20.254</index><next-hop>10.10.20.254</next-hop><metric>1</metric></config><interface-ref><config><interface>GigabitEthernet1</interface></config></interface-ref></next-hop></next-hops></static></static-routes></protocol><protocol><identifier xmlns:oc-pol-types="http://openconfig.net/yang/policy-types">oc-pol-types:DIRECTLY_CONNECTED</identifier><name>DEFAULT</name><config><identifier xmlns:oc-pol-types="http://openconfig.net/yang/policy-types">oc-pol-types:DIRECTLY_CONNECTED</identifier><name>DEFAULT</name></config></protocol></protocols></network-instance></network-instances></data></rpc-reply>
PS C:\Users\HP\Desktop\unidad3> & C:/Users/HP/AppData/Local/Programs/Python/Python312/python.exe c:/Users/HP/Desktop/unidad3/lab28_sharonolvera.py
```



lab28_sharonolvera.py > ...

```python
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from ncclient import manager
import xml.dom.minidom

m = manager.connect(
    host = "10.10.20.48",
    port = 830,
    username = "developer",
    password = "C1sco12345",
    hostkey_verify = False
)

netconf_filter = """
<filter>
    <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native" />
</filter>
"""

netconf_reply = m.get_config(source="running", filter=netconf_filter)
print(xml.dom.minidom.parseString(netconf_reply.xml).toprettyxml())
```

```
PS C:\Users\HP\Desktop\unidad3> & C:/Users/HP/AppData/Local/Programs/Python/Python312/python.exe c:/Users/HP/Desktop/unidad3/lab28_sharonolvera.py
Traceback (most recent call last):
  File "c:\Users\HP\Desktop\unidad3\lab28_sharonolvera.py", line 22, in <module>
    netconf_reply = m.get_config(source="running", filter=netconf_filter)
                    ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "C:\Users\HP\AppData\Local\Programs\Python\Python312\Lib\site-packages\ncclient\manager.py", line 257, in execute
    return cls(self._session,
           ^^^^^^^^^^^^^^^^^^
  File "C:\Users\HP\AppData\Local\Programs\Python\Python312\Lib\site-packages\ncclient\operations\retrieve.py", line 166, in request
    return self._request(node)
           ^^^^^^^^^^^^^^^^^^^
  File "C:\Users\HP\AppData\Local\Programs\Python\Python312\Lib\site-packages\ncclient\operations\rpc.py", line 375, in _request
    raise self._reply.error
ncclient.operations.rpc.RPCError: {'type': 'protocol', 'tag': 'unknown-element', 'app_tag': None, 'severity': 'error', 'info': '<?xml version="1.0" encoding="
UTF-8"?><error-info xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0"><bad-element>filter</bad-element>\n</er
ror-info>\n', 'path': '\n    /rpc/get-config\n  ', 'message': None}
PS C:\Users\HP\Desktop\unidad3>
```

El script genera un error, puede ser a causa de que el servicio esta dado de baja.

PARTE 2

lab28_2_olverasharon.py > ...

```python
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#Descripción: Configuración NETCONF con Python: Configuración del dispositivo
#Fecha: 05/12/2023

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import xml.dom.minidom

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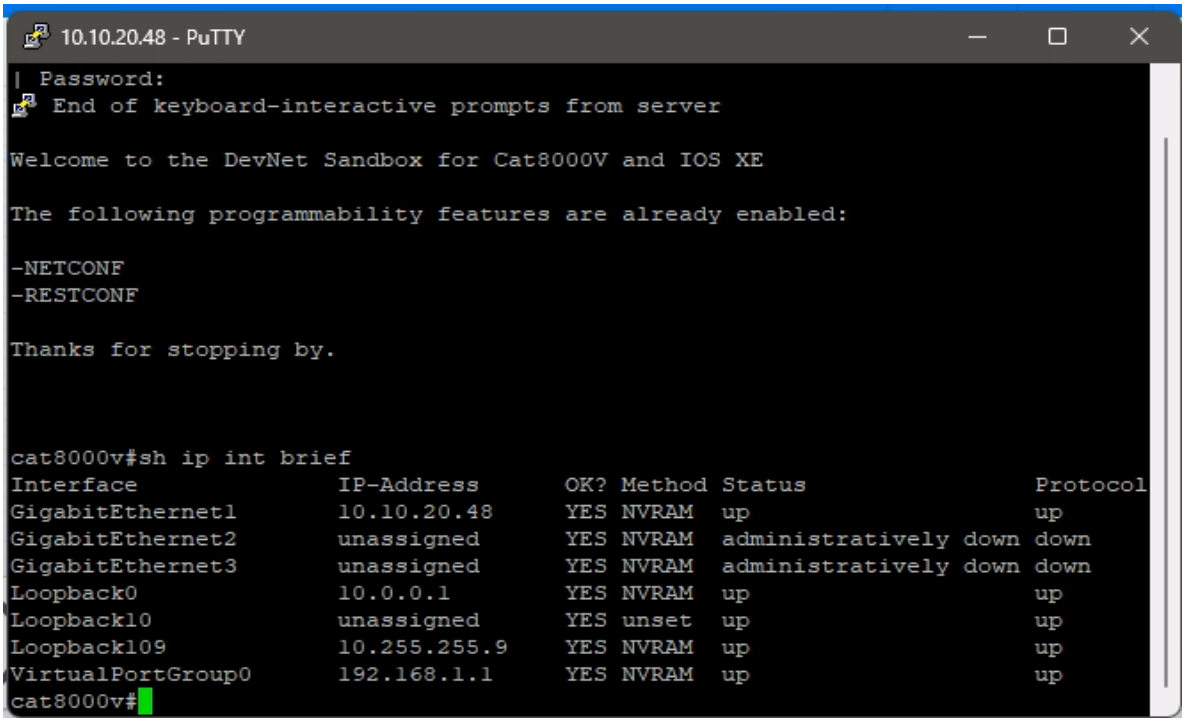
    host = "10.10.20.48",
    port = 830,
    username = "developer",
    password = "C1sco12345",
    hostkey_verify = False
)

netconf_data = """
<config>
  <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native">
    <hostname>NEWHOSTNAME</hostname>
  </native>
</config>
"""
netconf_reply = m.edit_config(target="running", config=netconf_data)
print(xml.dom.minidom.parseString(netconf_reply.xml).toprettyxml())
```



```
)

netconf_data = """
<config>
 <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native">
  <interface>
   <Loopback>
    <name>100</name>
    <description>TEST1</description>
    <ip>
     <address>
      <primary>
       <address>100.100.100.100</address>
       <mask>255.255.255.0</mask>
      </primary>
     </address>
    </ip>
   </Loopback>
  </interface>
 </native>
</config>
"""

netconf_reply = m.edit_config(target="running", config=netconf_data)
print(xml.dom.minidom.parseString(netconf_reply.xml).toprettyxml())
```

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from ncclient import manager
import xml.dom.minidom

m = manager.connect(
    host = "10.10.20.48",
    port = 830,
    username = "developer",
    password = "C1sco12345",
    hostkey_verify = False
)

netconf_data = """
<config>
 <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native">
  <interface>
   <Loopback>
    <name>111</name>
    <description>TEST1</description>
    <ip>
     <address>
      <primary>
       <address>100.100.100.100</address>
       <mask>255.255.255.0</mask>
      </primary>
     </address>
    </ip>
   </Loopback>
  </interface>
 </native>
</config>
"""
netconf_reply = m.edit_config(target="running", config=netconf_data)
print(xml.dom.minidom.parseString(netconf_reply.xml).toprettyxml())
```