

RINCON ULLOA YAZMIN ELIZABETH

Lab – raw NETCONF

Objectives

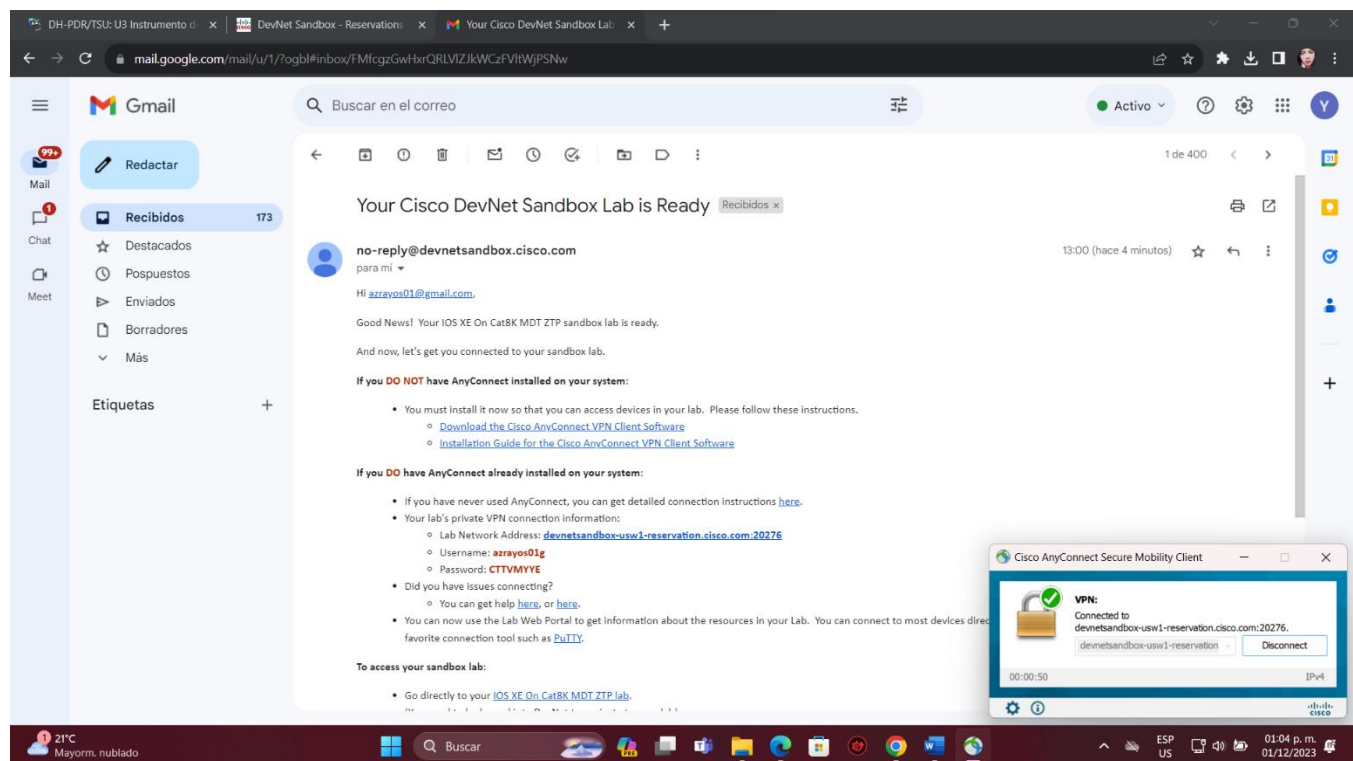
Part 1: Verify that NETCONF is Running on the IOS XE

Background / Scenario

In this lab, you will learn how to verify that the NETCONF service is running on the device by directly connecting to its port using an SSH client. You will be sending raw NETCONF Remote Procedure Calls encoded in XML structures.

Required Resources

- Access to a router with the IOS XE operating system version 16.6 or higher



- Putty

Part 1: Verify that NETCONF is Running on the IOS XE

Step 1: Use Putty as an SSH client to connect to the NETCONF service.

- Start Putty.
- Using Putty, connect to host “192.168.56.101” (Adjust the IP address to match the router’s current address.) and port “830”.

- e. The end of the message is identified with “]]>]]>”.
- f. To start a NETCONF session, the client needs to send its own hello message in a response:

```
<hello xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <capabilities>
    <capability>urn:ietf:params:netconf:base:1.0</capability>
  </capabilities>
</hello>
]]>]]>
```

The screenshot shows the Cisco DevNet Sandbox interface. On the left, there are instructions and credential tables for various devices. The main window displays a terminal view of a NETCONF session. The session starts with a 'hello' message from the client, which is received by the server. The server responds with its own 'hello' message and capabilities. The session is then ready to process RPC messages.

Developer Box Credentials

host	port	username	password
10.10.20.48	22	developer	Cisco12345
10.10.20.48	830	developer	Cisco12345
10.10.20.48	443	developer	Cisco12345

IOS XRv 9K Credentials

host	port	username	password
10.10.20.35	22	developer	Cisco12345

Nexus 9K

host	port	username	password
10.10.20.50	22	developer	Cisco12345
localhost	2222	developer	Cisco12345

Terminal View (10.10.20.48 - PuTTY)

```
<capability>urn:ietf:params:xml:ns:yang:smiv2:TOKENRING-MIB?module=TOKENRING-MIB&revision=1994-10-23</capability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:TUNNEL-MIB?module=TUNNEL-MIB&revision=2005-05-16</capability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:UDP-MIB?module=UDP-MIB&revision=2005-05-20</capability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:VPN-TC-STD-MIB?module=VPN-TC-STD-MIB&revision=2005-11-15</capability>
<capability>
  urn:ietf:params:netconf:capability:notification:1.1
</capability>
</capabilities>
<session-id>26</session-id></hello>]]><hello xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <capabilities>
    <capability>urn:ietf:params:netconf:base:1.0</capability>
  </capabilities>
</hello>
]]>]]>
<rpc message-id="103" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <get>
    <filter>
      <interfaces xmlns="urn:ietf:params:xml:ns:yang:ietf-interfaces"/>
    </filter>
  </get>
</rpc>
]]>]]>
```

- g. After the client hello message has been sent, the NETCONF session is ready to process RPC messages. For example, the following XML formatted RPC message will return the ietf-interfaces model data. Please note that the returned XML data are designed to be consumed by an application. By default, this data might be difficult to for humans to read.

```
<rpc message-id="103" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <get>
    <filter>
      <interfaces xmlns="urn:ietf:params:xml:ns:yang:ietf-interfaces"/>
    </filter>
  </get>
</rpc>
]]>]]>
```


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The screenshot displays the Cisco DevNet Sandbox interface. The main window shows a network topology diagram with three nodes: an IOS XRv 9000 (left), a VLAN - VLAN 276 (center), and an IOS XE Cat 8Kv-509 (right). The nodes are connected by bidirectional arrows. The left sidebar contains instructions and credential tables.

Instructions: IOS XE On Cat Latest Code

Developer Box Credentials

host	port	username	password
10.10.20.48	22	developer	C1sco12345
10.10.20.48	830	developer	C1sco12345
10.10.20.48	443	developer	C1sco12345

Note: The time to achieve guestshell after a wr mem/reload on Catalyst 8000v serial interface is approximately 6 minutes.

IOS XRv 9K Credentials

host	port	username	password
10.10.20.35	22	developer	C1sco12345

The right sidebar shows a user profile for Yazmin Ulloa with a notification that synchronization is disabled and a button to activate it.