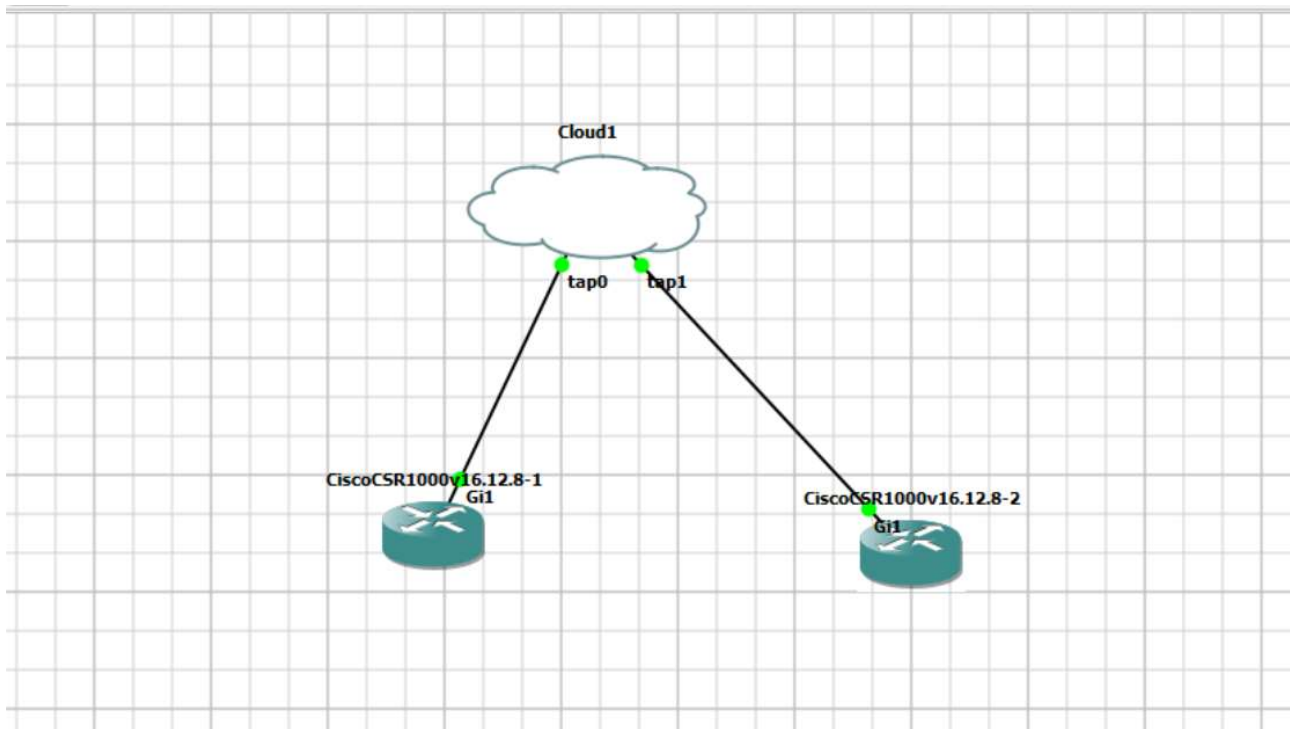


## Enable the Netconf on the Router (09-07)

### Network Topology:



### DHCP will allocate the IP address to the Router:

```
*Jul  9 09:13:40.286: AUTOINSTALL: Tftp script execution not successful
Router>sh ip int br
Interface                IP-Address      OK? Method Status
GigabitEthernet1        172.20.0.100    YES  DHCP   up
GigabitEthernet2        unassigned      YES  unset  down
GigabitEthernet3        unassigned      YES  unset  down
GigabitEthernet4        unassigned      YES  unset  down
Router>_
```

### Show platform software yang-management process:

```
Router#sh platform software yang-management process
confd                : Running
mesd                 : Running
syncfd               : Running
ncsshd               : Running
dmiauthd             : Running
nginx                : Running
nmbmand              : Running
pubd                 : Running
Router#
```

## Check the yang connectivity in Command Prompt:

```
Select Administrator: Command Prompt - ssh admin@172.20.0.103 -p 830 -s netconf

C:\Users\Administrator>ssh admin@172.20.0.103 -p 830 -s netconf
admin@172.20.0.103's password:
<?xml version="1.0" encoding="UTF-8"?>
<hello xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <capabilities>
    <capability>urn:ietf:params:netconf:base:1.0</capability>
    <capability>urn:ietf:params:netconf:base:1.1</capability>
    <capability>urn:ietf:params:netconf:capability:writable-running:1.0</capability>
    <capability>urn:ietf:params:netconf:capability:xpath:1.0</capability>
    <capability>urn:ietf:params:netconf:capability:validate:1.0</capability>
    <capability>urn:ietf:params:netconf:capability:validate:1.1</capability>
    <capability>urn:ietf:params:netconf:capability:rollback-on-error:1.0</capability>
    <capability>urn:ietf:params:netconf:capability:notification:1.0</capability>
    <capability>urn:ietf:params:netconf:capability:interleave:1.0</capability>
    <capability>urn:ietf:params:netconf:capability:with-defaults:1.0?basic-mode=explicit&also-supported-report-all-tagged</capability>
    <capability>urn:ietf:params:netconf:capability:yang-library:1.0?revision=2016-06-21&module-set-id=b1077a37217dd85cbd50b51197785edf</capability>
    <capability>http://tail-f.com/ns/netconf/actions/1.0</capability>
    <capability>http://tail-f.com/ns/netconf/extensions</capability>
    <capability>http://cisco.com/ns/cisco-xe-ietf-ip-deviation?module=cisco-xe-ietf-ip-deviation&revision=2016-08-10</capability>
    <capability>http://cisco.com/ns/cisco-xe-ietf-ipv4-unicast-routing-deviation?module=cisco-xe-ietf-ipv4-unicast-routing-deviation&revision=2015-09-11</capability>
    <capability>http://cisco.com/ns/cisco-xe-ietf-ipv6-unicast-routing-deviation?module=cisco-xe-ietf-ipv6-unicast-routing-deviation&revision=2015-09-11</capability>
    <capability>http://cisco.com/ns/cisco-xe-ietf-ospf-deviation?module=cisco-xe-ietf-ospf-deviation&revision=2018-02-09</capability>
    <capability>http://cisco.com/ns/cisco-xe-ietf-routing-deviation?module=cisco-xe-ietf-routing-deviation&revision=2016-07-05</capability>
  </capabilities>
</hello>
```

## Start a NETCONF session by sending a hello message from the client:

```
Administrator: Command Prompt - ssh admin@172.20.0.103 -p 830 -s netconf

</capabilities>
<session-id>40</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>
]]]]>
```

## show netconf-yang sessions:

```
QEMU (CiscoCSR1000v16.12.8-1) - TightVNC Viewer

Router>
*Jul  9 10:52:20.175: %SEC_LOGIN-5-LOGIN_SUCCESS: Login Success [user: admin] [Source: LOCAL] [localport: 0] at 10:52:20 UTC Tue Jul 9 2024en
Router#
*Jul  9 10:54:50.795: %DMI-5-AUTH_PASSED: R0/0: dmiauthd: User 'admin' authenticated successfully from 172.20.0.43:50570 for netconf over ssh. External groups: PRIU15
Router#sh netconf-yang sessions
R: Global-lock on running datastore
C: Global-lock on candidate datastore
S: Global-lock on startup datastore

Number of sessions : 1

session-id  transport  username  source-host  global-lock
-----
31          netconf-ssh  admin    172.20.0.43  None
```

### Close the NETCONF session:

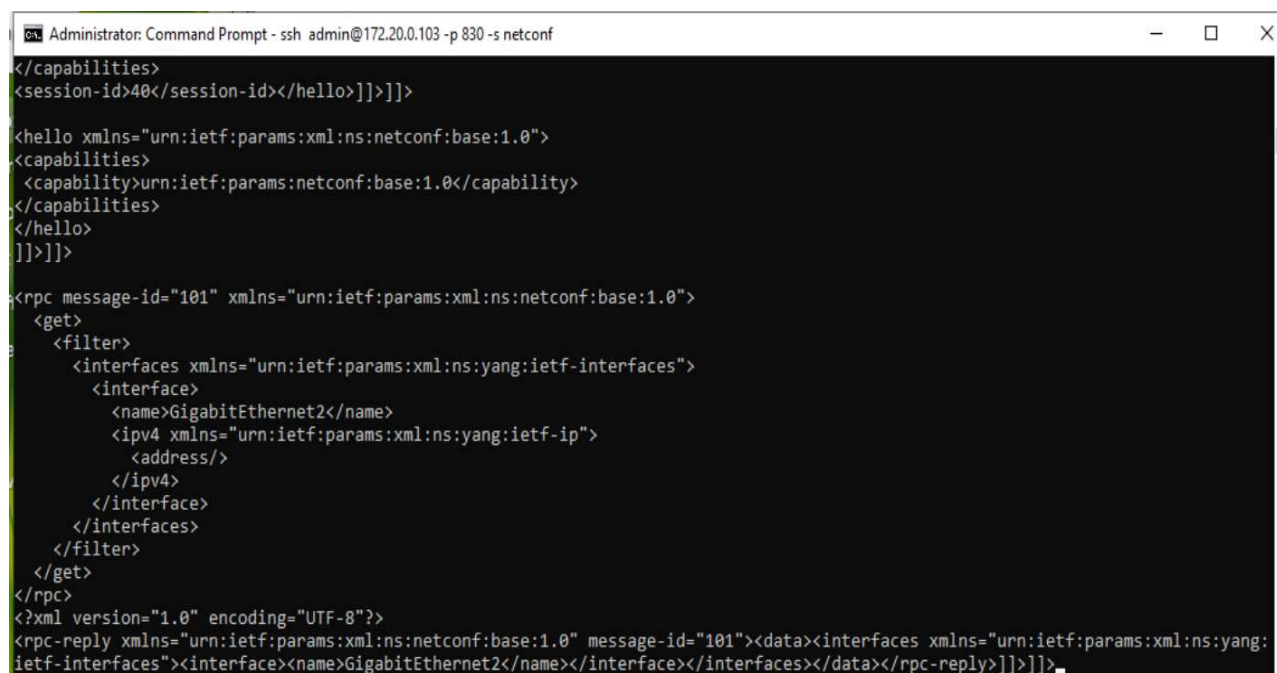
```
<rpc message-id="99999999"
xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
<close-session />
</rpc>
```

### show netconf-yang sessions

```
Router#sh netconf-yang sessions
There are no active sessions

Router#_
```

### Get the interface IP address details:



```
Administrator: Command Prompt - ssh admin@172.20.0.103 -p 830 -s netconf
</capabilities>
<session-id>40</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="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <get>
    <filter>
      <interfaces xmlns="urn:ietf:params:xml:ns:yang:ietf-interfaces">
        <interface>
          <name>GigabitEthernet2</name>
          <ipv4 xmlns="urn:ietf:params:xml:ns:yang:ietf-ip">
            <address/>
          </ipv4>
        </interface>
      </interfaces>
    </filter>
  </get>
</rpc>
<?xml version="1.0" encoding="UTF-8"?>
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="101"><data><interfaces xmlns="urn:ietf:params:xml:ns:yang:ietf-interfaces"><interface><name>GigabitEthernet2</name></interface></interfaces></data></rpc-reply>]]>]]>_
```

## Get the router hostname:

```
Administrator: Command Prompt - ssh admin@172.20.0.103 -p 830 -s netconf

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

<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
  <get-config>
    <source>
      <running/>
    </source>
    <filter type="subtree">
      <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native">
        <hostname/>
      </native>
    </filter>
  </get-config>
</rpc>
<?xml version="1.0" encoding="UTF-8"?>
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1"><data><native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native"><hostname>Router</hostname></native></data></rpc-reply>]]>]]>
```

## Change the router hostname:

```
Administrator: Command Prompt - ssh admin@172.20.0.103 -p 830 -s netconf

<?xml version="1.0" encoding="UTF-8"?>
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1"><data><native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native"><hostname>Router</hostname></native></data></rpc-reply>]]>]]>

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

<?xml version="1.0" ?>
  <rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
    <edit-config>
      <target>
        <running/>
      </target>
      <config>
        <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native">
          <hostname>Router</hostname>
        </native>
      </config>
    </edit-config>
  </rpc>
<?xml version="1.0" encoding="UTF-8"?>
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="101"><ok></rpc-reply>]]>]]>
```

## Change the interface status to down:

```
Administrator: Command Prompt - ssh admin@172.20.0.103 -p 830 -s netconf
<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="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <edit-config>
    <target>
      <running/>
    </target>
    <config>
      <interfaces xmlns="urn:ietf:params:xml:ns:yang:ietf-interfaces">
        <interface>
          <name>GigabitEthernet2</name>
          <enabled>false</enabled>
        </interface>
      </interfaces>
    </config>
  </edit-config>
</rpc>
<?xml version="1.0" encoding="UTF-8"?>
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="101"><ok/></rpc-reply>]]>]]>.
```

## Create the Loopback interface:

```
Administrator: Command Prompt - ssh admin@172.20.0.103 -p 830 -s netconf
</hello>
]]>]]>

<rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <edit-config>
    <target>
      <running/>
    </target>
    <config>
      <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native">
        <interface>
          <Loopback>
            <name>4</name>
            <ip>
              <address>
                <primary>
                  <address>14.1.1.1</address>
                  <mask>255.255.255.0</mask>
                </primary>
              </address>
            </ip>
          </Loopback>
        </interface>
      </native>
    </config>
  </edit-config>
</rpc>
<?xml version="1.0" encoding="UTF-8"?>
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="101"><ok/></rpc-reply>]]>]]>.
```



## Create the Loopback interface:

```
Administrator: Command Prompt - ssh admin@172.20.0.103 -p 830 -s netconf
<capability>
  urn:ietf:params:netconf:capability:notification:1.1
</capability>
</capabilities>
<session-id>43</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="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <edit-config>
    <target>
      <running/>
    </target>
    <config>
      <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native">
        <interface>
          <Loopback operation='delete'>
            <name>1</name>
          </Loopback>
        </interface>
      </native>
    </config>
  </edit-config>
</rpc><?xml version="1.0" encoding="UTF-8"?>
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="101"><rpc-error>
```

Activate Windows