Ce cours

Commencé le	vendredi 21 avril 2023, 14:34
État	Terminé
Terminé le	vendredi 28 avril 2023, 10:42
Temps mis	6 jours 20 heures
Points	6,50/7,00
Note	**4,64** sur 5,00 (**92,86**%)

QUESTION 1

Terminé

Non noté

Prénom et nom des étudiants ayant contribué au labo :

Timothée Van Hove

QUESTION 2

Terminé

Note de 1,00 sur 1,00

Quelles commandes avez-vous utilisées pour activer NETCONF et le candidate datastore ?

conf t
netconf-yang
username grs privilege 15 password 0 labo
netconf-yang feature candidate-datastore

Commentaire :

QUESTION 3

Terminé

Note de 1,00 sur 1,00

Quel message avez-vous reçu lors de votre connexion ssh ? Copiez-collez le résultat.

pour se connecter en ssh:
ssh -s grs@192.168.81.131 -p 830 netconf

Extrait du message reçu:


```
</subinterface></subinterfaces><ethernet xmlns="http://openconfig.net/yang/interfaces/ethernet"><con
fig><mac-address>00:0c:29:56:47:d4</mac-address><auto-negotiate>true</auto-negotiate><enable-flow-co
ntrol>true</enable-flow-control></config></ethernet></interface></interfaces><lldp xmlns="http://ope
nconfig.net/yang/lldp"><config><enabled>false</enabled></config><interfaces><interface><name>Gigabit
Ethernet1</name><config><name>GigabitEthernet1</name><enabled>true</enabled></config></interface><in
terface><name>GigabitEthernet2</name><config><name>GigabitEthernet2</name><enabled>true</enabled></c
onfig></interface><interface><name>GigabitEthernet3</name><config><name>GigabitEthernet3</name><enab
led>true</enabled></config></interface></interfaces></lldp><network-instances xmlns="http://openconf
ig.net/yang/network-instance"><network-instance><name>default</name><config><name>default</name><typ
e xmlns:oc-ni-types="http://openconfig.net/yang/network-instance-types">oc-ni-types:DEFAULT_INSTANCE
</type><description>default-vrf [read-only]</description></config><tables><table><protocol xmlns:oc-
pol-types="http://openconfig.net/yang/policy-types">oc-pol-types:DIRECTLY_CONNECTED</protocol><addre
ss-family xmlns:oc-types="http://openconfig.net/yang/openconfig-types">oc-types:IPV4</address-family
><config><protocol xmlns:oc-pol-types="http://openconfig.net/yang/policy-types">oc-pol-types:DIRECTL
Y_CONNECTED</protocol><address-family xmlns:oc-types="http://openconfig.net/yang/openconfig-types">o
c-types:IPV4</address-family></config></table><table><protocol xmlns:oc-pol-types="http://openconfig
.net/yang/policy-types">oc-pol-types:DIRECTLY_CONNECTED</protocol><address-family xmlns:oc-types="ht
tp://openconfig.net/yang/openconfig-types">oc-types:IPV6</address-family><config><protocol xmlns:oc-
pol-types="http://openconfig.net/yang/policy-types">oc-pol-types:DIRECTLY_CONNECTED</protocol><addre
ss-family xmlns:oc-types="http://openconfig.net/yang/openconfig-types">oc-types:IPV6</address-family
></config></table><table><protocol xmlns:oc-pol-types="http://openconfig.net/yang/policy-types">oc-p
ol-types:STATIC</protocol><address-family xmlns:oc-types="http://openconfig.net/yang/openconfig-type
s">oc-types:IPV4</address-family><config><protocol xmlns:oc-pol-types="http://openconfig.net/yang/po
licy-types">oc-pol-types:STATIC</protocol><address-family xmlns:oc-types="http://openconfig.net/yang
/openconfig-types">oc-types:IPV4</address-family></config></table><table><protocol xmlns:oc-pol-type
s="http://openconfig.net/yang/policy-types">oc-pol-types:STATIC</protocol><address-family xmlns:oc-t
ypes="http://openconfig.net/yang/openconfig-types">oc-types:IPV6</address-family><config><protocol x
mlns:oc-pol-types="http://openconfig.net/yang/policy-types">oc-pol-types:STATIC</protocol><address-f
amily xmlns:oc-types="http://openconfig.net/yang/openconfig-types">oc-types:IPV6</address-family></c
onfig></table></tables><protocols><protocol><identifier xmlns:oc-pol-types="http://openconfig.net/ya
ng/policy-types">oc-pol-types:STATIC</identifier><name>DEFAULT</name><config><identifier xmlns:oc-po
l-types="http://openconfig.net/yang/policy-types">oc-pol-types:STATIC</identifier><name>DEFAULT</nam
e></config></protocol><protocol><identifier xmlns:oc-pol-types="http://openconfig.net/yang/policy-ty
pes">oc-pol-types:DIRECTLY_CONNECTED</identifier><name>DEFAULT</name><config><identifier xmlns:oc-po
l-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-re
ply>]]>]]>_
```


Je ne peux malheureusement pas scroller pour afficher le début du message

Commentaire :
selon image reçue par mail

QUESTION 4

Terminé

Note de 1,00 sur 1,00

Quelle commande avez-vous utilisé pour obtenir la running config de votre routeur ?

<?xml version="1.0"?>
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="101">
<get-config>
<source>
<running/>
</source>
</get-config>
</rpc>]]>]]>

Commentaire :

QUESTION 5

Terminé

Note de 0,50 sur 1,00

Quelle est les 3 commandes XML permettant de récupérer les Bytes entrant sur l'interface GigabitEthernet1 ?

COMMANDE IETF:

```
<get>
 <filter type="subtree">
  <if:interfaces xmlns:if="urn:ietf:params:xml:ns:yang:ietf-interfaces"/>
  <if:interfaces-state xmlns:if="urn:ietf:params:xml:ns:yang:ietf-interfaces"/>
 </filter>
</get>
```

extrait de la réponse:

```
<interface>
    <name>GigabitEthernet1</name>
    <type xmlns:ianaift="urn:ietf:params:xml:ns:yang:iana-if-type">ianaift:ethernetCsmacd</type>
    <admin-status>up</admin-status>
    <oper-status>up</oper-status>
    <last-change>2023-04-21T12:38:42.777+00:00</last-change>
    <if-index>1</if-index>
    <phys-address>00:50:56:22:b1:77</phys-address>
    <speed>1000000000</speed>
    <statistics>
     <discontinuity-time>2023-04-21T12:36:52+00:00</discontinuity-time>
     <in-octets>2109792</in-octets>
     <in-unicast-pkts>11671</in-unicast-pkts>
     <in-broadcast-pkts>0</in-broadcast-pkts>
     <in-multicast-pkts>0</in-multicast-pkts>
     <in-discards>0</in-discards>
     <in-errors>0</in-errors>
     <in-unknown-protos>0</in-unknown-protos>
     <out-octets>32769361</out-octets>
     <out-unicast-pkts>27183</out-unicast-pkts>
     <out-broadcast-pkts>0</out-broadcast-pkts>
     <out-multicast-pkts>0</out-multicast-pkts>
     <out-discards>0</out-discards>
     <out-errors>0</out-errors>
    </statistics>
   </interface>
```

COMMANDE CISCO

```
<get>
 <filter type="subtree">
  <interfaces-ios-xe-oper:interfaces xmlns:interfaces-ios-xe-oper="http://cisco.com/ns/yang/Cisco-IOS-XE-interfaces-oper"/>
 </filter>
</get>
```

extrait de la réponse:

```
<interface>
    <name>GigabitEthernet1</name>
    <interface-type>iana-iftype-ethernet-csmacd</interface-type>
    <admin-status>if-state-up</admin-status>
    <oper-status>if-oper-state-ready</oper-status>
    <last-change>2023-04-21T12:38:41.777+00:00</last-change>
    <if-index>1</if-index>
    <phys-address>00:50:56:22:b1:77</phys-address>
    <speed>1000000000</speed>
    <statistics>
     <discontinuity-time>2023-04-21T12:36:51+00:00</discontinuity-time>
     <in-octets>2125234</in-octets>
     <in-unicast-pkts>11737</in-unicast-pkts>
     <in-broadcast-pkts>0</in-broadcast-pkts>
     <in-multicast-pkts>0</in-multicast-pkts>
     <in-discards>0</in-discards>
```

```
      <in-errors>0</in-errors>
      <in-unknown-protos>0</in-unknown-protos>
      <out-octets>32774770</out-octets>
      <out-unicast-pkts>27202</out-unicast-pkts>
      <out-broadcast-pkts>0</out-broadcast-pkts>
      <out-multicast-pkts>0</out-multicast-pkts>
      <out-discards>0</out-discards>
      <out-errors>0</out-errors>
      <rx-pps>0</rx-pps>
      <rx-kbps>0</rx-kbps>
      <tx-pps>0</tx-pps>
      <tx-kbps>0</tx-kbps>
      <num-flaps>0</num-flaps>
      <in-crc-errors>0</in-crc-errors>
      <in-discards-64>0</in-discards-64>
      <in-errors-64>0</in-errors-64>
      <in-unknown-protos-64>0</in-unknown-protos-64>
      <out-octets-64>32774770</out-octets-64>
    </statistics>
```

COMMANDE OPEN-CONFIG:

```
<get>
  <filter type="subtree">
    <oc-if:interfaces xmlns:oc-if="http://openconfig.net/yang/interfaces"/>
  </filter>
</get>
```

Extrait de la réponse:

```
    <name>GigabitEthernet1</name>
    <config>
      <name>GigabitEthernet1</name>
      <type xmlns:ianaift="urn:ietf:params:xml:ns:yang:iana-if-type">ianaift:ethernetCsmacd</type>
      <description>Interface sur LAN GRS</description>
      <enabled>true</enabled>
    </config>
    <state>
      <name>GigabitEthernet1</name>
      <type xmlns:ianaift="urn:ietf:params:xml:ns:yang:iana-if-type">ianaift:ethernetCsmacd</type>
      <description>Interface sur LAN GRS</description>
      <enabled>true</enabled>
      <ifindex>1</ifindex>
      <admin-status>UP</admin-status>
      <oper-status>UP</oper-status>
      <last-change>1682080722777000000</last-change>
      <counters>
        <in-octets>2127640</in-octets>
        <in-unicast-pkts>11750</in-unicast-pkts>
        <in-broadcast-pkts>0</in-broadcast-pkts>
        <in-multicast-pkts>0</in-multicast-pkts>
        <in-discards>0</in-discards>
        <in-errors>0</in-errors>
        <in-unknown-protos>0</in-unknown-protos>
        <in-fcs-errors>0</in-fcs-errors>
        <out-octets>32786308</out-octets>
        <out-unicast-pkts>27218</out-unicast-pkts>
        <out-broadcast-pkts>0</out-broadcast-pkts>
        <out-multicast-pkts>0</out-multicast-pkts>
        <out-discards>0</out-discards>
        <out-errors>0</out-errors>
        <last-clear>1682080612000000000</last-clear>
      </counters>
    </state>
```

Commentaire :
Vous auriez pu affiner la requête pour n'obtenir que la valeur demandée ?

QUESTION 6

Terminé

Note de 1,00 sur 1,00

Votre script Python

```
# ncclient version 0.6.13 et python 3.11
from ncclient import manager
from lxml import etree

router = "192.168.81.131"
interface = "GigabitEthernet1"

# Ouvre la session NETCONF sur le router
with manager.connect(host=router, port=830, username="grs", password="labo", device_params={'name':'iosxe'},
hostkey_verify=False) as m:
    # Utilise le schema openconfig
    filter = ('subtree', '<interfaces xmlns="http://openconfig.net/yang/interfaces"/>')
    result = m.get(filter)

    # Encode en utf-8 au cas ou des caractères unicode se trouvent dans le XML
    response = etree.fromstring(result.xml.encode('utf-8'))

    # Parse le réponse XML pour trouver le tag "in-octets"
    bytes_in_element = response.find(".//{http://openconfig.net/yang/interfaces}in-octets")

    if bytes_in_element is not None:
        bytes_in = bytes_in_element.text
        print("Nombre de bytes entrant sur l'interface {}: {}".format(interface, bytes_in))
    else:
        print("Erreur: Nombre de bytes pas trouvés dans la réponse")
```

Commentaire :
ok, mais ça serait à priori plus simple de récupérer la bonne valeur, sauf si d'autres valeurs du même interface nous intéresse.

QUESTION 7

Terminé

Note de 1,00 sur 1,00

Commande(s) IOS / Cisco utilisée(s)

conf t

restconf

Commentaire :

QUESTION 8

Terminé

Note de 1,00 sur 1,00

quelle est votre URL ?

URL: https://192.168.81.131/restconf/data/Cisco-IOS-XE-interfaces-oper:interfaces/interface?depth=2

Pour avoir les objets json avec curl:
curl -k -u grs:labo -H "Accept: application/yang-data+json" -X GET https://192.168.81.131/restconf/data/Cisco-IOS-XE-interfaces-oper:interfaces/interface?depth=2

Commentaire :
C'est toujours sympa d'avoir la réponse !

◄ RENDU LABO 3 - YAML NETCONF/RESTCONF OLD

Aller à...

LABO 4 - SENTINEL ►