

Programación de Redes

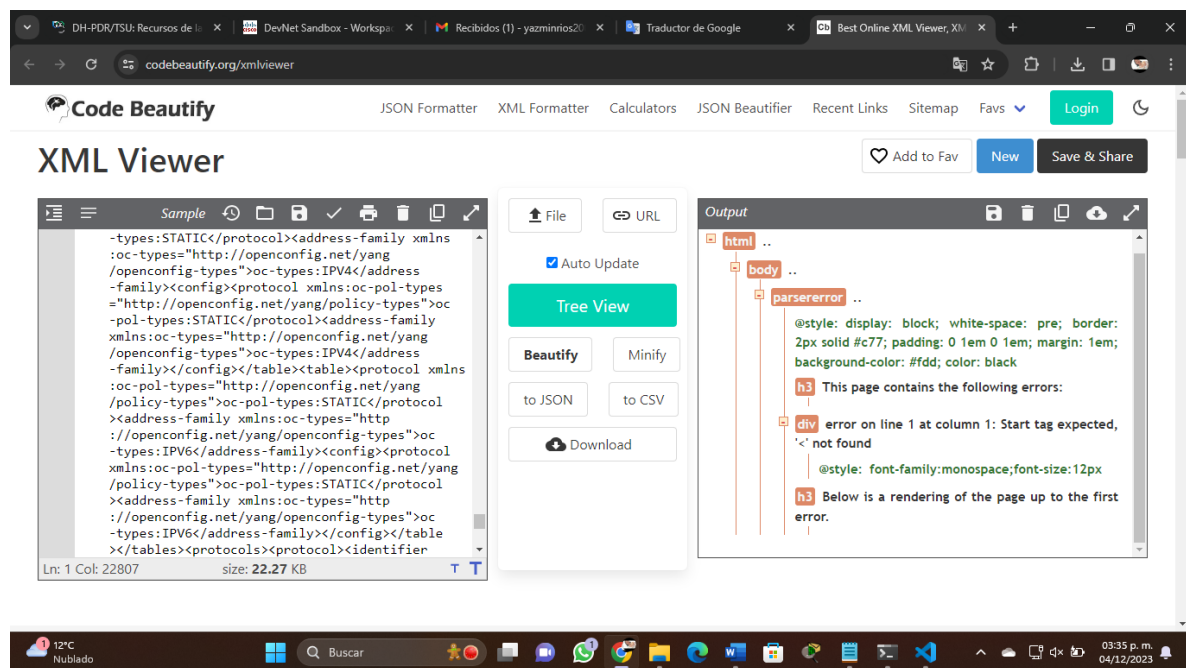
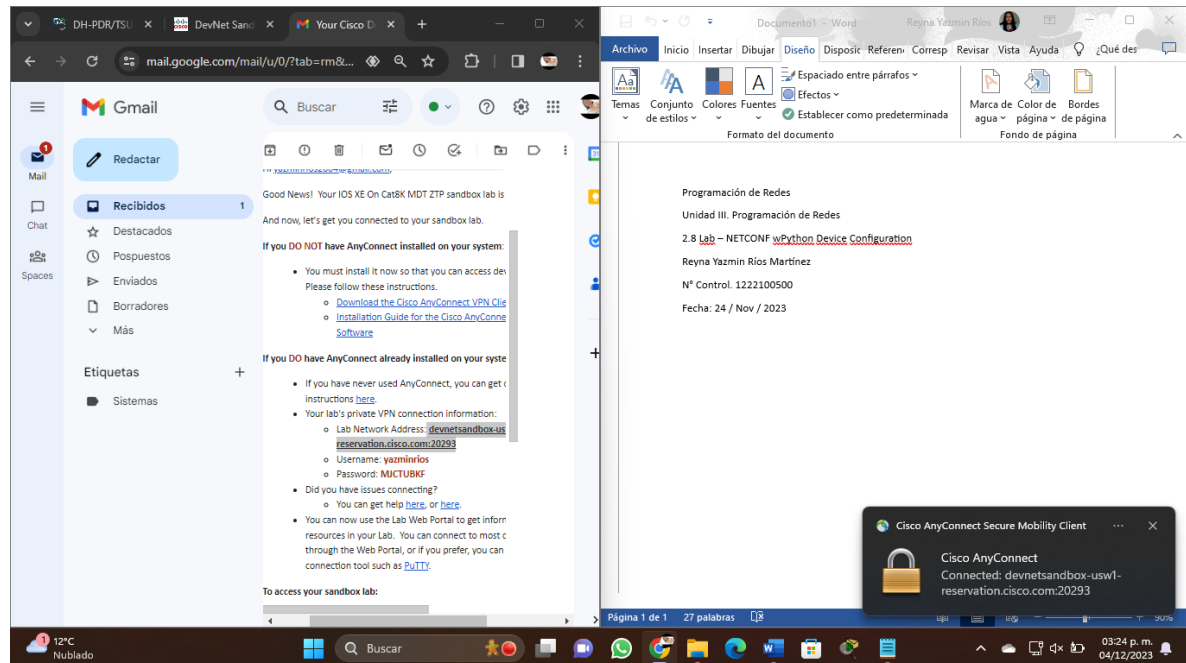
Unidad III. Programación de Redes

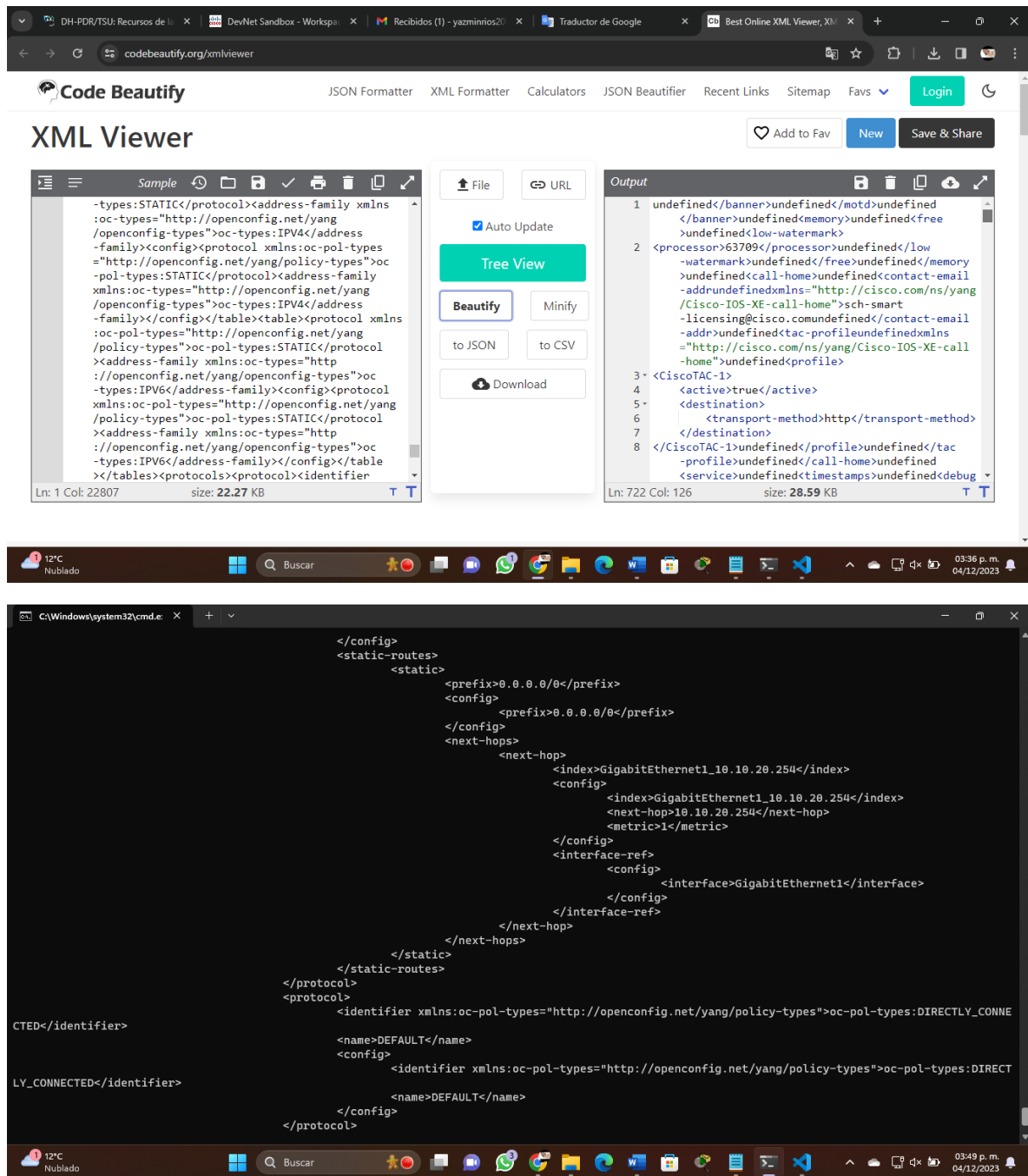
2.8 Lab – NETCONF wPython Device Configuration

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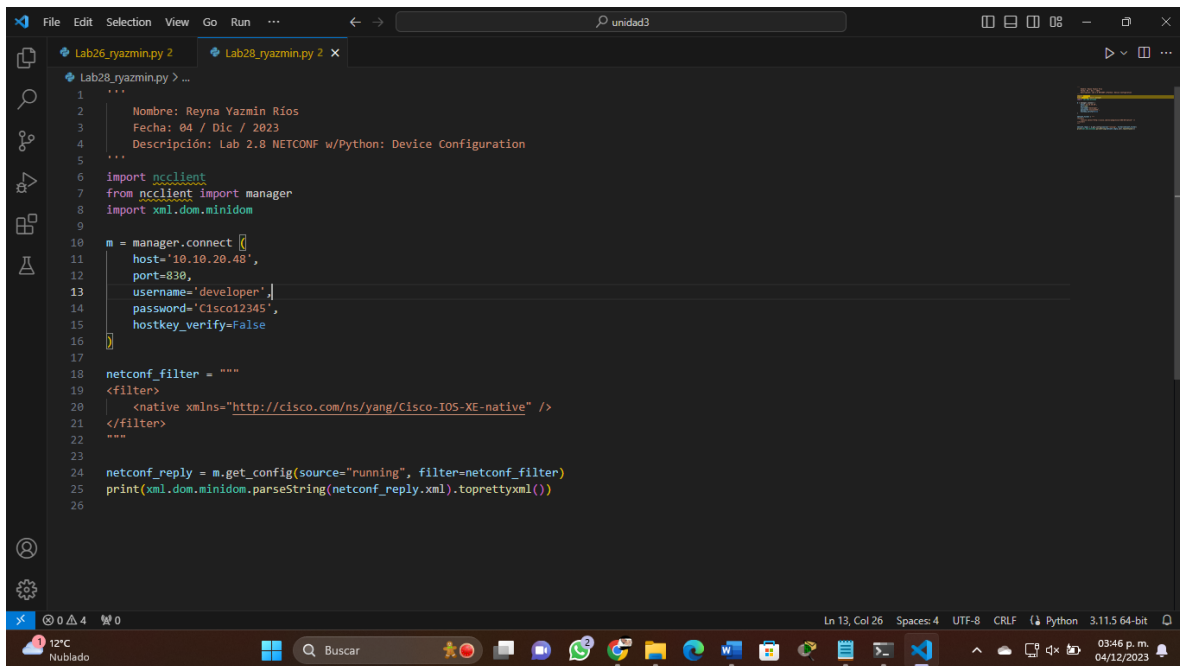
Fecha: 24 / Nov / 2023





El filtro esta dado de baja

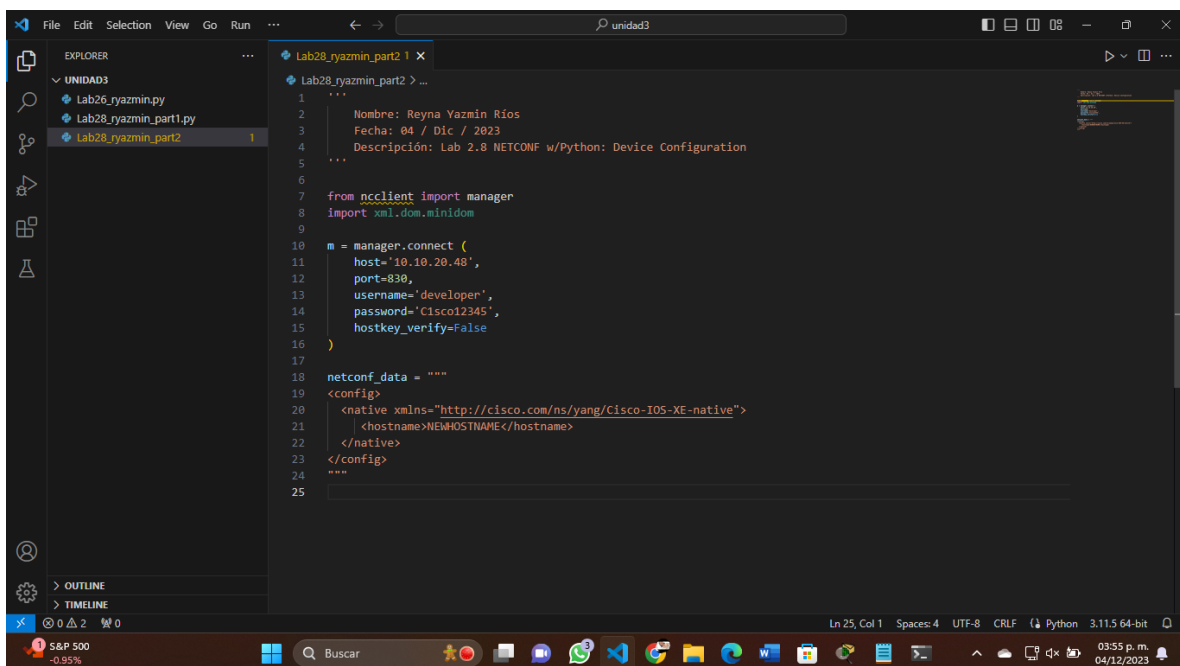
```
netconf_filter = ""
<filter>
  <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native" />
</filter>
""
```



```
1  ...
2  Nombre: Reyna Yazmin Rios
3  Fecha: 04 / Dic / 2023
4  Descripción: Lab 2.8 NETCONF w/Python: Device Configuration
5  ...
6  import ncclient
7  from ncclient import manager
8  import xml.dom.minidom
9
10 m = manager.connect (
11     host='10.10.20.48',
12     port=830,
13     username='developer',
14     password='Cisco12345',
15     hostkey_verify=False
16 )
17
18 netconf_filter = """
19 <filter>
20   <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native" />
21 </filter>
22 """
23
24 netconf_reply = m.get_config(source="running", filter=netconf_filter)
25 print(xml.dom.minidom.parseString(netconf_reply.xml).toprettyxml())
26
```

El filtro esta dado de baja:

```
netconf_data = """
<config>
  <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native">
    <hostname>NEWHOSTNAME</hostname>
  </native>
</config>
"""
```



```
1  ...
2  Nombre: Reyna Yazmin Rios
3  Fecha: 04 / Dic / 2023
4  Descripción: Lab 2.8 NETCONF w/Python: Device Configuration
5  ...
6
7  from ncclient import manager
8  import xml.dom.minidom
9
10 m = manager.connect (
11     host='10.10.20.48',
12     port=830,
13     username='developer',
14     password='Cisco12345',
15     hostkey_verify=False
16 )
17
18 netconf_data = """
19 <config>
20   <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native">
21     <hostname>NEWHOSTNAME</hostname>
22   </native>
23 </config>
24 """
25
```


This screenshot shows the first part of a Python script in a VS Code editor. The Explorer panel on the left shows a project named 'UNIDAD3' with files 'Lab26_ryazmin.py', 'Lab28_ryazmin_2.py' (selected), and 'Lab28_ryazmin_part1.py'. The script in 'Lab28_ryazmin_2.py' includes a docstring with author and date information, followed by imports for 'ncclient' and 'xml.dom.minidom'. It then defines a 'manager' object with connection details and a 'netconf_data' variable containing an XML configuration snippet for a loopback interface.

```
1  ...
2  Nombre: Reyna Yazmin Rios
3  Fecha: 04 / Dic / 2023
4  Descripción: Lab 2.8 NETCONF w/Python: Device Configuration
5  ...
6
7  from ncclient import manager
8  import xml.dom.minidom
9
10 m = manager.connect (
11     host='10.10.20.48',
12     port=830,
13     username='developer',
14     password='Cisco12345',
15     hostkey_verify=False
16 )
17
18 netconf_data = """
19 <config>
20 <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native">
21 <interface>
22 <Loopback>
23 <name>100</name>
24 <description>TEST1</description>
25 <ip>
26 <address>
27 <primary>
28 <address>100.100.100.100</address>
29 <mask>255.255.255.0</mask>
30 </primary>
31 </address>
32 </ip>
```

This screenshot shows the second part of the Python script. It continues from the previous section, adding the closing XML tags for the interface and native namespaces. Below the XML, it defines a 'netconf_reply' variable by calling the 'edit_config' method on the 'manager' object and then prints the resulting XML string using 'toprettyxml()'.

```
33 </Loopback>
34 </interface>
35 </native>
36 </config>
37 """
38
39 netconf_reply = m.edit_config(target="running", config=netconf_data)
40 print([xml.dom.minidom.parseString(netconf_reply.xml).toprettyxml()]])
```


File Edit Selection View Go Run ... unidad3

EXPLORER

- UNIDAD3
 - Lab26_ryazmin.py
 - Lab28_ryazmin_2.py 1
 - Lab28_ryazmin_part1.py

Lab28_ryazmin_2.py > ...

```
1  ...
2  Nombre: Reyna Yazmin Rios
3  Fecha: 04 / Dic / 2023
4  Descripción: Lab 2.8 NETCONF w/Python: Device Configuration
5  ...
6
7  from ncclient import manager
8  import xml.dom.minidom
9
10 m = manager.connect (
11     host='10.10.20.48',
12     port=830,
13     username='developer',
14     password='Cisco12345',
15     hostkey_verify=False
16 )
17
18 netconf_data = """
19 <config>
20 <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native">
21 <interface>
22 <Loopback>
23 <name>111</name>
24 <description>TEST1</description>
25 <ip>
26 <address>
27 <primary>
28 <address>100.100.100.100</address>
29 <mask>255.255.255.0</mask>
30 </primary>
31 </address>
32 </ip>
```

Ln 18, Col 19 Spaces: 2 UTF-8 CRLF Python 3.11.5 64-bit

13°C Nublado 04:02 p. m. 04/12/2023

File Edit Selection View Go Run ... unidad3

EXPLORER

- UNIDAD3
 - Lab26_ryazmin.py
 - Lab28_ryazmin_2.py 1
 - Lab28_ryazmin_part1.py

Lab28_ryazmin_2.py > ...

```
12     port=830,
13     username='developer',
14     password='Cisco12345',
15     hostkey_verify=False
16 )
17
18 netconf_data = """
19 <config>
20 <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native">
21 <interface>
22 <Loopback>
23 <name>111</name>
24 <description>TEST1</description>
25 <ip>
26 <address>
27 <primary>
28 <address>100.100.100.100</address>
29 <mask>255.255.255.0</mask>
30 </primary>
31 </address>
32 </ip>
33 </Loopback>
34 </interface>
35 </native>
36 </config>
37 """
38
39 netconf_reply = m.edit_config(target="running", config=netconf_data)
40 print(xml.dom.minidom.parseString(netconf_reply.xml).toprettyxml())
41
```

Ln 18, Col 19 Spaces: 2 UTF-8 CRLF Python 3.11.5 64-bit

13°C Nublado 04:02 p. m. 04/12/2023

```
C:\Windows\system32\cmd.exe
C:\Users\yazmi\Documents\unidad3>python Lab28_ryazmin_2.py
Traceback (most recent call last):
  File "C:\Users\yazmi\Documents\unidad3\Lab28_ryazmin_2.py", line 39, in <module>
    netconf_reply = m.edit_config(target="running", config=netconf_data)
    ~~~~~^~~~~~
  File "C:\Users\yazmi\AppData\Local\Programs\Python\Python312\Lib\site-packages\ncclient\manager.py", line 257, in execute
    return cls(self._session,
    ~~~~~^~~~~~
  File "C:\Users\yazmi\AppData\Local\Programs\Python\Python312\Lib\site-packages\ncclient\operations\edit.py", line 76, in request
    return self._request(node)
    ~~~~~^~~~~~
  File "C:\Users\yazmi\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>config </bad-element></error-info>\n', 'path': '\n /rpc/edit-config\n ', 'message': None}

C:\Users\yazmi\Documents\unidad3>python Lab28_ryazmin_2.py
Traceback (most recent call last):
  File "C:\Users\yazmi\Documents\unidad3\Lab28_ryazmin_2.py", line 39, in <module>
    netconf_reply = m.edit_config(target="running", config=netconf_data)
    ~~~~~^~~~~~
  File "C:\Users\yazmi\AppData\Local\Programs\Python\Python312\Lib\site-packages\ncclient\manager.py", line 257, in execute
    return cls(self._session,
    ~~~~~^~~~~~
  File "C:\Users\yazmi\AppData\Local\Programs\Python\Python312\Lib\site-packages\ncclient\operations\edit.py", line 76, in request
    return self._request(node)
    ~~~~~^~~~~~
  File "C:\Users\yazmi\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>config </bad-element></error-info>\n', 'path': '\n /rpc/edit-config\n ', 'message': None}

C:\Users\yazmi\Documents\unidad3>
```

Dado a que los filtros no se encuentran disponibles este proceso no arroja nada:

```
10.10.20.48 - PuTTY
<capability>urn:ietf:params:xml:ns:yang:smiv2:RFC1155-SMI?module=RFC1155-SMI</ca
pability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:RFC1213-MIB?module=RFC1213-MIB</ca
pability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:RFC1315-MIB?module=RFC1315-MIB</ca
pability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:RMON-MIB?module=RMON-MIB&revisi
on=2000-05-11</capability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:RMON2-MIB?module=RMON2-MIB&revi
sion=1996-05-27</capability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:RSVP-MIB?module=RSVP-MIB&revisi
on=1998-08-25</capability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:SNMP-FRAMEWORK-MIB?module=SNMP-FRA
MEWORK-MIB&revision=2002-10-14</capability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:SNMP-PROXY-MIB?module=SNMP-PROXY-M
IB&revision=2002-10-14</capability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:SNMP-TARGET-MIB?module=SNMP-TARGET
-MIB&revision=1998-08-04</capability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:SNMPv2-MIB?module=SNMPv2-MIB&re
vision=2002-10-16</capability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:SNMPv2-TC?module=SNMPv2-TC</capabi
lity>
<capability>urn:ietf:params:xml:ns:yang:smiv2:SONET-MIB?module=SONET-MIB&revi
sion=2003-08-11</capability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:TCP-MIB?module=TCP-MIB&revisio
n=2005-02-18</capability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:TOKEN-RING-RMON-MIB?module=TOKEN-R
ING-RMON-MIB</capability>
<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&re
vision=2005-05-16</capability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:UDP-MIB?module=UDP-MIB&revisio
n=2005-05-20</capability>
<capability>urn:ietf:params:xml:ns:yang:smiv2:VPN-TC-STD-MIB?module=VPN-TC-STD-M
IB&revision=2005-11-15</capability>
<capability>
  urn:ietf:params:netconf:capability:notification:1.1
</capability>
</capabilities>
<session-id>30</session-id></hello>]]]]show ip int brief
show int desc
```