MELBOURNE
INSTITUTE OF TECHNOLOGY

LABORATORY 4

Course Title: Network Automation
Course code: MN521

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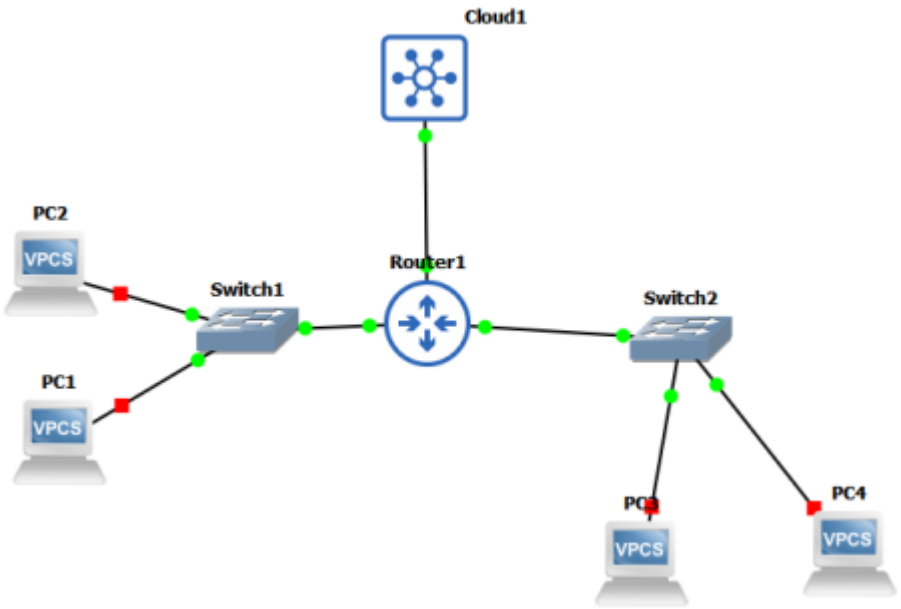
NETCONF/SSH configuration on a Cisco router.

use the ncclient library to write and run Python programs that retrieve and apply configurations.



The router was configured with the following commands to enable NETCONF:

```
enable
configure terminal
netconf ssh
exit
wr
```

Run the following command from the Ubuntu client:

```
ssh -2 cisco@10.10.60.25 -s netconf
```

```
<hello>
  <capabilities>
    ...
  </capabilities>
  <session-id>...</session-id>
</hello>
```

```python
from ncclient import manager

device = {
    "host": "10.10.60.25",
    "port": 22,
    "username": "cisco",
    "password": "cisco123",
    "hostkey_verify": False,
    "device_params": {"name": "iosxr"},
    "allow_agent": False,
    "look_for_keys": False,
    "ssh_config": "/home/username/.ssh/config"
}

with manager.connect(**device) as m:
    response = m.get_config(source="running")
    print(response)
```

```python
config = """
<config>
  <cli-config-data>
    <cmd>interface FastEthernet0/0</cmd>
    <cmd>ip address 192.168.1.1 255.255.255.0</cmd>
    <cmd>no shutdown</cmd>
  </cli-config-data>
</config>
"""

m.edit_config(target='running', config=config)
```

```
config = """
<config>
  <cli-config-data>
    <cmd>router rip</cmd>
    <cmd>network 192.168.1.0</cmd>
    <cmd>version 2</cmd>
  </cli-config-data>
</config>
"""

m.edit_config(target='running', config=config)
```