



Master of Engineering in Internetworking

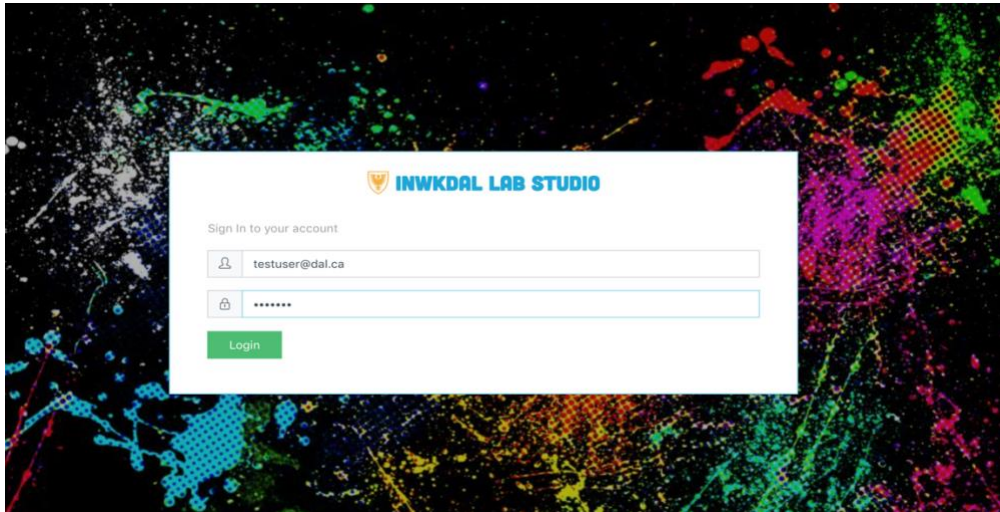
VIRTUAL LAB STUDIO GUIDE

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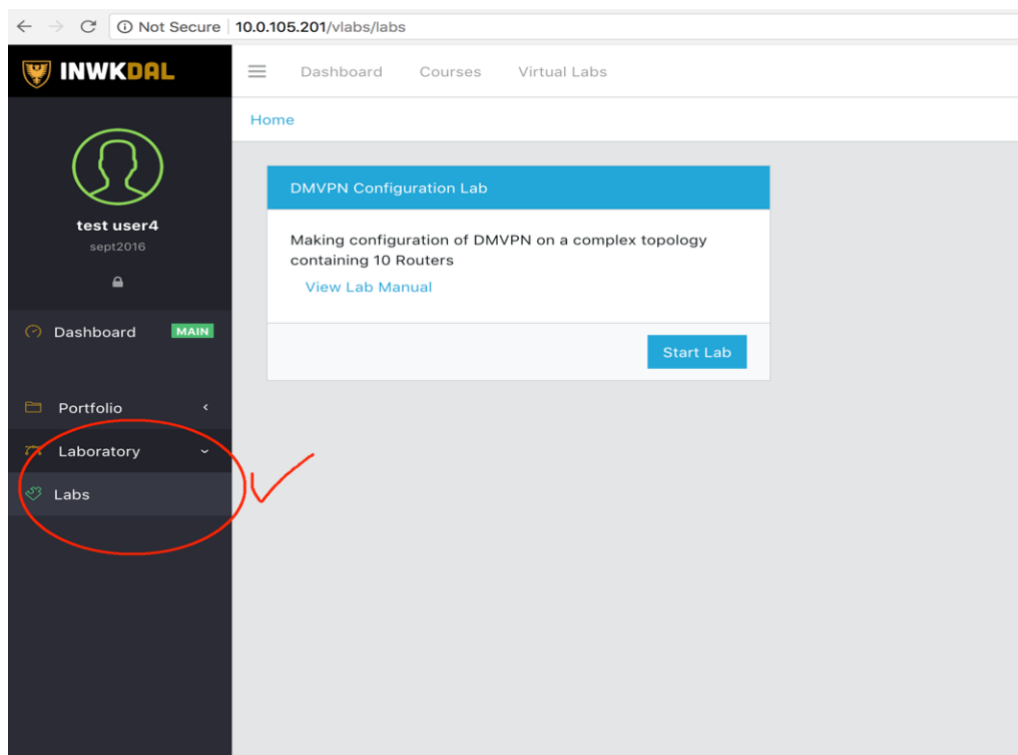
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SECTION 1: STARTING UP A NEW LAB AND ACCESSING NODES

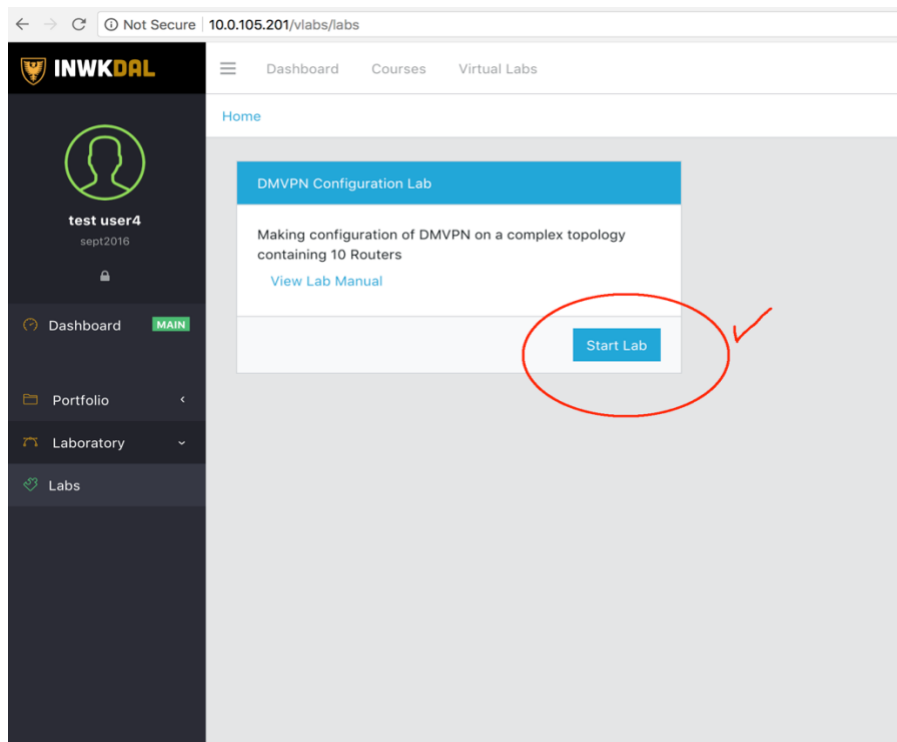
step 1. Navigate to the URL: <http://10.0.105.201> and login with your *equipment username and password*.



step 2. On the left area of the page *click* 'Laboratory' and then 'Labs'



step 3. On the right area, under the *lab* you wish to start, click “**Start Lab**”



step 4. You will be redirected to the **Dashboard**, which is a view for you to access all the necessary functionalities of your lab. Please allow several minutes for all the devices to initialize. *(it might take several minutes for all devices to initialize depending on the type and number of devices in the topology).*

step 5. To access the nodes via TELNET, under the **Node Connectors** Panel, *click* on the **Telnet Refresh** Button. Click on the **Green Button** next to the node you wish to gain access. A pop-up telnet client should emerge depending on your custom telnet client for your browser.

*If you see a blank Green button, it means that particular device is still **initializing**. You will need to refresh the node links, by clicking on the **Telnet** refresh Button again*

Active Labs

Lab ID	User-ID	Full Name	Lab Code	Host	Created
inwk6113-dmvpn-testuser4@dal.ca	testuser4@dal.ca	test user4	inwk6113-dmvpn	10.0.132.20	Wed, 14 Feb 2018 20:21:37 GMT

Node Connectors

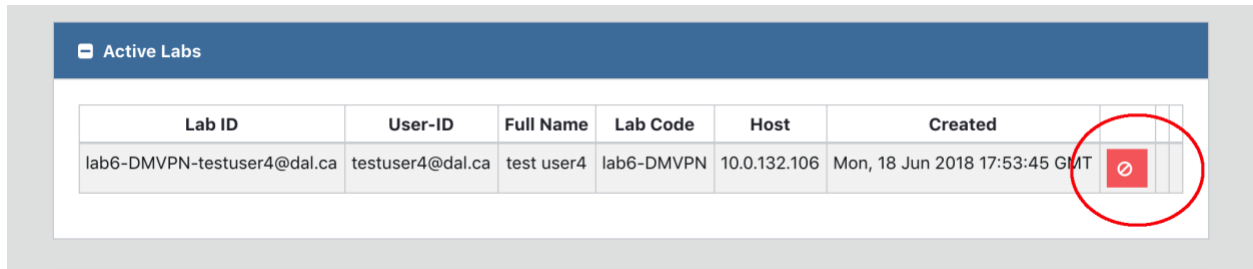
telnet web

Node	Address:Port
Bell	10.0.132.20:17000
Eastlink	10.0.132.20:17002
Halifax-BR	10.0.132.20:17004
INWK-Halifax	10.0.132.20:17006
INWK-Montreal	10.0.132.20:17008
INWK-Toronto	10.0.132.20:17010
INWK-Vancouver	10.0.132.20:17012
Montreal-BR	10.0.132.20:17014
Toronto-BR	10.0.132.20:17016
Vancouver-BR	10.0.132.20:17018

- step 6.** (Optional). You may also click the ‘**web**’ button to gain access to the lab devices via a web link.
- step 7.** Once your computer’s telnet client opens up the connection, if you see a blank screen, hit the **ENTER** key on your keyboard to **activate** the connection.

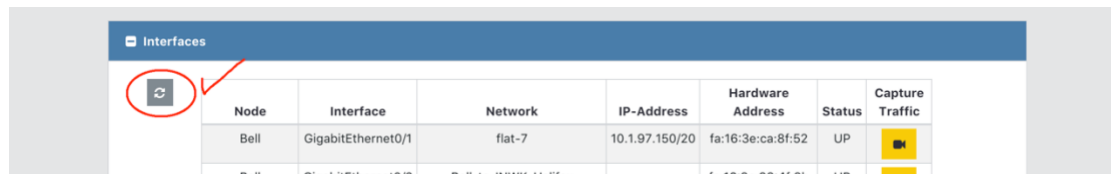
SECTION 2: SHUTTING DOWN A LAB

step 1. Navigate to the “**Dashboard**”. Under the *Active Labs* panel, click the *Red Stop button* next to the lab you wish to end.



SECTION 3: TRAFFIC CAPTURE

step 1. Navigate to the **Interface Panel** and click the “+” button to expand it. Next, click the **Refresh** button to fetch all the interfaces of all the nodes in your simulation.



step 2. Assuming you will like to capture traffic on the **Eastlink Router** interface **G0/2**:

Click on the **yellow video button** next to Eastlink interface G0/2. A *pop-up* window should appear for you to choose the *type of packet* you will like to capture. Refer to the link on the window for more information about the syntax of the **PCAP** packet capture type.

For example, to capture ICMP packets, type **ICMP** in the input box and click “**Start Capture**”.

Interfaces						
Node	Interface	Network	IP-Address	Hardware Address	Status	Capture Traffic
Bell	GigabitEthernet0/1	flat-7	10.1.97.150/20	fa:16:3e:ca:8f:52	UP	
Bell	GigabitEthernet0/2	Bell-to-INWK-Halifax		fa:16:3e:93:4f:3b	UP	
Bell	GigabitEthernet0/3	Bell-to-INWK-Montreal		fa:16:3e:63:80:1e	UP	
Bell	GigabitEthernet0/4	Bell-to-INWK-Vancouver		fa:16:3e:51:00:3c	UP	
Bell	GigabitEthernet0/0	mgmt		5e:00:00:06:00:00	UP	
Eastlink	GigabitEthernet0/1	flat-8	10.1.97.151/20	fa:16:3e:50:02:da	UP	
Eastlink	GigabitEthernet0/2	Eastlink-to-INWK-Montreal		fa:16:3e:8f:16:a9	UP	✓
Eastlink	GigabitEthernet0/3	Eastlink-to-INWK-Toronto		fa:16:3e:56:7d:26	UP	
Eastlink	GigabitEthernet0/4	Eastlink-to-INWK-Vancouver		fa:16:3e:ab:f1:73	UP	
Eastlink	GigabitEthernet0/0	mgmt		5e:00:00:07:00:00	UP	
Halifax-BR	GigabitEthernet0/1	flat-1	10.1.97.152/20	fa:16:3e:da:fc:61	UP	
Halifax-BR	GigabitEthernet0/2	Halifax-BR-to-INWK-Halifax		fa:16:3e:b5:5d:4f	UP	
Halifax-BR	GigabitEthernet0/0	mgmt		5e:00:00:00:00:00	UP	
INWK-Halifax	GigabitEthernet0/1	flat-4	10.1.97.153/20	fa:16:3e:71:77:0b	UP	

Virtual Labs

Traffic Capture

PCAP Filter. e.g: "icmp or arp", "icmp", "host 1.2.3.4", "tcp port 123"

icmp

[see syntax for more details](#)

Start Capture

Virtual Labs

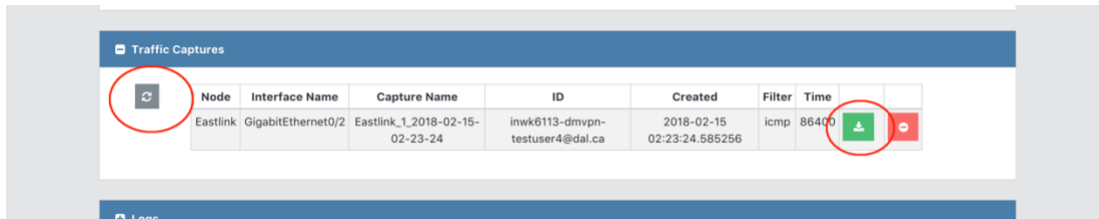
Traffic Capture Started

Your Traffic Capture on Eastlink was started successfully.

Close

step 3. Navigate to the “**Traffic Captures**” panel and expand it with the “+” button, if it is not already expanded. Click on the refresh button to see the updated traffic captures. Right

next to the Capture you are interested in, click the “Download button” to download the PCAP capture file and use Wireshark to analyze it.



If you type in an invalid PCAP capture, you will get a “**Traffic Capture Error**” and you might have to delete the Capture in the Traffic capture list and try again with a valid PCAP syntax.

You need to download the updated traffic capture and analyze with Wireshark every time you capture new packets

SECTION 4: TROUBLESHOOTING GUIDE

Occasionally, errors can occur when you start a new lab topology. This section is meant to provide guidelines to known errors.

1. If you cannot gain access to the console of a particular device, check the status of the device under the *Nodes Panel*. If the state is *Active*. You should **restart only that device** not the topology.
2. If you cannot gain access to the console of a particular device, but the state is *Error*. You should **restart only that device** not the topology
3. If status of the multiple devices shows “*Error*” after several minutes, you should **restart the topology** not the devices.

3A: RESTARTING A NODE

If you wish to restart a device. Perform the following steps:

- step 1.** Navigate to the “**Nodes**” panel and expand it with the “+” button, if it is not already expanded. Click on the refresh button to see the list of all the nodes in your topology.

Assuming you will like to restart device R1. Click the green switch button, next to the device, to turn it off. You will see a success message, if the request was successful.

Request to stop R1 node was successful! , The switch button will turn the opposite direction in a few seconds to confirm the operation

Nodes

Node	Mgmt Reachability	State	
Branch-Halifax	no	active	<input checked="" type="checkbox"/>
Branch-Montreal	no	active	<input checked="" type="checkbox"/>
Branch-Toronto	no	active	<input checked="" type="checkbox"/>
R1	no	active	<input checked="" type="checkbox"/>
R2	no	active	<input checked="" type="checkbox"/>
R3	no	active	<input checked="" type="checkbox"/>

Please wait for several seconds to see the updated status of the device until you notice the switch button has changed to an *off* status and the state of the device is ‘**ABSENT**’. Click the button again to turn the device back on.

Nodes

Node	Mgmt Reachability	State	
Branch-Halifax	no	active	<input checked="" type="checkbox"/>
Branch-Montreal	no	active	<input checked="" type="checkbox"/>
Branch-Toronto	no	active	<input checked="" type="checkbox"/>
R1	no	absent	<input type="checkbox"/>
R2	no	active	<input checked="" type="checkbox"/>
R3	no	active	<input checked="" type="checkbox"/>