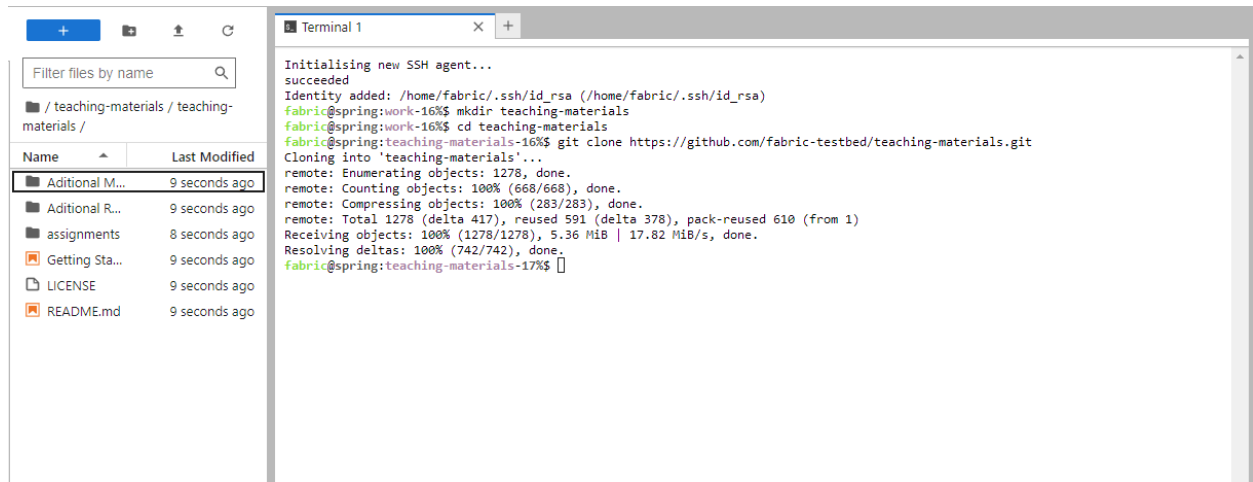Samantha Jackson
CSCI4406_Lab
10-20-2024

CLab 6 - Routing with IPv4

Installing the Tutorial

Observations/Issues: None.

Creating the Slice

Observations/Issues: Had issues with the first script where the project_id was not defined. Was remedied by specifying the ID for the Computer Networks Project.

```
[4]: # Import Fablib
     from fabrictestbed_extensions.fablib.fablib import FablibManager as fablib_manager

     fablib = fablib_manager(project_id="a70de2f5-9e12-4b6b-b412-0ae1a2c553b0")

     fablib.show_config()

     import json
     import traceback
```

FABlib Config

Credential Manager	cm.fabric-testbed.net
Orchestrator	orchestrator.fabric-testbed.net
Bastion Host	bastion.fabric-testbed.net
Bastion Private Key File	/home/fabric/work/fabric_config/fabric-bastion-key
Slice Private Key File	/home/fabric/work/fabric_config/slice_key
Slice Public Key File	/home/fabric/work/fabric_config/slice_key.pub
Log Level	INFO
Log File	/tmp/fablib/fablib.log
Version	1.7.3
Project ID	a70de2f5-9e12-4b6b-b412-0ae1a2c553b0
Data directory	/tmp/fablib
SSH Command Line	ssh -i {{ _self_.private_ssh_key_file }} -F /home/fabric/work/fabric_config/ssh_config {{ _self_.username }}@{{ _self_.management_ip }}
Core API	uis.fabric-testbed.net
Token File	/home/fabric/.tokens.json
Sites to avoid	
Bastion SSH Config File	/home/fabric/work/fabric_config/ssh_config
Bastion Username	sjack012_0000240143

Importing the Fabric API

Observations/Issues: None.

Import the Fabric API

```python
# Load Fablib and Node Information
from fabrictestbed_extensions.fablib.fablib import FablibManager as fablib_manager
fablib = fablib_manager()
fablib.show_config()
import json
import traceback

slice_name = 'IPv4_Routing'
try:
    slice = fablib.get_slice(slice_name)
    slice.list_nodes()
except Exception as e:
    print(f"Get Slices Fail: {e}")
```

FABlib Config

Credential Manager	cm.fabric-testbed.net
Orchestrator	orchestrator.fabric-testbed.net
Bastion Host	bastion.fabric-testbed.net
Bastion Private Key File	/home/fabric/work/fabric_config/fabric-bastion-key
Slice Private Key File	/home/fabric/work/fabric_config/slice_key
Slice Public Key File	/home/fabric/work/fabric_config/slice_key.pub
Log Level	INFO
Log File	/tmp/fablib/fablib.log
Version	1.7.3
Data directory	/tmp/fablib
SSH Command Line	ssh -i {{ _self_.private_ssh_key_file }} -F /home/fabric/work/fabric_config/ssh_config {{ _self_.username }}@{{ _self_.management_ip }}
Core API	uis.fabric-testbed.net
Token File	/home/fabric/.tokens.json
Sites to avoid	
Bastion SSH Config File	/home/fabric/work/fabric_config/ssh_config
Project ID	a70de2f5-9e12-4b6b-b412-0ae1a2c553b0
Bastion Username	sjack012_0000240143

Nodes

ID	Name	Cores	RAM	Disk	Image	Image Type	Host	Site	Username	Management IP	State	Error	SSH Command	Pub
e577c208-5bba-45d4-90f0-89a1784ad7f7	ND_A	1	2	10	default_ubuntu_20	qcow2	eduky-w7.fabric-testbed.net	EDUKY	ubuntu		Ticketed			/hor
4421797d-5610-4c7f-9dda-1eb41763f89d	ND_B	1	2	10	default_ubuntu_20	qcow2	eduky-w7.fabric-testbed.net	EDUKY	ubuntu		Ticketed			/hor
abf40541-c94d-4cba-9676-ae35fbd0df08	ND_C	1	2	10	default_ubuntu_20	qcow2	eduky-w10.fabric-testbed.net	EDUKY	ubuntu		Ticketed			/hor

SSH'ing Into Nodes

Observations/Issues: Cannot figure out how to SSH into these nodes. Managed to fix this by rerunning the hello-fabric script from git clone. Then rerunning the script in IPv4

routing/Routing_with_IPv4.ipynb and I finally got the SSH commands. However, now I can't access the nodes because they are publickey. I'm not really sure how to fix this.

	Image Type	Host	Site	Username	Management IP	State	Error	SSH Command
ubuntu_20	qcow2	eduky-w7.fabric-testbed.net	EDUKY	ubuntu	2610:1e0:1700:206:f816:3eff:fe53:a0f2	Active		ssh -i /home/fabric/work/fabric_config/slice_key -F /home/fabric/work/fabric_config/ssh_config ubuntu@2610:1e0:1700:206:f816:3eff:fe53:a0f2
ubuntu_20	qcow2	eduky-w7.fabric-testbed.net	EDUKY	ubuntu	2610:1e0:1700:206:f816:3eff:fe74:13bf	Active		ssh -i /home/fabric/work/fabric_config/slice_key -F /home/fabric/work/fabric_config/ssh_config ubuntu@2610:1e0:1700:206:f816:3eff:fe74:13bf
ubuntu_20	qcow2	eduky-w10.fabric-testbed.net	EDUKY	ubuntu	2610:1e0:1700:206:f816:3eff:fed1:846e	Active		ssh -i /home/fabric/work/fabric_config/slice_key -F /home/fabric/work/fabric_config/ssh_config ubuntu@2610:1e0:1700:206:f816:3eff:fed1:846e

```
fabric@spring:work-17%$ ssh -i /home/fabric/work/fabric_config/slice_key -F /home/fabric
/work/fabric_config/ssh_config ubuntu@2610:1e0:1700:206:f816:3eff:fe53:a0f2
Warning: Permanently added 'bastion.fabric-testbed.net' (ED25519) to the list of known h
osts.
Warning: Permanently added '2610:1e0:1700:206:f816:3eff:fe53:a0f2' (ED25519) to the list
 of known hosts.
ubuntu@2610:1e0:1700:206:f816:3eff:fe53:a0f2: Permission denied (publickey).
fabric@spring:work-17%$ ssh -i /home/fabric/work/fabric_config/slice_key -F /home/fabric
/work/fabric_config/ssh_config ubuntu@2610:1e0:1700:206:f816:3eff:fe53:a0f2
Warning: Permanently added 'bastion.fabric-testbed.net' (ED25519) to the list of known h
osts.
Warning: Permanently added '2610:1e0:1700:206:f816:3eff:fe53:a0f2' (ED25519) to the list
 of known hosts.
ubuntu@2610:1e0:1700:206:f816:3eff:fe53:a0f2: Permission denied (publickey).
fabric@spring:work-17%$ ssh -i /home/fabric/work/fabric_config/slice_key -F /home/fabric
/work/fabric_config/ssh_config ubuntu@2610:1e0:1700:206:f816:3eff:fe53:a0f2
Warning: Permanently added 'bastion.fabric-testbed.net' (ED25519) to the list of known h
osts.
Warning: Permanently added '2610:1e0:1700:206:f816:3eff:fe53:a0f2' (ED25519) to the list
 of known hosts.
ubuntu@2610:1e0:1700:206:f816:3eff:fe53:a0f2: Permission denied (publickey).
fabric@spring:work-17%$ ssh -i /home/fabric/work/fabric_config/slice_key -F /home/fabric
/work/fabric_config/ssh_config ubuntu@2610:1e0:1700:206:f816:3eff:fe74:13bf
Warning: Permanently added 'bastion.fabric-testbed.net' (ED25519) to the list of known h
osts.
Warning: Permanently added '2610:1e0:1700:206:f816:3eff:fe74:13bf' (ED25519) to the list
 of known hosts.
ubuntu@2610:1e0:1700:206:f816:3eff:fe74:13bf: Permission denied (publickey).
fabric@spring:work-17%$
```