# Method of Procedure (MOP) for Installing a VM in OpenStack, Installing nDPI, and Configuring Traffic Blocking

## Document Control

\*\*Version:\*\* 1.0

\*\*Date:\*\* 2024-06-05

\*\*Author:\*\* [Your Name]

\*\*Reviewed by:\*\* [Reviewer Name]

\*\*Approval:\*\* [Approver Name]

---

## Purpose

This MOP outlines the steps to create a virtual machine (VM) in OpenStack, install nDPI, and configure it to block specific traffic. The procedure also includes instructions for customizing CPU and RAM allocations.

## Reference

- OpenStack Documentation: https://docs.openstack.org/

- nDPI GitHub Repository: https://github.com/ntop/nDPI

## Prerequisites

1. Access to an OpenStack environment with appropriate permissions to create VMs.

2. A valid OpenStack image (e.g., Ubuntu 22.04) available in the image repository.

3. Basic knowledge of OpenStack CLI or Horizon dashboard.

## Prerequisite Resources

- \*\*VM Requirements:\*\*

- Minimum 2 GB RAM

- Minimum 2 CPU cores

- Network access to the internet for package installation

## Procedure

### Step 1: Create a VM in OpenStack

1. \*\*Log in to OpenStack:\*\*

- Use the OpenStack CLI or Horizon dashboard to log in.

2. \*\*Create a Key Pair (if not already created):\*\*

```bash

openstack keypair create my-key > my-key.pem

chmod 600 my-key.pem

```

3. \*\*Launch a VM Instance:\*\*

- Using the OpenStack CLI:

```bash

openstack server create --flavor m1.small --image <IMAGE\_ID> --key-name my-key --network <NETWORK\_ID> --security-group default my-ndpi-vm

```

- Replace `<IMAGE\_ID>` with the ID of your Ubuntu image and `<NETWORK\_ID>` with the ID of your network.

4. \*\*Assign a Floating IP (if required):\*\*

```bash

openstack floating ip create <EXTERNAL\_NETWORK>

openstack server add floating ip my-ndpi-vm <FLOATING\_IP>

```

### Step 2: Access the VM

1. \*\*SSH into the VM:\*\*

```bash

ssh -i my-key.pem ubuntu@<FLOATING\_IP>

```

### Step 3: Install nDPI

1. \*\*Update the Package List:\*\*

```bash

sudo apt update

```

2. \*\*Install Required Dependencies:\*\*

```bash

sudo apt install git cmake g++ libpcap-dev

```

3. \*\*Clone the nDPI Repository:\*\*

```bash

git clone https://github.com/ntop/nDPI.git

cd nDPI

```

4. \*\*Build and Install nDPI:\*\*

```bash

mkdir build

cd build

cmake ..

make

sudo make install

```

### Step 4: Configure nDPI to Block Specific Traffic

1. \*\*Create a Configuration File:\*\*

- Create a configuration file for nDPI to specify the traffic to block. For example, to block HTTP traffic:

```bash

sudo vi /etc/ndpi/ndpi.conf

```

- Add the following lines to block HTTP traffic:

```ini

[http]

block = true

```

2. \*\*Run nDPI:\*\*

- Use nDPI to monitor traffic and apply the blocking rules:

```bash

sudo ndpiReader -i <INTERFACE> -b

```

- Replace `<INTERFACE>` with the network interface you want to monitor (e.g., `eth0`).

### Step 5: Set CPU and RAM as Desired

1. \*\*Resize the VM (if needed):\*\*

- To change the flavor of the VM to allocate more CPU or RAM, use the following command:

```bash

openstack server resize --flavor <NEW\_FLAVOR> my-ndpi-vm

```

- Replace `<NEW\_FLAVOR>` with the desired flavor (e.g., `m1.medium` for more resources).

2. \*\*Confirm the Resize:\*\*

```bash

openstack server resize confirm my-ndpi-vm

```

### Step 6: Verify nDPI Functionality

1. \*\*Check nDPI Logs:\*\*

- Monitor the logs to ensure that the traffic is being blocked as configured.

```bash

tail -f /var/log/ndpi.log

```

2. \*\*Test Traffic Blocking:\*\*

- Attempt to access the blocked service (e.g., HTTP) from a client machine to verify that it is being blocked.

## Conclusion

This MOP provides a comprehensive guide to creating a VM in OpenStack, installing nDPI, and configuring it to block specific traffic. Ensure to monitor the system and adjust configurations as necessary.

## Notes

- Always back up configurations before making changes.

- Test the configuration in a controlled environment before deploying to production.

---

\*\*End of Document\*\*