Setting up your mac mini for a topology including dynamips

Contents

Some of our topologies noteably the Campus Network Design (CND) and the Network Monitoring and Management (NMM) have routers. As a recap their topologies are as follows:

Understanding the goals of the workshop in question allows you to understand why the topology was picked.

Our repositories do not match the workshop names, the web interface in git will be very useful in finding which repository you would like to clone.

In our case we will work with the Campus Network Design topology wich has a cloud of virtaul routers insulated from each other.

1 clone repo

First step is to clone the repo once you have found it. In our case we have a local repo to save on time. The Campus Network Design Repo has the name `net-design`.

Only one of you should do this part.

```
$ cd
$ git clone http://nsrc@kit1.lab.nsrc.org/git/net-design.git
```

2 locate layout diagram

Next step is to study the network layout diagram for your repo. For this repo we have had it above and looks as follows:

As you can see this is a class that is entirely in dynamips cloud and isolated from the rest of the network.

There are many folders in each repo and best way to find which folder you should use is to ask the NSRC trainers. The reason is we have had many versions of this workshop with many different topologies. In many cases we have found it useful to keep the old topologies around because we use them sometimes (e.g. for a physical lab like deployed by KENET similar to the NSRC one at the University of Oregon and available over the Internet).

We are going to manage this network in groups because we are all dealing with the same topology. Usually in a class there's one topology and many instructors. We shall share the keyboard/mouse between them using VNC like we did earlier (choose who will run the session.)

concerning real environments you can use `screen` to share text terminals between users. We will not conentrate on that tool in this lab. It means you'd be able to run this from an SSH session

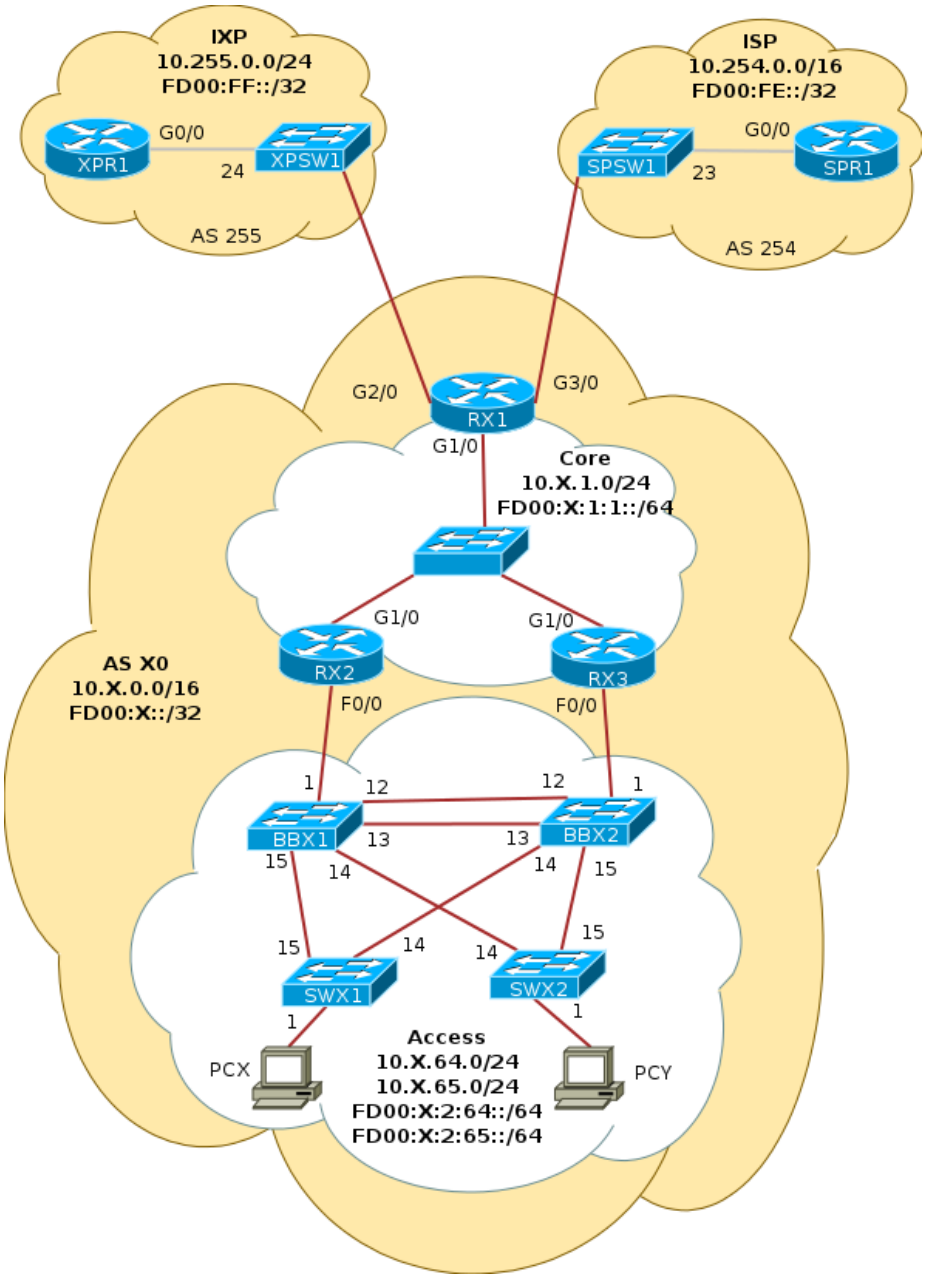

Figure 1: Campus Network Design

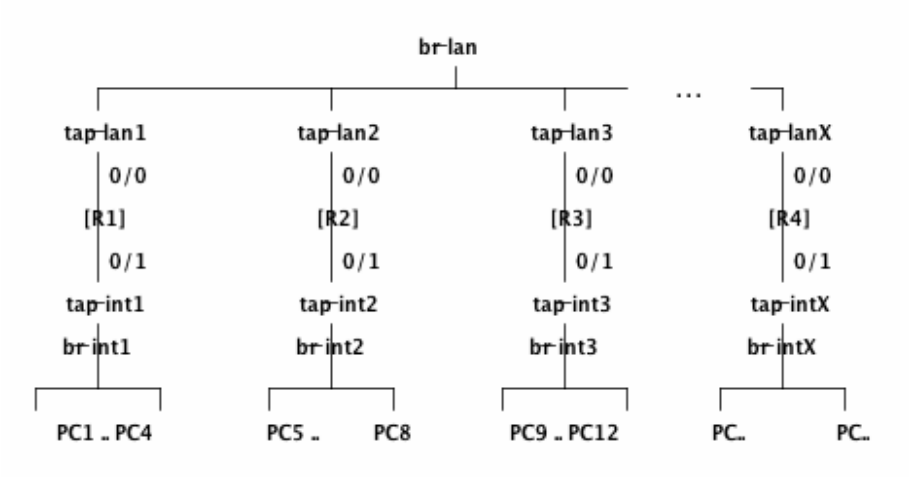

Figure 2: Network Monitoring & Management

as before, start a VNC server (this time on a high port not already used by our vms) and connect to it.

- In an SSH session (only one of you needs this)

  ```
  $ vncserver :99
  ```

- Then open your client to s1.ws.nsrc.org:99
- In an XTERM window:

  ```
  $ cd ~/net-design/en/Labs/campus-labs-virtual
  $ ls
  ```

3 Teaching points

To move the class through certain checkpoints sometimes it is necessary to drop config files that get the class to a particular point. We will need configuration files for the routers that we may use when illustrating this point.

We have a script to do this in the `dynamips-campus` directory.

```
$ cd dynamips-campus
$ ./mk-all 1 5
$ cd ..
```

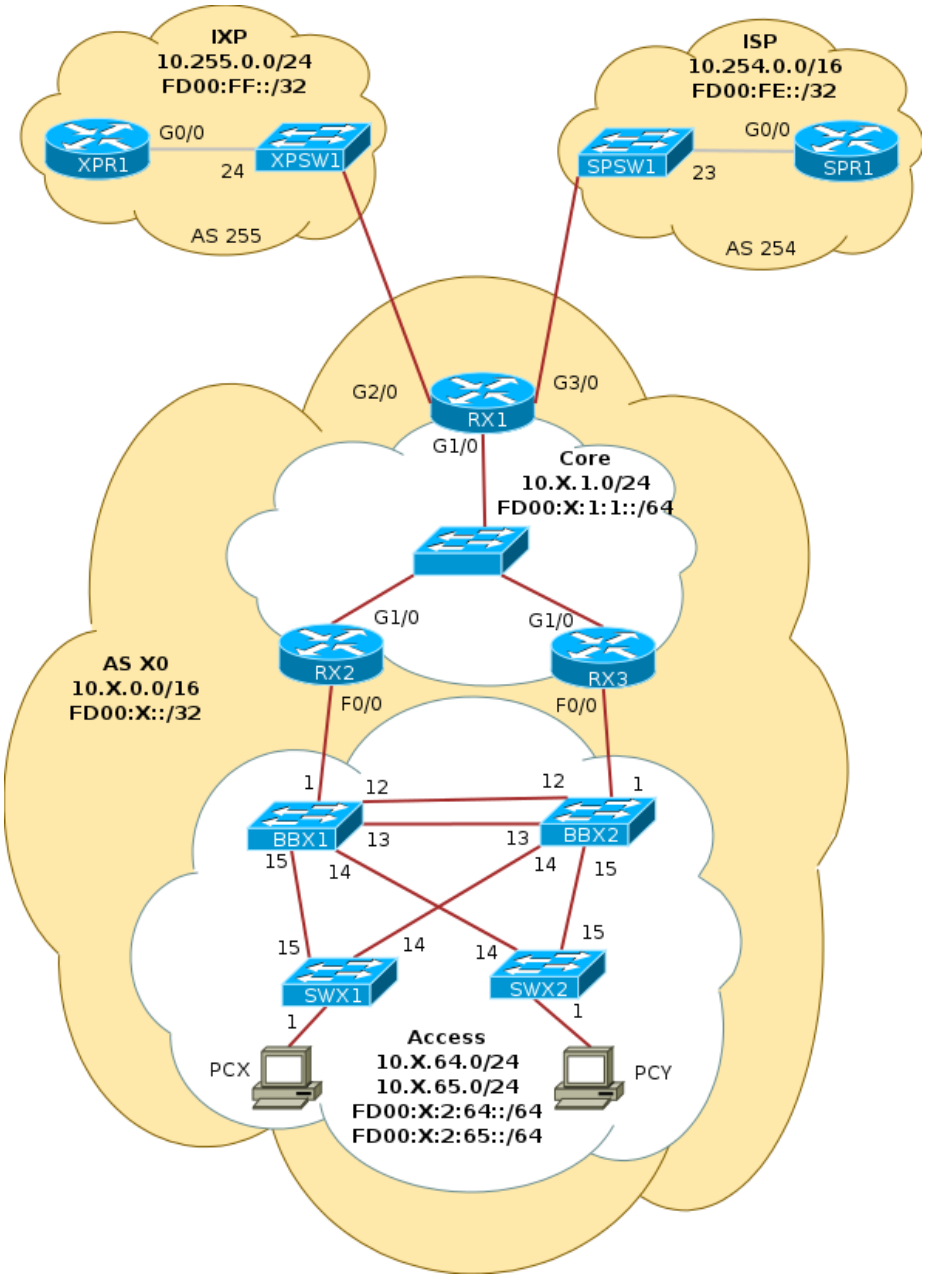

Figure 3: Campus Network Design

4 Start dynamips

We have a script to ensure you have the directories reffered to in our routers.net (remember we did this manually with various mkdir commands)

So in this xterm, let us start dynamips

```
$ ./run-dynamips
```

We need to open a second xterm where we will run dynagen

```
$ cd  ~/net-design/en/Labs/campus-labs-virtual
```

Take a quick look at the `routers.net` with less (press q to quit). Note that there are 5 groups of equipment and there are no taps in this topology. Also note the location of the IOS image and the cache image directory.

```
$ less routers.net
```

Now we can run dynagen on this file

```
$ dynagen routers.net
```

Now you can type "list" to see what routers you have and what ports they are running on

```
=> list
```

You can telnet to `s1.ws.nsrc.org` on the console ports listed e.g. telnet to `s1.ws.nsrc.org` on port `2011` to get into the console port of router `R11`

5 Lab in progress

Congratulations, now the lab is in progress, the debugging-dynamips lab takes us through what can go wrong and what we can do about it.

Leave this dynagen running for the next exercise.