CS 468/598 Project 1: Network Services Setup
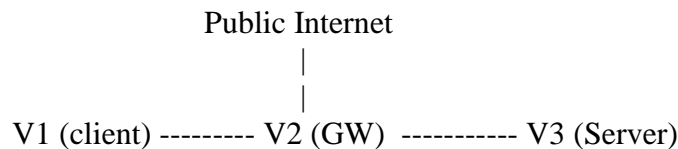
Objects: Setup network servers (without security features).

Project Environment: https://vlab.asu.edu

You can login with you ASU ID by using the CAS login. After login, you can access to our virtual networking environment via web-based VM remote desktops.

Preparations:
1. We will use virtual lab (V-Lab) at ASU to setup the project environment.
2. In V-Lab, each student will be assigned three virtual machines: V1, V2 and V3. They are interconnected as follows.

```
                        Public Internet
                              |
                              |
        V1 (client) --------- V2 (GW)  ----------- V3 (Server)
```

At beginning, only the GW can access to the public Internet. The client and server needs to configure properly (set up the default gateway) to access to Internet. Please do not change the GW's network configuration, which may prevent you from accessing to the Internet.

Task 1: Setup Apache server (on server VM)
```
sudo apt-get install apache2
```

You need to create a sample webpage, such as "hello world" to test from the client VM. List all steps you have done on this project and show what configuration you have changed.

Task 2: Setup DNS server (on gateway VM)
```
sudo apt-get install bind9
```

You are required to create the entries for your web server, DNS server (GW), and your client. For example, on the client, if you issue the commands:
```
#nslookup www
#nslookup dns
#nslookup ftp
#nslookup v1,
#nslookup v2,
#nslookup v3,
```
the DNS server should return the IP address that assigned for these machines.
`#nslookup IP_address`, should return its domain name

Project requirements:

1. Configure the server
2. Test the server
3. Follow the project requirement to write report.

Project Report submission

Submit your project report in electronic copy in the blackboard system.

Demo requirements:

- Demo will be performed in the same week or the week after the project due during the TA's office hour. TA will post the demo schedule online.

Some useful installation and operation tips:

1. **Root privilege:**
   Some operations need root privilege on Linux (for example, software package installation, configurations etc.).

   From command line prompt you can raise your power to root privilege:

   ```
   #su
   ```
   password: *****

   To exit from root privilege:

   ```
   #exit
   ```

2. **How to install software package from its source on Ubuntu?**
   Use `apt-get` command in Ubuntu.
   Reference: https://help.ubuntu.com/8.04/serverguide/C/apt-get.html

3. **Tutorial on DNS configuration**
   http://www.linuxhomenetworking.com/wiki/index.php/Quick_HOWTO_:_Ch18_:_Configuring_DNS

   You can search for other tutorials as well.