Linnéuniversitetet

Laboration 3

1DV020 – Serveradministraion

February 19, 2015

1 Introduction

In this Laboration we will cover 3 concepts: DHCP, DNS and a Web server - and see how they work together. As previously we will be using the lab from where we left off. We will also introduce a new VMNet (5) and add another server there - dmzserver.

Our previous Linux server will act as a DNS for mycompany.lab. The new dmzserver will act as our web server for mycompany.lab and the windows server will be responsible for handing out IP addresses with DHCP.

2 Deadline

There are two laboratory sessions connected to this module, at these sessions you are given the opportunity to get help if so needed. To be able to finish the modules you are likely needed to spend more time on your own.

Accounting You will show your work and demonstrate your progress at any of these lab session, prepare a small document with an overview of your configuration/setup if needed for overview.

3 Assignment

The following fours sections with subtasks are the assignment:

3.1 Add a second virtual machine and VMNet

We will add another VMNet (5) that will act as our DMZ and put a virtual Linux server on it from here on called **dmzserver**. To do this and make it communicate with our network we need to manually add another network interface on our linux router on VMNet 5, see figure Figure1. We also need to put

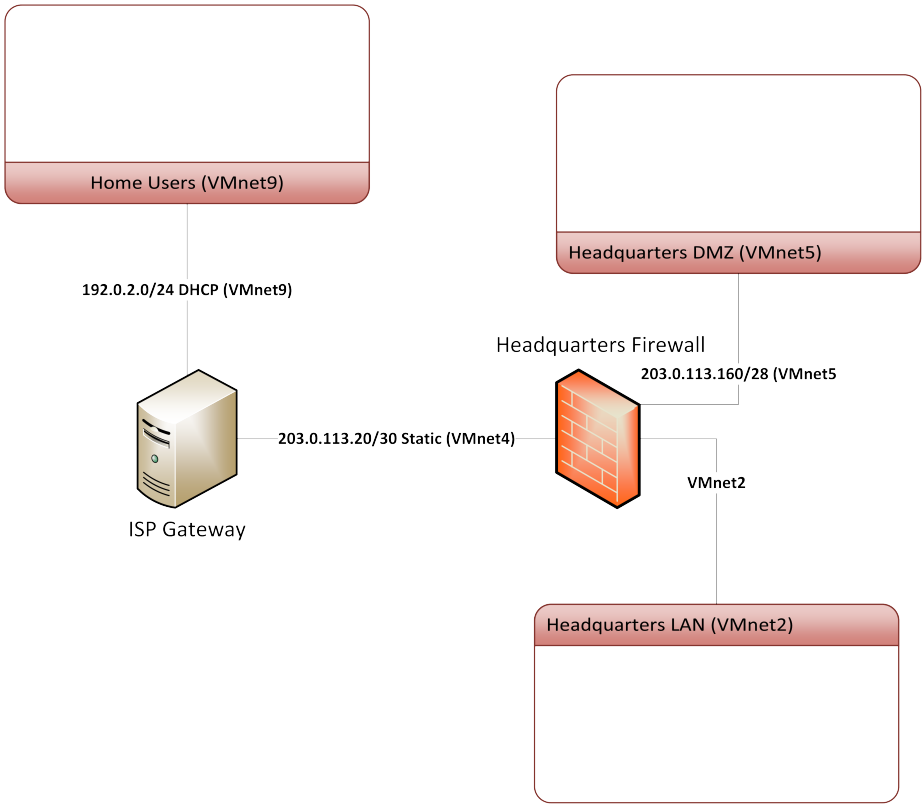

Figure 1: The network as it should be setup in Lab 3.

this VMNet 5 in the subnet 203.0.113.160/28 this is because the ISP gateway is configured to route this traffic to VMNet 4 toward the firewall You should be able to ping the machine from both VMNet 9 ,4 and 2.

3.2 DNS

First install bind9, bind9utils and dnsutils

1. Turn your internal linux server into a forward and caching DNS-server. Don't forget to point the forwarder to 203.0.113.21. You should also point the machines DNS to the localhost 127.0.0.1 (in the same matter as you pointed it to 203.0.113.21 in the first module.) To confirm it is actually caching the data you can use: rndc dumpdb. And locate the cache in: /var/cache/bind/named_dump.db

2. We now setup and make records for our internal network: corp.mycompany.lab. It should contain records for:

   - the linux server
   - the windows server
   - the internal gateway.
   - reverse lookup for those hosts.

3. Make the linux server authoritative over mycompany.lab It should at least contain the following records using A or A + CNAME records:

   - www -> <dmz server>
   - altwww -> <dmz server>
   - company -> 203.0.113.22

4. Now that we see that we have our own zone we will register it to the ISP. To do this use a computer that refers to the ISP gateway as its DNS server 203.0.113.21 (should be all computers within your virtual environment) and direct one of their browsers to www.nic.lab . here you will be able to register a domain.

   For the registration to work the DNS server needs to be correctly configured. When asked asked for a name server you direct it to: hq-ip-gw.static.lab (This is just an A record pointing to your linux routers external ip 203.0.113.22.)

   Don't forget that the DNS traffic (port 53) going from the ISP gateway needs to be forwarded to your internal linux server

3.3 DHCP

For the DHCP part we will be using the windows server as our DHCP server handing out ip addresses. the first thing is to install the role. Then we will be using the MAC address for our internal computers (except the router) and reserve the IP for the Ubuntu server using the MAC address of the interfaces. You can find the MAC address either on the virtual network adapter (Virtual Machine Settings -> Network Adapter -> Advanded) or on the machine itself.

The ubuntu server and the internal client should not need to specify gateway or DNS manually. All this should be handled by the DHCP server.

3.4 Web server

Install a web server on your newly created **dmzserver** on VMNet 5.

1. Then setup two virtual hosts on that server. If your DNS settings are correct you should be able to reach the web server from any browser on the network using the following addresses:

   - www.mycompany.lab
   - altwww.mycompany.lab

   so www.mycompany.lab should show one page and then altwww.mycompany.lab another.

2. Make a third page that is only seen when you connect to it using the port 2015. All pages should of course be reachable at the same time.

4 Requirements

Consider not using the firewall at all when implementing but instead add the rules once you see that all is working. Otherwise it should work as in the assignment description.

5 Workenviroment

We will continue to use the lab where we left of. If you get stuck somewhere you can try your luck with another part but to configure DHCP properly you at least need to be done with forwarding part of the DNS (so we can refer to the linux server as our DNS). And to get the virtual hosts working we need the DNS records(unless we circumvent it mapping local hosts)

Good luck!