

System Administrator Decal

Week 9 Homework

April 7, 2007

1 IP Addressing

1. What are the 4 IP ranges that have been reserved for private networks?
2. How does the IP protocol ensure that the networks are private?
3. What is the IP range reserved for “loopback” communication?
4. How does loopback communication work?

2 Network Address Translation

1. What are two common types of NAT? What is the most commonly used NAT type?
2. Describe how NAT can be used to allow multiple hosts on a private network to access the internet using a single public IP address.
3. Describe why some applications require you to use “port forwarding”.

3 Address Resolution Protocol

1. Why is it necessary to provide a mapping from a logical IP address to a physical hardware address?
2. Describe the method used by the ARP protocol to obtain a hardware address from an IP address.

4 DHCP

1. What is DHCP? Why is it useful?
2. Where are the the two most common types of DHCP?
3. Describe a typical conversation between a new host on a private network and a DHCP server running on that same network.

5 Postfix

Install Postfix on your account on `tempest.ocf.berkeley.edu` and change the configuration as necessary. Your virtual server should be able to send email (not receive unfortunately). Try and email yourself a message – I recommend using one of the two text-editors mentioned in notes: `pine` or `mutt`.

6 Procmail

Create separate rules for the following assuming your email address is **`groupxx@tempest.ocf.berkeley.edu`**:

1. Deleting all the mail coming from `myspace.com` on arrival.
2. Send all of the mail coming from your Forestry 125C GSI Bob John (`naturebobby@berkeley.edu`) to a folder `Forestry`.
3. Save all of the message that are either send directly To you or Cc'ed From an email from `cs.berkeley.edu` domain into a folder `CS`
4. Send everything that is not sent from `berkeley.edu` domain to `spam`