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Technical Document to describe methods used to set up server client arrangement as described in the assignment sheet. Assumption is made that the user has two ubuntu server machines set up that can communicate with each other have an internet connection.

**DHCP Setup:**

Install DHCP server:

* sudo apt-get install isc-dhcp-server

Edit this file to change the interface to the local network:

* sudo vi /etc/default/isc-dhcp-server
* [...]

INTERFACES="eth1"

Edit this file to change the settings of DHCP to your own by adding these lines:

* sudo vi /etc/dhcp/dhcpd.conf
* # option definitions common to all supported networks...

option domain-name "ostechnix.lan";

option domain-name-servers ubuntuserver.ostechnix.lan;

* authoritative;
* subnet 192.168.1.0 netmask 255.255.255.0 {

range 192.168.1.150 192.168.1.200;

option domain-name-servers 192.168.1.1, 8.8.8.8;

option domain-name “example.lan”;

option routers 192.168.1.1;

option broadcast-address 192.168.1.254;

default-lease-time 600;

max-lease-time 7200;

}

Restart the DHCP service:

* sudo service isc-dhcp-server restart

Switch to client and edit /etc/network/interfaces by adding and commenting out previous setup:

* auto eth1

iface eth1 inet dhcp

then switch interface on/off and test if DHCP worked by seeing if the ip changed:

* sudo ifconfig eth1 down
* sudo ifconfig eth1 up
* ifconfig

**NFS Setup:**

Install nfs on server:

* sudo apt-get update

sudo apt-get install nfs-kernel-server

Make new directory in /home:

* sudo mkdir /home/myshare

Edit /etc/exports to share files:

* /home/myshare 192.168.1.150(rw,sync,no\_root\_squash,no\_subtree\_check)

Restart for changes to take effect:

* sudo service nfs-kernel-server restart

Install nfs on client:

* sudo apt-get update

sudo apt-get install nfs-common

Make directory to use to mount:

* sudo mkdir -p /nfs/home/myshare

Mount directory:

* sudo mount 192.168.1.11:/home /nfs/home/myshare

Make a file to test if successful:

* sudo touch /nfs/home/myshare/general.test

Open and edit /etc/fstab to start the mount on startup:

* sudo vi /etc/fstab

203.0.113.0:/home /nfs/home/myshare

nfs auto,nofail,noatime,nolock,intr,tcp,actimeo=1800 0 0

**DNS Setup:**

Install bind9 for dns:

* sudo apt-get install bind9 bind9utils bind9-doc

Edit this file to enable ipv4:

* sudo vi /etc/default/bind9
* OPTIONS="-4 -u bind"

Edit this file to set own configurations:

* sudo vi /etc/bind/named.conf.options
* acl "trusted" {

192.168.1.11; #server

192.168.1.150; #client

};

options {

directory "/var/cache/bind";

recursion yes;

allow-recursion { trusted; };

listen-on { 192.168.1.11; };

allow-transfer { none; };

forwarders {

8.8.8.8;

8.8.4.4;

};

};

Edit this file to create zones:

* sudo vi /etc/bind/named.conf.local
* zone "server.example.lan" {

type master;

file "/etc/bind/zones/db.server.example.lan";

};

zone "1.168.192.in-addr.arpa" {

type master;

file "/etc/bind/zones/db.192.168.1";

};

Create forward zone files and then edit configurations:

* sudo mkdir /etc/bind/zones
* cd /etc/bind/zones
* sudo cp ../db.local ./db.server.example.lan
* sudo vi /etc/bind/zones/db.server.example.com
* $TTL 604800

@ IN SOA ns1.server.example.lan. admin.server.example.lan. (

3 ; Serial

604800 ; Refresh

86400 ; Retry

2419200 ; Expire

604800 ) ; Negative Cache TTL

;

; name servers - NS records

IN NS ns1.server.example.lan.

; name servers - A records

ns1.server.example.lan. IN A 192.168.1.11

; 192.168.1.0/24 - A records

host1.server.example.lan. IN A 192.168.1.150

Now do reverse zone files and edit configurations:

* cd /etc/bind/zones
* sudo cp ../db.127 ./db.192.168.1
* sudo vi /etc/bind/zones/db.192.168.1
* $TTL 604800

@ IN SOA ns1.server.example.lan. admin.server.example.lan. (

3 ; Serial

604800 ; Refresh

86400 ; Retry

2419200 ; Expire

604800 ) ; Negative Cache TTL

; name servers

IN NS ns1.server.example.lan.

; PTR Records

11 IN PTR ns1.server.example.lan. ; 192.168.1.11

150 IN PTR host1.server.example.lan. ; 192.168.1.150

Restart bind9 to mark changes:

* sudo service bind9 restart

Configure client:

* sudo vi /etc/resolvconf/resolv.conf.d/head

search server.example.lan

nameserver 192.168.1.11

* sudo resolvconf

Test configurations:

- nslookup host1

- nslookup 10.128.100.101

**FTP Setup:**

Install ftp for server:

* sudo apt-get install vsftpd

Edit configuration files:

* sudo nano /etc/vsftpd.conf
* ##Disable anonymous user login.

anonymous\_enable=NO

#uncomment this to allow local users to log in.

Local\_enable=YES

##Uncomment these two lines.

ascii\_upload\_enable=YES

ascii\_download\_enable=YES

##Uncomment and enter your Welcome message - Not necessary, It's optional.

ftpd\_banner=Welcome to OSTechNix FTP service.

##Add this line the end.

use\_localtime=YES

Restart to mark changes:

* sudo service vsftpd restart

Test by logging by:

* ftp 192.168.1.11