Working With TFTP

Basics of TFTP

Simple UDP based file transfer protocol

Wikipedia:

RFC 1350

(all of this means it's quick and dirty…)

Preparing the network

On your Laptop:
Do you have a VNC Client?
Download a VNC client (if you don't have one already)

Connect to host ts01.sie.ws.afnog.org on port 59xx

(And say thank you to Patrick)

Preparing the network on the router

Download a Telnet client (if you don't have one already)

Connect to host ts01.sie.ws.afnog.org on port 20xx

You will connect to the console port of a brand new Cisco router.

Set access passwords.

Configure your interfaces:

```
configure terminal
interface Gi 0/x
ip address 196.200.22x.x 255.255.25x.x
```

Ping the FreeBSD to test.

Enabling TFTP in FreeBSD

Most modern UNIX based systems have a built-in tftp server. In the case of FreeBSD which we are using in the class the easiest way to activate the inbuilt tftp server is to enable and run (re)start the service called inetd (which in turn controls the tftp service)

First: make sure inetd is set to start so:

```
# vi /etc/rc.conf
```

Add the line (if it doesn't exist) that says:

```
# inetd_enable="YES"
```

This will make sure that the service restarts if your server is rebooted.

Enabling TFTP in FreeBSD

Find, and uncomment the appropriate line in /etc/inetd.conf

```
# vi /etc/inetd.conf
```

In FreeBSD you will find two lines; one starting with UDP and the next with UDP6. That simply means that you can choose to have the service listening on just IPv4 or IPv6. **Please uncomment both!**

(re)Start inetd, enabling the TFTP daemon

```
# /etc/rc.d/inetd start
```

Check that TFTP is actually running.

```
# netstat –an | grep “*.69”
```

Enabling TFTP in FreeBSD

Create a directory for tftp to operate with

```
# mkdir /tftpboot
```

If you're going to write to a config file, the file needs to exist, and you need to have write permission to it; 'touch' will create the file for you

```
# touch /tftpboot/sie-config
```

Now, you need to allow world-write permission to the file you've created above:

```
# chmod 666 /tftpboot/sie-config
```

BE AWARE THAT THIS IS DANGEROUS !

Enabling TFTP in Ubuntu

```
# apt-get install tftpd
```

Directory Structure

TFTPd will use the base directory that you specified in inetd.conf to store your files. In most cases that is /tftpboot/. If you are in doubt, check the inetd.conf file that you edited earlier.

When you reference this by reading/ writing to tftp, you do not need to specify the base directory (on the tftp client) when asked for the destination.

Using TFTP to manage your router

```
router# copy start tftp

 router# copy tftp start

 router# copy flash tftp

 router# copy tftp flash

 router# copy run tftp
```

Using TFTP to manage your router

```
router# copy start tftp
```

Copies your startup configuration to the tftp server. This is typically what you will use to backup your (router) saved configuration to an external tftp server.

```
router# copy tftp start
```

Copies your configuration from a tftp server, to your router's startup configuration. Useful for restoring configuration from an external backup.

Using TFTP to manage your router

When would you use the following:

```
router# copy flash tftp

router# copy tftp flash

router# copy run tftp
```

Things to remember

Keep your server secure!

- Your TFTP server will typically have stored router configs and IOS images.
- Therefore it's important that you restrict access to your server.
- Setup integrity checking (even simple md5)

For large file transfers, consider using SCP/ RCP for more reliable transport.