Unix for Telecommunications

Portfolio Task – P-Lab-04-Basic-Apache
Pass Level Task

I. Introduction

In this lab you will learn about the Apache web server application. You will perform some basic configuration of your RULE host to provide web services using Apache.

II. Purpose

To gain and/or enhance the following practical skills:

- Deploying and configuring Apache to provide a simple web service for a single website
- Understand issues relating to service configuration
- Process and respond to error messages in log files
- Configure services to auto-start in Unix

III. Preparation

You can prepare for this lab by reading some of the Apache documentation available at http://httpd.apache.org. You should also review the basic concepts of:

- TCP
- TCP Port Numbers
- Allocated/default TCP Port Number Allocation
- The HTTP Protocol

IV. Methodology

A. Apache Introduction

1) Apache has already been installed on your rule host, it would typically be installed under FreeBSD using ports. Locate the port installation directory under FreeBSD on your RULE host
2) Have a look at the `/etc/services` file. What do you think Unix uses this file for?

B. Apache Configuration File

1) Have a look at the Apache configuration file in `/usr/local/etc/apache24` (you do not have to understand all of the options in this file)
   - What port will Apache run on when started?
   - What directory from your RULE host will be served?
   - Locate where the error log and access log will be written to

C. Installing a Simple Web Page

1) Create some basic content for the Apache Server to serve. At a minimum this should include:
   - An `index.html` file
   - An image (eg. from http://www.freebsd.org/art.html)
   - Your name and student ID somewhere on the web page
2) Install your generated content into the directory you previously discovered would be served by Apache

D. Starting Apache

1) Run

```
sockstat -4
```

and note the output

2) Start Apache using the command

```
apachectl -k start
```

3) Rerun

```
sockstat -4
```

What does the output mean?

4) Access your new web site by browsing to your RULE host from one of the lab computers (Note: It is recommended not to use Internet Explorer due to it's caching behaviour)
5) Look at your `httpd-access.log` file
   - What is in this file?
   - What do each of the lines mean?
   - What does each field on each line represent?
6) Access a web page on the server (from the browser) that does not exist
   - Where can you find information about what went wrong?

E. Automatically Starting Apache at System Boot

1) Once a service is properly configured and running, we often want to:
   - Start it automatically at boot-time, in case the system is rebooted for whatever reason
   - Enable starting/stopping/restarting the service via the use of the rc scripts – this simplifies the procedure and ensures that any dependent are also started if required
2) To configure both these tasks you need to edit the `/etc/rc.conf` file and add the line:

```
apache24_enable="YES"
```

3) You will now be able to start and stop apache using the command:

```
/usr/local/etc/rc.d/apache24 <start|stop>
```

Note: *You will have to stop the apache server using apachectl before using the rc scripts*

V. Assessment

The due date for completion of practical work is **11:00pm**, exactly **six** days after your scheduled class.

Note: *The nominated submission day/time holds regardless of whether that day is a non-teaching day or public holiday*

A. Self Assessment

You can self-assess your progress at any time via the marking script available at http://ruleprimary1.caia.swin.edu.au

B. Completion of task in Doubtfire

Download the PDF output of the marking script from http://ruleprimary1.caia.swin.edu.au and submit it to Doubtfire. Your tutor will confirm completion of the lab by examing the rule marking log files on the rule server.

If you complete the task during class beforehand, you may demonstrate completion in class to your tutor.

Note: *The downloaded PDF is not evidence of successful completion of the lab, it is a document to demonstrate completion within your portfolio. Your tutor will assess the evidence via either direct confirmation via the marking script or via the log files generated when you run the marking script*

C. Tutor Discussion

In order for the submission to be marked as complete, you must discuss your work with the tutor