

Matric No: _____

**NAPIER UNIVERSITY
SCHOOL OF COMPUTING**

CO32034 J

**SERVER ADMINISTRATION
(JAMES WATT COLLEGE)**

ACADEMIC SESSION: 2004-2005

DIET: MAY/JUNE * **VERSION 2** *

TRIMESTER: TWO

EXAM DURATION: 2 HOURS

READING TIME: NONE

EXAM PAPER INFORMATION

Answer ALL questions.

Write the answers into your answer book. You do not need to start each question on a separate page of the answer book.

Number of pages - SIX

Number of questions – TWENTY

All exam papers to be returned to the examiner.

OPEN BOOK EXAMINATION

EXAMINERS: UTA PRISS & GORDON RUSSELL

PLEASE READ FULL INSTRUCTIONS BEFORE COMMENCING WRITING

Short Answer Questions: Please answer all questions, and record each answer in your answer script book. Each answer should only be a few sentences long, or where necessary a few lines of code long. Do not start a new page in the script book for each question.

1. State the purpose of files and directories you would expect to see in the /usr directory.

Mark: 2

2. What would appear on the screen after typing the following:

```
cd /home
mkdir gr
mkdir gr/public
ls -l /etc > gr/info
ls gr
```

Mark: 2

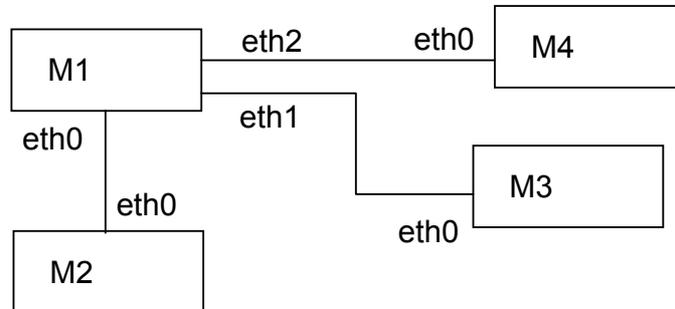
3. Continuing from Q2, if the command “rm gr/” was typed in, what would the result be and why?

Mark: 2

4. You need to start up the xyzd xyz daemon. What is the most likely command which would achieve this?

Mark: 2

5. Consider the following topology:



M2: 10.0.0.2/24, and has a connection (not shown) to the internet.

M1: eth0 is 10.0.0.1/24, eth1 10.0.1.1/24, eth2 10.0.2.1/24

M3: 10.0.1.5/24

M4: 10.0.2.5/24

Give the ip route commands for M1 to configure this topology.

Mark: 2

6. Continuing from Q5, show the ifconfig commands to configure M3.

Mark: 2

7. A packet enters through eth0, and leaves through eth2. State the iptable table or tables that the packet would travel through.

Mark: 2

8. In an INPUT firewall ruleset where the default policy is DROP, how would you allow packets to arrive correctly to support an internal web server which should only be accessible from 10.0.0.0/24.

Mark: 2

9. In an INPUT firewall ruleset where the default policy is ACCEPT, how would you allow packets to arrive correctly to support an internal web server which should only be accessible from 10.0.0.0/24.

Mark: 2

10. User "jim" has created a public_html directory but is unable to see any of his pages. Make a list of 3 specific things you could check to try and find out what the problem was.

Mark: 2

11. Find 4 problems with the following zone file.

```
$TTL 8000
ORIGIN grussell.org
@           1D IN SOA @ root (
                42           ;serial
                3H           ; refresh
                15M          ; retry
                1W           ; expiry
                1D )         ; min

1D IN NS @
1D IN A 146.176.166.1

www. 1D IN A 150.0.0.6
```

Mark:2

12. What should be added to make web.grussell.org an alias to grussell.org?

Mark: 2

13. Find the error in the following virtual host definition:

```
NameVirtualHost *:20
<VirtualHost *>
ServerAdmin me@grussell.org
DocumentRoot /home/gordon
ServerName wherever.com
</VirtualHost>
```

Mark: 2

14. Given a working virtual host definition for aaa.com, which also has an alias for bbb.com, write a rewrite rule which will force an external and permanent redirection so that the use of bbb.com will be rewritten to aaa.com

Mark: 2

15. A user has a file “/home/jim/public_html/htpass” and another called “/home/jim/public_html/.htaccess”. The “htpass” file contains usernames and passwords used as the AuthUserFile in an Apache basic authentication definition. The user is worried about the security of the “htpass” file. What would you recommend to the user?

Mark: 2

16. Consider the following email header:

```
Received: by 10.36.3.6 with SMTP id 6cs149698nzc;
  Wed, 25 May 2005 14:24:46 -0700 (PDT)
Received: by 10.36.36.14 with SMTP id j14mr342612nzm;
  Wed, 25 May 2005 14:24:46 -0700 (PDT)
Received: from lists-outbound.sourceforge.net (lists-outbound.sourceforge.net
[66.35.250.225])
  by mx.gmail.com with ESMTP id 12si1247282nzn.2005.05.25.14.24.35;
  Wed, 25 May 2005 14:24:46 -0700 (PDT)
Received: from projects.sourceforge.net (sc8-sf-list1-b.sourceforge.net [10.3.1.7])
  by sc8-sf-spam1.sourceforge.net (Postfix) with ESMTP
  id 14D3E337DC; Wed, 25 May 2005 14:24:34 -0700 (PDT)
Received: from sc8-sf-mx2-b.sourceforge.net ([10.3.1.12] helo=sc8-sf-mx2.sourceforge.net)
  by sc8-sf-list1.sourceforge.net with esmtp (Exim 4.30) id 1Db3Ls-0007Ik-Qu
  for user-mode-linux-user@lists.sourceforge.net; Wed, 25 May 2005 14:23:44 -0700
Received: from smtp005.mail.ukl.yahoo.com ([217.12.11.36])
  by sc8-sf-mx2.sourceforge.net with smtp (Exim 4.41) id 1Db3Lo-0003Vb-HQ
  for user-mode-linux-user@lists.sourceforge.net; Wed, 25 May 2005 14:23:44 -0700
Received: from napier.ac.uk ([151.97.230.36]) (rblade@151.97.230.36 with login)
  by smtp005.mail.ukl.yahoo.com with SMTP; 25 May 2005 21:23:34 -0000
From: rblade <blablade@yahoo.it>
To: user-mode-linux-user@lists.sourceforge.net
Subject: Re: [uml-user] UML 2.6.11 SMP issues
User-Agent: KMail/1.7.2
```

How long did this email take to arrive at the final destination?

Mark: 2

17. What leg of the journey shown in the headers of Q16 took the longest. Give a likely reason why this step took so long.

Mark: 2

18. A website which makes use of Apache and MySQL to support a site selling online books is suffering from poor performance. List three things you could check to help you diagnose the problem.

Mark: 2

19. The Apache server on a machine you are looking after has to handle long periods of inactivity (minutes), and then sudden periods of handling about 100 simultaneous requests for a duration which spans a few seconds. Currently the performance during these high-load periods is poor. During the low-load periods there are very few Apache processes in the process table. What can be done to help improve performance?

Mark: 2

20. Your web server is being attacked by a denial of service attack. List 2 ways that you could find out the source of this attack.

Mark: 2

Total Marks: 40

END OF EXAM