**SENECA COLLEGE OF APPLIED ARTS AND TECHNOLOGY  
FACULTY OF CONTINUING EDUCATION**

**FINAL EXAMINATION**

**SEMESTER – Summer 2023**

**SUBJECT NAME: Open System Application Server**

**SUBJECT CODE: OPS345V1A**

**INSTRUCTOR NAME: Jason Pang**

**EXAMINATION DATE: August 16th, 2023**

**TIME ALLOTTED: 2 HOURS**

**MARKS ALLOTTED: 100**

**WEIGHTING: 25%**

**SPECIAL INSTRUCTIONS:**

Exam Books: Required: Not Required: X

Exam Aids: Permitted: (Open Book) Not Permitted:

Exam Question Paper: Returned: Through Blackboard Not Returned:

Approved by:

Sheri Ladoucier

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Sheri Ladoucier, Academic Program Manager

**Academic Policy Section 9:**

**Engaging in any form of academic dishonesty to obtain any type of advantage or credit is an offence and will not be tolerated by the College. Such offences under this policy include, but are not limited to, cheating, plagiarism, falsification, impersonation, misrepresentation and procurement.**

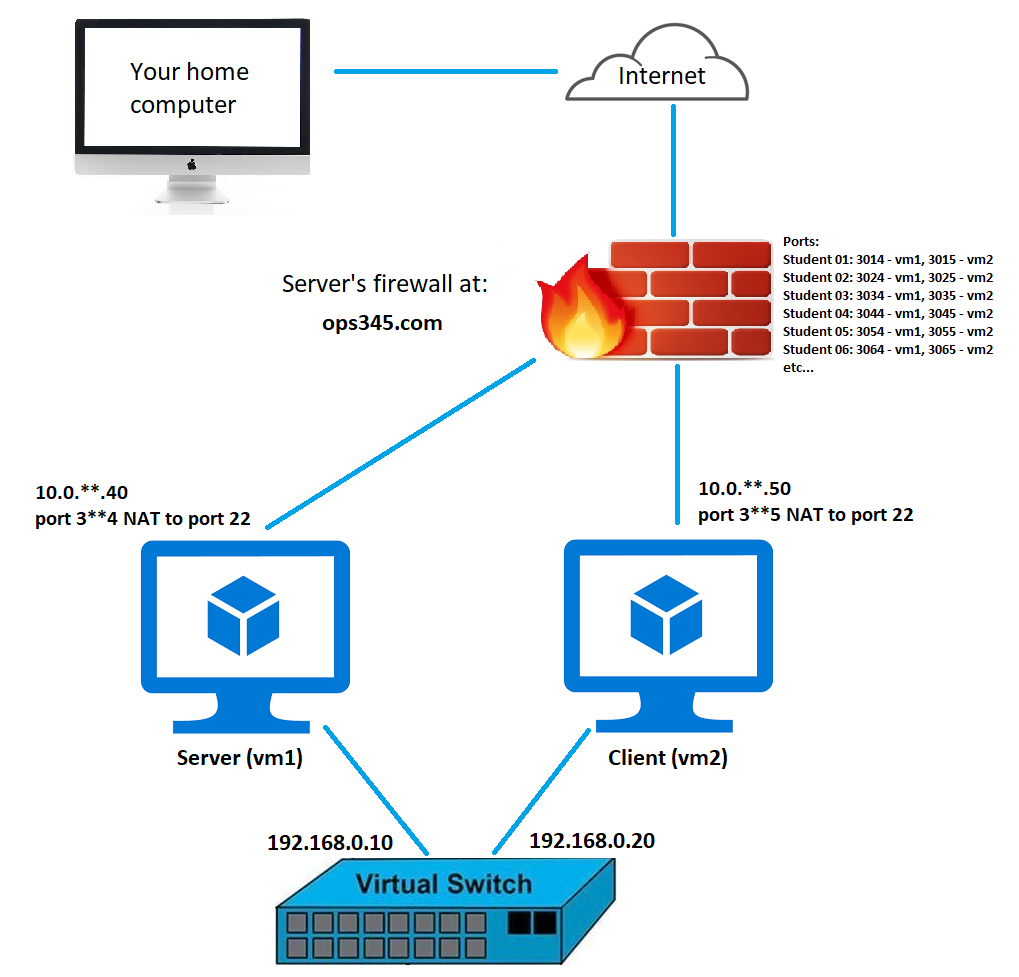
The end states of the configurations are what I will check.

You are expected to submit functional servers as requested.

All tasks must be done with the ‘root’ privilege.

Each configuration item is worth 5 marks.

Please refer to the following diagram for information related to the Internet connection / Internal network…etc.



**Part 1: VM configurations - Total 20 marks**

1. (5 marks) SSH to “ops345.com” with assigned port numbers **vm1 (port 3\*\*4)** and **vm2 (port 3\*\*5)** posted on Blackboard. Default password is “Password1234”

On vm1, change the “ops345” password to another password of your choice.

Record the New Password: **Ror5127**

On vm2, change the “ops345” password to another password of your choice.

Record the New Password: **Ror5127**

**Do not** use the default “Password1234” as your new password.

1. (5 marks) Create a file in your ops345 home directory with your name and student ID for **both** VMs.

* The info could be in the filename or in the content of a file.
* I won’t mark your exam if I cannot identify you.

1. (5 marks) Permanently disable the **firewalld** service
2. (5 marks) Install, start and enable the **iptables** service.

**Part 2: Build a functional DNS server (master DNS server on vm1 only) - Total 25 marks**

1. (5 marks) Install the DNS service and the utilities on the **vm1**.
2. (5 marks) Configure with the correct syntax of zone declaration (**forward** lookup only).

Use “yoursenecaid.ops” as the zone, you **must** change the highlighted area with your Seneca username.

1. (5 marks) Correct syntax of zone file which must be able to resolve the following record.

server 192.168.0.10

client 192.168.0.20

final 192.168.0.100

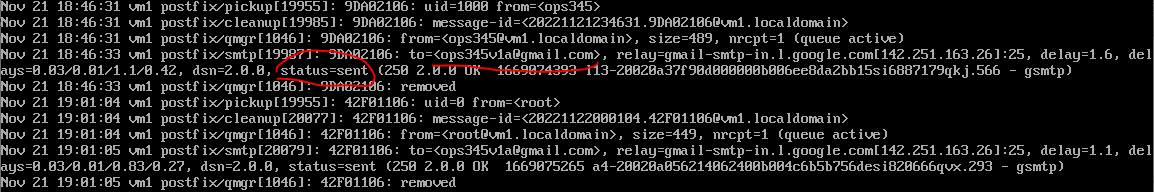
1. (5 marks) Enable and start your DNS service, confirm the primary DNS is pointing to 192.168.0.10 and you can query DNS records on **vm1**.
2. (5 marks) Add firewall (**iptables**) entry on vm1 to allow vm2 to query DNS record. Confirm your **vm2**’s primary DNS is also 192.168.0.10 and you can query DNS records from **vm2**.

**Part 3: Configure mail server - Total 20 marks**

1. (5 marks) Configure MTA (**postfix**) on **vm1**, and make the necessary change so that the sender of the email going out will looks like [username@yoursenecaid.ops](mailto:username@yoursenecaid.ops)
2. (5 marks) Configure **vm2** to make it act as SMTP server, and all emails must be relayed to the **vm1** for delivery.
3. (5 marks) Install MUA (**mailx**) to vm2 and Send an email from vm2 to [ops345@m](mailto:ops345@m)ydemo.ca

Subject as “OPS345 Final Exam: YourNameInitial” with any contents in the mail body.

1. (5 marks) Check and confirm the email was sent successfully.



(It is fine if the email rejected, I could see if you sent the email from logs, however, you would lose mark if your syntax is wrong.)

**Part 4: Configure LAMP - Total 15 marks**

1. (5 marks) Install and configure **httpd** and **php** support on your **vm1**
2. (5 marks) Create an index.php file in the DocumentRoot with the following contents:

The current time is <?php system("date"); ?>!

1. (5 marks) On your vm2, install a text browser (**lynx**) and connect to <http://server.yoursenecaid.ops/index.php>

Make sure every time you refresh the page, you will get a new time.

Take a screenshot and paste it here.

A computer screen with a black screen

Description automatically generated

**Part 5: Configure Webmail (Roundcube) - Total 20 marks**

1. (5 marks) Install Roundcube on **vm1**, with the provided link.

https://github.com/roundcube/roundcubemail/releases/download/1.4.10/roundcubemail-1.4.10-complete.tar.gz

1. (5 marks) Configure Roundcube on **vm1**
2. (5 marks) Create a new user as your firstname on **vm1**
3. (5 marks) send an email from the newly created user to user ops345@yoursenecaid.ops

Make sure you have filled in your new VM password in this document.

Save this document as “OPS345\_2234\_Final Exam\_NameInitial.docx”.

Upload to Blackboard \ My Homework \ Final Exam