

CS316 – DevOps Lab Exercises

Lab # 02

REG#: _____

NAME: _____

COURSE CODE: CS316

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TOTAL MARKS: Non-Graded**TASK 1 – Remote Access & SSH**

1. Access Remote Server (SSH)
 - o Connect to your lab machine using SSH.
 - o Run `whoami` and `hostname` to verify.
 - o Connect to your friend machine using SSH.
2. Control SSH Service
 - o Stop and start the SSH service (`systemctl`).
 - o Verify connection works or fails accordingly.
3. Authentication Settings
 - o Locate the SSH config file.
 - o Disable/enable password authentication.
 - o Setup public/private key authentication for a non-root user.
 - o Disable root login and verify with test connections.

TASK 2 – Apache Web Server

1. Apache2 Basics
 - o Install `apache2`.
 - o Start/stop/restart service.
 - o Verify web server running with `curl localhost` or using the browser.
2. Deploy Static Web App
 - o Clone the static website from the following link.
 - <https://github.com/msajidaligik/gik-fcse-icet2022.git>
 - o Place it in `/var/www/html/`.
 - o Verify via browser or `curl`.
3. Multi-Website Setup
 - o Configure another static app on port 8080.
 - o Test both websites running on different ports.

TASK 3 – Port Conflict Debugging

1. Stop Apache web server
2. Start Nginx web server
 - o Install `nginx` if not using
3. Try to start Apache
 - o Observe the status of Apache
 - o Observe the logs using `journalctl` and following the class demos
 - o Check for the open ports using `lsof`
 - o See lecture slides for help
4. Stop `nginx`
5. Start the Apache again and observe the status

TASK 4 – Broken Virtual Host

1. Create new virtual host file with wrong DocumentRoot
 - o /var/www/wrongfolder
2. Restart Apache server.
3. Try to access that configured site now.
 - o Check and follow apache2 error logs set by you in virtualhost or /var/log/apache2/error.log
 - i. Did you see anything in the error log?
 - ii. Follow the access logs you set for the site.
 - iii. Now, did you see anything in the file?
 - o Why?
4. Fix the DocumentRoot and restart the apache2 service

Most Important DevOps Rule

- o Directories → 755
- o Files → 644
- o Owner → deployment user
- o Group → web server group
- o Never → 777

TASK 5 – Ownership in Web Servers – web app files are owned by your user, but the web server runs as www-data

1. Create directory in /var/www/lab02/task5
2. Set current user as owner and group to this directory
 - o chown \$USER:\$USER directory path
3. Copy any index.html file to this directory
4. Setup your apache2 to host this static content on port 83
5. Change permissions (to 700) for the index.html file
6. Access your site and observe the response
7. Fix the error by setting the right owner and group for this directory and files which should be?
 - o See above rule of thumb

TASK 6 – Host the static website you deployed in Task 2 (using Apache) now using NGINX. Ensure the site is accessible via the server's IP, and the homepage (index.html) loads correctly.

[Hint]: Follow the guidelines provided in the nginx sites-available file

Note: Think about server_name, root, index, and location / in NGINX configuration. You may follow the guidelines provided in the default nginx configuration file