

Comprehensive Linux Operations

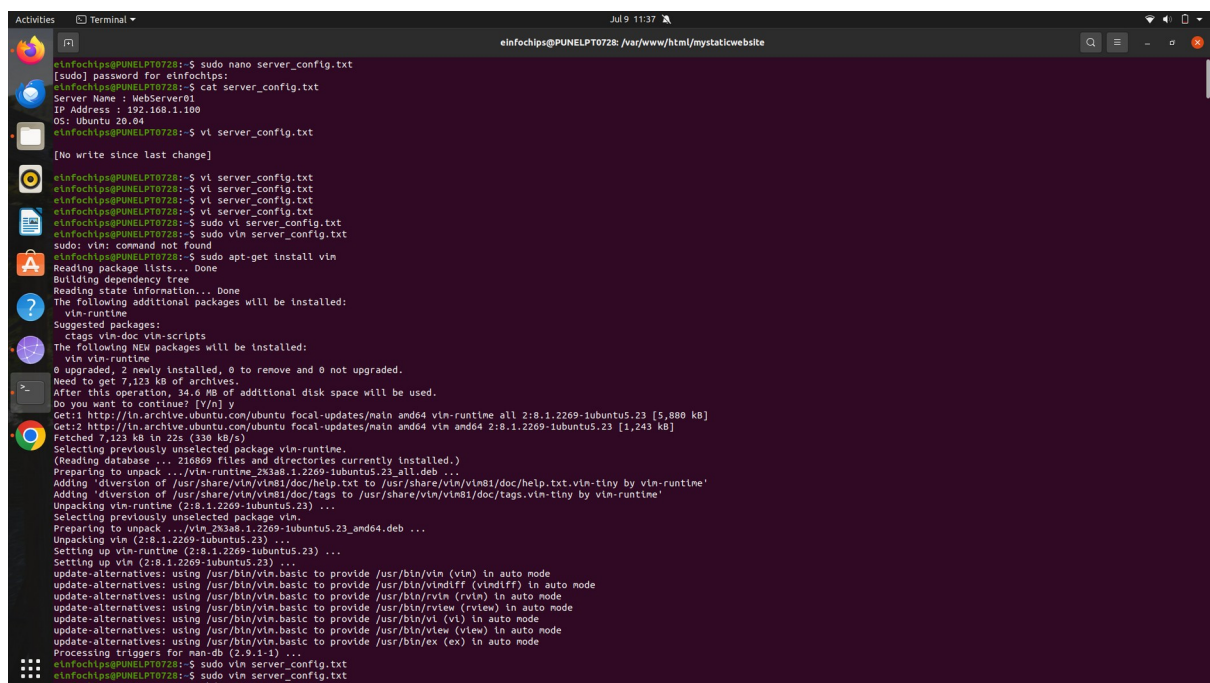
Project Overview

This project spans various aspects of Linux system administration, including file management, user and group management, service control, process handling, and more. You will be completing tasks that simulate real-world scenarios, providing hands-on experience with Linux commands and configurations.

Project Breakdown

Part 1: Creating and Editing Text Files (20 minutes)

Scenario: You are tasked with documenting the configurations and settings for a new server. You'll use different text editors to create and update these documents.



```
einfochips@PUNELPT0728:~$ sudo nano server_config.txt
[sudo] password for einfochips:
einfochips@PUNELPT0728:~$ cat server_config.txt
Server Name : WebServer01
IP Address : 192.168.1.100
OS: Ubuntu 20.04
einfochips@PUNELPT0728:~$ vi server_config.txt
[No write since last change]
einfochips@PUNELPT0728:~$ vi server_config.txt
einfochips@PUNELPT0728:~$ vi server_config.txt
einfochips@PUNELPT0728:~$ vi server_config.txt
einfochips@PUNELPT0728:~$ sudo vi server_config.txt
einfochips@PUNELPT0728:~$ sudo vim server_config.txt
sudo: vim: command not found
einfochips@PUNELPT0728:~$ sudo apt-get install vim
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  vim-runtime
Suggested packages:
  ctags vim-doc vim-scripts
The following NEW packages will be installed:
  vim-runtime
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 7,123 kB of archives.
After this operation, 34.6 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://ln.archive.ubuntu.com/ubuntu focal-updates/main amd64 vim-runtime all 2:8.1.2269-1ubuntu5.23 [5,880 kB]
Get:2 http://ln.archive.ubuntu.com/ubuntu focal-updates/main amd64 vim amd64 2:8.1.2269-1ubuntu5.23 [1,243 kB]
Fetched 7,123 kB in 22s (330 kB/s)
Selecting previously unselected package vim-runtime.
(Reading database ... 216869 files and directories currently installed.)
Preparing to unpack .../vim-runtime_2:8.1.2269-1ubuntu5.23_all.deb ...
Adding 'diversion of /usr/share/vim/vim81/doc/help.txt to /usr/share/vim/vim81/doc/help.txt.vim-tiny by vim-runtime'
Adding 'diversion of /usr/share/vim/vim81/doc/tags to /usr/share/vim/vim81/doc/tags.vim-tiny by vim-runtime'
Unpacking vim-runtime (2:8.1.2269-1ubuntu5.23) ...
Selecting previously unselected package vim.
Preparing to unpack .../vim_2:8.1.2269-1ubuntu5.23_amd64.deb ...
Unpacking vim (2:8.1.2269-1ubuntu5.23) ...
Setting up vim-runtime (2:8.1.2269-1ubuntu5.23) ...
Setting up vim (2:8.1.2269-1ubuntu5.23) ...
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vim (vim) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vimdiff (vimdiff) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/rvim (rvim) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/rview (rview) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vi (vi) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/view (view) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/ex (ex) in auto mode
Processing triggers for man-db (2.9.1-1) ...
einfochips@PUNELPT0728:~$ sudo vim server_config.txt
einfochips@PUNELPT0728:~$ sudo vim server_config.txt
einfochips@PUNELPT0728:~$ mkdir /dev/shm/Accessment
```

Part 2: User & Group Management (20 minutes)

Scenario: You need to set up user accounts and groups for a new team joining the project.

```
Activities Terminal Jul 9 11:37
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite

mkdir: cannot create directory 'DevOps': File exists
einfochips@PUNELPT0728:~$ mkdir DevOps-Assessment
einfochips@PUNELPT0728:~$ mv server_config.txt ~/DevOps-Assessment/
einfochips@PUNELPT0728:~$ ls
Assessment  Desktop  Downloads  Documents  Pictures  Templates
'Class Notes'  DevOps  'Linux cert installation'  Music  'Script to Install MDATP in Linux'  vagrant-vm
einfochips@PUNELPT0728:~$ cd DevOps-Assessment/
einfochips@PUNELPT0728:~/DevOps-Assessment$ ls
server_config.txt
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo adduser developer
Adding user 'developer' ...
Adding new group 'developer' (1001) ...
Adding new user 'developer' (1001) with group 'developer' ...
Creating home directory '/home/developer' ...
Copying files from '/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for developer
Enter the new value, or press ENTER for the default
    Full Name []:
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] y
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo deluser developer
Removing user 'developer' ...
Warning: group 'developer' has no more members.
Done.
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo groupadd devteam
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo usermod -aG devteam developer
usermod: user 'developer' does not exist
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo useradd developer
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo usermod -aG devteam developer
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo gpasswd -d developer devteam
Removing user developer from group devteam
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo deluser developer
Removing user 'developer' ...
Warning: group 'developer' has no more members.
Done.
einfochips@PUNELPT0728:~/DevOps-Assessment$ ls -l
total 4
-rw-r--r-- 1 root root 137 Jul 9 10:40 server_config.txt
einfochips@PUNELPT0728:~/DevOps-Assessment$ ls -l server_config.txt
-rw-r--r-- 1 root root 137 Jul 9 10:40 server_config.txt
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo chown developer:devteam server_config.txt
chown: invalid user: 'developer:devteam'
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo useradd developer
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo chown developer:devteam server_config.txt
einfochips@PUNELPT0728:~/DevOps-Assessment$ ls -l server_config.txt
-rw-r--r-- 1 root root 137 Jul 9 10:40 server_config.txt
Command 'ls-' not found, did you mean:
```

Part 3: File Permissions Management (20 minutes)

Scenario: Ensure that only the appropriate users have access to specific files and directories.

```
Activities Terminal Jul 10 18:32
einfochips@PUNELPT0728: ~/DevOps-assessment/Assessment 1

einfochips@PUNELPT0728:~/DevOps-assessment/Assessment 1$ ls -l server_config.txt
-rw-r--r-- 1 einfochips devteam 137 Jul 9 10:40 server_config.txt
einfochips@PUNELPT0728:~/DevOps-assessment/Assessment 1$ chmod 644 server_config.txt
einfochips@PUNELPT0728:~/DevOps-assessment/Assessment 1$ ls -l
total 5688
-rw-r--r-- 1 einfochips einfochips 221627 Jul 9 09:06 'Day 1.docx'
drwxr-xr-x 2 einfochips einfochips 4096 Jul 9 12:13 mystaticwebsite
-rw-r--r-- 1 einfochips einfochips 2171783 Jul 9 09:00 Overview-of-Linux-and-Architecture.pdf
-rw-r--r-- 1 einfochips einfochips 377411 Jul 9 11:37 'Screenshot from 2024-07-09 11-37-05.png'
-rw-r--r-- 1 einfochips einfochips 378673 Jul 9 11:37 'Screenshot from 2024-07-09 11-37-14.png'
-rw-r--r-- 1 einfochips einfochips 403766 Jul 9 11:37 'Screenshot from 2024-07-09 11-37-27.png'
-rw-r--r-- 1 einfochips einfochips 349568 Jul 9 11:37 'Screenshot from 2024-07-09 11-37-41.png'
-rw-r--r-- 1 einfochips einfochips 355252 Jul 9 11:37 'Screenshot from 2024-07-09 11-37-48.png'
-rw-r--r-- 1 einfochips einfochips 392020 Jul 9 11:37 'Screenshot from 2024-07-09 11-37-54.png'
-rw-r--r-- 1 einfochips einfochips 446573 Jul 9 11:38 'Screenshot from 2024-07-09 11-38-27.png'
-rw-r--r-- 1 einfochips einfochips 449993 Jul 9 11:38 'Screenshot from 2024-07-09 11-38-36.png'
-rw-r--r-- 1 einfochips einfochips 162280 Jul 9 11:39 'Screenshot from 2024-07-09 11-39-06.png'
-rw-r--r-- 1 einfochips devteam 137 Jul 9 10:40 server_config.txt
einfochips@PUNELPT0728:~/DevOps-assessment/Assessment 1$ sudo chown developer:devteam server_config.txt
[sudo] password for einfochips:
chown: invalid user: 'developer:devteam'
einfochips@PUNELPT0728:~/DevOps-assessment/Assessment 1$
```

Part 4: Controlling Services and Daemons (20 minutes)

Scenario: Manage the web server service to ensure it is running correctly and starts on boot.

```
Activities Terminal Jul 9 11:37
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite

einfochips@PUNELPT0728:~/devOps-Accessment$ ls -l server_config.txt
-rw-r--r-- 1 developer devteam 137 Jul 9 10:40 server_config.txt

einfochips@PUNELPT0728:~/devOps-Accessment$ sudo systemctl status apache2.service
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2024-07-09 10:04:45 IST; 42min ago
     Docs: https://httpd.apache.org/docs/2.4/
   Process: 1025 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
    Main PID: 1171 (apache2)
      Tasks: 55 (limit: 38204)
     Memory: 7.7M
      CGroup: /system.slice/apache2.service
              └─1171 /usr/sbin/apache2 -k start
                  └─1173 /usr/sbin/apache2 -k start
                      └─1174 /usr/sbin/apache2 -k start

Jul 09 10:04:45 PUNELPT0728 systemd[1]: Starting The Apache HTTP Server...
Jul 09 10:04:45 PUNELPT0728 apachectl[1086]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name; it must be set via the 'ServerName' directive either in the main config or in the  config file
Jul 09 10:04:45 PUNELPT0728 systemd[1]: Started The Apache HTTP Server.

einfochips@PUNELPT0728:~/devOps-Accessment$ sudo systemctl start apache2
einfochips@PUNELPT0728:~/devOps-Accessment$ sudo systemctl stop apache2
einfochips@PUNELPT0728:~/devOps-Accessment$ sudo systemctl enable apache2
Synchronizing state of apache2.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable apache2
einfochips@PUNELPT0728:~/devOps-Accessment$ sudo systemctl disable apache2
Synchronizing state of apache2.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install disable apache2
Removed /etc/systemd/system/multi-user.target.wants/apache2.service.
einfochips@PUNELPT0728:~/devOps-Accessment$ sudo systemctl status apache2.service
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; disabled; vendor preset: enabled)
   Active: inactive (dead)
     Docs: https://httpd.apache.org/docs/2.4/

Jul 09 10:04:45 PUNELPT0728 systemd[1]: Starting The Apache HTTP Server...
Jul 09 10:04:45 PUNELPT0728 apachectl[1086]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name; it must be set via the 'ServerName' directive either in the main config or in the  config file
Jul 09 10:04:45 PUNELPT0728 systemd[1]: Started The Apache HTTP Server.
Jul 09 10:04:23 PUNELPT0728 systemd[1]: Stopping The Apache HTTP Server...
Jul 09 10:04:23 PUNELPT0728 apachectl[36113]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name; it must be set via the 'ServerName' directive either in the main config or in the  config file
Jul 09 10:04:23 PUNELPT0728 systemd[1]: apache2.service: Succeeded.
Jul 09 10:04:23 PUNELPT0728 systemd[1]: Stopped The Apache HTTP Server.

einfochips@PUNELPT0728:~/devOps-Accessment$ ps aux
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1   0.0  0.0  17162 13616 ?        Ss   10:04   0:05/sbin/init splash
root         2   0.0  0.0      0   0 ?        S    10:04   0:00/[kthreadd]
root         3   0.0  0.0      0   0 ?        I<-  10:04   0:00/[rcu_gp]
root         4   0.0  0.0      0   0 ?        I<-  10:04   0:00/[rcu_par_gp]
root         5   0.0  0.0      0   0 ?        I<-  10:04   0:00/[slub_flushq]
root         6   0.0  0.0      0   0 ?        I<-  10:04   0:00/[netns]
root         8   0.0  0.0      0   0 ?        I<-  10:04   0:00/[kworker/0:0H-events_highpri]
root        10   0.0  0.0      0   0 ?        I<-  10:04   0:00/[rmw_percpu_wq]
root        11   0.0  0.0      0   0 ?        S    10:04   0:00/[rcu_tasks_rude_]
root        12   0.0  0.0      0   0 ?        S    10:04   0:00/[rcu_tasks_trace]
root        13   0.0  0.0      0   0 ?        S    10:04   0:00/[ksftirqd/0]
```

```
Activities Terminal Jul 9 11:37
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite

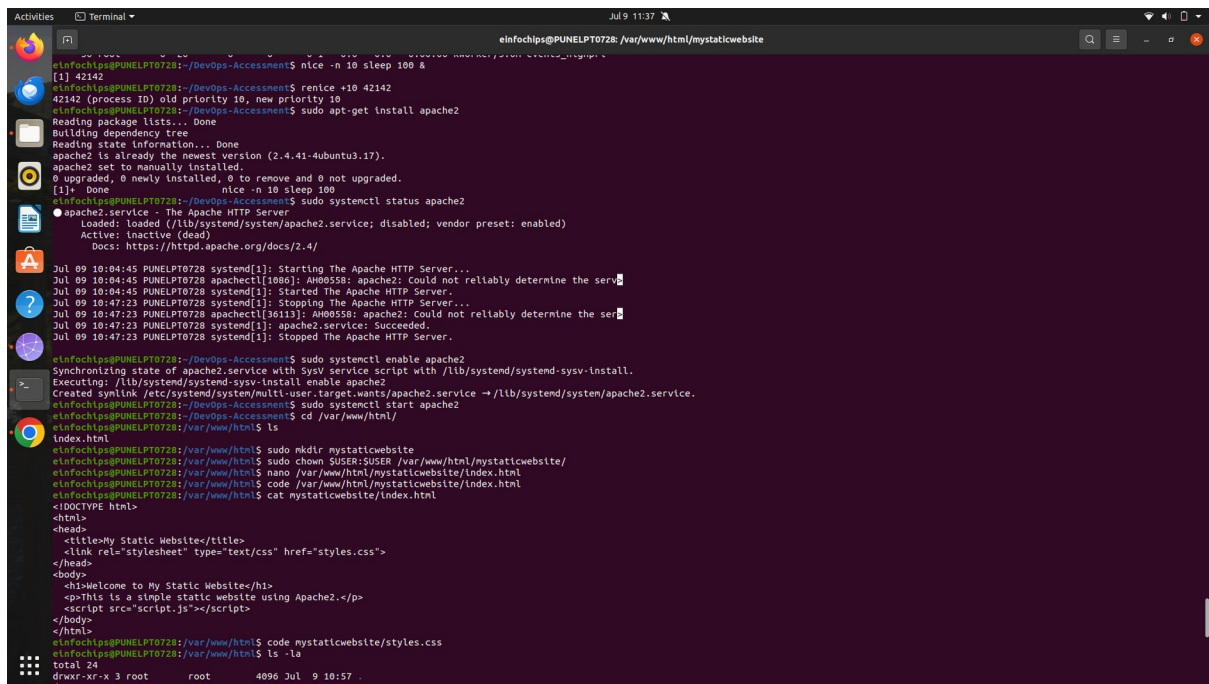
einfochips@PUNELPT0728:~/devOps-Accessment$ http
einfochips@PUNELPT0728:~/devOps-Accessment$ kill 7414
einfochips@PUNELPT0728:~/devOps-Accessment$ top

top - 10:50:38 up 45 min, 1 user, load average: 0.35, 0.35, 0.44
Tasks: 409 total, 1 running, 408 sleeping, 0 stopped, 0 zombie
  Cpu(s):  0.8 us,  0.9 sy,  0.0 ni, 98.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
 Mem:   31929.5 total, 23148.2 free,  3979.2 used,  4802.0 buff/cache
 MemSwap: 2048.0 total,  2048.0 free,    0.0 used,  27388.1 avail Mem

   PID USER      PR  NI    VIRT    RES    SHR   S  %CPU  %MEM     TIME+ COMMAND
 1330 root        20   0 1036432 89128 48516 S   3.0   0.2   0:37.71 wdavdaemon
2081 einfoch+  20   0  24.20 77744 48740 S   2.7   0.2   0:23.27 Xorg
1054 root        20   0 1076080 136372 57880 S   2.3   0.4   0:39.83 wdavdaemon
 280 root       -51   0      0      0      0 S   1.3   0.0   0:08.48 lrq/74-ELAN0711
1454 root        20   0 271820 23096 16376 S   1.3   0.1   0:09.08 telemed_v2
2729 einfoch+  20   0 4483088 415480 140994 S   0.7   1.3   1:10.04 gnome-shell
5096 einfoch+  20   0 825156 56380 40572 S   0.7   0.2   0:11.99 gnome-terminal-
 784 root      -51   0      0      0      0 S   0.3   0.0   0:47.04 lrq/182-nvidia
 786 root        20   0      0      0      0 S   0.3   0.0   0:00.31 mv_queue
1252 root        20   0 1407844 49356 18032 S   0.3   0.2   0:07.83 TantumClient
1266 root        20   0 3639476 33960 10540 S   0.3   0.1   0:07.30 TantumCX
1361 root        20   0 929440 46844 23436 S   0.3   0.1   0:05.31 TantumCX
1392 root        20   0 778852 27876 24020 S   0.3   0.1   0:02.13 TantumCX
1639 root        20   0 857856 28848 21948 S   0.3   0.1   0:02.17 TantumCX
1661 root        20   0 770812 19280 16968 S   0.3   0.1   0:02.00 TantumCX
2786 einfoch+  20   0 102924  6560  9316 S   0.3   0.0   0:00.25 at-spi2-registr
7191 einfoch+  20   0 32.4g 131340 98320 S   0.3   0.4   0:31.41 chrome
40586 einfoch+  20   0 12240  4296  3240 R   0.3   0.0   0:00.05 top
   1 root        20   0 171072 13636 6352 S   0.0   0.0   0:05.85 systemd
   2 root        20   0      0      0      0 S   0.0   0.0   0:00.00 kthreadd
   3 root       -20   0      0      0      0 I   0.0   0.0   0:00.00 rcu_gp
   4 root       -20   0      0      0      0 I   0.0   0.0   0:00.00 rcu_par_gp
   5 root       -20   0      0      0      0 I   0.0   0.0   0:00.00 slub_flushq
   6 root       -20   0      0      0      0 I   0.0   0.0   0:00.00 netns
   8 root       -20   0      0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
  10 root       -20   0      0      0      0 I   0.0   0.0   0:00.00 rmw_percpu_wq
  11 root        20   0      0      0      0 S   0.0   0.0   0:00.00 rcu_tasks_rude_
  12 root        20   0      0      0      0 S   0.0   0.0   0:00.00 rcu_tasks_trace
  13 root        20   0      0      0      0 I   0.0   0.0   0:00.03 ksoftirqd/0
  14 root        20   0      0      0      0 I   0.0   0.0   0:01.08 rcu_sched
  15 root      rt   0      0      0      0 S   0.0   0.0   0:00.01 migration/0
  16 root       -51   0      0      0      0 S   0.0   0.0   0:00.00 idle_inject/0
  18 root        20   0      0      0      0 S   0.0   0.0   0:00.00 cpuhp/0
  19 root        20   0      0      0      0 S   0.0   0.0   0:00.00 cpuhp/1
  20 root       -51   0      0      0      0 S   0.0   0.0   0:00.00 idle_inject/1
  21 root        20   0      0      0      0 S   0.0   0.0   0:00.13 migration/1
  22 root        20   0      0      0      0 I   0.0   0.0   0:00.02 ksoftirqd/1
  24 root       -20   0      0      0      0 I   0.0   0.0   0:00.00 kworker/1:0H-events_highpri
  25 root        20   0      0      0      0 S   0.0   0.0   0:00.00 cpuhp/2
  26 root       -51   0      0      0      0 S   0.0   0.0   0:00.00 idle_inject/2
  27 root      rt   0      0      0      0 S   0.0   0.0   0:00.13 migration/2
  28 root        20   0      0      0      0 S   0.0   0.0   0:00.01 ksoftirqd/2
  30 root       -20   0      0      0      0 I   0.0   0.0   0:00.00 kworker/2:0H-kblockd
  31 root        20   0      0      0      0 S   0.0   0.0   0:00.00 cpuhp/3
  32 root       -51   0      0      0      0 S   0.0   0.0   0:00.00 idle_inject/3
```

Part 5: Process Handling (20 minutes)

Scenario: Monitor and manage processes to ensure the server is performing optimally.



```
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite
einfochips@PUNELPT0728:~/DevOps-Assessment$ nice -n 10 sleep 100 &
[1] 42142
einfochips@PUNELPT0728:~/DevOps-Assessment$ renice +10 42142
42142 (process ID) old priority 10, new priority 10
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo apt-get install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
apache2 is already the newest version (2.4.41-4ubuntu3.17).
apache2 set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
[1]+  Done                  nice -n 10 sleep 100
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; disabled; vendor preset: enabled)
   Active: inactive (dead)
     Docs: https://httpd.apache.org/docs/2.4/

Jul 09 10:04:45 PUNELPT0728 systemd[1]: Starting The Apache HTTP Server...
Jul 09 10:04:45 PUNELPT0728 apache2[1080]: AH00558: apache2: Could not reliably determine the serv
Jul 09 10:04:45 PUNELPT0728 systemd[1]: Started The Apache HTTP Server.
Jul 09 10:47:23 PUNELPT0728 systemd[1]: Stopping The Apache HTTP Server...
Jul 09 10:47:23 PUNELPT0728 apache2[1081]: AH00558: apache2: Could not reliably determine the se
Jul 09 10:47:23 PUNELPT0728 systemd[1]: apache2.service: Succeeded.
Jul 09 10:47:23 PUNELPT0728 systemd[1]: Stopped The Apache HTTP Server.

einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo systemctl enable apache2
Synchronizing state of apache2.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable apache2
Created symlink /etc/systemd/system/multi-user.target.wants/apache2.service → /lib/systemd/system/apache2.service.
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo systemctl start apache2
einfochips@PUNELPT0728:~/DevOps-Assessment$ cd /var/www/html/
einfochips@PUNELPT0728:~/DevOps-Assessment$ ls
index.html
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo mkdir mystaticwebsite
einfochips@PUNELPT0728:~/DevOps-Assessment$ sudo chown $USER:$USER /var/www/html/mystaticwebsite/
einfochips@PUNELPT0728:~/DevOps-Assessment$ nano /var/www/html/mystaticwebsite/index.html
einfochips@PUNELPT0728:~/DevOps-Assessment$ code /var/www/html/mystaticwebsite/index.html
einfochips@PUNELPT0728:~/DevOps-Assessment$ cat mystaticwebsite/index.html
<!DOCTYPE html>
<html>
<head>
<title>My Static Website</title>
<link rel="stylesheet" type="text/css" href="styles.css">
</head>
<body>
<h1>Welcome to My Static Website</h1>
<p>This is a simple static website using Apache2.</p>
<script src="script.js"></script>
</body>
</html>
einfochips@PUNELPT0728:~/DevOps-Assessment$ code mystaticwebsite/styles.css
einfochips@PUNELPT0728:~/DevOps-Assessment$ ls -la
total 24
drwxr-xr-x 3 root root 4096 Jul 9 10:57 .
drwxr-xr-x 3 root root 4096 Jul 9 10:57 ..
```

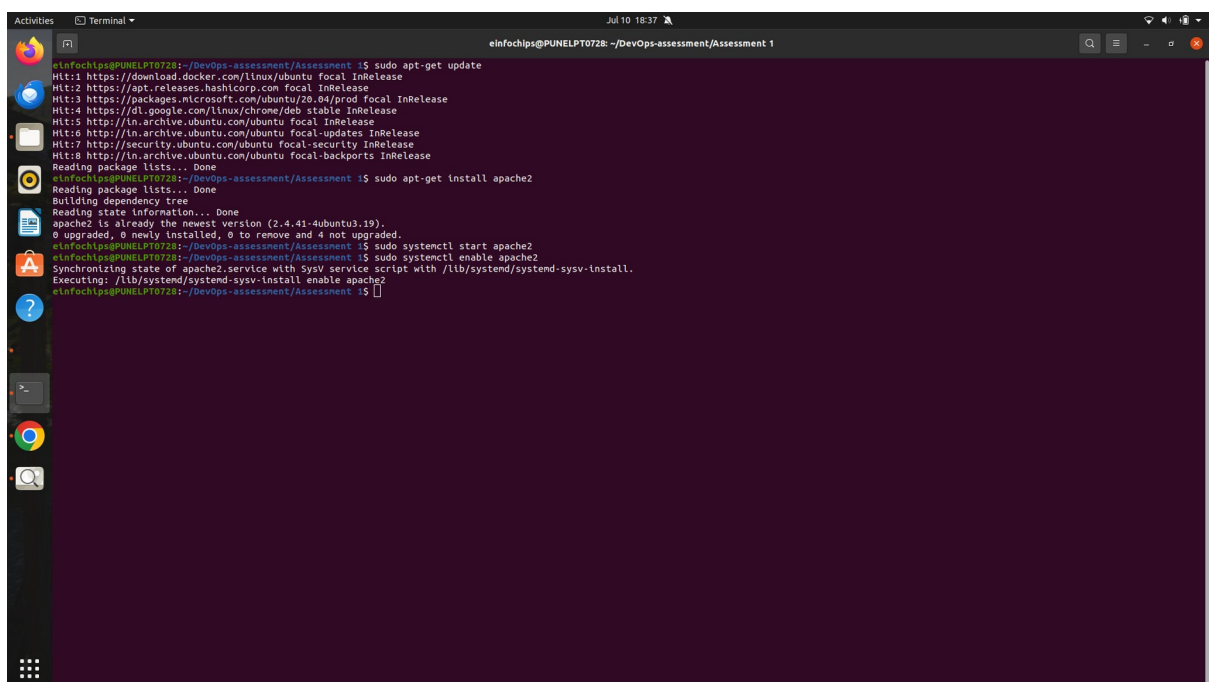
Creating and Deploying a Static Website with Apache2

Preparation (5 minutes)

- Ensure you have access to a Linux environment (e.g., virtual machines, EC2 instances, or local installations) with sudo privileges.

Activity Breakdown

Part 1: Installing Apache2 (5 minutes)



```
einfochips@PUNELPT0728: ~/DevOps-assessment/Assessment 1
einfochips@PUNELPT0728:~/DevOps-assessment/Assessment 1$ sudo apt-get update
Hit:1 https://download.docker.com/linux/ubuntu focal InRelease
Hit:2 https://apt.releases.hashicorp.com focal InRelease
Hit:3 https://packages.microsoft.com/ubuntu/20.04/prod focal InRelease
Hit:4 https://dl.google.com/linux/chrome/deb stable InRelease
Hit:5 http://ln.archive.ubuntu.com/ubuntu focal InRelease
Hit:6 http://ln.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:7 http://security.ubuntu.com/ubuntu focal-security InRelease
Hit:8 http://ln.archive.ubuntu.com/ubuntu focal-backports InRelease
Reading package lists... Done
einfochips@PUNELPT0728:~/DevOps-assessment/Assessment 1$ sudo apt-get install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
apache2 is already the newest version (2.4.41-4ubuntu3.19).
0 upgraded, 0 newly installed, 0 to remove and 4 not upgraded.
einfochips@PUNELPT0728:~/DevOps-assessment/Assessment 1$ sudo systemctl start apache2
einfochips@PUNELPT0728:~/DevOps-assessment/Assessment 1$ sudo systemctl enable apache2
Synchronizing state of apache2.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable apache2
einfochips@PUNELPT0728:~/DevOps-assessment/Assessment 1$
```

Part 2: Creating the Website (10 minutes)


```
Activities Terminal Jul 9 11:37
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite

einfochips@PUNELPT0728:~/DevOps-Accessment$ nice -n 10 sleep 100 &
[1] 42142
einfochips@PUNELPT0728:~/DevOps-Accessment$ renice +10 42142
42142 (process ID) old priority 10, new priority 10
einfochips@PUNELPT0728:~/DevOps-Accessment$ sudo apt-get install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
apache2 is already the newest version (2.4.41-4ubuntu3.17).
apache2 set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
einfochips@PUNELPT0728:~/DevOps-Accessment$ sudo systemctl status apache2
[1]+ Done nice -n 10 sleep 100
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; disabled; vendor preset: enabled)
   Active: inactive (dead)
     Docs: https://httpd.apache.org/docs/2.4/

Jul 09 10:04:45 PUNELPT0728 systemd[1]: Starting The Apache HTTP Server...
Jul 09 10:04:45 PUNELPT0728 apache2ctl[1080]: AH00558: apache2: Could not reliably determine the serv
Jul 09 10:04:45 PUNELPT0728 systemd[1]: Started The Apache HTTP Server.
Jul 09 10:04:23 PUNELPT0728 systemd[1]: Stopping The Apache HTTP Server...
Jul 09 10:04:23 PUNELPT0728 apache2ctl[3611]: AH00558: apache2: Could not reliably determine the se
Jul 09 10:04:23 PUNELPT0728 systemd[1]: apache2.service: Succeeded.
Jul 09 10:04:23 PUNELPT0728 systemd[1]: Stopped The Apache HTTP Server.

einfochips@PUNELPT0728:~/DevOps-Accessment$ sudo systemctl enable apache2
Synchronizing state of apache2.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable apache2
Created symlink /etc/systemd/system/multi-user.target.wants/apache2.service → /lib/systemd/system/apache2.service.
einfochips@PUNELPT0728:~/DevOps-Accessment$ sudo systemctl start apache2
einfochips@PUNELPT0728:~/DevOps-Accessment$ cd /var/www/html/
einfochips@PUNELPT0728: /var/www/html$ ls
Index.html
einfochips@PUNELPT0728: /var/www/html$ sudo mkdir mystaticwebsite
einfochips@PUNELPT0728: /var/www/html$ sudo chown $USER:$USER /var/www/html/mystaticwebsite/
einfochips@PUNELPT0728: /var/www/html$ nano /var/www/html/mystaticwebsite/index.html
einfochips@PUNELPT0728: /var/www/html$ code /var/www/html/mystaticwebsite/index.html
einfochips@PUNELPT0728: /var/www/html$ cat mystaticwebsite/index.html
<!DOCTYPE html>
<html>
<head>
<title>My Static Website</title>
<link rel="stylesheet" type="text/css" href="styles.css">
</head>
<body>
<h1>Welcome to My Static Website</h1>
<p>This is a simple static website using Apache2.</p>
<script src="script.js"></script>
</body>
</html>
einfochips@PUNELPT0728: /var/www/html$ code mystaticwebsite/styles.css
einfochips@PUNELPT0728: /var/www/html$ ls -la
total 24
drwxr-xr-x 3 root root 4096 Jul 9 10:57 .
drwxr-xr-x 3 root root 4096 Jul 9 10:57 ..
drwxr-xr-x 2 root root 4096 Jul 9 10:57 mystaticwebsite
```

Part 3: Configuring Apache2 to Serve the Website (10 minutes)

```
Activities Terminal Jul 9 11:38
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite

Index.html styles.css
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ ls -la
total 16
drwxr-xr-x 2 einfochips einfochips 4096 Jul 9 11:02 .
drwxr-xr-x 3 root root 4096 Jul 9 10:57 ..
-rw-rw-r-- 1 einfochips einfochips 288 Jul 9 11:00 Index.html
-rw-rw-r-- 1 einfochips einfochips 168 Jul 9 11:02 styles.css
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ code scripts.js
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ ls -la
total 20
drwxr-xr-x 2 einfochips einfochips 4096 Jul 9 11:04 .
drwxr-xr-x 3 root root 4096 Jul 9 10:57 ..
-rw-rw-r-- 1 einfochips einfochips 288 Jul 9 11:00 Index.html
-rw-rw-r-- 1 einfochips einfochips 101 Jul 9 11:04 scripts.js
-rw-rw-r-- 1 einfochips einfochips 168 Jul 9 11:02 styles.css
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ cp ~/Downloads/einfochips-logo.png /var/www/html/mystaticwebsite/logo.png
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ code index.html
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ sudo code /etc/apache2/sites-available/mystaticwebsite.conf
mkdirt: cannot create directory '/': No such file or directory
You are trying to start Visual Studio Code as a super user which isn't recommended. If this was intended, please add the argument '--no-sandbox' and specify an alternate user data directory using the '--user-data-dir' argument.
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ sudo nano /etc/apache2/sites-available/mystaticwebsite.conf
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ sudo code /etc/apache2/sites-available/mystaticwebsite.conf
mkdirt: cannot create directory '/': No such file or directory
You are trying to start Visual Studio Code as a super user which isn't recommended. If this was intended, please add the argument '--no-sandbox' and specify an alternate user data directory using the '--user-data-dir' argument.
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ sudo nano /etc/apache2/sites-available/mystaticwebsite.conf
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ sudo code /etc/apache2/sites-available/mystaticwebsite.conf
mkdirt: cannot create directory '/': No such file or directory
You are trying to start Visual Studio Code as a super user which isn't recommended. If this was intended, please add the argument '--no-sandbox' and specify an alternate user data directory using the '--user-data-dir' argument.
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ sudo nano /etc/apache2/sites-available/mystaticwebsite.conf
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ cat /etc/apache2/sites-available/mystaticwebsite.conf
<VirtualHost *:80>
    ServerAdmin webmaster@localhost
    DocumentRoot /var/www/html/mystaticwebsite
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ sudo a2dissite 000-default.conf
Site 000-default disabled.
To activate the new configuration, you need to run:
    systemctl reload apache2
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ sudo systemctl reload apache2.service
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ sudo a2ensite mystaticwebsite.conf
Enabling site mystaticwebsite.
To activate the new configuration, you need to run:
    systemctl reload apache2
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$ sudo systemctl reload apache2.service
einfochips@PUNELPT0728: /var/www/html/mystaticwebsite$
```

