

Task 1: **Creating and Editing Text Files:** documented the configurations and settings for a new server. Used different text editors to create and update these documents.

```
einfochips@AHMLPT1707: ~  
Adding 'diversion of /usr/share/vim/vim82/doc/tags to /usr/share/vim/vim82/doc/t  
ags.vim-tiny by vim-runtime'  
Unpacking vim-runtime (2:8.2.3995-1ubuntu2.17) ...  
Selecting previously unselected package vim.  
Preparing to unpack .../vim_2%3a8.2.3995-1ubuntu2.17_amd64.deb ...  
Unpacking vim (2:8.2.3995-1ubuntu2.17) ...  
Setting up vim-runtime (2:8.2.3995-1ubuntu2.17) ...  
Setting up vim (2:8.2.3995-1ubuntu2.17) ...  
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vim (vim) in a  
uto mode  
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vimdiff (vimdi  
ff) 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 aut  
o 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 aut  
o mode  
Processing triggers for man-db (2.10.2-1) ...  
einfochips@AHMLPT1707:~$ vim server_config.txt
```

```
einfochips@AHMLPT1707: ~  
einfochips@AHMLPT1707:~$ nano server_config.txt  
einfochips@AHMLPT1707:~$ vi server_config.txt  
einfochips@AHMLPT1707:~$ vim server_config.txt  
Command 'vim' not found, but can be installed with:  
sudo apt install vim          # version 2:8.2.3995-1ubuntu2.13, or  
sudo apt install vim-tiny     # version 2:8.2.3995-1ubuntu2.13  
sudo apt install neovim       # version 0.6.1-3  
sudo apt install vim-athena    # version 2:8.2.3995-1ubuntu2.13  
sudo apt install vim-gtk3      # version 2:8.2.3995-1ubuntu2.13  
sudo apt install vim-nox       # version 2:8.2.3995-1ubuntu2.13  
einfochips@AHMLPT1707:~$ sudo apt install vim  
[sudo] password for einfochips:  
Reading package lists... Done  
Building dependency tree... Done  
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 vim-runtime  
0 upgraded, 2 newly installed, 0 to remove and 7 not upgraded.  
Need to get 8,561 kB of archives.  
After this operation, 37.6 MB of additional disk space will be used.
```

Task 2: User & Group Management: Set up user accounts and groups for a new team joining the project

```
einfochips@AHMLPT1707: ~  
einfochips@AHMLPT1707:~$ sudo adduser developer  
Adding user `developer' ...  
Adding new group `developer' (1002) ...  
Adding new user `developer' (1001) with group `developer' ...  
The home directory `/home/developer' already exists. Not copying from `/etc/skel'.  
adduser: Warning: The home directory `/home/developer' does not belong to the user you are currently creating.  
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@AHMLPT1707:~$ sudo groupadd devteam  
groupadd: group 'devteam' already exists  
einfochips@AHMLPT1707:~$ sudo usermod -aG devteam developer  
einfochips@AHMLPT1707:~$ sudo chown developer:devteam server_config.txt  
einfochips@AHMLPT1707:~$ ls -l server config.txt
```

Task 3: File Permission Management: Ensuring that only the appropriate users have access to specific files and directories.

```
einfochips@AHMLPT1707: ~  
Adding new group 'developer' (1002) ...  
Adding new user 'developer' (1001) with group 'developer' ...  
The home directory '/home/developer' already exists. Not copying from '/etc/ske  
l'.  
adduser: Warning: The home directory '/home/developer' does not belong to the us  
er you are currently creating.  
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@AHMLPT1707:~$ sudo groupadd devteam  
groupadd: group 'devteam' already exists  
einfochips@AHMLPT1707:~$ sudo usermod -aG devteam developer  
einfochips@AHMLPT1707:~$ sudo chown developer:devteam server_config.txt  
einfochips@AHMLPT1707:~$ ls -l server_config.txt  
-rw-r--r-- 1 developer devteam 96 Jul  9 10:37 server_config.txt  
einfochips@AHMLPT1707:~$
```

Task 4: Controlling Services and Daemons: Managed the web server service to ensure it is running correctly and starts on boot.

```
einfochips@AHMLPT1707: ~  
Processing triggers for ufw (0.36.1-4ubuntu0.1) ...  
einfochips@AHMLPT1707:~$ sudo systemctl enable apache2  
Synchronizing state of apache2.service with SysV service script with /lib/system  
d/systemd-sysv-install.  
Executing: /lib/systemd/systemd-sysv-install enable apache2  
einfochips@AHMLPT1707:~$ sudo systemctl start apache2  
einfochips@AHMLPT1707:~$ sudo systemctl stop apache2  
einfochips@AHMLPT1707:~$ sudo systemctl status apache2  
○ apache2.service - The Apache HTTP Server  
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor prese  
   Active: inactive (dead) since Tue 2024-07-09 11:04:05 IST; 21s ago  
   Docs: https://httpd.apache.org/docs/2.4/  
   Process: 54644 ExecStop=/usr/sbin/apachectl graceful-stop (code=exited, sta  
   Main PID: 52685 (code=exited, status=0/SUCCESS)  
   CPU: 81ms  
  
Jul 09 11:00:22 AHMLPT1707 systemd[1]: Starting The Apache HTTP Server...  
Jul 09 11:00:22 AHMLPT1707 apachectl[52684]: AH00558: apache2: Could not reliab  
Jul 09 11:00:22 AHMLPT1707 systemd[1]: Started The Apache HTTP Server.  
Jul 09 11:04:05 AHMLPT1707 systemd[1]: Stopping The Apache HTTP Server...  
Jul 09 11:04:05 AHMLPT1707 apachectl[54646]: AH00558: apache2: Could not reliab  
Jul 09 11:04:05 AHMLPT1707 systemd[1]: apache2.service: Deactivated successfull  
Jul 09 11:04:05 AHMLPT1707 systemd[1]: Stopped The Apache HTTP Server.  
lines 1-15/15 (END)
```

Task 5: Process Handling: Monitored and managed processes to ensure the server is performing optimally

```
einfochips@AHMLPT1707: ~  
einfochips@AHMLPT1707:~$ top  
top - 11:12:47 up 17:18, 2 users, load average: 1.14, 0.88, 1.03  
Tasks: 326 total, 1 running, 325 sleeping, 0 stopped, 0 zombie  
%Cpu(s): 1.4 us, 1.2 sy, 0.0 ni, 97.3 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st  
MiB Mem : 15797.7 total, 7016.2 free, 3297.2 used, 5484.4 buff/cache  
MiB Swap: 15259.0 total, 15259.0 free, 0.0 used. 10995.2 avail Mem
```

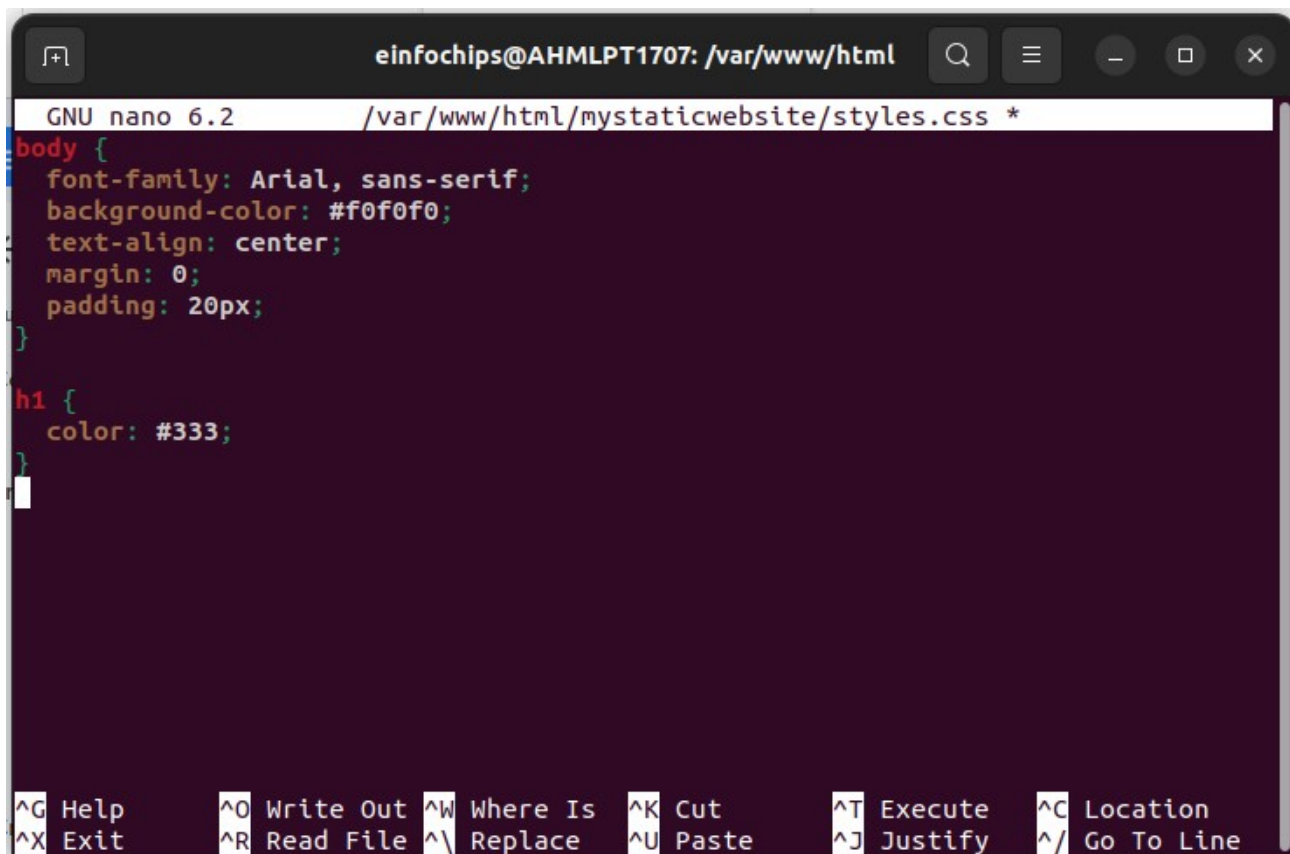
PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
37272	einfoch+	20	0	556084	53492	40228	S	5.3	0.3	0:15.53	gnome-t+
2124	einfoch+	20	0	5923736	329748	147500	S	5.0	2.0	13:11.25	gnome-s+
18747	einfoch+	20	0	1136.1g	333428	127492	S	2.6	2.1	2:45.33	outlook+
199	root	-51	0	0	0	0	S	2.0	0.0	0:15.36	irq/51+
26673	root	20	0	1401056	45064	18604	S	1.0	0.3	0:14.56	TaniumC+
18787	einfoch+	20	0	1131.5g	175280	124544	S	0.7	1.1	0:18.47	teams-f+
1	root	20	0	168248	13236	8116	S	0.3	0.1	0:11.81	systemd
397	root	-51	0	0	0	0	S	0.3	0.0	0:02.74	irq/139+
555	systemd+	20	0	14836	6784	6016	S	0.3	0.0	0:10.44	systemd+
655	root	20	0	276232	10496	9600	S	0.3	0.1	0:17.01	thermald
721	root	20	0	1156452	134576	56880	S	0.3	0.8	0:20.74	wdavdae+
2334	einfoch+	20	0	389024	11796	6912	S	0.3	0.1	0:12.83	ibus-da+
2492	einfoch+	20	0	163484	7168	6528	S	0.3	0.0	0:04.28	ibus-en+
4586	mdatp	20	0	883152	171024	68736	S	0.3	1.1	0:35.52	wdavdae+

Part 2: Creating a website

1. Creating HTML file and using nano to edit the file

```
einfochips@AHMLPT1707: /var/www/html  
GNU nano 6.2 /var/www/html/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>  
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute  ^C Location  
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify  ^_ Go To Line
```

2. Created CSS file and using nano to edit the file



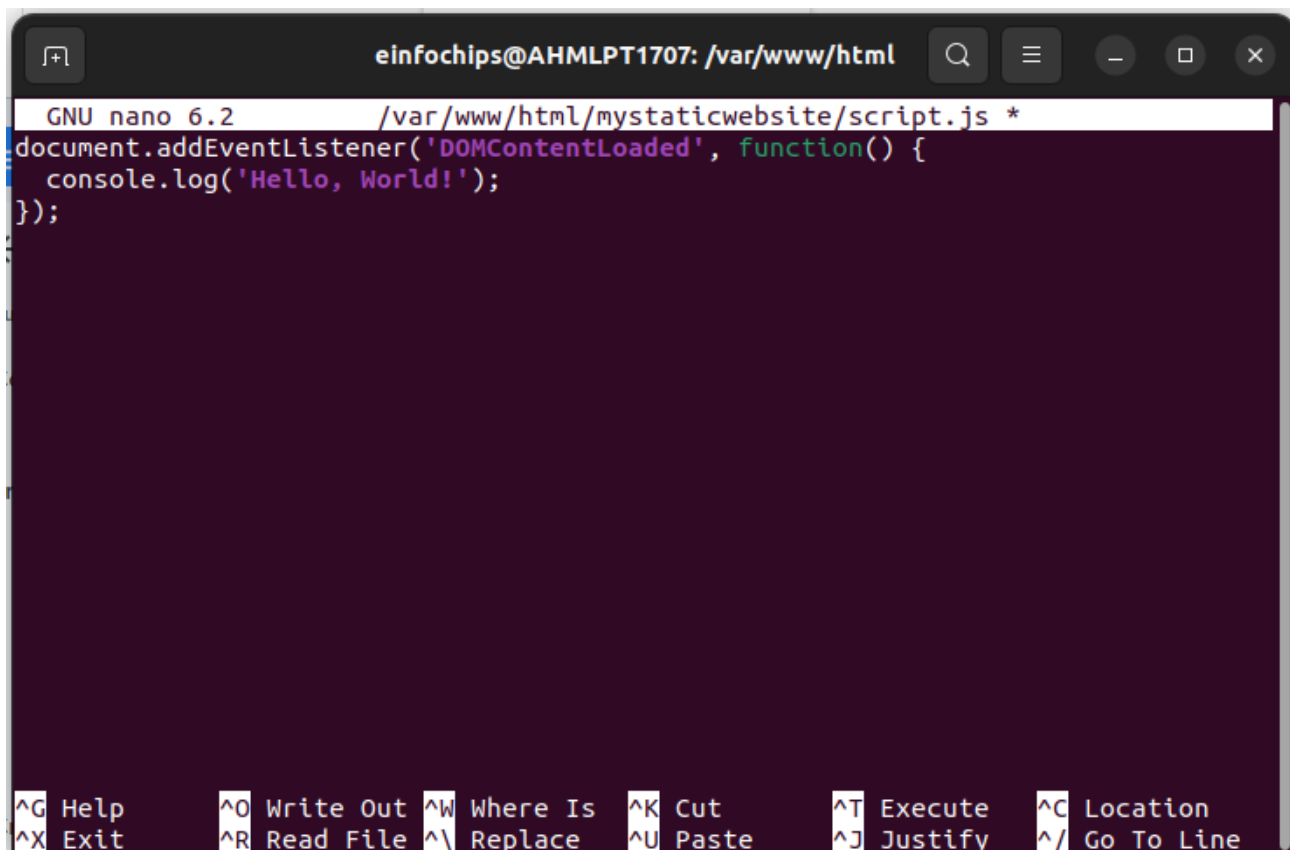
The screenshot shows a terminal window with the title bar "einfochips@AHMLPT1707: /var/www/html". The terminal displays the GNU nano 6.2 editor editing the file "/var/www/html/mystaticwebsite/styles.css". The CSS code is as follows:

```
body {
  font-family: Arial, sans-serif;
  background-color: #f0f0f0;
  text-align: center;
  margin: 0;
  padding: 20px;
}

h1 {
  color: #333;
}
```

The bottom of the terminal shows the nano editor's command shortcuts: ^G Help, ^X Exit, ^O Write Out, ^R Read File, ^W Where Is, ^\ Replace, ^K Cut, ^U Paste, ^T Execute, ^J Justify, ^C Location, and ^_ Go To Line.

3. Created JS file and using nano to edit the file



The screenshot shows a terminal window with the title bar "einfochips@AHMLPT1707: /var/www/html". The terminal displays the GNU nano 6.2 editor editing the file "/var/www/html/mystaticwebsite/script.js". The JavaScript code is as follows:

```
document.addEventListener('DOMContentLoaded', function() {
  console.log('Hello, World!');
});
```

The bottom of the terminal shows the nano editor's command shortcuts: ^G Help, ^X Exit, ^O Write Out, ^R Read File, ^W Where Is, ^\ Replace, ^K Cut, ^U Paste, ^T Execute, ^J Justify, ^C Location, and ^_ Go To Line.

4.Adding and image

```
einfochips@AHMLPT1707: /var/www/html
einfochips@AHMLPT1707:~$ ipconfig
Command 'ipconfig' not found, did you mean:
  command 'iwconfig' from deb wireless-tools (30~pre9-13.1ubuntu4)
  command 'ifconfig' from deb net-tools (1.60+git20181103.0eebece-1ubuntu5)
  command 'iconfig' from deb ipmiutil (3.1.8-1)
Try: sudo apt install <deb name>
einfochips@AHMLPT1707:~$ cd /var/www/^C
einfochips@AHMLPT1707:~$ cd /var/www/html
einfochips@AHMLPT1707:/var/www/html$ sudo mkdir mystaticwebsite
einfochips@AHMLPT1707:/var/www/html$ sudo chown -R $USER:$USER /var/www/html/mys
taticwebsite
einfochips@AHMLPT1707:/var/www/html$ nano /var/www/html/mystaticwebsite/index.ht
ml
einfochips@AHMLPT1707:/var/www/html$ nano /var/www/html/mystaticwebsite/styles.c
ss
einfochips@AHMLPT1707:/var/www/html$ nano /var/www/html/mystaticwebsite/script.j
s
einfochips@AHMLPT1707:/var/www/html$ cp /home/einfochips/Downloads/test.jpg ^[[2
00~/var/www/html/mystaticwebsite/logo.png
cp: cannot create regular file '$'\033'[200~/var/www/html/mystaticwebsite/logo
.png': No such file or directory
einfochips@AHMLPT1707:/var/www/html$ cp /home/einfochips/Downloads/test.jpg /var
/www/html/mystaticwebsite/test.jpg
einfochips@AHMLPT1707:/var/www/html$
```

Part 3: Configuring Apache2 to Serve the Website

1: Created and edited a Virtual Host File

```
einfochips@AHMLPT1707: /var/www/html
GNU nano 6.2 /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>

^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute  ^C Location
^X Exit      ^R Read File ^\ Replace  ^U Paste     ^J Justify  ^_ Go To Line
```

2. Enabled the New Virtual Host

```
einfochips@AHMLPT1707: /var/www/html
einfochips@AHMLPT1707:/var/www/html$ sudo chown -R $USER:$USER /var/www/html/mystaticwebsite
einfochips@AHMLPT1707:/var/www/html$ nano /var/www/html/mystaticwebsite/index.html
einfochips@AHMLPT1707:/var/www/html$ nano /var/www/html/mystaticwebsite/styles.css
einfochips@AHMLPT1707:/var/www/html$ nano /var/www/html/mystaticwebsite/script.js
einfochips@AHMLPT1707:/var/www/html$ cp /home/einfochips/Downloads/test.jpg ^[[200~/var/www/html/mystaticwebsite/logo.png
cp: cannot create regular file ''$'\033''[200~/var/www/html/mystaticwebsite/logo.png': No such file or directory
einfochips@AHMLPT1707:/var/www/html$ cp /home/einfochips/Downloads/test.jpg /var/www/html/mystaticwebsite/test.jpg
einfochips@AHMLPT1707:/var/www/html$ nano /var/www/html/mystaticwebsite/index.html
einfochips@AHMLPT1707:/var/www/html$ sudo nano /etc/apache2/sites-available/mystaticwebsite.conf
[sudo] password for einfochips:
einfochips@AHMLPT1707:/var/www/html$ sudo a2ensite mystaticwebsite.conf
Enabling site mystaticwebsite.
To activate the new configuration, you need to run:
    systemctl reload apache2
einfochips@AHMLPT1707:/var/www/html$ systemctl reload apache2
```

3. Disabled the New Virtual Host

```
einfochips@AHMLPT1707: /var/www/html
einfochips@AHMLPT1707:/var/www/html$ nano /var/www/html/mystaticwebsite/styles.css
einfochips@AHMLPT1707:/var/www/html$ nano /var/www/html/mystaticwebsite/script.js
einfochips@AHMLPT1707:/var/www/html$ cp /home/einfochips/Downloads/test.jpg ^[[200~/var/www/html/mystaticwebsite/logo.png
cp: cannot create regular file ''$'\033''[200~/var/www/html/mystaticwebsite/logo.png': No such file or directory
einfochips@AHMLPT1707:/var/www/html$ cp /home/einfochips/Downloads/test.jpg /var/www/html/mystaticwebsite/test.jpg
einfochips@AHMLPT1707:/var/www/html$ nano /var/www/html/mystaticwebsite/index.html
einfochips@AHMLPT1707:/var/www/html$ sudo nano /etc/apache2/sites-available/mystaticwebsite.conf
[sudo] password for einfochips:
einfochips@AHMLPT1707:/var/www/html$ sudo a2ensite mystaticwebsite.conf
Enabling site mystaticwebsite.
To activate the new configuration, you need to run:
    systemctl reload apache2
einfochips@AHMLPT1707:/var/www/html$ systemctl reload apache2
einfochips@AHMLPT1707:/var/www/html$ sudo a2dissite 000-default.conf
Site 000-default disabled.
To activate the new configuration, you need to run:
```


4. Tested the configuration

Welcome to My Static Website



This is a simple static website using Apache2.