

# Project: Setting Up an Internal Web Server for XYZ Company

## Introduction:

XYZ Company needs an **internal Web Server** to display company information and share some files among employees. As a **System Administrator**, your task is to set up the environment, run the website, and manage permissions securely.

---

## Tasks to be Completed:

### 1. Configure Network and Connectivity:

- Set the **hostname** to `intranet.xyz.local`
  - Ensure the **IP Address** is **static** within the internal network.
  - Modify the `/etc/hosts` file to set up local **name resolution**.
- 

### 2. Create Users and Assign Roles:

User	Role	Permissions
admin1	System Admin	Has <code>sudo</code> privileges to manage the server.
developer1	Web Developer	Can modify website files only.
viewer1	Regular Employee	Can only read shared files.

## Implementation:

- Create users using `useradd`.
  - Set passwords for each user.
  - Add `admin1` to the **sudo** group.
  - Ensure `developer1` can modify website files but has no administrative privileges.
  - `viewer1` should have **read-only access** to the shared files directory.
-

### 3. Set Up and Manage Files & Permissions:

#### Required File Structure:

```
/var/www/html/      # Main website files
/var/www/shared/    # Shared company files
```

#### Required Permissions:

- **/var/www/html/:**
  - **Owner:** developer1
  - **Permissions:** developer1 can modify files, while others can only read them.
- **/var/www/shared/:**
  - **Owner:** admin1
  - **Permissions:** All users can read, but cannot modify files.

#### Implementation:

- Change file ownership using **chown**.
  - Set proper permissions using **chmod**.
- 

### 4. Install and Configure Web Server:

- Install **Apache (httpd)** using `dnf install httpd`.
- Start the service and ensure it runs after reboot using `systemctl enable --now httpd`.
- Place a **test HTML page** in `/var/www/html/index.html`. ( I'm "your name")
- Verify website accessibility using `curl http://localhost`.

(search → selinux, firewall (disable))

---

#### Expected Outcome:

After completing the project, students should be able to access the company's internal website via a browser using the **IP Address** or **hostname** (`http://intranet.xyz.local`).

- The **developer** can update the website.
- Employees can access shared files in read-only mode.
- Security is enforced to prevent unauthorized modifications.

# Python script

```
root@localhost:~# ssh root@192.168.206.131
root@192.168.206.131's password:
X11 forwarding request failed on channel 0
Activate the web console with: systemctl enable --now cockpit.socket

Last login: Fri Apr 18 14:11:37 2025 from 192.168.206.1
[root@localhost ~]# chmod +x linux_script/main.py
[root@localhost ~]# vi linux_script/main.py
[root@localhost ~]# ./linux_script/main.py
Setting hostname to intranet.xyz.local
Setting static IP 192.168.206.131 for connection ens160
Adding intranet.xyz.local to /etc/hosts
Configuration completed successfully.
Starting user setup...
User 'admin1' created.
Password set for 'admin1'.
'admin1' added to sudo group.
User 'developer1' created.
Password set for 'developer1'.
User 'viewer1' created.
Password set for 'viewer1'.
User setup complete.
Created directory: /var/www/html
Created directory: /var/www/shared
Ownership set to developer1:developer1 for /var/www/html
Ownership set to admin1:admin1 for /var/www/shared
Permissions set to 755 for both directories
Permissions and ownership set successfully.
Disabling firewalld...
Removed "/etc/systemd/system/multi-user.target.wants/firewalld.service".
Removed "/etc/systemd/system/dbus-org.fedoraproject.FirewallD1.service".
firewalld stopped and disabled.
Disabling SELinux (temporary and permanent)...
SELinux set to permissive now and disabled permanently.
Installing httpd...
Rocky Linux 9 - BaseOS
Rocky Linux 9 - AppStream
Rocky Linux 9 - Extras
Dependencies resolved.
```

Package	Architecture	Version	Repository	Size
httpd	x86_64	2.4.62-1.el9_5.2	appstream	45 k
apr	x86_64	1.7.0-12.el9_3	appstream	122 k
apr-util	x86_64	1.6.1-23.el9	appstream	94 k
apr-util-bdb	x86_64	1.6.1-23.el9	appstream	12 k
httpd-core	x86_64	2.4.62-1.el9_5.2	appstream	1.4 M
httpd-filesystem	noarch	2.4.62-1.el9_5.2	appstream	12 k
httpd-tools	x86_64	2.4.62-1.el9_5.2	appstream	79 k
rocky-logos-httpd	noarch	90.15-2.el9	appstream	24 k
apr-util-openssl	x86_64	1.6.1-23.el9	appstream	14 k
mod_http2	x86_64	2.0.26-2.el9_4.1	appstream	163 k
mod_lua	x86_64	2.4.62-1.el9_5.2	appstream	59 k

UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

```
root@localhost:~# Dependencies resolved.
Package Architecture Version Repository Size
Installing:
httpd x86_64 2.4.62-1.el9_5.2 appstream 45 k
Installing dependencies:
apr x86_64 1.7.0-12.el9_3 appstream 122 k
apr-util x86_64 1.6.1-23.el9 appstream 94 k
apr-util-bdb x86_64 1.6.1-23.el9 appstream 12 k
httpd-core x86_64 2.4.62-1.el9_5.2 appstream 1.4 M
httpd-filesystem noarch 2.4.62-1.el9_5.2 appstream 12 k
httpd-tools x86_64 2.4.62-1.el9_5.2 appstream 79 k
rocky-logos-httpd noarch 90.15-2.el9 appstream 24 k
Installing weak dependencies:
apr-util-openssl x86_64 1.6.1-23.el9 appstream 14 k
mod_http2 x86_64 2.0.26-2.el9_4.1 appstream 163 k
mod_lua x86_64 2.4.62-1.el9_5.2 appstream 59 k

Transaction Summary
Install 11 Packages

Total download size: 2.0 M
Installed size: 6.1 M
Downloading Packages:
(1/11): apr-util-openssl-1.6.1-23.el9.x86_64.rpm 14 kB/s | 14 kB 00:01
(2/11): apr-util-bdb-1.6.1-23.el9.x86_64.rpm 5.5 kB/s | 12 kB 00:02
(3/11): rocky-logos-httpd-90.15-2.el9.noarch.rpm 11 kB/s | 24 kB 00:02
(4/11): apr-util-1.6.1-23.el9.x86_64.rpm 188 kB/s | 94 kB 00:00
(5/11): mod_http2-2.0.26-2.el9_4.1.x86_64.rpm 227 kB/s | 163 kB 00:00
(6/11): apr-1.7.0-12.el9_3.x86_64.rpm 152 kB/s | 122 kB 00:00
(7/11): mod_lua-2.4.62-1.el9_5.2.x86_64.rpm 169 kB/s | 59 kB 00:00
(8/11): httpd-tools-2.4.62-1.el9_5.2.x86_64.rpm 371 kB/s | 79 kB 00:00
(9/11): httpd-filesystem-2.4.62-1.el9_5.2.noarch.rpm 66 kB/s | 12 kB 00:00
(10/11): httpd-2.4.62-1.el9_5.2.x86_64.rpm 88 kB/s | 45 kB 00:00
(11/11): httpd-core-2.4.62-1.el9_5.2.x86_64.rpm 2.2 MB/s | 1.4 MB 00:00
-----
Total 499 kB/s | 2.0 MB 00:04
Running transaction check
Transaction check succeeded.
Running transaction test
```

UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

```
root@localhost~  
Terminal Sessions View X server Tools Games Settings Macros Help  
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help  
Quick connect...  
root@localhost~  
Name  
ssh  
linux_script  
bash_history  
bash_logout  
bash_profile  
bashrc  
cshrc  
tcshrc  
anaconda-ks.cfg  
(8/11): httpd-tools-2.4.62-1.el9_5.2.x86_64.rpm 371 kB/s | 79 kB 00:00  
(9/11): httpd-filesystem-2.4.62-1.el9_5.2.noarch.rpm 66 kB/s | 12 kB 00:00  
(10/11): httpd-2.4.62-1.el9_5.2.x86_64.rpm 88 kB/s | 45 kB 00:00  
(11/11): httpd-core-2.4.62-1.el9_5.2.x86_64.rpm 2.2 MB/s | 1.4 MB 00:00  
-----  
Total 499 kB/s | 2.0 MB 00:04  
Running transaction check  
Transaction check succeeded.  
Running transaction test  
Transaction test succeeded.  
Running transaction  
Preparing : 1/1  
Installing : apr-1.7.0-12.el9_3.x86_64 1/11  
Installing : apr-util-bdb-1.6.1-23.el9.x86_64 2/11  
Installing : apr-util-1.6.1-23.el9.x86_64 3/11  
Installing : apr-util-openssl-1.6.1-23.el9.x86_64 4/11  
Installing : httpd-tools-2.4.62-1.el9_5.2.x86_64 5/11  
Running scriptlet: httpd-filesystem-2.4.62-1.el9_5.2.noarch 6/11  
Installing : httpd-filesystem-2.4.62-1.el9_5.2.noarch 6/11  
Installing : httpd-core-2.4.62-1.el9_5.2.x86_64 7/11  
Installing : mod_lua-2.4.62-1.el9_5.2.x86_64 8/11  
Installing : rocky-logos-httpd-90.15-2.el9.noarch 9/11  
Installing : mod_http2-2.0.26-2.el9_4.1.x86_64 10/11  
Installing : httpd-2.4.62-1.el9_5.2.x86_64 11/11  
Running scriptlet: httpd-2.4.62-1.el9_5.2.x86_64 11/11  
Verifying : rocky-logos-httpd-90.15-2.el9.noarch 1/11  
Verifying : apr-util-openssl-1.6.1-23.el9.x86_64 2/11  
Verifying : apr-util-bdb-1.6.1-23.el9.x86_64 3/11  
Verifying : apr-util-1.6.1-23.el9.x86_64 4/11  
Verifying : mod_http2-2.0.26-2.el9_4.1.x86_64 5/11  
Verifying : apr-1.7.0-12.el9_3.x86_64 6/11  
Verifying : mod_lua-2.4.62-1.el9_5.2.x86_64 7/11  
Verifying : httpd-tools-2.4.62-1.el9_5.2.x86_64 8/11  
Verifying : httpd-filesystem-2.4.62-1.el9_5.2.noarch 9/11  
Verifying : httpd-core-2.4.62-1.el9_5.2.x86_64 10/11  
Verifying : httpd-2.4.62-1.el9_5.2.x86_64 11/11  
Installed:  
apr-1.7.0-12.el9_3.x86_64 apr-util-1.6.1-23.el9.x86_64 apr-util-bdb-1.6.1-23.el9.x86_64 apr-util-openssl-1.6.1-23.el9.x86_64  
httpd-2.4.62-1.el9_5.2.x86_64 httpd-core-2.4.62-1.el9_5.2.x86_64 httpd-filesystem-2.4.62-1.el9_5.2.noarch httpd-tools-2.4.62-1.el9_5.2.x86_64  
mod_http2-2.0.26-2.el9_4.1.x86_64 mod_lua-2.4.62-1.el9_5.2.x86_64 rocky-logos-httpd-90.15-2.el9.noarch  
Follow terminal folder  
UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: https://mobaxterm.mobatek.net
```

```
root@localhost~  
Terminal Sessions View X server Tools Games Settings Macros Help  
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help  
Quick connect...  
root@localhost~  
Name  
ssh  
linux_script  
bash_history  
bash_logout  
bash_profile  
bashrc  
cshrc  
tcshrc  
anaconda-ks.cfg  
Preparing : 1/1  
Installing : apr-1.7.0-12.el9_3.x86_64 1/11  
Installing : apr-util-bdb-1.6.1-23.el9.x86_64 2/11  
Installing : apr-util-1.6.1-23.el9.x86_64 3/11  
Installing : apr-util-openssl-1.6.1-23.el9.x86_64 4/11  
Installing : httpd-tools-2.4.62-1.el9_5.2.x86_64 5/11  
Running scriptlet: httpd-filesystem-2.4.62-1.el9_5.2.noarch 6/11  
Installing : httpd-filesystem-2.4.62-1.el9_5.2.noarch 6/11  
Installing : httpd-core-2.4.62-1.el9_5.2.x86_64 7/11  
Installing : mod_lua-2.4.62-1.el9_5.2.x86_64 8/11  
Installing : rocky-logos-httpd-90.15-2.el9.noarch 9/11  
Installing : mod_http2-2.0.26-2.el9_4.1.x86_64 10/11  
Installing : httpd-2.4.62-1.el9_5.2.x86_64 11/11  
Running scriptlet: httpd-2.4.62-1.el9_5.2.x86_64 11/11  
Verifying : rocky-logos-httpd-90.15-2.el9.noarch 1/11  
Verifying : apr-util-openssl-1.6.1-23.el9.x86_64 2/11  
Verifying : apr-util-bdb-1.6.1-23.el9.x86_64 3/11  
Verifying : apr-util-1.6.1-23.el9.x86_64 4/11  
Verifying : mod_http2-2.0.26-2.el9_4.1.x86_64 5/11  
Verifying : apr-1.7.0-12.el9_3.x86_64 6/11  
Verifying : mod_lua-2.4.62-1.el9_5.2.x86_64 7/11  
Verifying : httpd-tools-2.4.62-1.el9_5.2.x86_64 8/11  
Verifying : httpd-filesystem-2.4.62-1.el9_5.2.noarch 9/11  
Verifying : httpd-core-2.4.62-1.el9_5.2.x86_64 10/11  
Verifying : httpd-2.4.62-1.el9_5.2.x86_64 11/11  
Installed:  
apr-1.7.0-12.el9_3.x86_64 apr-util-1.6.1-23.el9.x86_64 apr-util-bdb-1.6.1-23.el9.x86_64 apr-util-openssl-1.6.1-23.el9.x86_64  
httpd-2.4.62-1.el9_5.2.x86_64 httpd-core-2.4.62-1.el9_5.2.x86_64 httpd-filesystem-2.4.62-1.el9_5.2.noarch httpd-tools-2.4.62-1.el9_5.2.x86_64  
mod_http2-2.0.26-2.el9_4.1.x86_64 mod_lua-2.4.62-1.el9_5.2.x86_64 rocky-logos-httpd-90.15-2.el9.noarch  
Complete!  
httpd installed.  
Starting and enabling httpd service...  
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service -> /usr/lib/systemd/system/httpd.service.  
httpd service started and enabled.  
index.html created with content: 'HELLO FROM OMAR ADAMY'.  
Ownership set to developer1:developer1 for /var/www/html  
Ownership set to developer1:developer1 for /var/www/html/index.html  
Verifying website accessibility...  
Website is accessible and content is correct.  
[root@intranet ~]#
```

## ip add or (cat ens160.nmconnection)

```
[root@intranet ~]# cat /etc/NetworkManager/system-connections/ens160.nmconnection
[connection]
id=ens160
uuid=0b989758-a746-3677-910c-a8c6f15cdd7a
type=ethernet
autoconnect-priority=-999
interface-name=ens160
timestamp=1745067966

[ethernet]

[ipv4]
address1=192.168.206.131/24,192.168.206.2
dns=192.168.206.2;
method=manual

[ipv6]
addr-gen-mode=eui64
method=auto

[proxy]
[root@intranet ~]# █
```

lease support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

## Hostnamectl

```
[root@intranet ~]# hostnamectl
Static hostname: intranet.xyz.local
Icon name: computer-vm
Chassis: vm
Machine ID: 8a6078a56f644966a5f77be32447b389
Boot ID: 7e519e90fec94773bd76a018f39df4f8
Virtualization: vmware
Operating System: Rocky Linux 9.5 (Blue Onyx)
CPE OS Name: cpe:/o:rocky:rocky:9::baseos
Kernel: Linux 5.14.0-503.14.1.el9_5.x86_64
Architecture: x86-64
Hardware Vendor: VMware, Inc.
Hardware Model: VMware Virtual Platform
Firmware Version: 6.00
[root@intranet ~]# █
```

lease support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

## cat /etc/hosts

```
[root@intranet ~]# cat /etc/hosts
127.0.0.1    localhost localhost.localdomain localhost4 localhost4.localdomain4
::1         localhost localhost.localdomain localhost6 localhost6.localdomain6
127.0.0.1    intranet.xyz.local
[root@intranet ~]# █
```

lease support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

## cat /etc/passwd | grep 'admin1\|developer1\|viewer1'

```
[root@intranet ~]# cat /etc/hosts
127.0.0.1    localhost localhost.localdomain localhost4 localhost4.localdomain4
::1         localhost localhost.localdomain localhost6 localhost6.localdomain6
127.0.0.1    intranet.xyz.local
[root@intranet ~]# cat /etc/passwd | grep 'admin1\|developer1\|viewer1'
admin1:x:1000:1000::/home/admin1:/bin/bash
developer1:x:1001:1001::/home/developer1:/bin/bash
viewer1:x:1002:1002::/home/viewer1:/bin/bash
[root@intranet ~]# █
```

lease support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

## sudo -l -U admin1

```
[root@intranet ~]# sudo -l -U admin1
Matching Defaults entries for admin1 on intranet:
!visiblepw, always_set_home, match_group_by_gid, always_query_group_plugin, env_reset, env_keep="COLORS DISPLAY HOSTNAME HISTSIZE KDEDIR LS_COLORS",
env_keep+="MAIL PS1 PS2 QTDIR USERNAME LANG LC_ADDRESS LC_CTYPE", env_keep+="LC_COLLATE LC_IDENTIFICATION LC_MEASUREMENT LC_MESSAGES", env_keep+="LC_MONETARY
LC_NAME LC_NUMERIC LC_PAPER LC_TELEPHONE", env_keep+="LC_TIME LC_ALL LANGUAGE LINGUAS _XKB_CHARSET XAUTHORITY", secure_path=/sbin\:/bin\:/usr/sbin\:/usr/bin

User admin1 may run the following commands on intranet:
  (ALL) ALL
[root@intranet ~]# █
```

lease support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

## ls -ld /var/www/html ls -ld /var/www/shared

```
[root@intranet ~]# ls -ld /var/www/html ls -ld /var/www/shared
ls: cannot access 'ls': No such file or directory
drwxr-xr-x. 2 developer1 developer1 24 Apr 19 15:08 /var/www/html
drwxr-xr-x. 2 admin1      admin1    6 Apr 19 15:07 /var/www/shared
[root@intranet ~]# █
```

lease support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

## systemctl status httpd

```
[root@intranet ~]# ls -ld /var/www/html ls -ld /var/www/shared
ls: cannot access 'ls': No such file or directory
drwxr-xr-x. 2 developer1 developer1 24 Apr 19 15:08 /var/www/html
drwxr-xr-x. 2 admin1     admin1     6 Apr 19 15:07 /var/www/shared
[root@intranet ~]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disabled)
   Active: active (running) since Sat 2025-04-19 15:08:09 EET; 17min ago
     Docs: man:httpd.service(8)
   Main PID: 2277 (httpd)
   Status: "Total requests: 1; Idle/Busy workers 100/0;Requests/sec: 0.000952; Bytes served/sec:  0 B/sec"
    Tasks: 177 (Limit: 10868)
   Memory: 36.2M
      CPU: 1.546s
   CGroup: /system.slice/httpd.service
           └─2277 /usr/sbin/httpd -DFOREGROUND
             └─2278 /usr/sbin/httpd -DFOREGROUND
               └─2280 /usr/sbin/httpd -DFOREGROUND
                 └─2281 /usr/sbin/httpd -DFOREGROUND
                   └─2282 /usr/sbin/httpd -DFOREGROUND

Apr 19 15:08:09 intranet.xyz.local systemd[1]: Starting The Apache HTTP Server...
Apr 19 15:08:09 intranet.xyz.local httpd[2277]: AH00558: http: Could not reliably determine the server's fully qualified domain name, using intranet.xyz.local. Set
Apr 19 15:08:09 intranet.xyz.local systemd[1]: Started The Apache HTTP Server.
Apr 19 15:08:09 intranet.xyz.local httpd[2277]: Server configured, listening on: port 80
lines 1-20/20 (END)
```

Please support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

## ls -l /var/www/html/

```
-rw-r--r--. 1 developer1 developer1 30 Apr 19 15:08 index.html
[root@intranet ~]#
```

Please support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

## curl http://intranet.xyz.local

```
[root@intranet ~]# curl http://intranet.xyz.local
<h1>HELLO FROM OMAR ADAWY</h1>[root@intranet ~]#
```

Please support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>