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# PROJECT PART 1

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Apache Web Server



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Network Installation and Administration I

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## Introduction

This project focuses on creating and securing a web server using Apache, hosted at IP address 192.168.50.10. The goal is to build a functional website with controlled access, authentication, and authorization mechanisms to meet specific security and accessibility requirements. The project is divided into four key tasks, each addressing different aspects of web server setup, user authentication, directory access controls, and department-specific website authorization.

The project aims to demonstrate proficiency in web server administration, secure configuration, and access control implementation. By completing these tasks, the server will provide a robust, secure, and organized environment for hosting departmental websites with strict adherence to authentication and authorization policies.

# Creating a website

Configure an Apache server to serve web pages from /var/www/html\_project1. Develop a homepage (index.html) incorporating essential HTML tags and links to other project pages. Ensure the server is accessible, starts automatically, and is properly configured.

## Install and configure Apache server

On AlmaLinux, install httpd (Apache)

### Dnf install -y httpd

```
[root@server12 ~]# dnf install -y httpd
Last metadata expiration check: 1:45:37 ago on Mon 14 Apr 2025 02:53:35 PM.
Dependencies resolved.
=====
Package                                Arch      Version                               Repository    Size
=====
Installing:
  httpd                                x86_64    2.4.62-1.el9_5.2                     appstream     45 k
Installing dependencies:
  almalinux-logos-httpd                noarch    90.5.1-1.1.el9                       appstream     18 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
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    162 k
  mod_lua                               x86_64    2.4.62-1.el9_5.2                     appstream     58 k

Transaction Summary
=====
```

```
Installed:
  almalinux-logos-httpd-90.5.1-1.1.el9.noarch
  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
```

```
Complete!
```

```
[root@server12 ~]#
```

## Make a copy of the Apache configuration file

A copy of the original configuration file should always be made before making changes as security in case something goes wrong.

```
[root@server12 ~]# cp /etc/httpd/conf/httpd.conf /etc/httpd/conf/httpd.conf.original
[root@server12 ~]#
```

```
[root@server12 ~]# cd /etc/httpd/conf
[root@server12 conf]# ll
total 40
-rw-r--r--. 1 root root 12005 Jan 21 16:19 httpd.conf
-rw-r--r--. 1 root root 12005 Apr 14 17:13 httpd.conf.original
-rw-r--r--. 1 root root 13430 Jan 21 16:24 magic
[root@server12 conf]#
```

## Creating the project directory

Create the directory **/var/www/html\_project1** that we will use to configure our Apache server to use for web pages

```
mkdir -p /var/www/html_project1
```

```
[root@server12 /]# mkdir -p /var/www/html_project1
[root@server12 /]# cd /var/www
[root@server12 www]# ll
total 0
drwxr-xr-x. 2 root root 6 Jan 21 16:23 cgi-bin
drwxr-xr-x. 2 root root 6 Jan 21 16:23 html
drwxr-xr-x. 2 root root 6 Apr 14 17:21 html_project1
[root@server12 www]#
```

## Configuring the Apache config file

### Nano /etc/httpd/conf/httpd.conf

```
[root@server12 www]# nano /etc/httpd/conf/httpd.conf
```

Replace DocumentRoot `"/var/www/html"` with DocumentRoot `"/var/www/html_project1"`.

```
#
DocumentRoot "/var/www/html_project1"
```

Update the `<Directory>` block:

```
# Further relax access to the default document root:
<Directory "/var/www/html_project1">

    Options Indexes FollowSymLinks

    AllowOverride None

    Require all granted

</Directory>
```

Optional, you can add your server name here

```
#
ServerName server-12:80
#
```

**Sudo apachectl configtest** to verify the syntax of the httpd.conf file after changes

```
[root@server12 www]# sudo apachectl configtest
Syntax OK
[root@server12 www]#
```

Setting permissions for the project directory

**sudo chown -R apache:apache /var/www/html\_project1**

**sudo chmod -R 755 /var/www/html\_project1**

```
[root@server12 www]# chown -R apache:apache /var/www/html_project1
[root@server12 www]# chmod -R 755 /var/www/html_project1
[root@server12 www]#
```



Set the SELinux context for the project directory

**restorecon -R /var/www/html\_project1**

```
[root@server12 www]# restorecon -R /var/www/html_project1
[root@server12 www]#
```

Setting firewall permissions

**Firewall-cmd - -permanent - -add-service=http - -zone=nm-shared**

**firewall-cmd --reload**

```
[root@server12 /]# firewall-cmd --permanent --add-service=http --zone=nm-shared
success
[root@server12 /]# firewall-cmd --reload
success
[root@server12 /]#
```

Enabling Apache on boot and verifying status

**Systemctl enable httpd**

**Systemctl start httpd**

**Systemctl status httpd**

```

[root@server12 /]# systemctl enable httpd
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service → /usr/lib/systemd/system/httpd.service.
[root@server12 /]# systemctl start httpd
[root@server12 /]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disabled)
   Active: active (running) since Mon 2025-04-14 18:11:52 EDT; 5s ago
     Docs: man:httpd.service(8)
  Main PID: 35567 (httpd)
    Status: "Started, listening on: 192.168.50.10 port 80"
     Tasks: 177 (limit: 22831)
    Memory: 39.5M
       CPU: 841ms
    CGroup: /system.slice/httpd.service
            └─35567 /usr/sbin/httpd -DFOREGROUND
              └─35568 /usr/sbin/httpd -DFOREGROUND
                └─35569 /usr/sbin/httpd -DFOREGROUND
                  └─35570 /usr/sbin/httpd -DFOREGROUND
                    └─35575 /usr/sbin/httpd -DFOREGROUND

Apr 14 18:11:51 server12 systemd[1]: Starting The Apache HTTP Server...
Apr 14 18:11:52 server12 systemd[1]: Started The Apache HTTP Server.
Apr 14 18:11:52 server12 httpd[35567]: Server configured, listening on: 192.168.50.10 port 80
[root@server12 /]#

```

## Create the Homepage

**sudo nano /var/www/html\_project1/index.html**

```

<html>
<head>
    <title>Project Part I - Homepage</title>
</head>
<body>
    <h1>Welcome to Project Part I</h1>
    <p>This is the homepage for <b>Project Part I</b>. Below are links to all project pages.</p>
    <hr>
    <p><u>Secure Directories:</u></p>
    <ul>
        <li><a href=http://192.168.50.10/secure1/>Secure1 (user01 only)</a></li>
        <li><a href=http://192.168.50.10/secure2/>Secure2 (user01 from 192.168.50.0/24)</a></li>
        <li><a href=http://10.35.17.1/secure2/>Secure2 (user01 and 10.35.17.1 - not accessible)</a></li>
        <li><a href=http://192.168.50.10/secure3/>Secure3 (user01 or any user on 192.168.50.0/24)</a></li>
        <li><a href=http://10.35.16.1/secure3/>Secure3 (user01 and 10.35.16.1 - accessible)</a></li>
        <li><a href=http://192.168.50.10/secure4/>Secure4 (user02 only)</a></li>
    </ul>

```

```

<li><a href=http://10.35.16.1/secure3/>Secure3 (user01 and 10.35.16.1 - accessible)</a></li>
<li><a href=http://192.168.50.10/secure4/>Secure4 (user02 only)</a></li>
<li><a href=http://192.168.50.10/secure5/>Secure5 (user01 via .htaccess - accessible)</a></li>
<li><a href=http://10.35.16.1/secure5/>Secure5 (user01 and 10.35.16.1 via .htaccess - accessible)</a></li>
<li><a href=http://192.168.50.10/secure6/>Secure6 (user01 from 192.168.50.0/24 via .htaccess - accessible)</a></li>
<li><a href=http://10.35.17.1/secure6/>Secure6 (user01 from 10.35.17.1 via .htaccess - not accessible)</a></li>
<li><a href=http://192.168.50.10/secure7/>Secure7 (user01 or any user from 192.168.50.0/24 via .htaccess - accessible)</a></li>
<li><a href=http://10.35.16.1/secure7/>Secure7 (user01 or any user from 10.35.16.1 via .htaccess - not accessible)</a></li>
</ul>
<p><u>Project Directories: All accessible from 192.168.50.0/24</u></p>
<ul>
<p><u>Project1:</u></p>
<li><a href=http://10.35.16.1/Project1/>Project1 Page</a> (Accessible from 10.35.16.0/24. Files named secret.* not accessible n.)</li>
<li><a href=http://10.35.17.1/Project1/>Project1 Page</a> (Accessible from 10.35.17.0/24. Files named secret.* not accessible n.)</li>

```

```

</ul>
<p><u>Project Directories: All accessible from 192.168.50.0/24</u></p>
<ul>
<p><u>Project1:</u></p>
<li><a href=http://10.35.16.1/Project1/>Project1 Page</a> (Accessible from 10.35.16.0/24. Files named secret.* not accessible n.)</li>
<li><a href=http://10.35.17.1/Project1/>Project1 Page</a> (Accessible from 10.35.17.0/24. Files named secret.* not accessible n.)</li>
<li><a href=http://192.168.100.1/Project1/>Project1 Page</a> (Not accessible from 192.168.100.0/24. Files named secret.* not accessible n.)</li>
<li><a href=http://192.168.50.10/Project1/>Project1 Page (Accessible from 192.168.50.0/24) </a></li>
<p><u>Project2:</u></p>
<li><a href=http://192.168.100.1/Project2/>Project2 Page (Accessible from all other than 10.35.16.0/24. All files accessible to others.192.168.100.1 - accessible) </a></li>
<li><a href=http://10.35.17.1/Project2/>Project2 Page (Accessible from 10.35.17.1. All files accessible) </a></li>

```

```

<li><a href=http://10.35.16.1/Project1/>Project1 Page</a> (Accessible from 10.35.16.0/24. Files named secret.* not accessible n.)</li>
<li><a href=http://10.35.17.1/Project1/>Project1 Page</a> (Accessible from 10.35.17.0/24. Files named secret.* not accessible n.)</li>
<li><a href=http://192.168.100.1/Project1/>Project1 Page</a> (Not accessible from 192.168.100.0/24. Files named secret.* not accessible n.)</li>
<li><a href=http://192.168.50.10/Project1/>Project1 Page (Accessible from 192.168.50.0/24) </a></li>
<p><u>Project2:</u></p>
<li><a href=http://192.168.100.1/Project2/>Project2 Page (Accessible from all other than 10.35.16.0/24. All files accessible to others.192.168.100.1 - accessible) </a></li>
<li><a href=http://10.35.17.1/Project2/>Project2 Page (Accessible from 10.35.17.1. All files accessible) </a></li>
<li><a href=http://10.35.16.1/Project2/>Project2 Page (Not accessible from 10.35.16.1) </a></li>
<li><a href=http://192.168.50.10/Project2/>Project2 Page (Accessible from 192.168.50.0/24) </a></li>
<p><u>Project3:</u></p>
<li><a href=http://192.168.100.1/Project3/>Project3 Page (Accessible only from 192.168.100.0/24. All .txt and .gif files not accessible - Accessible) </a></li>
<li><a href=http://10.35.16.1/Project3/>Project3 Page (10.35.16.0/24 Not Accessible) </a></li>
<li><a href=http://10.35.17.1/Project3/>Project3 Page (10.35.17.0/24 Not Accessible) </a></li>

```

## Authentication

Set up authentication for seven secure directories (secure1 to secure7) within /var/www/html\_project1, using <Directory> directives for secure1 to secure4 and .htaccess files for secure5 to secure7.

```
sudo mkdir /var/www/html_project1/secure{1,2,3,4,5,6,7}
```

```
drwxr-xr-x. 9 apache apache 129 Apr 15 10:47 .
drwxr-xr-x. 5 root root 54 Apr 14 17:21 ..
-rw-r--r--. 1 root root 1212 Apr 15 10:06 index.html
drwxr-xr-x. 2 root root 6 Apr 15 10:47 secure1
drwxr-xr-x. 2 root root 6 Apr 15 10:47 secure2
drwxr-xr-x. 2 root root 6 Apr 15 10:47 secure3
drwxr-xr-x. 2 root root 6 Apr 15 10:47 secure4
drwxr-xr-x. 2 root root 6 Apr 15 10:47 secure5
drwxr-xr-x. 2 root root 6 Apr 15 10:47 secure6
drwxr-xr-x. 2 root root 6 Apr 15 10:47 secure7
```

Create the .htpasswd for User01 and User02

```
htpasswd -c /var/www/html_project1/.htpasswd_user01 user01
```

```
htpasswd -c /var/www/html_project1/.htpasswd_user02 user02
```

```
[root@server12 html_project1]# htpasswd -cb /var/www/html_project1/.htpasswd_user01 user01 secret
Adding password for user user01
[root@server12 html_project1]# htpasswd -cb /var/www/html_project1/.htpasswd_user02 user02 secret
Adding password for user user02
[root@server12 html_project1]#
```

Add them to the httpd.conf file, in the directory block for secure1 and secure2 and add the following to allow the file to be accessed:

## Secure1

**secure1: Requires user01 from any IP.**

```
<Directory "/var/www/html_project1/secure1">
    AuthType Basic
    AuthName "Restricted Area"
    AuthUserFile /var/www/html_project1/.htpasswd_user01
    Require user user01
    <Files "*.html">
        Require all granted
    </Files>
</Directory>
```

## Secure2

**secure2: Requires user01 and restricts access to the 192.168.50.0/24 subnet**

```
<Directory "/var/www/html_project1/secure2">
    AuthType Basic
    AuthName "Restricted Area"
    AuthUserFile /var/www/html_project1/.htpasswd_user01
    Require user user01
    Require ip 192.168.50.0/24
</Directory>
```

## Secure3

**secure3: Allows user01 or any user from 192.168.50.0/24 (local subnet)**

```
<Directory "/var/www/html_project1/secure3">  
    AuthType Basic  
    AuthName "Restricted Area"  
    AuthUserFile /var/www/html_project1/.htpasswd_user01  
    Require user user01  
    Require ip 192.168.50.0/24  
    Satisfy Any  
</Directory>
```

## Secure4

**secure4: Requires user02 from any IP.**

```
<Directory "/var/www/html_project1/secure4">  
    AuthType Basic  
    AuthName "Restricted Area"  
    AuthUserFile /var/www/html_project1/.htpasswd_user02  
    Require user user02  
</Directory>
```

## Secure5

**Enable .htaccess:** Ensure AllowOverride All is set in the <Directory "/var/www/html\_project1"> block.

**Create .htaccess files:**

**`/var/www/html_project1/secure5/.htaccess`**

Repeat for secure6 and 7

```
[root@server12 ~]# nano /var/www/html_project1/secure5/.htaccess
```

```
AuthType Basic
AuthName "Restricted Area"
AuthUserFile /var/www/html_project1/.htpasswd_user01
Require user user01
```

Change the permissions:

```
[root@server12 ~]# nano /var/www/html_project1/secure5/.htaccess
[root@server12 ~]# chown apache:apache /var/www/html_project1/secure5/.htaccess
[root@server12 ~]# chmod 644 /var/www/html_project1/secure5/.htaccess
```

```
[root@server12 ~]# chown apache:apache /var/www/html_project1/.htpasswd_user01
[root@server12 ~]# chmod 644 /var/www/html_project1/.htpasswd_user01
```

## Secure6

```
[root@server12 ~]# nano /var/www/html_project1/secure6/.htaccess
```

```
AuthType Basic
AuthName "Restricted Area"
AuthUserFile /var/www/html_project1/.htpasswd_user01
Require user user01
Require ip 192.168.50.0/24
```

```
[root@server12 ~]# chmod 644 /var/www/html_project1/secure6/.htaccess
[root@server12 ~]#
```

## Secure7

```
[root@server12 ~]# nano /var/www/html_project1/secure7/.htaccess
[root@server12 ~]#
```

```
/var/www/html_project1/secure7/.htaccess
AuthType Basic
AuthName "Restricted Area"
AuthUserFile /var/www/html_project1/.htpasswd_user01
Require user user01
Require ip 192.168.50.0/24
```

Systemctl restart httpd

Systemctl status httpd

```
[root@server12 /]# systemctl restart httpd
[root@server12 /]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disabled)
   Active: active (running) since Tue 2025-04-15 13:44:56 EDT; 6s ago
     Docs: man:httpd.service(8)
  Main PID: 41875 (httpd)
    Status: "Started, listening on: port 80"
    Tasks: 177 (limit: 22831)
   Memory: 45.4M
      CPU: 533ms
   CGroup: /system.slice/httpd.service
           └─41875 /usr/sbin/httpd -DFOREGROUND
             └─41876 /usr/sbin/httpd -DFOREGROUND
               └─41877 /usr/sbin/httpd -DFOREGROUND
                 └─41878 /usr/sbin/httpd -DFOREGROUND
                   └─41879 /usr/sbin/httpd -DFOREGROUND

Apr 15 13:44:56 server12 systemd[1]: Starting The Apache HTTP Server...
Apr 15 13:44:56 server12 httpd[41875]: Server configured, listening on: port 80
Apr 15 13:44:56 server12 systemd[1]: Started The Apache HTTP Server.
[root@server12 /]#
```

Testing:



Create a secure1 directory and configure Apache using the directive so that only the user user01 with the password “**secret**” can access it from any subnet. **No other users should have access.**

2. Create a secure2 directory and configure Apache so that only **user01** can access it when connecting from the subnet **192.168.50.0/24**.

3. Create a secure3 directory and configure Apache so **that either user01 or any user from the 192.168.50.0/24 subnet can access it.**

4. Create a secure4 directory and configure it similarly to secure1 but **grant access only to the user user02 (password “secret”).**

5. Create a secure5 directory and place an .htaccess file inside it to restrict access to only **user01 from any subnet.**

6. Create a secure6 directory and use an .htaccess file to restrict access to **user01**, but only when connecting from the **192.168.50.0/24 subnet.**

7. Create a secure7 directory and use an .htaccess file to allow access to either the **user01 or any user from the 192.168.50.0/24 subnet.**

## Secure1

Create a secure1 directory and configure Apache using the directive so that only the user user01 with the password “**secret**” can access it from any subnet. **No other users should have access.**

### Secure Directories:

- [Secure1 \(user01 only\)](#)
- [Secure2 \(user01 from 192.168.50.0/24\)](#)
- [Secure2 \(user01 and 10.35.17.1 - not accessible\)](#)
- [Secure3 \(user01 or any user on 192.168.50.0/24\)](#)
- [Secure3 \(user01 and 10.35.16.1 - accessible\)](#)
- [Secure4 \(user02 only\)](#)
- [Secure5 \(user01 via .htaccess - accessible\)](#)
- [Secure5 \(user01 and 10.35.16.1 via .htaccess - accessible\)](#)
- [Secure6 \(user01 from 192.168.50.0/24 via .htaccess - accessible\)](#)
- [Secure6 \(user01 from 10.35.17.1 via .htaccess - not accessible\)](#)
- [Secure7 \(user01 or any user from 192.168.50.0/24 via .htaccess - accessible\)](#)
- [Secure7 \(user01 or any user from 10.35.16.1 via .htaccess - not accessible\)](#)

→ 192.168.50.10/secure1/

#### Sign in

http://192.168.50.10

Your connection to this site is not private

Username

Password

Cancel

Sign in

#### Sign in

http://192.168.50.10

Your connection to this site is not private

Username

user01

Password

.....

Cancel

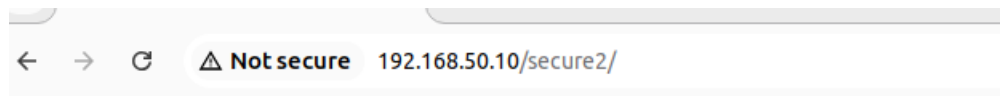
Sign in

## Secure1

Welcome to Secure1!

## Secure2

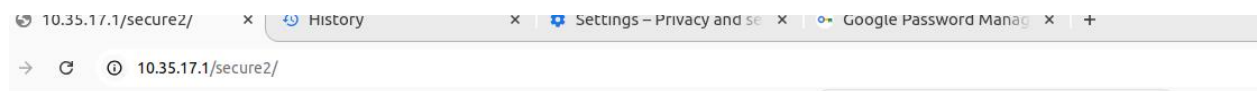
2. Create a secure2 directory and configure Apache so that only **user01** can access it when connecting from the subnet **192.168.50.0/24**.



# Secure2

Welcome to Secure2!

Secure2 from 10.35.17.1



**Sign in**  
http://10.35.17.1  
Your connection to this site is not private

Username

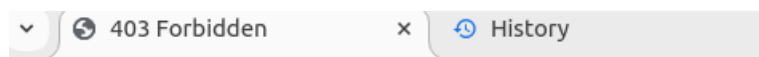
user01

Password

.....|

Cancel

Sign in

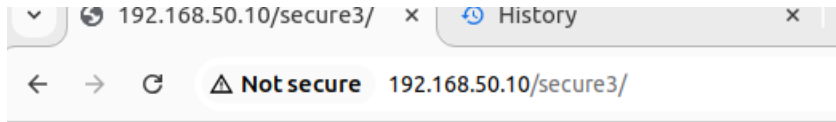


# Forbidden

You don't have permission to access this resource.

## Secure3

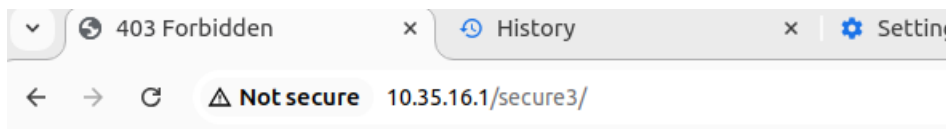
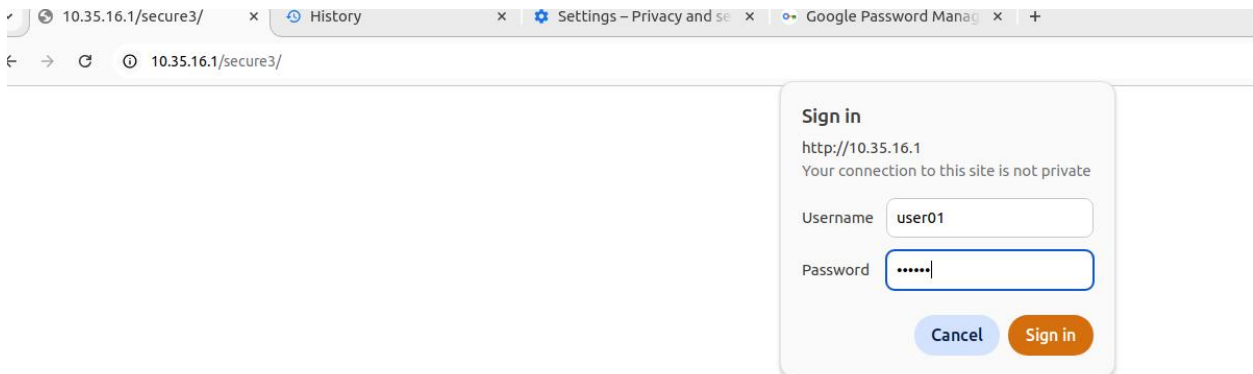
3. Create a secure3 directory and configure Apache so **that either user01 or any user from the 192.168.50.0/24 subnet can access it.**



## Secure3

Welcome to Secure3!

Secure3 with user01 on 10.35.16.1

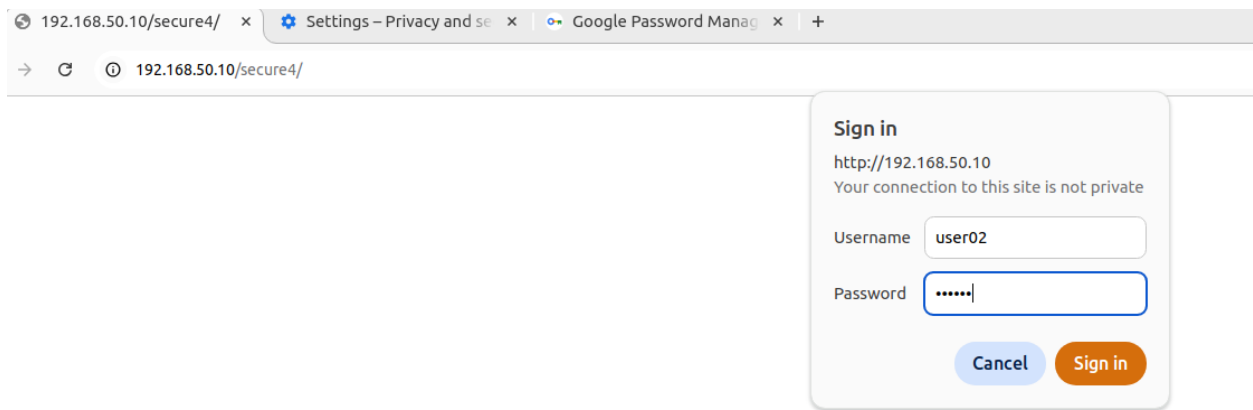


## Forbidden

You don't have permission to access this resource.

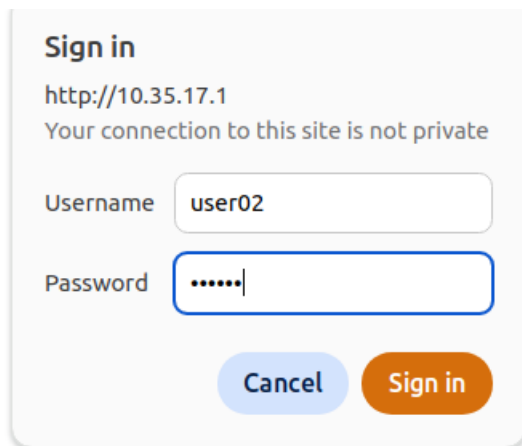
## Secure4

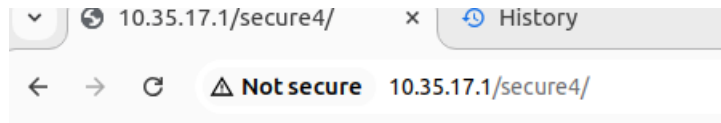
4. Create a secure4 directory and configure it similarly to secure1 but **grant access only to the user user02 (password “secret”)**.



## Secure4

Welcome to Secure4!



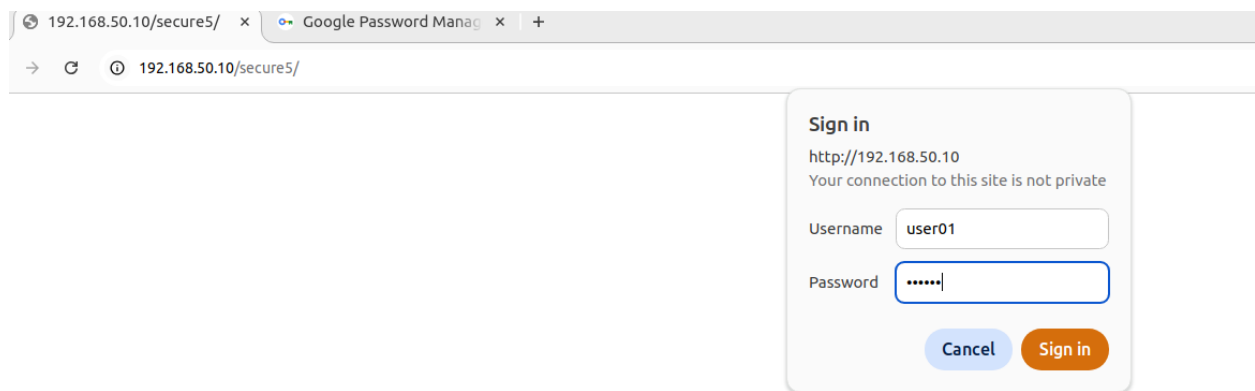


## Secure4

Welcome to Secure4!

## Secure5

5. Create a secure5 directory and place an .htaccess file inside it to restrict access to only **user01** from any subnet





## Secure5

Welcome to Secure5!

Sign in

http://10.35.16.1

Your connection to this site is not private

Username

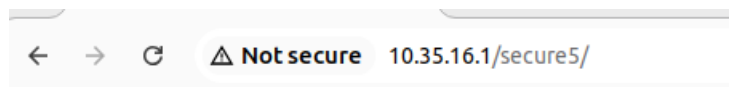
user01

Password

.....

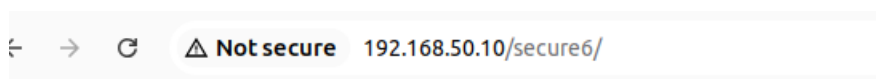
Cancel

Sign in



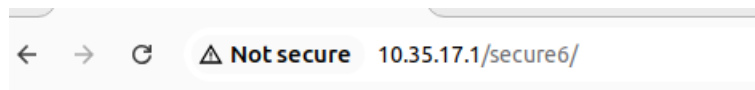
## Secure5 Directory

Secure6



## Secure6

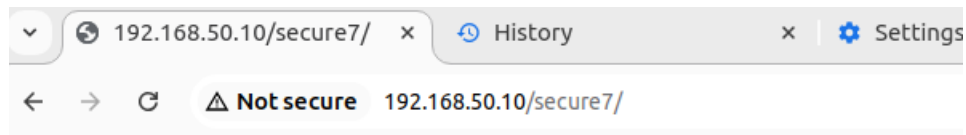
Welcome to Secure6!



# Forbidden

You don't have permission to access this resource.

## Secure7



## Secure7 Directory

## Creating the project pages

In the `html_project1` directory, create 4 project pages

**Mkdir Project1**

**Mkdir Project2**



### Mkdir Project3

### Mkdir Project4

```
[root@server12 html_project1]# mkdir Project2
[root@server12 html_project1]# mkdir Project3
[root@server12 html_project1]# mkdir Project4
[root@server12 html_project1]# ls -la
total 16
drwxr-xr-x. 13 apache apache 4096 Apr 15 14:25 .
drwxr-xr-x.  5 root   root   54 Apr 14 17:21 ..
-rw-r--r--.  1 apache apache  45 Apr 15 13:00 .htpasswd_user01
-rw-r--r--.  1 root   root   45 Apr 15 13:00 .htpasswd_user02
-rw-r--r--.  1 root   root  1212 Apr 15 13:03 index.html
drwxr-xr-x.  2 root   root    6 Apr 15 14:24 Project1
drwxr-xr-x.  2 root   root    6 Apr 15 14:25 Project2
drwxr-xr-x.  2 root   root    6 Apr 15 14:25 Project3
drwxr-xr-x.  2 root   root    6 Apr 15 14:25 Project4
drwxr-xr-x.  2 root   root   24 Apr 15 13:04 secure1
drwxr-xr-x.  2 root   root   24 Apr 15 13:05 secure2
drwxr-xr-x.  2 root   root   24 Apr 15 13:05 secure3
drwxr-xr-x.  2 root   root   24 Apr 15 13:05 secure4
drwxr-xr-x.  2 root   root   41 Apr 15 13:35 secure5
drwxr-xr-x.  2 root   root   41 Apr 15 13:41 secure6
drwxr-xr-x.  2 root   root   24 Apr 15 13:06 secure7
[root@server12 html_project1]#
```

Project1 should only be accessible from the subnets 10.35.16.0/24 (IP range 10.35.16.0 to 10.35.16.255) and 10.35.17.0/24 (IP range 10.35.17.0 to 10.35.17.255).

Any files in Project1 named secret.\* (e.g., secret.txt, secret.jpg) must not be accessible, regardless of the user's IP.

```
# Global .txt file restriction

<FilesMatch "(?i).txt$">
Require all denied
</FilesMatch>

<Directory "/var/www/html_project1/Project1">
Options +Indexes
IndexOptions FancyIndexing VersionSort NameWidth=* DescriptionWidth=*
<RequireAny>
Require ip 192.168.50.0/24
Require ip 10.35.16.0/24
Require ip 10.35.17.0/24
</RequireAny>
<Files "*">
<RequireAny>
Require ip 192.168.50.0/24
Require ip 10.35.16.0/24
Require ip 10.35.17.0/24
</RequireAny>
</Files>
<FilesMatch "^secret.">
Require all denied
</FilesMatch>
<FilesMatch "(?i).txt$">
Require all denied
</FilesMatch>
<IfModule autoindex_module>
Require all granted
```

Project2 should not be accessible from the 10.35.16.0/24 subnet, but all other IPs (including 192.168.50.0/24) should have access.

The project specifies that “all files must be accessible to others,” meaning there are no file-specific restrictions for Project2 beyond the subnet rule. So, files like project2.html should be accessible to allowed IPs without additional restrictions.

```

<Directory "/var/www/html_project1/Project2">
Options +Indexes
IndexOptions FancyIndexing VersionSort NameWidth=* DescriptionWidth=*
<RequireAll>
Require all granted
Require not ip 10.35.16.0/24
</RequireAll>
<Files "*">
<RequireAll>
Require all granted
Require not ip 10.35.16.0/24
</RequireAll>
</Files>
<FilesMatch "(?i).txt$">
Require all denied
</FilesMatch>
<IfModule autoindex_module>
Require all granted
</IfModule>
</Directory>

```

Project3 should only be accessible from the 192.168.100.0/24 subnet (IP range 192.168.100.0 to 192.168.100.255).

All \*.gif files in Project3 (e.g., image.gif) must not be accessible, even to users in the allowed subnet.

```

<Directory "/var/www/html_project1/Project3">
Options +Indexes
IndexOptions FancyIndexing VersionSort NameWidth=* DescriptionWidth=*
Require ip 192.168.100.0/24
Require ip 192.168.50.0/24
<Files "*">
Require ip 192.168.100.0/24
Require ip 192.168.50.0/24
</Files>
<FilesMatch ".gif$">
Require all denied
</FilesMatch>
<FilesMatch "(?i).txt$">
Require all denied
</FilesMatch>
<IfModule autoindex_module>
Require all granted
</IfModule>
</Directory>

```

Project4 should only be accessible from the subnets 10.35.16.0/24 and 192.168.100.0/24

All test.html files in Project4 must not be accessible, even to users in the allowed subnets.

```
<Directory "/var/www/html_project1/Project4">
Options +Indexes
IndexOptions FancyIndexing VersionSort NameWidth=* DescriptionWidth=*
<RequireAny>
Require ip 10.35.16.0/24
Require ip 192.168.100.0/24
Require ip 192.168.50.0/24
</RequireAny>
<Files "*">
<RequireAny>
Require ip 10.35.16.0/24
Require ip 192.168.100.0/24
Require ip 192.168.50.0/24
</RequireAny>
</Files>
<FilesMatch "^test.html$">
Require all denied
</FilesMatch>
<FilesMatch "(?i).txt$">
Require all denied
</FilesMatch>
<IfModule autoindex_module>
Require all granted
</IfModule>
</Directory>
```

Finally, you need to ensure that all \*.txt files in the four subdirectories (Project1, Project2, Project3, Project4) are not accessible, regardless of the user's IP or other access rules.

## Testing

Project Directories: All accessible from 192.168.50.0/24

Project1:

- [Project1 Page](#) (Accessible from 10.35.16.0/24. Files named secret.\* not accessible n.)
- [Project1 Page](#) (Accessible from 10.35.17.0/24. Files named secret.\* not accessible n.)
- [Project1 Page](#) (Not accessible from 192.168.100.0/24. Files named secret.\* not accessible n.)
- [Project1 Page](#) (Accessible from 192.168.50.0/24)

Project2:

- [Project2 Page](#) (Accessible from all other than 10.35.16.0/24. All files accessible to others.192.168.100.1 - accessible)
- [Project2 Page](#) (Accessible from 10.35.17.1. All files accessible)
- [Project2 Page](#) (Not accessible from 10.35.16.1)
- [Project2 Page](#) (Accessible from 192.168.50.0/24)

Project3:

- [Project3 Page](#) (Accessible only from 192.168.100.0/24. All .txt and .gif files not accessible - Accessible)
- [Project3 Page](#) (10.35.16.0/24 Not Accessible)
- [Project3 Page](#) (10.35.17.0/24 Not Accessible)
- [Project3 Page](#) (Accessible from 192.168.50.0/24. All .txt and .gif files not accessible)





Project4:

- [Project4 Page](#) (Accessible from 10.35.16.0/24. All test.html and .txt files not accessible)
- [Project4 Page](#) (Accessible from 192.168.100.0/24. All test.html and .txt files not accessible)
- [Project4 Page](#) (Not accessible from 10.35.17.0/24. All test.html and .txt files not accessible)
- [Project4 Page](#) (Accessible from 192.168.50.0/24. All test.html and .txt files not accessible)





```
/var/www/html_project1/  
├── index.html  
├── Project1  
│   ├── secret.doc  
│   ├── test.gif  
│   ├── test.html  
│   ├── test.jpg  
│   └── test.txt  
├── Project2  
│   ├── secret.doc  
│   ├── test.gif  
│   ├── test.html  
│   ├── test.jpg  
│   └── test.txt  
├── Project3  
│   ├── secret.doc  
│   ├── test.gif  
│   ├── test.html  
│   ├── test.jpg  
│   └── test.txt  
├── Project4  
│   ├── secret.doc  
│   ├── test.gif  
│   ├── test.html  
│   ├── test.jpeg  
│   └── test.txt
```

Project page 1

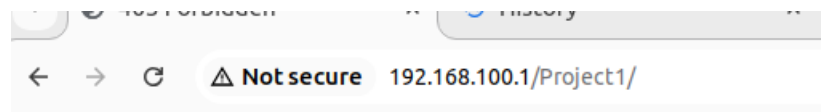
From 10.35.16.1

<a>←</a> <a>→</a> <a>🔄</a> <span>⚠ Not secure</span> 10.35.16.1/Project1/			
<h2>Index of /Project1</h2>			
<a>Name</a>	<a>Last modified</a>	<a>Size</a>	<a>Description</a>
 <a>Parent Directory</a>		-	
 <a>test.gif</a>	2025-04-16 15:30	0	
 <a>test.html</a>	2025-04-16 15:31	0	
 <a>test.jpg</a>	2025-04-17 18:47	0	

From 10.35.17.1

<a>←</a> <a>→</a> <a>🔄</a> <span>⚠ Not secure</span> 10.35.17.1/Project1/			
<h2>Index of /Project1</h2>			
<a>Name</a>	<a>Last modified</a>	<a>Size</a>	<a>Description</a>
 <a>Parent Directory</a>		-	
 <a>test.gif</a>	2025-04-16 15:30	0	
 <a>test.html</a>	2025-04-16 15:31	0	
 <a>test.jpg</a>	2025-04-17 18:47	0	

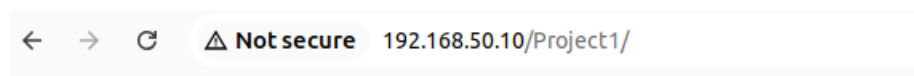
From 192.168.100.1







# Forbidden

You don't have permission to access this resource.

From 192.168.50.10



## Index of /Project1

Name	Last modified	Size	Description
 <a href="#">Parent Directory</a>		-	
 <a href="#">test.gif</a>	2025-04-16 15:30	0	
 <a href="#">test.html</a>	2025-04-16 15:31	0	
 <a href="#">test.jpg</a>	2025-04-17 18:47	0	

Project page 2



From 192.168.100.1

← → ↻ ⚠ Not secure 192.168.100.1/Project2/

## Index of /Project2

	<a href="#">Name</a>	<a href="#">Last modified</a>	<a href="#">Size</a>	<a href="#">Description</a>
🔙	<a href="#">Parent Directory</a>		-	
🔍	<a href="#">secret.doc</a>	2025-04-17 18:43	0	
🖼️	<a href="#">test.gif</a>	2025-04-16 15:32	0	
📄	<a href="#">test.html</a>	2025-04-16 15:32	0	
🖼️	<a href="#">test.jpg</a>	2025-04-17 18:46	0	

From 10.35.17.1

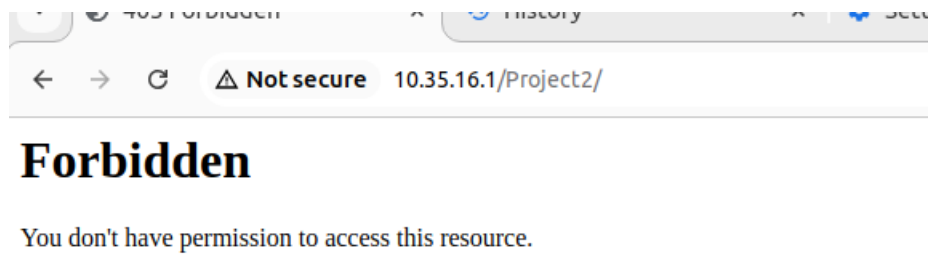
index of /Project2 History Settings - Privacy and se

← → ↻ ⚠ Not secure 10.35.17.1/Project2/

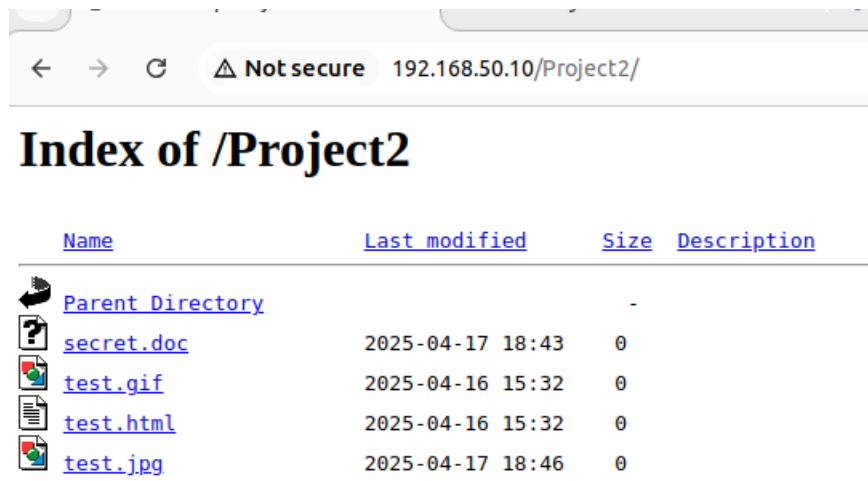
## Index of /Project2

	<a href="#">Name</a>	<a href="#">Last modified</a>	<a href="#">Size</a>	<a href="#">Description</a>
🔙	<a href="#">Parent Directory</a>		-	
🔍	<a href="#">secret.doc</a>	2025-04-17 18:43	0	
🖼️	<a href="#">test.gif</a>	2025-04-16 15:32	0	
📄	<a href="#">test.html</a>	2025-04-16 15:32	0	
🖼️	<a href="#">test.jpg</a>	2025-04-17 18:46	0	





From 10.35.16.1



From 192.168.50.10



Project page 3

<div>← → ↻ ⚠ Not secure 192.168.100.1/Project3/</div>			
<h2>Index of /Project3</h2>			
<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
 <a href="#">Parent Directory</a>		-	
 <a href="#">secret.doc</a>	2025-04-17 18:45	0	
 <a href="#">test.html</a>	2025-04-17 18:44	0	
 <a href="#">test.jpg</a>	2025-04-17 18:44	0	

From 10.35.16.1

← → ↻ ⚠ Not secure 10.35.16.1/Project3/

## Forbidden

You don't have permission to access this resource.





From 10.35.17.1

← → ↻ ⚠ Not secure 10.35.17.1/Project3/





## Forbidden

You don't have permission to access this resource.

From 192.168.50.10

<a href="#">←</a> <a href="#">→</a> <a href="#">↻</a> <span>⚠ Not secure</span> 192.168.50.10/Project3/			
<h2>Index of /Project3</h2>			
<a href="#">Name</a>	<a href="#">Last modified</a>	<a href="#">Size</a>	<a href="#">Description</a>
 <a href="#">Parent Directory</a>		-	
 <a href="#">secret.doc</a>	2025-04-17 18:45	0	
 <a href="#">test.html</a>	2025-04-17 18:44	0	
 <a href="#">test.jpg</a>	2025-04-17 18:44	0	





Project page 4

<a href="#">←</a> <a href="#">→</a> <a href="#">↻</a> <span>⚠ Not secure</span> 10.35.16.1/Project4/			
<h2>Index of /Project4</h2>			
<a href="#">Name</a>	<a href="#">Last modified</a>	<a href="#">Size</a>	<a href="#">Description</a>
 <a href="#">Parent Directory</a>		-	
 <a href="#">secret.doc</a>	2025-04-17 18:47	0	
 <a href="#">test.gif</a>	2025-04-16 15:32	0	
 <a href="#">test.jpeg</a>	2025-04-16 15:33	0	

From 192.168.100.1

Not secure 192.168.100.1/Project4/

# Index of /Project4

Name	Last modified	Size	Description
 <a href="#">Parent Directory</a>		-	
 <a href="#">secret.doc</a>	2025-04-17 18:47	0	
 <a href="#">test.gif</a>	2025-04-16 15:32	0	
 <a href="#">test.jpeg</a>	2025-04-16 15:33	0	

From 10.35.17.1

Not secure 10.35.17.1/Project4/





# Forbidden

You don't have permission to access this resource.

From 192.168.50.10

Not secure 192.168.50.10/Project4/

# Index of /Project4

Name	Last modified	Size	Description
 <a href="#">Parent Directory</a>		-	
 <a href="#">secret.doc</a>	2025-04-17 18:47	0	
 <a href="#">test.gif</a>	2025-04-16 15:32	0	
 <a href="#">test.jpeg</a>	2025-04-16 15:33	0	

## Task 4 – Authorization

### Create directories for departments

**Vendors:** Use the subnet 10.50.1.0/24, which includes IP addresses from 10.50.1.0 to 10.50.1.255.

**Accountants:** Use the subnet 10.51.1.0/24, which includes IP addresses from 10.51.1.0 to 10.51.1.255.

**Administrators:** Use the subnet 10.52.1.0/24, which includes IP addresses from 10.52.1.0 to 10.52.1.255.

**Programmers:** Use the subnet 10.53.1.0/24, which includes IP addresses from 10.53.1.0 to 10.53.1.255.

**Mkdir -p /var/www/htdocs/ Vendors**

Repeat for all departments: Accountants, Programmers and Administrators

/var/www/htdocs/accountants for the Accountants department.

/var/www/htdocs/administrators for the Administrators department.

/var/www/htdocs/programmers for the Programmers department.

```
[root@server12 /]# mkdir -p /var/www/htdocs/Vendors
[root@server12 /]# mkdir -p /var/www/htdocs/Accountants
[root@server12 /]# mkdir -p /var/www/htdocs/Administrators
[root@server12 /]# mkdir -p /var/www/htdocs/Programmers
[root@server12 /]# cd /var/www/htdocs
[root@server12 htdocs]# ls -la
total 0
drwxr-xr-x. 6 root root 81 Apr 16 10:15 .
drwxr-xr-x. 6 root root 68 Apr 16 10:14 ..
drwxr-xr-x. 2 root root 6 Apr 16 10:14 Accountants
drwxr-xr-x. 2 root root 6 Apr 16 10:15 Administrators
drwxr-xr-x. 2 root root 6 Apr 16 10:15 Programmers
drwxr-xr-x. 2 root root 6 Apr 16 10:14 Vendors
[root@server12 htdocs]#
```

Set the permissions to make sure Apache can read the directories

```
chown -R apache:apache /var/www/htdocs
chmod -R 755 /var/www/htdocs
```

```
[root@server12 htdocs]# chown -R apache:apache /var/www/htdocs
[root@server12 htdocs]# chmod -R 755 /var/www/htdocs
[root@server12 htdocs]# █
```

Create test files:

```
[root@server12 htdocs]# tree accountants
```

```
accountants
├── data.txt
├── test.doc
├── test.gif
├── test.html
└── test.jpg
```

```
[root@server12 htdocs]# tree administrators
```

```
administrators
├── data.txt
├── test.doc
├── test.gif
├── test.html
└── test.jpg
```

```
[root@server12 htdocs]# tree programmers
```

```
programmers
├── data.txt
├── test.doc
├── test.gif
├── test.html
└── test.jpg
```

```
[root@server12 htdocs]# tree vendors
```

```
vendors
├── data.txt
├── test.doc
├── test.gif
├── test.html
└── test.jpg
```

Creating the aliases in httpd.conf:

```
Alias "/vendors" "/var/www/htdocs/vendors"
Alias "/accountants" "/var/www/htdocs/accountants"
Alias "/administrators" "/var/www/htdocs/administrators"
Alias "/programmers" "/var/www/htdocs/programmers"
```



Vendors cannot access the websites of other departments (e.g.,  
<http://192.168.50.10/accountants>)

```
<Directory "/var/www/htdocs/vendors">
Options +Indexes
IndexOptions FancyIndexing VersionSort NameWidth=* DescriptionWidth=*
<RequireAny>
Require ip 10.50.1.0/24
Require ip 10.52.1.0/24
Require ip 10.53.1.0/24
</RequireAny>
<Files "*">
<RequireAny>
Require ip 10.50.1.0/24
Require ip 10.52.1.0/24
Require ip 10.53.1.0/24
</RequireAny>
</Files>
<FilesMatch ".(gif|jpg)$">
<RequireAny>
Require ip 10.50.1.0/24
Require ip 10.52.1.0/24
</RequireAny>
</FilesMatch>
<IfModule autoindex_module>
Require all granted
</IfModule>
</Directory>
```

Accountants can access only the accountants' website and must not be able to view any \*.html files.

```
<Directory "/var/www/htdocs/accountants">
Options Indexes
<RequireAny>
Require ip 10.51.1.0/24
Require ip 10.52.1.0/24
Require ip 10.53.1.0/24
</RequireAny>
<Files "*">
<RequireAny>
Require ip 10.51.1.0/24
Require ip 10.52.1.0/24
Require ip 10.53.1.0/24
</RequireAny>
</Files>
<FilesMatch "\.html$">
<RequireAll>
Require all granted
Require not ip 10.51.1.0/24
</RequireAll>
</FilesMatch>
<FilesMatch "\.(gif|jpg)$">
<RequireAny>
Require ip 10.51.1.0/24
Require ip 10.52.1.0/24
</RequireAny>
</FilesMatch>
DirectoryIndex disabled
```

Administrators must be able to view all department websites.

```

<Directory "/var/www/htdocs/administrators">
Options +Indexes
IndexOptions FancyIndexing VersionSort NameWidth=* DescriptionWidth=*
<RequireAny>
Require ip 10.52.1.0/24
Require ip 10.53.1.0/24
</RequireAny>
<Files "*">
<RequireAny>
Require ip 10.52.1.0/24
Require ip 10.53.1.0/24
</RequireAny>
</Files>
<FilesMatch ".(gif|jpg)$">
<RequireAny>
Require ip 10.52.1.0/24
</RequireAny>
</FilesMatch>
<IfModule autoindex_module>
Require all granted
</IfModule>
</Directory>

```

Programmers must be able to access their own website and to view all department websites except their \*.gif or \*.jpg files.

```

<Directory "/var/www/htdocs/programmers">
Options +Indexes
IndexOptions FancyIndexing VersionSort NameWidth=* DescriptionWidth=*
<RequireAny>
Require ip 10.52.1.0/24
Require ip 10.53.1.0/24
</RequireAny>
<Files "*">
<RequireAny>
Require ip 10.52.1.0/24
Require ip 10.53.1.0/24
</RequireAny>
</Files>
<IfModule autoindex_module>
Require all granted
</IfModule>
</Directory>

```

## Index file for departments

```
<br>
    <p><u>Vendors</u></p>

    <a href=http://10.50.1.1/vendors>Vendors - (accessible)</a><br>
    <a href=http://10.52.1.1/vendors>Vendors (10.52.1.1 Administrators - accessible)</a><br>
    <a href=http://10.53.1.1/vendors>Vendors (10.53.1.1 Programmers - accessible except for .gif or .jpg)</a><br>

    <p><u>Accountants</u></p>

    <a href=http://10.51.1.1/accountants>Accountants (only able to view their own website and no .html files)</a><br>
    <a href=http://10.52.1.1/accountants>Accountants (Administrators from 10.52.1.1 - accessible)</a><br>
    <a href=http://10.50.1.1/accountants>Accountants (Vendors from 10.50.1.1 - not accessible)</a><br>
    <a href=http://10.53.1.1/accountants>Accountants (Programmers from 10.53.1.1 accessible except for .gif and .jpg)</a><br>

    <p><u>Administrators</u></p>

    <a href=http://10.52.1.1/administrators>Administrators (from 10.52.1.1 - accessible)</a><br>
    <a href=http://10.51.1.1/administrators>Administrators (from 10.51.1.1 Accountants -not accessible)</a><br>
    <a href=http://10.53.1.1/administrators>Administrators (from 10.53.1.1 Programmers - accessible except for .gif .jpg)</a><br>
```

```

    <p><u>Administrators</u></p>

    <a href=http://10.52.1.1/administrators>Administrators (from 10.52.1.1 - accessible)</a><br>
    <a href=http://10.51.1.1/administrators>Administrators (from 10.51.1.1 Accountants -not accessible)</a><br>
    <a href=http://10.53.1.1/administrators>Administrators (from 10.53.1.1 Programmers - accessible except for .gif .jpg)</a><br>
    <a href=http://10.50.1.1/administrators>Administrators (from 10.50.1.1 Vendors - not accessible)</a><br>

    <p><u>Programmers</u></p>

    <a href=http://10.53.1.1/programmers>Programmers (from 10.53.1.1 Programmers - accessible)</a><br>
    <a href=http://10.52.1.1/programmers>Programmers (from 10.52.1.1 Administrators - accessible)</a><br>
    <a href=http://10.51.1.1/programmers>Programmers (from 10.51.1.1 Accountants - not accessible)</a><br>
    <a href=http://10.50.1.1/programmers>Programmers (from 10.50.1.1 Vendors - not accessible)</a><br>
```

## Testing

## Vendors

[Vendors - \(accessible\)](#)

[Vendors \(10.52.1.1 Administrators - accessible\)](#)

[Vendors \(10.53.1.1 Programmers - accessible except for .gif or .jpg\)](#)

## Accountants

[Accountants \(only able to view their own website and no .html files\)](#)

[Accountants \(Administrators from 10.52.1.1 - accessible\)](#)

[Accountants \(Vendors from 10.50.1.1 - not accessible\)](#)

[Accountants \(Programmers from 10.53.1.1 accessible except for .gif and .jpg\)](#)

## Administrators

[Administrators \(from 10.52.1.1 - accessible\)](#)

[Administrators \(from 10.51.1.1 Accountants -not accessible\)](#)

[Administrators \(from 10.53.1.1 Programmers - accessible except for .gif .jpg\)](#)

[Administrators \(from 10.50.1.1 Vendors - not accessible\)](#)

## Programmers

[Programmers \(from 10.53.1.1 Programmers - accessible\)](#)

[Programmers \(from 10.52.1.1 Administrators - accessible\)](#)







[Programmers \(from 10.51.1.1 Accountants - not accessible\)](#)

[Programmers \(from 10.50.1.1 Vendors - not accessible\)](#)







---

Vendors





From Vendors

<div><div><div>←</div><div>→</div><div>↺</div></div><div><div>⚠ Not secure</div><div>10.50.1.1/vendors/</div></div></div>			
<h2>Index of /vendors</h2>			
	<a href="#">Name</a>	<a href="#">Last modified</a>	<a href="#">Size</a> <a href="#">Description</a>
	<a href="#">Parent Directory</a>		-
	<a href="#">data.txt</a>	2025-04-17 14:27	10
	<a href="#">test.doc</a>	2025-04-17 14:35	0
	<a href="#">test.gif</a>	2025-04-17 14:27	9
	<a href="#">test.html</a>	2025-04-17 15:46	0
	<a href="#">test.jpg</a>	2025-04-16 10:23	9






From Administrators

<div><div><div>←</div><div>→</div><div>↺</div></div><div><div>⚠ Not secure</div><div>10.52.1.1/vendors/</div></div></div>			
<h2>Index of /vendors</h2>			
	<a href="#">Name</a>	<a href="#">Last modified</a>	<a href="#">Size</a> <a href="#">Description</a>
	<a href="#">Parent Directory</a>		-
	<a href="#">data.txt</a>	2025-04-17 14:27	10
	<a href="#">test.doc</a>	2025-04-17 14:35	0
	<a href="#">test.gif</a>	2025-04-17 14:27	9
	<a href="#">test.html</a>	2025-04-17 15:46	0
	<a href="#">test.jpg</a>	2025-04-16 10:23	9

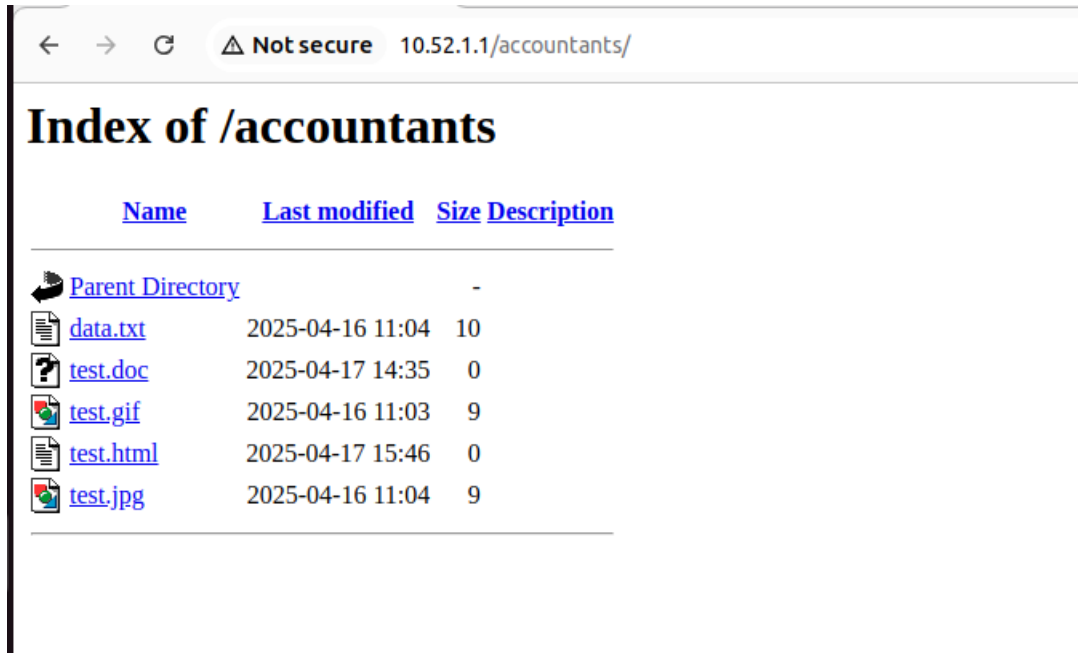
From Programmers without access to .gif files

<div><div>← → ↻</div><div>⚠ Not secure 10.53.1.1/vendors/</div></div>			
<h2>Index of /vendors</h2>			
<a href="#">Name</a>	<a href="#">Last modified</a>	<a href="#">Size</a>	<a href="#">Description</a>
 <a href="#">Parent Directory</a>		-	
 <a href="#">data.txt</a>	2025-04-17 14:27	10	
 <a href="#">test.doc</a>	2025-04-17 14:35	0	
 <a href="#">test.html</a>	2025-04-17 15:46	0	

Accountants

<div><div>▼</div><div>Index of /accountants x</div><div>History x</div><div>⚙</div></div>			
<div><div>← → ↻</div><div>⚠ Not secure 10.51.1.1/accountants/</div></div>			
<h2>Index of /accountants</h2>			
<a href="#">Name</a>	<a href="#">Last modified</a>	<a href="#">Size</a>	<a href="#">Description</a>
 <a href="#">Parent Directory</a>		-	
 <a href="#">data.txt</a>	2025-04-16 11:04	10	
 <a href="#">test.doc</a>	2025-04-17 14:35	0	
 <a href="#">test.gif</a>	2025-04-16 11:03	9	
 <a href="#">test.jpg</a>	2025-04-16 11:04	9	

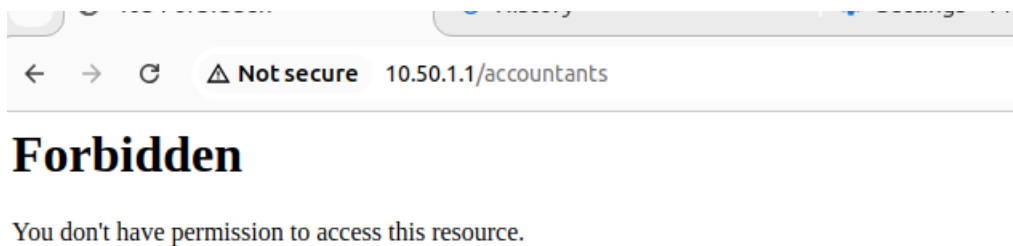
From administrators



The screenshot shows a web browser window with the address bar displaying "10.52.1.1/accountants/". The page title is "Index of /accountants". Below the title is a table with columns: "Name", "Last modified", "Size", and "Description". The table lists the following items:

Name	Last modified	Size	Description
<a href="#">Parent Directory</a>	-	-	-
<a href="#">data.txt</a>	2025-04-16 11:04	10	
<a href="#">test.doc</a>	2025-04-17 14:35	0	
<a href="#">test.gif</a>	2025-04-16 11:03	9	
<a href="#">test.html</a>	2025-04-17 15:46	0	
<a href="#">test.jpg</a>	2025-04-16 11:04	9	

From Vendors



The screenshot shows a web browser window with the address bar displaying "10.50.1.1/accountants". The page title is "Forbidden". Below the title is a message: "You don't have permission to access this resource."



From programmers

<div>← → ↻ ⚠ Not secure 10.53.1.1/accountants/</div>				
<h2>Index of /accountants</h2>				
	<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
🔙	<a href="#">Parent Directory</a>		-	
📄	<a href="#">data.txt</a>	2025-04-16 11:04	10	
❓	<a href="#">test.doc</a>	2025-04-17 14:35	0	
📄	<a href="#">test.html</a>	2025-04-17 15:46	0	

Administrators

<div>← → ↻ ⚠ Not secure 10.52.1.1/administrators/</div>				
<h2>Index of /administrators</h2>				
	<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
🔙	<a href="#">Parent Directory</a>		-	
📄	<a href="#">data.txt</a>	2025-04-16 11:11	10	
❓	<a href="#">test.doc</a>	2025-04-17 14:35	0	
🖼	<a href="#">test.gif</a>	2025-04-16 11:10	9	
📄	<a href="#">test.html</a>	2025-04-17 15:46	0	
🖼	<a href="#">test.jpg</a>	2025-04-16 11:11	9	

From Accountants

[←](#) [→](#) [↻](#) ⚠ Not secure 10.51.1.1/administrators

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# Forbidden

You don't have permission to access this resource.

From Programmers

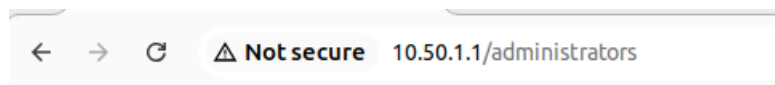
[←](#) [→](#) [↻](#) ⚠ Not secure 10.53.1.1/administrators/

---

## Index of /administrators

	<a href="#">Name</a>	<a href="#">Last modified</a>	<a href="#">Size</a>	<a href="#">Description</a>
	<a href="#">Parent Directory</a>		-	
	<a href="#">data.txt</a>	2025-04-16 11:11	10	
	<a href="#">test.doc</a>	2025-04-17 14:35	0	
	<a href="#">test.html</a>	2025-04-17 15:46	0	

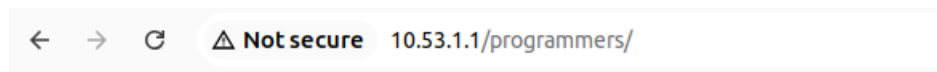
From Vendors









## Forbidden

You don't have permission to access this resource.

### Programmers



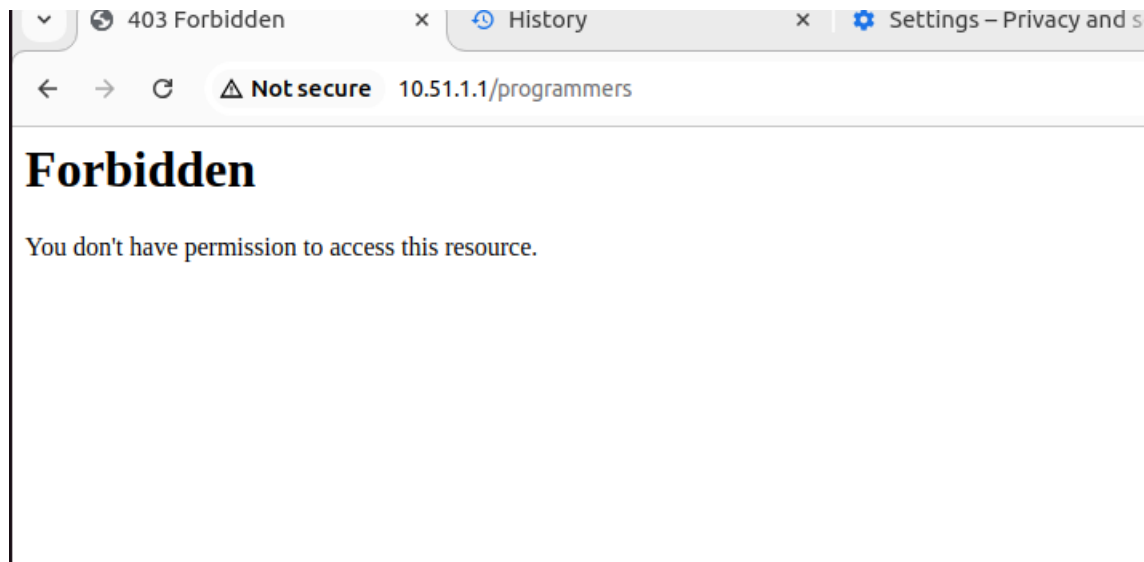
## Index of /programmers

Name	Last modified	Size	Description
 <a href="#">Parent Directory</a>		-	
 <a href="#">data.txt</a>	2025-04-16 11:14	10	
 <a href="#">test.doc</a>	2025-04-17 14:35	0	
 <a href="#">test.gif</a>	2025-04-16 11:14	9	
 <a href="#">test.html</a>	2025-04-17 15:47	0	
 <a href="#">test.jpg</a>	2025-04-16 11:14	9	

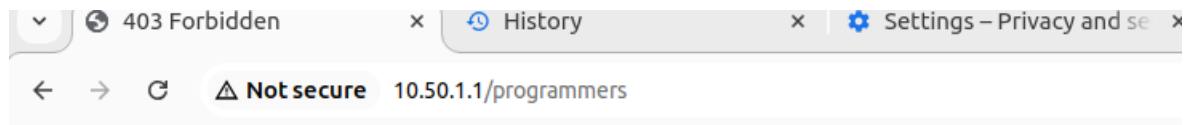
### From Administrators

    Not secure 10.52.1.1/programmers/			
<h2>Index of /programmers</h2>			
	<u>Name</u>	<u>Last modified</u>	<u>Size</u> <u>Description</u>
	<a href="#">Parent Directory</a>	-	
	<a href="#">data.txt</a>	2025-04-16 11:14	10
	<a href="#">test.doc</a>	2025-04-17 14:35	0
	<a href="#">test.gif</a>	2025-04-16 11:14	9
	<a href="#">test.html</a>	2025-04-17 15:47	0
	<a href="#">test.jpg</a>	2025-04-16 11:14	9

From Accountants



From Vendors



# Forbidden

You don't have permission to access this resource.