

LAB 5 Web Server Notes

Monday, October 14, 2024 12:22 PM

Lab5 Webserver Notes:

Install Apache server on machine C

```
ssh root@100.64.28.3
```

```
sudo apt update
```

```
sudo apt install apache2
```

Configure Virtual hosts:

Created directories for each website:

```
sudo mkdir -p /var/www/html/dundermifflin
```

```
sudo mkdir -p /var/www/html/michaelscottpapercompany
```

```
sudo mkdir -p /var/www/html/schrute farms
```

User Permissions:

Pbessly, K Kapoor, abernard can add/edit files only on the Dundermifflin server.

dschrute can add/edit files only on the schrute farms server without needing sudo access.

Editing Apache Configuration

```
sudo nano /etc/apache2/sites-available/dundermifflin.conf
```

adding configurations for dundermifflin:

```
<VirtualHost *:80>
```

```
    ServerName dundermifflin.com
```

```
    ServerAlias www.dundermifflin.com
```

```
    DocumentRoot /var/www/html/dundermifflin
```

```
    <Directory /var/www/html/dundermifflin>
```

```
        AllowOverride All
```

```
    </Directory>
```

```
</VirtualHost>
```

adding configurations for michaelscottpapercompany:

```
<VirtualHost *:80>
```

```
    ServerName micahelscottpapercompany.com
```

```
    ServerAlias www.micahelscottpapercompany.com
```

```
    DocumentRoot /var/www/html/micahelscottpapercompany
```

```
    <Directory /var/www/html/micahelscottpapercompany>
```

```
        AllowOverride All
```

```
    </Directory>
```

```
</VirtualHost>
```

adding configurations for schrute farms:

```
<VirtualHost *:80>
```

```
    ServerName schrute farms.com
```

```
    ServerAlias www.schrute farms.com
```

```
    DocumentRoot /var/www/html/schrute farms
```

```
    <Directory /var/www/html/schrute farms>
```

```
        AllowOverride All
```

```
    </Directory>
```

</VirtualHost

enable the virtual hosts:

```
sudo a2ensite dundermifflin.conf
sudo a2ensite michaelscottpapercompany.conf
sudo a2ensite schrute farms.conf
```

restart the apache server:

```
sudo systemctl restart apache2
```

Backup configurations on machine D:

```
ssh root@100.64.28.4
```

install rsync:

```
sudo apt install rsync
```

create a backscript:(backup)

```
nano ~/backup
```

```
rsync -avz root@100.64.28.3:/var/www/html/ /var/www/html/
```

make it executable:

```
chmod +x ~/backup
```

add a cron job to run the script every 5 minutes:

```
crontab -e
```

```
* /5 * * * * { echo "$(date '+\%H:\%M:\%S') - Starting backup"; rsync -avz --delete root@
100.64.28.3:/var/www/html/. /var/www/html/.; echo "$(date '+\%H:\%M:\%S') - Backup
completed"; } >> /var/log/rsync.log 2>&1
```

for testing

First, I modified the hosts file on my local machine by opening Notepad as an administrator. I assigned the IP address 100.64.28.3 (Machine C) to the following domains: dundermifflin.com, schrute farms.com, michaelscottpapercompany.com, www.dundermifflin.com, www.schrute farms.com, and www.michaelscottpapercompany.com.

When I tested the websites from my local machine, I right-clicked on the page and selected "Inspect." Then, I navigated to the Network tab, where I could see the IP address of Machine C.

After completing the backup, I changed the IP address in my hosts file to 100.64.28.4 (Machine D).

When I accessed the webpages in my local browser and selected "Inspect," I checked the Network tab and saw the IP address of Machine D.

Disk Usage:

CGI Script Configuration on Machine C

```
sudo mkdir -p /var/www/cgi-bin/
sudo nano /var/www/cgi-bin/diskusage
```

add the content to cgi script:

```
#!/bin/bash
```

```
# CGI script to report disk usage for the three websites
```

```

# Output HTTP headers
echo "Content-type: text/html"
echo ""

# Output HTML content
echo "<html><head><title>Disk Usage</title></head><body>"
echo "<h1>Disk Usage</h1>"
echo "<table border='1'><tr><th>Site</th><th>Files</th><th>Size</th></tr>"

# Directories and site names
SITES=(
"/var/www/dundermifflin"
"/var/www/michaelscottpapercompany"
"/var/www/schrutefarms"
)
SITE_NAMES=("dundermifflin.com" "michaelscottpapercompany.com" "schrutefarms.com")

# Loop through each site, calculate file count and size
for i in "${!SITES[@]}"; do
    FILE_COUNT=$(find "${SITES[$i]}" -type f | wc -l)
    SIZE=$(du -sh "${SITES[$i]}" | cut -f1)
    echo "<tr><td>${SITE_NAMES[$i]}</td><td>${FILE_COUNT}</td><td>${SIZE}</td></tr>"
done

echo "</table></body></html>"

Make the CGI script executable:
sudo chmod +x /var/www/cgi-bin/diskusage

Configure Apache for CGI Access:
Enable CGI:
sudo a2enmod cgi

Edit Apache configuration for CGI directory:
sudo nano /etc/apache2/sites-available/000-default.conf

Add the following under the <VirtualHost *:80> section:
ScriptAlias /cgi-bin/ /var/www/cgi-bin/
<Directory "/var/www/cgi-bin">
    AllowOverride None
    Options +ExecCGI
    AddHandler cgi-script .cgi .pl .py .sh
    Require all granted
</Directory>

Restart Apache:
sudo systemctl restart httpd

Restrict Access to the CGI Script:
sudo htpasswd -c /etc/apache2/.htpasswd webmaster

set password as dm23

```

you need to give permissions:

```
chmod 775 .htpasswd
```

Edit the Apache configuration for the CGI directory:

```
sudo nano /etc/httpd/.htpasswd
```

```
<Directory "/usr/lib/cgi-bin">
    AllowOverride None
    Options +ExecCGI -MultiViews +SymLinksIfOwnerMatch
    RewriteEngine On
    # Check if the Host header matches
    RewriteCond %{HTTP_HOST} !^(www\.)?dundermifflin\.com$ [NC]
    # Deny access if the Host header does not match
    RewriteRule .* - [F]
    # If the request reaches here, it means the Host header matches
    AuthType Basic
    AuthName "Restricted Area"
    AuthUserFile /etc/httpd/.htpasswd
    Require valid-user
```

```
</Directory>
```

Restart apache:

```
sudo systemctl restart httpd
```

Sync to Machine D Using rsync:

Use rsync to mirror the CGI script to machine D

```
rsync -avz /var/www/cgi-bin/diskusage root@100.64.28.4:/var/www/cgi-bin/
```

Set Up crontab for Automatic Syncing:

```
crontab -e
```

```
*/5 * * * * { echo "$(date '+\%H:\%M:\%S') - Starting cgi backup"; rsync -avz --delete root@
100.64.28.3:/usr/lib/cgi-bin/. /var/www/cgi-bin/.; echo "$(date '+\%H:\%M:\%S') - Backup
completed"; } >> /var/log/rsync.log 2>&1
```

This will sync the CGI script from machine C to machine D every 5 minutes.

Restrict Access to the CGI Script:

```
sudo htpasswd -c /etc/apache2/.htpasswd webmaster
```

set password as dm23

you need to give permissions:

```
chmod 775 .htpasswd
```

reload apache:

```
systemctl reload httpd
```

If you modify the IP address in your local machine's hosts file to match the IP of Machine C, you can access <http://www.dundermifflin.com/cgi-bin/diskusage>. When prompted, enter the username

"webmaster" and password "dm23" to view the disk usage table.

Similarly, after updating the hosts file to use Machine D's IP, you can try accessing the same script. However, when you attempt to access <http://www.schrute farms.com/cgi-bin/diskusage> or <http://www.michaelscottpapercompany.com/cgi-bin/diskusage>, you'll see a permission error.

To find the correct IP addresses for Machines C and D, you can inspect the network tab in your browser's developer tools.

Notes on how you allowed users to add and modify files for the web server and how you tested your web servers.

On Machine C, I logged into the Dunder Mifflin site as abernard and created a file named testfile.html. I did the same for kkapoor and pbeesly. After that, I accessed the created file in my local browser at www.dundermifflin.com/testfile.html, and it worked successfully.

When I logged into Dunder Mifflin as dschrute and attempted to create a file, I received a "permission denied" error. This is because only users kkapoor, abernard, and pbeesly have the ability to add or edit files on the Dunder Mifflin site.

On the Schrute Farms site, when I logged in as a user other than dschrute and tried to create a file, I encountered a "permission denied" error. This is because only dschrute has been granted permission to add or edit files on that site.