

# Single Web Hosting (Apache2 – Hosting One Website)

**Goal:** Serve one static website from /var/www/html on port 80.

## Prerequisites

- Ubuntu server (e.g., EC2) with outbound internet access
- User with sudo privileges
- Security Group / firewall allows inbound HTTP (TCP 80)

### 1. Login: ubuntu

Log in to your Ubuntu server (EC2 or any Linux VM).

This is the default user provided by cloud providers like AWS.

### 2. sudo -i (root)

Switch to the root user so you can run administrative commands without prefixing every command with sudo.

Root access is required for package installation and service management.

### 3. apt update

Updates the list of available packages from Ubuntu repositories.

Ensures you install the latest stable version of packages.

```
ubuntu@ip-10-1-7-179:~$ sudo -i
root@ip-10-1-7-179:~# apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu noble-security InRelease
Reading package lists... 26%
```

### 4. apt install apache2

```
root@ip-10-1-7-179:~# apt install apache2
```

Installs Apache2 web server.

Apache2 is one of the most popular web servers for hosting websites.

### 5. apache2 -v

Verifies if Apache is installed correctly.

Displays the installed version of Apache2.

```

root@ip-10-1-7-179:~# apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
apache2 is already the newest version (2.4.58-1ubuntu8.8).
0 upgraded, 0 newly installed, 0 to remove and 5 not upgraded
root@ip-10-1-7-179:~# apache2 -v
Server version: Apache/2.4.58 (Ubuntu)
Server built:   2025-08-11T11:10:09
root@ip-10-1-7-179:~#

```

## 6. service apache2 status

Checks if Apache2 service is running.

Should show Active (running) if installation is successful.

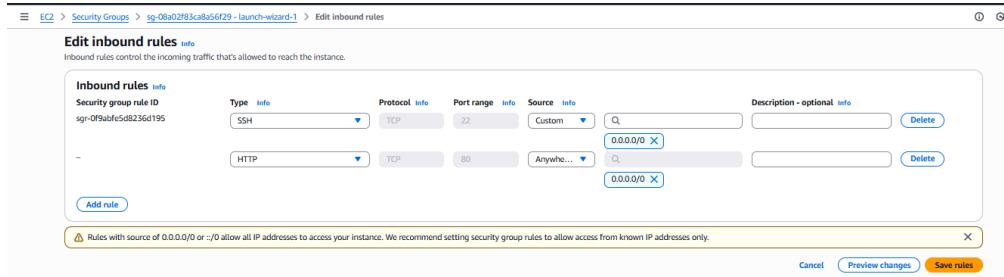
```

● apache2.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
   Active: active (running) since Mon 2025-08-25 11:01:00 UTC; 53min ago
     Docs: https://httpd.apache.org/docs/2.4/
      Main PID: 3496 (apache2)
        Tasks: 55 (limit: 1121)
       Memory: 5.2M (peak: 5.4M)
          CPU: 204ms
         CGroup: /system.slice/apache2.service
                   ├─3496 /usr/sbin/apache2 -k start
                   ├─3499 /usr/sbin/apache2 -k start
                   ├─3500 /usr/sbin/apache2 -k start

Aug 25 11:01:00 ip-10-1-7-179 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Aug 25 11:01:00 ip-10-1-7-179 apachectl[3495]: AH00558: apache2: Could not reliably determine
Aug 25 11:01:00 ip-10-1-7-179 systemd[1]: Started apache2.service - The Apache HTTP Server.
lines 1-16/16 (END)

```

## 7. Go to Instance Security Groups → inbound rules → add HTTP (80)



Opens port 80 (default HTTP port) on your cloud instance (AWS EC2, GCP, Azure).

Without this, external browsers cannot access your server.

## 8. Copy public IP and paste it in browser



Visiting the instance public IP (e.g., `http://54.123.45.67`) should show Apache default page → confirms web server works.

## 9. Download sample HTML file and get link of file

You need a sample static website (zip format).

Example: Free templates from GitHub or other sources.

## 10. wget <file link>

```
root@ip-10-1-7-179:~# wget https://www.tooplate.com/zip-templates/2134_gotto_job.zip
--2025-08-25 12:03:36-- https://www.tooplate.com/zip-templates/2134_gotto_job.zip
Resolving www.tooplate.com (www.tooplate.com)... 72.52.176.250
Connecting to www.tooplate.com (www.tooplate.com)|72.52.176.250|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 2256895 (2.2M) [application/zip]
Saving to: '2134_gotto_job.zip'

2134_gotto_job.zip          100%[=====] 2.15M 11.4MB/s    in 0.2s
2025-08-25 12:03:36 (11.4 MB/s) - '2134_gotto_job.zip' saved [2256895/2256895]
root@ip-10-1-7-179:~#
```

Downloads the sample website zip file to your server.

## 11. apt install unzip

```
root@ip-10-1-7-179:~# apt install unzip
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  zip
The following NEW packages will be installed:
  unzip
  1 package
  0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
```

## 11. unzip file.zip

```
root@ip-10-1-7-179:~# ls -l
total 2212
drwxr-xr-x 6 root root 4096 Apr  8 2023 2134_gotto_job
-rw-r--r-- 1 root root 2256895 Apr  8 2023 2134_gotto_job.zip
drwx----- 3 root root 4096 Aug 25 10:37 snap
root@ip-10-1-7-179:~#
```

Extracts the downloaded website files.

## 12. rsync -a file/ /var/www/html/

Copies extracted website files into Apache's default web root directory (/var/www/html/).

-a ensures files are copied with proper permissions.

## 13. cd /var/www/html/ → check files

```
root@ip-10-1-7-179:~# rsync -a 2134_gotto_job/ /var/www/html/
root@ip-10-1-7-179:~# cd /var/www/html/
root@ip-10-1-7-179:/var/www/html# ls -l
total 224
-rw-r--r-- 1 root root 510 Jul 30 2019 'ABOUT THIS TEMPLATE.txt'
-rw-r--r-- 1 root root 26029 Apr  8 2023 about.html
-rw-r--r-- 1 root root 17177 Apr  8 2023 contact.html
drwxr-xr-x 2 root root 4096 Apr  8 2023 css
drwxr-xr-x 2 root root 4096 Apr  8 2023 fonts
drwxr-xr-x 6 root root 4096 Apr  8 2023 images
-rw-r--r-- 1 root root 69981 Apr  8 2023 index.html
-rw-r--r-- 1 root root 29295 Apr  8 2023 job-details.html
-rw-r--r-- 1 root root 51803 Apr  8 2023 job-listings.html
drwxr-xr-x 2 root root 4096 Apr  8 2023 js
root@ip-10-1-7-179:/var/www/html#
```

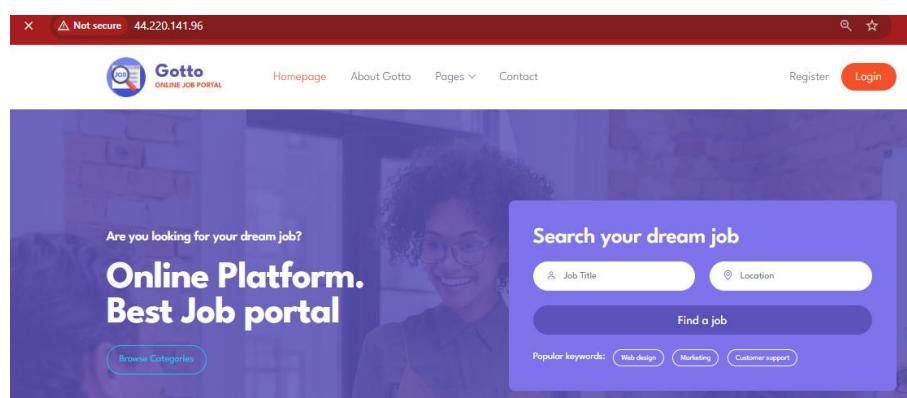
Confirm that your HTML, CSS, JS files are inside Apache's serving folder.

## 14. service apache2 restart

```
root@ip-10-1-7-179:/var/www/html# service apache2 restart
root@ip-10-1-7-179:/var/www/html#
```

Restarts Apache so it serves the new website files.

## 15. Go to browser → refresh public IP



Now instead of default Apache page, your custom website should appear. 🎉

## Multiple Website Hosting (Apache2 Virtual Hosts)

This is Virtual Hosting in Apache → host multiple websites on the same server with different ports.

#### **16. Download additional HTML files (file2, file3, file4)**

You'll host multiple sites (sample templates).

Each one will be assigned its own port.

**17. wget <file2> <file3> <file4>**

```
[root@ip-10-1-7-179:~/var/www/html# wget https://www.tooplate.com/zip-templates/2132_clean_work.zip
--2025-08-25 12:14:39 -- https://www.tooplate.com/zip-templates/2132_clean_work.zip
Resolving www.tooplate.com (www.tooplate.com)... 72.52.176.250
Connecting to www.tooplate.com (www.tooplate.com)|72.52.176.250|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3060105 (2.9M) [application/zip]
Saving to: '2132_clean_work.zip'

2132_clean_work.zip      100%[=====] 2.92M 13.1MB/s  in 0.2s

2025-08-25 12:14:39 (13.1 MB/s) - '2132_clean_work.zip' saved [3060105/3060105]

root@ip-10-1-7-179:/var/www/html# wget https://templatemo.com/tm-zip-files-2020/templatemo_504_page_one.zip
--2025-08-25 12:14:57 -- https://templatemo.com/tm-zip-files-2020/templatemo_504_page_one.zip
Resolving templatemo.com (templatemo.com)... 72.52.176.250
Connecting to templatemo.com (templatemo.com)|72.52.176.250|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 2265943 (2.2M) [application/zip]
Saving to: 'templatemo_504_page_one.zip'

templatemo_504_page_one.zip      100%[=====] 2.16M 11.7MB/s  in 0.2s

2025-08-25 12:14:58 (11.7 MB/s) - 'templatemo_504_page_one.zip' saved [2265943/2265943]

root@ip-10-1-7-179:/var/www/html# wget https://templatemo.com/tm-zip-files-2020/templatemo_506_tinker.zip
--2025-08-25 12:15:14 -- https://templatemo.com/tm-zip-files-2020/templatemo_506_tinker.zip
Resolving templatemo.com (templatemo.com)... 72.52.176.250
Connecting to templatemo.com (templatemo.com)|72.52.176.250|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3919143 (3.7M) [application/zip]
Saving to: 'templatemo_506_tinker.zip'

templatemo_506_tinker.zip      100%[=====] 3.74M 16.6MB/s  in 0.2s

2025-08-25 12:15:14 (16.6 MB/s) - 'templatemo_506_tinker.zip' saved [3919143/3919143]
```

Download the website zip files.

**18. `unzip <file2> <file3> <file4>`**

Extract each site's files.

```
root@ip-10-1-7-179:/var/www/html# ls -l
total 9272
drwxr-xr-x 6 root root 4096 Nov 22 2022 2132_clean_work
-rw-r--r-- 1 root root 3060105 Nov 22 2022 2132_clean_work.zip
-rw-r--r-- 1 root root 510 Jul 30 2019 'ABOUT THIS TEMPLATE.txt'
-rw-r--r-- 1 root root 26029 Apr 8 2023 about.html
-rw-r--r-- 1 root root 17177 Apr 8 2023 contact.html
drwxr-xr-x 2 root root 4096 Apr 8 2023 css
drwxr-xr-x 2 root root 4096 Apr 8 2023 fonts
drwxr-xr-x 6 root root 4096 Apr 8 2023 images
-rw-r--r-- 1 root root 69981 Apr 8 2023 index.html
-rw-r--r-- 1 root root 29295 Apr 8 2023 job-details.html
-rw-r--r-- 1 root root 51803 Apr 8 2023 job-listings.html
drwxr-xr-x 2 root root 4096 Apr 8 2023 js
drwxr-xr-x 6 root root 4096 Jun 2 2019 templatemo_504_page_one
-rw-r--r-- 1 root root 2265943 Jun 2 2019 templatemo_504_page_one.zip
drwxr-xr-x 6 root root 4096 Jun 2 2019 templatemo_506_tinker
-rw-r--r-- 1 root root 3919143 Jun 2 2019 templatemo_506_tinker.zip
root@ip-10-1-7-179:/var/www/html#
```

## 19. rm -rf \*.zip

```
root@ip-10-1-7-179:/var/www/html# ls -l
total 236
drwxr-xr-x 6 root root 4096 Nov 22 2022 2132_clean_work
-rw-r--r-- 1 root root 510 Jul 30 2019 'ABOUT THIS TEMPLATE.txt'
-rw-r--r-- 1 root root 26029 Apr 8 2023 about.html
-rw-r--r-- 1 root root 17177 Apr 8 2023 contact.html
drwxr-xr-x 2 root root 4096 Apr 8 2023 css
drwxr-xr-x 2 root root 4096 Apr 8 2023 fonts
drwxr-xr-x 6 root root 4096 Apr 8 2023 images
-rw-r--r-- 1 root root 69981 Apr 8 2023 index.html
-rw-r--r-- 1 root root 29295 Apr 8 2023 job-details.html
-rw-r--r-- 1 root root 51803 Apr 8 2023 job-listings.html
drwxr-xr-x 2 root root 4096 Apr 8 2023 js
drwxr-xr-x 6 root root 4096 Jun 2 2019 templatemo_504_page_one
drwxr-xr-x 6 root root 4096 Jun 2 2019 templatemo_506_tinker
root@ip-10-1-7-179:/var/www/html#
```

Clean up unnecessary zip files.

## 20. cd /etc/apache2/sites-available/

Apache stores Virtual Host config files here.

Each .conf file defines a site.

```
root@ip-10-1-7-179:/var/www/html# cd /etc/apache2/sites-available/
root@ip-10-1-7-179:/etc/apache2/sites-available# ls -l
total 12
-rw-r--r-- 1 root root 1286 Mar 18 2024 000-default.conf
-rw-r--r-- 1 root root 4573 Mar 18 2024 default-ssl.conf
root@ip-10-1-7-179:/etc/apache2/sites-available# vi 000-default.conf
```

## 21. ls -l

Lists available config files.

You should see 000-default.conf (default Apache site).

## 22. vi 000-default.conf

Edit this config.

Remove unnecessary lines, keep structure clean (VirtualHost block).

## 23. Copy config file for new sites

```
root@ip-10-1-7-179:/etc/apache2/sites-available# vi 000-default.conf
root@ip-10-1-7-179:/etc/apache2/sites-available# cp 000-default.conf file2.conf
root@ip-10-1-7-179:/etc/apache2/sites-available# cp file2.conf file3.conf
root@ip-10-1-7-179:/etc/apache2/sites-available# cp file3.conf file4.conf
root@ip-10-1-7-179:/etc/apache2/sites-available# vi file2.conf
```

cp 000-default.conf file2.conf

cp file2.conf file3.conf

cp file3.conf file4.conf

Creates separate config files for each website.

## 24. Edit each config

```
<VirtualHost *:81>
    ServerAdmin webmaster@localhost
    DocumentRoot /var/www/file2

    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>

<VirtualHost *:83>
    ServerAdmin webmaster@localhost
    DocumentRoot /var/www/file3

    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
~>

<VirtualHost *:84>
    ServerAdmin webmaster@localhost
    DocumentRoot /var/www/file4

    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```

Open each file (vi file2.conf, etc.) and change:

Port (<VirtualHost \*:81>)

DocumentRoot (/var/www/file2)

Do the same for file3 on port 83, file4 on port 84.

## 25. cd (home directory)

Just navigation.

## 26. cd /etc/apache2/sites-enabled/

Active configs are linked here.

## 27. a2ensite file2 file3 file4

```
root@ip-10-1-7-179:/etc/apache2/sites-available# a2ensite file2 file3 file4
Enabling site file2.
Enabling site file3.
Enabling site file4.
To activate the new configuration, you need to run:
    systemctl reload apache2
```

Enables the new sites.

Apache creates symlinks from sites-available → sites-enabled.

## 28. cd

Back to home directory.

## 29. cd /etc/apache2/

Go to Apache main config folder.

### 30. vi ports.con

```
# If you just change the port or add more ports here  
# have to change the VirtualHost statement in  
# /etc/apache2/sites-enabled/000-default.conf  
  
Listen 80  
Listen 81  
Listen 83  
Listen 84  
  
<IfModule ssl_module>  
    Listen 443  
</IfModule>  
  
<IfModule mod_gnutls.c>  
    Listen 443  
</IfModule>  
~
```

Add new listen ports:

Listen 80

Listen 81

Listen 83

Listen 84

Tells Apache to listen on multiple ports.

### 31. cd (home directory)

32. rsync -a file2/ /var/www/file2/

33. rsync -a file3/ /var/www/file3/

34. rsync -a file4/ /var/www/file4/

```
root@ip-10-1-7-179:/var/www/html# rsync -a templatemo_504_page_one/ /var/www/file2/  
root@ip-10-1-7-179:/var/www/html# rsync -a 2132_clean_work/ /var/www/file3/  
root@ip-10-1-7-179:/var/www/html# rsync -a templatemo_506_tinker/ /var/www/file4/  
root@ip-10-1-7-179:/var/www/html#
```

Copy each site's files into its respective directory.

### 35. service apache2 restart

Restart to apply changes.

### 36. Add inbound rules in Security Group (81, 83, 84)

Edit inbound rules [Info](#)  
Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules <a href="#">Info</a>	Type <a href="#">Info</a>	Protocol <a href="#">Info</a>	Port range <a href="#">Info</a>	Source <a href="#">Info</a>	Description - optional <a href="#">Info</a>	Delete
sgr-0f9abef5cd8236d195	SSH	TCP	22	Custom <a href="#">Q</a> 0.0.0.0/0		<a href="#">Delete</a>
sgr-0f00d8512bd69f8c	HTTP	TCP	80	Custom <a href="#">Q</a> 0.0.0.0/0		<a href="#">Delete</a>
-	Custom TCP	TCP	81	Anywhere <a href="#">Q</a> 0.0.0.0/0		<a href="#">Delete</a>
-	Custom TCP	TCP	83	Anywhere <a href="#">Q</a> 0.0.0.0/0		<a href="#">Delete</a>
-	Custom TCP	TCP	84	Anywhere <a href="#">Q</a> 0.0.0.0/0		<a href="#">Delete</a>

[Add rule](#)

⚠ Rules with source of 0.0.0.0/0 or -/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

[Cancel](#) [Preview changes](#) [Save rules](#)

Without this, traffic won't reach Apache on new ports.

### 37. Browser test

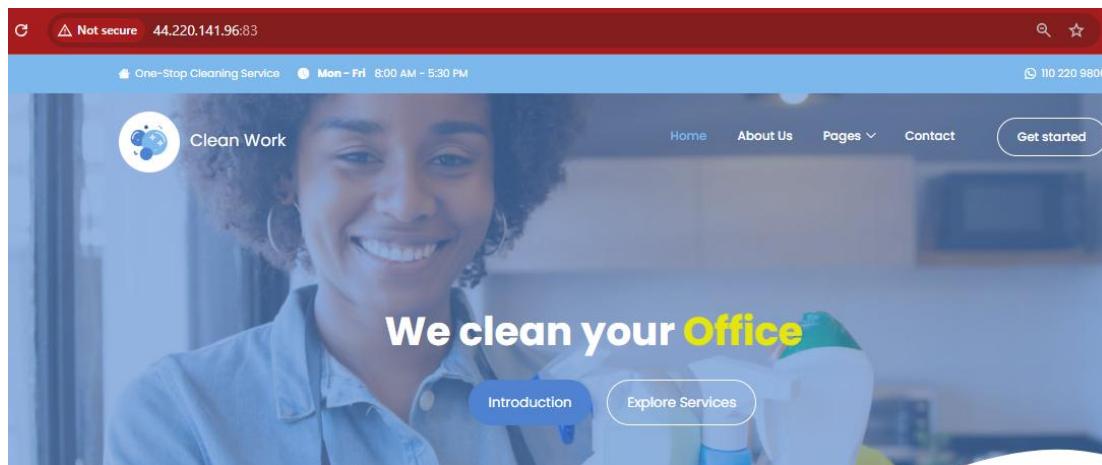
Visit:

`http://<public-ip>:80 → site1`

`http://<public-ip>:81 → site2`

`http://<public-ip>:83 → site3`

`http://<public-ip>:84 → site4`



🎉 Now you have multi-website hosting on one Apache server.