Navigate to https://httpd.apache.org/

In the menu on the left, click the "Download!" link



In the page that appears, click the link under "Stable Release – Latest Version" (at the time of writing this document this was 2.4.41)

ARN MORE	Downloading the Apache HTTP Server
	Use the links below to download the Apache HTTP Server from one of our mirrors. You i from our main distribution directory. The signatures can be verified with our <u>KEYS</u> file.
<u>d!</u>	Only current recommended releases are available on the main distribution site and its n are available from the <u>archive download site</u> .
	Apache httpd for Microsoft Windows is available from a number of third party vendors.
<u>Reports</u>	Stable Release - Latest Version:
ories	 <u>2.4.41</u> (released 2019-08-14)
Information	If you are downloading the Win32 distribution, please read these important notes.

Click "Files for Mirosoft Windows"

Apache HTTP Server 2.4.41 (httpd): 2.4.41 is the latest available version

The Apache HTTP Server Project is pleased to <u>announce</u> the release of version 2.4.41 of the Aj our latest GA release of the new generation 2.4.x branch of Apache HTTPD and represents fifte previous releases!

For details, see the Official Announcement and the CHANGES 2.4 and CHANGES 2.4.41 lists.

- Source: <u>httpd-2.4.41.tar.bz2</u> [<u>PGP</u>] [<u>SHA256</u>]
- Source: <u>httpd-2.4.41.tar.gz</u> [PGP] [SHA256]
- <u>Binaries</u>
- Security and official patches
- Other files
- Files for Microsoft Windows

Select "Apache Lounge"

Downloading Apache for Windows

The Apache HTTP Server Project itself does not provide binary n as a convenience, but it is not a release deliverable.

If you cannot compile the Apache HTTP Server yourself, you can

Popular options for deploying Apache httpd, and, optionally, PHP

- ApacheHaus
- Apache Lounge
- Bitnami WAMP Stack
- <u>WampServer</u>
- XAMPP

At the Apache Lounge website, download the latest apache installer for 64-bit Windows. Note that the Apache webserver is named "httpd" (as in "http daemon"). A daemon is a computer program that runs as a background process. In this case the program serves the http network protocol.

Also download the required Visual C++ redistributable, which are some additional files required by Apache.

Be sure you installed latest 14.24.28127.4 Visual C++ Redistributal Redistributable	ble for Visual Studio 2015-2019 <u>vc_redist_x64</u> r <u>vc_redist_x86</u> see
Арас	he 2.4 binaries VS16
Apache 2.4.41 Win64	Info & Changelog
httpd-2.4.41-win64-VS16.zip	14 Aug '19 10.094k
PGP Signature (Public PGP key), SHA1-SHA512 Checksums	

After the downloads, install the software. Start with the redistributable. Agree to the terms and click Install. Also confirm the next warning that this program is allowed to make changes to the computer. You may need to restart the computer when done.

🛃 Microso	t Visual C++ 2015-2019 Redistributable (x64) - 14	_		\times	
	Microsoft Visual C++ 201	15-2	019		
N	Redistributable (x64) - 14	.24.	2812	7	
MICROS	OFT SOFTWARE LICENSE TERMS			^	
MICROSOFT VISUAL C++ 2019 RUNTIME					
These lice based on	ense terms are an agreement between Microsoft where you live, one of its affiliates) and you. Th named above. The terms also apply to any Micro	Corpored apply	ration (or y to the	r . v	
∕ l <u>a</u> gree t	o the license terms and conditions				
		nstall	<u>C</u> lo	se	

Now install apache. Installation consists of the following steps:

- 1. Unzip the downloaded zipfile httpd-2.4.41-win64-VS16.zip .
- 2. When unzipped, find the folder named "Apache24" and move it to the root of the C:\ drive (thus its destination will be C:\Apache24). Do a move (thus Cut/Paste)
- 3. The next step requires that you open an MS-DOS Command Prompt in Administrator mode:



Confirm allowing the command prompt making changes to the computer.

- 4. When the command prompt opens, type the following command, and press ENTER:
 - $C:\Apache24\bin\httpd -k$ install





5. Now start the Windows Services, and confirm that an item named Apache2.4 is in the list:



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File Action View	Help						
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🔍 Services (Local)	Services (Local)						
	Apache2.4	Name	Description	Status	Startup Type	Log On As	^
	Start the service	🧠 ActiveX Installer (AxInstSV) 🧠 AllJoyn Router Service	Provides Us Routes AllJo		Manual Manual (Trig	Local Syste Local Service	
		Apache2.4	Apache/2.4		Automatic	Local Syste	
	Description: Apache/2.4.41 (Win64)	App Readiness Application Identity Application Information Application Layer Gateway Application Management Application Management AppX Deployment Service (AssignedAccessManager Se	Gets apps re Determines Facilitates t Provides su Processes in Provides inf AssignedAc	Running Running	Manual Manual (Trig Manual (Trig Manual Manual Manual Manual (Trig	Local Syste Local Service Local Syste Local Service Local Syste Local Syste Local Syste	
		Auto Time Zone Updater	Automatica	_ .	Disabled	Local Service	~
	Extended Standard						

6. Right-click on Apache2.4 and select "Start"

File Action View						
Services (Local)	Services (Local)					
	Apache2.4	Name	Description Status	Startup Type	Log On As	^
	Start the service	ActiveX Installer (AxInstSV) AllJoyn Router Service	Provides Us Routes AllJo	Manual Manual (Trig	Local Syste Local Service	1
		Apache2.4	Apache/2.4	Automatic	Local Syste	
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		AppX Deployment Service (AssignedAccessManager Se	All Tasks >	Manual Manual (Trig	Local Syste Local Syste	
		Auto Time Zone Updater	Refresh	Disabled	Local Service	~

7. Now the service will report "Running":

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]							

8. Confirm it is working, by opening your browser on this computer, and navigating to the website "localhost". If you see the text "It works!", then the webserver was installed successfully.



9. In order to allow connection from other computers, you must still enable allowing http network traffic through the Windows Firewall. To do this, find and start the application named "windows defender firewall with advanced security"



10. In the menu on the left, click "Inbound Rules"

💣 Windows Defender Firewall with	n Advanced Security
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Windows Defender Firewall witl	Windows Defender Firewall with Advance
🔣 Inbound Rules	
Connection Security Bulan	Windows Defender Firewall with Advand
Monitoring	
, « <u>s</u>	Overview
	For your security, some settings are
	Domain Profile is Active
	Windows Defender Firewall is on.
	S Inbound connections that do not match a
	Outbound connections that do not match
	Private Profile
	Windows Defender Firewall is on.
	S Inbound connections that do not match a
	Outbound connections that do not match
	Public Profile
	Windows Defender Firewall is on.
	S Inbound connections that do not match a
	Outbound connections that do not match
In the menu on the right, click "	New Rule"
	Actions

11.

		Actions
^ Profile	Enabled ^	Inbound Rules
All	Yes	🗽 New Rule
All	Yes	▼ Filter by Profile ►
Private	Yes Vor	▼ Filter by State
All	Yes	▼ Filter by Group
Domai	n Yes	View
Domai	n Yes	Q Refresh
Domai	n Yes	📑 Export List
Domai	n Yes	P Help
All	Yes	

- 12. Go through the "New Inbound Rule Wizard", and make the following selection: Port, TCP, 80, Allow the connection, Domain, Private, Public, give the name "Apache" and Finish.
- 13. After this rule is added, connection to the webserver of this computer will also be possible from other computers. Just use any other computer, and type the IP address of this computer to confirm that the page "It works!" also appears.

Now download and install python.

Go to the website <u>http://www.python.org/</u>, click "Downloads" and then "View the full list of downloads" (do not click on the button "Python 3.8.2", this will most likely download the 32-bits version of Python:



In the next page, click the latest release under "Looking for a specific release":

Looking for a spec Python releases by version	ific release?	
Release version	Release date	
Python 3.8.2	Feb. 24, 2020	🕹 Download
Python 3.8.2 Python 3.8.1	Feb. 24, 2020 Dec. 18, 2019	🕹 Download

In the page that appears, scroll down and click the "Windows x86-64 executable installer"

Files

Version	Operating System	Description	MD5 Su
Gzipped source tarball	Source release		f9f3768
XZ compressed source tarball	Source release		e9d6eb
macOS 64-bit installer	Mac OS X	for OS X 10.9 and later	f122031
Windows help file	Windows		750667
Windows x86-64 embeddable zip file	Windows	for AMD64/EM64T/x64	1a9856
Windows x86-64 executable installer	Windows	for AMD64/EM64T/x64	b5df1ct
Windows x86-64 web-based installer	Windows	for AMD64/EM64T/x64	2586cd

Save the file, and when it is downloaded, double-click it to start the installation of Python.

Uncheck the option "Install launcher for all users (recommended)", and click "Customize installation".



In the next page, uncheck the options Documentation, Python test suite and py launcher before clicking Next.



In the next screen, change the install location to C:\Python38 , and click Install.

b Python 3.8.2 (64-bit) Setup		_		×
	Advanced Options			
	Install for <u>a</u> ll users			
	Associate files with Python (requires the py launcher)			
	Create shortcuts for installed applications			
	Add Python to environment variables			
	Precompile standard library			
	Download debugging symbols			
	Download debug binaries (requires VS 2015 or later)			
	Customize install location			
	C:\Python38		B <u>r</u> ows	se
python	You will require write permissions for the selected location.			
windows	<u>B</u> ack <u>I</u> nstall		<u>C</u> ano	el

When done, click Close (ignore the option to Disable path length limit)



Now configure the apache webserver to run python scripts.

Use Notepad to edit the file C:\Apache24\conf\httpd.conf

Search and find the line with text "Options Indexes FollowSymLinks" (halfway in the file). Change this line, append the option ExecCGI. The line will then read "Options Indexes FollowSymLinks ExecCGI". Note that the line starts with 4 spaces. Keep it that way.

Now search and find the line with the text "#AddHandler cgi-script .cgi".

Uncomment this line, by removing the # in front of the line. Also add .py to the end of the line. The new line should look like this:

AddHandler cgi-script .cgi .py

Maintain the 4 spaces before the line (as it was).

Save the file, and close Notepad.

Now restart the Apache webserver. Do this through the Services application. Find Apache2.4, right-click on it, and from the menu that appears select Restart.

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File Action View Help						
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Test the Apache configuration adjustment, confirm that Apache is now executing .py scripts, instead of downloading the text-content.

To do so, use the Windows Explorer to go to folder C:\Apache24\htdocs . Once there, create a new textfile (right-click on the empty space on the right, and from the menu that appears, select "New -> Text Document".



Name the new file "test".

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File Home Share	View			~ 🕐
\leftarrow \rightarrow \checkmark \uparrow \square \rightarrow This	PC > System (C:) > Apache24 > htdocs	~ ē	Search htdocs	م
A Quick access	Name	Date modified	Туре	Size
	e index	5-3-2020 16:52	HTML File	1 KB
	📄 test	6-3-2020 10:00	Text Document	0 KB
Documents 🖈				
📰 Pictures 🛛 🖈				
b Music				
📑 Videos				
~				
2 items				

Make an adjustment to the Windows Explorer settings, making it show the full filename (including the extension). Go to View, and enable File name extensions.

	htdocs	-	⊐ ×
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Navigation management	Extra large icons Large icons Medium icons Small icons Sort File name extensions Hide selected Hide selected items Hide nitems	Options	
Panes	Layout Current view Show/hide		
 Downlos Docume Pictures Music 	ints ★ ★ Tile name extensions Show or hide the set of characters added to the end of files that identifies the file type or format.		0 KB
2 items	~		

Now the new textfile will reveal its extension. It will show "test.txt".

Double-click the file to open it in Notepad for editing.

Copy/Paste the following 6 lines of content into the textfile:

```
#!/Python38/python
print('Content-type: text/html')
print('')
print('<html><head></head><body>')
print('Only this text must be visible!')
print('</body></html>')
```

Note the first line, reading #!/Python38/python ; this should match the location where you have installed Python. Note also that the quotes are pasted as regular single quotes (not pretty open and close quotes, as Microsoft Word may have the tendency to auto-change them).

Save the file and close Notepad.

Now rename the file to test.py (change the extension from .txt to .py).

Click Yes on the warning that Windows Explorer gives when changing the file extension.

Renam	e				
	If you change a file name extension, the file might become unusable. Are you sure you want to change it?				
	Yes No				

Result:

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Desktop	<i>*</i>	test.py	6-3-2020 10:09	PY File	1	KB
Downloads	ж					
Documents	R					
Pictures	* .					
2 items 1 item se	lected 17	7 bytes				

Confirm it is working, by opening your browser on this computer, and navigating to the website "http://localhost/test.py". If you see the text "Only this text must be visible!", then the python scripting was configure successfully.



If, instead, you see the 6 lines of text that were typed into the textfile earlier, then there is a mistake in one of the steps that must be corrected.