Installing Apache on Windows 98

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The idea

The Internet has grown very fast in the last couple of years, and today almost everybody has a way to access the Internet at home, at work, at a friend's house etc. This raises the demand for people to have their own web page. Although there is many free web space providers on the Internet today, such as freehomepage.com or geocities.com, these free hosts are often limited in space, content, and functionality, while they usually also clutter the users homepage with advertisement.

Although most people may be thinking installing their own web server at home may require much expertise, the Apache web server is quite easy to install. It is not only the most used web server in the world today, it is also a free piece of software, available for many different platforms. This tutorial will explain the installation of the so-called win32 binary of the Apache web server for Windows 98. I will explain how to install, start, and stop the server, and also how to create a simple web page.

The only system requirements for this operation is an x86 compatible computer running Windows 98, that is connected to the internet.

Obtaining the software

The first step we will have to do is to obtain the Apache web server software. The software and many other resources can be found at
http://apache.org.
Since the software is available for many different platforms, we will have to find the win32 binary, which can be found here:
http://httpd.apache.org/dist/httpd/binaries/win32/
At this web page we should find two available download packages, one without the source code (e.g. *apache_1.3.20-win32-no_src.msi*), and one including the source code (e.g. *apache_1.3.20-win32-src.msi*). For our purposes, we will download the package without the source code. After clicking on this link, our web browser will ask where we want to save the file. We should save this file somewhere on the hard disk, where we can find it later on.

The installer package is about 1.8 MB in size as for version 1.3.20; depending on the available internet connection, this download can take up to 10 minutes.

Installing Apache

Once the package is downloaded, we are ready to install. We browse to the location where we saved the file, and double-click it. The installation wizard will start with the advice to close all running programs, which we should, and click **next**. It will then display the license agreement, which we can accept by selecting **I accept the terms of the license agreement** and by pressing **next**. The next installer screen will display a readme file. We can continue again by pressing **next**.

The following screen becomes more interesting. Here the installer will try to automatically insert our computer's Network Domain, Server Name, and select a default email address. This email address will be displayed on error pages, and we may want to type in our personal email address here instead. If the installer fails to detect the other two fields, we can skip to the following section to find our IP address manually. Otherwise, we should now make sure the **Run as a service for all users** is selected and then click **next**. The installer will now give us the option to select a complete or custom installation, we will choose the **complete** installation.

Although the suggested **Destination Folder** for the program will work fine, I suggest changing it to an easier to find location in the root of drive **C:**. That way it will be easier for us later on to navigate to our directory where we will save our web pages. To change this, we click on **Change**, and type
C:
into the path field, click **OK** and then click on **next**.
The setup program will then tell us it's ready to go, and we can begin installing the files by pressing **Install**. Once it's done, we can exit the wizard by pressing **Finish**.

Finding the IP address

If the installation wizard could not find the Network Domain and Server Name, we will have to find out our IP address manually. The IP address is an address that identifies our computer on the Internet. Depending on the type of connection we have, this may be a static address (an address that does not change, e.g. a DSL connection), or a dynamically assigned address (a different address that will be assigned by the ISP every time an internet connection is established).
This sounds really more difficult than it is; there is an easy way to find out the IP address.
To do this, first we make sure we are connected to the Internet, and then we click **start**, **run**, and enter **winipcfg** into the little popup window. This opens another window called **IP Configuration**. The only thing

we want to get from this program is the **IP Address**. To get this, we make sure that the drop-down box on top of the window is displaying either the modem name, or the network card, which ever we are using to connect to the Internet. We should probably write this number on a piece of paper.

Running the Server

We are now ready to do our first test run! Before we do this, we should confirm that we are connected to the Internet. The Apache server can be started by using the shortcut in the start menu, to do this we click on **Start**, **Programs**, **Apache httpd Server** and finally **Start Apache in Console**. An MS-DOS window will start up displaying the line
Apache/1.3.20 (Win32) running...
If there should be an error message instead, some trouble-shooting tips are included at the end of this document. As long as we want Apache to serve web pages, we have to leave this window open. To stop Apache, we simple close the MS-DOS window.

Testing the server

Now the server is running, and we should be able to connect to it. In order to do this we open a web browser and enter the IP address of our computer, which either was found by the installation wizard, or was discovered through the winipcfg program. The default Apache website should come up, which starts with "*If you can see this, it means that the installation of the Apache web server software on this system was successful. You may now add content to this directory and replace this page.*" If this page is visible, congratulations! The Apache web server is running and accessible from any computer on the Internet, and there is not a pixel of annoying advertisement on our page. If this page does not load, the trouble-shooting section at the end of this tutorial might be helpful. Now let's bring up our own content!

Creating our first web page

There are very many different ways to create a web page, and also many different programs available for creating web sites. Since Notepad is by default installed on any Windows 98 computer, let's use it to create our first web page.
Every HTML web page consists of the HTML source code, which is in other words a formatting language that tells our browser how to display the web page. There are a number of different so-called tags, usually starting like e.g. **<TITLE>** which would have the closing tag **</TITLE>**. What's in between is what will be displayed, for the case of the TITLE tag, the title of the browser window.

Let's open Notepad by going to **Start**, **Programs**, **Accessories** and clicking **Notepad**, then enter the following code for our first web page:

<HTML>
<HEAD>
<TITLE>My first Page</TITLE>
</HEAD>
<BODY>
Hello World!
</BODY>
</HTML>

We started the HTML page with the **<HTML>** tag, which every HTML document opens with, then we opened the header tag, **<HEAD>**, which holds information like the **<TITLE>** tag. After closing the header with **</HEADER>**, we open the **<BODY>** tag, which will actually hold the text etc. to be displayed in the main browser window. When we are finished with what should be displayed, we have to add the closing **</BODY>** tag and finally the closing **</HTML>** tag.

Now we save this document by using **Save As...** from the File menu in Notepad. In the following window we have to make sure that the **Save as type:** option is set to **All files**. The HTML documents visible to the world are located in the **htdocs** directory, which, if Apache was installed to **C:\apache** as suggested, is at **C:\apache\htdocs**.

We browse to that directory and save the file as **index.html**. The name index.html is special to apache, because this is the default page it will display when no specific file in the requested directory was asked for. E.g. if you created a subfolder like
C:\apache\htdocs\new
and you enter
http://xxx.xxx.xxx.xxx/new/
(Note: xxx.xxx.xxx.xxx stands for the IP address!)
into your web browser, Apache will look for an index.html file in the directory **C:\apache\htdocs\new** and display it.

Once saved, we can return to our web browser and enter our IP number again. Apache will find the **index.html** file we created displaying "*Hello World!*" with "*My first Page*" as the window title.

Congrats again! We just created our first hand-coded HTML page. We can tell our friends to enter the IP address into their browser, and they should be able to confirm our success.

Next steps

Now we can add any documents as well as files of other types into the htdocs directory, to access them we simply type our IP address into the browser and the filename, e.g.
http://xxx.xxx.xxx.xxx/screensaver.zip
(Note: xxx.xxx.xxx.xxx stands for the IP address!)
and the browser will act according to the type of file it is. In this case, the browser would start downloading the zip file. The limit of files depends only on the size of our hard drive, which is a huge advantage over web spaces from free hosts.

To learn more about HTML coding I recommend checking out the webmonkey tutorials at
http://hotwired.lycos.com/webmonkey/authoring/html_basics/.
These tutorials are quite easy to understand and will improve HTML skills quickly.

Once we want to get more into the many features available with Apache, I recommend reading the documentation; a lot of info is installed with the Apache package to the hard drive and can be accessed by going to
http://xxx.xxx.xxx.xxx/manual
(Note: xxx.xxx.xxx.xxx stands for the IP address!)

Much more and always up-to-date information can be found at the apache website at
http://www.apache.org/docs.

There is also a couple of books available for the Apache server, I recommend the title "Professional Apache", available through WROX at
http://www.wrox.com/Books/Book_Details.asp?ISBN=1861003021

Trouble-shooting

Problem: The server can't be accessed via the Internet.

Possible Solutions:

Is the server running and actually displaying the line that it is running?
Is the computer connected to the Internet?
If the internet connection is through a modem, the IP address may have changed. Referring to the "Finding the IP address" section should help.
If this doesn't help, we should use Notepad to examine the **error_log**, which can be found in **C:\apache\logs\error.log**.

Problem: The newly saved **index.html** page but does not display

Possible Solutions:

Is the file correctly saved in the **htdocs** directory?
Notepad might have saved the file with the **.txt** extension. The file should be renamed to **index.html**.
Clicking **refresh** on our browser will try to find the file again.

Problem: The web page can't be accessed from outside world.

Possible Solutions:

The computer is probably on a Local Area Network sharing the Internet connection, meaning there is an internal network with many different computers sharing one IP address for the Internet, but each of them having their individual IP addresses, invisible to the outside world. We would have to talk to the Network Administrator to find out if he will allow to run the Apache software.

I hope this was a helpful tutorial, and the Apache web server installation was successful.

Written by [DrTebi]