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Tutorial about Setting up WAP Servers for Hosting WAP 1.x or WAP 2.0 Sites

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Before a WAP site can be accessible on mobile phones or other mobile devices, you have to host it on a WAP server. In this tutorial, you can learn how to set up a WAP server for hosting WAP 1.x or WAP 2.0 sites. We will begin the tutorial with a description of what a WAP server is (WAP server = web server with proper configuration) and how to publish WAP 1.x and WAP 2.0 content over the mobile Internet. Then you can learn about WAP 1.x and WAP 2.0 MIME types and how to set up MIME types on WAP servers using a variety of methods. At last, we will describe how to set default documents to keep the URL of a WAP site short.

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Setting up WAP Servers Introduction

Web sites are hosted on web servers. Similarly, WAP sites are hosted on WAP servers. A WAP server stores the files that make up a WAP site and handles requests from users. In the following sections, you can learn what a WAP server is and how to set up a WAP server to publish WAP 1.x (latest version: WAP 1.2.1) and WAP 2.0 content to users of wireless devices.

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What is a WAP Server?

- A WAP server is just a standard web server that hosts a WAP site's contents like WML and XHTML MP documents.
- Some companies have a "WAP server" product that is actually a web server plus a WAP gateway. This confuses the term. So, when you talk about WAP servers, make sure you and the one listening to you are not referring to different things.
(Note that content providers do not need to care about the WAP gateway part typically since mobile network operators provide a WAP gateway to their service subscribers. However, if you are creating a secure WAP application like mobile banking, then you need to consider whether to use you own WAP gateway.)
- Two popular web servers are Apache and IIS.
- Tomcat is a Java Servlet / JSP container that can also be used as a standalone web server.
- Apache, IIS and Tomcat are the most commonly used software for hosting WAP / web sites.

Apache - Open-source, Free WAP / Web Server

- Apache is a very professional open-source WAP / web server. It can be downloaded free of charge at the website <http://httpd.apache.org/>.
- Apache is available on many platforms including Microsoft Windows and Linux / UNIX.
- PHP is very often used with Apache for server-side scripting.

Tomcat - Open-source, Free Java Servlet / JSP Container and Web / WAP Server

- Like Apache, Tomcat is open-source. It can be downloaded free of charge at the website <http://jakarta.apache.org/tomcat/>.
- Tomcat is mainly used to host dynamic WAP / web applications developed with the Java Servlet or JSP (Java Server Pages) server-side technologies.

- Tomcat can also be used to host static documents.
- It is available on many different platforms like Microsoft Windows and Linux / UNIX.

Microsoft IIS - Built-in Web / WAP Server of Windows

- IIS (Internet Information Services) is a web server developed by Microsoft.
- IIS is only available on the MS Windows platform. It is bundled with some versions of MS Windows like Windows 2000, Windows XP Professional and Windows Server 2003.
- IIS is commonly used to host ASP applications.
- ASP (Active Server Pages) is a server-side technology developed by Microsoft for creating dynamic WAP / web sites.

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Publishing WAP 1.x / WAP 2.0 Content over the Mobile Internet

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The steps for publishing WAP 1.x or WAP 2.0 content over the mobile Internet are very straightforward:

1. Install and configure a web server as if you were setting up a web site.
2. Make sure the MIME types of WAP 1.x and WAP 2.0 documents have been set up properly in the configuration file of the web server.
3. Place your WAP 1.x and WAP 2.0 documents in the web server as if they were ordinary web documents.
4. Start the web server.
5. Make sure the web server is connected to the wired Internet.

That's it. If anyone wants to visit your WAP site over the mobile Internet, he/she will type the URL address of your WAP site in a WAP browser. The WAP browser will then download the WAP page and display it on the screen. (Note that a user has to follow the instructions provided by the mobile network operator to configure the settings of the mobile phone before he/she can access your WAP site.)

For example, if you want to view the *helloWorldEg1.xhtml* document of our XHTML MP tutorial on a mobile phone, you will type `http://www.developershome.com/examples/wap/xhtmlmp/helloWorldEg1.xhtml` in the WAP browser.

If you have not registered a domain name for your WAP site, you can specify the IP address of your WAP server as the host part of the URL. For example, let's say the IP address is 123.123.123.123. To visit the WAP site, you will enter `http://123.123.123.123/` on a WAP browser.

As mentioned before, if you are creating a secure WAP application like mobile banking, you need to consider whether to set up your own WAP gateway to ensure maximum security.

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What are MIME Types?

- When a web or WAP browser receives a document, it needs some way to determine the type of contents the document contains so that it can decide how to deal with the document.
- MIME (Multipurpose Internet Mail Extensions) is developed for such purpose.
- A MIME type is associated to a file type.
- For example, the MIME type "text/html" is associated to HTML files and the MIME type "text/vnd.wap.wml" is associated to WML files.

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Web servers choose a suitable MIME type and include it in an HTTP response automatically. They keep a conversion table that contains the mappings between MIME types and file extensions.

For example, let's say a WAP browser requests a WML file named *helloWorld.wml* from a web / WAP server. The web / WAP server will search for the MIME type associated to the ".wml" extension in the conversion table and includes it in the HTTP response automatically.

WAP 1.x / WAP 2.0 MIME Types and File Extensions

Before a web / WAP server can be used to serve WAP 1.x or WAP 2.0 content, you need to make sure its MIME settings have been configured properly. Otherwise WAP browsers cannot display the WAP pages.

The latest versions of some web servers have set the MIME types of WAP 1.x and WAP 2.0 properly by default, which means you do not need to modify anything.

The following table lists the MIME types of WAP 1.x:

File extension	MIME type	Contents of the file
.wml	text/vnd.wap.wml	WML markup in plain-text form
.wmlc	application/vnd.wap.wmlc	Compiled WML markup
.wbmp	image/vnd.wap.wbmp	WBMP image
.wmls	text/vnd.wap.wmlscript	WMLScript code in plain-text form
.wmlsc	application/vnd.wap.wmlscriptc	Compiled WMLScript code

The following table lists the MIME types of WAP 2.0:

File extension	MIME type	Contents of the file
.xhtml or .html or .htm	application/vnd.wap.xhtml+xml or application/xhtml+xml or text/html	XHTML MP markup in plain-text form
.css	text/css	WCSS (WAP CSS or Wireless CSS) code in plain-text form

As you can see in the above table, there are three possible MIME types for XHTML MP files:

- application/vnd.wap.xhtml+xml**
 This is the MIME type specified by the Open Mobile Alliance. If "application/vnd.wap.xhtml+xml" is not set as the MIME type, XHTML MP documents cannot be viewed on some WAP browsers (e.g. browsers on some Nokia Series 60 mobile phones).
- application/xhtml+xml**
 This is the MIME type for XHTML Family document types. (XHTML MP belongs to the XHTML family.)
- text/html**
 This is the MIME type for HTML documents. XHTML MP is HTML-compatible.

Advantage of using "text/html": Using "text/html" ensures that XHTML MP documents can be displayed on ordinary web browsers. Some web browsers (e.g. Internet Explorer 6) do not display documents with MIME types like "application/vnd.wap.xhtml+xml" and "application/xhtml+xml". For example, let's say "application/vnd.wap.xhtml+xml" is associated to your XHTML MP documents. If you use IE 6 to load any one of them, it will pop up a dialog box asking you whether to save the file on the hard disk.

Disadvantage of using "text/html": Browsers will parse XHTML MP documents as HTML documents but not XML documents. Hence, invalid XML syntax may not be detected.

Sometimes you may want to detect the MIME types supported by a client browser and then assign an appropriate MIME type to your XHTML MP documents dynamically. For example, if you find that a browser supports the "application/vnd.wap.xhtml+xml" type, you will assign "application/vnd.wap.xhtml+xml" to your XHTML MP documents. If you find that a browser only supports the "text/html" type (e.g. IE 6), you will assign "text/html" to your XHTML MP documents. Please refer to the "[Choosing MIME Types Dynamically](#)" section of our XHTML MP tutorial if you want to learn the details.

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