

Wireless Markup Language

THE WIRELESS MARKUP LANGUAGE (WML) is a segment of the Wireless Application Protocol (WAP) designed to meet the needs of resource-limited devices such as consumer screen phones and pagers.

In this chapter, I show you how to use WML to make your content available to the Internet phones deployed today. You learn how to create and mark up content using WML.

In Chapter 13, “Dynamic Content with WMLScript,” you see how to extend WML’s power with WMLScript, the lightweight scripting environment that is a part of the WAP standard. If you are already familiar with the basics of WML, you may want to skip straight to Chapter 13 to learn how scripting can enhance your wireless content.

Why Use WML?

Although there are many similarities between the World Wide Web’s architecture and the WAP architecture, there are also several important differences. In many ways, WAP has taken the best features of the infrastructure for the World Wide Web and enhanced their operation for mobile devices. Therefore, WAP has many advantages for the wireless content developer.

With the advent of Mobile XHTML for WAP (see Chapter 11, “Wireless Application Protocol”), the question becomes a little more difficult. WML is best suited for supporting legacy devices, as well as writing wireless applications that require client-side scripting or custom user interfaces, because you can combine WML with WMLScript to override the look and feel of controls and perform simple scripting. On the other hand, if you already have a wireless HTML site, it is easy to ensure you have support for XHTML, giving newer WAP users the ability to access your site.

WML Is Efficient

WML is more efficient than traditional Web-based markup languages. Explicitly designed for wireless use, WAP enables clients and servers to exchange the most data using the least amount of bandwidth.

Content marked up using WML generally occupies fewer bytes than content marked up in HTML. Not only is WML content more compact because of the encoding performed prior to exchange with the client, but WML markup generally results in pages that are more compact. WML's markup fosters concise writing because its constructs remind authors of the simplicity of the viewing device. In addition, the tags defined in WML provide efficiencies not available in HTML. Similarly, the WAP protocols that carry data from the physical layer to the WML layer, including the Wireless Transport Protocol (WTP) and Wireless Session Protocol (WSP), are more efficient than Transport Control Protocol/Internet Protocol (TCP/IP) or Hypertext Transport Protocol (HTTP).

WML Provides for Constrained Clients

WML was designed from the outset for clients with minimal computing capabilities. Unlike HTML, which has been adapted with varying degrees of success to operate on low-capability devices, WAP has been optimized to provide the greatest flexibility with minimal resources.

WAP's use of gateway servers at points throughout the wireless network allows much of the processing required by Web browsers to be performed by servers, rather than by individual clients. Although these gateway servers are an additional link in the chain between origin server and client that require computing resources, maintenance, stability, and robust operation, their health is generally assured by the companies that operate them.

Of course, to make the most of this feature, it is important to be sure your content is *well-formed*—that there are no errors in your WAP content as defined by the specification that will cause problems for either the gateway or handheld clients.

WML Is Predictable

The WAP Forum tightly controls both the WAP standard and deployment of WAP-compatible devices. If a browser is compatible with a specific version of WAP, you know it will work with content authored to the specification. This is in sharp contrast to the wireless Hypertext Markup Language (HTML) browsers available, where the multitude of browser vendors and compromises has yielded an environment where it is not clear which tags will be available on a specific device.