Wireless Application Protocol

By Shyam Tummala
WIRELESS APPLICATION PROTOCOL
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What is WAP?
Wireless application protocol (WAP) is an application environment and a set of communication protocols for wireless devices designed to give manufacturer, vendor, and technology-independent access to the Internet and advanced telephony services.

The wireless industry came up with the idea of WAP. The point of this standard was to show internet contents on wireless clients, like mobile phones.

WAP is an application communication protocol
WAP is used to access services and information
WAP is inherited from Internet standards
WAP is for handheld devices such as mobile phones
WAP is a protocol designed for micro browsers
WAP enables the creating of web applications for mobile devices.
WAP uses the mark-up language WML (not HTML)
WML is defined as an XML 1.0 application

The Wireless Application Protocol
The WAP protocol is the leading standard for information services on wireless terminals like digital mobile phones.

The WAP standard is based on Internet standards (HTML, XML and TCP/IP). It consists of a WML language specification, a WMLScript specification, and a Wireless Telephony Application Interface (WTAI) specification.

WAP is published by the WAP Forum, founded in 1997 by Ericsson, Motorola, Nokia, and Unwired Planet. Forum members now represent over 90% of the global handset market, as well as leading infrastructure providers, software developers and other organizations.

WAP Micro Browsers
To fit into a small wireless terminal, WAP uses a Micro Browser.

A Micro Browser is a small piece of software that makes minimal demands on hardware, memory and CPU. It can display information written in a restricted mark-up language called WML.
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The Micro Browser can also interpret a reduced version of JavaScript called WMLScript.

What is WML?
WML stands for Wireless Markup Language. It is a mark-up language inherited from HTML, but WML is based on XML, so it is much stricter than HTML.

WML is used to create pages that can be displayed in a WAP browser. Pages in WML are called DECKS. Decks are constructed as a set of CARDS.

What is WMLScript?
WML uses WMLScript to run simple code on the client. WMLScript is a light JavaScript language. However, WML scripts are not embedded in the WML pages. A WML page only contains references to script URLs. WML scripts need to be compiled into byte code on a server before they can run in a WAP browser.

Examples of WAP use Architecture

Checking train table information
Ticket purchase
Flight check in
Viewing traffic information
Checking weather conditions
Looking up stock values
Looking up phone numbers
Looking up addresses
Looking up sport results
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Architecture:

The WAP datagram protocol (WDP) is the transport layer that sends and receives messages via any available bearer network, including SMS, USSD, CSD, CDPD, IS136 packet data, and GPRS.

WTLS
Wireless transport layer security (WTLS), an optional security layer, has encryption facilities that provide the secure transport service required by many applications, such as e-commerce.

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WTP
The WAP transaction protocol (WTP) layer provides transaction support, adding reliability to the datagram service provided by WDP.

WSP
The WAP session protocol (WSP) layer provides a lightweight session layer to allow efficient exchange of data between applications.

HTTP Interface
The HTTP interface serves to retrieve WAP content from the Internet requested by the mobile device.

Conclusion:
WAP can provide multiple applications, for business and customer markets such as banking, corporate database access, and a messaging interface.

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