

Mobile Computing

Lecture 22

WAP (Wireless Application Protocol) 1



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- History
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HISTORY



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.

Mobile Applications - 1



- Vehicles
 - transmission of news, road condition etc
 - ad-hoc network with near vehicles to prevent accidents
- Emergencies
 - early transmission of patient data to the hospital
 - ad-hoc network in case of earthquakes, cyclones
 - military ...
- Traveling salesmen
 - direct access to central customer files
 - consistent databases for all agents
 - mobile office

Mobile Applications - 2



- Web access
 - outdoor Internet access
 - intelligent travel guide with up-to-date location dependent information
- Information services
 - push: stock quotes; pull: nearest cash ATM
- Disconnected operations
 - file-system caching for off-line work
 - mobile agents, e.g., shopping
- Entertainment
 - games, etc

WAP- Wireless Application Protocol



- Wireless Application Protocol commonly known as WAP is used to enable the access of internet in the mobile phones or PDAs.
- An open, global specification that empowers mobile users with wireless devices to easily access and interact with internet information and services instantly.

About WAP

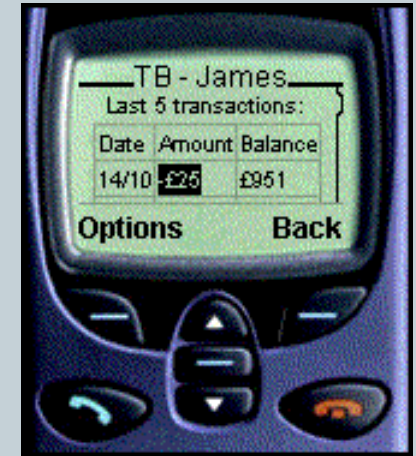


WAP stands for Wireless Application Protocol

- WAP is an application communication protocol
- WAP is used to access services and information
- WAP is for handheld devices such as mobile phones
- 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

GOALS

- The basic *AIM* of WAP is to provide a web-like experience on small portable devices - like mobile phones and PDAs.



Cont..



- **PURPOSE OF WAP**

To enable easy, fast delivery of relevant information and services to mobile users.

- **TYPE OF DEVICES THAT USE WAP**

- Handheld digital wireless devices such as mobile phones, pagers, two-way radios, smart phones and communicators .

- **WAP WORKS WITH MOST WIRELESS NETWORKS SUCH AS:**

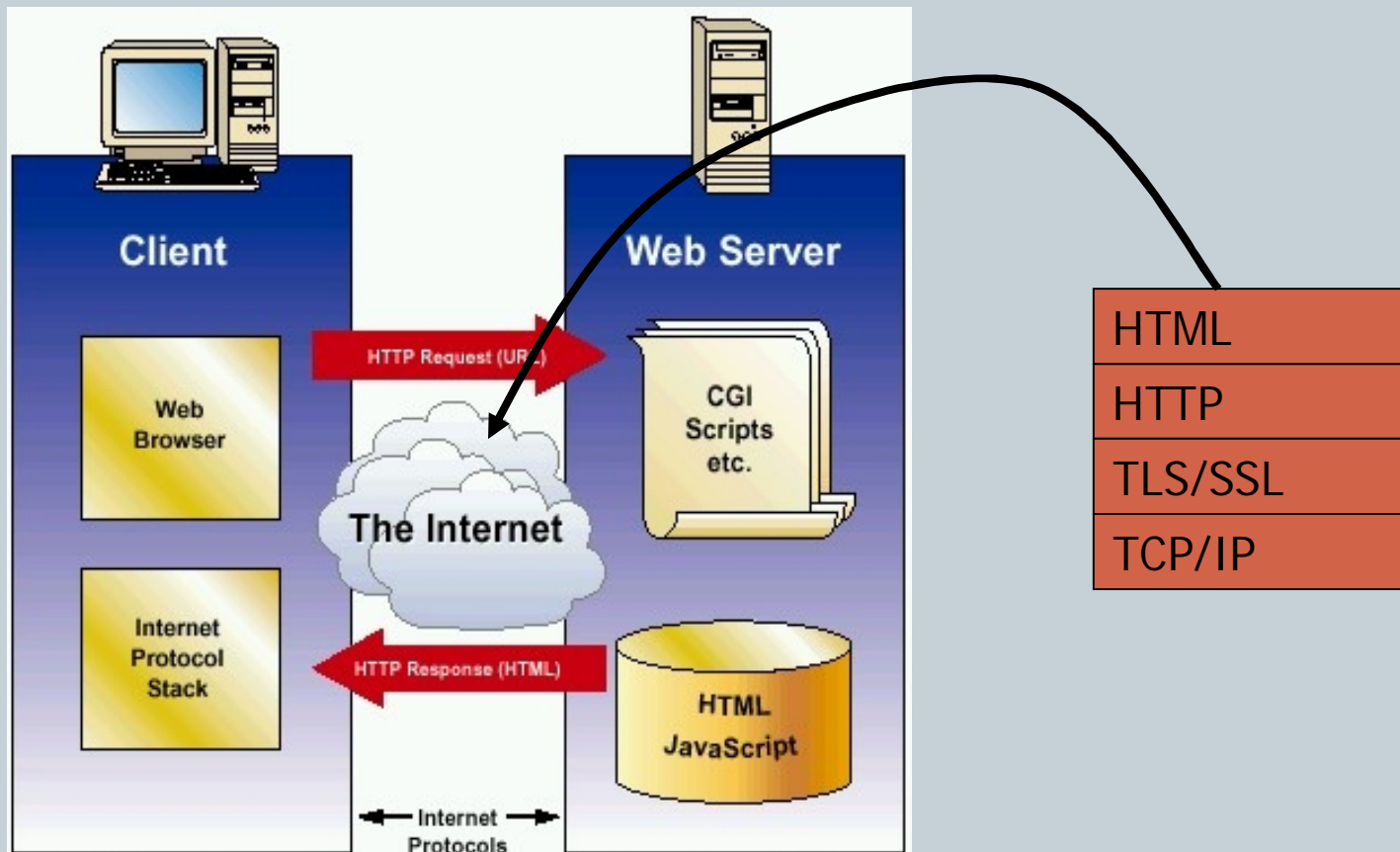
- CDPD, CDMA, GSM, PDC, PHS, TDMA, FLEX, TETRA, DECT

WAP: Main Features



- **Browser**
 - "Micro browser", similar to existing web browsers
- **Markup language**
 - Similar to HTML, adapted to mobile devices
- **Script language**
 - Similar to Javascript, adapted to mobile devices
- **Gateway**
 - Transition from wireless to wired world
- **Server**
 - "Wap/Origin server", similar to existing web servers
- **Protocol layers**
 - Transport layer, security layer, session layer etc.
- **Telephony application interface**
 - Access to telephony functions

Internet Model

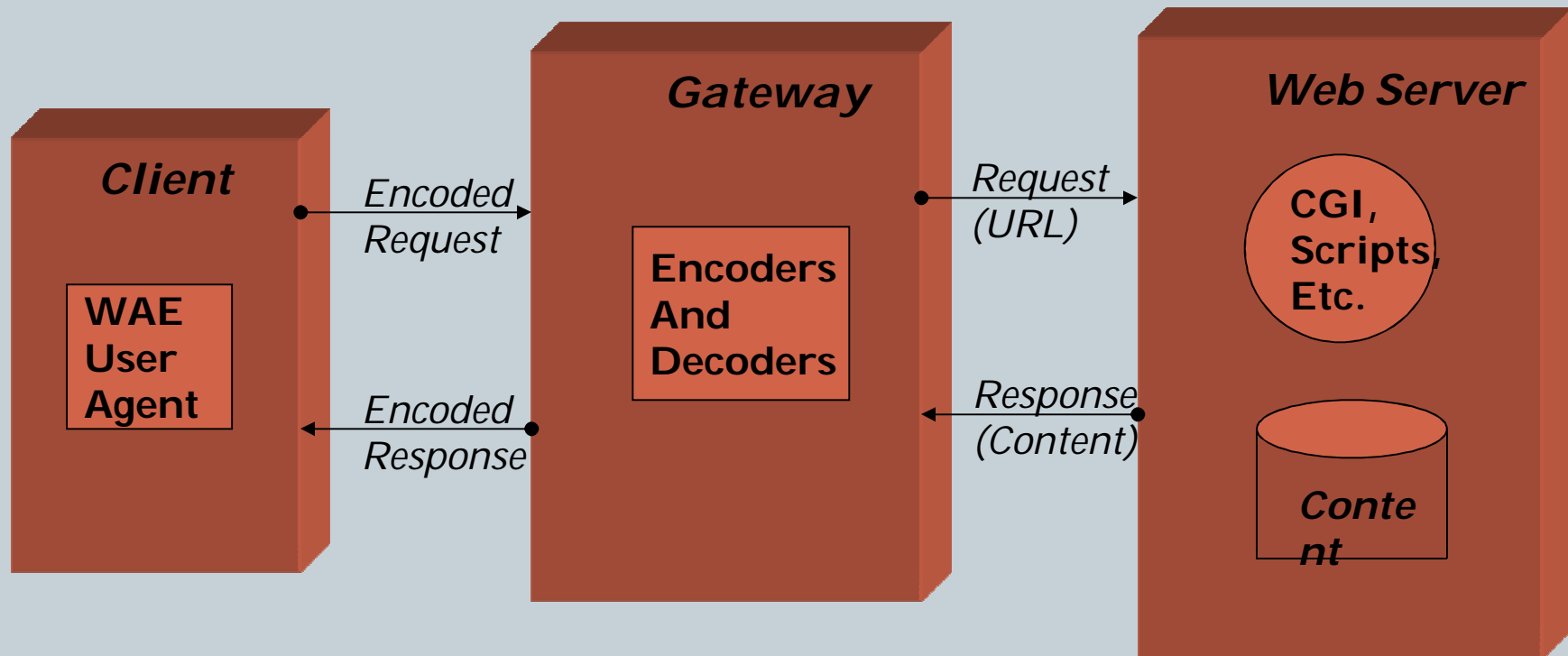


OPERATING SYSTEMS COMPATIBLE WITH WAP

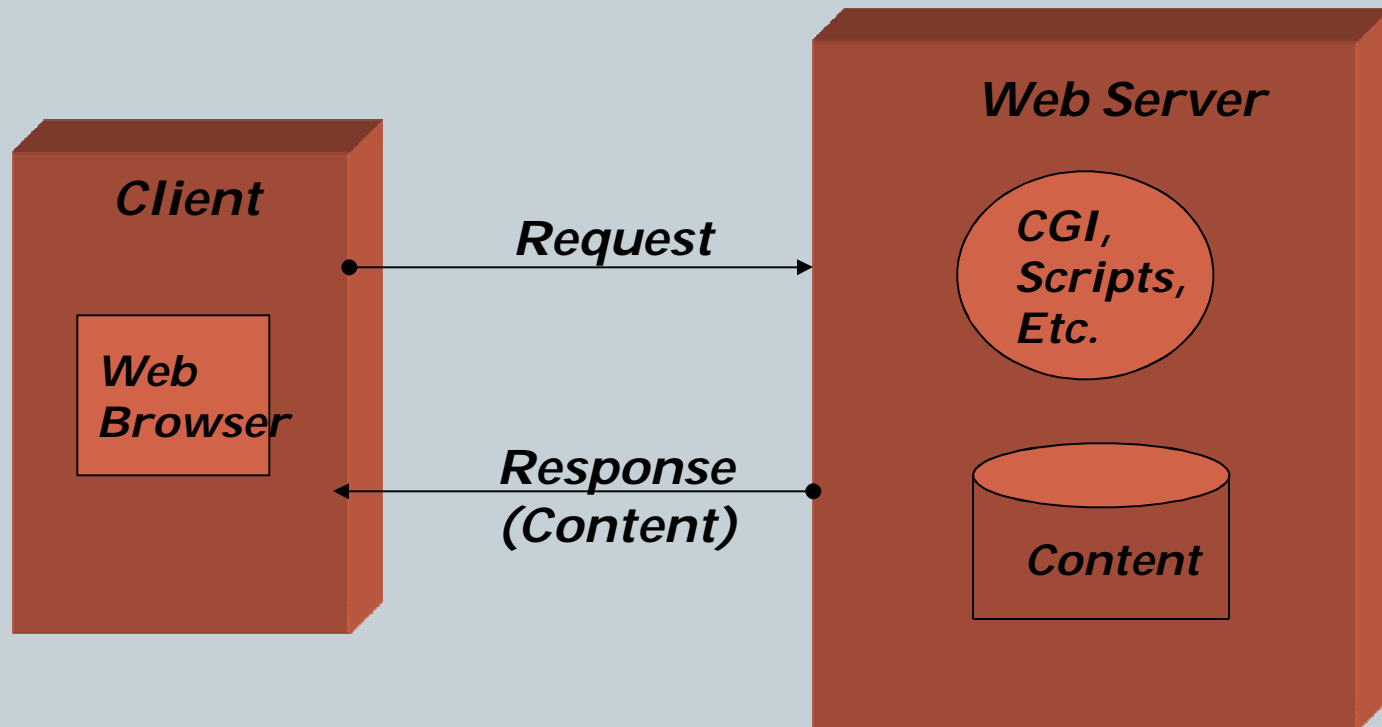


- WAP is a communications protocol and an application environment.
- WAP is independent of OS that means WAP can be implemented on any OS.
- It can be built on any operating system including Palm OS, EPOC 32, Windows CE, FLEXOS, OS/9, Java OS, etc. It provides service interoperability even between different device families.

WAP ARCHITECTURE

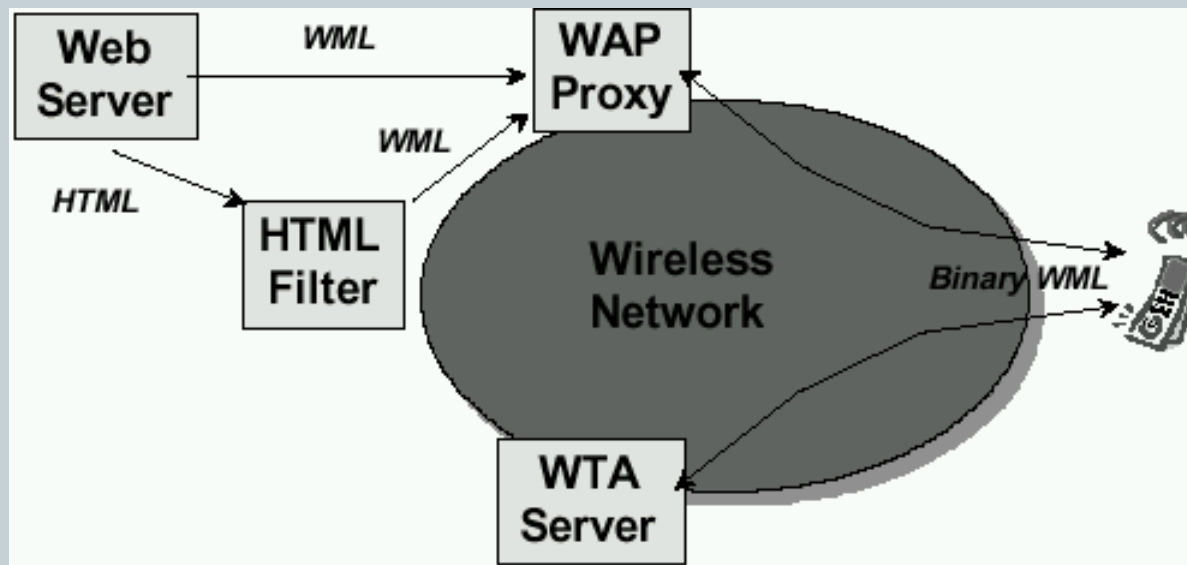


WORLD-WIDE WEB MODEL



WAP Architecture

- Another look



Key Components

- Origin/Web Server
- WAP Gateway/Proxy
- WAP Protocol Stack
- Micro Browser
- WML/WML Script
- Transcoders
- WTA

WAP ARCHITECTURE REQUIREMENTS



- Leverage existing standards whenever possible
- Define a layered and extensible architecture
- Support as many wireless networks as possible
- Provide support for secure applications and communication
- Optimize for efficient use of device resources