

Wireless Application Protocol (W A P)

a
presentation
by
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on
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Today's Focus?

- What is WAP?
- When does WAP come to existence?
- Why are we using WAP?
- How does WAP work?
- Where is WAP heading?

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Day Dreaming?

Imagine:

You step out of an office building on the way to the airport and use your WAP-enabled, wireless device to check the traffic report. After finding congestion, you locate the train timetable and choose to purchase a train ticket on-line instead of driving. On the way to the airport, you select your aisle seat, check in for the flight, and reserve a special meal. Finally, you unpack your raincoat after looking up the weather at your destination.



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What else can we expect from WAP?

- customer care and provisioning
- message notification and call management
- e-mail, telephony value-added services and unified messaging
- mapping and locator services
- weather and traffic alerts, news, sports and information services
- e-commerce transactions and banking services
- online address books, directory services
- corporate intranet applications

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What is WAP?

The Wireless Application Protocol (WAP) is an open, global specification that empowers mobile users with wireless devices to easily access and interact with information and services instantly.

What type of devices will use WAP?

Handheld digital wireless devices such as mobile phones, pagers, two-way radios, smartphones, and communicators -- from low-end to high-end.

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Industry Representation

- WAP Forum Ltd. currently has 244 full members consisting of wireless network operators and industry suppliers of wireless communications products.
- It also has 385 associate members mainly non infrastructure industry supplier: any supplier to the telecommunications industry that is not a manufacturer of infrastructure products.

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Why WAP?

WAP Forum claims:

- Specific needs of wireless networks and phones are not addressed.
- WAP enables any data transport.
- WAP uses standard Internet markup language technologies (XML).
- The WML UI components map well onto existing mobile phone UI.
- WAP utilizes plain Web Http 1.1 servers thus leveraging existing development methodologies.

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Technical Details?

Here comes Marc!

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Problems With Wireless Networks

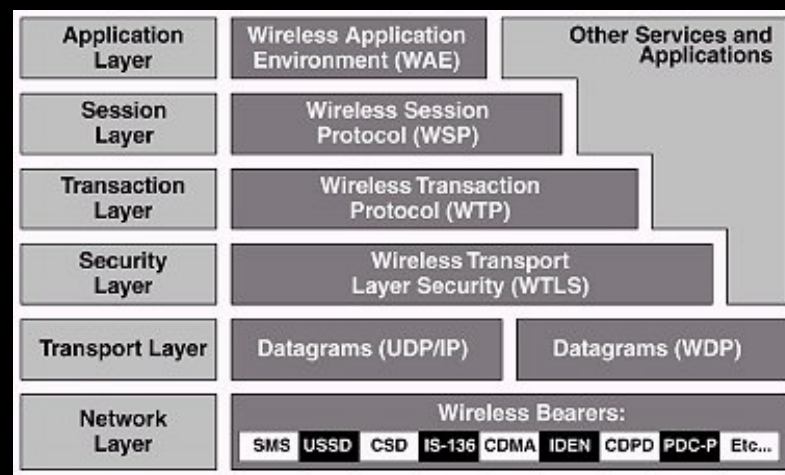
- Less available bandwidth
- High latency
refers to high amount of time it takes for a sent packet to travel to a remote server and return again
- Less connection stability
- Less predictable availability

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WAP Layers



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Wireless Markup Language (WML)

- WML is modeled after HTML and XML
- WML is a strong typed language
- WML has many similar tags to HTML, but has less tags available.
- WML decks (pages) are arranged into a number of cards (sub-pages) that can be viewed by the micro-browser on the WAP device

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Wireless Markup Language Script (WMLScript)

- WMLScript is similar to JavaScript. It has similar syntax, but is much more restricted
- Like JavaScript in our assignment 4, WMLScript can validate form data without going to the server
- WMLScript can access telephony functions (e.g. make a phone call) that WML cannot
- WMLScript can be used to generate dialogs

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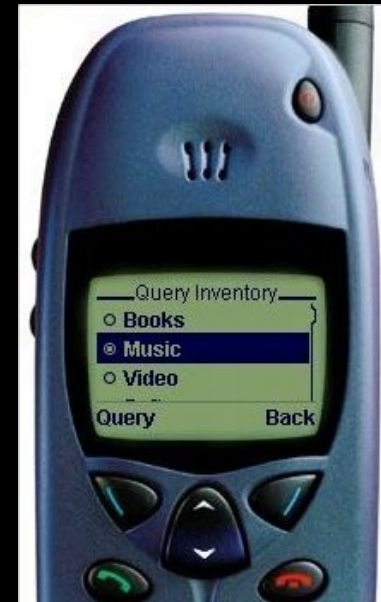
WML example

```
<wml>
<card id="Order" title="Query Inventory">
  <p>
    <select name="Items" title="Items">
      <option value="Books">Books</option>
      <option value="Music">Music</option>
      <option value="Video">Video</option>
      <option value="Software">Software</option>
    </select>
  </p>
  <do type="accept" label="Query">
    <go href="http://127.0.0.1/WML/Inventory.asp" method="post">
      <postfield name="Items" value="$(Items)"/>
    </go>
  </do>
</card>
</wml>
```

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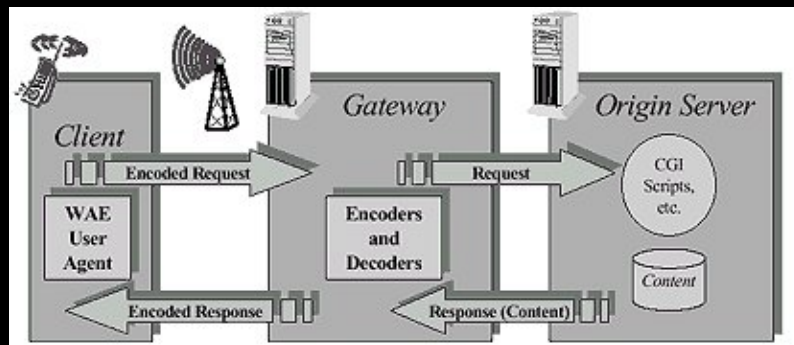


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Overall Picture



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Services Provided by the Gateway

- Converts WAP requests to HTTP for transport on the Internet
- Caches frequently accessed WML decks and WMLScript files
- Compiles WML and WMLScript files into binary form for more compressed transfer over wireless networks
- Provides a WAP client with DNS services. DNS services are not done locally (i.e. hosts file lookup) on the WAP device

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