



Wireless Possibilities for CF Programmers

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Our Practice Makes You Perfect™

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Agenda

- Quick Intro to Wireless Development
- Looking at it from a CF Point of View
- Getting and Using WAP Emulators
- Developer Resources for Learning More
- Common Challenges for WAP Developers
- Considering Advanced Features
- Industry Trends and Battle Lines

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Audience

- **Those considering deploying wireless applications (WAP in particular)**
 - Should you? Shouldn't you? Why?
- **Those who are cynical about WAP**
 - Why you should or shouldn't be
- **All should come away with greater understanding of issues, opportunities**

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Who Am I?

- **Author of monthly Journeyman ColdFusion article in CFDJ**
 - Speaker at Macromedia Developers Conference and CFUGs around the country, on all manner of CF and related topics
- **Past focus on wireless application development**
 - Co-author of, Professional WAP (Wrox Press, 2000)
 - Speaker at:
 - Wrox Press Wireless Developer Conference in Amsterdam
 - Wireless DevCon in San Jose in December
- **A trainer by trade, programmer at heart, with nearly 20 years IT experience**

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What is WAP?

- **WAP: Wireless Application Protocol**
 - A well-defined and broadly supported standard for sending data to wireless phones and other devices
 - Managed by the wapforum (wapforum.org), supported by hundreds of members:
 - Phone manufacturers
 - Phone service providers
 - Content providers
 - Developers
 - Bottom line: a way to access web content customized for small, mobile devices

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Is All Wireless Data Comm. Based on WAP?

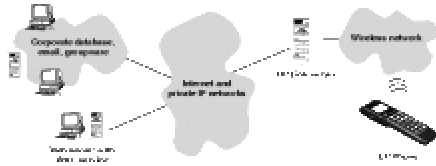
- **WAP is definitely not the only game**
 - Just one of many players in the wireless data communication space
- **Others include**
 - Palm Computing Platform
 - I-mode (hugely popular in Japan)
 - Java based (J2ME MIDp)
 - Microsoft Mobile Explorer
 - Symbian Epoch
 - And more
- **We will focus on WAP, discuss others later**

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So, How Does WAP Work?

- From Phone.com¹ (maker of up.link server)



¹ Phone.com, previously Unwired Planet, is now known as OpenWave

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What is WML?

- **WML: Wireless Markup Language**
 - The language of choice for defining layout and appearance of WAP sites
 - Looks and acts very much like HTML
 - Designed for the limited display and keyboard input features of today's phones
 - Generally can only be viewed in phones or "phone emulators"
 - There are significant differences. Not really HTML-lite.
 - Differences in tags
 - Differences in how it's coded

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WML "Hello World" Code

```
<?xml version="1.0"?>
<!DOCTYPE wml PUBLIC "-//WAPFORUM//DTD WML 1.1//EN"
"http://www.wapforum.org/DTD/wml_1.1.xml">
<wml>
<card>
<p>
Hello World!
</p>
</card>
</wml>
```

- Notice: 2 head tags, new non-HTML tags
 - WML tags are entered lowercase, always closed (WML is a subset of XML), text must be within <p></p> tags
- Might be stored as a "hello.wml"
- Will show where to learn more about WML

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WML "Hello World" Code in CF

```
<CFCONTENT TYPE="text/vnd.wap.wml"><?xml
version="1.0"?>
<!DOCTYPE wml PUBLIC "-//WAPFORUM//DTD WML 1.1//EN"
"http://www.wapforum.org/DTD/wml_1.1.xml">
<wml>
<card>
<p>
<CFSET name="Buck Williams">
<CFOUTPUT>Hello #name#!</CFOUTPUT>
</p>
</card>
</wml>
```

- Notice: CFCONTENT tag
 - <?xml> tag on same line
- Might be stored as a "hello.cfm"

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Using WAP in CF Apps

- **Can any CF Server serve WML?**
 - Certainly. All you need is the CFCONTENT tag and WML content in your template
- **Can any browser view WML pages?**
 - No, only phones and phone emulators can view output of a page sent as WML
- **Can WML do forms? Support URL variables?**
 - Yes, all based on HTTP. CF treats it just like regular HTML pages in that respect
 - All capabilities of CF can be used to generate WML just as if generating HTML

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Can Your Phone "Do" WAP?

- **WAP services enabled by phone and phone service provider**
 - Most recently manufactured phones are enabled to do WAP (or older form, HDML)
 - Major wireless service providers (ATT, Sprint, Verizon, etc.) all support
 - Some charge a monthly fee, or charge per minute (or both); some offer services free

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Can Any Site be Browsed on Phone?

- **Some assert that tools can convert HTML sites to WML on the fly**
 - Doesn't work well in real world
- **Only sites designed specifically for WAP will render effectively**
 - Not difficult to create "wap sites"
 - Coded with WML
 - Targeted for phones and mobile users
 - Easy, drill-down navigation
 - Few keystrokes
 - Remember past visits

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Quick Demo

- **Let's visit a major WAP site, Amazon**
 - Using a PC-based WAP emulator
 - Allows display of real WAP interface on PC
 - More on emulators in a moment

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Getting an emulator

- **Several to choose from, all free**
 - Mostly provided by phone manufacturers, or "phone browser" vendors
 - Most popular may be that of phone.com
 - Now openwave.com
- **Visit developer.openwave.com**
 - Download the openwave.sdk, free
 - No longer need to register (except to use advanced features)
 - Easy to install, includes lots of WAP docs

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Should Web Developers Get Excited?

- **WML Development is very much akin to web development**
 - WAP is based on HTTP (architecture of web)
 - WML is similar to HTML (some differences to support smaller devices, different network)
 - Tools like ColdFusion, ASP, JSP, PHP can be used to create dynamic WML pages
- **More and more WAP sites coming out**
 - People will become more and more comfortable and familiar with idea
 - Companies will seek to WAP-enable their sites
 - Developers can easily provide solutions

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Some Major Brand Sites Using WAP Today

- **ABCNews.com (abcnews.go.com)**
- **ESPN (espn.go.com)**
- **USA Today (usatoday.com)**
- **Wall Street Journal (wsj.com)**
- **Barnes and Noble (mobile.bn.com)**
- **Weather Channel (weather.com)**
- **CBS Sportline.com (cbs.sportline.com)**
- **Edmunds.com (mobile.edmunds.com)**
- **Zagat (Zagat.com)**
- **And more**

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Some Major Tech Sites Using WAP Today

- **AOL (aol.com/anyswhere)**
- **Yahoo (yahoo.com)**
- **eBay (ebay.com)**
- **Expedia.com, travelocity.com**
- **Mapquest.com**
- **E*Trade (www.etrade.com), Schwab**
- **ZDnet (zdnet.com)**
- **And more**

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Some Unique Mobile Applications Available

- **biztravel (biztravel.com)**
 - comprehensive travel information for frequent business travelers
- **iQradio (iqradio.com)**
 - interactive nationwide radio station directory
- **NextBus (nextbus.com)**
 - Real-time arrival info for arriving bus or train (in select cities, tracked via satellite)
- **TrafficStation (trafficstation.com)**
 - Personal Traffic Advisor, area reports, personalized, route-specific traffic reports, Personal Traffic Advisor Telewarning System

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Is WAP Crap?

- **Explanations for Some Disappointment**
 - Unfortunate over-hype of "web surfing via phone"
 - Evangelists of competing technologies
 - Slow uptake in US
 - Variety of networks
 - Melodramatic bandwidth concerns
 - Varied implementation of features on different phones
 - Tiny interface and keypad on current phones

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Not Quite as Bad as All That

- **Great services exist, targeted to phone interface and info needs**
- **Huge number of phones supporting WAP**
- **Tendency for people to keep phones for nearly 2 years**
 - Better phones are coming
- **G3, very high bandwidth, is coming**
- **Consider your audience and where they are**
- **Easy to develop WAP applications**

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Frequent WAP Battle Lines

- **WAP vs HDML**
- **Phone.com vs The World**
- **WAP in US vs WAP in Europe**
- **WAP vs I-mode**
 - More about the network and devices, cHTML
- **WAP vs Java**
- **WAP vs MME (MS Mobile Explorer)**
- **WAP vs Palm**
- **WAP vs AvantGo**
- **WAP vs Bluetooth**

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Proceeding with WAP for Now

- **These battles will rage on for a while**
- **We've seen that many businesses have made substantial investments in WAP**
- **It's very easy to get into**
 - Explore it, keeping an eye on mailing lists and magazines
 - Create a simple sample
 - Get over initial humps
 - Try wap-enabling some small part of site
 - Keep in contact with others doing it

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Common Developer Challenges

- **No time to discuss in detail.**
 - See any of the portals, books, magazines, and discussion lists for more
 - See my Wireless DevCon presentation at: www.systemanage.com/presentations/
- **Issues include:**
 - Browser incompatibility issues
 - Browser detection in server-side code
 - Problems using cookies (not always supported)
 - Error handling challenges (returned in HTML)
 - and more

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Extended Features Available

- **Again, no time to discuss in detail.**
 - See those previous resources for more
- **Issues include:**
 - Security (WTLS/SSL, and “wap gap”)
 - Location sensing
 - Push/notification
 - Using XML/XSLT
 - WMLScript
 - and more

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Learning More

- **Books**
- **Phone, Emulator Documentation**
- **Wireless Service Providers**
- **WAP Developer Portals**
- **Magazines**
- **Mailing Lists**
- **Top 10 Usability Guidelines for WAP Applications**

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Books

- **Several Books**
 - Professional WAP
 - Beginning WAP: WML and WMLScript
 - WAP Development with WML and WMLScript
 - Programming Applications with the Wireless Application Protocol
 - And more every month
- **Most include reference materials, topic discussions, complete apps**

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Phone Manufacturers' SDKs and Documentation

- **Software Development Kits (SDKs)**
 - OpenWave (Phone.com)
 - Nokia (nokia.com)
 - Ericsson (ericsson.com)
- **Most contain documentation, developer guidelines, emulators, editors**
- **Code created (and tools and documentation offered) generally apply to any WML device**

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Wireless Service Providers

- **Several in US/Canada**
 - ATT PocketNet (attws.com)
 - Sprint PCS (sprintpcs.com)
 - Verizon (verizonwireless.com)
 - Nextel (nextel.com)
 - And more
- **Others in Europe, Asia, elsewhere**
- **Most also offer developer sites, documentation, and some tools**
- **Also highlights about current and new WAP content providers**

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Wireless Developer Portals

- **Several rich wireless developer portals**
 - Anywhereyougo (ayg.com)
 - Wireless Dev Net (wirelessdevnet.com)
 - AllNetDevices (allnetdevices.com)
 - WapUSeek (wapuseek.co.uk)
 - And more
- **Usually very rich and deep with:**
 - news, market analysis, technical articles, links to other resources and sites, reviews of hardware and software, and lots more

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Magazines

- **Many magazines discuss WAP/WML, but these are focused on the industry and technology:**
 - Wireless Business and Technology (www.sys-con.com)
 - Mbusiness (mbizcentral.com)
 - Certainly are others
- **Technical articles, industry analysis, software/architecture/hardware comparisons, and more**
- **See my 2 articles on WAP in CFDJ, at www.coldfusionjournal.com**

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Mailing Lists

- **See all the portals, phone manufacturers, and wireless phone service providers**
- **Also see:**
 - Wrox WAP discussion list (p2p.wrox.com)
 - CF Wireless mailing list (<http://www.bromby.com/cfwireless/>)
 - LearnASP WAP discussion list (learnasp.com)

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- **Questions**
- **Evaluation forms?**
- **Contact: carehart@systemmanage.com**
- **Available for training, mentoring, short-term consulting (1-5 days):**
 - Wireless development training
 - All manner of CF topics, beginner-adv
 - Maximizing developer productivity
 - Database design, Int/Adv SQL topics
 - Testing, Source Code Control, and more

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