Building Wireless (WML) Apps With ColdFusion

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Why Should You Stay?

- In this session you'll learn:
  - what wireless apps are and why they're useful
  - what WAP is and why it's very intriguing
  - how to build dynamic WAP apps w/ CF
- Audience:
  - both new and experienced CF developers

Why Should You Care?

- 80% of US wireless phones will soon be WAP-compliant
- You can code apps for all of them, today, in CF!

What Will We Cover, Specifically?

- Preaching the Good News of WML
  - What are Wireless Web Apps About?
  - What Makes Them So Great?
  - Introduction to WML, the Early Leader for Building Them
- Preaching to the Choir
  - Serving WAP Content via ColdFusion
  - Studio Features for Creating WAP Apps
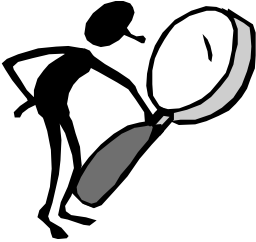 - Tricks and Traps

Who Am I?

- Founder, CTO of SysteManage
  - focusing on ColdFusion and wireless app dev, training
  - formerly with Fig Leaf Software
- Author
  - contributor to Wrox's Professional WAP Programming
  - contributor, tech editor of ColdFusion For Dummies
- Allaire Certified Trainer & Developer
- 20 Years IT Experience

What are Wireless Web Apps About?

- The Technologies, Devices & Networks
  - Approaches
    - Palm, Mobile Explorer, WAP
  - Phones, PDA's, etc
  - Sprint, ATT, etc.
- What's Working Now
  - US
  - Europe
  - Japan

Examples

- Some Wireless Enabled Business Sites/Services
  - Yahoo
  - BizTravel
  - Weather
  - Movies
  - Stock Quotes
  - Ebay Anywhere
  - Amazon
  - Advertising
  - Payments
  - Flooz

What Makes Them So Great?

- Universally accessible
- Simple interfaces
- Easily programmed
- Location Sensitive
- Nearly "always on"
- Ability to receive notifications/messages
- WML is easy to learn

Alphabet Soup

- WAP
  - Wireless Access Protocol
- WML
  - Wireless Markup Language
- HDML
  - Predecessor to WML
- WMLScript
  - Lightweight scripting language for WML browsers

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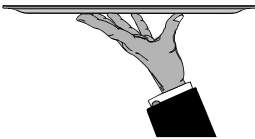
```
<?xml version="1.0"?>
<!DOCTYPE wml PUBLIC "-//WAPFORUM//DTD
 WML 1.1//EN"
 "http://www.wapforum.org/DTD/wml_1.1.xml">

<wml>
<card>
Hello World!<br/>
Welcome to WML
</p>
</card>
```

Typically served as a .wml file

Serving WAP Content via ColdFusion

- CF-generated pages are ".cfm" files
  - rather than .wml files
- Must set mime type for page
  - <CFCONTENT TYPE="text/vnd.wap.wml">
- Tells WML browser to expect WML
  - similar setting for sending WMLScript

Complete Skeletal CF/WML

```
<CFCONTENT TYPE="text/vnd.wap.wml"><?xml version="1.0"?>
<!DOCTYPE wml PUBLIC "-//PHONE.COM//DTD WML 1.1//EN"
  "http://www.phone.com/dtd/wml11.dtd" >
<wml>
<card>
</card>
</wml>
```

- Note <?xml> tag on first line
  - is placed next to CFCONTENT
    - prevents extra carriage return before <?xml>

Where to Go From There?

- Learn WML
  - place any valid WML on page
    - WML is different from HTML, do need to learn it
  - use any ColdFusion tags to create WML code
    - can generate WML from database, or based on data gathered from other objects, applications, or sites
  - perform actions in support of WML processing
    - can search/store data in databases, generate email, pass data to other objects, applications, or sites
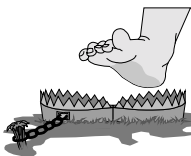
Cookin' Up Some CF Examples

- Form processing
- Form-driven query processing
- Dynamic select list
- Identifying CGI Vars
- CFHTTP agents

- Source Code to be loaded on Conference Web Site

Some CF/WML Traps

- CFCONTENT Problems
  - can be turned off by admin
  - not supported in CFExpress
- Studio Support
  - based on Phone.com WML
  - option may enter tags in upper case
- CF's HTML Heritage
  - CF Error messages, debugging output both in HTML format

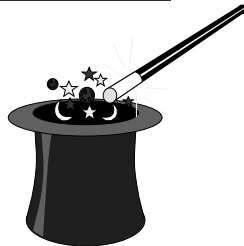- Discussed Further in Pro WAP, Chapter 11

An Ounce of Prevention

- Setup Application.cfm
  - Turn off debugging
  - Set up error handler
    - Can't use normal CFERROR type="request"
      - Can't use CFCONTENT
    - Can use type="exception" in 4.5
      - Allows any CF tags
      - Can catch many errors
- Place it in same directory as WML code
  - preferably a wml-only directory
- Discussed Further in Pro WAP, Chapter 11

Some CF Tricks

- Circumventing CFCONTENT restriction
- Browser Detection
- Converting semi-colon delimited "multiple SELECT" values
- Escaping # and $

- Discussed Further in Pro WAP, Chapter 11

Something Not in the Book

- Phone.com browsers support sending messages to phone
  - Called "notification"
  - Documented as examples in Perl and C
  - Can do in CF, just need to convert to CFOBJECT and object references

Using Phone.com Notification

```
<cfobject TYPE="COM" ACTION="CREATE" NAME="ntfn"
CLASS="Ntfn3Client.Ntfn3Client.1">

<cfoutput>
Setting host: #ntfn.NtfnSetHost("yourserver")#
<p>
Timeout value: #ntfn.NtfnGetTimeout()#

<p>
Posting alert: #ntfn.NtfnPostAlert('yourid','yourwebpage',0,'D---','test',4)#

<p>
Result: #ntfn.NtfnGetLastResult()#
</cfoutput>

<p>
<cfif ntfn.NtfnGetLastResult() is "204">
          Result was ok  (204 is good)
</cfif>
```

Classic WML Traps

- Use well-formed WML
  - <p></p> surrounding text
  -
 rather than
- Lower case WML elements
  - <card>, not <CARD>
- Passing multiple URL parms
  - Use & not &
- WML Supports client variables
  - They're persistent within session and SHARED among all apps on phone

Classic WML Traps (Cont)

- Do redirection with server-root relative paths
  - not simply relative to current file, applies to CFLOCATION as well
- Use get rather than post for forms

Studio 4.5 Features for Creating WAP Apps

- Creating WML Pages
  - "New Page" wizard
- Adding WML tags
  - tag insight, validation
  - tag chooser
- Editing WML Tags
  - tag editors
- Getting Help
  - F1, help w/in tag editors

Much More to Learn

- **Simulators**
  - Several, including some web-based ones
- **Gateways**
  - Don't need one, generally offered by phone company
- **Phone Differences**
  - Not all use phone.com browser, even then not all same
- **Security**
  - SSL is supported (WTLS) but not encrypted end-to-end
- **Sending information to phones**
  - Notification in phone.com, Push in WAP specs, SMS
- **Location/Personal Identification**
  - Not reported by all phones, gateways; privacy issues
- **Many more issues than can be covered here**

CF/WML Resources

- CF Chapter in "Professional WAP" from Wrox Press
  - Chapter available in pdf on conference cd
- Magazine Articles
  - January (Ben Forta), Aug-Oct 2000 (mine)
- Some sites
  - http://www.wapuseek.co.uk/wap_cf.cfm
  - http://www.systemanage.com/wml/
  - http://forums.allaire.com
- CF-WAP Mailing list
  - sign up at
    - http://www.houseoffusion.com

Generic WML Resources

- Wirelessdevnet.com
- Anywhereyougo.com
- Wapuseek.com
- Wapforum.org
- Wap.com
- Wap.colorline.no
- Soon, Wireless Journal

Crossing the Finish Line

- Dynamically generated WML is a powerful tool
- ColdFusion is especially well-suited
- Taking your sites to this next step will open new worlds of possibility

CF/WAP Consulting and Training

- For more information on ColdFusion and/or WAP consulting and training, please contact
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