



Migrating from WM/CE to Android with Enterprise Browser

DevTalk – August 2017

<https://developer.zebra.com/community/technologies/enterprisebrowser/blog/2017/06/19/migrating-from-wmce-to-android-with-enterprise-browser>

Agenda:

- Industrial Browsers?
- General considerations
- Migrating from Enterprise Browser WM/CE
- Migrating from RhoElements Shared Runtime 2.x & 4.x
- Migrating from RhoElements 1.x
- Migrating from PocketBrowser 1.x, 2.x & 3.x
- Migrating from Naurtech Browser
- Migrating from Intermec Browser
- Licensing
- Rendering engines

Industrial Browsers?

- Provide access to specialized device hardware through HTML & JS with a highly configurable browser component
- Ease of development / platform agnosticism
- Examples:
 - PocketBrowser
 - RhoElements / RhoElements Shared Runtime
 - Enterprise Browser
 - Naurtech Browser
 - Intermec Browser
 - Honeywell's Enterprise Browser

General Considerations

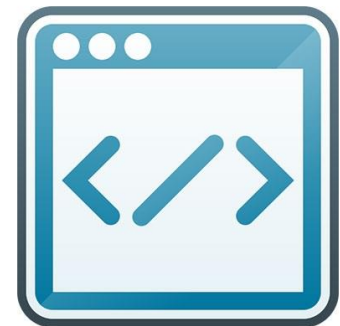
- WM / CE devices most often had a Hardware keyboard & dedicated hardware keys
 - Default software keyboard was a bit poor even at the time. Applications would generally not be designed to use it.
- Viewport – ubiquitous in the modern mobile web but foreign to Internet Explorer on WM/CE
- Deprecated technology over time & backwards compatibility

Licensing

- Enterprise Browser needs a new license
- Device license model only (for now)
- License server will be improved soon
- License upgrade model for EB is TBD
- Limitation: Cannot have multiple licensed products on the same device

Migrating from Enterprise Browser on WM/CE

- Enterprise Browser supports Windows Mobile / Windows Embedded Handheld / Windows CE
 - Should 'just work'
 - Rendering engine has changed so some tweaking may be required
 - Could upgrade from IE in steps:
 - Firstly from IE to WebKit on WM/CE
- ```
<EngineInUse value="WebKit"/>
```
- Secondly from WM/CE to Android



## Migrating from RhoElements Shared Runtime 4.x

- Included as part of RhoMobile Suite 4.x. Absent from RhoMobile Suite 5.x
- Included a new API set with the Rho namespace
- Backwards compatibility exists for the Rho namespace
  - More harmonized API set
  - Include `rhoapi-modules.js`
- Pretty similar `config.xml` format to Enterprise Browser
- META tag support identical to Enterprise Browser



## Migrating from RhoElements Shared Runtime 2.x

- Included as part of RhoMobile Suite 2.x
  - First version to combine the power of PocketBrowser with the Rho framework
- Include `elements.js` to use the RhoElements API set
  - (same as RE 1.x)
- Pretty similar `config.xml` format to Enterprise Browser
- META tag support identical to Enterprise Browser
- SAP compliant





## Migrating from RhoElements 1.x

- NOT part of RhoMobile Suite, this was a standalone product
  - Essentially PocketBrowser 3 + HTML5 for WM/CE + Android support
- Include `elements.js` to use the RhoElements API set
  - Also includes ActiveX object 'support'
- Had a custom web rendering component on Android
- Rendering differences with Android:
  - Keyboard APIs e.g. position
  - Font support
  - Zooming
  - Resize window
  - Scrolling



## Migrating from PocketBrowser 3.x

- Final version of PocketBrowser (product line continued as RhoElements 1.x)
- No support for Android devices.
  - Official migration guide from PB to EB assumes you are remaining on WM/CE as it is a few years old now.
- API syntax differs from PocketBrowser 2.x
  - from EMMML 1.0 to EMMML 1.1
- API access via JavaScript or Meta tags
- Include `elements.js` to use the PocketBrowser API set
  - (same as RE 1.x / RE 2.x Shared Runtime)



## Migrating from PocketBrowser 2.x

- Hopefully you are not using PocketBrowser 1.x
- PocketBrowser 2.x uses EMMML 1.0 syntax.
  - Ensure you have set UseRegularExpressions to '1' in the configuration
- SAP compliance



## Migrating from Naurtech Browser

- Naurtech browser is browser component of CE term
- Owned by Ivanti (formally known as Wavelink)
- WM/CE only – no Android support
  - Supports multiple vendors
- Option 1: Migrate to velocity browser (browser component of velocity)
  - META tags match, ActiveX objects are missing
- Option 2: Use Regular expressions to convert META tags to EB format
  - Naurtech browser has nearly identical format to PocketBrowser 2
  - Previous incarnations of Naurtech prepended similar tags with iBrowse.

## Migrating from Intermec Browser

- Intermec acquired by Honeywell in 2013
- Now appears to be integrated with Honeywell's 'Enterprise Browser'
  - Different from 'HTML5 Browser', only the former supports code and meta tags compliant with Intermec Browser.
- Only runs on Honeywell & Intermec devices
- Option 1: Rewrite application to take advantage of modern features
  - Assumption is app running in HEB or IB is by now fairly long in the tooth.
- Option 2: Use regular expressions to convert IB\_\* meta tags to a format recognized by (Zebra's) Enterprise Browser
  - Use DOM injection to mimic ActiveX objects? (ITCAXEdit)

## Rendering engines

| Platform                                   | Browser                                    |
|--------------------------------------------|--------------------------------------------|
| Windows Mobile 5, 6.1                      | Internet Explorer (PIE)                    |
| CE 5 & Earlier                             | CE Browser control                         |
| Windows Mobile / WEH 6.5 / 6.5.3           | IE6, PIE (PB will default to IE6)          |
| Windows Mobile / WEH 6.5 / 6.5.3, CE6, CE7 | HTML5 compliant browser (RhoElements only) |
| Android JB (AOSP)                          | Android Browser 4.1                        |
| Android KK (AOSP / GMS)                    | Android Browser 4.4.x                      |
| Android L & M (AOSP)                       | Android Browser                            |
| Android L & M (GMS)                        | Android Browser (Android System WebView)   |
| Android N & O (GMS)                        | Chrome Browser                             |

**THANK YOU**

**QUESTIONS?**

Official guide for migrating from PocketBrowser to EB

- <http://techdocs.zebra.com/enterprise-browser/1-7/guide/pb2/>

Official guide for migrating from RhoElements 2.x to EB

- <http://techdocs.zebra.com/enterprise-browser/1-7/guide/elements/>

Official guide for migrating from RhoElements 4.x to EB

- <http://techdocs.zebra.com/enterprise-browser/1-7/guide/rhomobile/>

Old blog (2012) on porting your PB applications to RhoElements

- <https://developer.zebra.com/community/rhomobile-suite/rhomobile-community/rhomobile-blogs/blog/2012/12/07/porting-your-pocketbrowser-application-to-rhoelements>

Recent blog (2017) on porting your WM/CE apps to Android via EB

- <https://developer.zebra.com/community/technologies/enterprisebrowser/blog/2017/06/19/migrating-from-wmce-to-android-with-enterprise-browser>