



Applications Everywhere: Getting to Application Portability on Multiple Platforms

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Intro

- Why portability matters
- Top issues affecting app portability
- Strategies for mitigating platform differences

Types of Portability

- VoiceXML browser vendors
- Browser and ASR engine combinations
- Browser platform and ASR engine releases
- TTS - voices, pronunciation and SSML support

Why Portability?

- Better economics
- Avoid vendor lock-in
- Hosted failover
- Platform upgrades
- Platform end of life

Standards are necessary, but not sufficient

Naysayers

- “Portability is for canoes”
 - Jim McCarthy
 - Microsoft 1995
 - Dynamics of Software Development
- Can be hard and costly for small teams

But:

- Third party solutions can help
- Differences that matter might not be so bad



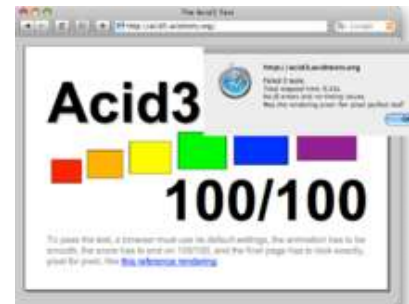
Where Standards Leave Off

- Behavioral/Rendering differences
- Feature differences
- Web apps have similar HTML browser portability issues, especially with standards compliance

IE 8



Safari 4



Images from <http://en.wikipedia.org/wiki/Acid3>

Caching and Rendering

- Audio file caching affects rendering
- Understand web/app server caching headers
- Browsers don't always respect HTTP caching headers
- Ambiguity in HTTP spec regarding caching
 - URL request parameters
- Some browser platforms include a caching server that needs to be configured

Grammar Fetching & Caching

- Grammar caching for same ASR can vary per VXML platform
- Some browsers fetch grammar and forward to ASR
- If ASR does fetch, it needs a route back to app server
- No cookie returned when fetching



<http://www.flickr.com/photos/jahdakinebrah/343282535/>

Feature Differences

- CTI
- Full call recording
- DTMF handling by browser
- Failover, e.g., secondary and tertiary URLs
- Voice authentication (VXML 3)
- Log correlation

ASR Differences

- Interpretation of confidence level values
- Precompiled grammars
- Hotword bargein type
- incompletetimeout and completetimeout
- Treatment of semantic ambiguity
- Support for grammar weights and probabilities
- GARBAGE grammar implementation (must be accepted, but can be ignored)

Portability Strategies

- Build an abstraction layer
- Runtime platform detection
- Runtime configuration properties

Detection Details

- Browser User Agent
- But what about ASR?
- Not updated for every version
- Can use URL path
 - http://example.com/my_app/browser_asr.vxml
- Control via DNIS-URL mapping on browser

Runtime Configuration Properties

- Define property values for each variant
 - engine.browser_asr.fetch_audio_delay
 - engine.browser_asr.incomplete_timeout
- Include defaults

Other Platforms

- Twilio, Tropo, Ribbit, Jaduka, ifByPhone, etc.
- Richer telephony features
- Speech support can vary
- Built-in API bindings for multiple languages
- Some built on a VXML/CCXML platform
- No portability



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Thank you

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