From RPG OA to PHP: IBM i Modernization and Mobile Approaches

Presented by:

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Agenda

- Brief History of Modernization
- 5250 Refacing
- RPG OA
- PHP
- Node.js
- Mobile

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Brief History

- Webfacing, Hats, Jwalk
- Slow Performance
- Lipstick on a pig
- Deployment
- New Product Enhancements?
- Browsers and JavaScript Now Improved

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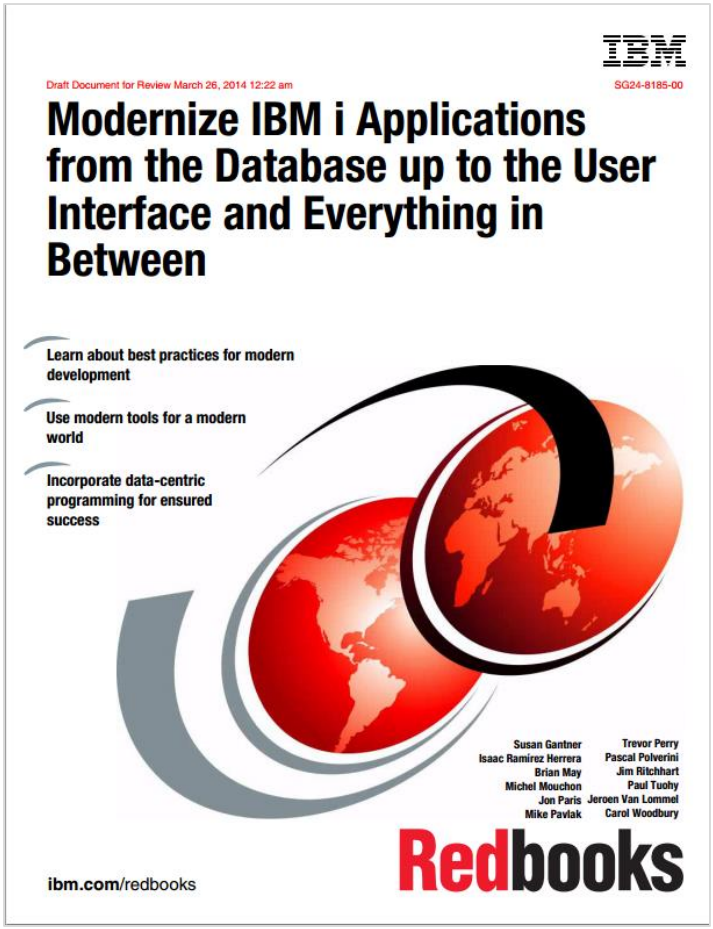
IBM Redbook



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Considerations

- Skillset
- Timeline
- Budget
- Current Applications
- Reface, Re-engineer or Replace
- Mobile

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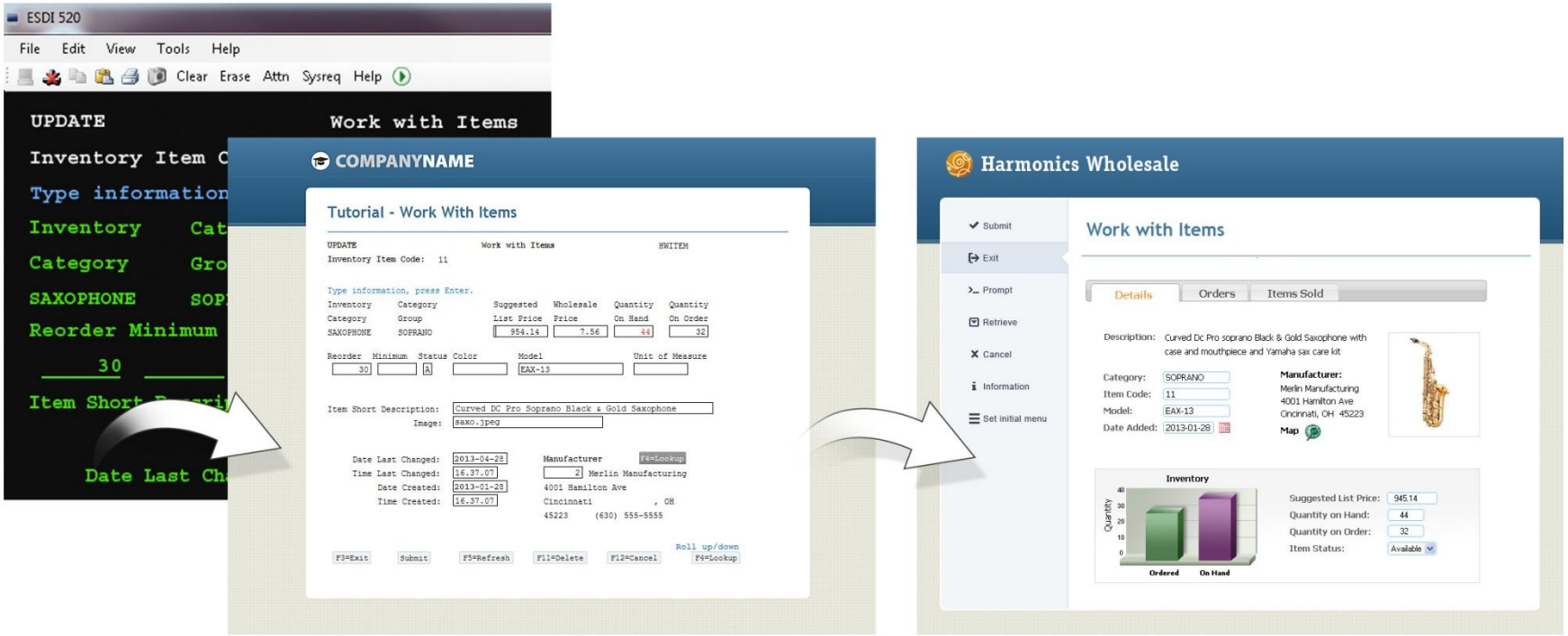
5250 Refacing



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5250 Datastream - Benefits

- Fastest results
- No code changes
- COBOL or RPG (any version)
- Any screen (third party, OS)
- All DDS
  - Data and screen constants
  - Includes input formatting rules *(Eg: auto record advance)*
  - Field positioning info
- Not many limitations

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Business Case For Modernizing Green Screens

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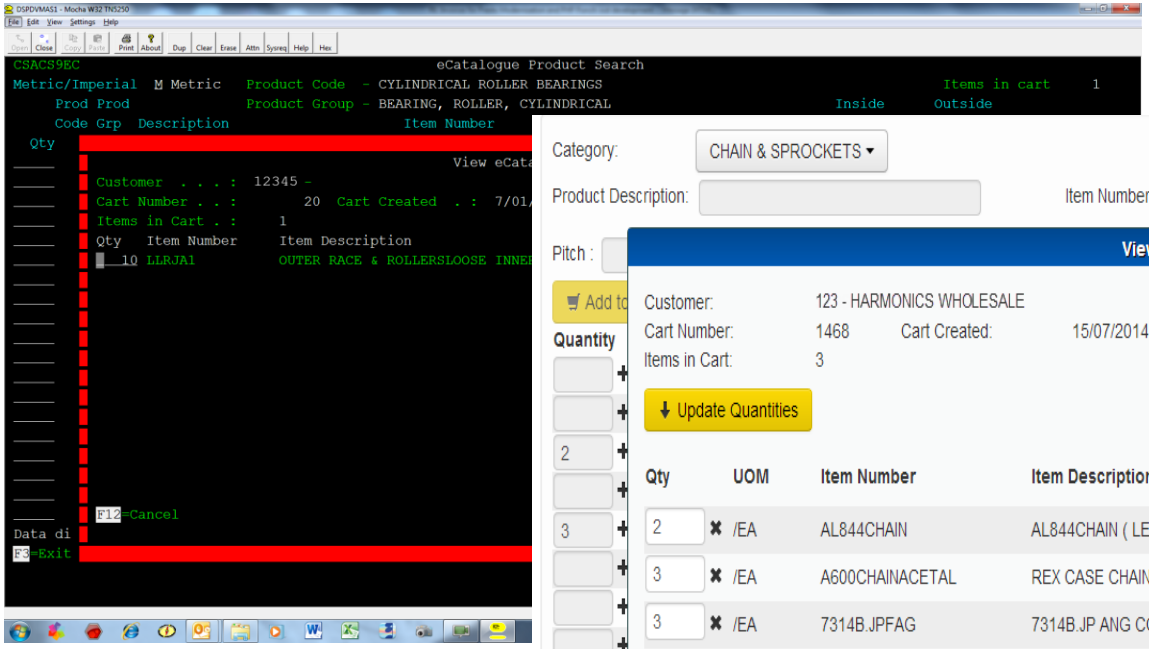
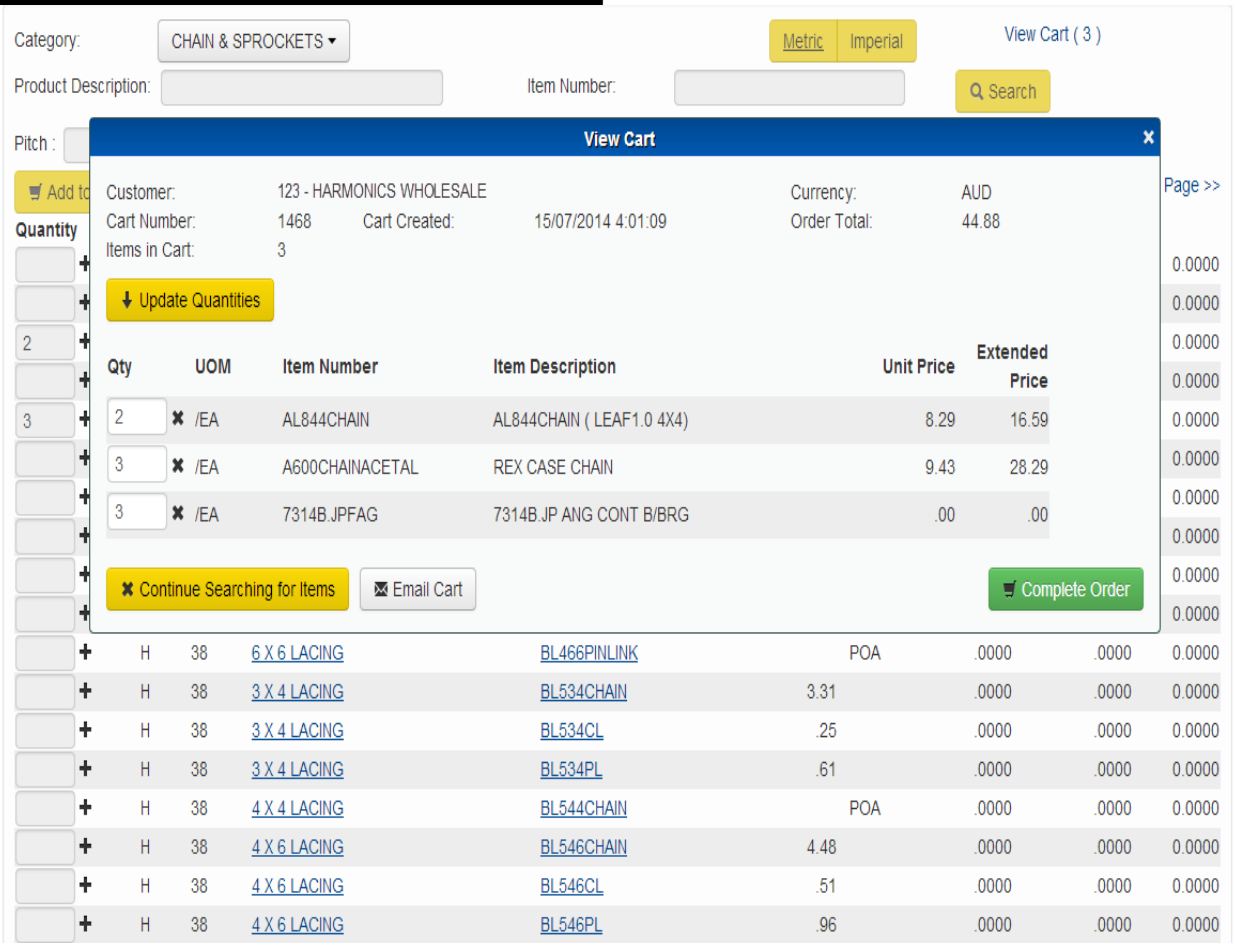
Rich Web Applications





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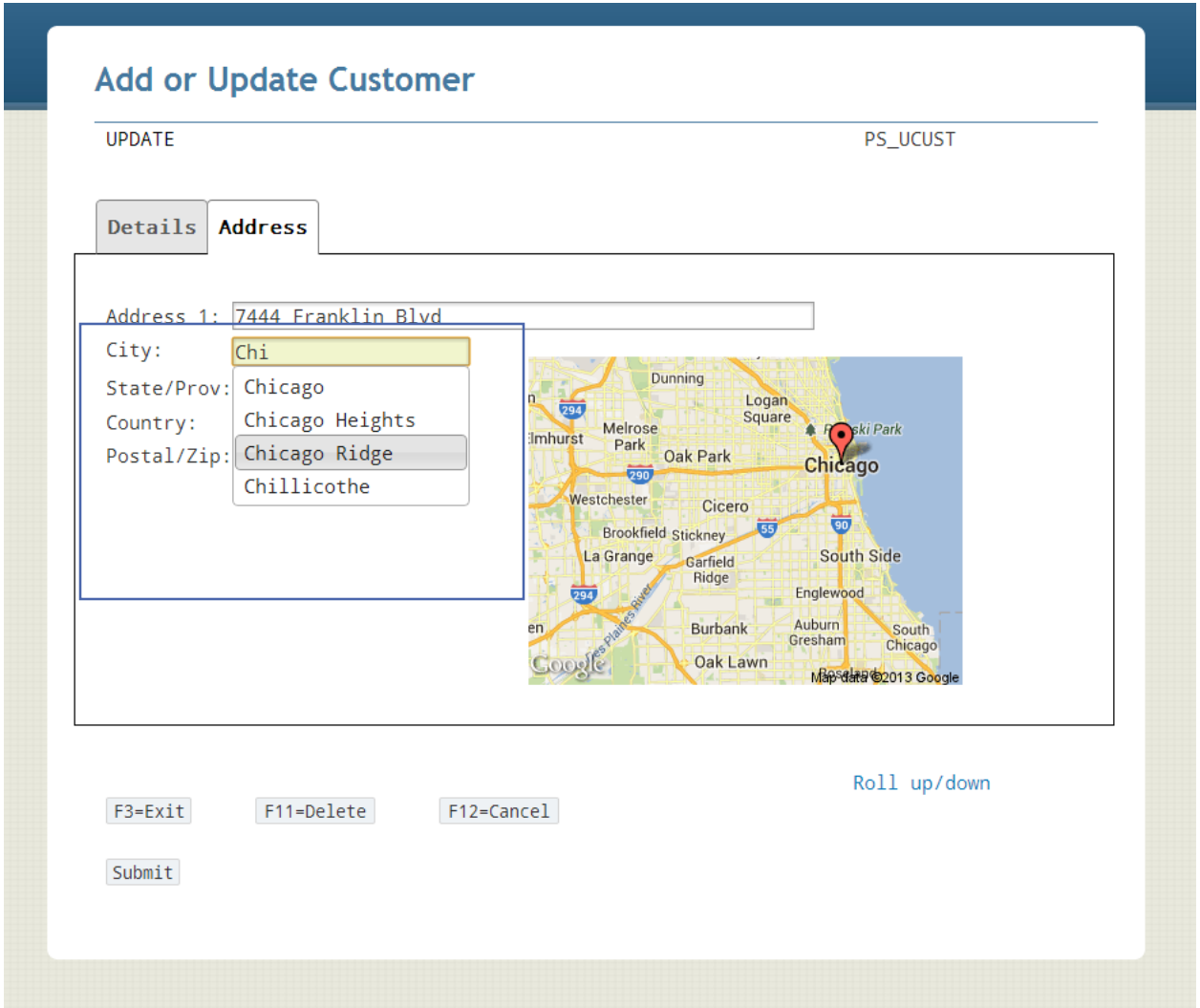
Faster Data Entry and Intuitive



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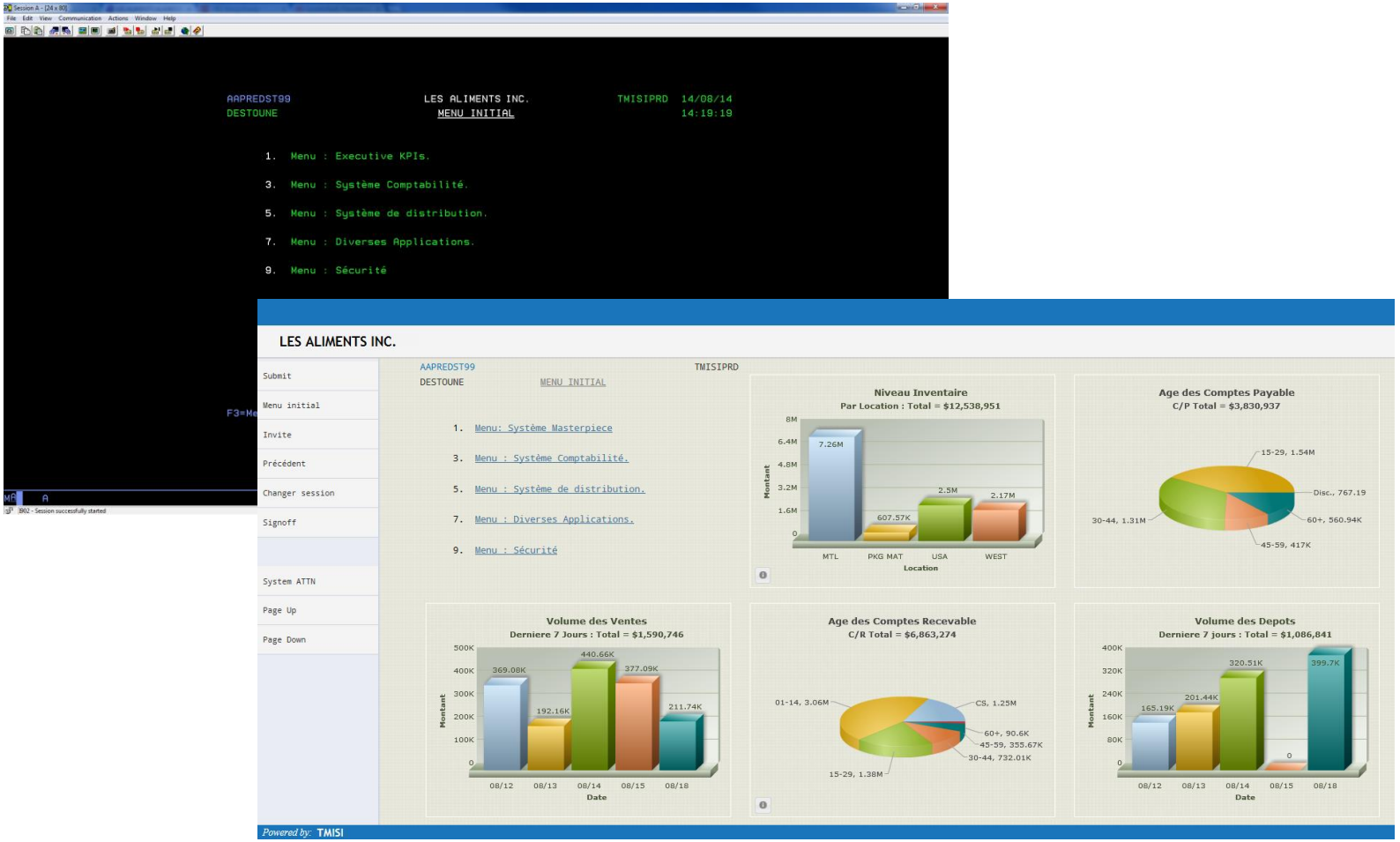
Visual Data



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Easy Deployment

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Repurpose

Presto™ Success Story - JRP & Associates

JRP & Associates Repurposes Customer Order Entry Application with a Web Browser Look and Feel

Jay Pierce, President
JRP & Associates

Presto-modernized IBM i green screen application improves customer service and saves everyone time by providing clients direct access to their accounts.

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Mobile Support

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eBook

http://www.bcdsoftware.com/business-case-ebook

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Tools

- Presto - BCD
- Newlook - looksoftware
- Profound Genie – Profound Logic
- Lansa - Axes
- Legasuite - Rocket
- Wings - ASNA

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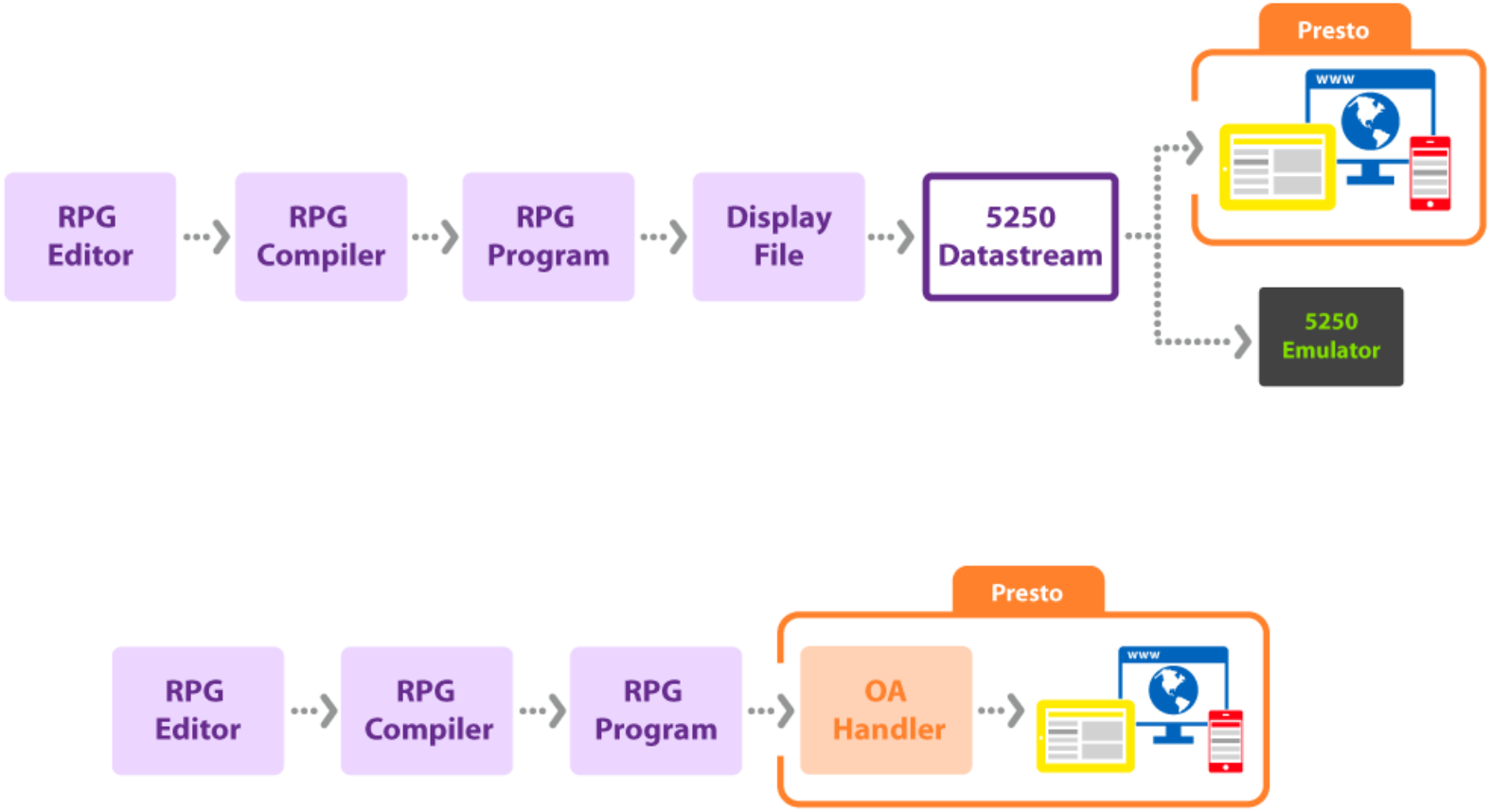
5250 and Open Access



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What is RPG Open Access

- Developed by IBM
- Get data from RPG to browser
- Green screens or new RPG programs
- Bypass 5250 datastream
- Handler populates data structure
- Use traditional I/O, existing RPG skills

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RPG OA - Requirements

- Requires source code
- Add 1 line of source code and recompile

```
0094.00 F                                       HANDLER('PR_OAHDLR(EP1)')
```

- RPG IV only
- Field data only
- Conditionally compile if need green screen
- Grid needs load all subfile
- Min OS - IBM i 6.1

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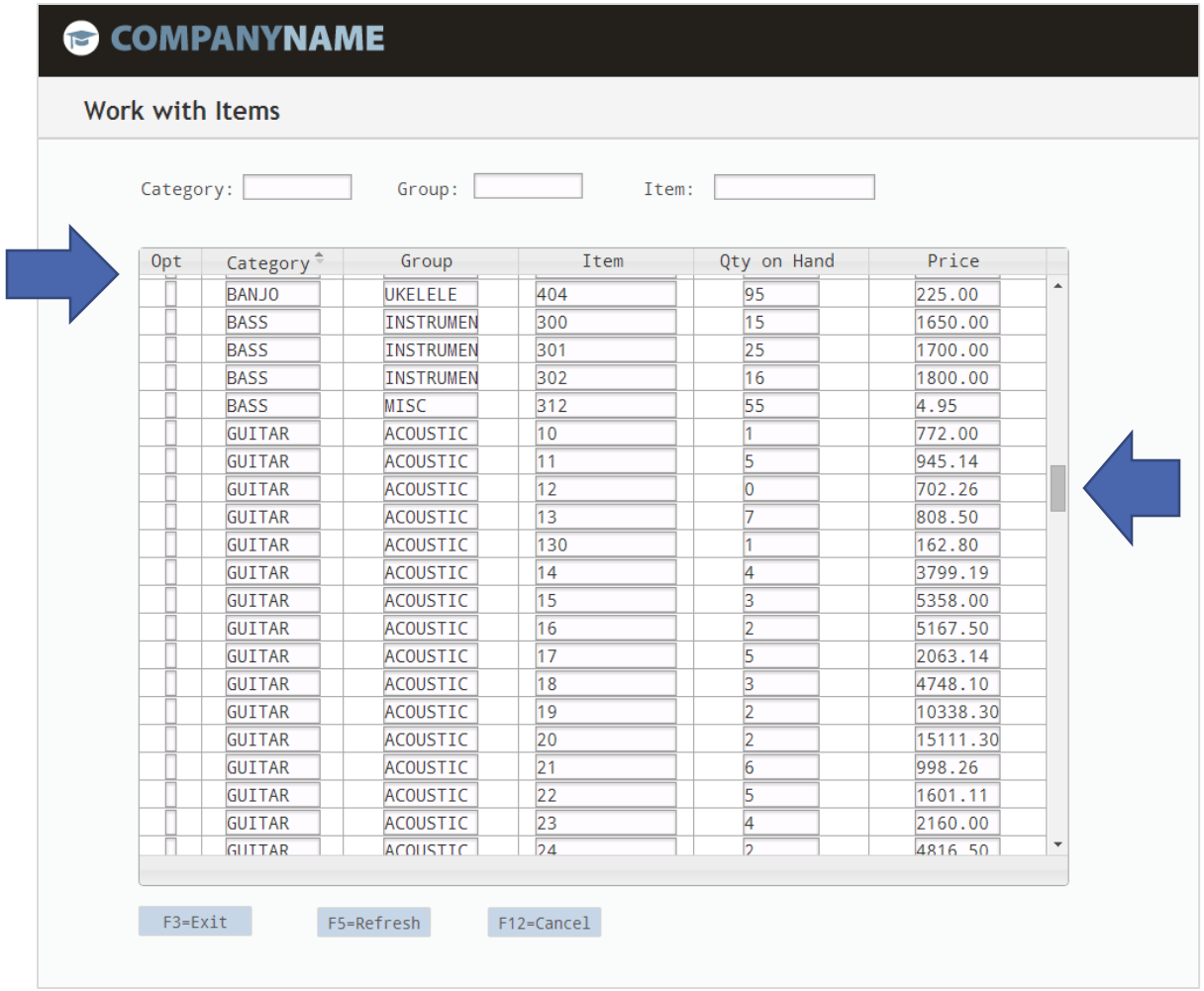
Grids



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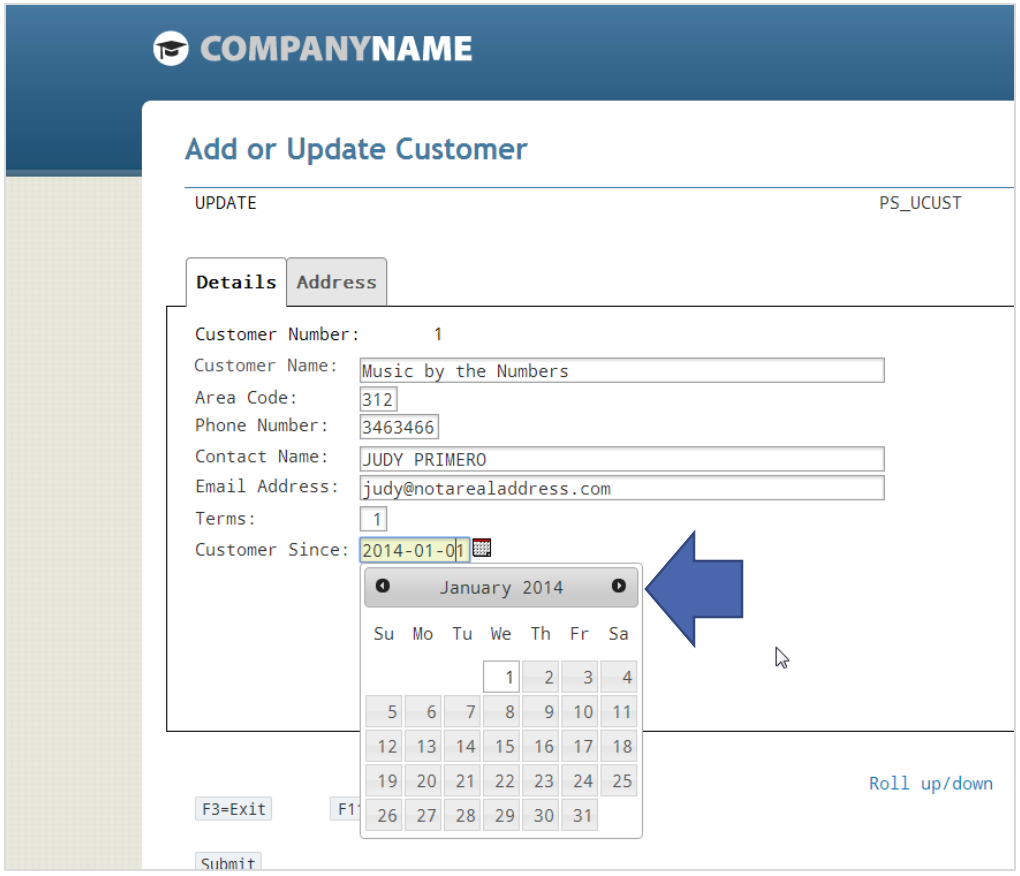
Field Types



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Tools

- Presto - BCD
- openlook - looksoftware
- Profound UI – Profound Logic
- ASNA Wings

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Stateless Web Applications

- New web applications
- No call stack
- Standard on other platforms
- Scalable
- Customer facing
- SEO, bookmarks

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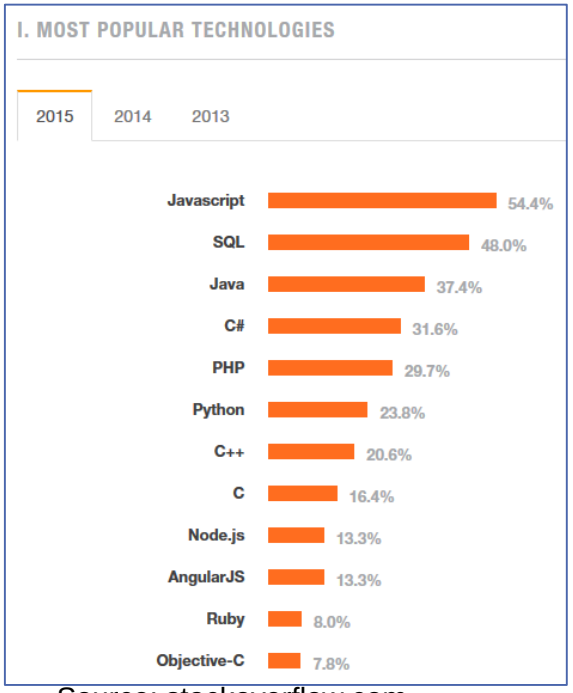
Why is PHP attractive?

- PHP is a proven solution for Enterprise
  - Thousands of IBM i shops using PHP
  - Half of the top 10 busiest site in the world (alexa.com)
- Easy to adopt for RPG developers
  - Procedural to OO to frameworks
  - Similar structure to RPG subprocedures
- New developers
  - 5-7 millions PHP developers
  - They ARE coming to the platform
- Community
  - Free Scripts
  - IBM and Zend



Source: stackoverflow.com

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Why PHP

http://www.bcdsoftware.com/lp/websmart-php/php-on-ibm-i.php

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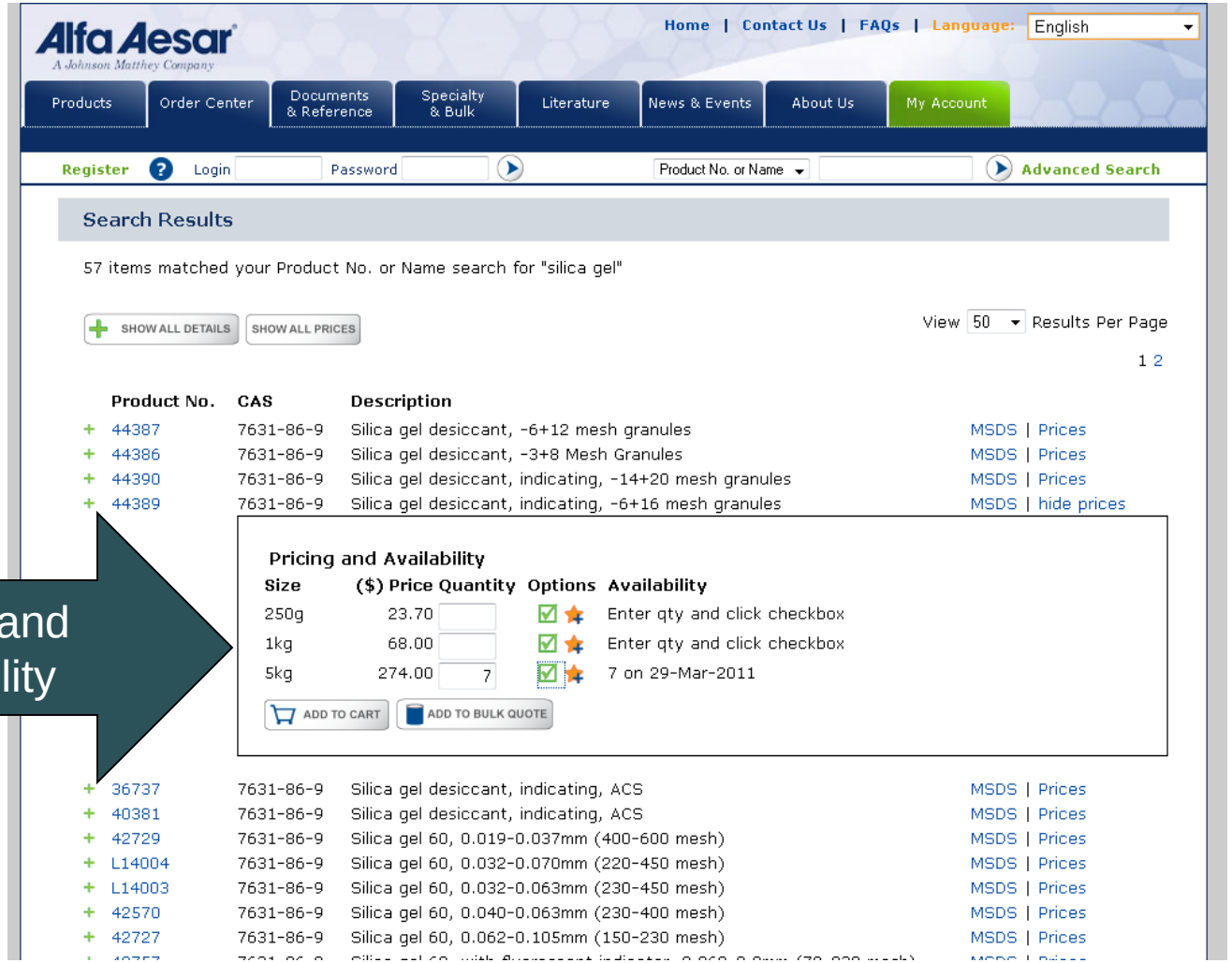
Leverage RPG Code



Pricing and Availability

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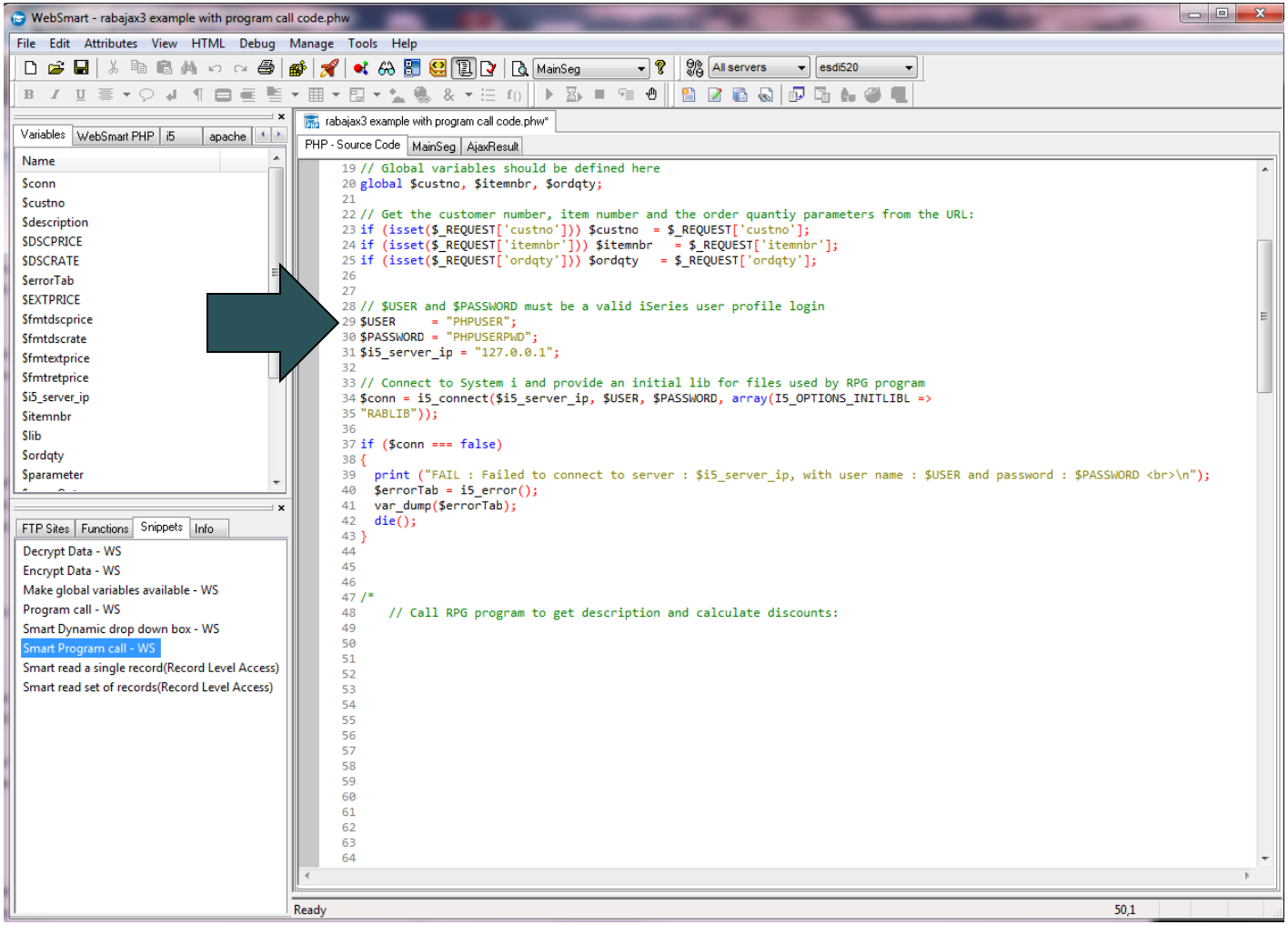
PHP – RPG Program Call



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What is Node.js

- Server Side Web Applications
- JavaScript for Server Side
- Open Source
- Created in 2009
- Popular Technology
  - Walmart, LinkedIn, PayPal

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Benefits of Node.js

- Performance
- Open Source Community
- Attract New Developers
- One Less Language
- Programmer Productivity
- Leverage RPG

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ILE - RPG CGI

- CGIDEV2, WebSmart ILE
- Stateless
- Uses native CGI APIs
- Runs in standard Apache web server
- Produce secure web apps
  - Login – IBM i user id, LDAP, etc.
  - Use sessions
- Better than stateful for new, highly scaleable apps
- SEO, bookmarks

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3 Approaches

- Native mobile apps
- Mobile web apps
- Hybrid apps

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Native Mobile Apps

- Device's native programming language
  - iOS – Objective C/Swift
  - Android – Java
  - Windows C#
- Not cross platform – specific to device
- App store

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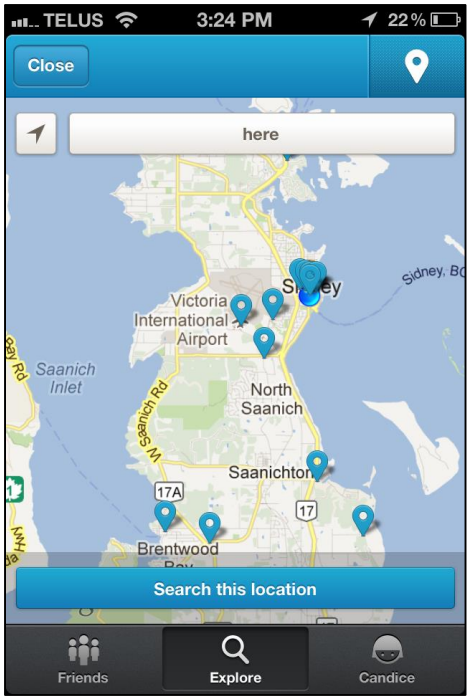
Native Mobile Apps *(con't)*

- Access to device's hardware
- Great user experience
  - Speed
  - Reliability
  - Access
- Web service for IBM i data



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Mobile Web Applications

- Website accessed from device's browser
- HTML, CSS and JavaScript
- PHP, RPG, .Net and more
- Looks more like a native app

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Mobile Web Applications *(con't)*

- Single code base for all platforms
  - Not all browsers render the same
  - Can optimize for specific browsers
  - Responsive web
- HTML5 and JavaScript frameworks
  - Examples: jQuery, BootStrap etc.
- Instant updates

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Mobile Web Applications *(con't)*

- Offline support
- No access to some device hardware
- Performance dependent
  - Network
  - Device
- Responsive – One code base for desktop and mobile

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Hybrid Mobile Apps

- Web technologies
- Turn web app into native mobile app
  - Wrapped in platform specific shell
  - Runs in native container
  - App store
- APIs to access device hardware
- No native development languages, reuse code
- Easier to enter native app world
- Slower performance

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Which Approach?

- Mobile web apps in most cases for IBM i
- HTML5 keeps improving
- Browsers won the last war
- No one size fits all

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Questions?

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