

WebSpeed®!

DEV-10

Scared of WebSpeed?
Ha! It's a piece of cake!

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Goals For This Presentation

- WebSpeed takes scare out of browser based UI
- Basic idea of how WebSpeed works
- Separation of UI and back-end

(Note: WebSpeed deployment not covered here)



Agenda

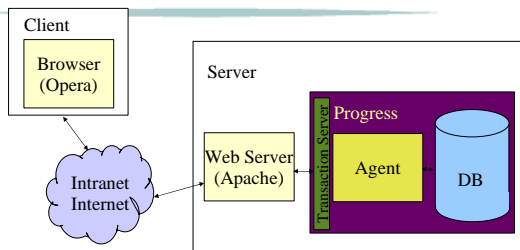
- Components of WebSpeed Application
- WebSpeed Round-Trip
- Original Programming Approaches
- Modern WebSpeed
 - OERA and WebSpeed
 - Examples of Practical Approach
- Final Remarks



Note...

- Some slides are included as reference for you during my demo. I will not show them during the presentation

WebSpeed Architecture



SW Components on Server

- WebServer – Apache, IIS, ...
- Messenger – cgiip.exe, msapi.dll, nsapi.dll
- Transaction Server (i.e. AppServer™)
 - Broker – PROGRESS tool to manage agents
 - Agent – PROGRESS “batch-client” with special input and output re-direction

Setup Steps – Properties

- Use Progress Explorer
 - even to setup UNIX transaction-server
- Basic:
 - Broker: Stateless, Working Directory, Port
- Logging:
 - Broker & Agents: Log-file names
- Life:
 - Agent: -pf in Agent Startup Params, propath

Demo

WebSpeed Setup

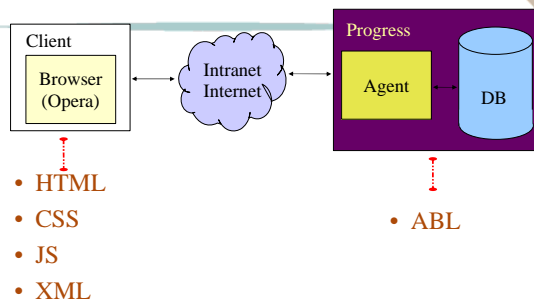
Setup Steps - Tests

- Messenger alive?
 - <http://localhost/cgi-bin/cgiip.exe/ping>
 - Expect Messenger Errors 6019 & 5825
- Broker alive?
 - <http://localhost/cgi-bin/cgiip.exe/WService=exchange07/ping>
 - “WebSpeed Transaction Server successfully accessed”
 - Check Propath and connected DB(s)
- Application alive?
 - <http://localhost/cgi-bin/cgiip.exe/WService=exchange07/app.p>

Setup Tips

- WService is case-sensitive
- Broker name is case-sensitive
 - exchange07 <> Exchange07!
- Application program is case-sensitive if transaction server runs on UNIX
- Restart of agent times (on my machines):
 - Win2k3Pro: 20 – 60 seconds
 - Fedora Linux: <1 second

SW Components



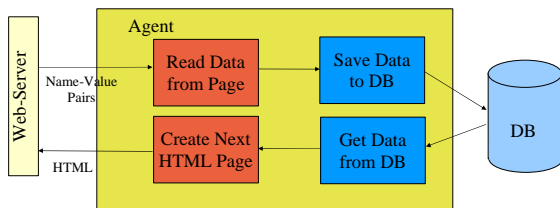
Components of SW Application

- Client Browser
 - html – organization of data, hyper-linking – content
 - css – Cascading Style Sheet – “looks”
 - js – Java-Script – logic on client
 - Web-Designer!
- Server
 - ABL – receive data, work it off, prepare response, (speak HTML when responding)
 - Any PROGRESS programmer!

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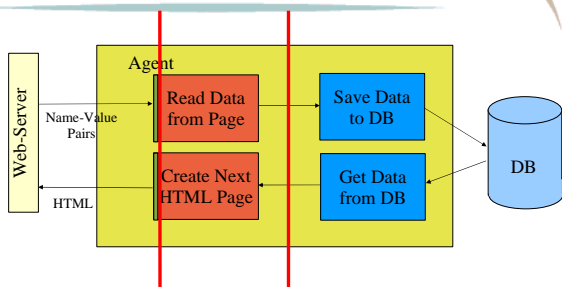
WebSpeed Round Trip



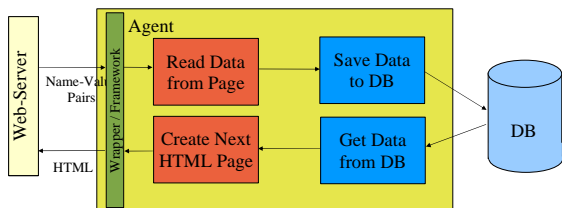
Seed of Thought

- Testing step by step makes life much easier
 - Prototyping and development
 - Debugging
 - Maintenance

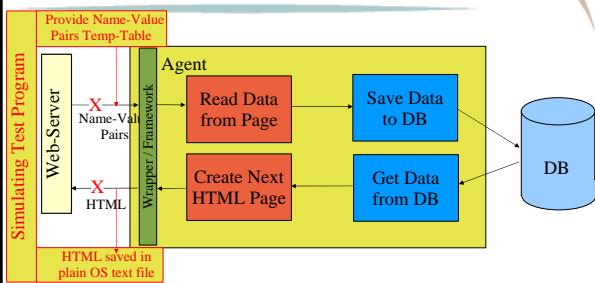
Layered Architecture



Testing / Debugging / Profiling



Testing / Debugging



States of Client/Server Communication

- Stateless – any agent for any client
 - Every request matched up by broker
 - Most WebSpeed Applications
- State-Aware – agent bound to client
- Web Transaction are by nature stateless

Stateless Environment Complexities

- Did record change since page was prepared?
 - Additionally sending complete record to page
 - So it can be retrieved as “before image” record
 - Storing before-images in context DB
 - Using “version” field
- Total disconnect between preparing page and next post
 - Context to be stored on server
 - Identification, re-authentication of user/session

Seed of Thought

- Context Management
 - Sophisticated system -> John Sadd's white paper on PSDN
- WebSpeed is “Batch-Client” - WebService too
 - Plumbing and best practices for WebSpeed are useful for WebServices too
- Performance
 - Codes and other semi-static data cached
 - Javascript for Drop-Downs and Menus
 - BY-REFERENCE for data-structure parameters

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Programming Approaches

- Embedded SpeedScript
 - ABL statements embedded in html
- CGI-Wrapper
 - HTML generated by ABL program
- Mapped WebObject
 - HTML mapped to pseudo window, maintained with AppBuilder
 - attempt of separating ABL and HTML worlds

Challenges

- Testing
- Debugging
- UI – Back-End separation
 - frequently changing looks
 - Presentation – application separation
- Code re-usability
- Code maintainability

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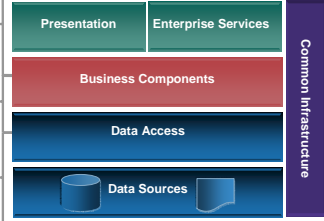


Open Edge Reference Architecture

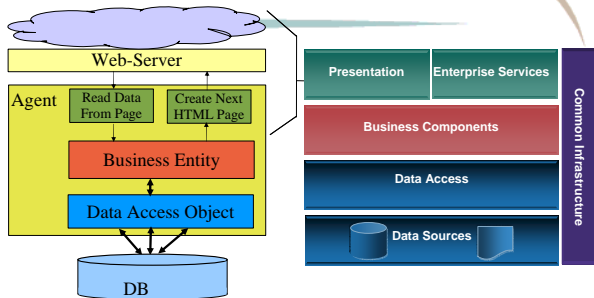
Separated presentation and integration layers

Common business logic with advanced models

Data access abstracted from storage



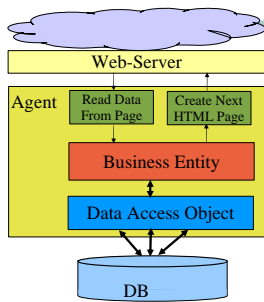
Modern Architecture



Business Components and Data Access Layers

- Business Rules and Logic
- Data Model Translation
 - DB: normalized, storage oriented data organization
 - UI/API: process oriented data organization

ABL vs WebSpeed vs Web-”Stuff”



- Standard Application
 - Data Access Object
 - Business Entity Object
 - 98% of server side Presentation Layer
 - Regular ABL
- “WebSpeed”
 - Wrapper Framework
- Web-”Stuff”
 - HTML, CSS, JS, XML


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Demo

Story Book


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Development Process - 1st Step

- Storybook
 - Customer feedback
 - Easy adjustments
 - Page layout
 - Menus and sub-menus
 - Work flow -> cards, events, card-sequences, AJAX requests
 - User-roles, access rights
 - Refined resources & time estimates
 - What fields and tables used in what combination, query-criteria,...


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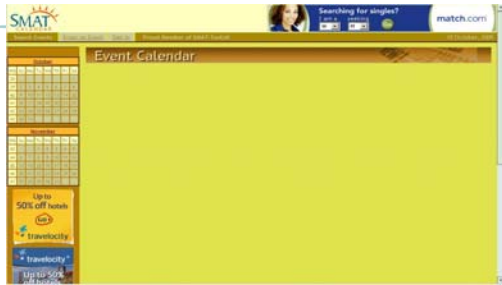
Seed of Thought

- 3 Event-types submit a page:
 - View (first request [menu], refresh, change in filter values, request details...)
 - Print (providing what and how to print)
 - Save (providing data to save, Ids to delete)
- Posting page can be
 - Same as next page (next instance, save&refresh,...)
 - Different from next page (browser->viewer,...)

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Page



Cards



Example of Basic Architecture

- One Page
 - containing one or more cards
 - Menu-system
 - Advertisements
- Various Cards
 - Browser or viewer
 - Prepare procedure
- Save Processes
 - Per card and event

Development Process

- Story Book
- Wrapper / framework (WebSpeed/ABL, reusable)
- Back-end libraries (plain ABL)
- Test environment and test-libraries (plain ABL)
- Simple Card (change password...) (plain ABL)
- Test and debug framework, test-environment, 1st card in editor (plain ABL)

Development Process cont.

- Test card in browser
- All other cards
 - Back-end & back-end test (plain ABL)
 - Card process object & editor test (plain ABL)
 - Browser based test

Demo

HTML Templates
Code Examples
Prepare
Save
Test-wrapper

AJAX

- Ken Wilner's Presentation!
- On ABL side the same as page posting
 - Result is “part” of page (XML, HTML, anything...)

Seed of Thought

- Javascript - Major pain in the neck!
 - Browser non-standard-compliant
 - Opera great debugging features
- Usability annoyances
 - Back/Forward buttons not usable
 - Links to non-secure page cause logout
 - Links can't be opened in second window

More Info

- Presentations
 - INNOV-10: Getting Started with AJAX (Ken Wilner)
 - INNOV-7: Building a Richer User Interface for the Browser (Chris Skeldon)
 - DEV-2: WebSpeed: Extended Mapped HTML Objects (Mike McMillan)
 - DEV-25: From Box To Developing WSA/AIA/WebSpeed Applications Using Tomcat (Matt Harrison)
 - COMP-11: Best Practices For Deploying AppServer and WebSpeed (Doug Merrett)

More Info (cont.)

- PSDN
 - John Sadd – Whitepaper: Context Management
 - Edsel Garcia – WebEx Recording: WebSpeed Development In OpenEdge Architect
- Documentation
 - Developing WebSpeed Applications
- Progress Email Group (www.peg.com)
- Google for Javascript, AJAX, CSS, ...

Summary

- WebSpeed is a piece of cake, when...
 - HTML and ABL worlds totally separated
 - Application follows layered architecture
 - Testing and test-environment is integrated in design
 - Framework allows development mainly in ABL world

(Note: WebSpeed Deployment not covered here)

Questions?

Thank you



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