VA Smalltalk Update

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Agenda

- Company Update
- Current Release Content
- Next Release Candidates
- Q&A
Company Updates
Non-Development Activity

• User Outreach
  • Conference sponsors and participants
    • ESUG, STIC, Smalltalks
  • Supporting new Smalltalk Foundation
    • CEO Mike Taylor joined Board of Directors
    • CTO John O’Keefe joined the Advisory Board
  • VA Smalltalk Google Group
    • Aggregated on [Smalltalk] http://forum.world.st
    • Old forum content (prior to May, 2011) still available (readonly)

• “Videos and Podcasts” pages on website
  • http://www.instantiations.com/resources/st4u_videos.html
  • http://www.instantiations.com/resources/videos.html
New Release

V8.6.1 available soon!
V8.6.1 Content
Base Class Libraries

- Zip/Unzip available on all supported platforms
- Complete Base64 Encode/Decode replaces ad-hoc encoding/decoding
- Portable Color class replaces CgRGBColor class for GUI
- TranslucentColor class added to handle alpha channel
- NumberParser framework added to replace ad-hoc parsing
V8.6.1 Content
Graphics Framework Improvements

• Increased performance of the event dispatching loop
  • filter out non-keyboard events early before attempting to detect accelerators and traversal keys
• Dead-Key character support used for non-English keyboard layouts
V8.6.1 Content
Text Editor Improvements

- Entire Scintilla 3.4.4 API supported
- All Scintilla API calls use Direct-Access instead of the windows message queue
  - up to 25x communication performance improvement
V8.6.1 Contents
General Browser Enhancements

• Better looking default browser and code fonts
• Improved progress bar
  • Use native progress bar on Windows
  • Use emulated control on UNIX
• Reduced ENVY calls needed to produce browser decorations
  • Important for high-latency network and/or large managers
- New virtual "-- all --" category to show methods from all categories
- “--all--” is the default
V8.6.1 Contents
Tabbed Browsers

Method browser tabs show dirty state by changing the color of the tab icon.

State maintained so undo can reach clean state.
Highlight uses context-sensitive algorithms

Browsing senders of a selector will not highlight all strings and substrings that match the selector name, just the method selectors.

Enhanced with Scintilla visual effects.
V8.6.1 Contents
Inspector Enhancements

• Major performance improvement to inspectors on large keyed collections
V8.6.1 Contents
Debugger Enhancements

Enhanced with Scintilla visual effects
V8.6.1 Contents
Code Assist Enhancements

Code Completion
Added "Define Accessor" suggestions to produce definition of getter and setter

Comment Folding with support for Auto-Collapse

Type Checker
Background task works to type receivers of method sends to help discover errors early
V8.6.1 Contents

Code Assist Enhancements

• Bracket Highlighting
  • Uses indicator underlays as default making them easier to see
  • Draws a margin marker on the line of a matched bracket when that bracket is off-screen (in either the x,y direction)

• Action-List Calltips
  • Calltips can uncollapse to produce a list of actions (i.e. refactoring, correct spelling...) that can be selected by the user

• Margin Markers to help identify the location of errors and warnings
V8.6.1 Contents
Interactive Refactoring

• Common refactoring that can be performed in an interactive manner without popups
  • Visualizations are used to show feedback and conflict detection
  • Local Variable Rename
  • Push-Down Temp
  • Declare Temp
  • Remove Unused Temps (supports batch mode)
V8.6.1 Contents
Lint Checker

- Background task performs lint checks on the code you write, as you write it
  - Prerequisite visibility - Identifies refs and methods that are not visible in prereq chain. Helps with packaging and general code base organization and maintainability
  - Unused temp (with option to invoke refactoring and remove it)
  - temp read before written, temp written but never read
  - temp could be pushed to inner scope (with option to invoke refactoring and push it to the preferred scope)
  - Misspelled selectors (with option to correct spelling)
  - Undefined temp (with option to define it at a scope of your choice using interactive refactoring)
Every visual effect used in the code editor is customizable through an easy-to-use UI.
Come to Seth Berman’s “Pushing the VA Smalltalk Editor Onward and Upward” session @ 12:00 Friday for details and demo.
Monticello Importer Improvements

- Monticello Importer available on all supported platforms
- Better prerequisite guessing for imported apps
- Improved class comment handling
V8.6.1 Contents
ENVY Manager Library

- EMSRV for Windows
  - Warning when running on multiprocessor hardware removed
- EMSRV for UNIX
  - Filesystem limitations removed - all filesystems supported
- EMSRV for Linux
  - 16GB manager library supported (was 2GB)
V8.6.1 Contents
Seaside and Grease

• New port levels available
  • Grease 1.1.6
  • Seaside 3.1.1 (plus a few 3.1.2 fixes)
• Mostly small bug fixes
• Configuration maps identify the Metacello package version used for the port:
  • ConfigurationOfGrease-DiegoLont.254
  • ConfigurationOfSeaside3-JohanBrichau.151
V8.6.1 Contents
Web Services Updates

- Web Services framework will now deploy WSDL containing SOAP 1.2 bindings
  - Both 1.1 and 1.2 bindings into the same container
  - Web service namespace was previously a global value
    - Each web service now queries its bindings to determine whether to use the 1.1 or 1.2 namespace
    - You must still set the soap envelope style for each service using SstWSService>>sstSoapEnvelopeNamespace:

- AbxXmlBasicTools Enhancements
  - Generate classes from WSDL containing schemas that define anonymous complex types
V8.6.1 Contents
WebConnection Updates

- Updated WebConnection binaries
  - MSVC compatible sources and makefiles
  - Updated binaries built using MSVC
V8.6.1 Contents

GLORP

- GLORP port updated to 7.10.1-3
  - Was 7.9.1-4 in V8.6
- GLORPTest port updated to 7.10.1-1
V8.6.1 Contents
SQLite

• Full support for SQLite3
  • 2 new loadable features
    • Database, SQLite
    • Database, SQLite Testing
  • Integrated with VA Smalltalk database framework
  • Access SQLite databases in memory or on disk
  • Runs on all supported platforms
V8.6.1 Contents
Windows Installer

- Location of the library manager is selectable
  - Default is the same as in 8.6
- Checkbox for selecting Environments desktop shortcut now a separate dialog
- Directories whose content is version-specific have version name included (ex: nls861)
- Upgrade from 8.6 to 8.6.1
  - Installer detects 8.6 and perform an upgrade
  - Will run importer tool to upgrade existing manager or install new manager
  - Important 8.6 directories are retained
V8.6.1 Contents
UNIX Installers

• New headless installer (.deb and .rpm) for Linux
• Separate packages for client/manager and documentation
• AIX and Solaris Installers unchanged
V8.6.1 Contents
Environments Management Tool

• Support for side-by-side Environments
• Detect/avoid data collisions when running multiple copies of Environments
• Selectively refresh all files for the chosen Environment (not just the image file)
• Import Environment folders that are not currently defined to Environments
V8.6.1 Content
Documentation

• Getting Started Completely rewritten to show
  • how to launch the product
  • how to save your work
  • simple VA Smalltalk code examples (in addition to the visual programming examples)
  • introduction to available tools
  • introduction to VA Smalltalk concepts
  • next steps to more in depth information
V8.6.1 Content
New Platforms

• Fedora 20
• Ubuntu 14.04
Looking to the Future
Future Releases

• Release schedule is about once a year
  • Depends on volume of content
  • Current content information in Product Roadmap
    • http://www.instantiations.com/products/roadmap.html

• Content based on requirements from:
  • Direct customer interactions
  • Forums
  • Support cases
  • Internals
Next Release
Candidate Items

• Internationalization
  • Full Unicode/UTF-8 (including VM and system APIs)
    • Based on International Components for Unicode (ICU) module

• Web interface
  • Seaside 3.x
  • Continuation support

• Infrastructure
  • Announcements (needed for Roassal)
  • Full inflate/deflate support (needed for .PNG)

• Middleware
  • Postgres —or—
  • MongoDB
Next Release
Candidate Items

• GUI Look-and-Feel
  • Common Widgets Application Window framework
    • Used by SUnit, Seaside, and Roassal
  • Icon/image support enhancements
    • Support for alpha-channel (blending)
    • Support for .PNG file (R/W)
  • Windows Common Controls
    • TreeView improvements

• Server
  • Easy to use server farms

• Installation
  • Headless install for AIX and Solaris
Next Release
Candidate Items

• Development Tools
  • Roassal
  • WAN gateway for EMSRV

• Security
  • ‘Basic’ security framework (consolidate existing OpenSSL wrappers and update to OpenSSL 1.0.2 or later)

• Performance and Scalability
  • Incremental garbage collection
  • 64-bit Smalltalk
Dino2 32/64 Bit VM Project
Process

- Kiln replaces image as code repository
- GCC replaces platform-specific compilers
- CodeBlocks replaces Smalltalk as IDE
- CMAKE/CTEST/CDASH replaces ad-hoc build system for CI builds of VM
- Incremental development
  - Shimming to make the new 32-bit VM always runnable
- Continuous improvement process
  - Fixes back-ported to current VM
  - Some improvements back-ported to current VM
Dino2 32/64 Bit VM Project

Results

- Existing VM is 90% Smalltalk Model -> ASM
- New VM is rework of existing VM to 99.998% C
- LIBFFI for external callout and callin
- New 32-bit VM
  - Fully functional and fully compatible with current VM
- Image is 32/64 bit transparent
  - Smart structures support auto-alignment by platform
- New 64-bit VM (simply recompiled 32-bit VM)
- Completely new 32/64 bit JITter
- New bytecode set (32/64 bit transparent?)
How Do You Get VA Smalltalk?

• Download evaluation copy

• Buy development licenses

• Download development build
  • Announced in VA Smalltalk Google Group

• Be a committer on an Open Source project
  • [http://www.instantiations.com/company/open-source.html](http://www.instantiations.com/company/open-source.html)

• Work for an educational institution
  • [http://www.instantiations.com/products/academic-license-program.html](http://www.instantiations.com/products/academic-license-program.html)
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Thank you for your attention

Questions?