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VA Smalltalk Update

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Agenda

- Company Update
- Current Release Content
- Demo
- Next Release Candidates
- Q&A

Company Updates

VAST remains strong - new technology and users

- Community Outreach
 - Conference/workshop sponsors and participants
 - ESUG, FAST Smalltalks, Camp Smalltalks
- Intense new technology development
 - Upcoming product release
 - New 64-bit VM
- VA Smalltalk Google Group
 - Aggregated on **[Smalltalk]** <http://forum.world.st>
 - Old forum content (prior to May, 2011) still available (read only)
- “Videos and Podcasts” pages on website
 - http://www.instantiations.com/resources/st4u_videos.html
 - <http://www.instantiations.com/resources/videos.html>

New Release

V8.6.2 available Q4 2015!

V8.6.2 Content

Base Class Libraries

- OSObject symbolic field access
 - Simplifies structure mapping
 - Eliminates manual field offset calculation
 - Handles platform-specific field alignment
 - Handles packed structures
 - Maps Unions
 - Supports 32/64-bit environments
 - Backward compatible

V8.6.2 Content

Base Class Libraries

- Smalltalk namespace query improvement
 - Improved performance of class/global/pool lookup and iteration
- In-memory and stream inflate/deflate
 - Add APIs to use zlib to inflate and deflate data to and from streams (collections, strings, and files)
 - Add APIs to create a Zip archive of files
 - Add APIs to create a Gzip archive of a file

V8.6.2 Contents

Cryptography

- Support for OpenSSL 1.0.0 and above
 - Message Digests
 - Symmetric Ciphers
 - Public/Private key support (RSA, DSA, Diffie-Hellman)
 - Digital Signatures
 - Digital Enveloping
 - Key Agreement
 - MAC
 - Secure RNG
 - High-Performance crypto streams (BIO)
 - Memory management enhancements
 - ASN1 capability enhancements
 - X509 capability enhancements
 - OpenSSL Version Detection

V8.6.2 Contents

Cryptography

- Uses platform- or user-supplied OpenSSL modules
 - On UNIX, `libcrypto` and `libssl` are supplied by the system
 - On Windows, `libeay32` and `ssleay32` are supplied by the user (for example, download from https://slproweb.com/download/Win32OpenSSL_Light-1_0_2d.exe)
- New native Thread-locking support for OpenSSL static and dynamic locking interfaces
- Extensive examples showing usage of all APIs

V8.6.2 Content

Graphics Framework Improvements

- New PNG file read and write support
- JPEG parser improvements
 - Silently ignore metadata that is not in the proper order

V8.6.2 Content

Development Tools Improvements

- Image startup scripting improvements
 - abt.cnf originally used to setup image parameters using chunk-formatted scripts
 - Function was replaced by declarative abt.ini
 - abt.cnf processing has remained in the product as a mechanism to script operations at image startup
 - but has always been a bit difficult to use since the image is not fully initialized at the time it is run
 - Added capability to designate code chunks to run at either pre-image startup or post-image startup
 - Post-startup code chunks are run after the image is fully operational
 - giving the user freedom to write scripts that use any part of the system, such as GUI components, loaded code, etc.

V8.6.2 Contents

General Browser Enhancements

- Optional Virtual Compiler for Class Definitions (On by default)
 - Problem: Deleting variables from a class definition can leave methods in an inconsistent state if removed variables are still referenced
 - Reason: Class Definition and Methods are separate compilation units
 - Solution: When saving a class definition, a virtual compiler is run that treats the class definition and methods as a single compilation unit
 - for the purposes of identifying and reporting a class definition that will become inconsistent if the operation takes place
 - If this is identified, the operation will be cancelled

V8.6.2 Content

Text Editor Improvements

- Updated Scintilla APIs to support displaying embedded NUL characters
 - previously a NUL identified the end of the string and all following characters were ignored

V8.6.2 Content Workspace Optimizations

- Workspaces did inefficient content management
 - Always collecting up the complete contents of the file into a string for most every algorithm
 - For small documents (i.e. Smalltalk snippets) this didn't matter
 - For large documents, this creates a lot of garbage and performance issues
- Workspace algorithms now take advantage of our ability to natively interface with Scintilla's (our editor component) internal character buffer
- File I/O algorithms have been updated for more efficient large document operations

V8.6.2 Content

Multilingual Workspace – Design Goals

- Keep it in Smalltalk
- Provide a first-class editing experience for:
 - Configuration Files
 - System Scripts (Shell or Batch)
 - Web Languages (HTML/Javascript/CSS)
 - C/C++/Assembler for Native Development
 - and of course... SMALLTALK!
- Pluggability: Support for additional languages should be easy to develop and plug-in

V8.6.2 Content

Multilingual Workspace – Language Adaptability

- Workspaces dynamically adjust their algorithms when a language is specified
 - Bracket/Brace Matching
 - Code Completion
 - Comments
 - Code Folding
 - Indentation/Tabs
 - Syntax Highlighting
 - Menus
 - Refactorings
 - Text Selection
 - Word Characters

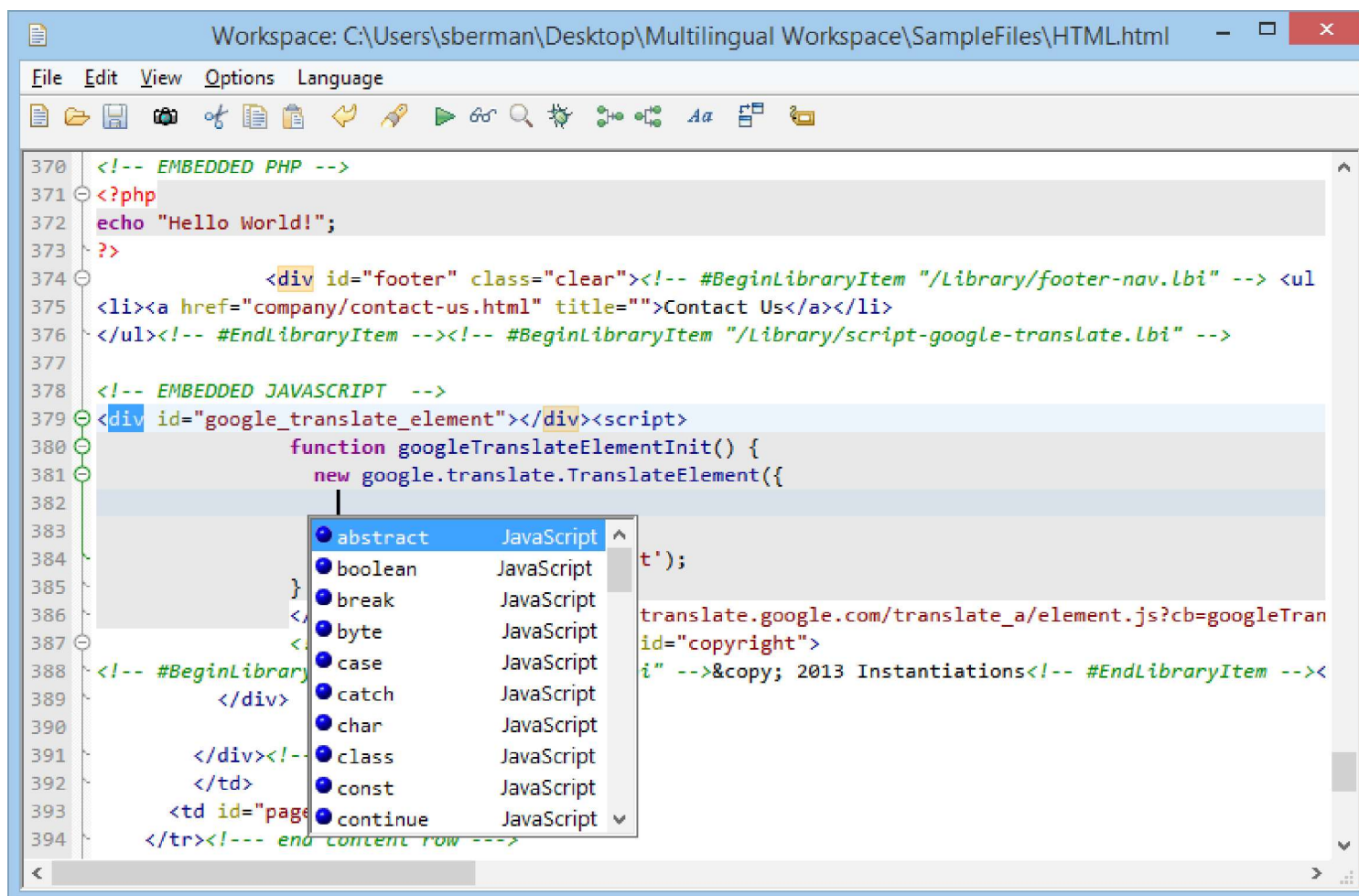
V8.6.2 Content

Multilingual Workspace - Pluggability

- A workspace has an active “Language Provider”
 - It provides implementation details to the various algorithms
- Pluggability is all well and good...but isn't creating support for a new language hard?
 - **Answer:** No, its not - that's because you won't be doing most of the work
 - Scintilla provides language support for 100+ languages
 - Handles Syntax Color Highlighting
 - Handles Code Folding
 - For more language specific features, you override some simple methods that provide default assumptions
 - Currently only 6 methods for you to override - 4 of them are simple 1 liners, the other 2 are easy to implement

V8.6.2 Content

Multilingual Workspace - Example



The screenshot shows a code editor window titled "Workspace: C:\Users\sberman\Desktop\Multilingual Workspace\SampleFiles\HTML.html". The editor contains HTML and JavaScript code. A context menu is open over the JavaScript code, listing various JavaScript keywords and types. The code includes an embedded PHP block, a footer navigation menu, and an embedded JavaScript block that defines a function for initializing a Google Translate element.

```
370 <!-- EMBEDDED PHP -->
371 <?php
372 echo "Hello World!";
373 ?>
374 <div id="footer" class="clear"><!-- #BeginLibraryItem "/Library/footer-nav.lbi" --> <ul
375 <li><a href="company/contact-us.html" title="">Contact Us</a></li>
376 </ul><!-- #EndLibraryItem --><!-- #BeginLibraryItem "/Library/script-google-translate.lbi" -->
377
378 <!-- EMBEDDED JAVASCRIPT -->
379 <div id="google_translate_element"></div><script>
380     function googleTranslateElementInit() {
381         new google.translate.TranslateElement({
382
383
384         });
385     }
386 </script>
387 <!-- #BeginLibraryItem "/Library/script-google-translate.lbi" -->
388 <div id="google_translate_element"></div>
389 </div>
390
391 </div><!-- #EndLibraryItem -->
392 </td>
393 <td id="page">
394 </tr><!-- end content row --->
```

| Keyword | Type |
|----------|------------|
| abstract | JavaScript |
| boolean | JavaScript |
| break | JavaScript |
| byte | JavaScript |
| case | JavaScript |
| catch | JavaScript |
| char | JavaScript |
| class | JavaScript |
| const | JavaScript |
| continue | JavaScript |

V8.6.2 Contents

ENVY Manager Library

- Updated source code compression functions
 - Compression reduces source code size by up to 50%
 - Now cross-locale and cross-platform
 - Requires 8.6.2 library access prims for full function
 - 8.6.2 image and 8.6.2 prims – GOOD, new function
 - 8.6.1 or earlier image and 8.6.2 prims – OK, old function
 - 8.6.2 image and 8.6.1 or earlier prims – BAD, Transcript warning at startup

V8.6.2 Contents

Secure Communications

- Secure Socket support updated to use new crypto function
 - Removed old crypto and ssl native libraries on all platforms
 - Default SSL Protocol is TLS (same as SSLv23 with SSLv2 excluded)
 - Deprecated Insecure protocols (SSL version 1-3)
- SST HTTPS support updated to use new crypto support

V8.6.2 Contents

Seaside and Grease

- New port levels available
 - Grease 1.2.0
 - Seaside 3.2.0
- Support for HTTPS connections
- Some small bug fixes
- Configuration maps identify the Metacello package version used for the port:
 - *ConfigurationOfGrease-JohanBrichau.311*
 - *ConfigurationOfSeaside3-JohanBrichau.268*

V8.6.2 Contents

SQLite

- Added transaction control support: BEGIN, COMMIT, and ROLLBACK
- Added support for Host Variables

V8.6.2 Contents

GLORP

- GLORP port updated to 8.1-7
 - Was 7.10.1-3 in V8.6.1
 - Bug fixes
 - Added support for SQLite
- GLORP Test port updated to 8.1-5
 - Added support for SQLite
- New features for SQLite Glorp and SQLite Glorp Testing

V8.6.2 Contents

Installers

- New installers for AIX
 - Based on standard Unix package managers
 - RPM format installed using the RPM package manager
 - Much faster than the old GUI installers
- Installers have simple to use install/uninstall scripts which run from the command line
 - Scripts can upgrade from 8.6.0 and 8.6.1
 - Scripts can run the importer tool to update an 8.6 manager

V8.6.2 Contents

Environments Management Tool

- Early validation
 - Installation and environments content validated before any processing is attempted
- Enhanced support for multiple installations
 - Can create environments for all versions of VA Smalltalk

V8.6.2 Content

Documentation

- ENVY/QA added to online library
- Many small updates

V8.6.2 Content

New Platforms

- Windows 10
- Fedora 22
- Ubuntu 15.04

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
 - Unicode/UTF-8 (including VM and system APIs)
 - Based on International Components for Unicode (ICU) module
- Web interface
 - Seaside 3.x
 - Continuation support
- Middleware
 - Postgres
 - NOSql (Voyage/MongoDB or ???)
 - TCPIP V6

Next Release

Candidate Items

- GUI Look-and-Feel
 - Common Widgets Application Window framework
 - Useful for SUnit, Seaside, and Roassal
 - Windows Common Controls
 - TreeView improvements
 - GTK replaces Motif on UNIX platforms
- Server
 - Easy to use server farms

Next Release

Candidate Items

- Development Tools
 - Improved code library access over WAN
 - Revamped Changes Browser
 - New Code Merge Engine
- Performance and Scalability
 - Incremental garbage collection
 - 64-bit Smalltalk (Dino2)

How Do You Get VA Smalltalk?

- Download evaluation copy
 - <http://www.instantiations.com/products/vasmalltalk/download.html>
- Buy development licenses
 - <http://www.instantiations.com/products/purchase.html>
- 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>
- Work for an educational institution
 - <http://www.instantiations.com/products/academic-license-program.html>

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Thank you for your attention

Questions?