

## EDT 0.8.1 Stakeholder Meeting

July 13, 2012

Project members: **CLEAR** BLADE **FBD SUBSCIATES INC. SEXTED BINSTITUTE BINS** 



#### Agenda

- Meeting Goal --- Discuss the design and implementation new features to ensure they meet stakeholder needs
- Plans are subject to change (mostly based on your input)
- Feel free to ask questions via the phone or chat to All in the Web conference window
- Press \*6 to mute/unmute your phone. Please mute your phone unless you are asking a question.

#### **Today's Topics**

- EDT Project Status Lisa Lasher
- What's New in 0.8.1 M1 / M2
  - System Library support Zhi Zhu, Fan Song, XiaoBin Chen
  - Language Enhancements Justin Spadea
- What's Coming in M3 Brian Svihovec
- What's Coming beyond M3 Brian Svihovec
- EDT Community and Open Development Theresa Ramsey



## **EDT Project Status**

Project members:













- EDT 0.7 Release Dec 2
  - Initial incubator release
  - EGL model
  - Generator framework
  - IDE
  - Debugger
  - Deployment
  - Basic EGL language
- EDT 0.8 Release April 13
  - Generator and debugger extensibility
  - Optimization of generated code
  - Integration with IBM I
  - JNDI support
  - IDE usability and productivity enhancements





#### Where We're At

- EDT 0.8.1 Schedule
  - M1 / M2 driver published June 11
  - M3 driver targeted to publish by June 29
  - Testing / fixing through July 20
  - 0.8.1 Release July 27
- For more on EDT 0.8.1 plans, see <u>http://wiki.eclipse.org/EDT:0.8.1 Planning</u>



#### Where We're Going

- EDT 0.8.2 Fall 2012
  - Incremental enhancements in:
    - IDE usability / productivity
    - Extensibility
    - Language
- EDT 0.8.x ? TBD
- EDT 0.9
  - APIs are complete and frozen
  - Most (all?) functionality is complete
- EDT 1.0
  - Production-level functionality and quality



## What's New In 0.8.1 M1 / M2

#### **System Library Support - EGLARs**

Project members:

















#### **EGLAR** Overview

- What is an EGL ARchive (EGLAR)?
  - An EGLAR file is a zip file that contains the compiled, intermediate representation (IR) version of one or more EGL parts. For more information about EGLAR files, see Introduction to EGLAR files and binary projects
- Role of EGLAR
  - > An EGLAR is similar to a JAR file in Java
  - EDT 0.8.1 only supports system EGLAR files, which are provided with EDT. User defined EGLAR files cannot be created or consumed at this time.



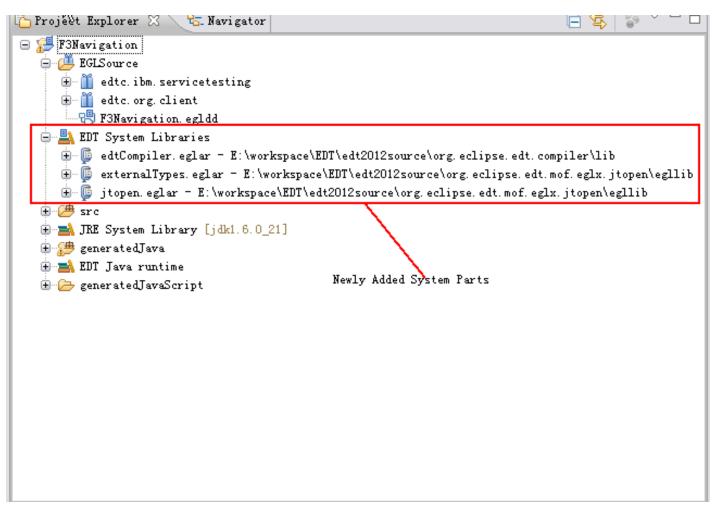
### EGL Path Changes

- The EGL System parts are now included on the EGL Path, instead of being implicitly defined by the compiler.
- A new container entry is added to .eglpath file that represents EGL system parts:
  - <eglpathentry kind="con" path="org.eclipse.edt.compiler.EDT\_RUNTIME"/>
  - > The entry is automatically added for newly created project in EDT 0.8.1.



#### **Project Explorer View Update**

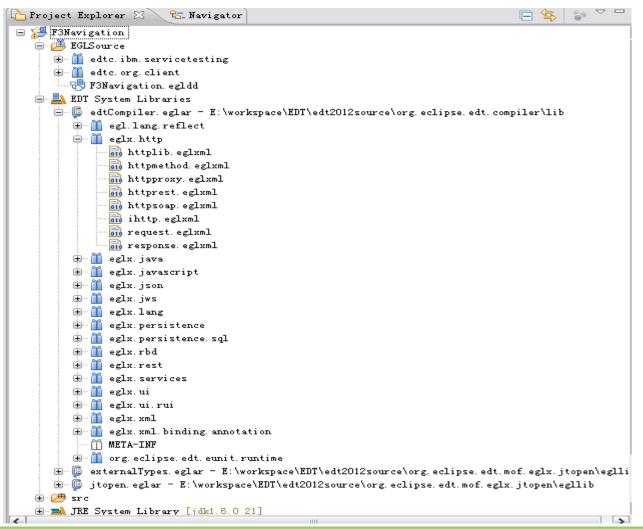
EGL system parts are shown automatically in the Project Explorer View





#### **Project Explorer View Update**

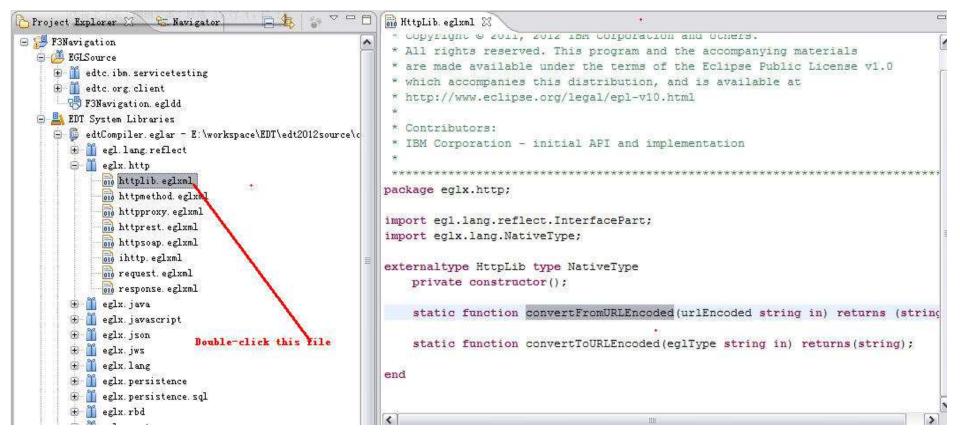
You can browse files contained in each EGLAR file





#### Display IR files in EGL Read-only Editor

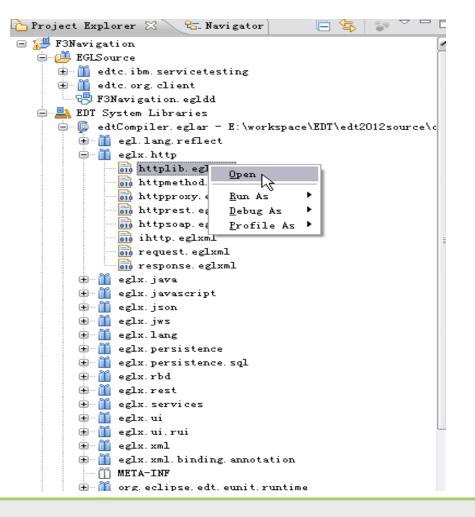
- Double-click an IR file, the corresponding EGL source file is opened in read-only editor.
  - Navigate edtCompiler.eglar -->eglx.http --> httplib.eglxml





#### Display IR files in EGL Read-only Editor

 Click an IR file, select Open operation from Context Menu and the corresponding EGL source file is opened in EGL read-only editor.





#### EGLAR Search Support

EGL Part Search (Part Declaration & Reference)

HttpLib					Case sens <u>i</u> tive
Search For — O <u>P</u> rogram OService OSt <u>e</u> reotype	<ul> <li>Function</li> <li>Interface</li> <li>Any element</li> </ul>	○Library ○Delegate	○ <u>R</u> ecord ○E <u>x</u> ternalType	○ <u>H</u> andler ○A <u>n</u> notation	Limit To Part declarations <u>References</u> All <u>o</u> ccurrences
Scope Scope Yorkspace Vor <u>k</u> ing se		resources	O Enclosing pro	iects	Choose

EGL Development Tools Project (EDT)



#### EGLAR Search Support

Matched Part(s) are shown in the Search View



#### EGL Development Tools Project (EDT)



#### Open System Part through Open Part Wizard

- Open Part by navigating through Navigate --> Open Part, and inputting 'Http'
- The system parts from the EGLAR is shown
- Select 'HttpProxy', and it is opened in read-only editor.

🤿 Open Part : 📃 🗖	×					
Choose a part (? = any character, * = any string):						
Http						
Matching parts:						
<ul> <li>HttpLib</li> <li>HttpFroxy</li> <li>HttpRest</li> <li>HttpServletRequest</li> <li>HttpServletResponse</li> <li>HttpSession</li> <li>HttpSoap</li> </ul>						
Qualifier:						
<pre>image in the set of the set</pre>	>					
OK Cancel						



## What's New In 0.8.1 M1 / M2

#### Language Enhancements

Project members:

















#### Foreach statement update

- Can now be used with an array as the "from" clause.
- Must specify a temporary field to hold the current iteration's value for arrays.
- Note: SQL usage of Foreach is unchanged

```
• Example:
names string[] = ["Bob", "Sue", "Hank"];
foreach (name string from names)
syslib.writestdout("Next name: " + name);
end
```

Output: Next name: Bob Next name: Sue Next name: Hank



#### Integer Literal Change

- Previously the type of an integer literal depended on its length
- Now an integer literal will always be of type "Int"
- An integer literal can be made a "Bigint" by following it with an uppercase "I"
- An integer literal can be made a "Smallint" by following it with an lowercase "i"
- Example:
  - i int = 12345; b bigint = 12345I;
  - s smallint = 12345i;
- This allows you to control the type, removing unnecessary type conversions.



#### New primitive types

- Time
  - Similar to Date and Timestamp, but just the hours, minutes, & seconds
  - When converting to/from a string, the delimiter between segments is a colon ":" and the hour is in the 24-hour format. Using the wrong format results in a runtime error.
  - See eglx.lang.ETime in the system parts for a full list of supported functions & operations, including documentation.
  - Example:

```
t1 time = "15:34:55"; // OK
t2 time = "15/34/55"; // ERROR - wrong delimiter
```

- Limited string String(n)
  - Just like String except there is a maximum length allowed on the field
  - This is NOT a fixed length type
  - Any text past the maximum length is truncated
  - Example:

```
s string(5) = "ABCDEFGHIJ"; // holds value "ABCDE"
```



## What's Coming in M3

Project members:















#### **EGLAR Search Support**

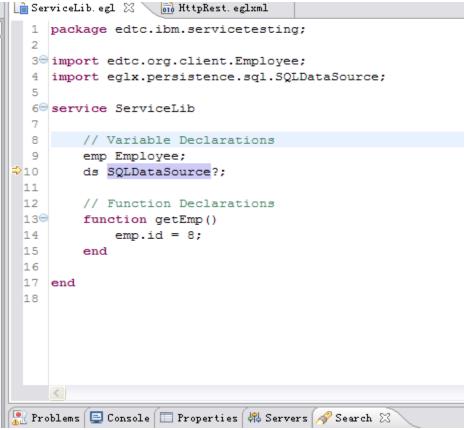
Click one of matched part, it will be opened in EGL read-only editor

```
🚮 HttpLib.eglxml 🔀
                                                                                   ~
 * are made available under the terms of the Eclipse Public License v1.0
* which accompanies this distribution, and is available at
 * http://www.eclipse.org/legal/epl-v10.html
 * Contributors:
 * IBM Corporation - initial API and implementation
package eglx.http;
import egl.lang.reflect.InterfacePart;
import eqlx.lang.NativeType;
externaltype HttpLib type NativeType
    private constructor();
    static function convertFromURLEncoded (urlEncoded string in) returns (string
    static function convertToURLEncoded (eglType string in) returns (string);
end
<
                                                                                >
                                                                                  🎥 Problems 📃 Console 🔲 Properties 👫 Servers 🚀 Search 🔀
                                                 🕂 😯 🗶 🦗
                                                               FF
'HttpLib' - 1 match in Workspace
🖃 🔛 F3Navigation
  😑 🔟 edtCompiler.eglar
     😑 🎽 eglx. http
         and httplib. eglxml
```



## F3 Navigation Support for System EGLARs

- Navigation from EGL source file to EGL IR file, please refer to below code segment.
  - Click SQLDataSource, and press F3, will navigate to SQLDataSource declaration part.





### F3 Navigation Support for System EGLARs

 Navigation from EGL source file to EGL IR file, please refer to below code segment.

Opened system part.

Y	🖹 ServiceLib. egl 🛛 🐻 HttpRest. eglxml 🖉 🚮 SQLDataSource. eglxml 🔀	
	* IBM Corporation - initial API and implementation	1
1	*	
	***************************************	
pa	ackage eglx.persistence.sql;	
	<pre>mport eglx.lang.Nativetype;</pre>	ſ
11	mport eglx.persistence.DataSource;	
e	xternalType SQLDataSource extends DataSource type NativeType	1
	static TRANSACTION_ISOLATION_NONE int;	
	<pre>static TRANSACTION_ISOLATION_READ_UNCOMMITTED int;</pre>	
	<pre>static TRANSACTION_ISOLATION_READ_COMMITTED int;</pre>	
	<pre>static TRANSACTION_ISOLATION_REPEATABLE_READ int;</pre>	
	<pre>static TRANSACTION_ISOLATION_SERIALIZABLE int;</pre>	
	<pre>private constructor();</pre>	
	constructor(connectionUrl string in);	l
	constructor(connectionUrl string in, properties Dictionary in);	
	<pre>function setCurrentSchema(schemaName string in);</pre>	
	<pre>function getAutoCommit() returns(boolean);</pre>	
	<pre>function setAutoCommit(autoCommit boolean in);</pre>	ſ
		a l

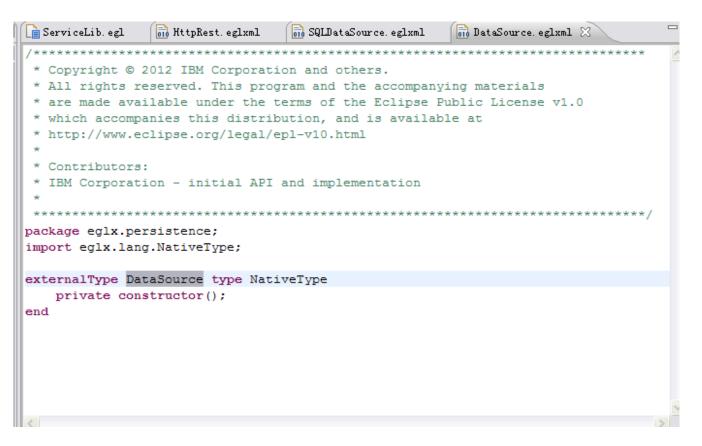
EGL Development Tools Project (EDT)



#### F3 Navigation Support for System EGLARs

Navigation from EGL IR file to EGL IR file

Click DataSource and press F3 in SQLDataSource, IR file for DataSource will be opened.



EGL Development Tools Project (EDT)



#### Vertical Ruler and Line Number Support in Read-only Editor

Vertical Ruler and Line Number can be shown in read-only editor

15/V ************************************	************************
* Copyright 漏 201:	1, 2012 IBM Corporation and
* All rights reser	rved. This program and the a
* are made availab	ole under the terms of the E
* which accompanie	s this distribution, and is
	ose.org/legal/epl-v10.html
*	
* Contributors:	
	- initial API and implement
*	
package eqlx.json;	
· Toggle Breakpoint	
and the second second second second second	ect.InterfacePart:
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Add Task	, cype Macrverype
	ton ().
Show Line <u>N</u> umbers	stor();
Pre <u>f</u> erences	<pre>ison2 string = "json2";</pre>
static JSON_JS_	json_parse string = "json_p
static JSON_JS_	json_parse_state string = "
static function	a convertFromJSON(json strin
static function	a convertFromJSON(json strin
static function	a convertToJSON(eglType AnyR
static function	convertToJSON(eglType any
static parserTy	pe String? = JsonLib.JSON J
end	



### Debugging Support for System EGLARs

- There are no debug limitations for parts in the system EGLARs.
- You can step into the system parts.
- The source code will be displayed and the line is highlighted.
- Breakpoints can be set in the read-only editor.
- The "Run to line" action can be performed in the read-only editor.
- Variables for the system parts will be displayed in the Variables view.



#### Dojo Mobile Widget Support

- http://wiki.eclipse.org/EDT:Dojo\_Mobile\_Widgets
- Supported Widgets
  - Button
  - CheckBox
  - List/ListCategory/ListItem
  - Progress
  - Slider
  - Switch
  - Tab Container
- Mobile Project Template
  - Client Only
  - Client with Services
- Known Restrictions
  - Cannot be used with Desktop Dojo widgets
  - WebKit (Safari) is the recommended for development

- View/ScrollableView/SwapView
- IconContainer/IconItem
- DatePicker
- TextArea
- Opener/Overlay



### Improved Support for Compiler Extensibility

- Support for contributing the following elements to the EDT Compiler:
  - Additional EGL Types
  - Additional runtime files
  - Validation rules
  - Generator Extensions
  - Debug Support
- Supporting for user defined bundles containing the elements listed above
  - Specify supported version ranges for the EDT compiler and generators
  - Single archive files containing Eclipse plug-ins that can be easily consumed by an existing EDT installation



#### Language Enhancements

- Support for the 'bytes' primitive type
- AS400\* data-conversion annotation renaming (see Bug 376979)
- Literals
- Float
  - d decimal = 123.45;
  - f float = 123.45F;
  - s smallfloat = 123.45f;
- Byte
  - b bytes = 0x1A2B3C; // must be lower case x



# What's Coming Beyond M3

**EGL Analysis Framework** 

Project members:















### EGL Analysis Framework (Bug 377473)

- The EGL Analysis Framework provides a way for users to define and execute code analysis rules on EGL source code
- Being developed by Bart van Campenhout at Asist
- The framework will provide:
  - An engine for running analysis rules
  - A common UI for displaying, and running rules in the IDE
  - Support for running rules and displaying results in an SDK environment
  - Extensible framework for defining additional rules to be written and contributed by the community
- Example Analysis Rules
  - An upward calltree builder (full tree structure of the programs, services, libraries that are calling (recursively) the current program, library, services )
  - A downward calltree builder
  - An extensible EGL programming standards analyzer that will list failing programs, based on naming conventions, sizes of records, sizes of functions, "unallowed" System library functions, ...



# Getting involved in the EDT Community

Project members:















## EDT Community - Be part of the EDT open-source process!

- Look at EDT's **Bugzilla**, used to track enhancements and bugs
  - If you're interested in a Bugzilla item, add yourself to the cc: list
  - Add comments (after signing on with Eclipse ID)
- Ask (and answer) questions on the EDT Forum: <u>http://www.eclipse.org/forums/index.php?t=thread&frm\_id=190</u>
- Familiarize yourself with the EDT Wiki documents: <u>http://wiki.eclipse.org/EDT</u>
- Read the EDT team **blog**, available via the Community page:
  - http://eclipse.org/edt/#community
  - > You can also subscribe via Email or Atom feed.
- Follow @Eclipse\_EDT on Twitter: <u>https://twitter.com/#!/Eclipse\_EDT</u>
- Charts for this (and previous stakeholder) meetings at:
  - http://wiki.eclipse.org/EDT:Stakeholder\_Meetings

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# **Questions?**

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# Thank You!