

# SpringSource Tool Suite 2.9.0.M1

- New and Noteworthy -

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2.9.0.M1

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Updated for 2.9.0.M1

## ENHANCEMENTS – 2.9.0.M1

### General Updates

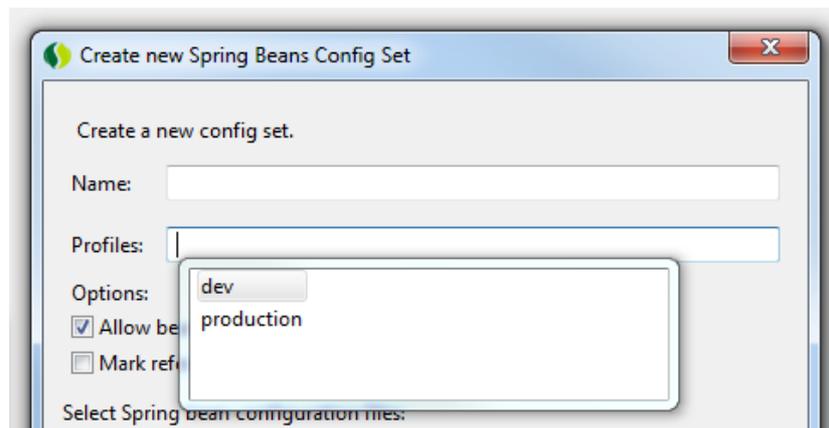
#### vFabric tc Server 2.6.2

STS ships now with the latest vFabric tc Server Developer Edition 2.6.2.

### Spring Development Tools

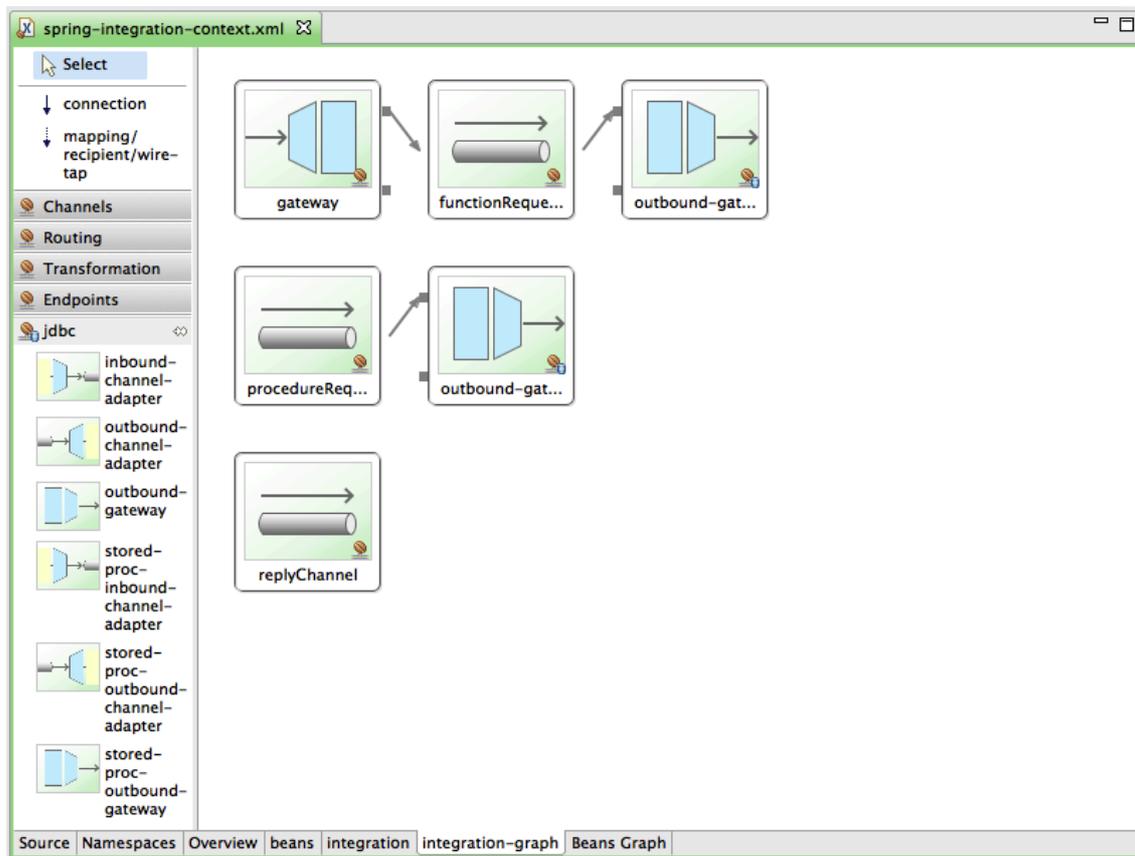
#### Improved Spring 3.1 Profile Support

In this release we added content assist for selecting profiles to be included while defining a Spring Beans config set. Currently the content assist only works on profiles that are defined in a Spring Beans config xml file, but we are working on making this work with profiles defined through Java annotations as well.



#### Support for Spring Integration 2.1

This releases adds support for Spring Integration 2.1.0. Visualizations have been added for the new SI-Gemfire, SI-Redis, and SI-RMI projects. All existing Spring Integration projects have been updated to support new visualization elements. Below you can see visual editing support for the new stored procedure adapters in SI-JDBC.



## Grails Development Tools

### DSL Support

#### Named queries

STS now has full support for the named query DSL:

<http://grails.org/doc/latest/ref/Domain%20Classes/namedQueries.html>.

First, for defining named queries, STS provides full content assist and type inferencing inside of the `namedQuery` static field of a domain class. For example, hovering over a reference to `"gt"` will bring up the JavaDoc for the `"gt"` method of `HibernateCriteriaBuilder` (and pressing F3 will navigate to the definition of `"gt"`):

```

static namedQueries = {
  recentPublications {
    def now = new Date()
    gt 'datePublished', now - 365
  }
  oldPublications {
    // ...
  }
}

```

Provided by Criteria builder DSL

- Criteria `grails.org.HibernateCriteriaBuilder.gt(String propertyName, Object propertyValue)`

Creates a "greater than" Criterion based on the specified property name and value

And it is possible to reference other named queries inside the definition of one:

```

publicationsWithBookInTitle {
  like 'title', '%Book%'
}
recentPublicationsWithBookInTitle {
  // calls to other named queries...
  recentPublications()
  publicationsWithBookInTitle()
}

```

Second, STS also provides full inferencing and content assist support for using named queries. Here are some examples that are taken from the Grails user guide, see:

<http://grails.org/doc/latest/ref/Domain%20Classes/namedQueries.html>).

All of these examples are fully supported by content assist and type inferencing:

```

// get all recent publications...
def recentPubs = Publication.recentPublications.list()
// get up to 10 recent publications, skip the first 5...
recentPubs = Publication.recentPublications.list(max: 10, offset: 5)

// get the number of recent publications...
def numberOfRecentPubs = Publication.recentPublications.count()

// get a recent publication with a specific id...
def pub = Publication.recentPublications.get(42)

// get all recent publications where title = 'Some Title'
def pubs = Publication.recentPublications.findAllWhere(title: 'Some Title')

// get a recent publication where title = 'Some Title'
pub = Publication.recentPublications.findWhere(title: 'Some Title')

// dynamic finders are supported
pubs = Publication.recentPublications.findAllByTitle('Some Title')

// get all old publications with more than 350 pages
pubs = Publication.oldPublicationsLargerThan(350).list()

// get all old publications with more than 350 pages and the word 'Grails' in the title
pubs = Publication.oldPublicationsLargerThan(350).findAllByTitleLike('%Grails%')

// get all recent publications with 'Book' in their title
pubs = Publication.recentPublicationsWithBookInTitle().list()

```

Note that due to Grails bug <http://jira.grails.org/browse/GRAILS-8387>, the return values of named query methods like "list", "get", and "findWhere" are all dynamically typed and so do not provide any useful type inferencing in the editor. For more information, see STS-2143 and STS-2145.

## Case insensitive dynamic finder content assist

Dynamic finders can now be invoked in content assist in a case insensitive way:

```
class Person {
    String name
    Date dob

    static printYoungPeopleNamedAl() {
        def younguns = Person.findAllByDobGr
    }
}
```

Content assist suggestions:

- findAllByDobGreaterThan : List - Person (GORM)
- findAllByDobGreaterThanEquals : List - Person (GORM)
- findAllByDobGreaterThan(Object dob) : List - Person (GORM)
- findAllByDobGreaterThanEquals(Object dob) : List - Person (GORM)

See STS-2227 for more information.

## Grails aware search

Searching references to controller types and their action fields or methods is now 'grails aware' (meaning it understands and finds references if made via certain Grails specific idioms). Below are some examples of the recognized idioms:

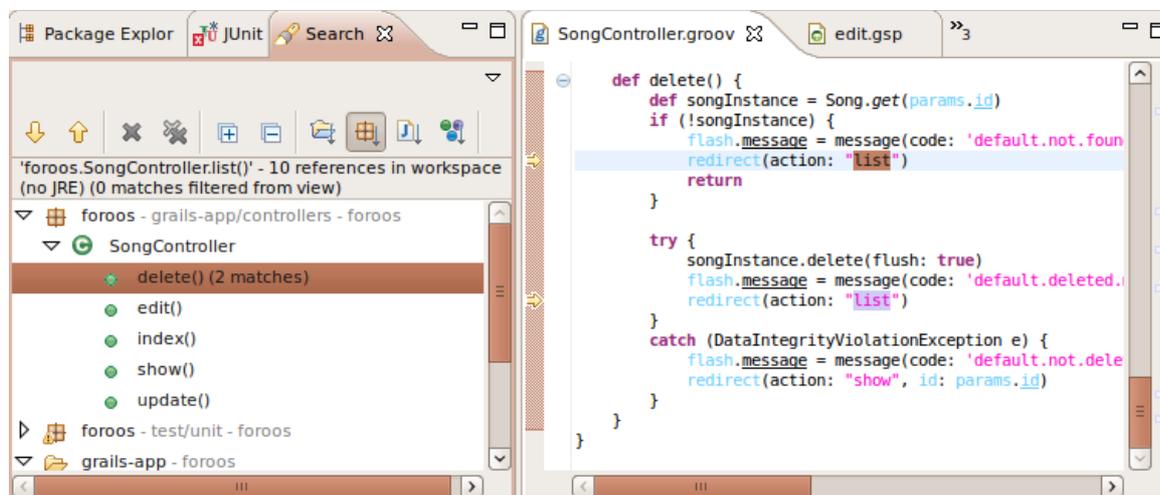
### Inside controllers:

```
render(controller: "song", action: "edit")
```

This counts as a reference to `SongController` and `SongController.edit`

```
redirect(view: "song")
```

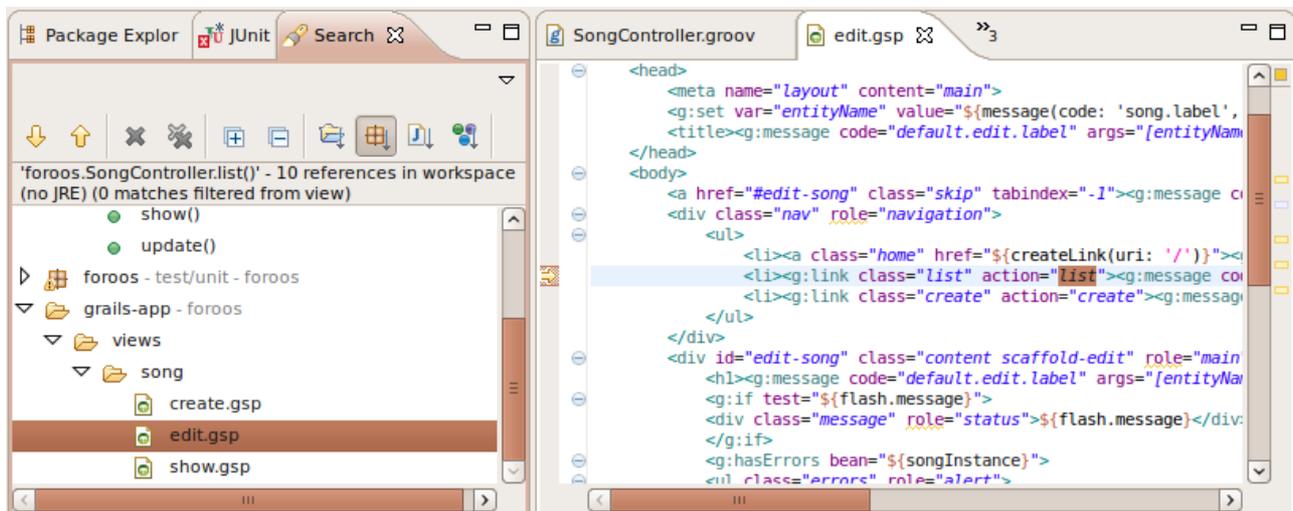
//counts as a reference to `SongController`



## Inside gsp files

```
<g:link controller='song' action='list'>
```

This counts as references to **SongController** and **SongController.list**



Inside URL mappings:

```
"/product"(controller:"product", action:"list")
```

This counts as a reference to **ProductController** and **ProductController.list**

```
"/showPeople" {
```

```
    controller = 'person' // This counts as a reference to PersonController
```

```
    action = 'list' // This counts as a reference to PersonController.list
```

```
}
```

```
name personList: "/showPeople" {
```

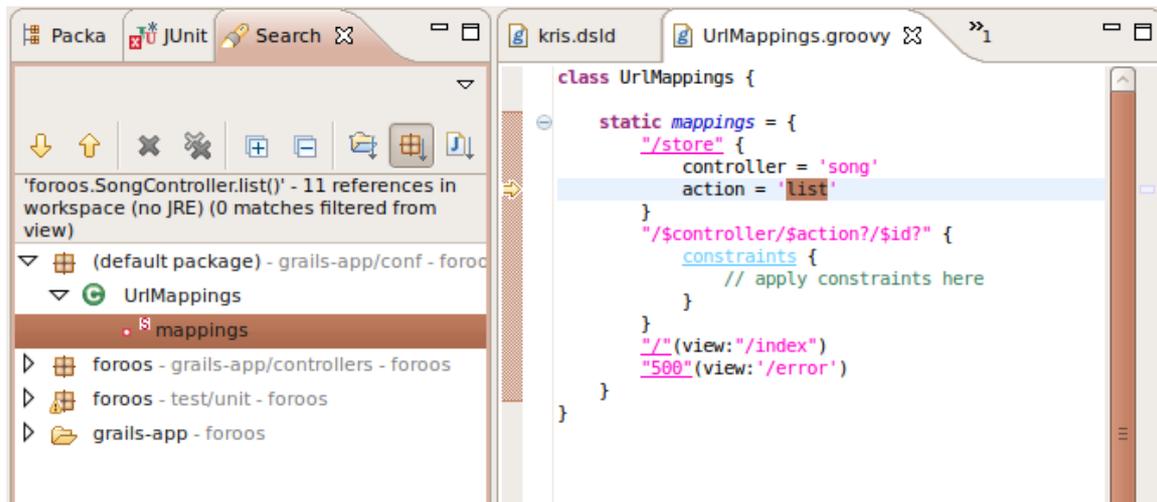
```
    controller = 'person' // counts as a reference to PersonController
```

```
}
```

```
"/product/${id}"(controller:"product") { // counts a reference to ProductController
```

```
    action = [GET:"show", PUT:"update", DELETE:"delete", POST:"save"] //Counts as
    references to show, update, delete and save in ProductController
```

```
}
```



## Grails aware refactoring

The same idioms as described in the previous section are also recognized and replaced appropriately when performing rename refactorings, renaming either:

- a controller class
- an action method or fields in a controller class.
- a gsp file (because it triggers a corresponding action rename).

In contrast with the searching support, which is new in STS 2.9.0.M1, the refactoring functionality existed already in STS 2.8.0. However, the set of recognized idioms has been expanded. The following idioms are newly recognized:

- redirect | render idioms are now recognized for controller type renames (previously they were only recognized for action renames)
- references inside URLMappings (see examples above)



## JavaDoc and source code for Gorm methods in domain classes

Source code is now included with the Grails distribution for the gorm-datastore jars. This means that Javadoc for gorm methods like "attach" and "validate" are available for hovers:

```
Publication pub = Publication.recentPublications.get(42)
pub.attach()
```

Provided by GORM Instance API

```
// g
def ● Publication org.grails.datastore.gorm.GormInstanceApi.attach()
// g
pub Attaches an instance to an existing session. Requires a session-based model
```

## DSL support in Grails unit and integration tests

STS now has much improved support for the Grails unit and integration test mini-DSL. For example, the `@TestFor` and `@Mock` annotations are used to populate implicit fields inside of your test class:

```
@TestFor(PublicationController)
@Mock(Publication)
class PublicationControllerTests {
    void testIndex() {
        controller.index() // inferred type of PublicationController
    }
}
```

**PublicationController PublicationControllerTests.controller**  
The controller class under test

Controller action return values are available where appropriate:

```
void testList() {
    controller.list()
    assert model.publicationInstanceList.size() == 0
    assert model.publicationInstanceTotal == 0
}
```

And the various mixin classes in unit tests are recognized in the editor, as described here:

<http://grails.org/doc/2.0.0.RC2/guide/testing.html#unitTesting>)

Here you can see some of the ControllerUnitTest/Mixin fields and methods being referenced:

```

void testList() {
    // ControllerUnitTestMixin
    view
    session
    response
    params
}

```

**GrailsParameterMap ControllerUnitTestMixin.params**  
 Provided by Controller unit test DSL

- GrailsParameterMap grails.test.mixin.web.ControllerUnitTestMixin.getParams()

The Grails 'params' object which is an instance of [GrailsParameterMap](#)

As expected, pressing F3 will navigate to the definition of any of these fields in the appropriate mixin class.

See STS-2222, STS-2225, and STS-2235 for more information. Also, please note that bug STS-2319 is still open. If your controller action contains a redirect, STS will not be able to infer the return values of the action.

## Groovy-Eclipse

### Search and refactoring

#### Search and refactoring of generated getters, setters, and properties

Groovy-Eclipse now allows you to search for references to generated getters, setters and properties. For example, searching for references to a Groovy property (such as age in this example) will find all references to `getAge` and `setAge` in both Java and Groovy files:

The screenshot shows the Groovy-Eclipse IDE with a search window open. The search query is `'pack.Person.age'`, and it has found 3 references in the workspace. The results are listed in the Search window:

- pack - src - new-greclipse
  - PersonMain
    - main(String[]) (2 potential matches)
  - PersonScript
    - run()

The IDE also shows the source code for the files involved:

```

Person.groovy - new-greclipse/src/pack
1 package pack
2
3 class Person {
4     String name
5     int age
6 }
7

PersonScript.groovy - new-greclipse/src/pack
1 package pack
2
3 def p = new Person(age:17, name:'Justin Bieber')
4 print "${p.getName()} is ${p.getAge()} years old"

PersonMain.java - new-greclipse/src/pack
1 package pack;
2 public class PersonMain {
3     public static void main(String[] args) {
4         Person p = new Person();
5         p.setAge(17);
6         p.setName("Justin Bieber");
7         System.out.println(p.getName() + " is " +
8             p.getAge() + " years old");
9     }
10 }
11

```

Similarly, references Java to getters and setters can be found inside of Groovy files even when they are referenced as properties. In this example, the class `Person` is defined in Java with explicit getters and setters. Searching for references on `setAge` will return references to the generated age property in the Groovy script:

```

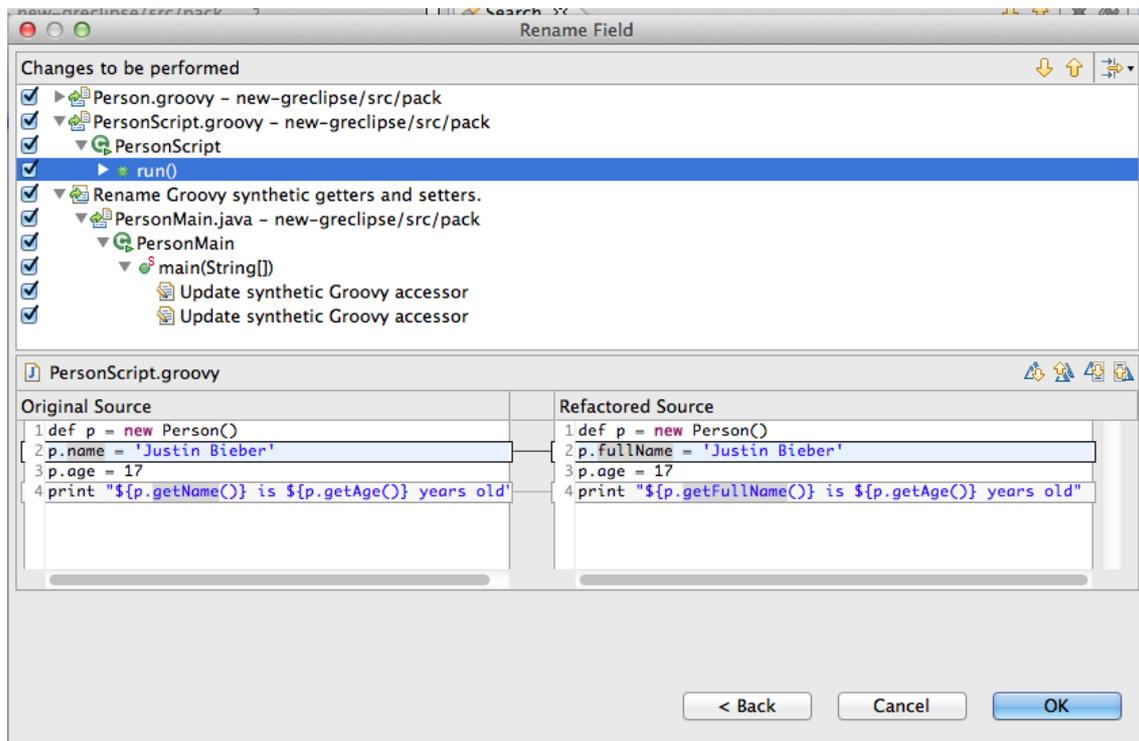
Person.java - new-greclipse/src/pack
1 package pack;
2
3 class Person {
4     private String name;
5     private int age;
6     public int getAge() {
7         return age;
8     }
9
10    public void setAge(int age) {
11        this.age = age;
12    }
13    public void setName(String name) {
14        this.name = name;
15    }
16    public String getName() {
17        return name;
18    }
19 }

PersonScript.groovy - new-greclipse/src/pack
1 package pack
2 |
3 def p = new Person()
4 p.name = 'Justin Bieber'
5 p.age = 17
6 print "${p.name} is ${p.age} years old"
  
```

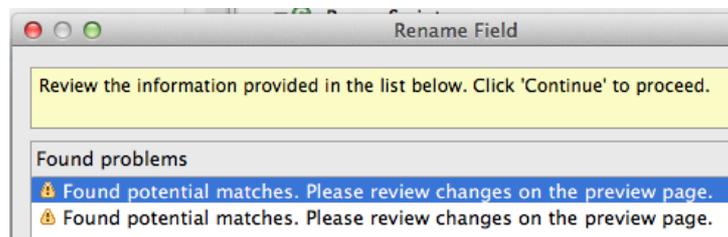
Search: 'pack.Person.setAge(int)' - 5 referen

- pack - src - new-greclipse
  - Person
  - PersonScript
    - run() (2 matches)

This also works for refactoring. As in the first example, when `Person` is defined as a Groovy class, we can rename 'name' to 'fullName' and the synthetic getters and setters will be renamed in both Java and Groovy files:



Note that you will sometimes see warnings during refactoring like this:

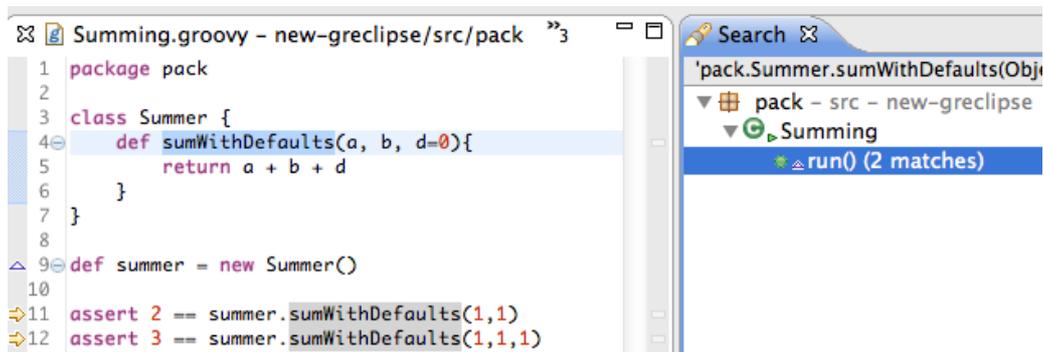


This warning comes about since some of the synthetic references in Java files cannot be determined to be precise by the Java search engine. By the nature of the language, refactoring of Groovy code can never be as precise as Java code is. It is always recommended to view the preview page before executing a refactoring.

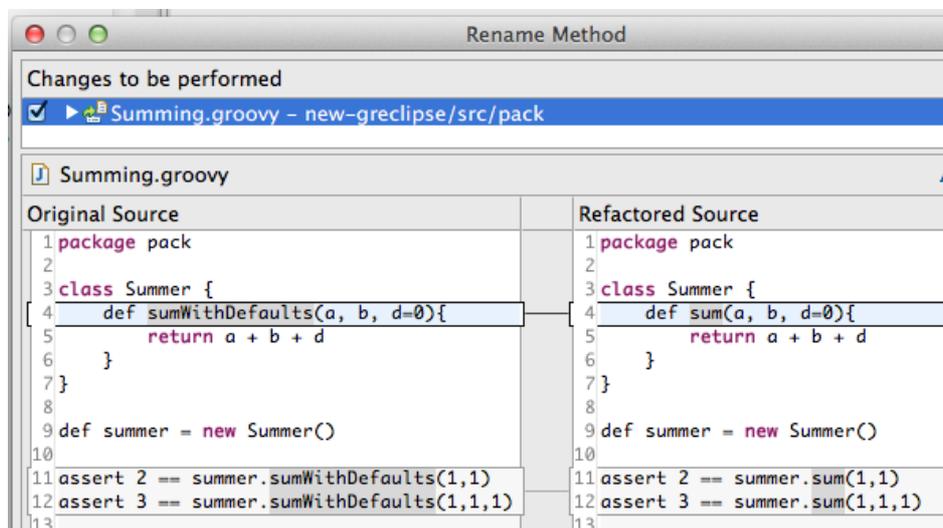
For more information on this feature, see issues GRECLIPSE-1204, GRECLIPSE-1010, and GRECLIPSE-1205.

### Better default parameter support

For this release, we have done significant work with searching for and refactoring methods with default parameters. Now, searching for references to a method that has default parameters will locate all references to that method, regardless of how many parameters that reference uses:



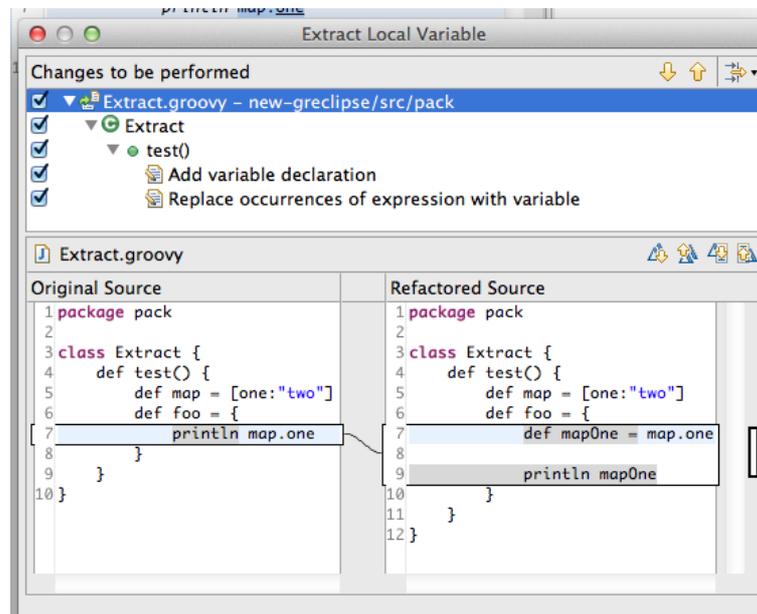
Similarly, rename refactor will correctly rename all references no matter how many parameters are used:



For more information on this feature, see issues GRECLIPSE-1255, and GRECLIPSE-1233.

### Better extract local variable refactoring

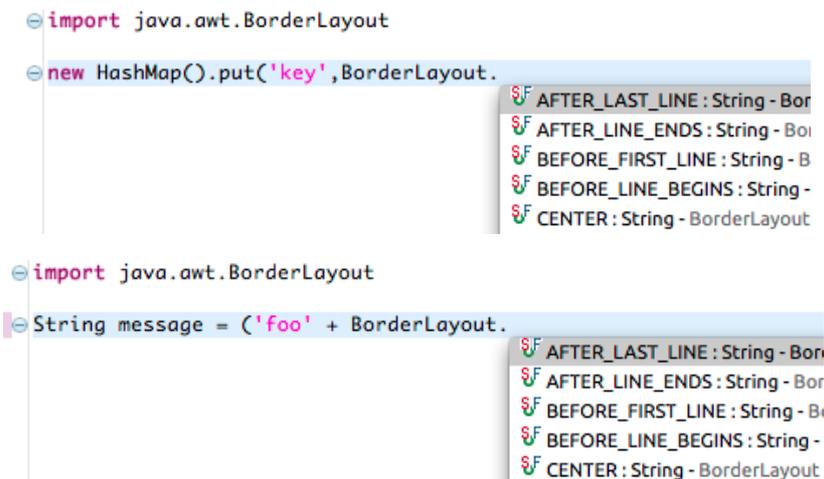
Extract local variable is now more precise as to where the variable is extracted to. Now, the variable is placed in the statement immediately preceding the variables first use. See this example, where 'map.one' is extracted to a variable and placed inside the enclosing closure:



## Parser recovery

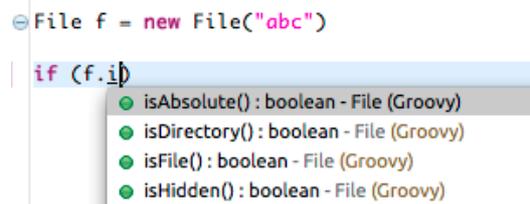
Further recovery enhancements have been made to the Groovy Parser. This enables it to cope better with malformed (unfinished) code and that enables content assist to offer suggestions in more places than before. Here are a couple of examples of the latest improvements:

These two situations show that correct content assist options are available even though there is a missing close paren:



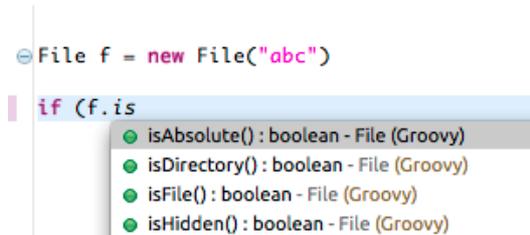
It is now possible to work on the `if` condition without the `then` block `{...}` being defined yet:

```
File f = new File("abc")
if (f.is
```



It will even work if the trailing paren of the if condition isn't specified yet:

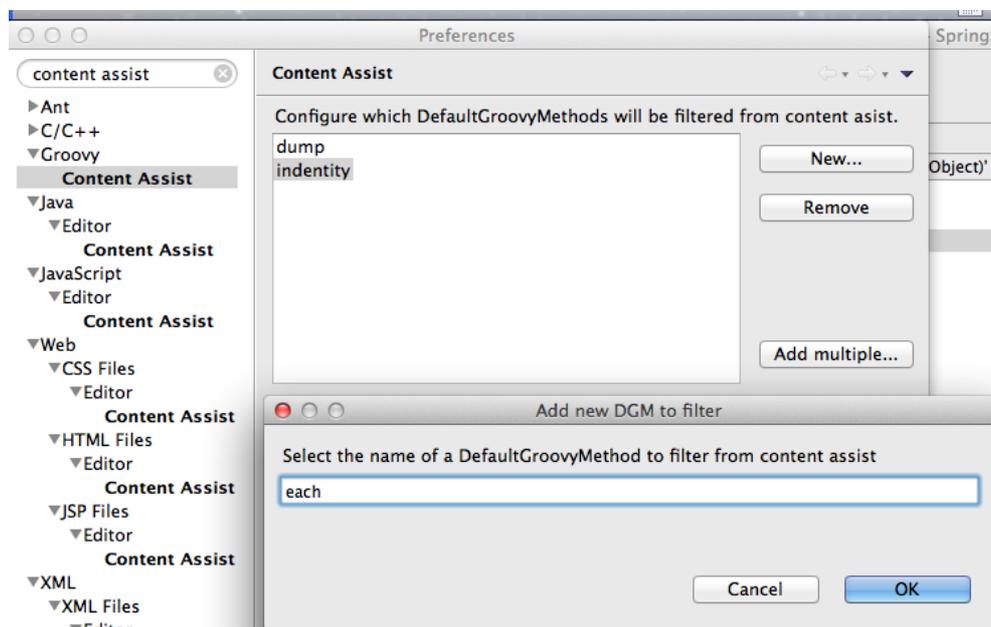
```
File f = new File("abc")
if (f.is
```



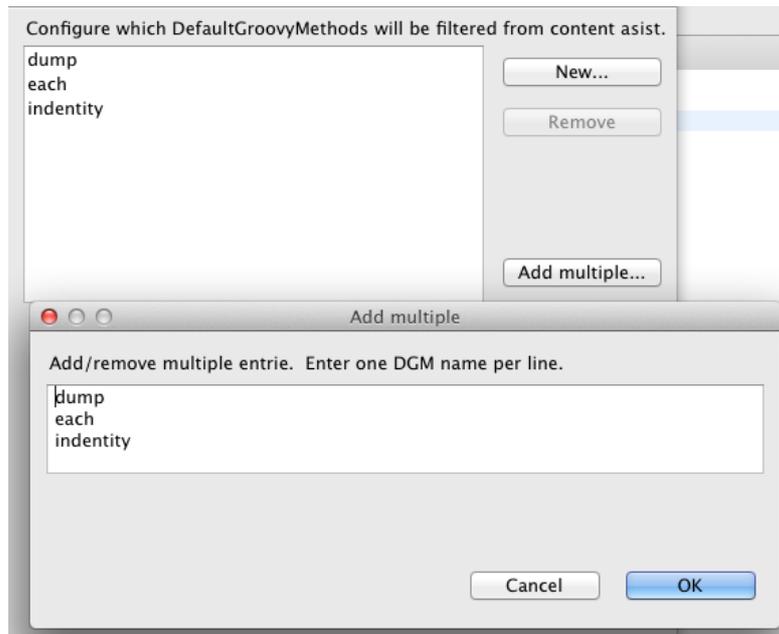
## Content assist

### Suppressing DGMs (default groovy methods) from content assist

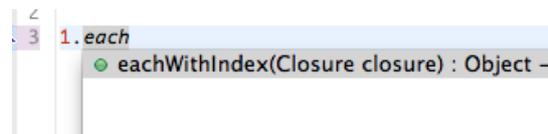
It is now possible to selectively suppress DGMs from cluttering up content assist. There is a new Preferences -> Groovy -> Content Assist preferences page:



This page contains a list of names of DGMs to be filtered from content assist. You can add and remove names individually by clicking on 'New...' and 'Remove'. Alternatively, you can edit the entire list at once by clicking on 'Add multiple...'. This opens a dialog box with a multi-line text editor where you can easily add and remove multiple entries at once. See here:

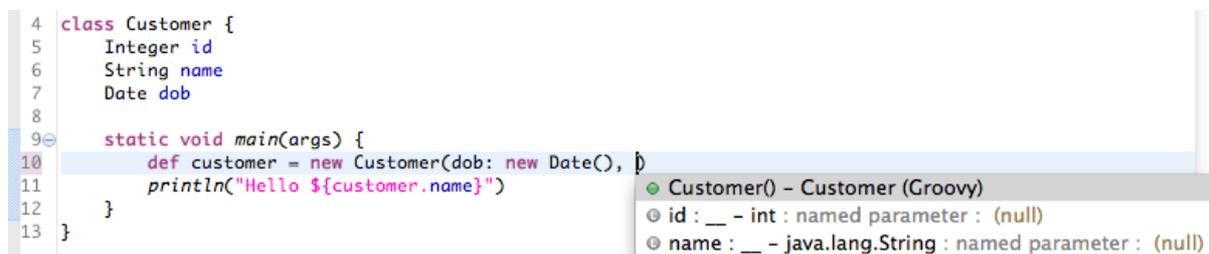


As expected, when in the editor, entries that have been suppressed no longer appear in content assist. In this case, "each" has been filtered, but "eachWithIndex" has not:



### Support for named arguments in constructors

When a Groovy class has no explicit constructor, it is possible to build an instance of the class using named arguments as described here (<http://groovy.codehaus.org/Groovy+Beans>). Groovy-Eclipse now provides content assist support for this kind of constructor call. In the following example code, performing content assist inside of the parens of the constructor call will bring up all remaining available arguments:

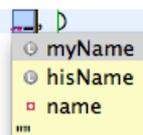


And, like all parameters applied in content assist, Groovy-Eclipse guesses some likely values for the parameter:

```

4 class Customer {
5     Integer id
6     String name
7     Date dob
8
9     static void main(args) {
10        def hisName = "Justin Bieber"
11        def myName = "Andrew Eisenberg"
12        def customer = new Customer(dob: new Date(), name:
13        println("Hello ${customer.name}")
14    }
15 }

```



Note: named parameter content assist will only be available if there is no prefix. I.e., it will be available here:

```
new Customer(/***/)
```

but not here:

```
new Customer(na/***/)
```

(where `/***/` is the location where content assist is invoked)

For more information, see issue GRECLIPSE-1228.

### Better content assist for methods with closure arguments

When performing content assist on a method and the last parameter is a closure, the proposal will be applied with an opening curly "`{`", but no closing curly as here:

```

3 def x = 9
4 def method(first, Closure second) { /* ... */ }
5 method(x) {
6

```

As a user, you can choose to delete this and add your own content, or you can press enter and the closure will be completed for you:

```

3 def x = 9
4 def method(first, Closure second) { /* ... */ }
5 method(x) {
6     |
7 }

```

For more information, see issue GRECLIPSE-1232.

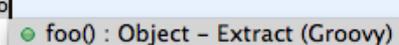
### Better content assist in closures

When inside of a closure, methods defined in the enclosing class are now available in content assist (GRECLIPSE-1114):

```

4 def foo() { }
5 (1..10).each {
6     foo
7 }

```



Similarly, the relevant fields like "closure" and "owner" are now available in content assist when inside a closure (GRECLIPSE-1267):

```

(1..10).each {
  del
}
  delegate :

```

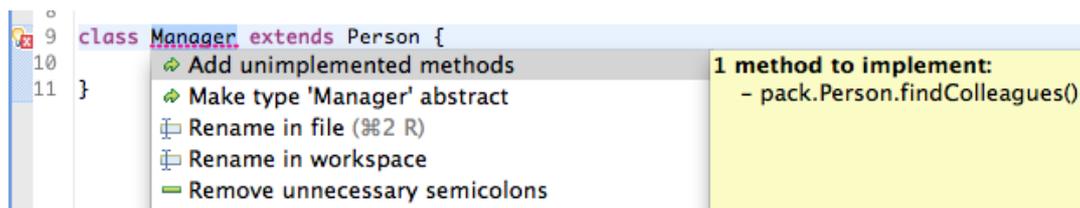
## Quick fixes and Quick assists

Thanks to some help at a Groovy-Eclipse hackathon, we now have quite a few quick fixes and quick assists. Quick fixes are available based on a particular error marker in the editor. And quick assists are available based on the structure of the syntax tree.

*Both quick fixes and quick assists can be invoked by pressing CTRL-1 (or CMD-1 in Mac) on a selection in the editor.*

### Add unimplemented methods/Make class abstract Quick fixes

When a concrete base class implements an abstract super class with abstract methods, there are two quick fixes available:



1. Make class abstract, which adds the "abstract" modifier to the sub-class
2. Add unimplemented methods, which adds method stubs for all unimplemented methods, as shown here:

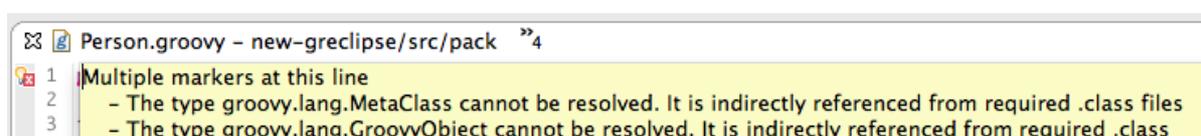
```

4
5 abstract class Person {
6     int age
7     String name
8     abstract List<Person> findColleagues()
9 }
10
11 class Manager extends Person {
12
13     public List<Person> findColleagues() {
14         // TODO Auto-generated method stub
15         return null;
16     }

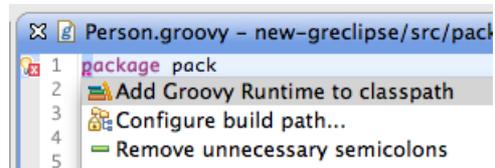
```

### Add groovy classpath container quick fix

When errors like these are seen on the first line of the editor, it means that the Groovy libraries cannot be found:



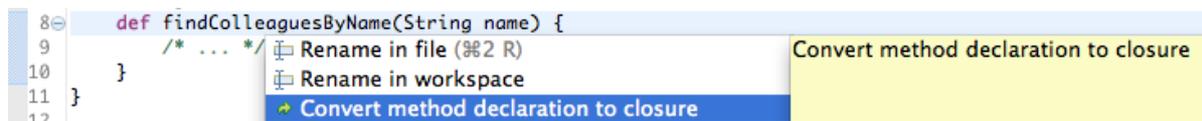
There is now a quickfix that will automatically add the Groovy classpath container to the project:



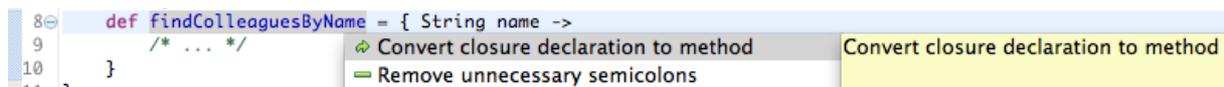
### Convert to closure and convert to method quick assists

This pair of quick assists can be invoked when inside of a method or closure declaration (the closure declaration must be assigned to a field), and allows a quick conversion between the two.

For example, this method declaration:



is converted into this closure:

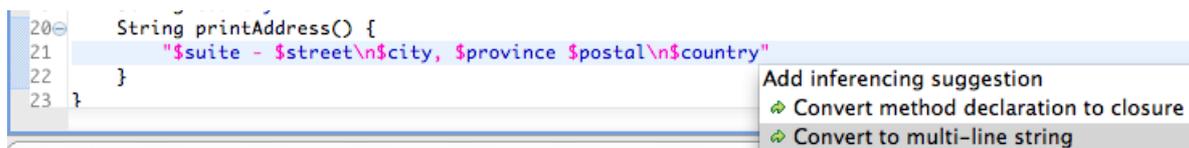


And the closure can be converted back into the method declaration.

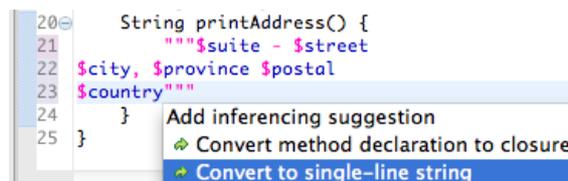
### Convert to single line/multi line string

This pair of quick assists converts between single and multi line strings. When converting between string variants, newlines, tabs, etc are properly (un-)escaped.

Here, a single line string is converted into a multiline string:



And, it can be converted back:



### Remove unnecessary semi-colons

This quick fix will remove all unnecessary semi-colons from a Groovy file. For example, this file:

```
package pack;
for (i = 0; i < 5; i++) {
    println i; println i;
}

```

Remove unnecessary semicolons

Will have all unnecessary semi-colons removed, but required ones will remain:

```
1 package pack
2 for (i = 0; i < 5; i++) {
3     println i; println i
4 }

```

## Compiler Integration

### Groovy 1.8.4 support

Although Groovy-Eclipse still ships with the 1.7.10 compiler by default, 1.8.4 is available as an optional add-on. Groovy-Eclipse always ships with the compiler version that is compatible with the current production release of Grails. Since Grails 2.0 is not available in production at time of writing, we do not ship the Groovy 1.8.x compiler by default.

### Better Grab support

Groovy-Eclipse is careful to not allow AST transforms to run during reconciling. Reconciling is the special compile done on the editor contents whilst they are actively being worked on, prior to a save. AST transforms are prevented from running because they can damage source locations/etc that in turn damage other editor features (breaking search/refactoring/etc). However, in 2.6.0 the Grab transformation is being allowed to run since it doesn't modify the code structure but instead just pulls in jars to be on the compilation classpath. This should mean that when working on scripts/etc that are Grab'ing dependencies, there should be no errors in the editor view.

### More binary dependencies

The Groovy-Eclipse classpath container now includes the ivy, jline, and bsf jars by default. Even though these libraries are not typically used directly in user code, including them on the classpath will help with searching for binary references. See GRECLIPSE-1211.

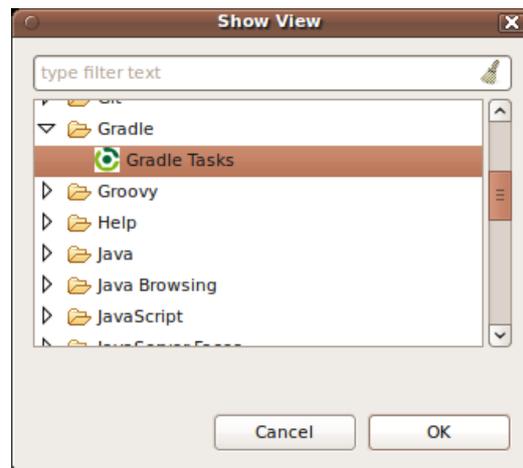
### Maven integration

There is now better ordering on the Java classpath of Groovy source folders when importing maven projects that user Groovy into Eclipse and STS.

## Gradle

### Gradle tasks view

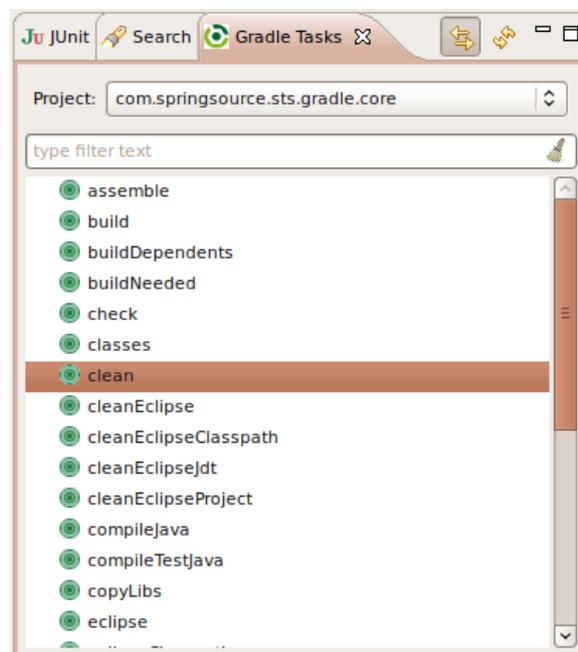
Gradle tooling now provides a basic 'Tasks View' that can be opened via 'Windows >> Show View >> Gradle >> Gradle Tasks':



The tasks view shows a list of tasks associated with a particular Gradle project (see image below). The project can be selected manually using the popup menu in the view itself.

Alternatively a 'link with selection' option ('double arrow' toggle button in the tool bar) will make the view automatically track the 'current project' based on elements selected in other views (e.g. project explorer or outline view).

Double clicking on any task in the view will launch the task. If a launch configuration for this task does not exist a new launch configuration will be created, otherwise the existing configuration will be reused.



Currently the view is very basic and always shows an unfiltered list of all the tasks in the selected project, sorted alphabetically. In the future we plan to provide ways to customize sorting and filtering the list. We are still considering options on how to further develop this part of the UI and welcome any feedback.

## Fixed Bugs and Enhancement Requests

Here is a full list of resolved bugs and enhancement requests for the 2.9.0.M1 release:

<https://issuetracker.springsource.com/secure/IssueNavigator.jspa?reset=true&jqlQuery=project+%3D+STS+AND+fixVersion+%3D+11799+AND+status+in+%28Resolved%2C+Closed%29>