

Replaced the IScriptObject with IScriptable, making it possible to document the API of plugins through JavaDocs

In Servoy 6.1 the way to provide documentation (ToolTips, SampleCode & Parameter info) for (3rd party) plugins in Servoy Developer has changed. Instead of providing the relevant information through the methods of the IScriptObject interface, the new mechanism allows the plugin developer to specify the relevant information through JavaDoc directly on the public methods and properties of the plugin and export those to a XML file using the Servoy Documentation Generator. The generated XML file needs to be bundled with the plugin, which then will be used in Servoy Developer to provide the information to the developer using the plugin.

This change encompasses the deprecation of the IScriptObject interface and introduction of a new, empty IScriptable interface, which works together with the Documentation Generator plugin for Eclipse.

The benefits of the change is largely for plugin developers: the new mechanism allows the developer to tie the documentation directly to the methods /properties in code, instead of in separate methods.

The IScriptable Interface

The IScriptable interface is an empty interface that classes that expose methods or properties to the JavaScript layer in Servoy have to implement. When plugins get loaded in Servoy Developer, for all classes that implement this interface, the documentation will be loaded. For more information refer to the IScriptable API doc in the [Servoy API](#).

The IScriptable interface replaces three methods of the IScriptObject interface previously used to provide documentation for plugin methods and properties: getSample, getToolTip, getParameterNames.

The .getAllReturnedTypes() method of the deprecated IScriptObject is replaced by separate interface IReturnedTypesProvider, which only needs to be implemented on plugin classes that have actual returnTypes.

Documenting method & properties using JavaDoc

When implementing the new documentation mechanism, the method sample code, tooltip, parameter names will have to be documented using JavaDoc. For more details on writing documentation in the Javadoc way, see the [Javadoc reference pages](#). This type of code documentation is a standard way of documenting Java code.

The supplied JavaDoc can be extracted in XML format using the Documentation Generator below and then be bundled with the plugin for Servoy Developer to use.

A plugin must annotate itself so that the Document Generator Tool knows what to get. Servoy has a special annotation called @ServoyDocumented. The annotation can have additional attributes to specify the public and scripting names. Below a sample of the FilePlugin:

```
@ServoyDocumented(publicName = FilePlugin.PLUGIN_NAME, scriptingName = "plugins." + FilePlugin.PLUGIN_NAME)
public class FileProvider implements IReturnedTypesProvider, IScriptable
```

For returnTypes like JSFile the @ServoyDocumented annotation marks a class for documentation:

```
@ServoyDocumented
public class JSFile implements IScriptable, IJavaScriptType
```

Note that if a class is documented, documented methods/properties will be looked up in the class hierarchy. If a method is present multiple times in hierarchy, the first occurrence will be used by doc generator.

Methods can be annotated in order to be marked as properties, functions or as deprecated.

If a method is annotated with the special annotation @JSReadOnlyProperty, it will be considered a readonly property of the plugin.

```
/**
 * This is a readonly property
 */
@JSReadOnlyProperty
public String myPropertyVersion()
{
    return "version 1.0";
}
```

Two methods using the @JSGetter and @JSSetter properties can be used to create a property of the plugin, as follows:

```

@JSGetter
public String getSomeProperty()
{
    //...
}

@JSSetter
public void setSomeProperty(String someProperty)
{
    //...
}

```

The code above will create a JavaScript property called "someProperty" of the plugin.

If a method is annotated with the `@JSFunction` property it will be considered a JavaScript function:

```

@JSFunction
public String myFunction(String myParameter)
{
    //...
}

```

Please note that the method above does not have to start with the "js_" prefix in order to be considered a JavaScript function of the plugin it belongs to.

If a method should be marked as deprecated, the new documentation generator tool also takes into consideration the `@Deprecated` annotation:

```

@Deprecated
public void neverRetire()
{
    //...
}

```

The result is that such a method will not show up in the plugin's (Solution Explorer) list view.

Methods can be documented according to the sample below:

```

/**
 * This is the method description.
 *
 * @sample
 * var message = someMethod('someParameter');
 *
 * @param simpleParameterName this is a simple parameter name
 *
 * @return what the method returns
 */
public String js_someMethod(String simpleParameterName)
{
    //...
}

```

Besides the standard Javadoc tags like `@param`, `@return` and `@since`, Servoy introduces a few tags to provide sample code part or to clone parts of the Javadoc of another method.

- `@sample`: doc below this section, until the next tag is seen as sample code. This should contain the text previously returned by `.getSample(String methodName)`
- `@sampleas`: this will copy over the sample code from another method: `@sampleas js_someMethod(String)`
- `@clonedesc`: this will copy over the description from another method: `@clonedesc js_someMethod(String)`
- `@sameas`: this will copy the entire documentation from another method: `@sameas js_someMethod(String)`

The `@param` tag supports so-called rest parameters by using '...' prefix. It also supports marking parameters as optional. The following example is the button a optional and variable arguments parameter

```
@param ...button optional
```

If you want to use a JSDoc notation in your sample code for example to type a specific variable, so `/** @type {JSFile} */`. Then the last `/` must be escaped by using the ascii notation:

```
/** @type {JSFile} */
```

The Documentation Generator Tool

After annotating the source of the plugin using JavaDoc, the documentation needs to be exported to XML format and bundled with the plugin. Servoy provides a Eclipse plugin to generate the XML, called the Documentation Generator.

In order to have the method documentation available, in JavaScript, you must the documentation generation tool installed, in the Eclipse in which you are developing the plugin code (along with its documentation). The documentation generation tool must be installed via Eclipse update sites. From the Servoy Developer, via Help->Install New Software, add the <http://download.servoy.com/documentbuilder> url as an update site and install the documentation generator (Servoy Documentation Generator Feature). It will show up under installed software as the Servoy Documentation Generator Feature.

After the tool is installed, you can generate the documentation of a plugin, by selecting the project/package corresponding to that plugin and using the context menu Servoy->Generate Servoy Documentation XML. An file with the plugin's documentation, available in XML format, will be generated.

In order to have this documentation available with the plugin, in the Servoy Developer, the plugin developer must include and bundle the documentation XML file along with the actual plugin, inside the plugin jar file. Then, once the plugin jar is copied to the Servoy installation's application_server/plugins directory, the documentation XML, corresponding to that plugin, will be automatically loaded and the documentation will be available.

The documentation generator tool also has a corresponding preference page, which will show up in Eclipse up under Windows->Preferences->Servoy Documentation Generator. There are currently two properties which can be set:

- Show confirmation dialog before overwriting an existing file
- Show a final summary with an overview of the files that were generated