

Oracle® WebCenter Sites

Developer Tools

11g Release 1 (11.1.1)

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Oracle® WebCenter Sites: Developer Tools, 11g Release 1 (11.1.1)

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About This Guide

This guide describes Oracle WebCenter Sites: Developer Tools, a toolkit used to integrate Oracle WebCenter Sites with the Eclipse Integrated Development Environment (IDE). The Developer Tools kit enables developers to work in a distributed environment using the Eclipse IDE and version control systems (VCS).

Applications discussed in this guide are former FatWire products. Naming conventions are the following:

- *Oracle WebCenter Sites* is the current name of the application previously known as *FatWire Content Server*. In this guide, *Oracle WebCenter Sites* is also called *WebCenter Sites*.
- *Oracle WebCenter Sites: Developer Tools* is the current name of the application previously known as *FatWire Content Server Developer Tools (CSDT)*. In this guide, *Oracle WebCenter Sites: Developer Tools* is also called *Developer Tools*.

Audience

This guide is written for WebCenter Sites general administrators and developers. Users are assumed to have a comprehensive knowledge of their company's site design and an advanced knowledge of JSP development. Users should have experience working with the Eclipse IDE. Users should also have experience working with command-line tools and a version control system (VCS), as well as the *Oracle WebCenter Sites Javadoc* and *Tag Reference*.

Related Documents

For more information, see the following documents:

- *Oracle WebCenter Sites Administrator's Guide*
- *Oracle WebCenter Sites Developer's Guide*
- *Oracle WebCenter Sites Javadoc*
- *Oracle WebCenter Sites Tag Reference*

Conventions

The following text conventions are used in this guide:

- **Boldface** type indicates graphical user interface elements that you select.
- *Italic* type indicates book titles, emphasis, or variables for which you supply particular values.
- `Monospace` type indicates file names, URLs, sample code, or text that appears on the screen.
- **Monospace bold** type indicates a command.

Third-Party Libraries

Oracle WebCenter Sites and its applications include third-party libraries. For additional information, see *Oracle WebCenter Sites 11gR1: Third-Party Licenses*.

Chapter 1

About Oracle WebCenter Sites: Developer Tools

This chapter provides an overview of Oracle WebCenter Sites: Developer Tools.

This chapter contains the following topics:

- [Introduction](#)
- [Developer Tools Architecture](#)
- [Next Steps](#)

Introduction

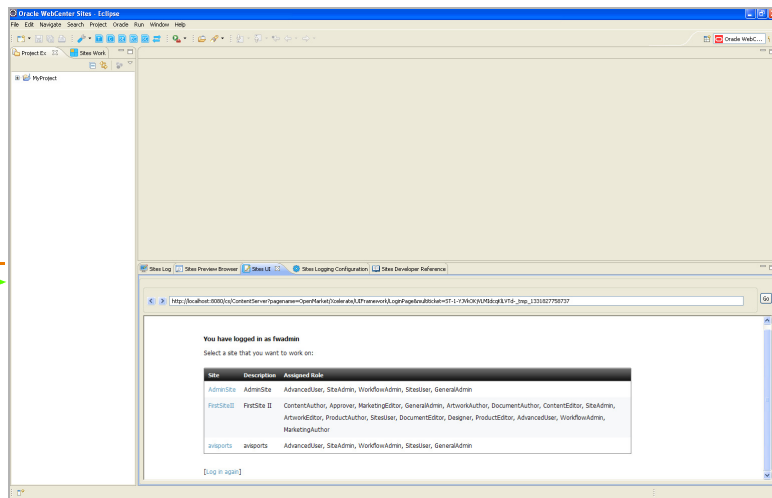
This guide provides information and instructions about developing WebCenter Sites CM sites using Oracle WebCenter Sites: Developer Tools. The Developer Tools kit enables developers to work in a distributed environment using tools such as the Eclipse Integrated Development Environment (IDE) and version control system (VCS) integration. Developer Tools does not interfere or integrate with other development models. Using Developer Tools, a development team can manage WebCenter Sites resources and exchange those resources with other members of the team.

Developer Tools Architecture

On any computer running Oracle WebCenter Sites, Developer Tools can be used to integrate WebCenter Sites with the Eclipse IDE as shown in [Figure 1](#), [on page 11](#) and thus create a personal and flexible developer's environment:

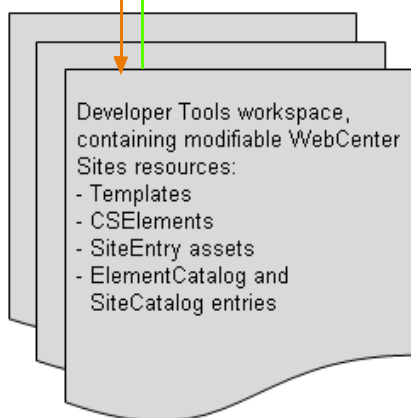
- The developer interacts with Developer Tools (and therefore WebCenter Sites), primarily through Eclipse, which upon integration provides a rich set of WebCenter Sites-specific tools for managing assets and other types of WebCenter Sites resources.
- The Developer Tools kit enables synchronization of resource development in Eclipse with resource development in WebCenter Sites, and vice versa.

Although simple in concept and design, the Developer Tools kit has many important implications. For example, IDE-managed resources are stored as files in a file system, giving developers the option to integrate with a version control system of their choice. At the same time, the files are automatically converted to WebCenter Sites' native asset representation and imported into the WebCenter Sites database. Synchronization can also be performed in the reverse direction enabling developers to work either in Eclipse or directly in WebCenter Sites. More information about the capabilities of Developer Tools can be found in the rest of this chapter.

Figure 1: Developer Tools Process Flow**Eclipse Plug-In**

1. Developer works with a Developer Tools-integrated Eclipse to create and manage code-based WebCenter Sites resources.

2. The metadata of the resources that are saved in Eclipse are converted into multiple files and stored in a file system structure called the main Developer Tools workspace (resources that are created and saved in the embedded WebCenter Sites Admin interface are an exception). Each JSP and XML element associated with these resources is placed in its own file.

**Import****Export****WebCenter Sites instance**

3. The Developer Tools kit supports bi-directional synchronization. Resources can either be exported from WebCenter Sites to the main Developer Tools workspace and/or imported into the WebCenter Sites database from the main Developer Tools workspace.

IDE Integration

Using the Eclipse integration, developers can:

- Create, edit, and delete CSElement, Template, and SiteEntry assets, as well as SiteCatalog and ElementCatalog entries
- Develop JSP elements with standard Eclipse features such as tag completion, syntax highlighting, debugging, and so on
- Export and import assets, asset types, flex families, sites, roles, tree tabs, and start menu items
- Preview WebCenter Sites pages within the Eclipse IDE using an embedded preview browser
- View the WebCenter Sites log file in a dynamically refreshing panel
- Leverage existing Eclipse capabilities for integration with version control systems, given the file system representation of WebCenter Sites resources

Note

When integrated with the Developer Tools kit, Eclipse provides an embedded WebCenter Sites Admin interface, used to manage all types of WebCenter Sites resources. WebCenter Sites resources created in the Admin interface are not stored in a file system structure; they are stored directly in the WebCenter Sites database. **The embedded Admin interface is not covered in this guide.** For information about the development tasks you can accomplish in this interface, see the *Oracle WebCenter Sites Developer's Guide* and *Administrator's Guide*.

The Developer Tools Workspace

WebCenter Sites resources that are managed in Eclipse are stored as files in a file system structure called the *main Developer Tools workspace*. This enables resources to be easily managed and optionally exchanged with other WebCenter Sites instances. The main Developer Tools workspace is the only workspace accessible from Eclipse.

Note

Advanced developers can use the command-line tool to create any number of custom Developer Tools workspaces for a WebCenter Sites instance. Custom workspaces are not accessible from Eclipse. Creating a custom workspace is optional, and in most distributed environments the only necessary workspace is the main Developer Tools workspace. For more information, see [Chapter 6](#), “Workspaces.”

In this guide, any mention of the Developer Tools workspace refers to the main Developer Tools workspace. Custom Developer Tools workspaces are explicitly identified.

Synchronization

The Developer Tools kit enables you to synchronize resource development in the Eclipse IDE with resource development in WebCenter Sites, ensuring that the Developer Tools workspace and WebCenter Sites database are populated with the same content. Manual synchronization is bi-directional, meaning you can import resources into WebCenter Sites and export resources to the Developer Tools workspace.

Any resource developed in the Eclipse IDE is stored as a single file or multiple interrelated files in the Developer Tools workspace. When you import a resource into WebCenter Sites, the Developer Tools kit converts the resource to native WebCenter Sites format (database representation) and stores the resource in the WebCenter Sites database. When you export resources that are developed directly in WebCenter Sites to the Eclipse IDE, those resources are converted into files by the Developer Tools kit and stored in the Developer Tools workspace.

Note

Automatic synchronization occurs when WebCenter Sites resources are edited, created, or deleted in Eclipse. All changes are automatically synchronized with the Eclipse-integrated WebCenter Sites instance and stored in the native database structure. Synchronization to WebCenter Sites is automatic only when the Eclipse-integrated WebCenter Sites instance is running.

JSP Management

The Developer Tools kit exposes JSPs at a well-known location in the Developer Tools workspace. This enables developers to write and debug JSPs by working directly with the files. This way managing (creating, editing, debugging) WebCenter Sites JSPs in Eclipse is the same as working with any other JSP files. The Developer Tools kit automatically synchronizes the files stored in the Developer Tools workspace with WebCenter Sites. This synchronization also includes transparent flushing of page and resultset caches in WebCenter Sites.

In addition, the Developer Tools kit manages modifications made to all other files by automatically synchronizing those changes to WebCenter Sites. However, if you modify WebCenter Sites resources without using Eclipse or modify resources directly in WebCenter Sites, manual synchronization is required.

Command-line Tool

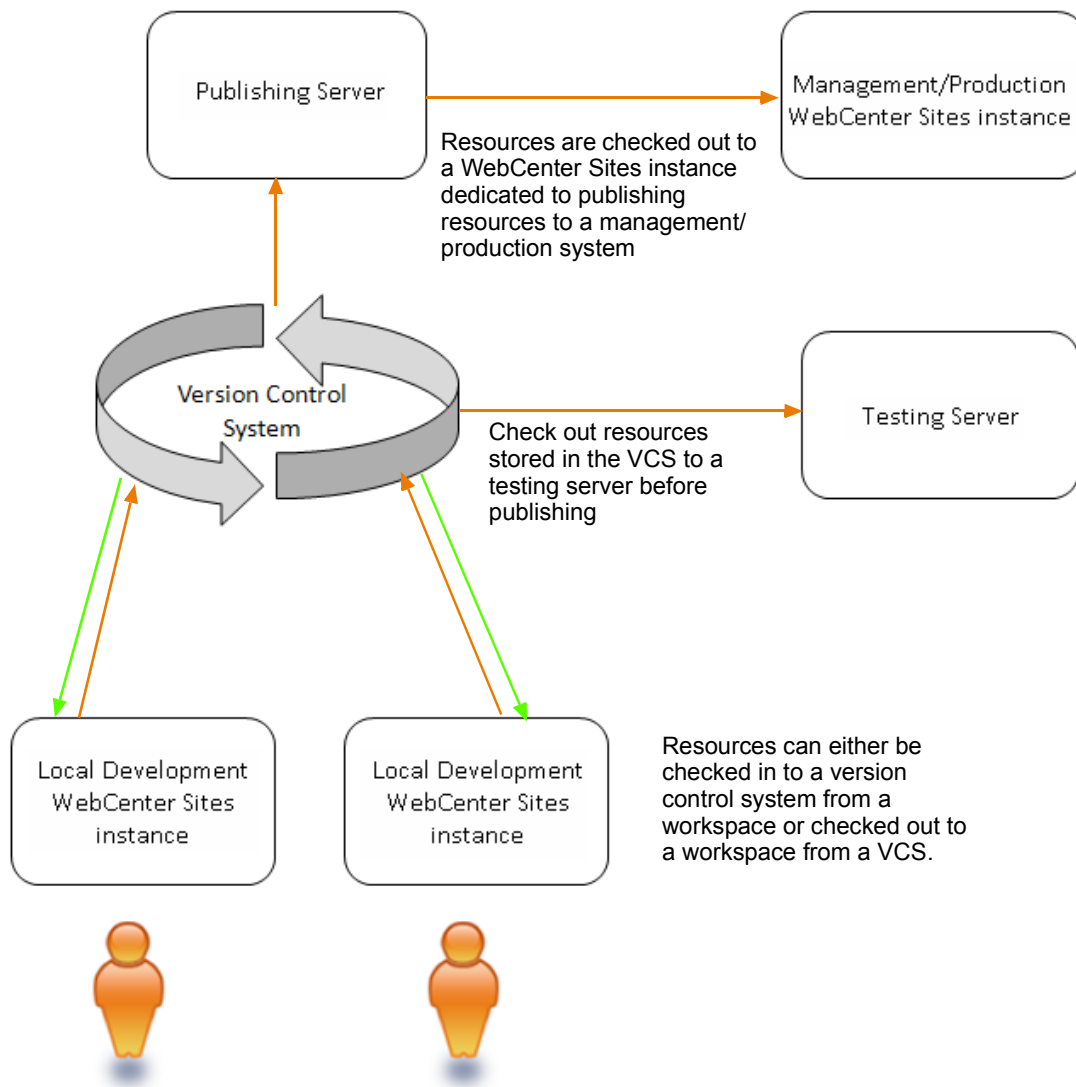
The Developer Tools kit provides a command-line utility which can be used for automation, deployment, and certain development activities. The command-line tool is an export/import feature intended for large-scale resource movement. However, unlike the Eclipse integration which enables you to work only with WebCenter Sites resources that are exported to the main Developer Tools workspace, the command-line tool enables you to work with WebCenter Sites resources stored in any workspace.

Using a Version Control System

The Developer Tools kit supports the exchange of resources between WebCenter Sites instances, this can be accomplished with the implementation of a version control system. While the Developer Tools kit does not provide any tools for integrating with version control systems, the file system structure in which the Developer Tools kit stores resources in workspaces supports the implementation of version control integration. A workspace's file system structure enables the resources to be tracked by a version control system.

Checking in resources from your workspace to a version control system enables you to exchange those resources with other developers. You can also update your workspace with the resources checked in to the version control system by other developers. Using a version control system you can check out resources to any target system, including testing servers, Management or Production WebCenter Sites systems, or another developer's WebCenter Sites instance.

[Figure 2](#) illustrates an example of using Developer Tools with a version control system. This example uses a dedicated WebCenter Sites instance to publish resources to a Management/Production WebCenter Sites instance. Therefore, the Approval/Publishing feature provided by WebCenter Sites can be used to publish resources that were checked out from the version control system. This example is the recommended way to use a VCS with Developer Tools, but it is not required.

Figure 2: Using Developer Tools with a version control system

Next Steps

The rest of this guide provides information about using Developer Tools to manage WebCenter Sites resources in a distributed development environment. The next chapter provides instructions for installing Developer Tools and integrating a WebCenter Sites instance with the Eclipse IDE. The next chapter also provides information to help you get started creating and managing resources in an Eclipse-integrated WebCenter Sites instance. For information and instructions, see [Chapter 2, “Quick Start.”](#)

Chapter 2

Quick Start

This chapter contains instructions for setting up Developer Tools and integrating a WebCenter Sites instance with the Eclipse IDE. This chapter also provides a brief overview for managing WebCenter Sites resources in Eclipse.

This chapter contains the following sections:

- [Prerequisites](#)
- [Setting Up Developer Tools](#)
- [Managing WebCenter Sites Resources in Eclipse](#)

Prerequisites

Before setting up Developer Tools, ensure the following requirements are met:

- The Developer Tools kit requires a fully functional, licensed WebCenter Sites.
- After you have integrated Eclipse with WebCenter Sites, you must log in to WebCenter Sites with general administrator credentials (for example, `fwadmin/xcelsadmin`). This user must be a part of the `RestAdmin` group.
- To use the command-line tool feature, you must have an advanced knowledge of Developer Tools. Information and instructions about running and using the command-line tool are provided in [Chapter 7](#), “[Command-Line Tool](#).”

Setting Up Developer Tools

1. Install Eclipse 3.6 Helios J2EE edition on the computer WebCenter Sites is installed. You can download Eclipse from the following URL:
`http://eclipsesource.com/en/downloads/eclipse-helios-download/`
2. Unzip `csdt.zip`, which is located in the WebCenter Sites distribution package. Open the `csdt-eclipse` folder and save the `com.fatwire.csdt.eclipsecsdt_1.0.0.jar` file to the `plugins` folder under your Eclipse installation.
3. Start your local WebCenter Sites.
4. Start Eclipse (`eclipse.exe`) and configure its settings according to your preferences.
5. Open the “Oracle WebCenter Sites” perspective:
In the Eclipse menu bar, select **Window > Open Perspective > Other ... > Oracle WebCenter Sites**.
6. Integrate WebCenter Sites with the Eclipse IDE:
 - If you are setting up Developer Tools for the first time, the configuration screen is automatically displayed.
 - If you have used Developer Tools before and wish to integrate a different WebCenter Sites instance, navigate to the Eclipse menu bar and select **Oracle > Configure**.

In the configuration screen, fill in the following fields with the information for your WebCenter Sites instance:

- a. In the “Sites Installation Directory” field, click **Browse** to select the directory containing the `futuretense.ini` file for the WebCenter Sites instance.
- b. In the “Username” field, enter the user name of a general administrator. This user must be a member of the `RestAdmin` group.
- c. In the “Password” field, enter the password for the user name you entered in [step b](#).
- d. In the “Project name” field, enter a name for the project on which you will be working.

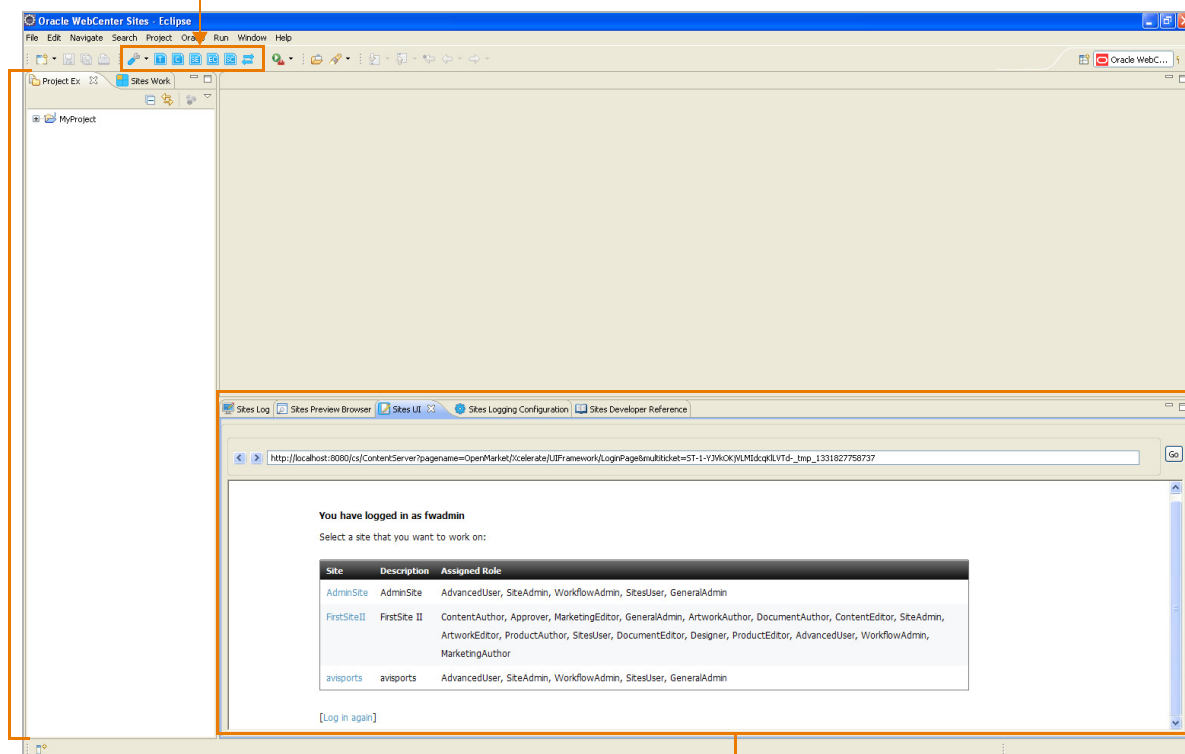
- e. In the “Sites Log File” field, enter the location of your log file (for example, logs/sites.log).
- f. Click **OK**.

The “Oracle WebCenter Sites” perspective opens. If you are accessing the WebCenter Sites-integrated Eclipse for the first time, the Oracle WebCenter Sites perspective looks as follows:

WebCenter Sites Toolbar, provides:

- Shortcut to the Oracle WebCenter Sites configuration screen
- Shortcuts for creating SiteEntry, CSElement, and Template assets
- Shortcuts for creating SiteCatalog and ElementCatalog entries
- Synchronization tool

**Project Explorer
and
Sites Workspace
Elements views**



Bottom panel views: **Sites Log**, **Sites Preview Browser**, **Sites UI**, **Sites Logging Configuration**, and **Sites Developer Reference**.

If the Oracle perspective is rendered as shown above, then you have successfully installed and configured the Developer Tools plug-in.

Note

The panels containing the Eclipse and Developer Tools views are interchangeable. To move a view to a different panel, click the view's tab and drag it to the desired panel.

7. (Optional) To associate the *Oracle WebCenter Sites Tag Reference* and *Javadoc* with Eclipse:
 - a. Download the `TagReference.zip` and `javadoc.zip`.
 - b. Create a folder named “developerdocs” inside your WebCenter Sites installation directory.
 - c. Extract the `TagReference.zip` and `javadoc.zip` inside the `developerdocs` folder.
 - d. In Eclipse, open the “Sites Developer Reference” view. In both the “Tag Reference” and “Javadoc” tabs, click **Home**. The *Oracle WebCenter Sites Tag Reference* and *Javadoc* are displayed in their respective tabs.
8. If you upgraded your WebCenter Sites system, and wish to use Developer Tools to work with resources created prior to this release (existing resources), see “[Using Developer Tools with Pre-Existing Resources](#),” on page 45.
9. To quickly get started with managing WebCenter Sites resources in the Oracle WebCenter Sites perspective, continue to the next section. Start with [step 4](#).






Managing WebCenter Sites Resources in Eclipse

This section takes you through the Eclipse Oracle WebCenter Sites perspective by summarizing the steps you would take to create, edit, and otherwise manage code-based WebCenter Sites resources:


- SiteEntry assets
- CSElement assets
- Template assets
- ElementCatalog Entries
- SiteCatalog Entries

To manage WebCenter Sites resources in Eclipse

1. Start your local WebCenter Sites.
2. Start Eclipse.
3. Open the “Oracle WebCenter Sites” perspective:

In the Eclipse menu bar, select **Window > Open Perspective > Other ... > Oracle WebCenter Sites**.
4. To create resources, do the following:
 - To create a SiteEntry asset, click the  icon and fill in the forms.
 - To create a CSElement asset, click the  icon and fill in the forms.
 - To create a Template asset, click the  icon and fill in the forms.
 - To create an ElementCatalog entry, click the  icon and fill in the forms.
 - To create a SiteCatalog entry, click the  icon and fill in the forms.

For field definitions, see “Creating Template, CSElement, and SiteEntry Assets” in the *Oracle WebCenter Sites Developer's Guide*.

5. To manage the resources you create, edit, delete, or share with other sites use the “Sites Workspace Elements” view. Right-click the resource and select the desired option. For information about the available options, see “[‘Sites Work’](#),” on page 27.
 6. To display Developer Tools views in panels, do the following:
 - a. Select **Window > Show View > Other...**
 - b. In the “Show View” dialog box, select the desired view (located under the **Oracle WebCenter Sites** folder):
 - **Sites UI** displays the embedded WebCenter Sites Admin interface.
 - **Sites Log** displays the log file for WebCenter Sites. This view is only available if you have specified the location of the WebCenter Sites log file in the configuration screen (for instructions, see [step 6 on page 18](#)).
 - **Sites Developer Reference** displays the *Oracle WebCenter Sites Tag Reference* and *Javadoc*, only if you have associated the *Tag Reference* and *Javadoc* with your current WebCenter Sites instance (for instructions, see [step 7 on page 20](#)).
 - **Sites Workspace Elements** provides access to code-related resources. This view displays the resources in a tree and groups each resource according to its site affiliation.
 - **Sites Logging Configuration** displays a dynamically updating view of the log4j configuration. In this view you can set the log levels of each WebCenter Sites logger.
 - **Sites Preview Browser** displays an embedded preview browser.
- For more information about the Developer Tools views, see “[Developer Tools Views](#),” on page 27.
7. Synchronize WebCenter Sites resources by selecting the  icon. The synchronization tool enables you to either export data from WebCenter Sites to the Developer Tools workspace or import data to WebCenter Sites from your Developer Tools workspace.
 - For a quick overview of using the synchronization tool, see “[Data Synchronization \(Export/Import\) Tool](#),” on page 31.
 - For detailed information about synchronizing resources, see [Chapter 5](#), “[Synchronization and Data Exchange](#).”

Chapter 3

WebCenter Sites Features in Eclipse

This chapter contains information about WebCenter Sites features that are provided in Eclipse when it is integrated with Developer Tools.

- [Oracle WebCenter Sites Perspective](#)
- [Next Steps](#)

Oracle WebCenter Sites Perspective

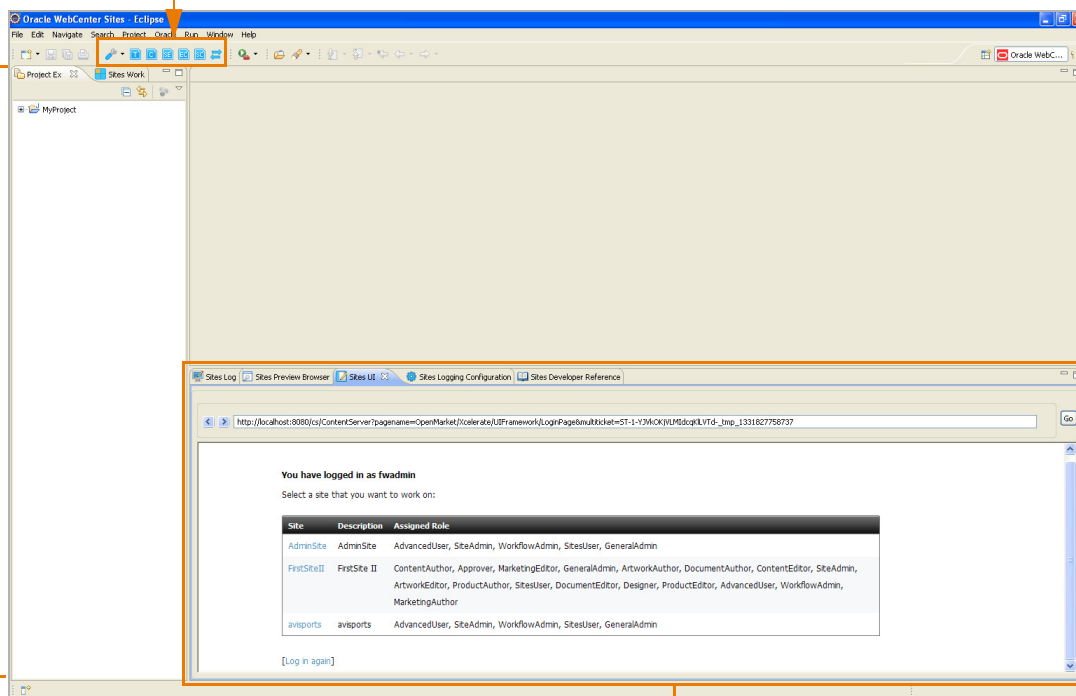
All Developer Tools functionality in Eclipse is grouped under the Oracle WebCenter Sites perspective (**Window > Open Perspective > Other... > Oracle WebCenter Sites**).

Figure 3: Oracle WebCenter Sites perspective:
Eclipse > Window > Open Perspective > Other... > Oracle WebCenter Sites

WebCenter Sites Toolbar, provides:

- Shortcut to the WebCenter Sites configuration screen
- Shortcuts for creating SiteEntry, CSElement, and Template assets
- Shortcuts for creating SiteCatalog and ElementCatalog entries
- Synchronization tool

Left panel containing the **Project Explorer** and **Sites Workspace Elements** views



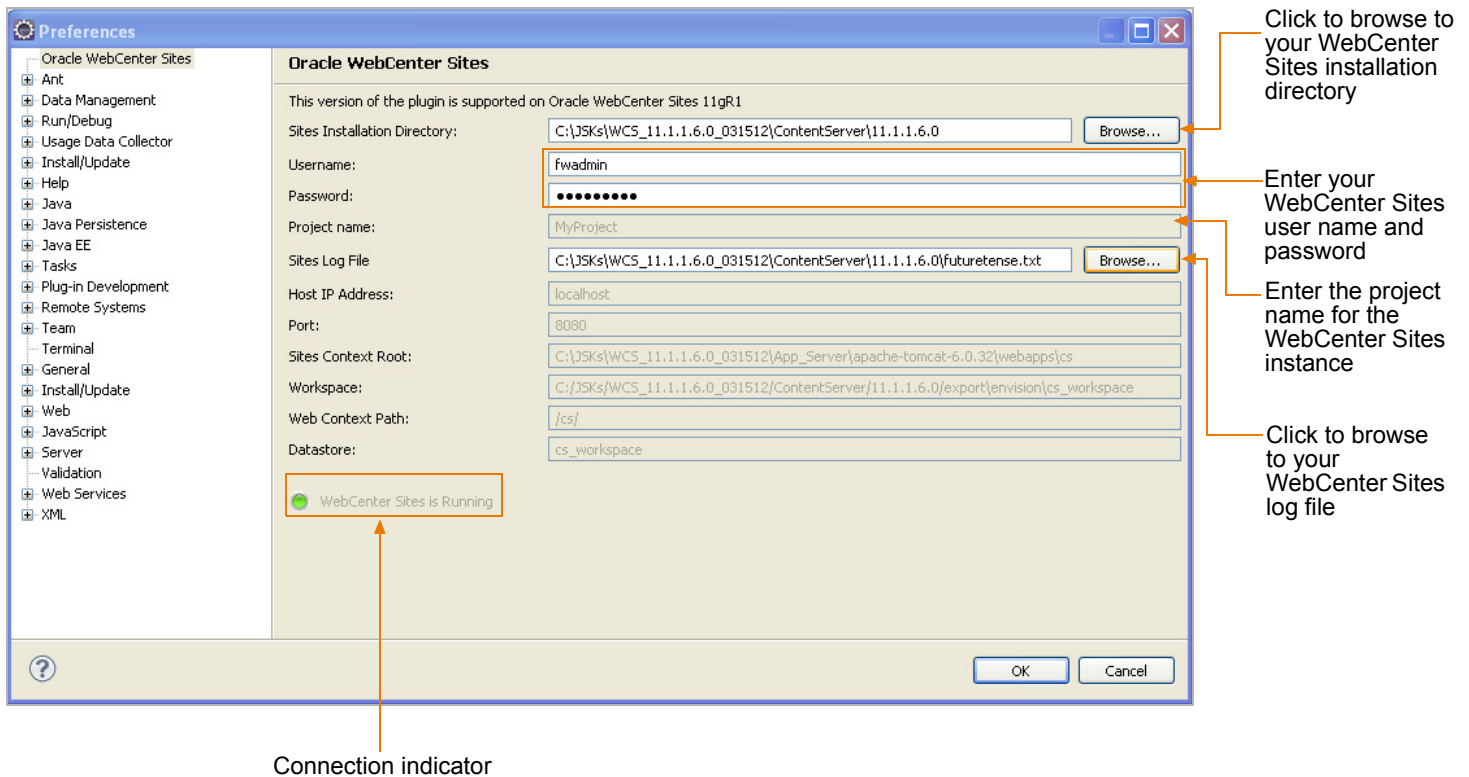
Bottom panel views: **Sites Log**, **Sites Preview Browser**, **Sites UI**, **Sites Logging Configuration**, and **Sites Developer Reference**.

The Oracle perspective contains the following:

- [Configuration Screen](#)
- [Project and Workspace in Eclipse](#)
- [Developer Tools Views](#)
- [Data Synchronization \(Export/Import\) Tool](#)

Configuration Screen

The configuration screen opens automatically on first access of WebCenter Sites-integrated Eclipse. On subsequent access the configuration screen can be opened by selecting the **Configuration** button on the WebCenter Sites Toolbar. This screen enables you to specify the WebCenter Sites instance with which you wish to work.



The configuration screen requires the path to the WebCenter Sites installation directory, a WebCenter Sites user that is part of the `RestAdmin` group, a project name for this WebCenter Sites instance, and the path to your WebCenter Sites log file. After you fill in all the required information, Developer Tools determines a number of other parameters for your WebCenter Sites instance and displays them for your information in read-only fields. In addition, the connection indicator will show whether Developer Tools is able to connect to the specified WebCenter Sites instance.

Project and Workspace in Eclipse

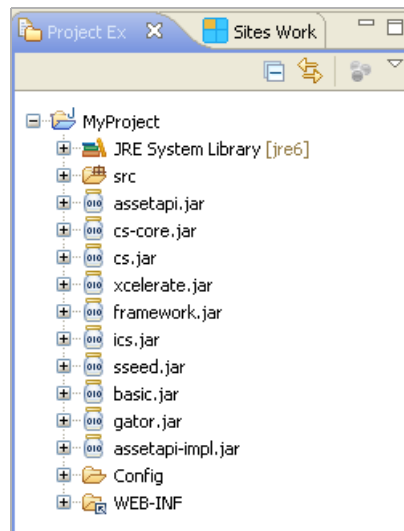
Each WebCenter Sites instance that is accessed through Eclipse is assigned an Eclipse project. The Eclipse project's folder is displayed in the "Project Explorer" view. The project is needed for tracking Developer Tools workspace items. Only one project is created by default for each WebCenter Sites instance and only one WebCenter Sites instance can be serviced by a project.

Note

The main purpose of the project is to facilitate information tracking and process Eclipse events. Projects are managed by the Developer Tools plug-in. **Do not open, close, or modify the project.**

Each Developer Tools Eclipse project includes the following elements:

- `src` – The Developer Tools workspace folder for the current WebCenter Sites instance. This folder contains all the files for the resources stored in the Developer Tools workspace. The resources in this folder can be checked in to a version control system.
- `Config` – Links to common configuration files belonging to the current WebCenter Sites instance.
- `WEB-INF` – Links to the current WebCenter Sites instance's `WEB-INF` folder.

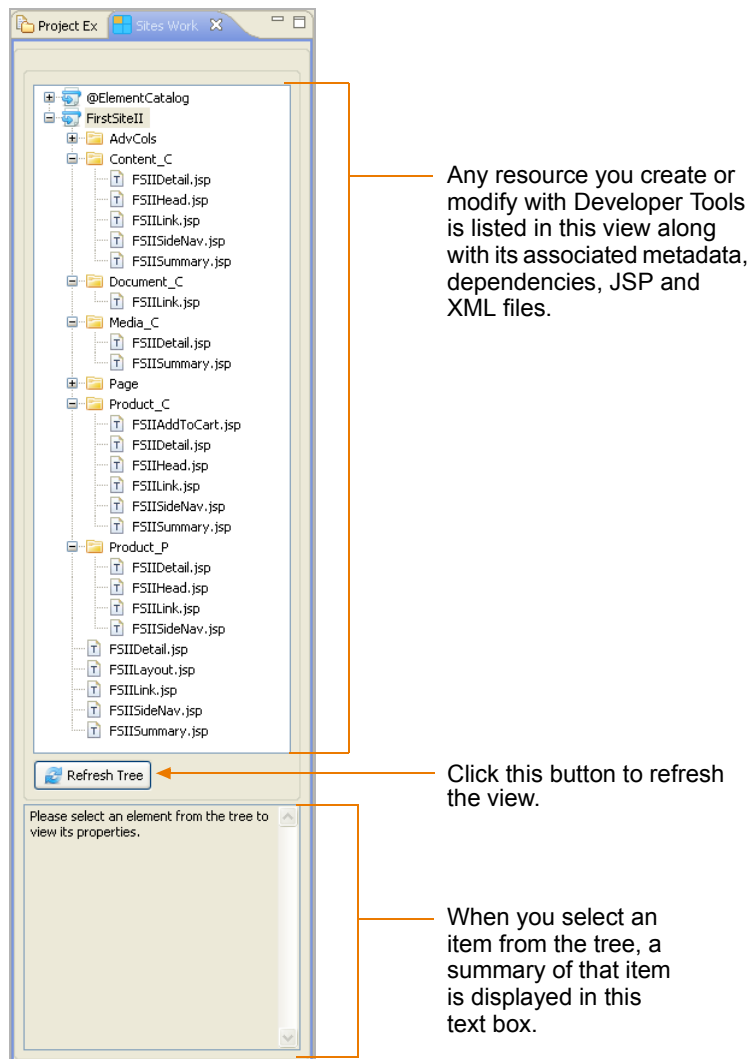


Developer Tools Views

- ‘Sites Work’
- ‘Sites Log’ View
- ‘Sites Preview Browser’ View
- ‘Sites UI’ View
- ‘Sites Logging Configuration’ View
- ‘Sites Developer Reference’ View
- Wizards

‘Sites Work’

This view provides access to code-related resources. The resources are grouped according to their site affiliation. If you select a resource, a quick summary of that resource is shown in the text box at the bottom of the view.

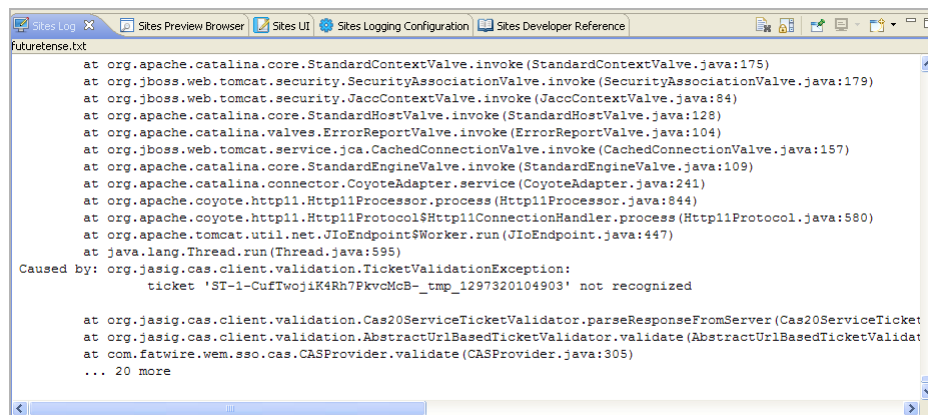


Right-click a resource in the tree to view the available management options. The options that are displayed to you depend on the resource you select:

- **Show Metadata** – Shortcut to the `.main.xml` file, which contains the metadata of the selected item.
- **Site Entry** – View the resource's site entry, share the site entry with other sites, create a new site entry, and delete a site entry.
- **Share** – Manage the sites with which this resource is associated.
- **Properties** – Manage properties of this resource, such as cache criteria and default arguments.
- **Delete** – Delete this resource.

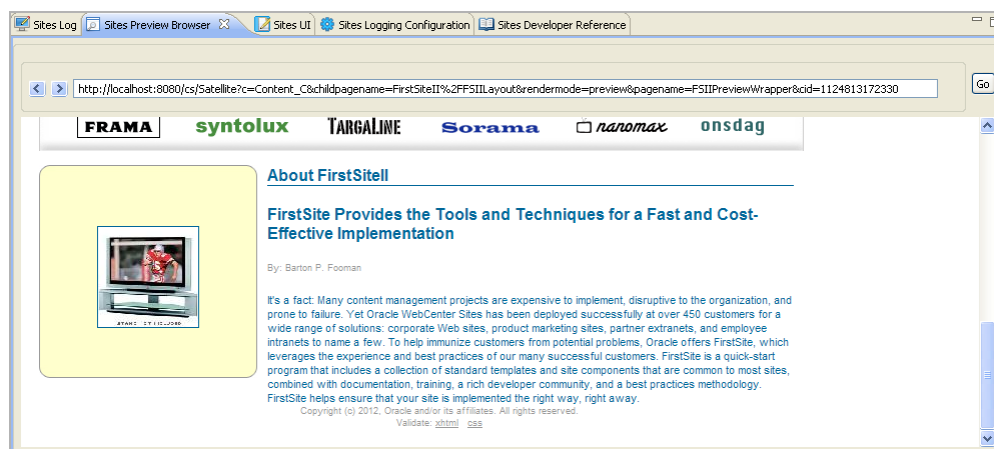
'Sites Log' View

This view shows a dynamically updating record of the WebCenter Sites log file. This view can be used to monitor the behavior of your IDE-integrated WebCenter Sites instance.



'Sites Preview Browser' View

This view provides a quick way to preview pages. To preview a web page with this view, enter the name of the page to the URL in the address bar and press **Enter** or click **Go**. To refresh the current page, use the **Ctrl + r** keyboard shortcut or click **Go**.



‘Sites UI’ View

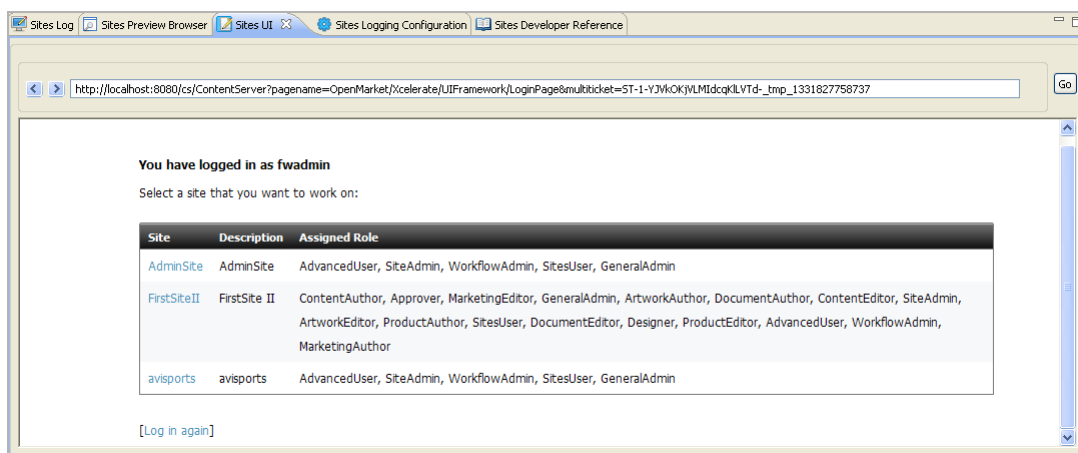
This view displays the WebCenter Sites Admin interface in an embedded browser. This is equivalent to using the Admin interface in a standalone browser.

Note

The WebCenter Sites Admin interface utilizes a Java applet to display the left pane. For information about running applets in browser views, see the Eclipse FAQ, located at the following URL:

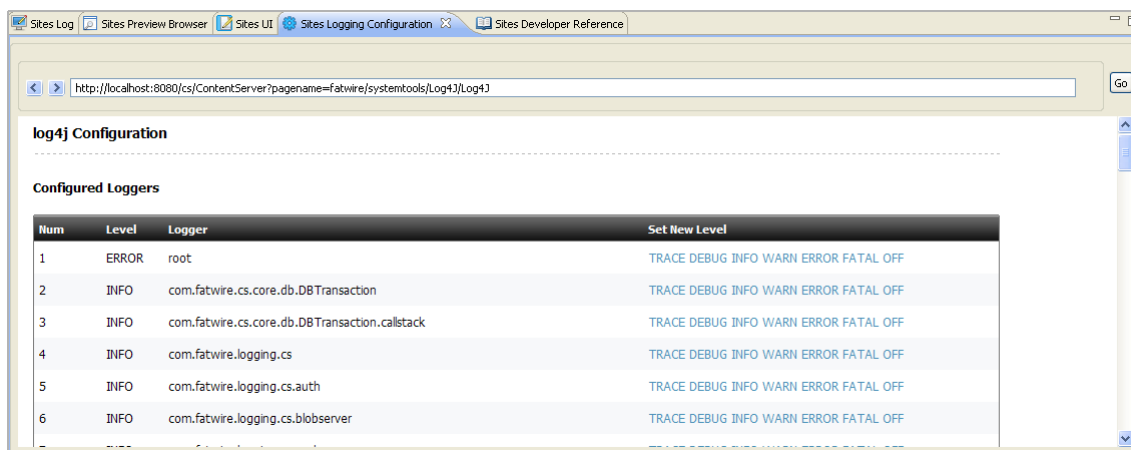
<http://www.eclipse.org/swt/faq.php#browserapplets>

If you are unable to run the applet, use the applet-free Admin interface mode or use a standalone browser to work in the Admin interface.



‘Sites Logging Configuration’ View

If your WebCenter Sites system is using Apache log4j, this view displays a dynamically updating log4j configuration screen. The log4j configuration screen enables you to view current loggers, change logger levels, add new loggers, and search logs.

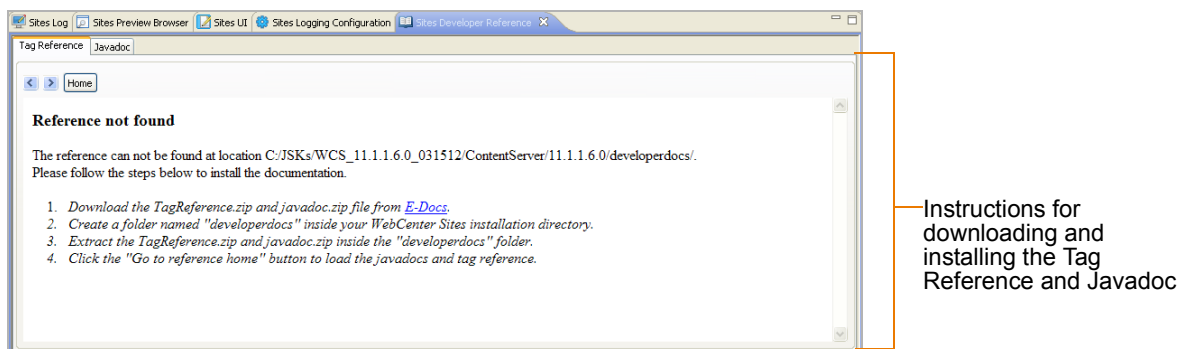


For information about using the log4j configuration screen, see the “System Tools” chapter in the *Oracle WebCenter Sites Administrator's Guide*.

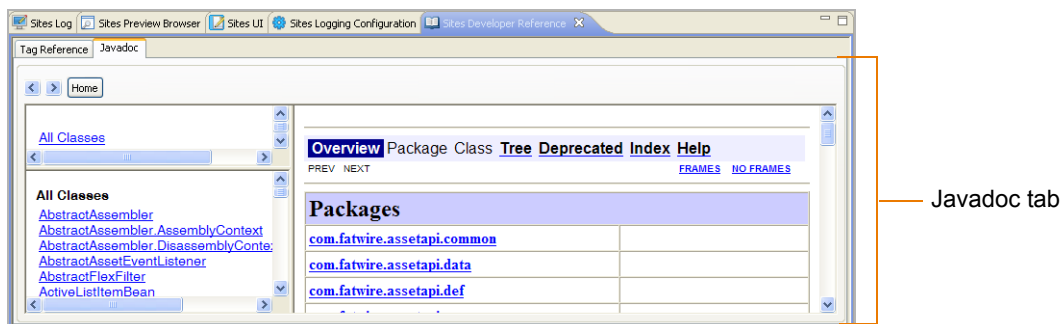
‘Sites Developer Reference’ View

This view contains two tabs, one of which displays the *Oracle WebCenter Sites Tag Reference* and the other displays the *Javadoc*. This information is only displayed if you have associated the *Tag Reference* and *Javadoc* with Eclipse. Otherwise, the view displays instructions for associating the *Tag Reference* and *Javadoc* with Eclipse. For instructions, you can also refer to [step 7 on page 20](#) in the “[Setting Up Developer Tools](#)” section.

If the Tag Reference and Javadoc are not associated with Eclipse, the tabs display the following:

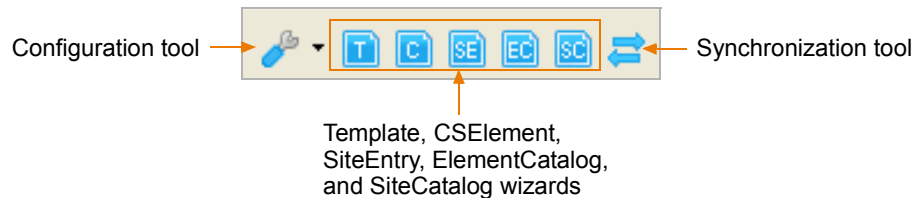


If the Tag Reference and Javadoc are associated with Eclipse, the tabs display the following:



Wizards

Wizards can be invoked from either the Oracle menu or the WebCenter Sites Toolbar, and enable you to create code-based WebCenter Sites resources. The available wizards are: SiteEntry, CSElement, Template, ElementCatalog, SiteCatalog, the configuration tool, and the synchronization tool.




Data Synchronization (Export/Import) Tool

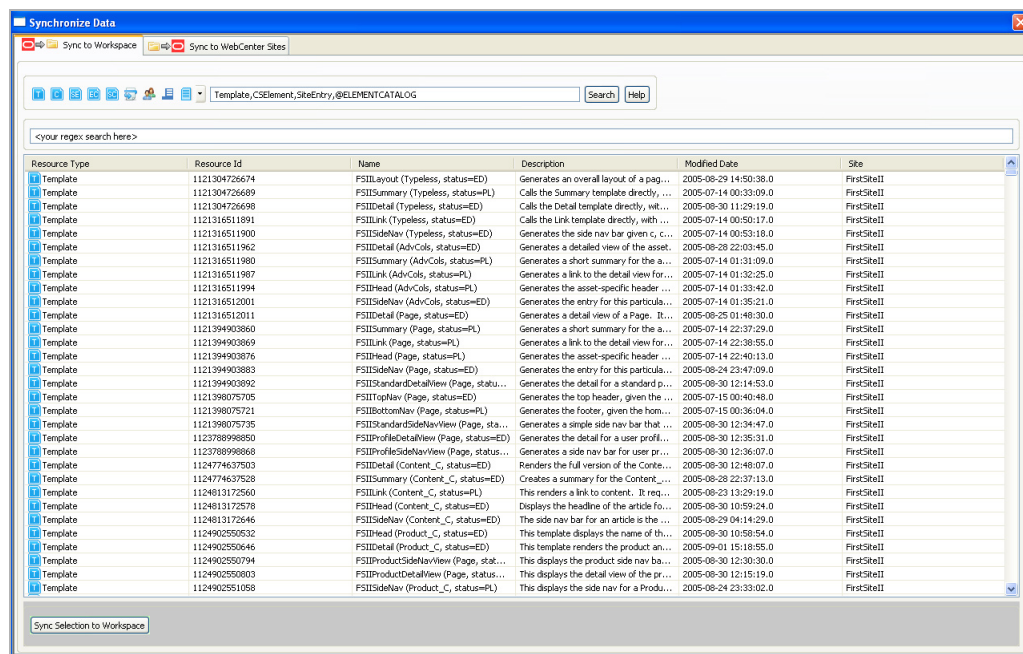
The synchronization tool provides you with two tabs:

- [Sync to Workspace \(Export from WebCenter Sites\)](#)
- [Sync to WebCenter Sites \(Import into WebCenter Sites\)](#)

Sync to Workspace (Export from WebCenter Sites)

Sync to Workspace is used to export data from the IDE-integrated WebCenter Sites to your Developer Tools workspace. In the process, Developer Tools serializes selected resources (transforms database representations into files) and copies the serialized representation to the Developer Tools workspace. You can then modify the resources in Eclipse.

Figure 4:  synchronization icon > Sync to Workspace tab




To export items from WebCenter Sites to your workspace

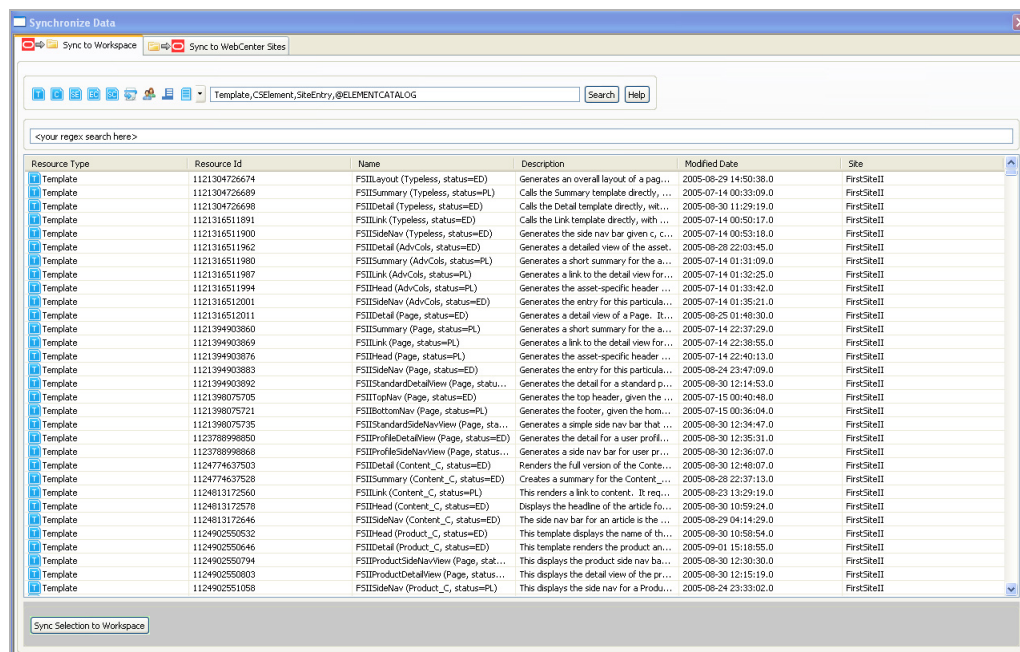
1. Select the items you wish to export. (To narrow down the list of items, go to the “regex” search bar and enter the name of the asset type you are searching for. To search for multiple asset types, enter a comma-separated list.)
2. Click **Sync Selection to Workspace**.

The assets you exported to your Developer Tools workspace are now listed in the “Sites Work” tree tab.

Sync to WebCenter Sites (Import into WebCenter Sites)

Sync to WebCenter Sites is used to import resources from your Developer Tools workspace into the IDE-integrated WebCenter Sites. In the process, Developer Tools transforms the selected resource to its native WebCenter Sites representation and copies it to the WebCenter Sites database.

Figure 5:  synchronization icon > Sync to WebCenter Sites tab



To import items into WebCenter Sites from the workspace

1. Select the items you wish to import. (To narrow down the list of items, go to the “regex” search bar and enter the name of the asset type you are searching for. To search for multiple asset types, enter a comma-separated list.)
2. Click **Sync Selection to WebCenter Sites**.

Next Steps

The rest of this guide provides information about using the WebCenter Sites features, provided by Developer Tools, in the Eclipse IDE. Proceed to the next chapter ([Chapter 4, “Developing JSPs”](#)) for information about JSP development in Eclipse.

Chapter 4

Developing JSPs

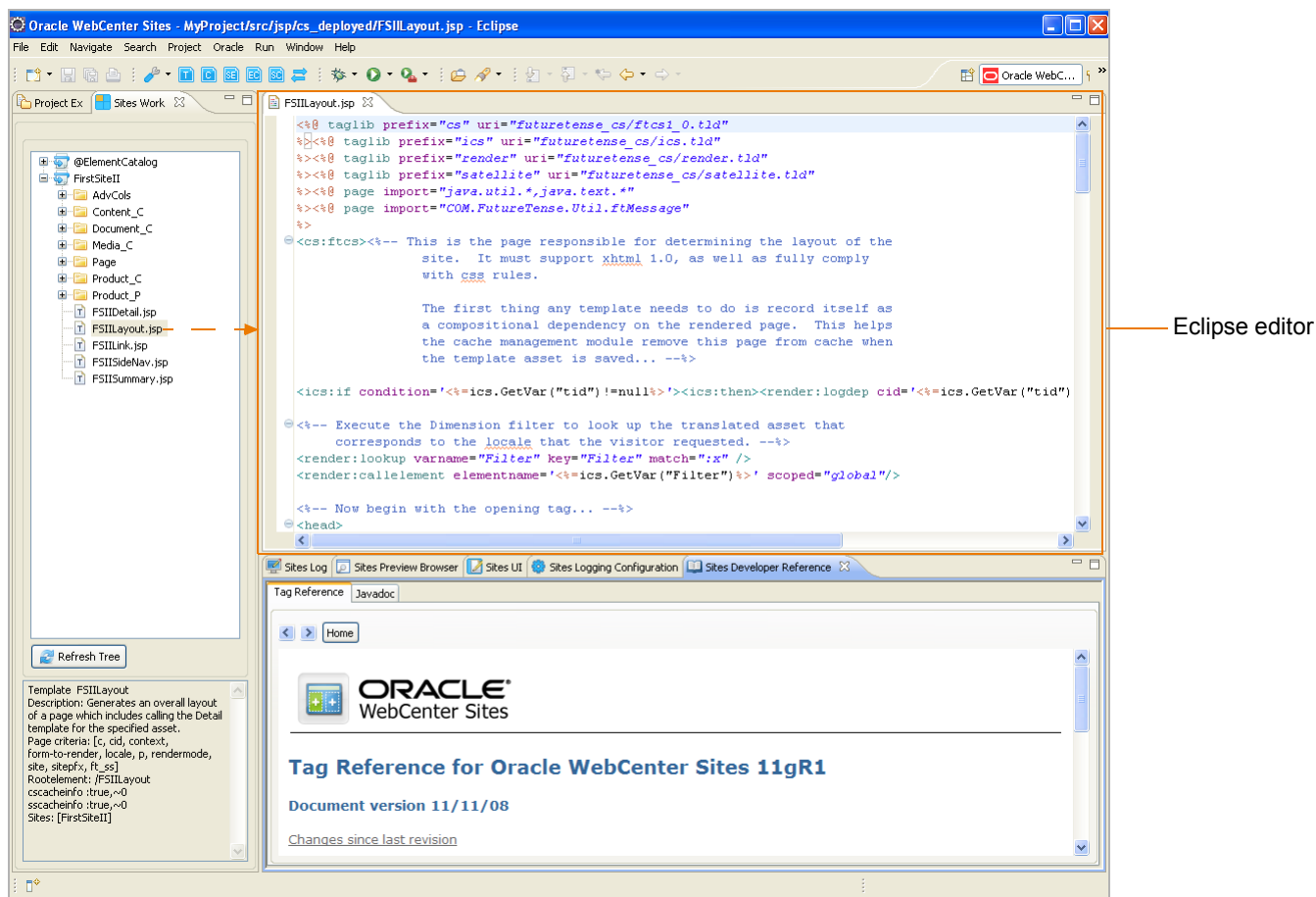
This chapter contains information about developing WebCenter Sites JSPs with Developer Tools. This chapter contains the following sections:

- [JSP Development with Developer Tools](#)
- [Tag and Java API Completion](#)
- [Debugging](#)

JSP Development with Developer Tools

The Developer Tools kit supports the development of WebCenter Sites JSPs using the native Eclipse JSP editor. The Eclipse JSP editor includes support for WebCenter Sites tag and Java API completion, syntax highlighting, and debugging. Figure 6 shows an example of a WebCenter Sites JSP in the Eclipse editor.

Figure 6: Eclipse JSP editor



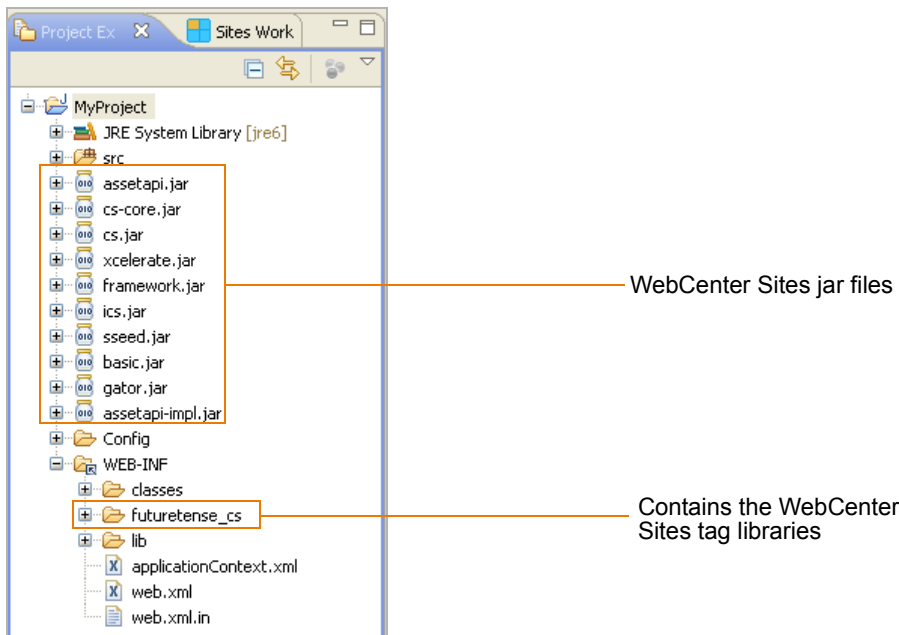
WebCenter Sites JSPs can include page caching, resultset caching, and associated metadata such as Template assets, CSElement assets, or ElementCatalog entries. The metadata of a JSP enables WebCenter Sites to track and manage it. Developer Tools handles a JSP's underlying WebCenter Sites processes transparently, including tracking the JSP and its corresponding metadata. When you save a JSP in Eclipse, the Developer Tools kit automatically synchronizes those changes with the current WebCenter Sites instance. Any metadata associated with the JSP is also synchronized with WebCenter Sites automatically. This enables you to view the changes in WebCenter Sites as soon as you save the JSP in Eclipse.

For example, if the JSP is associated with a Template asset, the Developer Tools kit saves the Template asset with the updated JSP.

Tag and Java API Completion

Eclipse provides tag and Java API completion features. Eclipse uses the tag libraries and jar files belonging to the current WebCenter Sites instance to provide the appropriate code completion for WebCenter Sites related tags and Java APIs. The WebCenter Sites tag libraries and jar files are automatically linked to your Eclipse project, and contained within the Eclipse project folder (located in the “Project Explorer” view):

- The tag libraries are contained in the `futuretense_cs` folder under the `WEB-INF` folder.
- The jar files are contained under the main Eclipse project folder.



Note

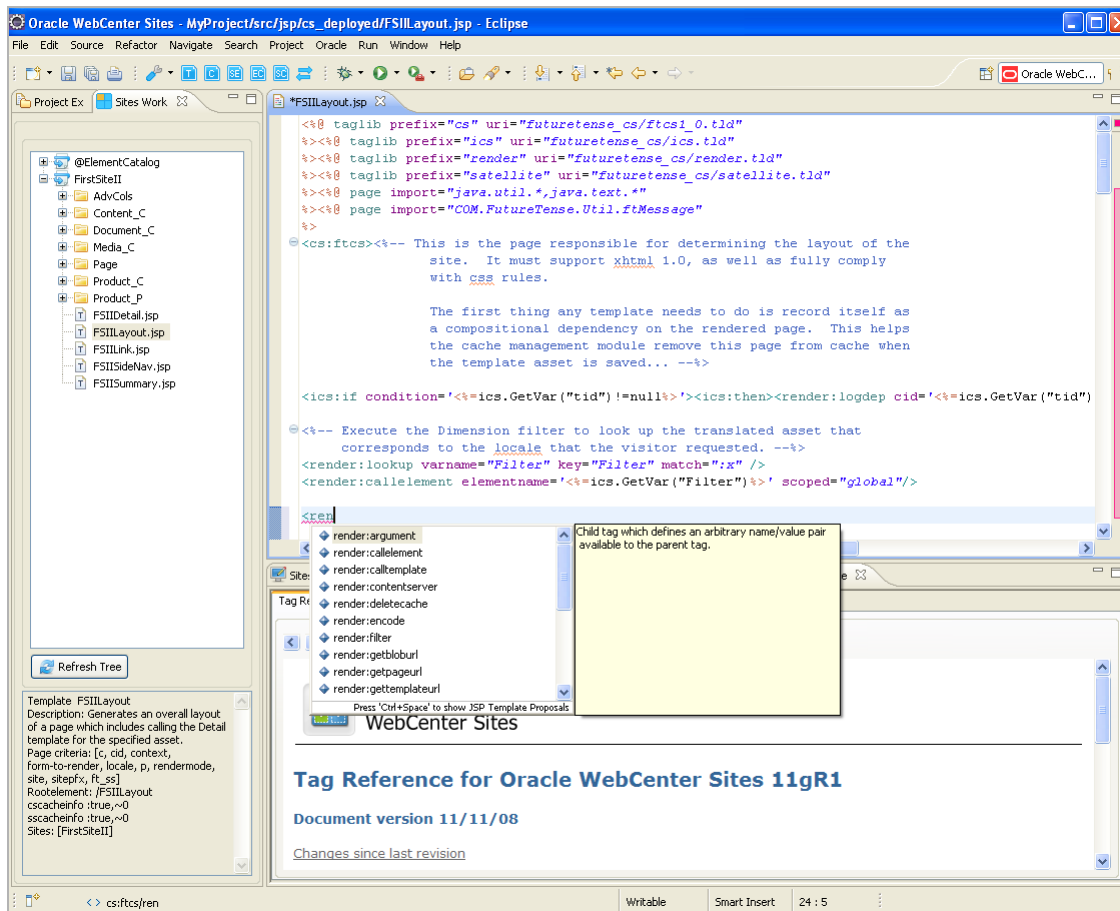
When you use the tag and Java API completion feature, keep in mind the following:

- Make sure you follow strict JSP coding standards. This way your code can be deployed on any application server.
- Eclipse code completion displays all public Java methods contained within the WebCenter Sites jars, only use the APIs that are in the WebCenter Sites documentation. Using undocumented functionality is risky and unsupported.

Associating the *Oracle WebCenter Sites Javadoc* and *Tag Reference* with Eclipse enables the tag and Java API completion features to display information about each tag and piece of Java code you use when managing a WebCenter Sites JSP. For example, when you are working with a WebCenter Sites JSP and you begin to type the name of a tag, a window opens listing code completion suggestions. If you associated the *Tag Reference* and

Javadoc with Eclipse, a second pop-up window is displayed containing information about each suggestion (see [Figure 7](#)).

Figure 7: Tag and Java API completion feature



In addition to adding functionality to the tag and Java code completion features, the *Javadoc* and *Tag Reference* are both made accessible in the “Sites Developer Reference” view. For more information, see “[‘Sites Developer Reference’ View](#),” on page 30.

Debugging

To debug Java and JSP code in Developer Tools, you must first attach the debugger to the JVM process that runs WebCenter Sites. It is recommended to do so with remote debugging. To attach the WebCenter Sites JVM, follow the instructions provided by Eclipse at the following URL:

<http://www.ibm.com/developerworks/library/os-ecbug/>

Once the JVM is attached to the debugger, you can set breakpoints in your JSP and Java code, view variables, and so on.

Chapter 5

Synchronization and Data Exchange

This chapter provides information about the export/import features supported by Developer Tools. This chapter also provides information about exchanging resources between WebCenter Sites instances, and the Developer Tools mappings processes.

This chapter contains the following topics:

- [Synchronization Using Developer Tools](#)
- [Data Exchange and Mappings](#)

Synchronization Using Developer Tools

Synchronization is the bi-directional flow of resources between a WebCenter Sites instance and its associated workspace. Using Developer Tools, you can perform the following synchronization operations:

- Export/import assets with built-in dependency resolution and ID mapping.
- Export/import asset types, such as flex families and AssetMaker asset types.
- Export/import site definitions, roles, start menu items, and tree tabs.
- Export/import SiteCatalog and ElementCatalog entries.
- (Command-line tool operation) Perform site re-mapping. For example, creating reusable modules which can be imported into any WebCenter Sites CM site.

Exporting or importing all resources of a given site enables you to track the entire site in a version control system. Advanced developers can use the command-line tool to re-map the resources of one site to another by creating reusable modules (custom workspaces).

Synchronization Scenarios

Depending on the scenario, resources are synchronized either automatically or manually.

Resources between WebCenter Sites and Eclipse are automatically synchronized when the following actions are performed in Eclipse:

- Code-based resources (Templates, CSElements, SiteEntries, ElementCatalog entries, and SiteCatalog entries) are created with the Developer Tools wizards in Eclipse.
- Code-based resources (Templates, CSElements, and ElementCatalog entries) stored in the Developer Tools workspace are edited in Eclipse. This includes edits to JSP files, XML files, metadata, and other files associated with the resource.

For example, if you edit a resource's associated JSP file in the Eclipse editor, the Developer Tools kit automatically synchronizes the changes into the WebCenter Sites instance. Using the Eclipse editor, advanced developers can also edit metadata files (`.main.xml`) of flex definitions and the Developer Tools kit will automatically synchronize the changes into WebCenter Sites. However, we recommend using the WebCenter Sites Admin interface to modify flex definitions.

In certain cases, resources must be manually synchronized using either the Synchronization tool in the Eclipse IDE or (for advanced developers) the command-line tool. Manual synchronization is required when:

- The Eclipse editor is not used to edit resources stored in the Developer Tools workspace. For example, when resources are copied to the Developer Tools workspace from a shared network file system or a version control system.
- WebCenter Sites resources are modified in the WebCenter Sites interfaces.

Note

The Eclipse IDE provides an embedded WebCenter Sites Admin interface. However, Eclipse does not detect the changes that are made using this interface. Therefore, working in the embedded Admin interface is the same as working in a standalone browser running the Admin interface.

- WebCenter Sites is not running while you are creating or editing resources in the Eclipse IDE. Once WebCenter Sites is restarted, you must manually synchronize the resources you created or edited.

Using the command-line tool to synchronize resources is mainly for deployment purposes, such as nightly builds that are deployed to test servers. For example, an advanced developer can embed a synchronization command into a script for an automated deployment procedure. For information about running and using the command-line tool, see [Chapter 7](#), “[Command-Line Tool](#).”

Dependency Resolution

WebCenter Sites resources often depend on other resources. For example, a flex asset requires an associated flex definition to exist before it can be created. In turn, the flex definition depends on a set of attributes and possibly other resources. Therefore, all flex constructs require that the flex family exist on the system. To import a flex asset into an empty WebCenter Sites system, you must first create a flex family to which the flex asset will be associated. Then, create the following:

1. Create the flex attributes. For example, name, address, age, and so on.
2. Create the desired flex parent definitions.
3. Create flex definitions.
4. Create the desired flex parents.
5. Create flex assets.

When you export a flex asset, the Developer Tools kit performs all dependency resolutions for that asset and automatically exports all of its dependencies. Therefore, you only need to select the desired resource (such as the desired flex asset) and the Developer Tools kit computes all of the asset’s dependencies.

Note

The Developer Tools kit does not resolve a resource’s dependency on site definitions. This enables you to choose whether you want to export or import an entire site, a subset of sites, or completely ignore site definitions (for example, if you are using the command-line tool to create a reusable module that can be imported into any site). For a detailed example of creating a reusable module, see [Appendix B](#), “[Using the Command-line Tool to Create Reusable Modules](#).”

Data Exchange and Mappings

The Developer Tools kit uses ID and site mapping processes to enable developers to exchange resources between WebCenter Sites instances. This section contains the following topics:

- [ID Mapping](#)
- [Site Mappings](#)

ID Mapping

Each resource created in WebCenter Sites is assigned a unique local identifier. A resource's local identifier is unique only to the WebCenter Sites instance on which it was created. Since multiple WebCenter Sites instances will be used to create resources, it is possible for two different resources, on separate WebCenter Sites instances, to have the same local identifier.

To uniquely identify resources, the Developer Tools kit assigns each resource a globally unique identifier (`fw_uid`), which is unique across all WebCenter Sites instances. In addition, when you import a resource into a WebCenter Sites instance, the Developer Tools kit assigns a new local identifier to that resource on that instance. If the resource references other assets (such as associations, asset pointers, and flex definitions), a new local identifier is generated for each of those assets. On subsequent imports to that WebCenter Sites instance, the resources are assigned the same local identifier. The Developer Tools kit maintains the resources' `fw_uid` values across all WebCenter Sites instances. If the resource and its referenced assets are imported back into their original WebCenter Sites instance, the Developer Tools kit re-maps their local identifiers back to their original value.

Note

Certain WebCenter Sites resources, such as Template assets, flex attributes, and tree tabs have unique name constraints. To avoid name conflicts, make sure each resource is uniquely named across all WebCenter Sites instances.

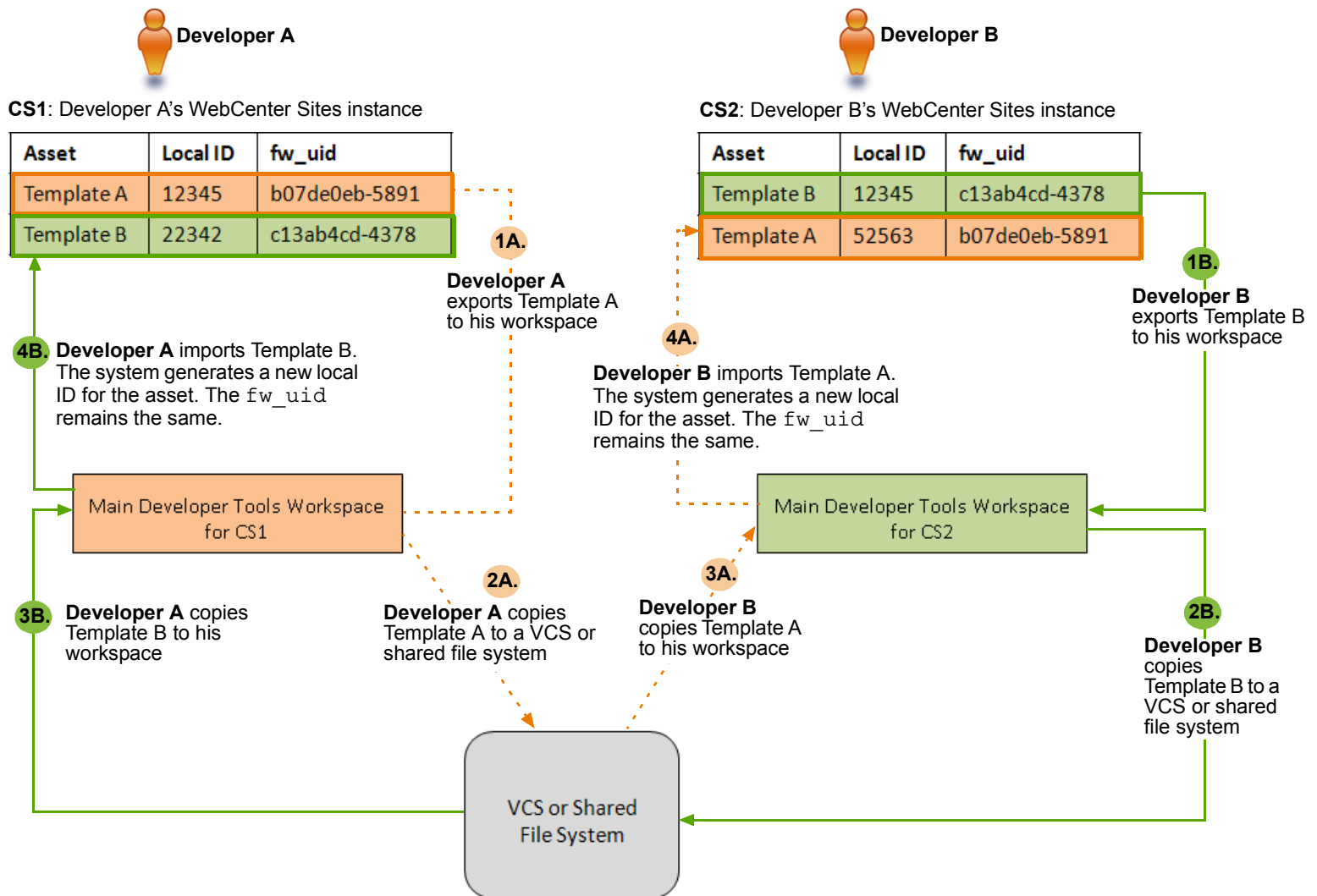
For example, (as shown in [Figure 8, on page 43](#)) Developer A is working with a WebCenter Sites instance named CS1 and Developer B is working with a WebCenter Sites instance named CS2. Both developers created a completely different Template asset. Developer A created Template A and Developer B created Template B. The two Template assets have different `fw_uid` values and different names. However, since local identifiers are randomly assigned, both Template assets, by chance, have been assigned the same local identifier (12345). Developers A and B want to exchange Template assets between each other's WebCenter Sites instances. Developer A wants to import Template B into the CS1 instance, and Developer B wants to import Template A into the CS2 instance.

[Figure 8](#) illustrates the steps both developers take to exchange Template assets between their WebCenter Sites instances. Both Template assets' local identifiers are re-mapped when imported into the other developer's WebCenter Sites instance. When Template A is imported into the CS2 instance, the system assigns it the local identifier 52563. When Template B is imported into the CS1 instance, the system assigns it the local identifier 22342. In each case, the `fw_uid` values for both Template assets remain the same.

Note

To exchange resources between WebCenter Sites instances, the developers in our examples use a VCS or shared file system. For information about using a VCS, see [Chapter 8, “Notes for Integrating with Version Control Systems.”](#)

Figure 8: Exchanging two different assets with the same local identifier between two WebCenter Sites instances

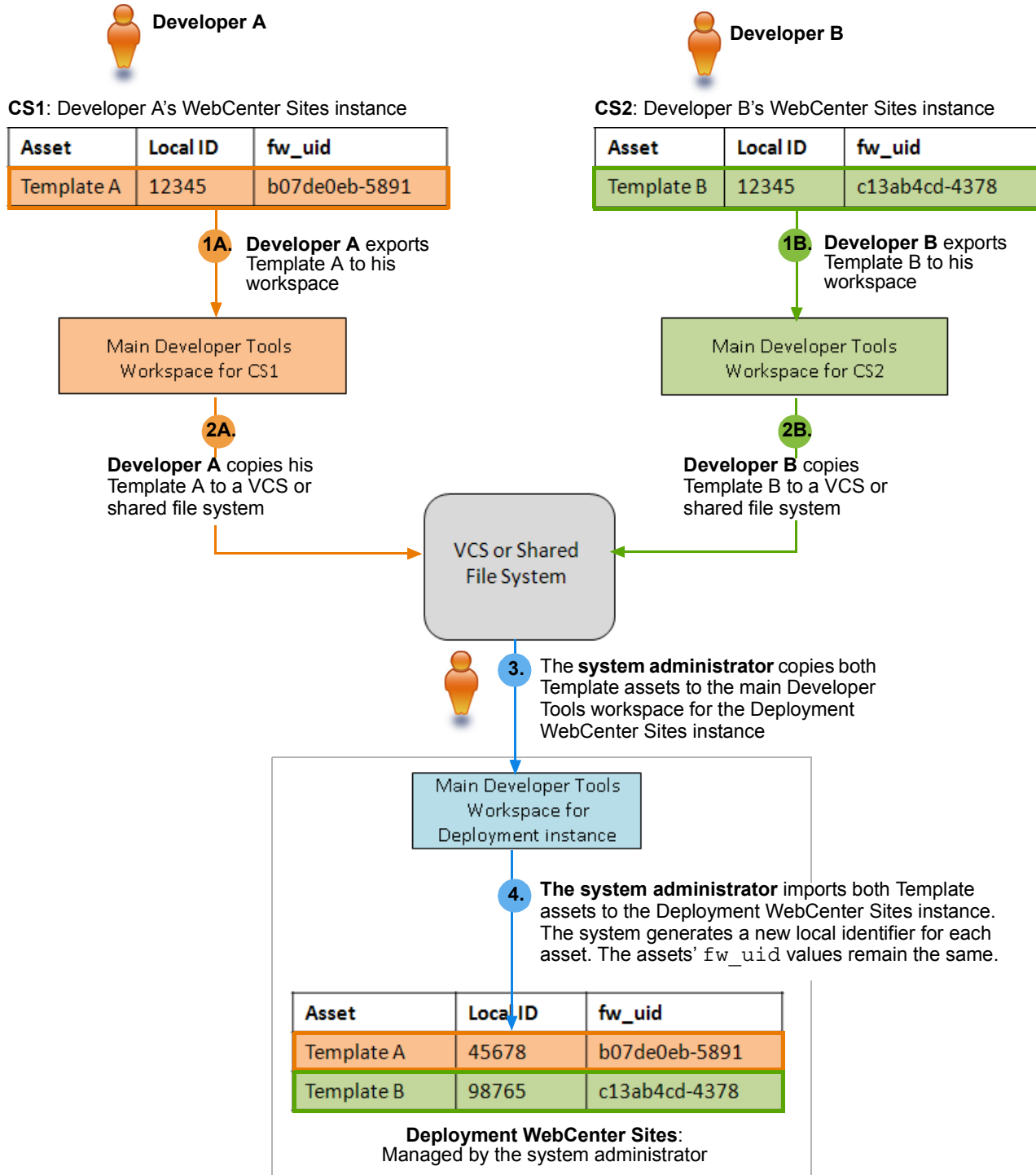


In [Figure 9, on page 44](#), Developer A wants to deploy Template A to the Deployment WebCenter Sites instance (managed by the system administrator) and Developer B wants to deploy Template B to the same instance. Both Template assets have the same local identifier (12345).

Developers A and B each export their Template to the main Developer Tools workspace for their WebCenter Sites instance. They then copy their Templates to a VCS or shared file system. From here, the system administrator copies both Template assets to the Deployment WebCenter Sites' main Developer Tools workspace. The system

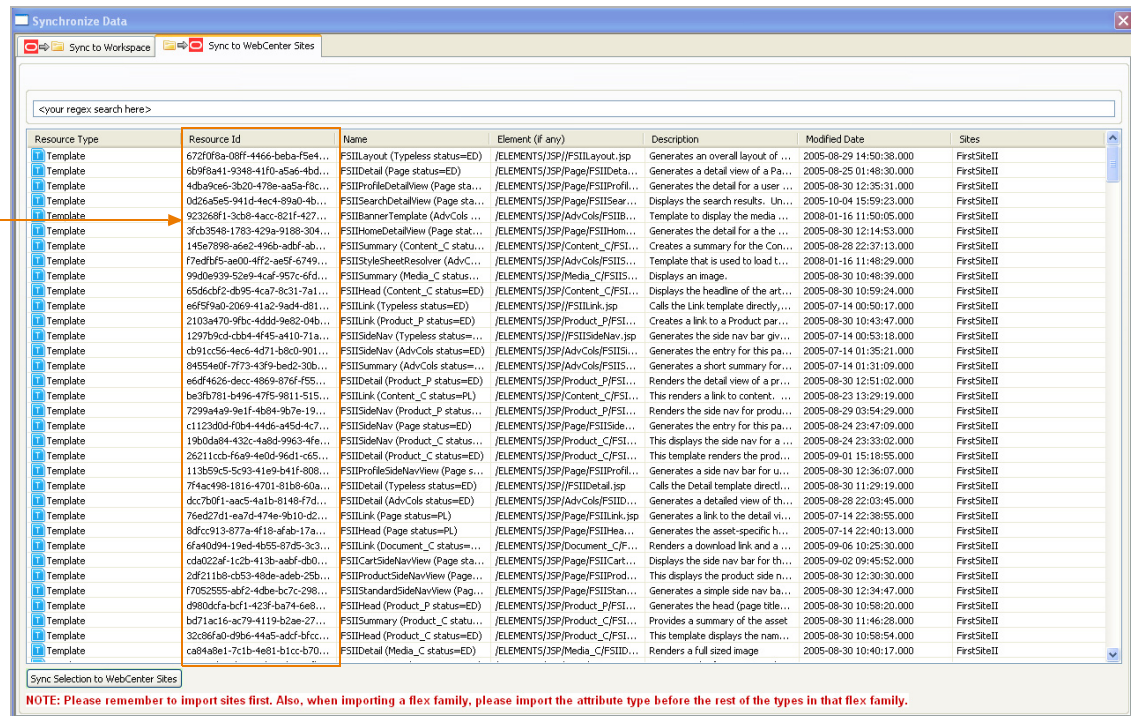
administrator then imports the two Template assets from the workspace to the Deployment WebCenter Sites. Upon import, the system assigns both Templates a new local identifier. Template A is assigned the local identifier of 45678 and Template B is assigned the local identifier of 98765. The assets' `fw_uid` values remain the same.

Figure 9: Deploying two different assets with the same local identifier to a third WebCenter Sites instance



When a resource is exported to a workspace, it is identified only by its `fw_uid`. ElementCatalog and SiteCatalog entries are not assigned an `fw_uid` because these entries are uniquely identified by element name.

The **Resource ID** column lists each WebCenter Sites resource by its `fw_uid` (with the exception of ElementCatalog and SiteCatalog entries).



Resource Type	Resource ID	Name	Element (if any)	Description	Modified Date	Sites
Template	672f0f8a-08ff-4466-beba-f5e4...	FSIILayout (Typeless status=ED)	/ELEMENTS/JSP/FSIILayout.jsp	Generates an overall layout of ...	2005-08-29 14:50:38.000	FirstSiteII
Template	6b9f8a41-9348-4170-a5a6-4bd...	FSIIDetail (Page status=ED)	/ELEMENTS/JSP/FSIIDetail.jsp	Generates a detail view of a Pa...	2005-08-30 01:48:30.000	FirstSiteII
Template	4db9a6c6-3b20-478a-a5a6-f8c...	FSIIProfileDetail (Page sta...	/ELEMENTS/JSP/FSIIProfileDetail.jsp	Generates the detail for a user ...	2005-08-30 12:35:31.000	FirstSiteII
Template	0d26a5e5-941d-4ec4-89a0-4b...	FSIISearchDetailView (Page sta...	/ELEMENTS/JSP/FSIISearchDetailView.jsp	Displays the search results. Un...	2005-10-04 15:59:23.000	FirstSiteII
Template	923268f1-3cb8-4acc-821f-427...	FSIIBannerTemplate (AdvCols...	/ELEMENTS/JSP/AdvCols/FSIIBannerTemplate.jsp	Template to display the media ...	2005-01-16 11:50:05.000	FirstSiteII
Template	3fcb3548-1783-429a-9188-304...	FSIIHomeDetailView (Page sta...	/ELEMENTS/JSP/FSIIHomeDetailView.jsp	Generates the detail for a the ...	2005-08-30 12:14:53.000	FirstSiteII
Template	145e7898-a6e2-496b-adbf-ab...	FSIISummary (Content_C statu...	/ELEMENTS/JSP/Content_C/FSIISummary.jsp	Creates a summary for the Con...	2005-08-28 22:37:13.000	FirstSiteII
Template	17ad9f55-ae00-4ff2-ae5f-6749...	FSIISheetResolver (AdvC...	/ELEMENTS/JSP/AdvCols/FSIISheetResolver.jsp	Template that is used to load t...	2008-01-16 11:46:29.000	FirstSiteII
Template	99d0e939-5269-4caf-957c-6fd...	FSIISummary (Media_C statu...	/ELEMENTS/JSP/Media_C/FSIISummary.jsp	Displays an image.	2005-08-30 10:48:39.000	FirstSiteII
Template	65dc6bf2-d995-4ca7-8c31-7a1...	FSIIHead (Content_C status=ED)	/ELEMENTS/JSP/Content_C/FSIIHead.jsp	Displays the headline of the art...	2005-08-30 10:59:24.000	FirstSiteII
Template	e6f59a0-2069-41a2-9ad4-d81...	FSIILink (Typeless status=ED)	/ELEMENTS/JSP/FSIILink.jsp	Calc the Link template directl...	2005-07-14 00:50:17.000	FirstSiteII
Template	2103a470-9fbc-4dd3-9e82-04b...	FSIILink (Product_P status=ED)	/ELEMENTS/JSP/Product_P/FSIILink.jsp	Creates a link to a Product par...	2005-08-30 10:43:47.000	FirstSiteII
Template	1297b9cd-cbb4-4f45-a410-71a...	FSIISideNav (Typeless status=...	/ELEMENTS/JSP/FSIISideNav.jsp	Generates the side nav bar giv...	2005-07-14 00:53:18.000	FirstSiteII
Template	cb91cc56-4ec6-4d71-b8c0-901...	FSIISideNav (AdvCols status=ED)	/ELEMENTS/JSP/AdvCols/FSIISideNav.jsp	Generates the entry for this pa...	2005-07-14 01:35:21.000	FirstSiteII
Template	84554e0f-7773-43f9-bed2-30b...	FSIISummary (AdvCols status=...	/ELEMENTS/JSP/AdvCols/FSIISummary.jsp	Generates a short summary for ...	2005-07-14 01:31:09.000	FirstSiteII
Template	e6df4626-decc-4869-876f-f55...	FSIIDetail (Product_P status=ED)	/ELEMENTS/JSP/Product_P/FSIIDetail.jsp	Renders the detail view of a pr...	2005-08-30 12:51:02.000	FirstSiteII
Template	be3fb781-b496-47f5-9811-515...	FSIILink (Content_C status=PL)	/ELEMENTS/JSP/Content_C/FSIILink.jsp	This renders a link to content. ...	2005-08-23 13:29:19.000	FirstSiteII
Template	7299a49-9e1f-4b84-9b7e-19...	FSIISideNav (Product_P status=...	/ELEMENTS/JSP/Product_P/FSIISideNav.jsp	Renders the side nav for produ...	2005-08-30 03:58:29.000	FirstSiteII
Template	c1123dd0-f0b4-44d6-a45d-4c7...	FSIISideNav (Page status=ED)	/ELEMENTS/JSP/FSIISideNav.jsp	Generates the entry for this pa...	2005-08-24 23:47:09.000	FirstSiteII
Template	1960da84-432c-4a8d-9963-4fe...	FSIISideNav (Product_C status=...	/ELEMENTS/JSP/Product_C/FSIISideNav.jsp	This displays the side nav for a ...	2005-08-24 23:33:02.000	FirstSiteII
Template	26211ccb-f6a9-4e0d-96d1-c65...	FSIIDetail (Product_C status=ED)	/ELEMENTS/JSP/Product_C/FSIIDetail.jsp	This template renders the prod...	2005-09-01 15:18:55.000	FirstSiteII
Template	113659c5-5c93-41e9-b41f-808...	FSIIProfileSideNavView (Page s...	/ELEMENTS/JSP/FSIIProfileSideNavView.jsp	Generates a side nav bar for u...	2005-08-30 12:36:07.000	FirstSiteII
Template	7f4ac498-1816-4701-81b8-60a...	FSIIDetail (Typeless status=ED)	/ELEMENTS/JSP/FSIIDetail.jsp	Calc the Detail template direct...	2005-08-30 11:29:19.000	FirstSiteII
Template	dc070d1f-aac5-4a1b-8148-47d...	FSIIDetail (AdvCols status=ED)	/ELEMENTS/JSP/AdvCols/FSIIDetail.jsp	Generates a detailed view of th...	2005-08-28 22:03:45.000	FirstSiteII
Template	76ed27d1-ea74-474e-9b10-42...	FSIILink (Page status=PL)	/ELEMENTS/JSP/FSIILink.jsp	Generates a link to the detail w...	2005-07-14 22:38:55.000	FirstSiteII
Template	8dfcc913-677a-4f18-af4b-17a...	FSIIHead (Page status=PL)	/ELEMENTS/JSP/FSIIHead.jsp	Generates the asset-specific h...	2005-07-14 22:40:13.000	FirstSiteII
Template	6fa40d94-19ed-4b55-87d5-3c3...	FSIILink (Document_C statu=...	/ELEMENTS/JSP/Document_C/FSIILink.jsp	Renders a download link and a ...	2005-09-06 10:25:30.000	FirstSiteII
Template	cd0a22af-1c2b-413b-aabf-d8b...	FSIICartSideNavView (Page sta...	/ELEMENTS/JSP/FSIICartSideNavView.jsp	Displays the side nav bar for th...	2005-09-02 09:45:52.000	FirstSiteII
Template	2df211b8-cb53-48de-adeb-25b...	FSIIProductSideNavView (Page...	/ELEMENTS/JSP/FSIIProductSideNavView.jsp	This displays the product side n...	2005-08-30 12:30:30.000	FirstSiteII
Template	f7052555-abf2-4d8e-bc7c-298...	FSIIStandardSideNavView (Pag...	/ELEMENTS/JSP/FSIIStandardSideNavView.jsp	Generates a simple side nav ba...	2005-08-30 12:34:47.000	FirstSiteII
Template	d980dcfa-bcf1-423f-ba74-6e8...	FSIIHead (Product_P status=ED)	/ELEMENTS/JSP/Product_P/FSIIHead.jsp	Generates the head (page title...	2005-08-30 10:58:20.000	FirstSiteII
Template	bd71ac16-ac79-4119-b2ae-27...	FSIISummary (Product_C statu...	/ELEMENTS/JSP/Product_C/FSIISummary.jsp	Provides a summary of the asset...	2005-08-30 11:46:28.000	FirstSiteII
Template	32c86fa0-d9b6-44a5-adaf-bfcc...	FSIIHead (Product_C status=ED)	/ELEMENTS/JSP/Product_C/FSIIHead.jsp	This template displays the nam...	2005-08-30 10:58:54.000	FirstSiteII
Template	ca94a8e1-7c1b-4e81-b1cc-b70...	FSIIDetail (Media_C status=ED)	/ELEMENTS/JSP/Media_C/FSIIDetail.jsp	Renders a full sized image	2005-08-30 10:40:17.000	FirstSiteII

NOTE: Please remember to import sites first. Also, when importing a flex family, please import the attribute type before the rest of the types in that flex family.

Overriding a Resource's `fw_uid`

When a resource is created, a UUID value is automatically generated as its globally unique identifier and stored in an asset attribute named `fw_uid`. Advanced developers can use the Asset API to override the default `fw_uid` scheme with their own by modifying the `fw_uid` attribute. For information about using the asset API, see the *Oracle WebCenter Sites Developer's Guide* and the *Oracle WebCenter Sites Javadoc*.

Note

We recommend using the default WebCenter Sites `fw_uid` scheme. If you override a resource's default `fw_uid` value, you must make sure the value is unique across all WebCenter Sites instances. Once you set a resource's `fw_uid` attribute, **do not** change the value.

Using Developer Tools with Pre-Existing Resources

If your Oracle WebCenter Sites system is an upgrade from FatWire Content Server, some of its pre-existing resources may have their `fw_uid` values set to `CSSystem:[type]:id`. However, as of Content Server 7.6, a resource's `fw_uid` is generated as a UUID value. Developer Tools can map resources with either type of `fw_uid` value, as long as the resource's `fw_uid` value is globally unique. Therefore, you can continue to use a pre-existing resource's current `fw_uid` value (in the format of `CSSystem:[type]:id`).

When using Developer Tools to work with pre-existing resources, do one of the following (or both):

- We recommend continuing to use the pre-existing resource's `fw_uid` value of `CSSystem: [type] :id`. However, you must ensure that no other WebCenter Sites instance has generated the same `fw_uid` value for a different resource. For example, if you have a WebCenter Sites development instance and you published resources to a management instance, the `fw_uid` values of the published resources remain the same on both instances. Therefore, synchronizing resources between these two instances using Developer Tools will not result in ID conflicts.
- If you have pre-existing resources that were created on separate FatWire Content Server instances, but with identical `fw_uid` values, each of those resources must be assigned a new, unique `fw_uid` value. To avoid ID conflicts, you can either remove the current `fw_uid` value and allow Developer Tools to generate a new UUID value when you export the resource from a WebCenter Sites instance, or you can assign your own unique identifier to the resource. For instructions, see [“Overriding a Resource's `fw_uid`,” on page 45](#).

Note

If you assign a resource a new `fw_uid`, make sure to assign the new `fw_uid` value to every instance of that resource. For example, if you published the resource to another WebCenter Sites instance before modifying its `fw_uid` value, make sure you assign the same `fw_uid` to both copies of that resource.

Site Mappings

Most WebCenter Sites resources, such as assets, are associated with at least one site. When a resource is exported from a WebCenter Sites instance to a workspace, it stores a complete (canonical) list of sites with which it is associated in its `.main.xml` file. The resource's canonical list remains the same on every WebCenter Sites instance, unless you add a new site affiliation, remove a current one, or (if you are an advanced developer) override the resource's natural site mapping using the command-line tool.

Natural Site Mappings

By default, Developer Tools maps resources to their associated sites by referencing the canonical list stored in a resource's `.main.xml` file. If any of the sites referenced in this list exist on the WebCenter Sites instance to which the resource is imported, Developer Tools maps the resource to those sites. If none of the sites referenced in the resource's canonical list exist on the WebCenter Sites instance, the import fails.

For example, Developer A installs two sites – News and Sports. On a separate WebCenter Sites instance, Developer B also installs two sites – News and Weather. Both developers import the same Template asset into their WebCenter Sites instances. This Template asset is associated with both the Sports and Weather sites (both sites are referenced in the asset's canonical list). Upon import, Developer Tools references the Template asset's canonical list and then maps the asset to the Sports site on Developer A's environment and the Weather site on Developer B's environment.

When Developers A and B share the changes they made to the Template asset with each other, Developer Tools maps the asset to the appropriate sites on both WebCenter Sites instances. The canonical list enables Developer Tools to recognize the sites with which the

Template asset is associated, even when the asset is exported into an instance where some of those sites are not installed.

Overriding Natural Site Mappings With the Command-line Tool

Advanced developers can use the command-line tool to import a resource into sites that are not referenced in its canonical list. The command-line tool enables you to create reusable modules, which are workspaces containing resources that can be imported into any site.

For example, a developer creates a blogging solution within the FirstSiteII sample site. This solution includes resources such as a flex family, assets, and Templates. The developer wants the resources to be imported into various sites, including sites that do not exist yet. Since he is an advanced developer, he uses the command-line tool to export the desired resources to an empty workspace, and then archives the content of this workspace (using a `.zip` or `.tar` format). Using the command-line tool, other developers can then customize the site mappings of the resources contained in this module and manually specify the sites into which the module will be imported.

For more information about using the command-line tool, see [Chapter 7](#), “[Command-Line Tool](#).” For a detailed scenario of creating a reusable module, see [Appendix B](#), “[Using the Command-line Tool to Create Reusable Modules](#).”

Chapter 6

Workspaces

This chapter contains information about how Developer Tools stores resources exported from an integrated WebCenter Sites instance.

This chapter contains the following topics:

- [Introduction](#)
- [Workspace Structure](#)

Introduction

A workspace is a disk-based repository of serialized WebCenter Sites data which represent resources from either the workspace's WebCenter Sites instance or another instance's workspace. Workspaces can store any type of WebCenter Sites resource including assets, flex families, sites, and so on. Each workspace is associated with one WebCenter Sites instance.

By default, Eclipse provides each WebCenter Sites instance with a main Developer Tools workspace (located in the Eclipse project folder) which is used for continuous development when working in the Eclipse IDE. Custom workspaces can be created by advanced developers using the Developer Tools command-line tool. Custom workspaces can be used for special projects such as creating modules. (For more information about creating custom workspaces, see [Chapter 7](#), “[Command-Line Tool](#).”)

With the use of a version control system (such as Subversion) or a shared file system, resources stored on one workspace can be exchanged with other workspaces. Any resource exported from a WebCenter Sites instance into the associated workspace can be copied to another WebCenter Sites instance's workspace. This makes the resource available for import into the second workspace's associated WebCenter Sites instance. For more information about sharing resources between different workspaces, see [Chapter 8](#), “[Notes for Integrating with Version Control Systems](#).”

Workspace Structure

Workspaces are created under the `export/envision` folder inside the WebCenter Sites installation directory. The main Developer Tools workspace is located under the `export/envision/cs_workspace` folder. The main Developer Tools workspace is the only visible workspace in the Eclipse project folder.

All workspaces have the same structure. Each resource contained in a workspace is stored as a single file or several interrelated files. The main file for each resource ends in `.main.xml` and contains resource-specific metadata. This main file also contains links to other files associated with the resource (such as an attached document, a JSP file, or a blob). This enables each resource to be fully self-contained, as long as all of a resource's associated files are stored in the workspace. Otherwise, the resource is incomplete.

If a resource has multiple files, those files are listed in the bottom section of the `.main.xml` file as `storable0`, `storable1`, and so on. The associated files of any given resource have similar names. This way, all of a resource's associated files appear together, except `ElementCatalog` entries which are stored separately to preserve their original root path.

The location of a resource's files in the workspace depends on the type of resource. The workspace is divided into the following sections:

- `src/_metadata` – The metadata section of a given resource which contains assets, asset types, sites, roles, and so on. In addition, legacy XML code is stored under the `ELEMENTS/` subfolder.
- `src/jsp/cs_deployed` – This section stores a resource's JSP file under its proper path.

Since workspaces have a highly consistent structure, resources from one workspace can be copied to another. As with all file system copy operations, ensure you are not overwriting files that have the same name.

Asset Storage Structure

Assets are stored under folders named `src/_metadata/ASSET/asset type`. Under this structure there is a two-level hash-based hierarchy, which contains asset data. The name of the asset file is based on the asset name and its `fw_uid` value. If the asset includes attached documents or blobs, the file name is based on the asset name, attribute name, `fw_uid` value, and the name of the document or blob (if any).

For example, a `Document_C` asset named *FSII IES_Manual.pdf* contains an attached document called *IES_MDPlayer_Manual.pdf*. Therefore, this asset is stored as two separate files:

- The first is the `.main.xml` file, which contains the asset's metadata and links to the files associated with the asset:

```
.src/_metadata/ASSET/Document_C/8/0/FSII IES_MDPlayer_Manual
.pdf (aa0b47b5-f558-49d4-a6ac2ee012d1b75) .main.xml
```

- The second is the actual document, which is a PDF file in this example:

```
.src/_metadata/ASSET/Document_C/8/0/FSII IES_MDPlayer_Manual
.pdf.FSIIDocumentFile (aa0b47b5-f558-49d4-8a6a-c2ee012d1b75)
.IES_MDPlayer_Manual.pdf
```

Note

Since all file names of the asset are based on the asset's name, renaming the asset also renames the file. If you are tracking the asset in VCS, delete the file with the old name.

Code-Based Resource Storage Structure

Templates, `CSElements`, and `ElementCatalog` entries are stored under the storage path required by their code elements. The JSP files associated with code-based resources are stored in the workspace under `src/jsp/cs_deployed` and the XML elements are stored under `src/_metadata/ELEMENTS`. The metadata files of code-based resources are stored under the same name as the resource's JSP with the appended `.main.xml` extension. Therefore, the code-based resource's metadata, JSP, and XML files are grouped together in the workspace.

Attribute Editor Storage Structure

Attribute editors are tracked as assets, but also have implicit references to a set of ElementCatalog entries. An attribute editor's ElementCatalog entries are tracked independently.

For example, the TextArea editor uses the OpenMarket/Gator/AttributeTypes/TEXTAREA ElementCatalog entry, which is registered as a dependency. Developer Tools maintains the following files for the TextArea editor:

- The .main.xml file:
`src/_metadata/ASSET/AttrTypes/9/10/TextArea(e64f983d-9c7c-489baedb-476d56f8121e).main.xml`
- The urlxml metadata file:
`src/_metadata/ASSET/AttrTypes/9/10/TextArea.urlxml(e64f983d-9c7c-489b-aedb-476d56f8121e).1095346398911.txt`
- The ElementCatalog entry, tracked as an independent resource:
 - The .main.xml file of the ElementCatalog entry:
`src/_metadata/ELEMENTS/OpenMarket/Gator/AttributeTypes/TEXTAREA.xml.main.xml`
 - The attribute editor's element code:
`src/_metadata/ELEMENTS/OpenMarket/Gator/AttributeTypes/TEXTAREA.xml`

Asset Type Storage Structure

Asset types have a main metadata part and a set of elements. For example, the following is the structure of a Page asset type:

- The main metadata of the page is stored in the .main.xml file:
`src/_metadata/Asset_Type/Page(b8d8ae9-14cc-4554-b80e-0c22e39a3ec8).main.xml`
- The associated elements are tracked independently (each element has its own .main.xml file):
`src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/SearchForm.xml`
`src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/CheckDelete.xml`
`src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/ContentForm.xml.main.xml`
`src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/ContentDetails.xml.main.xml`
`src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/LoadSiteTree.xml`
`src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/IndexReplace.xml.main.xml`
`src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/LoadTree.xml`
`src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/IndexAdd.xml.main.xml`

```
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  SearchForm.xml.main.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  IndexReplace.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  PreviewPage.xml.main.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  LoadTree.xml.main.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  PreUpdate.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  Tile.xml.main.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  SimpleSearch.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  SimpleSearch.xml.main.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  ContentForm.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  AppendSelectDetailsSE.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  LoadSiteTree.xml.main.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  AppendSelectDetails.xml.main.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  ManageSchVars.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  PreviewPage.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  CheckDelete.xml.main.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  ManageSchVars.xml.main.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  PreUpdate.xml.main.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  AppendSelectDetails.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  IndexCreateVerity.xml.main.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  ContentDetails.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  PostUpdate.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  IndexAdd.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  IndexCreateVerity.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  Tile.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  AppendSelectDetailsSE.xml.main.xml  
src/_metadata/ELEMENTS/OpenMarket/Xcelerate/AssetType/Page/  
  PostUpdate.xml.main.xml
```


Chapter 7

Command-Line Tool

This chapter is for advanced developers and provides information about running and using the command-line tool.

This chapter contains the following sections:

- [Introduction](#)
- [Running and Using the Command-Line Tool](#)
- [Creating Modules](#)

Introduction

The Developer Tools command-line tool can be used for deployment and other resource movement activities. Unlike the Eclipse integration, which enables you to work only with the Developer Tools workspace, the command-line tool enables you to work with any workspace. The command-line tool also provides import and export features which are not available when working in the Eclipse IDE. For example, developers can create reusable modules, which are workspaces containing resources that can be imported into any site.

Running and Using the Command-Line Tool

To run the command-line tool:

1. Unzip `csdt.zip`, which is located in the WebCenter Sites distribution package. Open the `csdt-client` folder and place the `csdt-client.jar` file in the classpath. Make sure you have met all the requirements listed in the *Oracle WebCenter Sites Certification Matrix*.
2. Run the command-line tool (`cmd`) and type the following command:

```
java com.fatwire.csdt.client.main.CSDT [ContentServer url]
    username= username password= password
    cmd=export|import|listcs|listds [options]
```

Replace the placeholder parameters with the information about your development environment and the desired command you wish to execute:

- `ContentServer url` – The URL of your local WebCenter Sites instance, including the `ContentServer` servlet (for example, `http://localhost:8080/cs/ContentServer`)
- `username` and `password` – The user name and password of a WebCenter Sites general administrator. This user must be a member of the `RestAdmin` group (for example, `fwadmin/xceladmin`).
- `cmd` – The command to execute. The following commands are available:
 - `export` - Export data from WebCenter Sites to a workspace
 - `import` - Import data into WebCenter Sites from a workspace
 - `listcs` - List WebCenter Sites content
 - `listds` - List workspace content
- `options` – Specify one of the following to either import or export:
 - `resources` - Specify which resources you wish to import or export in a semicolon-separated list of resource type and resource ID. To specify multiple resources, use a comma-separated list. To specify all resources of a given type, use the `*` symbol. If you are exporting a resource (to a workspace), specify the resource's local ID. For example, use `resources=Content_C:12345;Product_C:*` to export a specific `Content_C` asset and all `Product_C` assets.

If you are importing a resource (to a WebCenter Sites instance), specify the resource's `fw_uid`. To get the resource's `fw_uid`, use the `listds` option.

The following is a full listing of resource selectors:

- @SITE – Specify the desired sites
- @ROLE – Specify the desired roles
- @ASSET_TYPE – Specify the desired asset types
- @TREETAB – Specify the desired tree tabs
- @STARTMENU – Specify the desired start menu items
- @ELEMENTCATALOG – Specify the desired ElementCatalog entries
- @SITECATALOG – Specify the desired site catalog entries
- @ALL_NONASSETS – Use this short-hand notation to select all non-asset resources
- @ALL_ASSETS – Use this short-hand notation to select all available assets
- asset type – Specify assets of a certain type.

Note

To verify that selectors are picking up the correct resources before import or export, use `listcs` for export activities and `listds` for import activities. These commands fine-tune the selectors before execution by providing a list of the resources that will be moved.

If resources have dependencies, they are exported and imported automatically. However, dependencies are not listed using the `listcs` and `listds` commands.

- `fromSites` - Select resources from specified sites only.
- `toSites` - (Import only) Override the natural site affiliation during import with a comma-separated list of sites. Specified sites must exist on the target system.
- `modifiedSince` - (Assets only) Select only resources that have been modified since the specified date. The date format is `yyyy-mm-dd hh:MM:ss`.
- `datastore` – (Optional) Specify the workspace you wish to either export WebCenter Sites resources to or import WebCenter Sites resources from. If you do not specify a value for this parameter, the main Developer Tools workspace is specified by default. If you are exporting resources and specify a workspace that does not exist, the command-line tool automatically creates the workspace and exports the desired resources to it.

Example Commands

The following is a list of example commands that can be executed using the command-line tool:

- This command exports the specified Content_C assets and all Product_C assets that belong to FirstSiteII and were modified since the specified date. Since no workspace is specified, the Developer Tools workspace is used by default:

```
java com.fatwire.csdtd.client.main.CSDT http://localhost:8080/
cs/ContentServer username=bob password=password
resources=Content_C:123432123423,11234234212,111234341234;Pr
oduct_C:* fromSite=FirstSiteII modifiedSince=2010-08-08
19:14:00 cmd=export
```

- This command imports the specified Content_C asset and all Product_C assets found in the workspace. Since no workspace is specified, the Developer Tools workspace is used by default:

```
java com.fatwire.csdtd.client.main.CSDT http://localhost:8080/
cs/ContentServer username=bob password=password
resources=Content_C:aad618e9-f04e-4ee4-b902-
076224bb6f7b;Product_C:* fromSite=FirstSiteII cmd=import
```

- This command exports all resources from the site SecondSiteII into a workspace named “TheOutput”:

```
java com.fatwire.csdtd.client.main.CSDT http://localhost:8080/
cs/ContentServer username=bob password=password
resources=@ALL_ASSETS:*;@ALL_NONASSETS:*
fromSite=SecondSiteII datastore=TheOutput cmd=export
```

- This command imports all assets and tree tabs from the workspace named “TheInput” into the site MySite:

```
java com.fatwire.csdtd.client.main.CSDT http://localhost:8080/
cs/ContentServer username=bob password=password
resources=@ALL_ASSETS:*;@TREETAB:* toSites=MySite
datastore=TheInput cmd=import
```

Creating Modules

Modules are sets of related resources exported from your WebCenter Sites instance into a given workspace. The `datastore` parameter enables you to specify the workspace you wish to either export WebCenter Sites resources to or import WebCenter Sites resources from. If you export WebCenter Sites resources to a workspace that does not exist, the command-line tool automatically creates that workspace and exports the desired resources into it.

Modules are reusable, and their content can be imported into any CM sites (even if the site is not listed in the resources’ canonical list of sites). To import a module into a CM site, you must execute an import command. In the `datastore` parameter, specify the workspace that contains the desired resources and in the `toSites` parameter, specify the site(s) to which you wish to import those resources. This imports the content of the workspace into the specified CM site(s).

Chapter 8

Notes for Integrating with Version Control Systems

This chapter provides information about storing the resources, contained in the Developer Tools workspace folder, in a version control system (VCS). This enables you to share the resources in your Developer Tools workspace with other developers.

This chapter contains the following topic:

- [Version Control With Developer Tools](#)

Version Control With Developer Tools

Version control systems (VCS) provide you with the ability to create source code repositories. A VCS can provide advanced tools for versioning, branching, and managing source files. The file system structure in which the Developer Tools workspace stores WebCenter Sites resources enables those resources to be stored on any VCS and enables complete CM sites to be tracked in a VCS.

Integrating Developer Tools With a VCS

The Developer Tools workspace is located in the `src` folder of the Eclipse project. This folder can be accessed directly from the WebCenter Sites installation directory (under `export/envision/cs_workspace/src`). To copy the content of your Developer Tools workspace folder to a VCS, you must first determine which VCS you wish to use. Then, check-in the resources stored in the Developer Tools workspace to the VCS. The VCS you choose to use, determines the steps you must take to check resources in from the Eclipse IDE.

In some cases Eclipse supports the VCS you choose to use by providing a plug-in which allows you to check resources into the VCS directly from Eclipse. For example, if you use the Subversion repository to store the content of your Developer Tools workspace, the Eclipse IDE supports the Subclipse plug-in. Therefore, you can check resources into the Subversion directory directly from the Eclipse IDE.

The Developer Tools workspace stores all resources as one or more files, depending on the type of resource. If you check a resource into a VCS, you must also check-in all associated files of that resource. For example, an asset that contains attached documents (such as a PDF) is represented by a metadata file (`.main.xml`) and the associated document file(s). All associated files of the asset must be checked in to the VCS. Otherwise, the check-in fails. For a detailed description of the Developer Tools workspace layout and for information about how resources are mapped to workspace files, see [Chapter 6](#), “Workspaces.”

Note

Checking data into a VCS from the Developer Tools workspace does not require an extensive understanding of the Developer Tools workspace file structure. Instead, most VCS clients detect incremental changes to the Developer Tools workspace folder and indicate those changes during a VCS commit operation.

Working With a Developer Tools-Integrated VCS

When you check WebCenter Sites resources into a VCS from your Developer Tools workspace, you are able to exchange those resources with other developers and track changes to those resources over time. The following is an example of a development team using a VCS to share WebCenter Sites resources:

Developer A creates a resource in WebCenter Sites and exports it to the Developer Tools workspace. Developer A then checks that resource into a VCS. From the VCS, Developer B can then check-out the resource to his own Developer Tools workspace. This developer can now modify the resource and then check the changes back into the VCS. Developer A, as well as the rest of the development team, can now see the changes made to the resource from the VCS. This enables the members of the development team to synchronize their Developer Tools workspaces with the most recent changes made to the resource. Additional developers can join the group by checking-out resources from the VCS into their own, respective Developer Tools workspaces. As the project advances, the cycle of adding and modifying resources continues.

Note

WebCenter Sites provides a revision tracking system for resources that are kept within a given WebCenter Sites instance. The WebCenter Sites revision tracking system cannot be integrated with a VCS.

Appendices

This part contains the following appendices:

- [Appendix A, “Development Team Integration Use Case”](#)
- [Appendix B, “Using the Command-line Tool to Create Reusable Modules”](#)

Note

The appendices in this part include screen captures of the WebCenter Sites Admin interface and WebCenter Sites: Developer Tools. These screen captures have not been rebranded, but the content is still valid.

Appendix A

Development Team Integration Use Case

This appendix contains a development scenario involving a team of developers using Developer Tools to create a CM site and resources. The development team uses the synchronization tool provided by Developer Tools to manage and exchange resources between multiple WebCenter Sites instances. Using the command-line tool, the CM site and its resources will then be deployed as a nightly build.

The sequence of events for the scenario are as follows:

- [Today – Develop a Site and Associated Resources](#)
- [Three Days Later... Deployment](#)

Today – Develop a Site and Associated Resources

7:14 am – The New Project is Assigned

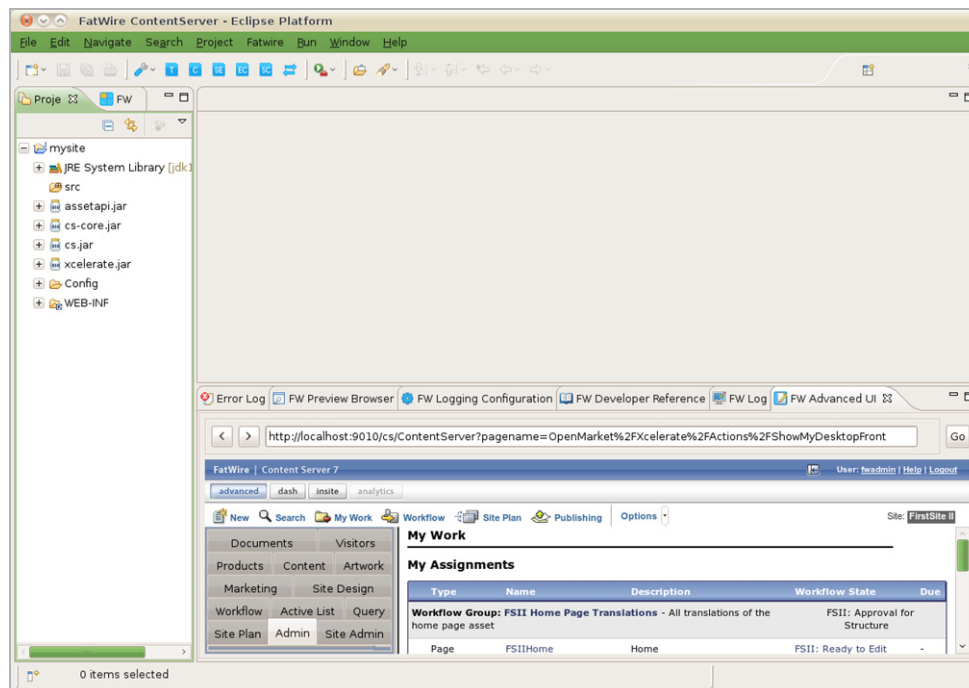
Artie the architect wakes up and finds himself appointed the leader of a new web-based project.

7:34 am – Setting Up Developer Tools

Artie gets some coffee and installs a WebCenter Sites instance on his laptop. He then starts the Eclipse IDE and configures the Developer Tools kit.

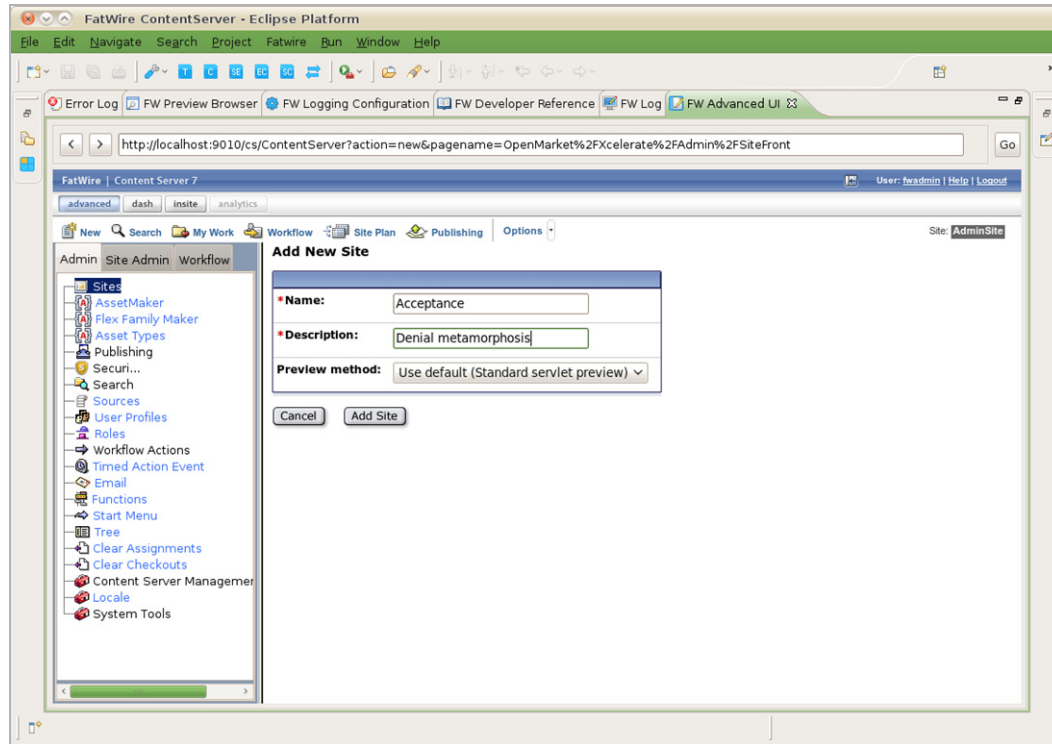
Note

To successfully integrate Eclipse with a WebCenter Sites instance, the configuration screen requires Artie to enter the user name and password of a general administrator. This user must be a member of the `RestAdmin` group.



7:45 am – Create the Site Definition

Artie creates the site definition (naming the site “Acceptance” in this scenario) by using the embedded WebCenter Sites Admin interface view in Eclipse.

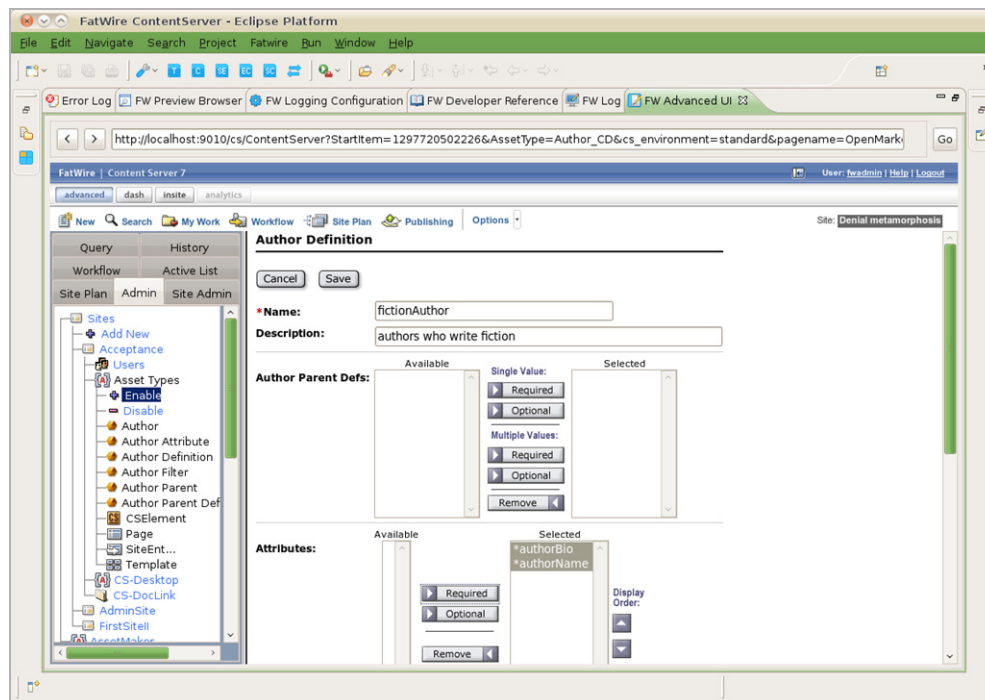


Artie could have used a separate browser window running the WebCenter Sites Admin interface to create the site definition. However, being a huge Eclipse fan, he indulges in the fact that he can usually write complete WebCenter Sites CM sites without leaving Eclipse.

7:46 am – Create Resources for the Site

Artie primes the site:

- Enables asset types.
- Assigns permissions.
- Creates and enables a flex family to store information assets (author information assets in this scenario) for the site:
 - Flex Attribute: Author_A
 - Flex Parent Definition: Author_PD
 - Flex Definition: Author_CD
 - Flex Parent: Author_P
 - Flex Asset: Author_C
 - Flex Filter: Author_F
- Creates flex attributes (authorName and authorBio) and a flex definition (fictionAuthor). He then adds the attributes to the flex definition.



8:12 am – The VCS Discussion

Artie arrives at the office and meets with the rest of the development team – Sonoko (coder), Matthäus (coder), and Yogesh (system engineer). The discussion is about whether to use a version control system for the project:

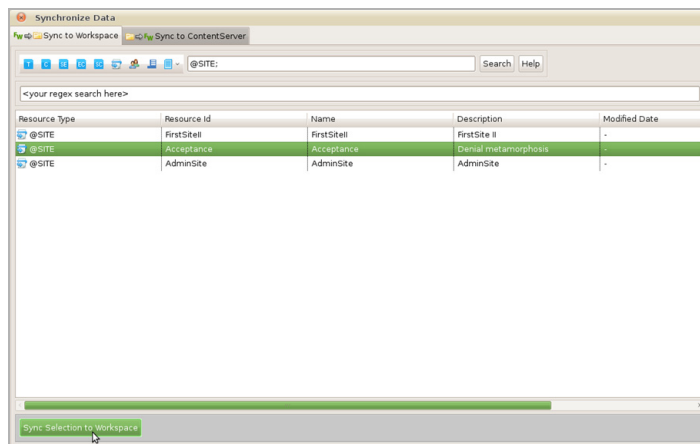
- Yogesh:** I can set up a version control system in-house, but I would like to avoid doing extra work. Do you guys really want one?
- Artie:** Well, we expect this project to last several months. We could just create a shared folder on the network and synchronize all our work to it. However, we have to be careful not to overwrite each other's work. For example, if two people are working on the same Template asset, they will have to wait for each other.
- Sonoko:** Artie, do you remember how the last project turned out to be very intense toward the end? Waiting for other people to finish their work it so unnerving when you have all this pressure from the management. I would much rather use a version control system. Also, can we keep the repository on the web this time so I can work from Stellarbucks when I'm bored?
- Matthäus:** I have to agree with Sonoko. We can get SVN hosting for next to nothing. We can even get an SVN with SSL for peace of mind.
- Yogesh:** If I don't have time to set up an in-house SVN, I could at least get you an SVN hosting subscription.
- Artie:** OK then, I guess we'll go with SVN. Anything else?

Artie and the rest of the development team decide to use SVN to track the resources of their site.

9:42 am – Synchronizing Workspaces With a VCS

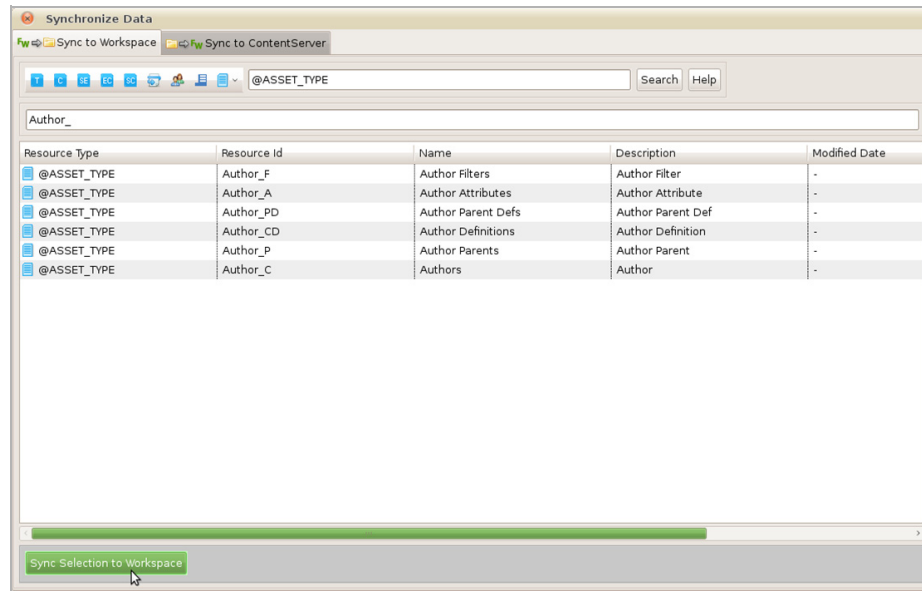
Artie and his team install the Subclipse plug-in from <http://subclipse.tigris.org/>. Now, Artie needs to check in the site and resources he created earlier:

1. Using the Developer Tools Synchronization screen in Eclipse, Artie accesses the “Sync to Workspace” tab and enters the @Site selector in the search field to retrieve a listing of all the sites on his WebCenter Sites instance.



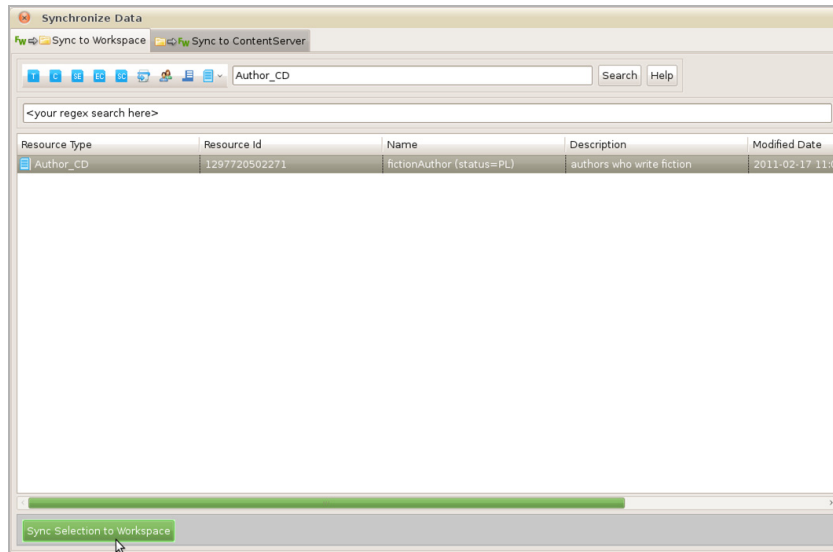
Artie selects the site he created earlier (“Acceptance” site) and clicks the **Sync Selection to Workspace** option to export the site definition from his WebCenter Sites instance to his workspace.

2. Next, Artie exports the site’s associated flex family to the workspace. He uses the `@ASSET_TYPE` selector to list all the assets on his WebCenter Sites instance. To narrow down the results, he uses the `Author_` search string. Artie then selects all listed items and clicks **Sync Selection to Workspace**.



The flex family types are serialized to the workspace, including their type-specific ElementCatalog entries.

- Now, Artie exports the flex definition to his workspace. He uses the `Author_CD` selector, which lists all available definitions of that type. In this case, there is only one definition (`fictionAuthor`).



Note

Artie did not select the flex attributes (`Author_A` instances) on which the site definition depends because he knows the Developer Tools kit synchronizes them automatically with the definition.

4. Artie takes a quick look at his workspace in the Eclipse “Project Explorer” view to verify that all his work is there. From top to bottom, he sees the following under the project’s `src` folder:
- `_metadata.ASSET_TYPE` entries for each asset type he synchronized
 - `_metadata.ASSET.Author_A` files for both of the `Author_A` attributes
 - `_metadata.ASSET.Author_CD` file for the serialized definition
 - `_metadata.ELEMENTS` entries for `ElementCatalog` entries related to each of the serialized asset types
 - `_metadata.SITE` entry for the site definition

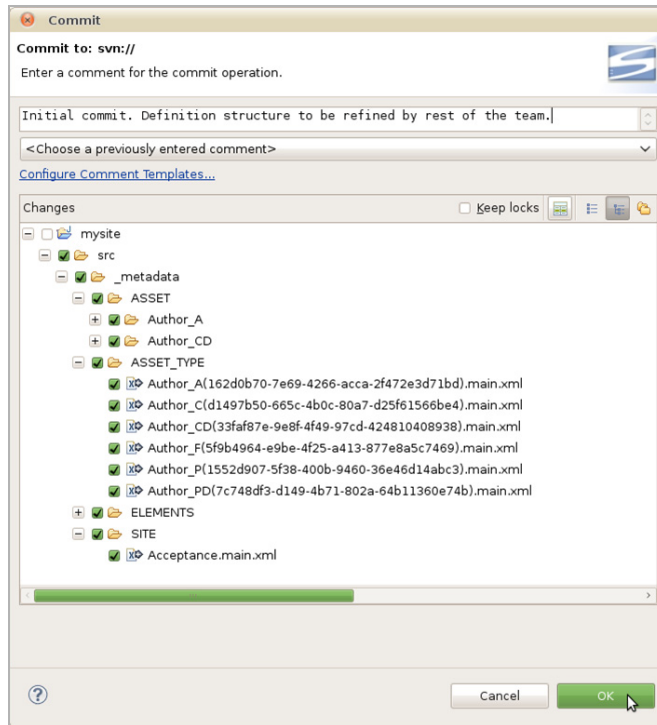


Note

Artie could have looked in the `export/envision/cs_workspace` folder in his WebCenter Sites installation directory to see the same data.

Looks like all the resources are in Artie’s workspace now. However, this is all on Artie’s laptop and the team has no access to it. Time to check-in.

5. Using Subclipse, Artie connects to the development team’s SVN repository and shares his Developer Tools project by committing his main Developer Tools workspace folder (`src` folder) to the SVN repository.



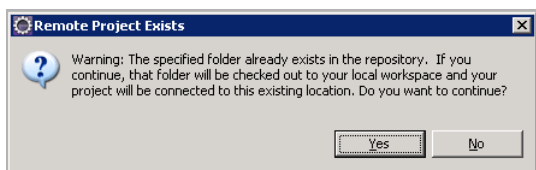
Note

The main Developer Tools workspace is located under the `src` folder in the Eclipse “Project Explorer” view. Only commit the files that are located inside the `src` folder. All other files are auxiliary local resources and must not be committed.

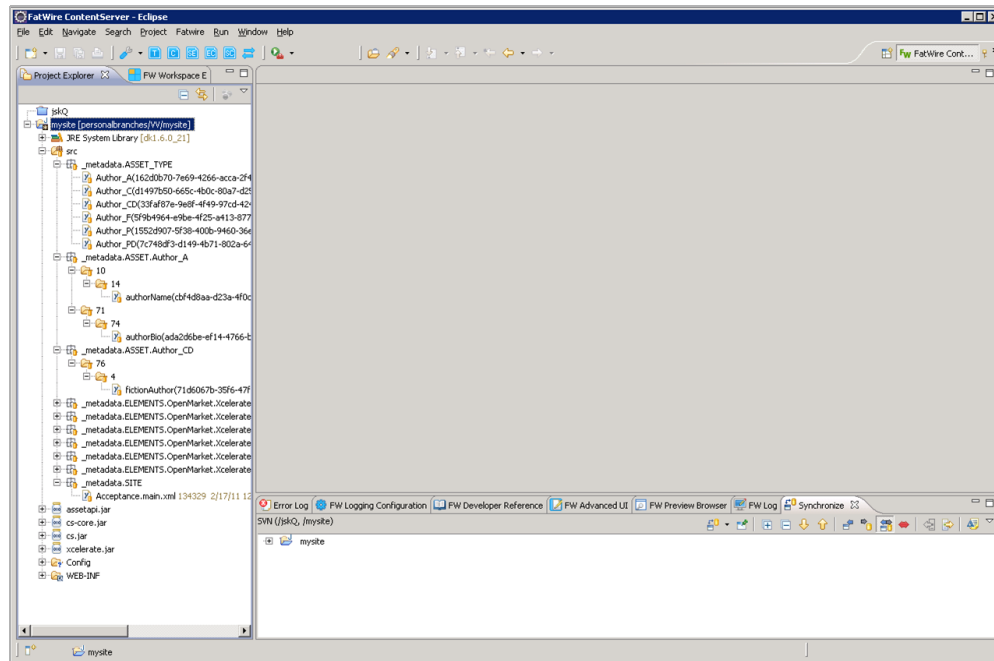
10:12 am – The Other Team Members Synchronize their Workspaces to the SVN Repository

Sonoko and Matthäus just finished setting up their own, individual Eclipse-integrated WebCenter Sites instances. They both connect their Eclipse projects to the SVN repository.

Since Artie checked the site and its resources into the SVN repository earlier, Subclipse detects that the target location already exists:



Sonoko and Matthäus both synchronize their main Developer Tools workspaces with the resources Artie made available in the SVN repository. Those resources are now accessible on both Sonoko's and Matthäus' main Developer Tools workspaces.



However, the resources are not synchronized with Sonoko's or Matthäus' WebCenter Sites instances yet.

10:18 am – Synchronize the Workspace to the WebCenter Sites Instance

Sonoko opens the Developer Tools Synchronization screen and selects the **Sync to WebCenter Sites** tab. All resources contained in Sonoko's main Developer Tools workspace are listed.

Synchronize Data

Sync to Workspace

Sync to ContentServer

Resource Type	Resource ID	Name	Element (if any)	Description	Modified Date
Author_CD	7160657b-2c96-47f4-a87-3e87...	fictionauthor (status=PL)		authors who write fiction	2011-02-18 13:16:16
Author_A	add5dfe1-f714-4766-b446-911...	authorbio (status=L)		author biography	2011-02-18 13:16:16
Author_A	cdf4d8a-dc23a-4f06-6556-e8f...	authorhome (status=L)		author name	2011-02-18 13:16:16
@BTE	Acceptance		null		2011-02-18 13:16:16
(@ELEMCATALOG	OpenMarket/Dicataloger/Asset Ty...	*	/ELEMENTS/OpenMarket/Zicater...	null	2011-02-18 13:16:16
(@ELEMCATALOG	OpenMarket/Dicataloger/Asset Ty...	*	/ELEMENTS/OpenMarket/Zicater...	null	2011-02-18 13:16:16
(@ELEMCATALOG	OpenMarket/Dicataloger/Asset Ty...	*	/ELEMENTS/OpenMarket/Zicater...	null	2011-02-18 13:16:16
(@ELEMCATALOG	OpenMarket/Dicataloger/Asset Ty...	*	/ELEMENTS/OpenMarket/Zicater...	null	2011-02-18 13:16:16
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(@ELEMCATALOG	OpenMarket/Dicataloger/Asset Ty...	*	/ELEMENTS/OpenMarket/Zicater...	null	2011-02-18 13:16:16
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(@ELEMCATALOG	OpenMarket/Dicataloger/Asset Ty...	*	/ELEMENTS/OpenMarket/Zicater...	null	2011-02-18 13:16:16
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(@ELEMCATALOG	OpenMarket/Dicataloger/Asset Ty...	*	/ELEMENTS/OpenMarket/Zicater...	null	2011-02-18 13:16:16
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(@ELEMCATALOG	OpenMarket/Dicataloger/Asset Ty...	*	/ELEMENTS/OpenMarket/Zicater...	null	2011-02-18 13:16:16
(@ELEMCATALOG	OpenMarket/Dicataloger/Asset Ty...	*	/ELEMENTS/OpenMarket/Zicater...	null	2011-02-18 13:16:16
(@ELEMCATALOG	OpenMarket/Dicataloger/Asset Ty...	*	/ELEMENTS/OpenMarket/Zicater...	null	2011-02-18 13:16:16
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(@ELEMCATALOG	OpenMarket/Dicataloger/Asset Ty...	*	/ELEMENTS/OpenMarket/Zicater...	null	2011-02-18 13:16:16
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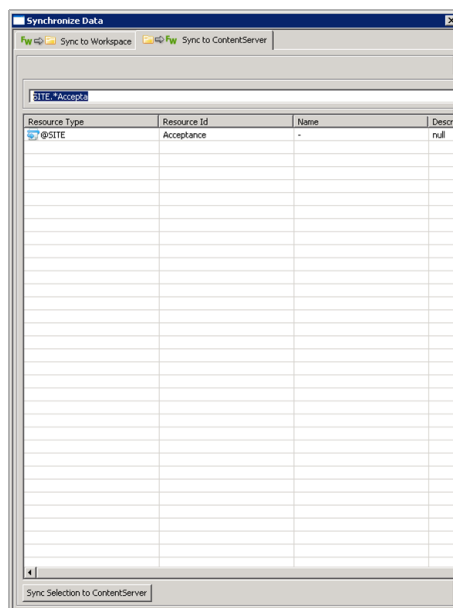
As required, she will first import the site definition, then the flex family, and then the assets, in separate runs as described below:

Note

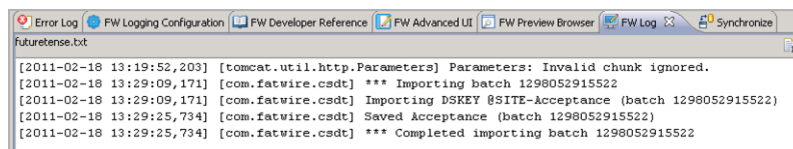
Matthäus will do the same later, when he finishes his meeting with Marketing.

1. Import the site definition (“Acceptance” in this scenario):

Sonoko imports the site definition first. She narrows down her search by using the `Site.*Accepta` expression in the search field. She then selects the site (“Acceptance”) and synchronizes it to her WebCenter Sites instance by clicking **Sync to WebCenter Sites**.

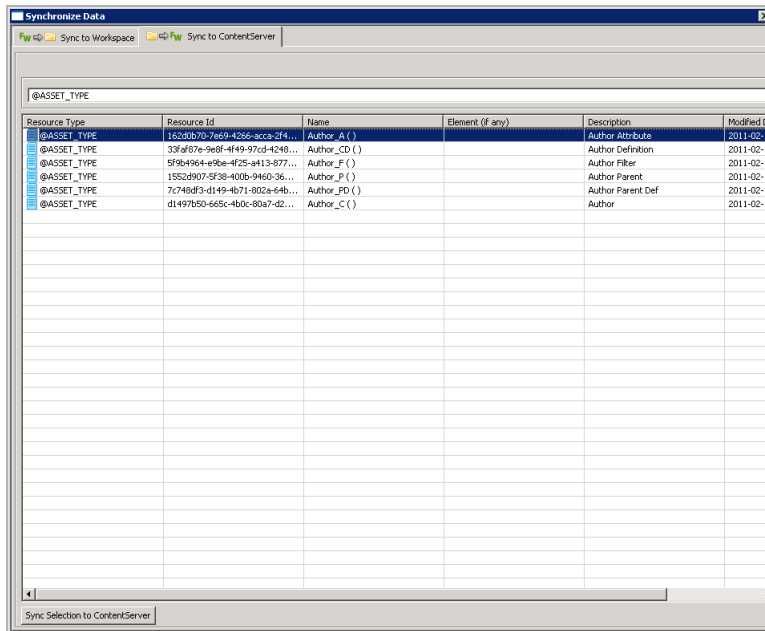


Using the “FW Log” view, Sonoko verifies that the site is imported successfully:



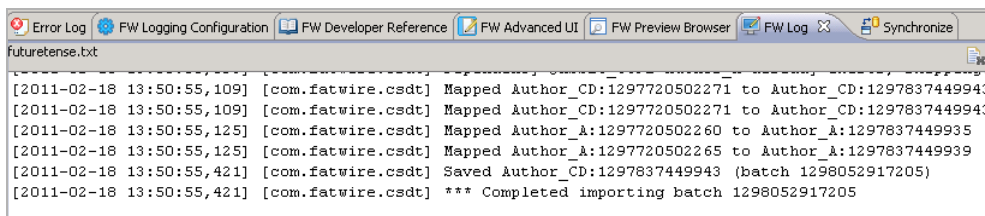
2. Sonoko opens the synchronization screen again, and import the site's flex family, starting with the flex attribute (Author_A in this scenario):

Since Sonoko did not set up the “Acceptance” site's flex family on her WebCenter Sites instance, she must first import the flex attribute (Author_A) to her WebCenter Sites instance. Once the flex attribute is imported, she can then synchronize the rest of the asset types that comprise the site's flex family to her WebCenter Sites instance.



3. As a final step, Sonoko synchronizes the flex definition, which automatically imports the required attributes.

The “FW Log” view shows that the local asset identifiers of all the site's resources are re-mapped when imported into the new WebCenter Sites instance.

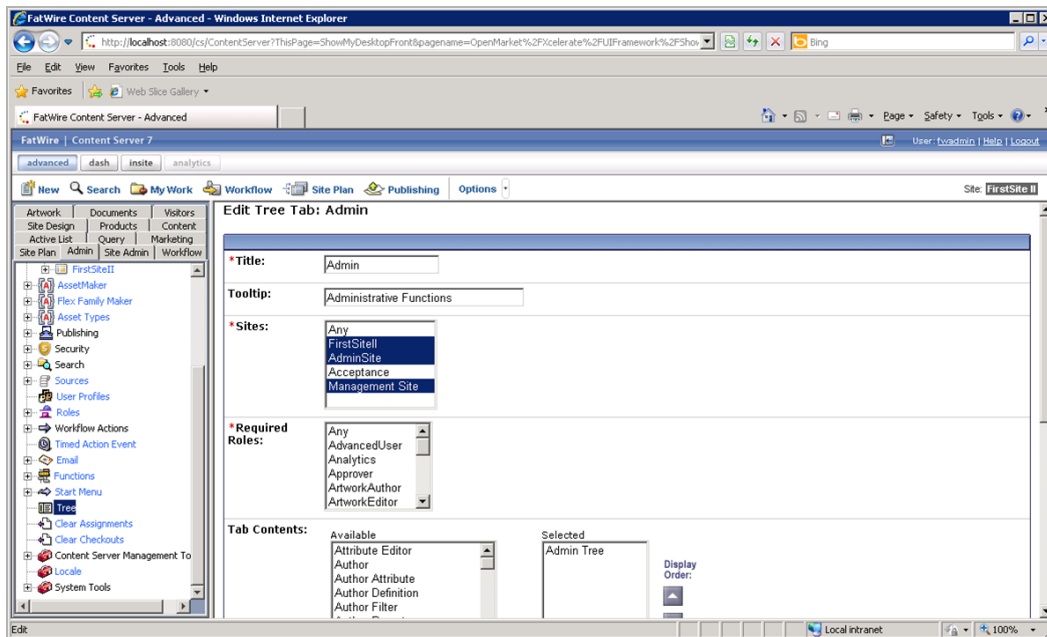


10:21 am – Assign Site Permissions

After synchronizing the resources to her WebCenter Sites instance, Sonoko assigns site permissions to herself. These permissions enable her to access the site and its resources from the WebCenter Sites Admin interface.

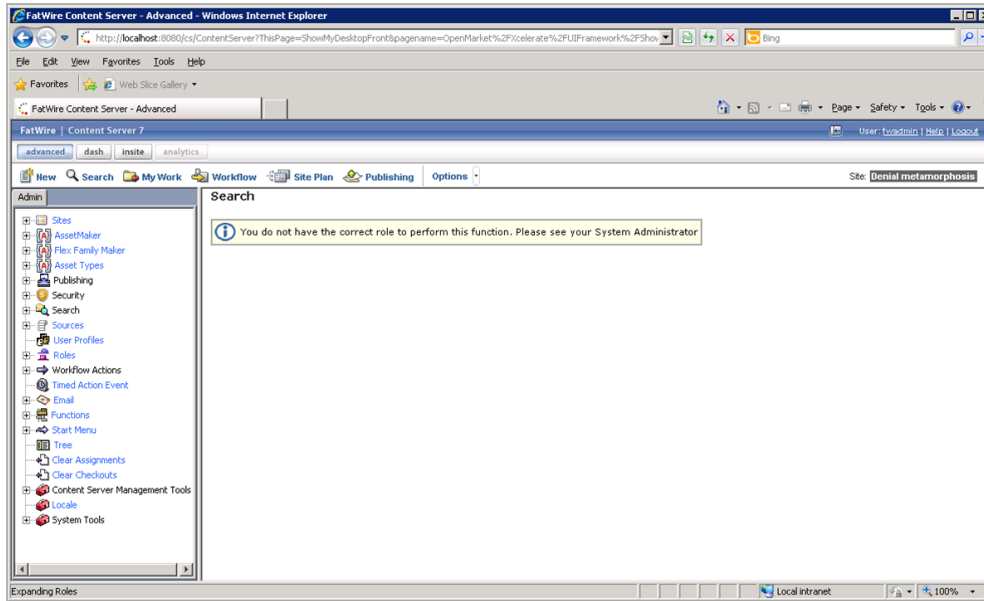
Note

To access the tree applet in the new site, Sonoko must assign at least one tree tab to the site.



10:22 am – The Start Menu Issue

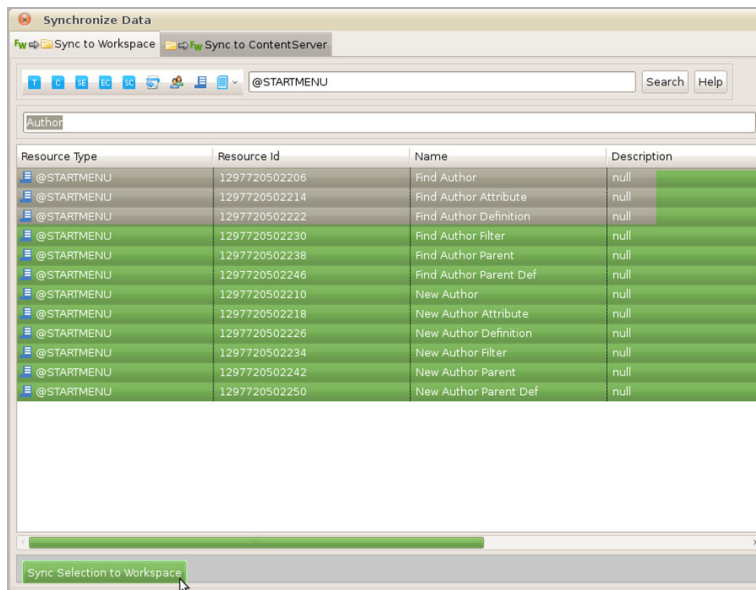
Sonoko logs into the site, and clicks the **New** option. However, she finds there are no start menu items available. Of course, Artie did not check the site's start menu items into the SVN repository.



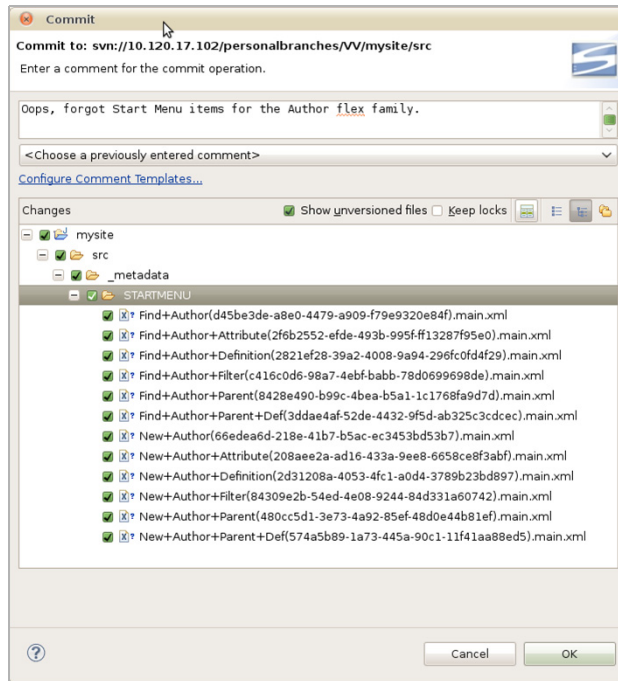
10:24 am – Resolving the Start Menu Issue

Sonoko sends Artie an IM informing him that he forgot to check in the new site's start menu items.

1. Artie synchronizes the site's start menu items to his main Developer Tools workspace.



2. Artie then checks the site's start menu items into the SVN repository.

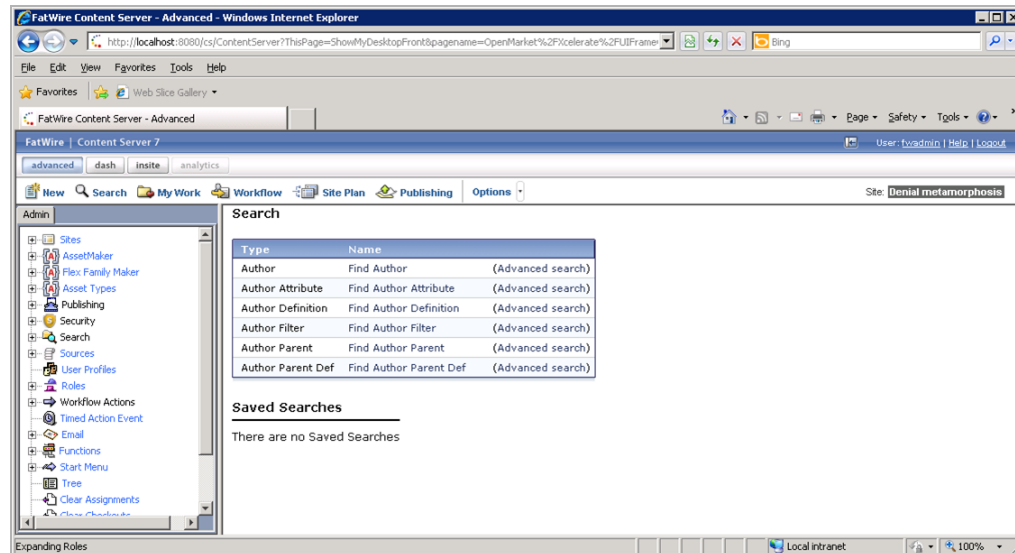


3. Sonoko just got a cup of earl grey tea with two sugars. She comes back to her desk to find that Artie committed the start menu items to the SVN. Sonoko then updates her Eclipse project. She accesses the SVN repository and synchronizes the start menu items to her main Developer Tools workspace. She then imports those start menu items to her WebCenter Sites instance.

Synchronize Data				
Sync to Workspace Sync to ContentServer				
@STARTMENU				
Resource Type	Resource Id	Name	Element (if any)	Description
@STARTMENU	66edeaa6d-218e-41b7-b5ac-ec...	New Author ()		null
@STARTMENU	c416c0d6-98a7-4ebf-babb-78d...	Find Author Filter ()		null
@STARTMENU	d45be3de-a8e0-4479-a909-f7...	Find Author ()		null
@STARTMENU	2821ef28-39a2-4008-9a94-29...	Find Author Definition ()		null
@STARTMENU	2f6b2552-efde-493b-995f-ff13...	Find Author Attribute ()		null
@STARTMENU	208aee2a-ad16-433a-9ee8-66...	New Author Attribute ()		null
@STARTMENU	8428e490-b99c-4bea-b5a1-1c...	Find Author Parent ()		null
@STARTMENU	2d31208a-4053-4fc1-a0d4-378...	New Author Definition ()		null
@STARTMENU	480cc5d1-3e73-4a92-85ef-48d...	New Author Parent ()		null
@STARTMENU	84309e2b-54ed-4e08-9244-84...	New Author Filter ()		null
@STARTMENU	3ddae4af-52de-4432-9f5d-ab3...	Find Author Parent Def ()		null
@STARTMENU	574a5b89-1a73-445a-90c1-11f...	New Author Parent Def ()		null

4. Without restarting her WebCenter Sites instance, Sonoko clicks **Search**.

The start menu items she imported into her WebCenter Sites instance are listed:



11:17 am – Marketing Requests Changes

Subject: Proposed Author Definition Changes

Date: Wed, 16 Feb 2011 11:17:39

From: matthäus.companynone.com

To: Tech-Development

Team,

I just synchronized your changes into my system. As per my meeting with Marketing, we must have date of birth and birthplace attributes in the Author Definition. I noticed these attributes do not exist, so I will add them. Artie, can you review the changes I make when you have the chance?

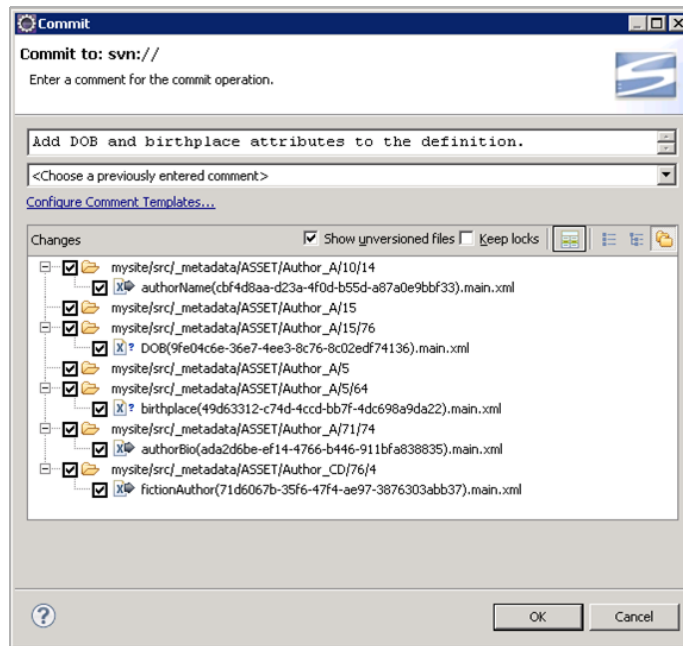
Regards,

Matthäus

11:22 am – Adding New Attributes to the Author Definition

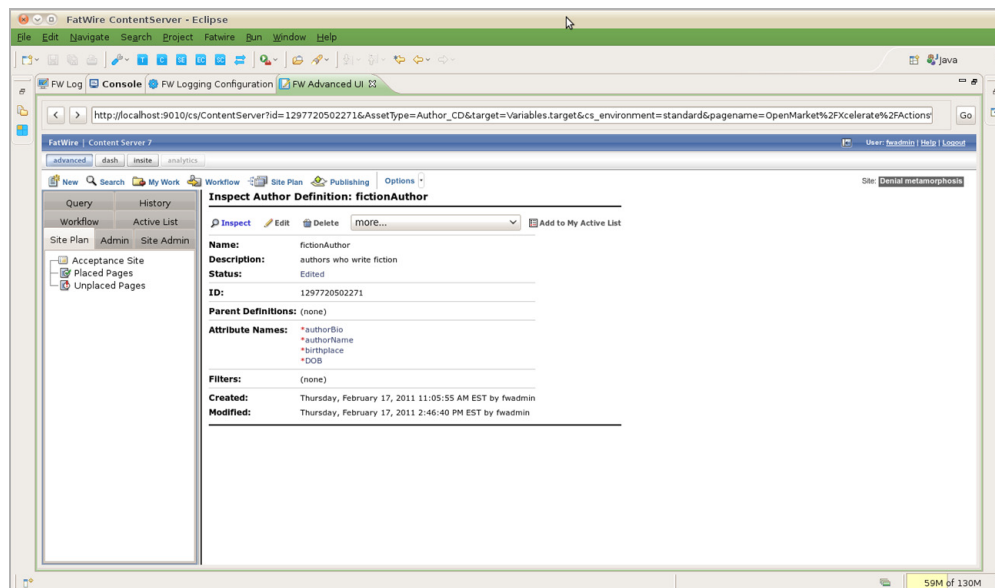
Matthäus creates the attributes Marketing requested and adds them to the flex definition (Author definition in this scenario). He then exports the new attributes and the flex

definition to his main Developer Tools workspace and commits them to the SVN repository.



11:25 am – Reviewing the Changes to the Site

Artie retrieves the modified Author definition from SVN and imports it into his WebCenter Sites instance.



Subject: RE: Proposed Author Definition Changes
 Date: Wed, 16 Feb 2011 11:37:31
 From: artie.companynone.com
 To: matthäus.companynone.com

Matthäus,

Thank you for taking care of this. Corporate standards require us to capitalize the first letter of each subsequent word. I will delete the birthplace attribute and add birthPlace instead.

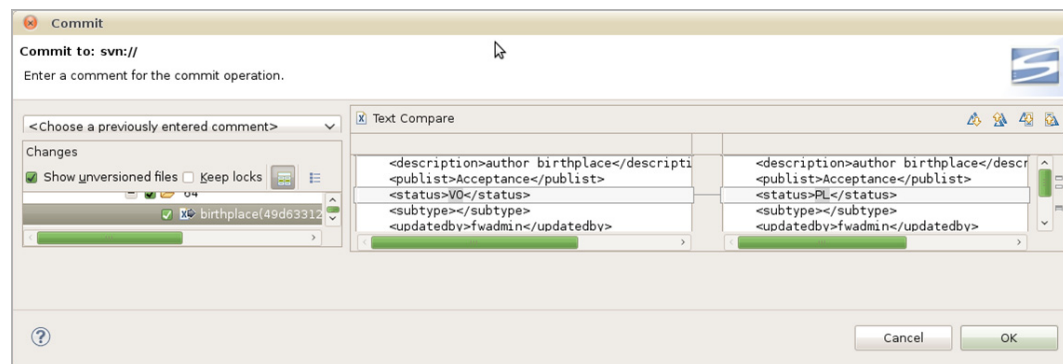
Thank you,

Artie

11:44 am – Modifying the Attributes of the Author Definition

1. Artie creates the “birthPlace” attribute and adds it to the flex definition. He then removes the original “birthplace” attribute from the site definition.
2. Artie commits the new attribute and the changes to the Author definition to the SVN repository. He then verifies that the “birthplace” attribute has a status of “VO,” indicating the attribute is voided.

When Sonoko and Matthäus update their WebCenter Sites instances, the “birthplace” attribute will correspondingly be voided on their own workspaces.



11:53 am – The Team Updates Their Workspaces and WebCenter Sites Instances

1. Sonoko and Matthäus update their main Developer Tools workspaces with the resources Artie checked in to the SVN repository.
2. They then import the resources in their workspaces to their WebCenter Sites instances by opening the “Synchronize to WebCenter Sites” tab. For convenience, they sorted by the “Modified Date” column so the most recent changes are shown on top.

Any voided attributes (such as the “birthplace” attribute Artie voided) show a status hint (status=VO) in the “Name” column.

Resource Type	Resource Id	Name	Element (if any)	Description	Modified Date
Author_CD	71d6067b-35f6-47f4-ae97-387...	fictionAuthor (status=ED)		authors who write fiction	2011-02-18 15:17:56.609
Author_A	42afd458-e90c-4e18-a1b6-47d...	birthPlace (status=PL)		place of birth	2011-02-18 15:17:56.421
Author_A	ada2d6be-ef14-4766-b446-911...	authorBio (status=ED)		author biography	2011-02-18 15:17:56.046
Author_A	9fe04c6e-36e7-4ee3-8c76-8d...	DOB (status=PL)		date of birth	2011-02-18 15:17:55.937
Author_A	49d63312-c74d-4ccd-bb7f-4dc...	birthplace (status=VO)		author birthplace	2011-02-18 15:17:55.765
Author_A	cbf4d8aa-d23a-4f0d-b55d-a87...	authorName (status=ED)		author name	2011-02-18 15:17:55.484
@STARTMENU	c416c0d6-98a7-4ebf-babb-78d...	Find Author Filter ()		null	2011-02-18 14:22:10.718
@STARTMENU	d45be3de-a8e0-4479-a909-f79...	Find Author ()		null	2011-02-18 14:22:10.718
@STARTMENU	2d31208a-a053-4fc1-a0d4-378...	New Author Definition ()		null	2011-02-18 14:22:10.703
@STARTMENU	480cc5d1-3e73-4a92-95ef-48d...	New Author Parent ()		null	2011-02-18 14:22:10.703
@STARTMENU	574a5b99-1a73-445a-90c1-11f...	New Author Parent Def ()		null	2011-02-18 14:22:10.703
@STARTMENU	66ede8d-218e-41b7-b5ac-ec3...	New Author ()		null	2011-02-18 14:22:10.687
@STARTMENU	3ddae4ef-52de-4432-9f5d-ab3...	Find Author Parent Def ()		null	2011-02-18 14:22:10.687
@STARTMENU	2821ef28-39a2-4008-9a94-296...	Find Author Definition ()		null	2011-02-18 14:22:10.671
@STARTMENU	8428e190-b99c-4bea-b5a1-1c1...	Find Author Parent ()		null	2011-02-18 14:22:10.671
@STARTMENU	208aee2a-ad16-433a-9ee8-66...	New Author Attribute ()		null	2011-02-18 14:22:10.656
@STARTMENU	84309e2b-54ed-4e08-9244-84...	New Author Filter ()		null	2011-02-18 14:22:10.656
@STARTMENU	2f6b2552-efde-493b-995f-f13...	Find Author Attribute ()		null	2011-02-18 14:22:10.609
@ELEMENTCATALOG	OpenMarket/Xcelerate/AssetTy...	-	/ELEMENTS/OpenMarket/Xceler...	null	2011-02-18 13:16:19.843
@ELEMENTCATALOG	OpenMarket/Xcelerate/AssetTy...	-	/ELEMENTS/OpenMarket/Xceler...	null	2011-02-18 13:16:19.843
@ELEMENTCATALOG	OpenMarket/Xcelerate/AssetTy...	-	/ELEMENTS/OpenMarket/Xceler...	null	2011-02-18 13:16:19.843
@ELEMENTCATALOG	OpenMarket/Xcelerate/AssetTy...	-	/ELEMENTS/OpenMarket/Xceler...	null	2011-02-18 13:16:19.828
@ELEMENTCATALOG	OpenMarket/Xcelerate/AssetTy...	-	/ELEMENTS/OpenMarket/Xceler...	null	2011-02-18 13:16:19.828

3. Sonoko and Matthäus import these changes from their workspaces to their WebCenter Sites instances. Their workspaces and WebCenter Sites instances are now up to date.

12:27 pm – The Team Creates a Template Asset for the Site

1. (12:27 pm) Matthäus creates a Template asset for the site’s “Welcome” page.

New Template

Template

General

Site: Acceptance

Name: welcome

Description: welcome page

AssetType: can apply to any asset type

Subtype: Any

Element

Usage: Usage unspecified

Element Description:

Element Type

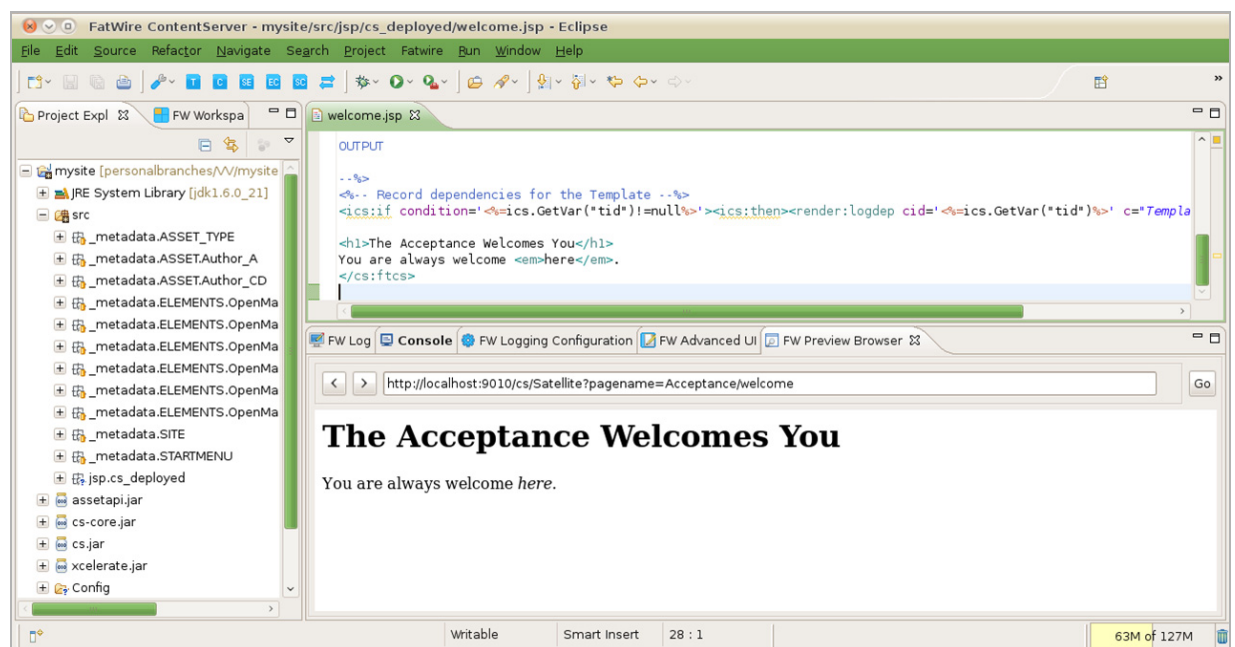
☐ XML ☒ JSP ☐ HTML ☐ Existing Element

Root Element: /welcome

Storage path: /welcome.jsp

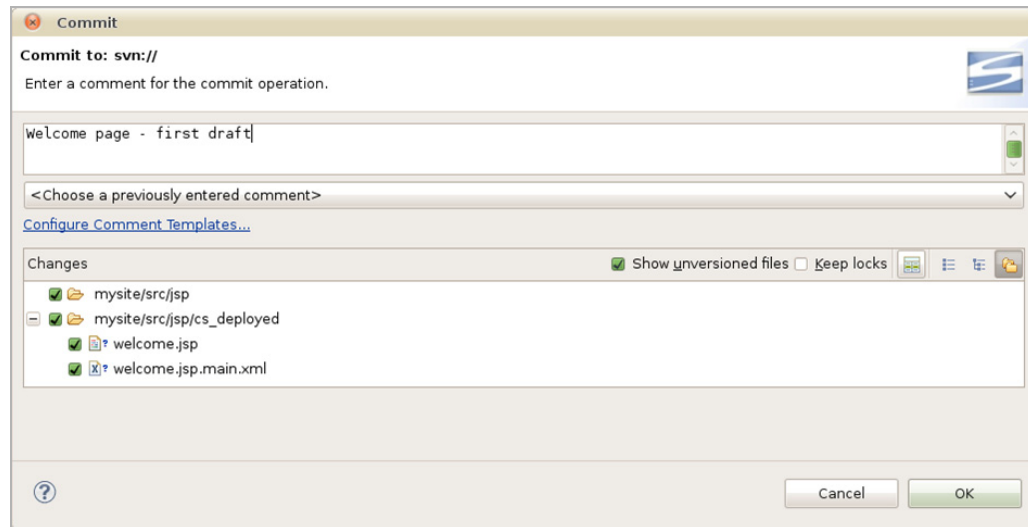
< Back Next > Cancel Finish

2. (12:34 pm) Matthäus edits the Template asset and previews the changes in the “FW Preview Browser” view. As soon as he saves the changes made to the Template asset’s JSP, he uses the **Ctrl-r** keyboard command to refresh the preview browser.

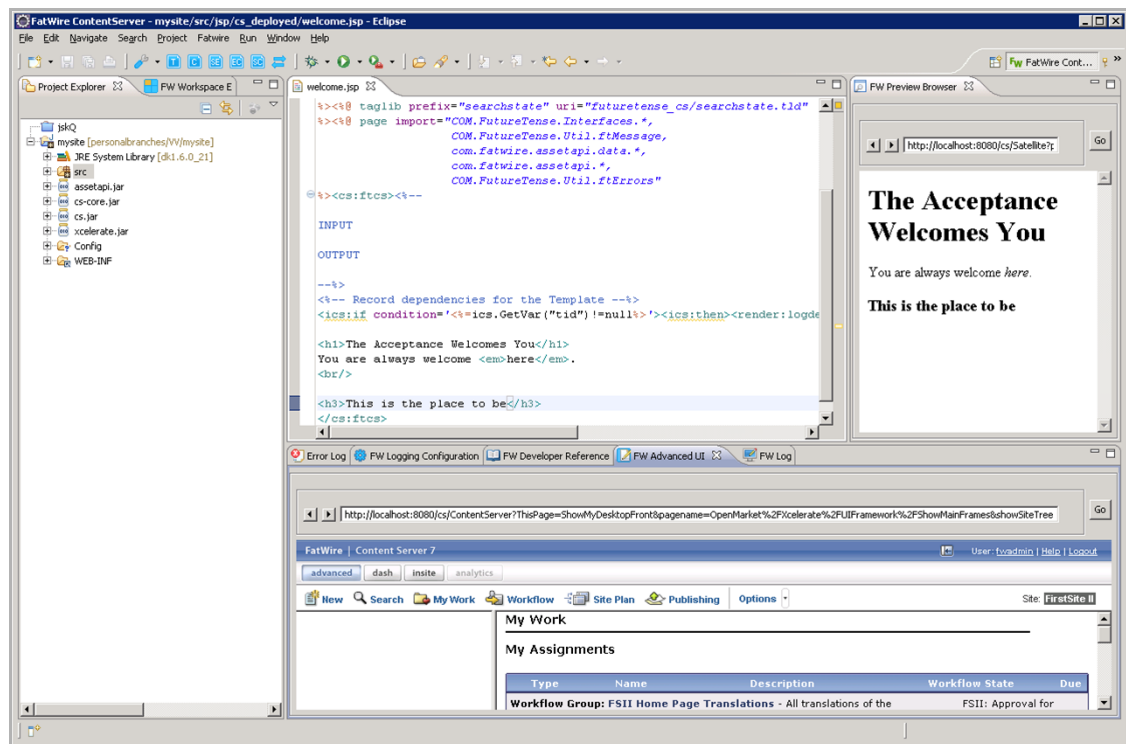


3. (12:39 pm) Matthäus commits the Template's .jsp and .main.xml files to the SVN repository.

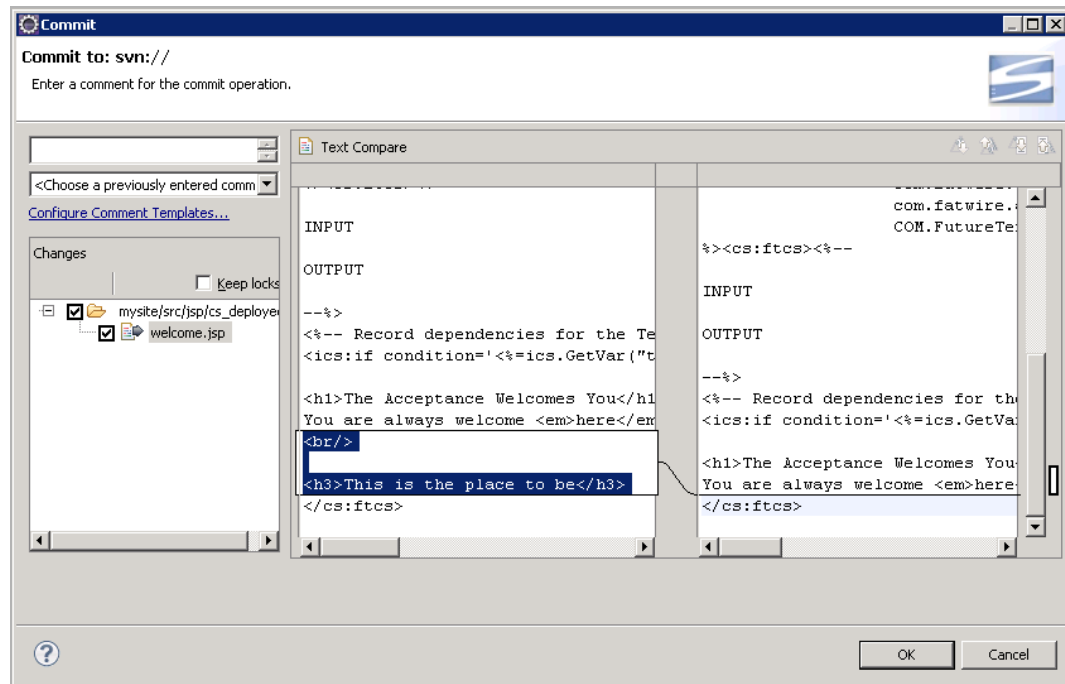
Subclipse finds all changes to the project and brings those changes to the attention of the developer. Since the only new asset was the Template asset, Matthäus is able to deduce that the .main.xml file is the Template's metadata and the JSP file is the Template's code.



4. (12:44 pm) Sonoko makes some touch ups to the Template's JSP file in her own workspace.



5. Sonoko reviews the changes to the JSP file and then commits those changes to the SVN.



Note

If another team member were to modify and check in this file at the same time as Sonoko, SVN would indicate to Sonoko that another version of the file is already checked in. She would then be able to integrate those changes with her own to avoid inadvertent overwrites.

Three Days Later... Deployment

Yogesh uses the command-line tool to deploy the site. For information about the commands used in this section, see [Chapter 7](#), “[Command-Line Tool](#).”

9:32 am – Preparing for Deployment

Yogesh finally got around to setting up the test environment and is preparing to deploy the current build using the command-line tool. He installed a WebCenter Sites system on hardware that matches the environment used in production.

To test the Developer Tools import before adding it to a fully-automated nightly script

1. Using the command-line tool, Yogesh checks the “Acceptance” site and its resources out of SVN and into the workspace of the target WebCenter Sites instance.

Command:

```
## go to the workspace location under export/envision/
   cs_workspace in the CS install directory
## create if not there
/home$ mkdir /opt/cs/export/envision/cs_workspace
/home$ cd /opt/cs/export/envision/cs_workspace

## checkout site from svn
/opt/cs/export/envision/cs_workspace$ svn checkout svn://
    yoursvnhost/projects/mysite/src
```

Output:

```
A  mysite/src
A  mysite/src/_metadata
A  mysite/src/_metadata/ASSET
A  mysite/src/_metadata/ASSET/Author_A
A  mysite/src/_metadata/ASSET/Author_A/10
A  mysite/src/_metadata/ASSET/Author_A/10/14
A  mysite/src/_metadata/ASSET/Author_A/10/14/authorName(cbf4d8aa-
d23a-4f0d-b55d-a87a0e9bbf33).main.xml
A  mysite/src/_metadata/ASSET/Author_A/11
A  mysite/src/_metadata/ASSET/Author_A/11/79
A  mysite/src/_metadata/ASSET/Author_A/11/79/birthPlace(42afd458-
e90c-4e18-a4b6-47d322b46414).main.xml
A  mysite/src/_metadata/ASSET/Author_A/5
A  mysite/src/_metadata/ASSET/Author_A/5/64
A  mysite/src/_metadata/ASSET/Author_A/5/64/birthplace(49d63312-
c74d-4ccd-bb7f-4dc698a9da22).main.xml
A  mysite/src/_metadata/ASSET/Author_A/15
A  mysite/src/_metadata/ASSET/Author_A/15/76
A  mysite/src/_metadata/ASSET/Author_A/15/76/DOB(9fe04c6e-36e7-4ee3-
8c76-8c02edf74136).main.xml
A  mysite/src/_metadata/ASSET/Author_A/71
A  mysite/src/_metadata/ASSET/Author_A/71/74
A  mysite/src/_metadata/ASSET/Author_A/71/74/authorBio(ada2d6be-
ef14-4766-b446-911bfa838835).main.xml
```

```

A    mysite/src/_metadata/ASSET/Author_CD
A    mysite/src/_metadata/ASSET/Author_CD/76
A    mysite/src/_metadata/ASSET/Author_CD/76/4
A    mysite/src/_metadata/ASSET/Author_CD/76/4/fictionAuthor(71d6067b-
35f6-47f4-ae97-3876303abb37).main.xml
A    mysite/src/_metadata/ASSET_TYPE
A    mysite/src/_metadata/ASSET_TYPE/Author_F(5f9b4964-e9be-4f25-a413-
877e8a5c7469).main.xml
A    mysite/src/_metadata/ASSET_TYPE/Author_P(1552d907-5f38-400b-9460-
36e46d14abc3).main.xml
A    mysite/src/_metadata/ASSET_TYPE/Author_A(162d0b70-7e69-4266-acca-
2f472e3d71bd).main.xml
A    mysite/src/_metadata/ASSET_TYPE/Author_CD(33faf87e-9e8f-4f49-
97cd-424810408938).main.xml
A    mysite/src/_metadata/ASSET_TYPE/Author_PD(7c748df3-d149-4b71-
802a-64b11360e74b).main.xml
A    mysite/src/_metadata/ASSET_TYPE/Author_C(d1497b50-665c-4b0c-80a7-
d25f61566be4).main.xml
A    mysite/src/_metadata/STARTMENU
A    mysite/src/_metadata/STARTMENU/Find+Author+Attribute(2f6b2552-
efde-493b-995f-ff13287f95e0).main.xml
...

```

- Yogesh runs a workspace listing (`cmd=listds`) to verify that the site and all of its resources will be imported into the WebCenter Sites instance. He uses the `@ALL_ASSETS` and `@ALL_NONASSETS` selectors to generate listings of all asset and non-asset resources in the workspace:

- Command** to use the `@ALL_ASSETS` selector:

```

/opt/cs/export/envision/cs_workspace$ export
CLASSPATH=csdt-client-1.0.2.jar
/opt/cs/export/envision/cs_workspace$ java
com.fatwire.csdt.client.main.CSDT
http://localhost:9010/cs/ContentServer username=fwadmin
password=xceladmin resources=@ALL_ASSETS cmd=listds

```

Output:

```

Resource Type ||| Resource Id ||| Name |||
Description ||| Modified On
-----
Author_A ||| cbf4d8aa-d23a-4f0d-b55d-a87a0e9bbf33 ||| authorName (
status=ED ) ||| author name ||| 2011-02-17 15:26:34.000
Author_A ||| 42afd458-e90c-4e18-a4b6-47d322b46414 ||| birthPlace (
status=PL ) ||| place of birth ||| 2011-02-17 15:26:34.000
Author_A ||| 9fe04c6e-36e7-4ee3-8c76-8c02edf74136 ||| DOB (
status=PL ) ||| date of birth ||| 2011-02-17 15:26:34.000
Author_CD ||| 71d6067b-35f6-47f4-ae97-3876303abb37 |||
fictionAuthor ( status=ED ) ||| authors who write fiction |||
2011-02-17 15:26:34.000
Author_A ||| ada2d6be-ef14-4766-b446-911bfa838835 ||| authorBio (
status=ED ) ||| author biography ||| 2011-02-17 15:26:34.000
Author_A ||| 49d63312-c74d-4ccd-bb7f-4dc698a9da22 ||| birthplace (
status=VO ) ||| author birthplace ||| 2011-02-17 15:12:43.000

```



```
Template ||| 89b05c0f-227b-4dcb-961e-2ab6e6af2dae ||| welcome
(Typeless status=PL) ||| welcome page ||| 2011-02-17 23:18:18.000
```

- **Command** to use the @ALL_NONASSETS selector:

```
/opt/cs/export/envision/cs_workspace$ export
CLASSPATH=csdt-client-1.0.2.jar
/opt/cs/export/envision/cs_workspace$ java
com.fatwire.csdt.client.main.CSDT
http://localhost:9010/cs/ContentServer username=fwadmin
password=xceladmin resources=@ALL_NONASSETS cmd=listds
```

Output:

```
Resource Type ||| Resource Id ||| Name |||
Description ||| Modified On
-----
@STARTMENU ||| 66edea6d-218e-41b7-b5ac-ec3453bd53b7 ||| New Author
( ) ||| null ||| 2011-02-18 11:02:23.000
@STARTMENU ||| c416c0d6-98a7-4ebf-babb-78d0699698de ||| Find
Author Filter ( ) ||| null ||| 2011-02-18 11:02:23.000
@ASSET_TYPE ||| 162d0b70-7e69-4266-acca-2f472e3d71bd ||| Author_A
( ) ||| Author Attribute ||| 2011-02-18 11:02:23.000
@STARTMENU ||| 2821ef28-39a2-4008-9a94-296fc0fd4f29 ||| Find
Author Definition ( ) ||| null ||| 2011-02-18 11:02:23.000
@STARTMENU ||| d45be3de-a8e0-4479-a909-f79e9320e84f ||| Find
Author ( ) ||| null ||| 2011-02-18 11:02:23.000
@STARTMENU ||| 2f6b2552-efde-493b-995f-ff13287f95e0 ||| Find
Author Attribute ( ) ||| null ||| 2011-02-18 11:02:23.000
@ASSET_TYPE ||| 7c748df3-d149-4b71-802a-64b11360e74b ||| Author_PD
( ) ||| Author Parent Def ||| 2011-02-18 11:02:23.000
@STARTMENU ||| 208aee2a-ad16-433a-9ee8-6658ce8f3abf ||| New Author
Attribute ( ) ||| null ||| 2011-02-18 11:02:23.000
@STARTMENU ||| 8428e490-b99c-4bea-b5a1-1c1768fa9d7d ||| Find
Author Parent ( ) ||| null ||| 2011-02-18 11:02:23.000
@ASSET_TYPE ||| d1497b50-665c-4b0c-80a7-d25f61566be4 ||| Author_C
( ) ||| Author ||| 2011-02-18 11:02:23.000
...
```

3. Yogesh then makes sure all necessary asset types will be imported by using the @ASSET_TYPE:* selector:

Command:

```
/opt/cs/export/envision/cs_workspace$ java
com.fatwire.csdt.client.main.CSDT
http://localhost:9010/cs/ContentServer username=fwadmin
password=xceladmin 'resources=@ASSET_TYPE:*' cmd=listds
```

Output:

```
Resource Type ||| Resource Id ||| Name ||| Description
||| Modified On
-----
```

```

Author_A ||| cbf4d8aa-d23a-4f0d-b55d-a87a0e9bbf33 ||| authorName (
status=ED ) ||| author name ||| 2011-02-17 15:26:34.000
Author_A ||| 42afd458-e90c-4e18-a4b6-47d322b46414 ||| birthPlace (
status=PL ) ||| place of birth ||| 2011-02-17 15:26:34.000
Author_A ||| 9fe04c6e-36e7-4ee3-8c76-8c02edf74136 ||| DOB ( status=PL
) ||| date of birth ||| 2011-02-17 15:26:34.000
Author_CD ||| 71d6067b-35f6-47f4-ae97-3876303abb37 ||| fictionAuthor (
status=ED ) ||| authors who write fiction ||| 2011-02-17 15:26:34.000
Author_A ||| ada2d6be-ef14-4766-b446-911bfa838835 ||| authorBio (
status=ED ) ||| author biography ||| 2011-02-17 15:26:34.000
Author_A ||| 49d63312-c74d-4ccd-bb7f-4dc698a9da22 ||| birthplace (
status=VO ) ||| author birthplace ||| 2011-02-17 15:12:43.000
Template ||| 89b05c0f-227b-4dcb-961e-2ab6e6af2dae ||| welcome
(Typeless status=PL) ||| welcome page ||| 2011-02-17 23:18:18.000

```

4. Yogesh notes that all necessary resources for the site will be imported into the build.

10:04 am – Deploying the Site and its Resources

Using the command-line tool, Yogesh runs the import sequence.

1. First, he imports the site:

Command:

```

/opt/cs/export/envision/cs_workspace$ java
com.fatwire.csdt.client.main.CSDT
http://localhost:9999/cs/ContentServer username=fwadmin
password=xceladmin 'resources=@SITE:Acceptance' cmd=import

```

Output:

```

*** Importing batch 1297868431526
Importing DSKEY @SITE-Acceptance (batch 1297868431526)
Saved Acceptance (batch 1297868431526)
*** Completed importing batch 1297868431526

```

2. Then, the flex family:

Command:

```

/opt/cs/export/envision/cs_workspace$ java
com.fatwire.csdt.client.main.CSDT
http://localhost:9999/cs/ContentServer username=fwadmin
password=xceladmin 'resources=@ASSET_TYPE:*' cmd=import

```

Output:

```

*** Importing batch 1298064678765
Importing DSKEY @ASSET_TYPE-162d0b70-7e69-4266-acca-2f472e3d71bd
(batch 1298064678765)
Importing DSKEY @ELEMENTCATALOG-OpenMarket/Xcelerate/AssetType/
Author_A/LoadTree (batch 1298064678765)
Saved OpenMarket/Xcelerate/AssetType/Author_A/LoadTree (batch
1298064678765)
...

```

3. Next, the assets:

Command:

```
/opt/cs/export/envision/cs_workspace java
com.fatwire.csdt.client.main.CSDT
http://localhost:9999/cs/ContentServer username=fwadmin
password=xceladmin 'resources=@ALL_ASSETS' cmd=import
```

Output:

```
*** Importing batch 1298064679760
Importing DSKEY Author_A-cbf4d8aa-d23a-4f0d-b55d-a87a0e9bbf33 (batch
1298064679760)
Dependency @ASSET_TYPE-Author_A already exists, skipping.
Saved Author_A:1295889071437 (batch 1298064679760)
Importing DSKEY Author_A-42afd458-e90c-4e18-a4b6-47d322b46414 (batch
1298064679760)
Dependency @ASSET_TYPE-Author_A already exists, skipping.
Saved Author_A:1295889071441 (batch 1298064679760)
Importing DSKEY Author_A-9fe04c6e-36e7-4ee3-8c76-8c02edf74136 (batch
1298064679760)
Dependency @ASSET_TYPE-Author_A already exists, skipping.
Saved Author_A:1295889071445 (batch 1298064679760)
Importing DSKEY Author_CD-71d6067b-35f6-47f4-ae97-3876303abb37 (batch
1298064679760)
Importing DSKEY Author_A-ada2d6be-ef14-4766-b446-911bfa838835 (batch
1298064679760)
Dependency @ASSET_TYPE-Author_A already exists, skipping.
Saved Author_A:1295889071449 (batch 1298064679760)
Dependency @ASSET_TYPE-Author_C already exists, skipping.
Dependency @ASSET_TYPE-Author_P already exists, skipping.
Dependency @ASSET_TYPE-Author_CD already exists, skipping.
Dependency @ASSET_TYPE-Author_PD already exists, skipping.
Dependency @ASSET_TYPE-Author_F already exists, skipping.
Dependency @ASSET_TYPE-Author_A already exists, skipping.
Saved Author_CD:1295889071453 (batch 1298064679760)
Importing DSKEY Author_A-49d63312-c74d-4ccd-bb7f-4dc698a9da22 (batch
1298064679760)
Dependency @ASSET_TYPE-Author_A already exists, skipping.
Saved Author_A:1295889071460 (batch 1298064679760)
Importing DSKEY Template-89b05c0f-227b-4dcb-961e-2ab6e6af2dae (batch
1298064679760)
Saved Template:1295889071461 (batch 1298064679760)
*** Completed importing batch 1298064679760
```

4. Since this is a delivery install, start menu items are optional. However, Yogesh imports the start menu items because he wants to use the WebCenter Sites Admin interface to verify that all of the resources are successfully imported.

Command:

```
/opt/cs/export/envision/cs_workspace$ java
com.fatwire.csdt.client.main.CSDT
http://localhost:9999/cs/ContentServer username=fwadmin
password=xceladmin 'resources=@STARTMENU:*' cmd=import
```

Output:

```
*** Importing batch 1298064681075
Importing DSKEY @STARTMENU-66edea6d-218e-41b7-b5ac-ec3453bd53b7 (batch
1298064681075)
Saved 1297720502210 (batch 1298064681075)
Importing DSKEY @STARTMENU-c416c0d6-98a7-4ebf-babb-78d0699698de (batch
1298064681075)
Saved 1297720502230 (batch 1298064681075)
Importing DSKEY @STARTMENU-2821ef28-39a2-4008-9a94-296fc0fd4f29 (batch
1298064681075)
Saved 1297720502222 (batch 1298064681075)
Importing DSKEY @STARTMENU-d45be3de-a8e0-4479-a909-f79e9320e84f (batch
1298064681075)
Saved 1297720502206 (batch 1298064681075)
Importing DSKEY @STARTMENU-2f6b2552-efde-493b-995f-ff13287f95e0 (batch
1298064681075)
Saved 1297720502214 (batch 1298064681075)
Importing DSKEY @STARTMENU-208aee2a-ad16-433a-9ee8-6658ce8f3abf (batch
1298064681075)
Saved 1297720502218 (batch 1298064681075)
Importing DSKEY @STARTMENU-8428e490-b99c-4bea-b5a1-1c1768fa9d7d (batch
1298064681075)
Saved 1297720502238 (batch 1298064681075)
Importing DSKEY @STARTMENU-2d31208a-4053-4fc1-a0d4-3789b23bd897 (batch
1298064681075)
Saved 1297720502226 (batch 1298064681075)
Importing DSKEY @STARTMENU-480cc5d1-3e73-4a92-85ef-48d0e44b81ef (batch
1298064681075)
Saved 1297720502242 (batch 1298064681075)
Importing DSKEY @STARTMENU-84309e2b-54ed-4e08-9244-84d331a60742 (batch
1298064681075)
*** Completed importing batch 1298064681075
```

10:55 am – The Deployment is Successful

Yogesh concludes that the import sequence was successful. He plans to automated daily installs on this system by writing the following script:

```
## Reinstall ContentServer to start with a clean slate.
## Optionally skip this and just do an update
Reinstall_CS()

## Bring in the latest source from SVN
SVN_Update()

## Prepare for import: compile any Java code such as url
  assemblers and flex filters, etc
## Prepare the database with any custom settings, etc.
preImport()

## Run the CSDT import sequence
CSDT_Import()

## Run the test suite - sanity, performance, acceptance tests
runTestSuite()

## Report results to the team by email so they know about any
  failures first thing in the morning
runReports()
```

The script will run as a cron job at five past midnight every night.

Appendix B

Using the Command-line Tool to Create Reusable Modules

The Developer Tools kit provides the ability to reuse and share resources in the form of modules. Modules are workspaces that are not site-specific and contain resources such as Templates, flex families, and ElementCatalog entries. Unlike the standard export/import functionality where assets are added to sites using natural mappings, modules typically utilize site overriding so they can be imported into any site you designate.

This appendix contains the following section:

- [Creating a Reusable Module](#)

Creating a Reusable Module

Artie has a flex family with a flex definition that he wants to reuse in other sites. He also has a Template asset associated with the flex definition. In the following scenario, Artie will create a module containing these resources. This scenario uses the command-line tool to create a module containing the resources Artie and his team developed in [Appendix A](#), “[Development Team Integration Use Case](#).”

Note

To use the command-line tool, Artie must specify the user name and password of a general administrator in each command he executes. This user must be a member of the RestAdmin group. In this scenario, Artie uses fwadmin/xceladmin.

Step I. List the Resources in the WebCenter Sites Instance

Artie uses the command-line tool to browse his WebCenter Sites instance. He uses the `resources=@ALL_ASSETS` and the `fromSites=Acceptance` selectors to list all the assets of the “Acceptance” site. The command Artie uses is `listcs`, which lists all the resources on his WebCenter Sites instance.

Command:

```
/opt/cs/export/envision/cs_workspace$ export CLASSPATH=csdt-
client-1.0.2.jar
/opt/cs/export/envision/cs_workspace$ java
com.fatwire.csdt.client.main.CSDT
http://localhost:9010/cs/ContentServer username=fwadmin
password=xceladmin resources=@ALL_ASSETS
fromSites=Acceptance cmd=listcs
```

Output:

Resource Type	Resource Id	Name	Description
Author_CD	1297720502271	fictionAuthor (status=ED)	authors who write fiction
Author_A	1297720502260	authorName (status=ED)	author name
Author_A	1297720502265	authorBio (status=ED)	author biography
Author_A	1297720502289	1297720502289 (status=VO)	author birthplace
Author_A	1297720502293	DOB (status=PL)	date of birth
Author_A	1297720502305	birthPlace (status=PL)	place of birth
Template	1297720502331	welcome (Typeless, status=ED)	welcome page

Artie notes that there are five Author_A flex attribute instances (one of which is voided), one Author_CD flex definition, and a Template asset.

Step II. List Start Menu Items

Artie further uses the command-line tool to browse for any start menu items that are assigned to the “Acceptance” site.

Command:

```
/opt/cs/export/envision/cs_workspace$ java
com.fatwire.csdt.client.main.CSDT
http://localhost:9010/cs/ContentServer username=fwadmin
password=xceladmin 'resources=@STARTMENU:*'
fromSites=Acceptance cmd=listcs
```

Output:

Resource Type	Resource Id	Name	Description
@STARTMENU	1297720502206	Find Author	null
@STARTMENU	1297720502214	Find Author Attribute	null
@STARTMENU	1297720502222	Find Author Definition	null
@STARTMENU	1297720502230	Find Author Filter	null
@STARTMENU	1297720502238	Find Author Parent	null
@STARTMENU	1297720502246	Find Author Parent Def	null
@STARTMENU	1297720494070	Find CSElement, FirstSiteII	Find CSElement
@STARTMENU	1297720494086	Find Page, FirstSiteII	Find Page
@STARTMENU	1297720494078	Find SiteEntry, FirstSiteII	Find SiteEntry
@STARTMENU	1297720494066	Find Template, FirstSiteII	Find Template
@STARTMENU	1297720502210	New Author	null
@STARTMENU	1297720502218	New Author Attribute	null
@STARTMENU	1297720502226	New Author Definition	null
@STARTMENU	1297720502234	New Author Filter	null
@STARTMENU	1297720502242	New Author Parent	null
@STARTMENU	1297720502250	New Author Parent Def	null
@STARTMENU	1297720501427	New CSElement	null
@STARTMENU	1297720494052	New Page, FirstSiteII	New Page
@STARTMENU	1297720501431	New SiteEntry	null
@STARTMENU	1297720501435	New Template	null

Step III. Export All Resources to the Desired Workspace

Artie wants to create a module using all of the resources listed in [steps I and II](#). He runs the following command to export all of the resources, at one time, into the specified workspace:

```
/opt/cs/export/envision/cs_workspace$ java
com.fatwire.csdt.client.main.CSDT
http://localhost:9010/cs/ContentServer username=fwadmin
password=xceladmin 'resources=@STARTMENU:*;@ALL_ASSETS'
fromSites=Acceptance cmd=export datastore=authorModule
```

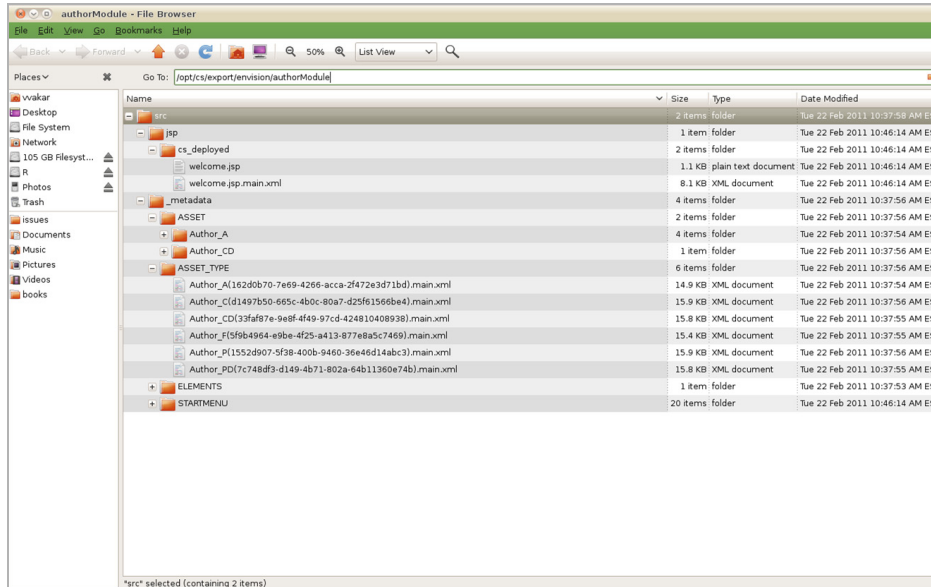
Output:

```
*** Exporting batch 1298385511005
Exporting ASSETDATA Author_CD:1297720502271 (batch 1298385511005)
Exporting ASSETDATA Author_A:1297720502260 (batch 1298385511005)
Exporting ASSET_TYPE Author_A (batch 1298385511005)
Exporting ELEMENTCATALOG OpenMarket/Xcelerate/AssetType/Author_A/
LoadSiteTree (batch 1298385511005)
Exporting ELEMENTCATALOG OpenMarket/Xcelerate/AssetType/Author_A/
AppendSelectDetails (batch 1298385511005)
Exporting ELEMENTCATALOG OpenMarket/Xcelerate/AssetType/Author_A/
AppendSelectDetailsSE (batch 1298385511005)
Exporting ELEMENTCATALOG OpenMarket/Xcelerate/AssetType/Author_A/IndexAdd
(batch 1298385511005)
Exporting ELEMENTCATALOG OpenMarket/Xcelerate/AssetType/Author_A/
IndexReplace (batch 1298385511005)
Exporting ELEMENTCATALOG OpenMarket/Xcelerate/AssetType/Author_A/
IndexCreateVerity (batch 1298385511005)
Exporting ELEMENTCATALOG OpenMarket/Xcelerate/AssetType/Author_A/
ContentDetails (batch 1298385511005)
Exporting ELEMENTCATALOG OpenMarket/Xcelerate/AssetType/Author_A/
ContentForm (batch 1298385511005)
Exporting ELEMENTCATALOG OpenMarket/Xcelerate/AssetType/Author_A/
PostUpdate (batch 1298385511005)
Exporting ELEMENTCATALOG OpenMarket/Xcelerate/AssetType/Author_A/
PreUpdate (batch 1298385511005)
...
```

All asset types for the flex family are included in the export. In addition, all elements belonging to those types are included as well. This information, although not usually modified, is necessary in order to make the module Artie is creating reusable on other WebCenter Sites instances.

Step IV. Inspect the Module's Content

Artie inspects the authorModule workspace on his file system.



Artie notes that the Template asset, flex family members, asset types, and start menu items were all exported to the workspace on his file system.

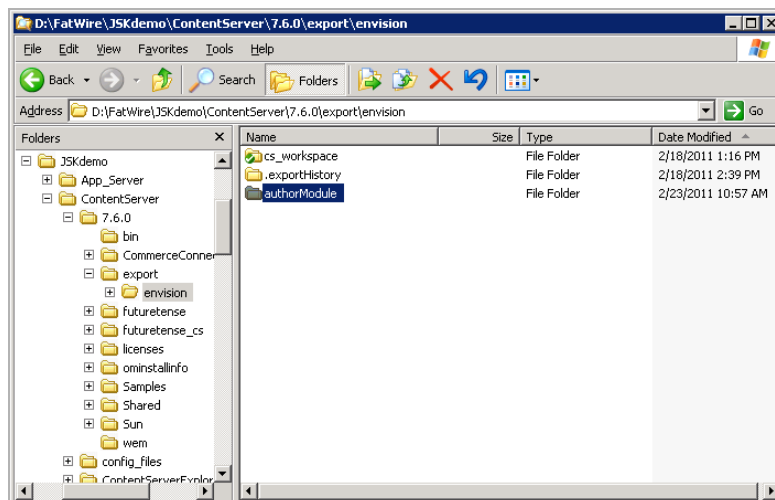
Step V. Archive the Module

Artie creates a .zip file archive of the authorModule workspace and saves it.

Step VI. Import the Module to a WebCenter Sites Instance

Artie decides to import the module into the FirstSiteII sample site.

1. Artie unzips the module into the workspace location of the target WebCenter Sites instance.



2. Using the command-line tool, Artie imports the asset types and start menu items into the target WebCenter Sites instance.

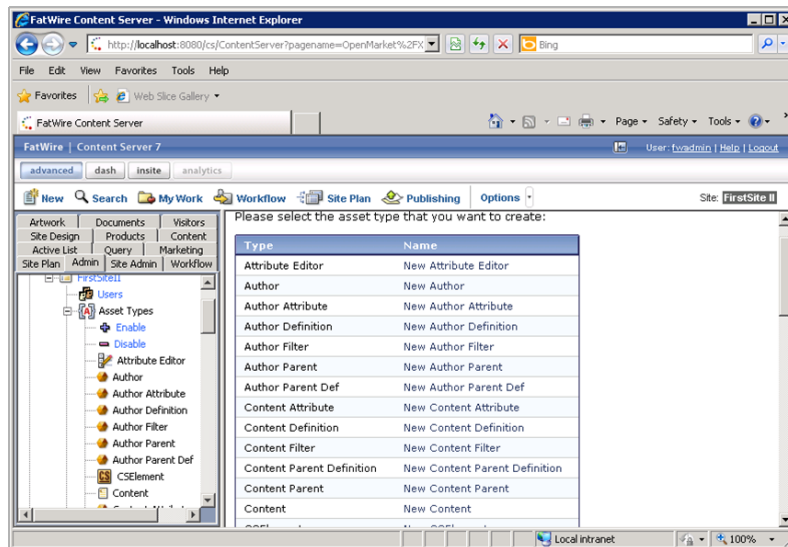
Command:

```
D:\FatWire\JSKdemo\ContentServer>java com.fatwire.csdt
.client.main.CSDT
http://localhost:8080/cs/ContentServer username=fwadmin
password=xceladmin resources=@ALL_NONASSETS cmd=import
datastore=authorModule toSites=FirstSiteII
```

Output:

```
*** Importing batch 1298052933085
Importing DSKEY @STARTMENU-4340b65d-a9e4-4131-ac7f-51185a79b18d (batch
1298052933085)
Saved 1297720494070 (batch 1298052933085)
Importing DSKEY @STARTMENU-0a2dec4d-b6be-418c-9992-a4332480bb20 (batch
1298052933085)
Saved 1297720501435 (batch 1298052933085)
Importing DSKEY @STARTMENU-66edea6d-218e-41b7-b5ac-ec3453bd53b7 (batch
1298052933085)
Saved 1297720502210 (batch 1298052933085)
Importing DSKEY @STARTMENU-c416c0d6-98a7-4ebf-babb-78d0699698de (batch
1298052933085)
Saved 1297720502230 (batch 1298052933085)
Importing DSKEY @ASSET_TYPE-162d0b70-7e69-4266-acca-2f472e3d71bd
(batch 1298052933085)
Dependency @ASSET_TYPE-Author_A already exists, skipping.
Importing DSKEY @ELEMENTCATALOG-OpenMarket/Xcelerate/AssetType/
Author_A/LoadSiteTree (batch 1298052933085)
Saved OpenMarket/Xcelerate/AssetType/Author_A/LoadSiteTree (batch
1298052933085)
Importing DSKEY @ELEMENTCATALOG-OpenMarket/Xcelerate/AssetType/
Author_A/AppendSelectDetails (batch 1298052933085)
Saved OpenMarket/Xcelerate/AssetType/Author_A/AppendSelectDetails
(batch 1298052933085)
Importing DSKEY @ELEMENTCATALOG-OpenMarket/Xcelerate/AssetType/
Author_A/AppendSelectDetailsSE (batch 1298052933085)
Saved OpenMarket/Xcelerate/AssetType/Author_A/AppendSelectDetailsSE
(batch 1298052933085)
Importing DSKEY @ELEMENTCATALOG-OpenMarket/Xcelerate/AssetType/
Author_A/IndexAdd (batch 1298052933085)
Saved OpenMarket/Xcelerate/AssetType/Author_A/IndexAdd (batch
1298052933085)
...
```

3. Artie access the WebCenter Sites Admin interface for the FirstSiteII sample site and confirms that the asset types and start menu items were imported successfully.



4. Now, Artie imports the assets.

Command:

```
D:\FatWire\JSKdemo\ContentServer>java com.fatwire.csd
t
.client.main.CSDT http://localhost:8080/cs/ContentServer
username=fwadmin password=xceladmin resources=@ALL_ASSETS
cmd=import datastore=authorModule toSites=FirstSiteII
```

Output:

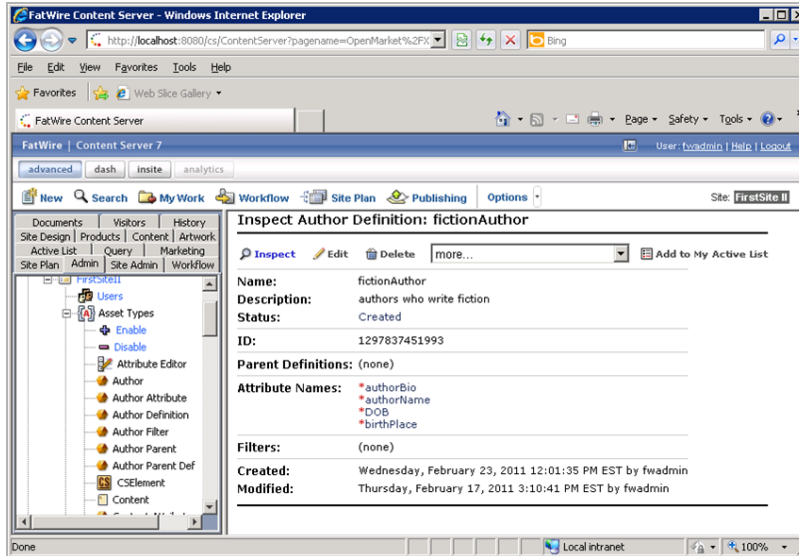
```
*** Importing batch 1298480206533
Importing DSKEY Author_A-cbf4d8aa-d23a-4f0d-b55d-a87a0e9bbf33 (batch
1298480206533)
Dependency @ASSET_TYPE-Author_A already exists, skipping.
Saved Author_A:1297837451977 (batch 1298480206533)
Importing DSKEY Author_A-42afd458-e90c-4e18-a4b6-47d322b46414 (batch
1298480206533)
Dependency @ASSET_TYPE-Author_A already exists, skipping.
Saved Author_A:1297837451981 (batch 1298480206533)
Importing DSKEY Author_A-9fe04c6e-36e7-4ee3-8c76-8c02edf74136 (batch
1298480206533)
Dependency @ASSET_TYPE-Author_A already exists, skipping.
Saved Author_A:1297837451985 (batch 1298480206533)
Importing DSKEY Author_CD-71d6067b-35f6-47f4-ae97-3876303abb37 (batch
1298480206533)
Importing DSKEY Author_A-ada2d6be-ef14-4766-b446-911bfa838835 (batch
1298480206533)
Dependency @ASSET_TYPE-Author_A already exists, skipping.
Saved Author_A:1297837451989 (batch 1298480206533)
Dependency @ASSET_TYPE-Author_C already exists, skipping.
Dependency @ASSET_TYPE-Author_P already exists, skipping.
Dependency @ASSET_TYPE-Author_CD already exists, skipping.
Dependency @ASSET_TYPE-Author_PD already exists, skipping.
```

```

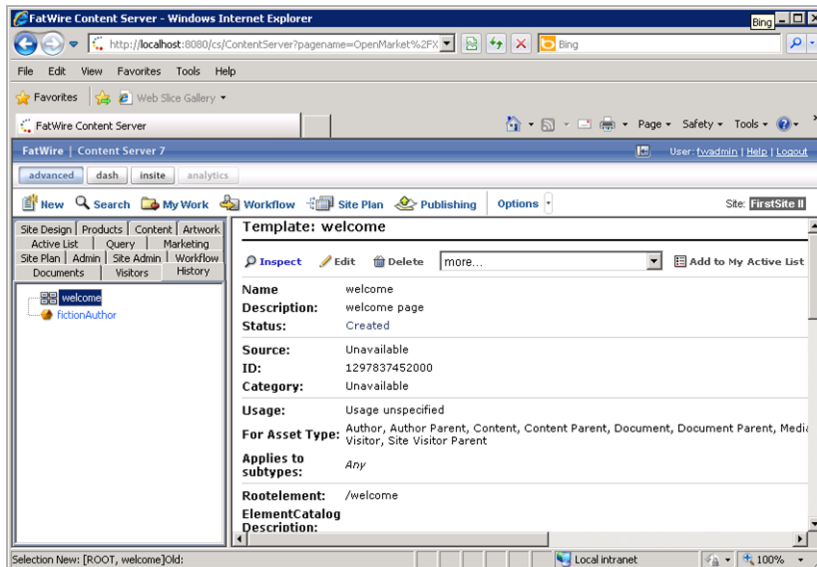
Dependency @ASSET_TYPE-Author_F already exists, skipping.
Dependency @ASSET_TYPE-Author_A already exists, skipping.
Saved Author_CD:1297837451993 (batch 1298480206533)
Importing DSKEY Template-89b05c0f-227b-4dcb-961e-2ab6e6af2dae (batch
1298480206533)
Saved Template:1297837452000 (batch 1298480206533)
*** Completed importing batch 1298480206533

```

5. Artie verifies that the flex definition is imported into the FirstSiteII sample site successfully:



6. Using the command-line tool, he also imports the Template asset. He then accesses the WebCenter Sites Admin interface again to verify the Template asset is imported correctly.



The entire module is imported successfully into the FirstSiteII sample site. This module can be reused and imported into any desired WebCenter Sites instance.