Oracle® Enterprise Manager

Application Configuration Console Getting Started

Release 5.3.2

E14653-02

September 2009

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E14653-02

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Preface

This document jump-starts the process of learning how to use Application Configuration Console.

Audience

This document is intended for anyone who wants to understand how Application Configuration Console is intended to be used as a configuration management tool.

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Related Documents

For more information, see the following documents in the Application Configuration Console documentation set:

- *Release Notes*
- *PCI Compliance*
- *Installation Guide*
- *Command Line Interface Reference*
- *Performance and Tuning Guide*

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1 About This Book

Congratulations. Your company has purchased the pre-eminent configuration, change, and release management software available on the market today. Application Configuration Console counters IT complexity and compliance with automation software that eliminates configuration management chaos in application infrastructure.

1.1 Scope

Application Configuration Console is a powerful, highly versatile tool in the hands of your IT infrastructure team. This book offers merely a glimpse; its purpose is to jump-start the process of harnessing that power. Thus, the scope is necessarily narrow and focuses on some of the basic tasks IT departments typically perform. The book also covers the first few things you need to do before you can perform these tasks.

1.2 Objectives

After you read this book, you should be comfortable enough with the application to perform basic tasks such as loading assets, tracking changes, comparing resources, and synchronizing your data.

1.3 Are You Ready to Get Started?

To answer in the affirmative, you have to have all your ducks in a row. This means that all of the following conditions have been met:

- You have installed and configured the Application Configuration Console software.
- Your Oracle database is accessible to the Application Configuration Console Server.
- LDAP (or some other) directory services are in place.
- Targeted resources have been identified.
- SSH (or FTP) support is in place to access hosts where resources reside.

If you need additional information on any of these requirements, see the *Application Configuration Console Installation Guide*.

1.4 One More Thing

This book introduces the fundamentals; the tasks that are presented here are fairly straightforward. At the conclusion of each simple task, however, a section summarizes additional or advanced topics that emanate from the basic concept. For detailed information on Application Configuration Console features and how to use them, consult the *Application Configuration Console Online Help*.

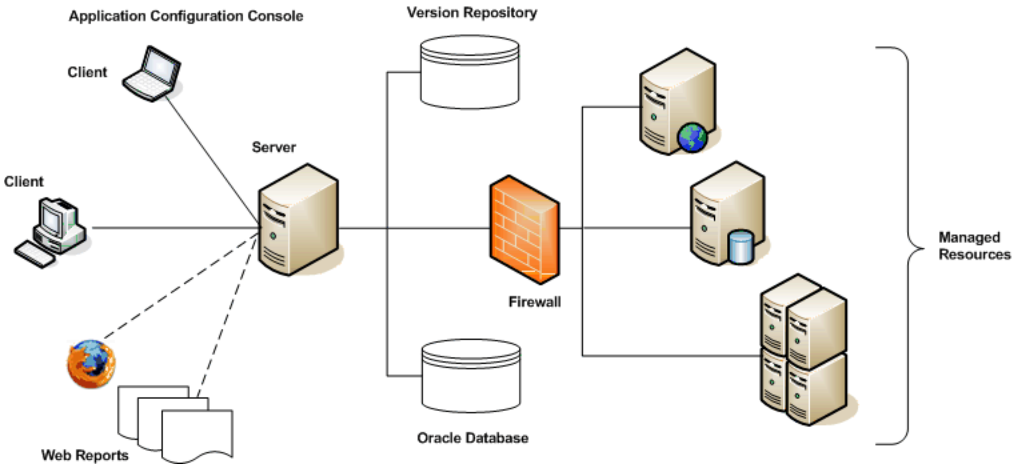
2 Application Configuration Console Overview

Before tackling some specific tasks, let's take a tour of the Application Configuration Console user interface and review some terminology to reach a certain comfort level.

2.1 Product Architecture

As you can see in Figure 2–1, Application Configuration Console is a multitiered application that has client and server components, a database repository, and your company's network infrastructure, which represents the targeted resources to be managed by the software.

Figure 2–1 Application Configuration Console Architecture



The targeted resources are the application servers, Web servers, operating systems, and so forth, that you are managing. To Application Configuration Console, these managed servers are assets that consist of configuration and other files. You can organize these assets in the Client into hierarchical containers that mirror your infrastructure. Using the Client, you work through the Application Configuration Console Server to load and manage the assets. Using a Web browser, you can access your managed data to generate Application Configuration Console Web Reports. The Server uses an Oracle database to store data and a Subversion (SVN) server for versioning control. There may or may not be a firewall between the managed resources and the Application Configuration Console Server.

2.2 Application Configuration Console User Interface

Open the Client UI; notice that it is divided into discrete windows, or frames.

The **Navigator view** displays your projects and configurations and how they relate to each other in a hierarchy similar to a file explorer. In Application Configuration Console, all configuration information is organized under projects. Projects can contain other containers and/or assets with configurations. Right-click an item in the Navigator view to select from a menu of possible actions. Menu options change according to the item clicked. **Breadcrumbs** provide a hierarchy path to where you are in the Navigator view relative to the selected item.

The **Editor area** shows the contents of configurations and metadata about containers and configurations. When you double-click an item in the Navigator view, Application Configuration Console opens it in the Editor area for further operation. You can open multiple items simultaneously. **Tabs** at the bottom control different aspects of how you view and work with the open item.

Other **views**, the most common of which are the Alerts view, which shows alerts if there are changes to any configurations that you are tracking; Jobs view, which shows a list of jobs (scripts) scheduled to be or already executed; Synchronize view, which shows changes between a container in Application Configuration Console and its external resource.

The **Details** area displays information about the item that is currently selected in the Navigator view. The information varies, depending on the type of item selected.

2.3 Terminology

The terms listed in this section should help in understanding the concepts and tasks presented in the remainder of this book. For a more extensive list of Application Configuration Console (and industry) terms, see the .

Alert

Notification that a difference was detected between elements such as an asset and its external resource, as a result of a scheduled event. Alerts appear in the Alerts view of the Application Configuration Console Client. You can optionally receive e-mail notification of the alert.

Asset

The key component in Application Configuration Console. Assets represent the servers, devices, and systems that you manage. For example, Web servers and application servers are both represented as assets.

Authentication Pack

Often shortened to auth pack. An authentication pack contains a username and password (encrypted), or an SSH certificate and passphrase, or similar credentials. An auth pack allows you to connect to a host where your external resources reside.

Base Directory

Specified on a resource specification as the starting point on a host machine from which to locate the configuration files of an asset.

Compare

To evaluate two or more containers or configurations for any differences between the elements being compared.

Configuration

An object that contains configuration information, such as properties and their values. Assets contain configurations, where each configuration usually represents the configuration information from a single configuration file, such as an XML file that contains application server settings.

Container

An object that contains configuration information, such as properties and their values. Assets contain configurations, where each configuration usually represents the configuration information from a single configuration file, such as an XML file that contains application server settings.

Endpoint

Protocol (either FTP, SSH, or UNC) used to transfer information over the network. Specified in combination with the host where the external resources reside.

External Resource

The source of an asset. A resource is external in the sense that it exists outside of Application Configuration Console, somewhere in your computing infrastructure.

Host

An addressable machine in your network where external resources reside. A host has an associated endpoint or protocol to use when connecting to it.

Mapping

Mappings control the way in which configuration information in external resources is brought into Application Configuration Console and displayed in the container tree. Application Configuration Console supports a variety of specialized and generic mappings.

Metadata

Metadata takes two forms. As system-defined, metadata is annotational information about a container or configuration, such as when it was created or who last made changes. Metadata can also be user-defined, and as such, is most commonly used to drive value substitution for things such as comparison settings, variables, Navigation view hierarchies, and so forth.

My Workspace

A hierarchy of projects, containers, and configurations within Application Configuration Console that is your private work area, and as such, cannot be seen by anyone else.

Parsing

Parsing is the first stage of the mapping process, where the physical representation of a configuration file is converted to an internal storage called a syntax tree.

Permissions

Granted to user groups to enable group members to view and change assets and configurations, execute commands and scripts, and provision and update assets and configurations.

Physical View

This is the raw text view of a configuration as it is stored in the external resource when the asset was loaded or updated.

Primary View

This is the parsed view of a configuration transformed for display in the Editor area based on file type, such as XML. A typical display is property name/value pairs within elements. This is the default view of a configuration.

Provision

To commit, or write out, an asset from Application Configuration Console to its external resource counterpart. This is the only Application Configuration Console action that modifies an external resource.

Public Workspace

A hierarchy of projects, containers, and configurations within Application Configuration Console that can be seen by everyone. When you share something in your My Workspace, it is visible here to those you share with.

Resource Definition

The details portion of a resource specification where you define the make-up of the external resource, such as the file name and type of mapping to use.

Resource Specification

Often shortened to resource spec. Identifies the files and resources that can be loaded as assets into Application Configuration Console from remote systems. There are two types of resource specification: one, file resource specification, for loading the files and directories that constitute the asset; the other, command resource specification, for saving the output of commands as the asset. Both types consist of one or more resource definitions that provide the details of the external resource.

Resource View

The default asset view. This view represents the way the asset's configurations appear in the external resource.

Roll Back

To restore a previous version of an asset or configuration following a provision or update action.

Synchronize

To determine whether changes exist in Application Configuration Console or the external resource and then to make them the same by updating one or provisioning the other.

Tracking

To monitor assets and configurations for the purpose of detecting changes in Application Configuration Console or in an external resource. Upon detecting a change, Application Configuration Console posts an alert and optionally sends an e-mail notification to a designated recipient.

Transform

Transform is the second stage of the mapping process. It converts configuration data from the internal storage format into a structured representation for display in a configuration view.

Update

To overwrite an asset in Application Configuration Console with its external resource counterpart.

Versioning

To overwrite an asset in Application Configuration Console with its external resource counterpart.

2.4 Who Can Do What

Although it doesn't necessarily come into play in this book, it is useful as part of this overview to point out certain aspects of the permissions model that Application Configuration Console enforces.

When you create something in Application Configuration Console, you are the owner. As the owner, only you can share what you create with other users. When you share something, it becomes viewable to those you share it with in the Public Workspace. You can transfer ownership to someone else, in which case it is removed from your My Workspace folder and appears in the new owner's My Workspace folder.

Besides the typical permissions of read and write, there are additional permissions exclusive to auth packs (read external, write external, execute external), which grants the holder the right to perform operations involving external resources, such as provision, update, track, and compare. Groups control which users have permission to view and change information in Application Configuration Console. A group contains one or more Application Configuration Console users. When you share a container or configuration, you set permissions for groups of users, not individual users. You can give different permissions to different groups, such as read permission or write permission.

Users of the system fall into two major groups, the Administrators group and the All Users group. Users of both of these groups originate in an external authentication system such as an LDAP directory service that is identified as part of Application Configuration Console installation. Thus, you cannot add new users directly to the Application Configuration Console user roster; they have to be added to the service.

Members of the Administrators group have permissions and capabilities not available to other users, enabling them to:

- Transfer ownership to another user; this includes items in the Public Workspace as well as items in some other user's My Workspace folder.
- Force an unlock (Application Configuration Console locks an item such as an asset when in edit mode; if a lock persists for some reason after the editing session ends, it needs to be released).

- Create new user groups (implies assigning members and setting permissions).
- View and manage jobs in the Jobs view (implies canceling pending and running jobs and removing completed jobs).
- Display a list of Application Configuration Console users currently connected to the system and the total number of connections.
- Install and uninstall Application Configuration Console extensions (extensions are optional product add-ins such as the WebSphere and WebLogic automation modules).
- View and change system configuration settings.
- Use Server Browse (this is a special authentication pack to access the host system of Application Configuration Console).

3 First Things First

Before you can start working with assets, you have to lay the groundwork. This does not refer to the installation and set up of Application Configuration Console and related software, which, as stated in Chapter 1, must already be in place.

Rather, laying the groundwork means you have to shape assets in terms of the resources they represent. Specifically, you have to map the following aspects of the external resource to Application Configuration Console concepts:

External Resource	Application Configuration Console Concept
Where are they?	Host/endpoint
Who can access them?	Authentication pack
What do they consist of?	Resource specification

Hosts, authentication packs, and resource specifications work together to let the Application Configuration Console Server read and write configuration data to and from managed servers and devices. Each managed server or device is represented as an asset in Application Configuration Console, and you must have a host, an authentication pack, and a resource specification to create an asset.

> **Note:** The tasks in this chapter assume that you are already logged in to the Application Configuration Console Client.

3.1 Create a Host and Endpoint

The first thing to do is to add a host and endpoint, that is, the machine on which the external resource resides, and the connection protocol to use to access it.

1. In the Navigator view, expand **System > Connectors**.
2. Right-click **Hosts** and select **Add Host** from the popup menu.
3. In the Add Host dialog, enter the machine addressable host name or IP address.
4. Click **Add** to define an endpoint for the host, as follows:
   a. Define the type by selecting **SSH** from the drop-down menu.
   b. This populates the name and port fields with the default values **SSH** and **22**. Keep these values unless you have some reason to change them.
   c. Click **OK** to complete the endpoint definition.

   You return to the Add Host dialog, where the endpoint now appears in the list.

5. Enter a description of the host, if you like, then click **OK** to complete host creation.

3.1.1 Other Things to Know About Hosts/Endpoints

Note the following additional points about hosts and endpoints:

- A host only gets added once. All users can see it, and connect to it with the right credentials. Only the owner can modify the properties.
- A host can have multiple endpoints.
- Endpoints have advanced settings related to things such as connection timeouts and autodetection settings.

3.2 Create an Authentication Pack

Next, you will need an authentication pack containing the credentials necessary to connect to the host you just added.

1. In the Navigator view, expand **System > Connectors**.
2. Right-click **Authentication Packs** and select **Add Authentication Pack** from the popup menu.
3. In the Add Authentication Pack dialog, enter a descriptive name for the auth pack.
4. Make sure that the type selected is **Username Password**.
5. Enter your username and password in the text boxes provided.
6. In the **Validation** portion, click the check box and select the host/endpoint that you previously created, from the drop-down list. This is not required, but it does present an opportunity to ensure that you can connect to the host with the credentials you provide. In any case, if the validation test fails, you can still create the auth pack now, and set up the credentials on the host later.
7. Click **OK** to complete auth pack creation.

3.2.1 Other Things to Know About Authentication Packs

Note the following additional points about authentication packs:

- Auth packs can be shared with other users (passwords are always hidden).
- Auth packs are not restricted to username/password combinations. They can also be specified as an SSH certificate and passphrase or other similar credentials.
- There is a secure provision variety of auth pack for use with access control systems such as sudo, su, and pbrun.
- Users need special permissions on an auth pack to interact with external resources (to provision, update, synchronize, and so forth).

3.3 Create a Resource Specification

Now create a resource specification to shape the contents of assets to be loaded into Application Configuration Console. The assumption at this point is that you have identified an external resource, an application server for example, that you want to load as an asset into Application Configuration Console. A set of configuration files exist on the targeted host that constitute the asset.

1. In the Navigator view, expand **System**.

2. Right-click **Resource Specifications** and select **Add File Resource Specification** from the popup menu.
3. In the Add File Resource Specification dialog, enter a descriptive name for the resource spec.
4. Select the **Host/Endpoint** you created from the drop-down list.
5. Select the **Authentication Pack** you created from the drop-down list.
6. Browse to the **Base Directory**, which is the starting point on the host machine where the asset configurations reside. When you click the **Browse** button, a dialog opens, exposing the file system on the host machine to which you have access, based on the credentials in the auth pack.
7. Complete the file resource definition portion of the resource spec by including the configuration files that constitute the asset. To do this, click the **Add File** button to open a dialog and select the files in the base directory.

   Notice the preselected check box **Automatically assign mappings**. This indicates a willingness to acknowledge that the software is smart enough to know how to store and display the files in Application Configuration Console, based on file type. This will often be the case.
8. Click **OK** to complete resource specification creation.

3.3.1 Other Things to Know About Resource Specifications

Note the following additional points about resource specifications:

- Resource specs can be shared with other users.
- When you use the resource spec to load an asset, you can change the resource locator information (host, auth pack, base directory).
- You can use wildcards and regular expressions as an alternative to manually selecting which files to include.
- You can customize the file mappings to any of an extensive list of parsers supported by Application Configuration Console.
- You can include a directory as part of the resource spec to monitor changes in the file list within the directory.
- You can define metadata to be part of each asset loaded with the resource spec.
- You can change a resource spec and reapply it to assets you have already loaded, optionally overwriting any existing metadata.
- The example used here covers a file resource specification. There is also a command resource specification that creates an asset from the output of a command execution.

4

Asset Load

With the underpinnings in place, you are now ready to load assets into Application Configuration Console.

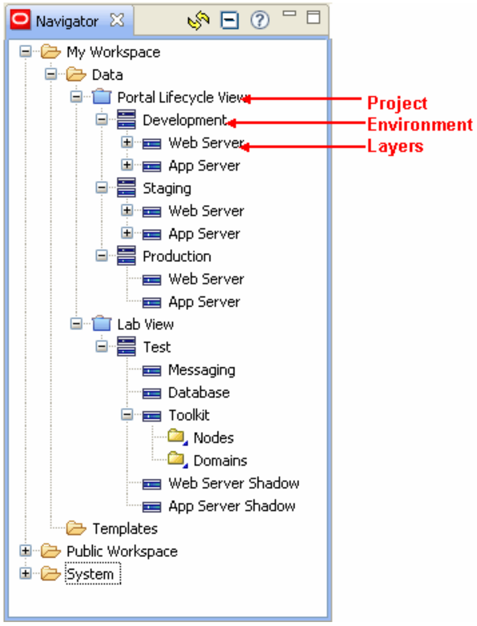
> **Note:** The tasks in this chapter assume that you are already logged in to the Application Configuration Console Client.

4.1 Organize Your Assets

Part of the process of loading assets is to build a hierarchical structure that mirrors your operation. In Application Configuration Console, you load assets and configurations into objects called containers. The top-level container is a project. Under projects you can have environments, layers, and folders. Or you can have no other container levels. Remember, these are devices that you can use as necessary to fit your organizational structure. If you want to give them different labels, feel free to do so.

Figure 4–1 shows an example structure that will serve as backdrop for discussions in the remainder of this book:

Figure 4–1 Sample Containers Used in Examples



In particular, we'll work with the Portal Lifecycle View project that has the Development, Staging, and Production environments, each with a Web Server and App Server layer.

4.2 Add Assets

Assets represent external resources, such as an application server, a Web server, or a router. They contain the Application Configuration Console configurations that hold the configuration data from the external resources. You can add an asset under any container in your hierarchy, such as directly under a project or under a layer.

Working with the foundation we've put in place, we're going to add an asset as follows:

1. In the Navigator view under 4, expand **Portal Lifecycle View > Development**.
2. Right-click **App Server** and select **Add > Asset**.

   The Add Asset dialog opens.
3. Enter a name for the asset, **Server1**, for example.
4. We're creating from a resource specification, so make sure that's the radio button selected, then locate the resource spec we created in Chapter 3 (**RS-XML**) in the drop-down list.

   After a moment, the **Host/Endpoint**, **Authentication Pack**, and **Base Directory** fields are filled in, based on the resource spec selected.
5. Click **OK** to load the asset configurations.

   After a moment, you should see a message denoting the success of the operation.

If you look at the Navigator view, you'll see the asset **Server1** and its configurations as determined by the resource spec under the **App Server** container.

Resource View represents the default asset view, that is, as the asset's configurations appear in the external resource. The Physical View of a configuration is its raw text format; the Primary View is a parsed view of a configuration arranged as elements and property-value pairs in a container hierarchy. Note that you can create your own custom asset views; they are a handy way of subdividing an asset's configurations into logical groupings.

4.2.1 Other Things to Know About Adding Assets

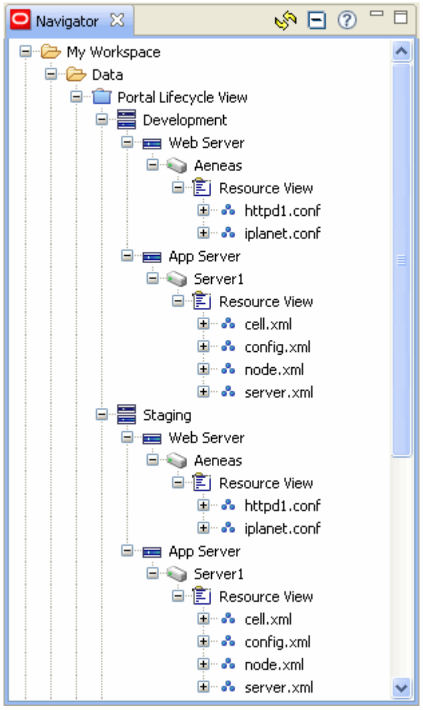
Note the following additional points about adding assets:

- When adding an asset based on a resource spec, you can change the host/endpoint, auth pack, and base directory to target different resources. What remains constant is the file resource definition.
- You can add an asset based on an existing asset. The asset you are adding then becomes subordinate to its master, the asset it is based on. This means that the subordinate's configuration values derive from the master asset, not from an external resource.
- You can add an asset based on a template that represents an asset standard or model within your organization.

4.3 Build Out the Model

Behind the scenes, we've fleshed out the data to demonstrate additional functionality covered in later chapters. We created a new resource spec (**RS-CONF**) to load another asset (**Aeneas**). We also populated the Staging environment layers with the same assets from the Development environment. Consequently, the Navigator view now appears as shown in Figure 4–2:

Figure 4–2 Sample Containers Extended



```
My Workspace
  Data
    Portal Lifecycle View
      Development
        Web Server
          Aeneas
            Resource View
              httpd1.conf
              iplanet.conf
        App Server
          Server1
            Resource View
              cell.xml
              config.xml
              node.xml
              server.xml
      Staging
        Web Server
          Aeneas
            Resource View
              httpd1.conf
              iplanet.conf
        App Server
          Server1
            Resource View
              cell.xml
              config.xml
              node.xml
              server.xml
```

Additionally, we've contrived to introduce some differences so things happen when we perform tasks in later chapters. If you're playing along at home, you may want to make some edits to your data, so you experience similar results.

> **Note:** Please keep in mind that, while we're working with just a couple of assets that have a small number of configurations, in reality, it's not uncommon for enterprises to load hundreds of assets that contain thousands or even tens of thousands of configurations.

5

Track, Compare, Find and Replace

Application Configuration Console provides versatile tools to monitor and oversee your IT infrastructure.

> **Note:** The tasks in this chapter assume that you are already logged in to the Application Configuration Console Client.

5.1 Track Assets and Configurations

The tracking feature lets you see alerts and receive e-mail when there are changes to configurations in Application Configuration Console or to external resources.

Let's set tracking on the **Server1** asset.

1. In the Navigator view, expand **Portal Lifecycle View > Development > App Server > Server1**.
2. Right-click **Resource View** and select **Open**.

   You set tracking on an asset view. Since the only view we have right now is the Resource View, that's the one you have to select.
3. At the bottom of the Editor area, click the **Tracking Schedule** tab.
4. Click the **Edit** button (upper-left corner). You won't be able to do anything until you do.
5. Click the **Enable Tracking** check box and select an option. In this case, make it **Track Configurations**.
6. Now select a specific configuration, in this case, **config.xml**.
7. Since this is for demonstration purposes, we'll set the schedule at the next hour on today only.
8. We want notification when differences are detected, so we'll supply an **Email Address** in the space provided.
9. Click **Save** to complete the scheduling operation.

5.1.1 Other Things to Know About Tracking

Note the following additional points about tracking:

- You can track single or selected configurations, or the entire asset.

- In a typical scenario, you would set up a recurring schedule, for example, every day of the week at 1:00 a.m., 12 months a year. Incidentally, off-hours is best from a performance standpoint.
- You are always notified in the Alerts view of Application Configuration Console when a difference is detected. E-mail notification is optional.
- The **Update** option at the bottom of the scheduling dialog, when set to **Replace**, causes the Application Configuration Console configuration to be overwritten with the external resource automatically, whenever a difference is detected.

5.1.2 When Tracking Detects a Difference

When tracking detects a difference, Application Configuration Console posts an alert in the Alerts view, identifying the time of detection and the respective paths of the internal and external data being compared.

The alert is a hyperlink. Double-click it (or right-click and select **Open in Compare View**) to display detected differences in the Editor area. The resulting Compare view shows rows that contain differences in a bold font with property differences highlighted.

If you opt for e-mail notification, you automatically receive a message with body content that provides information similar to that posted in the Alerts view. At the bottom of the message is a URL; click it to view the Application Configuration Console Web Reports Comparison Report in your browser, where you see the same information displayed in the Editor area when you open the alert in the Compare view.

5.2 Compare Assets and Configurations

You can compare two or more containers or configurations to quickly identify configuration differences, which are often the source of problems in applications. You can compare individual configurations or entire container trees. You can also compare an asset or configuration with its external resource to see any differences between the Application Configuration Console data and the external resource data.

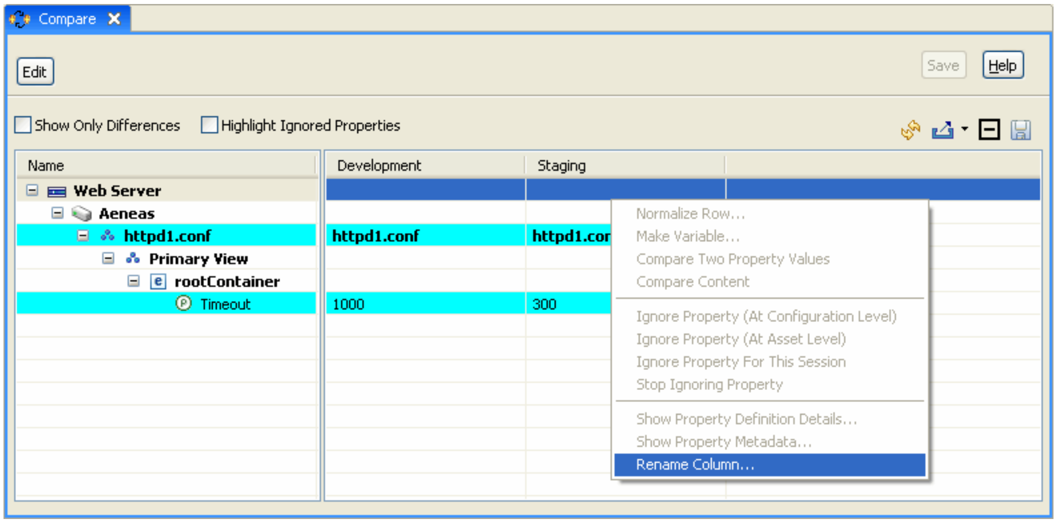
Let's do a simple compare of two containers, the respective Web Server layers in the Development and Staging environments.

1. In the Navigator view, click the Web Server layer under the Development environment, then ctrl-click the Web Server layer under the Staging environment.
2. Right-click and select **Compare** from the popup menu.
3. In the Comparison Options dialog that opens, accept the defaults and click **OK**.

   After a moment, the results of the comparison appear in the Editor area. The resulting Compare view shows all of the properties in the left column and the values from each container or configuration in additional columns. Any container rows that contain differences are shown in a bold font, and properties with differences are highlighted.

   Notice that the containers being compared have the same name-Web Server. This can sometimes be confusing when viewing comparisons, so Application Configuration Console gives you the capability to rename the columns to something more meaningful, in this case, perhaps, to the respective environments. To change the name of a column, right-click under the respective column name and select Rename Column. Figure 5–1 shows the columns already renamed, with the right-click menu selection exposed:

Figure 5–1 Comparison Results with Columns Renamed



Name	Development	Staging
Web Server		
Aeneas		
httpd1.conf	httpd1.conf	httpd1.cor
Primary View		
rootContainer		
Timeout	1000	300

Compare
Edit
Save
Help
□ Show Only Differences
□ Highlight Ignored Properties
Normalize Row...
Make Variable...
Compare Two Property Values
Compare Content
Ignore Property (At Configuration Level)
Ignore Property (At Asset Level)
Ignore Property For This Session
Stop Ignoring Property
Show Property Definition Details...
Show Property Metadata...
Rename Column...

In the first comparison, we compared containers within Application Configuration Console. Now let's compare Application Configuration Console data to its external resource.

1. In the Navigator view, expand **Portal Lifecycle View > Development > App Server > Server1 > Resource View**.
2. Right-click **config.xml** and select **Compare to Resource** in the popup menu.
3. In the Comparison Options dialog that opens, accept the defaults and click **OK**.

   After a moment, the results of the comparison appear in the Editor area, for example. This is an expanded view to expose the difference detected in the comparison. Column headings in the Compare view distinguish the Application Configuration Console data from the external resource data.

Now let's compare the same entities, only this time we'll compare the Application Configuration Console configuration content (raw text form) to its external counterpart.

1. In the Navigator view, expand **Portal Lifecycle View > Development > App Server > Server1 > Resource View**.
2. Right-click **config.xml** and select **Compare Content to Resource** in the popup menu.

   After a moment, the results of the comparison appear in the Editor area. Notice that this comparison displays in the Physical View, showing a physical (text) representation of the configuration and its external resource. You can edit content and normalize values in either direction; that is, in the Application Configuration Console data or the external resource.

5.2.1 Other Things to Know About Comparisons

Note the following additional points about comparisons:

- You can edit or normalize values when differences are detected. Say, for example, a comparison of six configurations flagged differences in the values of a particular property, and you wanted to make them all the same. You could do that by choosing to normalize the row to a selected value.

- In some cases, you know in advance that a comparison will detect differences, server names or port numbers for example. You can choose to have comparisons ignore certain properties either temporarily or permanently to cut down on differences clutter.
- Some comparisons you will want to run again and again. After you establish comparison criteria and run the comparison the first time, you can save the particulars of the comparison to run at will.
- You can share saved comparisons with others. You also can set up a schedule to run saved comparisons automatically on a recurring basis. Scheduled comparisons work the same as tracking in that differences are posted to the Alerts view and can generate e-mail notifications.
- Sometimes, even though you might think that you are comparing like entities, Application Configuration Console sees them as apples and oranges. This is mainly due to use of different property names and misaligned placement within configuration files. Metadata in the form of something called a comparison key and stored rule sets known as Savespecs afford sophisticated techniques to overcome obstacles to straight-up comparisons.

5.3 Find and Replace Operations

Application Configuration Console has a powerful find and replace capability that enables you to search not only for property values in your data but also for specific settings you have specified relative to the operations you perform within Application Configuration Console.

A compare operation performed earlier in the chapter revealed a discrepancy in a timeout value. For demonstration purposes, let's say you want to find every occurrence of this discrepancy within a project and reset the value accordingly.

1. In the Navigator view, right-click **Portal Lifecycle View** and select **Edit > Find And Replace**.
2. In the Find And Replace dialog that opens, set the criteria as follows:
   a. If it is not the current display, click the **Properties** tab.
   b. Select the **Name and Value** radio button.
   c. Enter Timeout for the property name.
   d. Enter 1000 for the current value.
   e. Enter 300 for the replacement value.
3. Click **Find**. Notice the result of the operation.
4. Click **Replace** to overwrite the current value with the replacement value.

   In a search results list with multiple entries, Application Configuration Console jumps to the next list entry. If you click **Replace All**, Application Configuration Console updates all entries in the list without any further interaction.

5.3.1 Other Things to Know About Find and Replace Operations

In addition to property and value searches, you can also search on the following:

- Container names
- Container metadata

- Tracking or provision settings
- Authentication pack settings
- Host and endpoint settings
- Resource specification settings
- Group names and users in groups

Note: All replacement property values are validated against stated requirements in Application Configuration Console so that you cannot set invalid values.

6

Provision, Update, Version

The logical extension to detecting differences, as covered in the previous chapter, is what to do about it. Do you want to synchronize property values? Which value takes precedence, the one in Application Configuration Console, or the one in the external resource? Or do you want to go back to a fixed point in time when you know the numbers were reliable?

This chapter explores these options and how to implement them.

> **Note:** The tasks in this chapter assume that you are already logged in to the Application Configuration Console Client.

6.1 Provision

Provisioning is pushing out assets and their configurations from Application Configuration Console to the targeted resources that constitute your business infrastructure. The implication is that once having loaded your assets into Application Configuration Console, you committed to managing your assets within, and consider any changes made outside the bounds of the application to be unwarranted and thus to be overwritten.

In Chapter 5, a comparison of `config.xml` to its external resource detected a difference. Since, for the purposes of this discussion, the Application Configuration Console version is considered to be correct, we are going to provision this version.

There are a variety of ways to initiate a provisioning operation. The process that follows demonstrates one way:

1. In the Navigator view, expand **Portal Lifecycle View > Development > App Server**.

2. Right-click **Server1** and select **Synchronize > Synchronize View** from the popup menu.

3. In the Synchronize Options dialog that opens, accept the default selection (**Show outgoing changes**) and click **OK**.

   The Synchronize view that opens tells us that a single configuration (**config.xml**) in the **Server1** asset differs from its external resource.

4. Right-click the asset (**Server1**) and select **Provision** from the popup menu. The Provision dialog opens. A few comments about the dialog:

   – **Tag** and **Comment** are optional. We filled in a comment but no tag.

   – We want to run now as opposed to a later time.

   - Since we did not select **Include All Configurations**, only the changed configuration will be provisioned.

5. Click **OK** to execute the provision operation. After a moment, a message denotes success (or failure) of the operation.

6.1.1 Other Things to Know About Provisioning

Note the following additional points about provisioning:

- When you do a Synchronize view, the resource spec is re-evaluated to pick up any changes to files added or deleted.
- You also can provision from the context (right-click) menu in the Navigator view. It opens the same provision dialog.
- Application Configuration Console has built-in protection in the event the external resource has changed since the initial load or the last update (**Stop on Conflict**). This allows you to investigate the difference and make an informed decision about allowing the provision to proceed.
- You can schedule a provision to occur at a later time, either as a one-time occurrence, or on a recurring basis.
- Application Configuration Console supports a form of secure provisioning that works with sudo and PowerBroker environments to provide access control and audit trail functions.
- When you provision a master asset, you have the option of provisioning some or all of the associated subordinate assets at the same time (the Provision dialog changes to accommodate this option).

6.2 Update

Updating is pulling assets and configurations into Application Configuration Console from external resources. This is what you do initially to create assets, so when you perform an update, you overwrite the Application Configuration Console data with the current external resource. The implication is that you use Application Configuration Console to monitor activity, but institute change outside the application.

An earlier comparison between assets in Application Configuration Console detected a difference in the timeout property value between httpd1.conf files. Since we're unsure which is correct, we decide to pull in the value from the external resource.

1. In the Navigator view, expand **Portal Lifecycle View > Development > Web Server**.
2. Right-click **Aeneas** and select **Synchronize > Update** from the popup menu. The Update dialog opens.
3. The dialog is fairly simple. **Tag** and **Comment** are optional. You can expand the selected **Container** to choose individual configurations, if desired (we're going to leave it as is). Click **OK** to execute the Update operation.

   After a moment, a message denotes success (or failure) of the operation:

   Note that a configuration was skipped. We updated at the asset level, and only one of the two configurations in Application Configuration Console was different from its external resource.

6.2.1 Other Things to Know About Updating

Note the following additional points about updating:

- When you update an asset, the resource specification is re-evaluated to pick up any changes and to identify new or deleted external files.
- If you perform an update operation on a subordinate asset, the configuration information updated from the external resource will be overwritten the next time the subordinate is refreshed from its master.

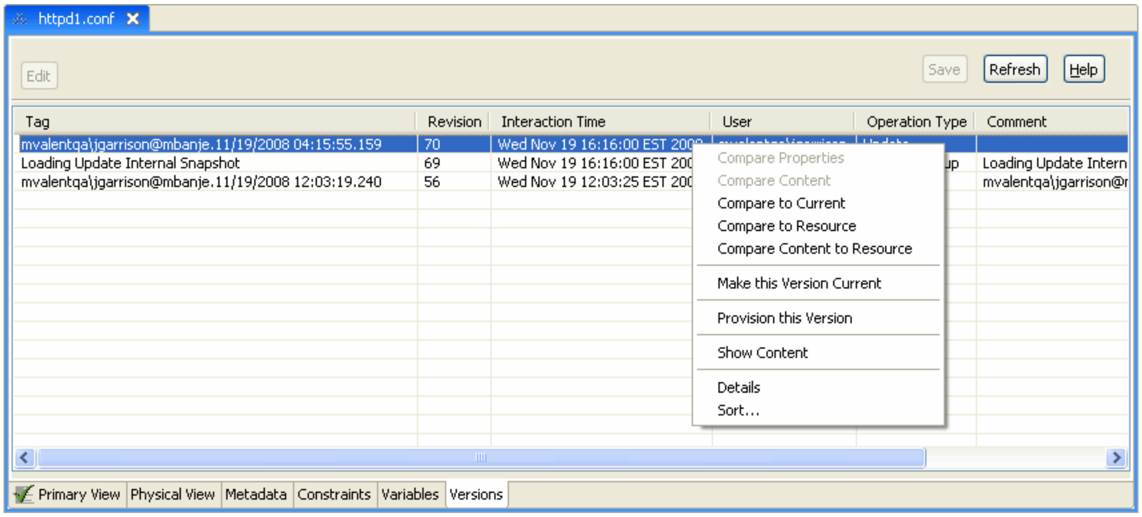
6.3 Version

A version is a snapshot in time of an asset and its configurations. Events such as provisions, updates, and tracking cause versions to be saved automatically. Saved versions include both Application Configuration Console data and external resources. Versions provide an audit trail and a recovery mechanism.

For a simple case, let's consider the configuration we just updated (`httpd1.conf`):

1. In the Navigator view, expand **Portal Lifecycle View > Development > Web Server > Aeneas > Resource View**.
2. Right-click **httpd1.conf** and select **Open** from the popup menu.
3. In the Editor area, click the **Versions** tab at the bottom to see all versions of this configuration since initial load, as shown in Figure 6–1:

Figure 6–1 Saved Versions of an Asset Configuration



Tag	Revision	Interaction Time	User	Operation Type	Comment
mvalentqa\jgarrison@mbanje.11/19/2008 04:15:55.159	70	Wed Nov 19 16:16:00 EST 200			
Loading Update Internal Snapshot	69	Wed Nov 19 16:16:00 EST 200		up	Loading Update Intern
mvalentqa\jgarrison@mbanje.11/19/2008 12:03:19.240	56	Wed Nov 19 12:03:25 EST 200			mvalentqa\jgarrison@r

As you can see, there currently are three versions of this configuration:

- As it was when first loaded into Application Configuration Console
- As it was immediately prior to the update
- As it is now, based on the current content of the external resource

This graphic shows the commands available from the context (right-click) menu. If you multiselect versions, the context menu changes to offer the five compare operations shown here in the top portion.

Clearly, maintaining an audit history such as this gives you considerable recovery and reconciliation options in maintaining the integrity of your assets.

6.3.1 Other Things to Know About Versioning

Note the following additional points about versioning:

- When you view the versions of an asset, you see all versions of all configurations under that asset.
- While versions are created automatically based on events such as provisions, updates, and so forth, you can save a version of an asset or configuration on demand, from the Navigator view.

7 Web Reports

Application Configuration Console Web Reports provide a powerful tool for monitoring and managing activities within the IT infrastructure. They allow users and administrators to be proactive rather reactive to the skews and anomalies that crop up in enterprise computing networks.

7.1 Access to Web Reports

Web Reports are browser-based; you do not need the Application Configuration Console Client to view and generate reports. You do, however, need proper credentials, as you have to log in after pointing your browser at this URL:

```
https://oaccservername:9943/mvwebreports/
```

Where `oaccservername` is the host where the Application Configuration Console Server is installed. Enter your username and password to log in to Application Configuration Console Web Reports. The browser window displays the Web Reports home page, where you can schedule and generate reports.

7.2 Report Summaries

Web Reports are grouped by category and provide a cross-section of statistical and graphical information about activities involving assets and configurations managed in Application Configuration Console. Table 7–1 summarizes the individual reports.

Table 7–1 Summary Descriptions of Individual Web Reports

Category	Reports	Description
Audit	PCI Compliance	The PCI Compliance report runs an audit on selected assets to validate compliance with recommended operating system security settings. This report is available only if you have the PCI Compliance Automation Module installed.
Audit	Change Compliance	A stacked bar series graph showing the number of configuration changes for a specified time period. Configuration changes refer to provision, update, and tracking alert activity.
Activity	Change Summary	A table that shows all provision, update, and tracking alert activity during a selected period by project.

Table 7–1 (Cont.) Summary Descriptions of Individual Web Reports

Category	Reports	Description
Planning	Job Schedules	A table that lists jobs currently scheduled for execution, either on a recurring basis or as a one-time event. These include tracking, provisioning, comparison, and report jobs, as well as one-time events such as automation module script execution. This report is useful for uncovering potential bottlenecks in scheduling activity.
Planning	Tracked Assets	Lists complete information about assets being tracked, including owner, number of configurations, whether auto-update is enabled, and so forth.
Planning	Non-Tracked Assets	Lists information on assets that are not being tracked. Such a list is helpful in deciding whether certain assets should be tracked.
Planning	Change Volume	A bar series graph that shows the number of changed configurations in projects over a specified time period. Configuration changes refer to provision, update, and tracking alert activity.
Comparison	Comparison Specification	Select from a list of saved comparisons to generate a comparison report in the browser window.
Comparison	Comparison Activity	Lists alerts raised by scheduled comparisons. It provides the date and time that the difference was detected and the name of the saved comparison that resulted in the alert.
Administration	Groups and Memberships	Lists all or selected groups in Application Configuration Console and their members. Groups are used to set permissions on shared objects.
Administration	Roles and Permissions	Lists all assets in a project (for which you have read permission), and information about each one related to ownership and permissions.
System Info	System Summary	A table that shows a high-level view of the data being managed in Application Configuration Console.
System Info	Host and Asset Details	Lists the assets on each host known to Application Configuration Console. Asset details include a count of the number of assets on each host and the asset owner.

Note: You can easily integrate your own custom reports into the Web Reports browser interface so that they are available on the menu bar to be generated and scheduled just like the standard reports.

7.3 What You Can Do

Besides generating Web Reports based on various criteria you supply, you can also do the following:

- Create and save a generated report in PDF format.
- E-mail a PDF version of a generated report.
- Export report data as a delimited text file (CSV).
- Schedule a report to run automatically on a recurring basis; arrange to e-mail the report output.
- Run a saved comparison and print out the resulting comparison table or export it to a spreadsheet.

7.4 Try It Out

Rather than spend any more time here on Web Reports, why not take it for a test drive. Let's assume you have completed the exercises in the previous chapters. Now we are going to generate a couple of sample reports to review some of the activities performed earlier.

1. Log in to Web Reports as described in the beginning of this chapter.
2. From the **Planning** menu, choose **Tracked Assets**.
3. In the Navigator tree on the left, select the **Portal Lifecycle View** project.
4. Click the **Generate Report** button.

The report that results should denote tracking set on the **Server1** asset, as performed in Chapter 5. As the report shows, although the asset has four configurations, we set tracking only on one file (`config.xml`, in this case).

Try another one.

1. From the **Activity** menu, choose **Change Summary**.
2. In the Navigator tree on the left, select the **Portal Lifecycle View** project.
3. Click the **Generate Report** button.
4. In the report that results, locate the tracking **Change Type** row for **Server1**. Click the pair of numbers in the **Revision** column.

A Change Detail report opens in a new browser window that shows the difference detected that generated the alert. Notice the link on the right (**Compare Content**); click it to compare the value in Application Configuration Console to the current value in the external resource.

If you didn't perform the exercises in the book, load some data now into Application Configuration Console and perform some tasks so you have activity to report on. Use the *Web Reports Online Help* for guidance in generating and dispersing reports.

Glossary

Alert

Alerts denote differences detected as a result of scheduled events. You can use alerts as a simple notification system, or you can use an enhanced version to manage alerts systematically.

Managing alerts involves a more formalized approach where someone takes ownership to investigate and eventually resolve the issue. In addition to the current status, a managed alert also denotes who works on and resolves the issue, when it was resolved, and what the resolution was.

See also **Tracking Alert**,**Comparison Alert**.

Alerts View

The portion of the Application Configuration Console Client window (lower-right pane) where alerts are announced and from which you can right-click to take any of various actions on an alert.

Asset

The key component in Application Configuration Console. An asset is defined by the union of a host/endpoint, an authentication pack, and a resource specification. These three things uniquely identify an **External Resource**. Assets represent the servers, devices, and systems that you manage. For example, Web servers and application servers are both represented as assets. Assets typically contain one to many configurations.

See also **Master Asset**,**Subordinate Asset**.

Asset View

A way of arranging the configurations of an asset. An asset view may contain all the configurations of an asset or some subset of configurations. Asset views are especially useful for assets with deeply-nested configurations, or assets with subsets of configurations that are of interest to different groups of users. You can also use an asset view to rearrange configurations and group them into different folders

Asset View Specification

The rules for creating an asset view are defined in an asset view specification. Some automation modules contain ready-to-use asset view specifications, such as the WebSphere Servers View in the WebSphere automation module. You can create additional asset view specifications, and then apply them to assets.

Authentication Pack

Often shortened to auth pack. A centralized, reusable, and convenient method to store access credentials for remote systems. An authentication pack contains a username and password (encrypted), or an SSH certificate and passphrase, or similar credentials. All Application Configuration Console users can create authentication packs, and they can share them with other users (passwords are always hidden). This alleviates the need for each user to have an account on each remote system, and changes to credentials only need to be made in one place.

Automation Module

An automation module brings enhanced functionality to Application Configuration Console. As the name implies, an automation module contains "automations" that combine many complex steps into simple operations. Automation modules also include dictionaries that contain specific properties and values appropriate for the automations. Application Configuration Console currently offers automation modules for IBM WebSphere application servers (versions 5.1 and 6.0), BEA WebLogic Server (versions 8, 9, and 10), and Windows 2003 Server.

Base Directory

A directory on a remote host that is identified in a **File Resource Specification** or an asset as the starting point from which all relative paths to files or directories defined in the resource spec are based.

Breadcrumbs

A locator tool that shows where you are in the **Navigator View** relative to the top of the hierarchical tree. The trail of breadcrumbs appears in a horizontal line above the Navigator view; each "crumb" in the trail is a hyperlink to the corresponding location within the hierarchy.

Command Line Interface (CLI)

The CLI is another method of accessing Application Configuration Console data and commands, in addition to the Client interface. The primary function of the CLI is to provide an interface for scripts to interact with Application Configuration Console. You can also type CLI commands manually to execute several of the commands in the Client interface.

Command Resource Specification

Lists a remote command or group of commands to be run in order to save the output in a configuration. The remote commands can be native commands of the remote device, or they can be scripts of some kind. You can run the commands directly or through sudo to have the benefits of sudo control and logging. You can run the commands through su to execute the commands under another user login. Interacts with a Command Resource Adapter.

See also **Resource Adapter**.

Compare

To evaluate two or more containers or configurations for any differences between the elements being compared. You can compare individual configurations or entire container trees. You can compare configurations within Application Configuration Console or to their external resources. You can also compare content, that is, raw (unparsed) text of configurations.

See also**Synchronize View**.

Compare View

A display that appears in the Application Configuration Console Editor area (upper-right pane of the Client), highlighting the differences uncovered in a comparison, from which you can take corrective action.

Comparison Alert

A difference detected between assets or configurations as a result of a scheduled comparison.

Comparison Key

Metadata that you can assign to a container to substitute a different container name for the purpose of comparison.

Configuration

An object that contains configuration information, such as properties and their values. Assets contain configurations, where each configuration usually represents the configuration information from a single configuration file, such as an XML file that contains application server settings.

Configuration View

A representation of your configuration data that is created with a specific **Transform**. Different transforms can help you see different aspects of your configuration data by rearranging attributes and elements and character data. **Primary View** and **Physical View** are examples of configuration views.

Connector

The combination of **Host**, **Authentication Pack**, and **Resource Specification** that enables Application Configuration Console to read and write configuration data to and from managed servers and devices.

Constraint

A way to test properties for certain values when saving or provisioning configurations. Think of a constraint as an "equals" statement, as in "When configurationA is provisioned, verify that the value of propertyA is equal to the value of metadataA."

A constraint contains two parts: a Source location and one or more Target locations. The Source location points to the value and the Target locations define what is to be tested or verified against that value.

Compare to **Variable**.

Container

Objects that you create in Application Configuration Console to define the structure of your system. Application Configuration Console recognizes projects, environments, layers, and folders as containers, but you can assign labels to these hierarchical containers that match your terminology.

Deferred Provisioning

Refers to the ability to schedule at a later time a once-only **Provision** operation for a particular container or configuration. Useful for example to defer a time-consuming provision until off-peak hours.

Dictionary

Also called a property dictionary. Contains definitions that set a property type and valid values. For example, an HTTP_Port property could be defined as an integer that can only have a value of 80. Many properties use the GenericString definition, which does not enforce any restrictions.

Editor Area

The portion of the Application Configuration Console Client window (upper-right pane) where the contents of configurations and **Metadata** about containers and configurations display. When you double-click an item in the Navigator view, Application Configuration Console opens it in the Editor area for further operation. You can open multiple items simultaneously.

Effective Permissions

The overlap of the permissions on a container and the permissions on a top-level shared container. A user group must have write permission in both locations to have effective write permission. For example, if a group has read and write permission on an asset, but the asset is shared under a **Project** that only has read permission for that group, the effective permission is read only—the write permission does not exist in both places so it is not effective.

See also **Permissions**.

Endpoint

Protocol (FTP, SSH, UNC) used to transfer information over the network. Specified in combination with the host where the external resources reside.

Environment

Usually the first level under a project. A typical use is to represent lifecycle stages for a product such as development, quality assurance, staging, etc. Environments can also be used for geographic locations to make it easy to view assets and resources by location. Environments can contain layers, folders, and assets.

Export/Import Capability

You can export comparison results as an HTML file or as a text delimited file and share the information with others in your organization who don't have access to Application Configuration Console. You can export system files such as resource specifications and property dictionaries as XML files that can be viewed and edited and subsequently imported into Application Configuration Console. For example, you can create a resource specification to be used as a standard within your organization, export it as an XML file, and have others import it into their Clients.

External Resource

The source of files or command responses that constitute an asset and its configuration(s). A resource is external in the sense that it exists outside of Application Configuration Console, somewhere in a file system on a remote host.

File Resource Specification

Lists the files to be added and managed in an asset. For example, one resource specification can identify all of the files to add in an asset for a WebSphere or WebLogic application server. Interacts with a File Resource Adapter.

See also **Resource Adapter**.

File Template

A complete copy of a file such as a shell script, created from the **Physical View** of a configuration. After you create a file template, you edit it to insert variables. You then set values for those variables in every asset that will contain a matching configuration. When you apply the file template to a configuration, it replaces the variables with the values you set.

Filter

In general, the capacity to apply criteria to refine a returned list. Application Configuration Console provides several filtering options, including alerts, jobs, synchronize views, rules specifications, and wildcard pattern matching on file resource specifications.

Find and Replace

Powerful search mechanism within Application Configuration Console that lets you search for, among other things, properties and values, container names, various settings, users and groups, and **Metadata**. The mechanism validates replacement values so that you cannot set invalid values.

Folder

The Navigator view contains three top-level folders:**My Workspace Folder**, **Public Workspace Folder**, and **System Folder**. Folders also are optional organizational containers that you can use as needed to organize and categorize assets. You can add folders at any level of the hierarchy between projects and assets.

Group

Groups control which users have permission to view and change information in Application Configuration Console. A group contains one or more Application Configuration Console users. When you share a container or configuration, you set permissions for groups of users, not individual users. You can give different permissions to different groups, such as read permission or write permission.

Host

An addressable machine in your network where external resources reside. A host has an associated endpoint or protocol to use when connecting to it.

Import

See **Export/Import Capability**.

Jobs View

The portion of the Application Configuration Console Client window (lower-right pane) that lists scripts that are running. The scripts might be part of an automation module, or they could be created by someone in your organization. Also lists deferred provisions set up to run as one-time only.

Layer

Layers can contain folders and assets. Layers are often used to represent technology layers contained in an environment, such as the Web server, application server, and database.

Link

A link is a way to see and open a container and its children (or a configuration) from a different location. Linking allows you to organize items in a way that's convenient for you. For example, your configuration data may be arranged by projects, with each project having its own application servers. You can create a new project and add links to all the application servers so that they all appear under one project, which makes them easy to locate and compare.

Make Configuration Changes Live

The ability to edit certain registry files on the Application Configuration Console Server directly within the Client and render the updates in real-time without interrupting server operations. There are other registry edits that require you to restart the Server to effect the changes.

Mapping

Application Configuration Console uses custom mappings to load external resources (usually configuration files) into the configuration database and to provision configurations out to external resources. Mappings convert the different formats used in external resources into a standard format that is used internally, and then transformed to a structured configuration view. Non-structured files and binary files, such as shell scripts and .ear files, don't have mappings.

Compare to **Transform**.

Master Asset

A master asset is a regular**Asset** from which other (subordinate) assets are “cloned;” that is, the cloned asset has the same makeup (set of configuration files) as its master. When you change the master asset, you propagate the changes by refreshing its subordinate assets.

An asset can become a master in a variety of ways. You create a new asset based on an existing asset. The existing asset becomes the master to the subordinate that was based on it. You take an existing asset and assign it master status by declaring another existing asset as subordinate to it.

Contrast with **Subordinate Asset**.

Metadata

Metadata takes two forms. As system-defined, metadata is annotational information about a container or configuration, such as when it was created or who last made changes. Metadata can also be user-defined, and as such, is most commonly used to drive value substitution for things such as comparison settings, variables, Navigation view hierarchies, and so forth.

Multiprovision

The act of provisioning a master asset and some or all of its subordinate assets in a single action. Multiprovisioning affords a convenient way of making configuration changes in one place and distributing these changes across multiple servers that have the same set of configuration files.

See also **Master Asset**,**Subordinate Asset**, **Provision**.

mvPath

mvPath is an expression language for referring to objects in Application Configuration Console such as containers and properties. Use mvPath when specifying variables and constraints, when using the command line interface, and when writing your own scripts. In the mvPath view of configuration data, everything is a container except for properties and **Metadata**. Projects, environments, layers, folders, assets, configurations, views, and configuration elements are all containers. Both containers and properties can have metadata, and properties and metadata can have values.

My Workspace Folder

Or simply My Workspace. A hierarchy of projects, containers, and configurations within Application Configuration Console that is your private work area, and as such, cannot be seen by anyone else. When you share something in My Workspace, it becomes visible in the Public Workspace folder to those you share with.

Contrast with **Public Workspace Folder**.

Navigator View

The portion of the Application Configuration Console Client window (upper-left pane) that displays your projects and configurations and how they relate to each other in a hierarchy, similar to a file explorer. In Application Configuration Console, all configuration information is organized under projects. Projects can contain other containers and/or assets with configurations.

Normalize

On comparisons that detect differences across two or more configurations, you can normalize the row in the comparison view where a difference is detected; that is, you can set the element or value in each configuration being compared to be the same.

Organizational View

An organizational view can show you your existing configuration data in a different organizational structure than the way it was originally loaded. For example, your configuration data may be arranged by projects, with each project having its own application servers. Because of the project hierarchy, the application servers are several levels down under different environments and layers. You can create a new organizational view in the project that contains links to all the application servers, which makes them easy to locate and compare.

Ownership

In general, anything you create in Application Configuration Console (container, asset, resource specification, host, and so forth), you own, which means you control access. Others can see items you own in the System folder (hosts and authentication packs, for example), but they cannot change them. You can share items you create with others by granting permissions to user groups. Shared items become visible in the Public Workspace. You can transfer ownership of your items, which means you relinquish control over them. In addition, an administrator can transfer ownership of all of your resources to another user.

pbrun

A program by Symark PowerBroker that uses access control lists to validate user requests based on the user's credentials and defined privileges. Used in Application Configuration Console for **Secure Provisioning** and remote command execution.

Permissions

See also **Effective Permissions**.

Physical View

This is the raw text view of a configuration as it is stored in the external resource when the asset was loaded or updated. The Physical View does not show any structure except the formatting and new lines from the original file. You can edit a configuration in the Physical View, and the data will be validated when you save your changes (assuming the file type can be validated).

Preferences

Settings you can establish to customize certain aspects of the Application Configuration Console Client interface. Preferences include such items as whether to remember or prompt for the server URL, and whether to require a tag field on provision and update operations. Preferences is a Window menu selection in the Client.

Preview

For configuration files of any type, you can validate the file and preview both the Primary (parsed) View and the Physical View as you create the resource specification, before you attempt to load an asset using the resource spec.

Primary View

This is the parsed view of a configuration transformed for display in the Editor area based on file type, such as XML. A typical display is property name/value pairs within elements. You can edit the contents within the Primary View. You also can add new elements and properties to the configuration.

Project

Projects are top-level containers that can contain any other organizational container, including other projects. In Application Configuration Console, projects are typically used to represent real-world projects or applications such as an Internet portal or a 401K program. You can create a system view for a project to see the relationships of the containers that make up that project.

Property

Properties together with their values constitute configuration information in Application Configuration Console. For example, you might have a configuration for a Web server that contains a property named port with a value of 1080. Properties are always displayed in a configuration view. Most configuration views use a transform to organize the properties into a structure of elements that shows the relationships between the properties.

Property Dictionary

See **Dictionary**.

Provision

Provision is the act of committing, or writing out, configuration information from Application Configuration Console to external resources, such as an XML configuration file for an application server. Configuration changes that you make in Application Configuration Console will have no effect on external resources until you provision the changes.

Provision is the only Application Configuration Console action that modifies an external resource.

Contrast with **Update**. See also **Deferred Provisioning**, **Secure Provisioning**.

Public Workspace Folder

Or simply Public Workspace. A hierarchy of projects, containers, and configurations within Application Configuration Console that can be seen by everyone.

Contrast with **My Workspace Folder**.

Query

Application Configuration Console has a querying capability that lets you see relationships between connectors and containers and learn how they are being used. For instance, you can query on which assets are using a specific authentication pack, host, or resource specification. Perhaps you want to know if a particular authentication pack has had recent activity, such as any write operations in the last three days.

Resource

See **External Resource**.

Resource Adapter

An underlying software driver that resource specifications use to load assets. Application Configuration Console uses command, file, and Windows resource adapters.

Resource Definition

The details portion of a file or command resource specification where you define the make-up of the external resource, such as the file name and type of mapping to use or the command and arguments to execute.

Resource Specification

Often shortened to resource spec. Identifies the files and resources that can be loaded as assets into Application Configuration Console from remote systems. There are two types of resource specifications: one, **File Resource Specification**, for loading files and directories; the other,**Command Resource Specification**, for saving the output of a command.

Also commonly referred to as Signature.

Resource View

The default asset view. The Resource View is a special asset view that shows the file and directory hierarchy that exists on the server file system, while other asset views show a different arrangement or subset of the same configurations.

Roll Back

To restore a previous version of an asset or configuration following a provision or update action.

saveSpecEntry

A saveSpecEntry identifies a series of targets and tasks to be carried out when an asset is loaded or updated. The most common example is setting element-level **Metadata** based on the value of a contained property, for use in compare operations.

Scheduling

In Application Configuration Console you can schedule various events to occur either on a one-time or on a recurring basis. Scheduled events include the following:

- Tracking changes
- Saved comparisons
- Provisioning
- Web Reports generation

Secure Provisioning

The capability within Application Configuration Console to perform **Provision** operations in enhanced-security environments. Secure provisioning writes configuration files to a **Temporary Directory** on a remote system and then uses a **sudo**, **pbrun**, or **su** command to copy the files to a secure location.

Sharing

You can share anything that you create in Application Configuration Console with other users. Shared containers and templates appear in the **Public Workspace Folder**. Items that you share in the **System Folder**, such as hosts and resource specifications, become visible to other users in the System Folder.

Only the owner of an item can share it. When you share an item, you set permissions that define which groups can see and use that item and its children.

Specification

See**Command Resource Specification**, **File Resource Specification**.

su

A command that changes user credentials to those of the root user or to some other specified user and then initiates a new session on a remote system. Used in Application Configuration Console for **Secure Provisioning** and remote command execution.

Subordinate Asset

A subordinate asset is one that derives its makeup (set of configuration files) from another asset that has been declared its master. You never edit or update the subordinate asset directly. Rather, you refresh a subordinate from its master to include changes made to the master asset.

An asset can become a subordinate in a variety of ways. You create a new asset based on an existing asset. The new asset becomes subordinate to the asset on which it is based. You take an existing asset and assign it subordinate status by declaring another existing asset as its master.

Contrast with **Master Asset**.

sudo

A command through which a system administrator delegates authority to give certain users (or groups of users) the ability to run some (or all) commands as root or another user while providing an audit trail of the commands and their arguments. Used in Application Configuration Console for **Secure Provisioning** and remote command execution.

Synchronize

To determine whether changes exist in Application Configuration Console or the external resource and then to make them the same by updating one or provisioning the other.

Synchronize View

Provides a way to identify changed configurations in Application Configuration Console and changed external resources, and then to use a **Provision** or an **Update** action to synchronize the two. Use the Synchronize view to compare entire assets or other containers to resources.

System Folder

The System folder contains resources and references, such as authentication packs, resource specifications, groups, and dictionaries, to help you work with your configuration data.

System View

A system view is a visual representation of the environments and layers in a project, or of any two container levels under a selected container. You can use a system view to easily see the components in each layer of several environments side by side.

Template

Templates can help you standardize your configurations, which makes it easier to create and roll out new systems that conform to those standards. Templates are essentially copies of existing containers and configurations. You typically add constraints and variables to templates for any values that need to change in each environment, such as a server hostname. When a template is ready, you can create new containers or configurations based on the template.

Temporary Directory

Used in Application Configuration Console for**Secure Provisioning** operations. This refers to a location on a remote system where configuration files can be written prior to being copied to their final secure location.

Tracking

To monitor configurations for the purpose of detecting changes in Application Configuration Console or in the external resource. To enable tracking, you specify which configurations to track and a schedule. At each scheduled time, the system compares the configurations with the external resource. If there are differences, the system displays an alert in the Alerts view and optionally sends an e-mail notification.

Tracking Alert

Posting of a difference detected between a configuration and its external resource where tracking was enabled on an asset view.

Transform

Transforms in Application Configuration Console convert configuration data from the internal storage format to a format that can be displayed in a configuration view. When you first load data into a configuration, a parser converts the data into a standard format that is used to store the data in Application Configuration Console. Transforms convert the data from that format into a structured representation. Once you've loaded data into a configuration, you can create configuration views that use different transforms to highlight different aspects of the data.

Compare to **Mapping**.

Update

Update is the act of overwriting configuration information in Application Configuration Console with the associated external resources. You can update a single configuration, or all configurations under an asset or higher container.

Contrast with **Provision**.

User Group

See **Group**.

Variable

Variables are a method of assigning values to properties, rather than setting the values directly. Values derived from variables are retained when configurations are updated, so they overwrite values loaded from external resources. You can also use variables to set container and property names and **Metadata**, but they are most commonly used for property values.

Compare to **Constraint**.

View

A pane within the Application Configuration Console window, such as the Navigator view, Alerts view, or Jobs view.

See also **Asset View**,**Configuration View**, **Organizational View**, **Synchronize View**, **System View**.

Web Reports

A Web-based reporting component that you can use to display Application Configuration Console data in a variety of textual and graphical formats. You can generate reports in real time or schedule them to run at specific intervals, with the output sent to an e-mail list. You also can export reports in PDF and CSV formats.

WebLogic Automation Module

See **Automation Module**.

WebSphere Automation Module

See **Automation Module**.

Windows Resource Extensions

The Windows Resource Extensions (WRE) adds capabilities to Application Configuration Console for working with Windows Servers and resources. The WRE includes a Windows automation module that loads a set of resource specifications designed to extract configuration and other information from Windows servers. These resource specifications interact with a Windows Resource Adapter.

See also **Automation Module**,**Resource Adapter**.

Workspace

See **My Workspace Folder**,**Public Workspace Folder**.