



Cloud Service Automation

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Content Archive Tool Guide

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Overview

HPE Cloud Service Automation (CSA), through the command-line interface of the CSA Content Archive Tool, enables you to export and import artifacts between CSA archive files. Exporting enables you to create a zip of selected artifacts on one system, and importing/updating enables you to install/add or replace/overwrite artifacts on another system.

An archive contains XML and JSON documents that represent the primary artifact being exported, dependent artifacts, and any customized images or dynamic property JSP files necessary to represent the entire artifact. For example, a service offering archive contains the XML documents representing the service offering, the service design associated with the service offering, resource offerings associated with the service design, and a Manifest XML document. The service offering archive will also contain any dynamic property JSP files and images used for customization of all these artifacts.

Important:

Archives created on previous versions of CSA can be imported to the most current version. However, if CSA has been configured to verify the authenticity of import service design, service offering, and catalog content archives (which is done by setting the property `csa.security.enable`), then service design, service offering, and catalog content archives that were successfully imported into CSA 4.50 or earlier will no longer import properly until they are digitally signed. See the *CSA Configuration Guide* for information on how to digitally sign a content archive.

Operations

The CAT enables you to use the following operations:

Export

Use the export operation to export supported artifacts as archives. An archive name includes the primary artifact type, its display name, and its ID. A separate archive is created for each primary/topmost artifact in an exported hierarchy. After an export is complete, a summary of the operation is displayed.

Validate

Use the validate operation to preview actions that will be taken by the import operation. This operation displays a summary of artifacts that can be imported from the specified archive and artifacts that already exist on the system.

Import and Update

The default import behavior adds artifacts, whereas the update behavior not only adds artifacts but also replaces matching artifacts. After an import/update is complete, a summary of the operation is displayed.

Default Import Process

By default, an artifact is not imported if the source and existing target artifacts are considered to be functionally equivalent. Artifacts are considered functionally equivalent if the following is true:

Values evaluated to determine functional equivalence

Artifact type	Has the same
Component Palette	Internal name
Resource Offering	Resource category, provider type, properties, and actions
Service Design	Internal name
Service Offering	Internal name
Resource Environment	Internal name
Catalog	Internal name and organization ID

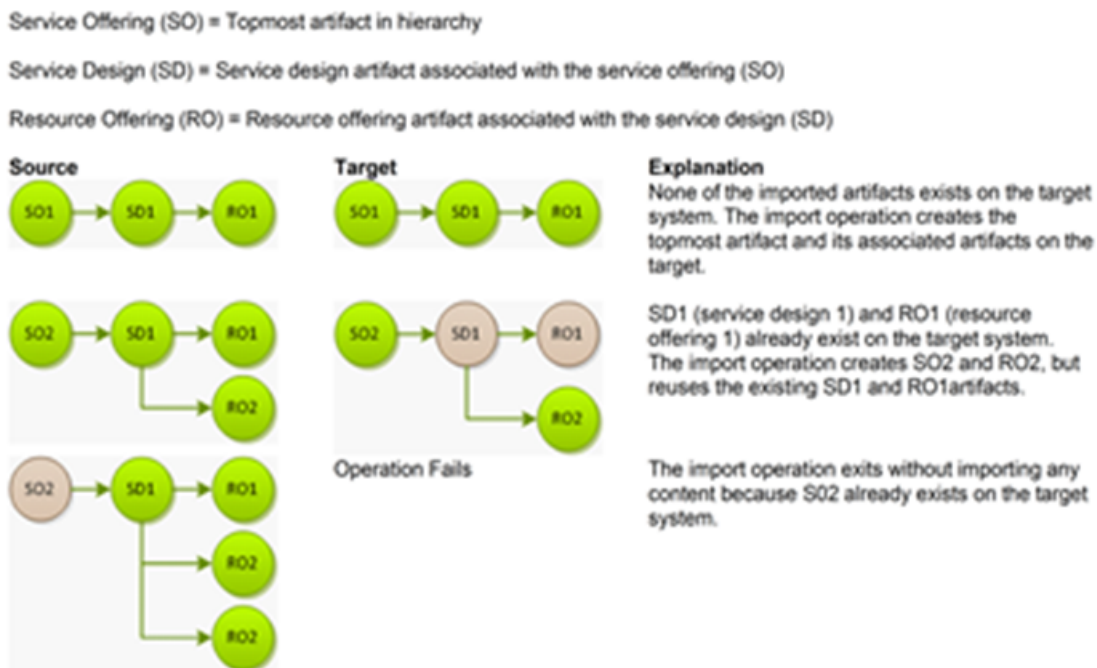
Important: If the import operation fails, changes are rolled back and the target system is left unchanged.

Important: Artifact-import rules differ for catalogs and component palettes. If a catalog already exists on the target system, the catalog is updated with any added or removed supported artifacts. Import of a component palette by default is an update operation, which is described below. The import process imports component palettes, including their associated component types, templates, and component type constraints.

Imported artifacts are associated with existing artifacts in the system. If the existing artifact is the primary artifact in a hierarchy, the import operation exits without importing any of the archive content. For example, when importing a service offering archive, if the service design in the archive already exists in the system and the service offering is not in the system, the service offering is imported and is associated with the existing service design. However, if the service offering (in this case the primary artifact) already exists in the system, the import operation exits without importing any artifacts.

The following figure includes additional examples of how the evaluation process works.

Example import scenarios



Import using validate option

This operation combines validate and import operations. Before importing, this operation validates the contents of the archive and displays a summary of changes that will be made during the import operation. After displaying this summary, the import with validation operation prompts the user before proceeding with the import.

Import using update option

The update option imports new artifacts and overwrites existing artifacts. New artifacts are created if they do not exist on the target system. Identical artifacts that exist on the target system are overwritten with changes from the archive.

There may be cases where an existing artifact on the target system cannot be updated. For example, if the existing artifact is a service offering or design and the service offering or design is published, the service offering or design will not be updated because a published service offering or design cannot be edited.

An existing service offering or design can be updated from a published offering or service design archive if the existing service offering or design is not published.

Note: Use this option with caution. Functionally equivalent artifacts that exist on the target system are updated (overwritten) with changes from the archive. New artifacts are created if they do not exist on the target system.

Import using update preserveExisting option

Use this option with caution. This operation imports all artifacts present in an archive, whether they exist on the target system or not. Any artifact with the same name on both the target system and the archive is preserved as follows: name, display name, and description of the existing artifact are modified internally, and the display name and the description are appended with "Superseded on" and the date. The name, display name, and description of the imported artifact remain intact.

This operation is supported for service offerings, service designs, resource offerings, and resource environments, and does not apply to component palettes. In the case of catalogs, this process applies to the associated artifacts, but does not apply to the catalog itself.

Important: For all imports and updates, if a dynamic property JSP file by the same name already exists on the target system, the existing file will be used, and will not be imported from the archive.

See ["Examples" on page 36](#) for examples of all operations.

Note: Content is added to the log file (content-archive-tool.log) for all operations.

Recommended Best Practices

Before importing or updating:

- Use the export operation to create a zip file of your existing archive, ensuring a backup of any artifacts you might be affecting.
- Create a backup of your system or data.

- Understand the differences between available import and update options (some of which can destroy existing data) to make sure you choose the one that matches your expectations.

Supported Artifacts

The following CSA artifacts are supported in CSA artifact archives: component palettes, resource offerings, service designs, service offerings, resource environments, and catalogs.

Component Palettes

This section lists component palettes.

Content archive for component palettes

Exporting a component palette creates a content archive (.zip) file. The content archive contains XML documents for the component palette and its associated component types, component templates, and component type constraints. If component templates in a component palette have resource bindings on resource offerings, when the component palette is exported, resource-offering XML files are included in the component palette archive. The archive also contains both icons for customizing the artifacts, and a Manifest XML document, which contains meta information about the archive files.

Import process for component palettes

- Import of a component palette by default is an update operation. The import process imports component palettes, including their associated component types, templates, and component type constraints.
- If the component palette already exists on the system, it is updated with any added or removed component types, component templates, and component type constraints.
- Component palettes with the same internal name are considered to be functionally equivalent and are not imported.
- Circular dependencies between palettes are not allowed. For example, Palette A cannot have components that are derived from Palette B while, at the same time, Palette B has components that are derived from Palette A.
- When importing multiple, dependent component palettes that already exist on the target system, it is recommended that you import the palettes in the order of their dependencies.
- The import process for component palettes always ensures system integrity for component-type derivation and property propagation. For example, if you have modified properties of a component type in a palette called "Palette A," and there are component types in other palettes that derive from this component type, when an update of 'Palette A' occurs during import, changes that have been made to the component types are propagated to component types in other palettes.

Import process for component templates in a component palette with resource bindings on resource offerings

- During a component-palette import, resource offerings are either created when a resource offering with same name does not exist on the system, or updated when a resource offering with the same name exists. This resource offering import behavior occurs because the import option for a component palette is always update.
- Resource offerings are not automatically associated with resource providers when component palettes are imported. The `-p` command-line option does not override this behavior.

Resource Offerings

This section describes resource offerings.

Importing and exporting resource offerings

You can import and export many of the resource offerings that provide the basis for cloud automation. The export operation provides the ability to preserve the selected artifacts so they can be used to replicate the services on another system or to restore the artifacts. These exported archive files are preserved in an industry-standard zip archive file format.

Installing or replacing artifacts on the target system is supported by import and update operations. The import operation only adds artifacts, whereas the update operation replaces matching artifacts.

See the [Tasks](#) section below for more information.

Import requirements and prerequisites

- **Resource categories**

When you import a resource offering, resource categories (such as Compute) and provider types (such as VMware vCenter) are resolved first by **name** and secondly by **display name**. Out-of-the box resource categories and provider types have identical name values on all installations of CSA, and automatically resolve correctly during import. User-created resource categories and provider types do not have a name match on different installations of CSA, and instead are resolved by display name. For example, if a user-created resource category with a display name of Auditing is used for a resource offering, when that resource offering is imported to another CSA installation, an attempt will be made to match a resource category with a display name of Auditing. This match is successful only if the user has already created this corresponding resource category on the system in which the import occurs. If a resource category or provider type cannot be resolved by either name or display name, a new resource category or provider type is automatically created during import of the resource offering. There is no need to add user-created resource categories and provider types ahead of time on the import system; however, if you have done so, ensure the display name values used match those on the export system.

This match is successful only if the user has already created this corresponding resource category on the system in which the import occurs.

- **Flows**

During an import or update operation, if required dependencies do not exist on the Operations Orchestration system, an error message identifies these missing dependencies. For resource offerings this can include missing flows. For service designs, this can include missing flows referenced by resource offerings that are part of the design. The content pack that contain these flows must have been deployed to the Operations Orchestration system prior to importing these artifacts. The flows must also have identical signatures and identical paths as the flows on the system from which the artifact was exported.

During import, flow signature-related information is verified in or added to the CSA database (flow signatures are used during the creation of an artifact and when adding a resource synchronization action or an external approval type). This information is resolved by name which corresponds to the full path to the Operations Orchestration flow (for example, `/Library/CSA Content Pack/CSA3.2/Providers/Infrastructure/vCenter/vCenter Clone Server/Actions/vCenterSimple Compute - Deploy`). For information about how to deploy Operations Orchestration content packs, see the *Central User Guide*.

- **Update operation**

The update operation is destructive to existing data. You should understand the differences between the import operation, update operation, and update options to ensure you choose the operations and options that match your expectations. See the Tasks section below for more information.

- **Archive content**

The archive (.zip) file can only reference files or content contained within the .zip file itself, or that are already contained in the csa.war file.

- **Image files**

All images in the archive files must end in one of the following suffix values (for information on adding additional suffix values, see the *Cloud Service Automation Configuration Guide*):

`jpg|jpeg|jpe|jfif|svg|tif|tiff|ras|cmx|ico|pnm|pbm|pgm|ppm|rgb|xbm|xpm|xwd|png`

- **Back up your data**

Create a backup of your system or data. Before proceeding, be sure to create a backup of any resource offerings you may be affecting by using the export operation to save an archive zip file.

Content archive for resource offerings

Exporting a resource offering creates a content archive (.zip) file. The content archive contains XML documents for the resource offering you are exporting, icons for customizing the artifacts, and the Manifest XML document, which contains meta information about the archive files.

Default Import process for resource offerings

Resource offerings that have the same resource category, provider type, properties, and actions are considered to be functionally equivalent and are not imported. See Import and Update for a definition of functionally equivalent.

Update process for resource offerings

During the update process, resource offerings with the same internal name that exist on the target system are updated (overwritten) with changes from the archive. New resource offerings are created if they do not exist on the target system.

Note: Resource offerings are identified as equivalent by internal name only for the update operation.

Update preserveExisting process for resource offerings

This process imports the resource offering, whether it exists on the target system or not. During this operation, if there is a resource offering with the same name in the system, the name, the display name, and the description of the resource offering are modified internally; the display name and the description are appended with "Superseded on" and the date. The internal name, display name, and description of the artifact that is imported remain intact.

Important: If providers of the same display name and provider type exist on the target system, use the associate ToProvider option (-p) to automatically associate these providers to imported resource offerings. Alternatively, you can associate providers to resource offerings manually.

Functionally Equivalent Resource Offerings

When a resource offering is imported, CSA determines if a functionally equivalent resource offering already exists on the system. If a functionally equivalent resource offering exists, then the import is skipped.

Functional equivalence is determined by comparing the resource offering to be imported with other resource offerings that exist on the system, as follows:

- Resource offerings are functionally equivalent if they share the same provider type and resource category, the same set of user defined custom properties, and the same set of lifecycle actions.
- Properties are considered equivalent if they share the same type, name, and value (or values for list properties).
- Lifecycle actions are considered equivalent if they share the same process definition, lifecycle state and sub-state, execution order, and action input properties and values.
- There are additional attributes on properties and lifecycle actions that must be identical for equivalence.

For specifics about the precise requirements for resource offering equivalence as it relates to entries in the .zip file produced during resource offering export, see the following table.

Functionally Equivalent Resource Offerings

Element	Necessary for Equivalence
property	name valueType values confidential - only for String property types
action	processDefinition name lifecycleState name lifecycleSubstate name lifecycleExecOrder errorOnTimeout failOnError timeout all properties must be identical, including the consumerVisible and consumerReadOnly elements for each property consumerVisible
resourceCategory	isCriticalSystemObject determines if this is an out-of-box resourceCategory. If true, name determines equivalence, otherwise displayName determines

Element	Necessary for Equivalence
	equivalence.
providerType	isCriticalSystemObject determines if this is an out-of-box providerType. If true, name determines equivalence, otherwise displayName determines equivalence.

Tasks

- **Import**

Adds only new artifacts to the target system (the archived artifacts do not exist on the target system).

Note: The import operation identifies resource offerings by functional equivalence to determine if an identical resource offering exists on the target system. An archived resource offering is considered to be functionally equivalent to the resource offering on the target system if the archived resource offering has the same resource category, provider type, properties, and actions as a resource offering on the target system. If the import operation identifies a functionally equivalent resource offering on the target system, the archived resource offering is not imported. See How CSA identifies matching artifacts for more information.

- **Update**

Imports new artifacts and overwrites existing artifacts. New artifacts are created if they do not exist on the target system. Identical artifacts that exist on the target system are overwritten with changes from the archive.

Note: The update operation identifies artifacts by name instead of functional equivalence to determine if the artifact exists on the target system. There may be cases where an existing artifact on the target system cannot be updated. For example, if the existing artifact is a service design and the service design is published, the service design will not be updated because a published service design cannot be edited. If the existing service design is upgradable to another service design, the service design will not be updated because, in order for the existing service design to be upgradable to another service design, the existing service design has been published.

An existing service design can be updated from a published service design archive if the existing service design is not published.

- **Preserve Originals**

Select this option to create a copy of the original artifact if the artifact exists on the target system. On import, a copy of the original artifact is created and then the original artifact is overwritten by the imported artifact. The display name, description, and version of the copy is appended with "Superseded on" and the date. The name, display name, description, and version of the artifacts being imported remain intact. If the artifact does not exist on the target system, a copy is not created.

- **Preview**

Generate a report of prospective results for the import process, including information about the artifacts and their status.

- **View Detailed Report**

From the Import Summary dialog, select this link to see a summary and details of the import process, including information about the artifacts and their status.

- **Export**

Create a content archive (.zip) file. The content archive contains XML documents for the artifacts you are exporting, as well as icons for customizing the artifacts, and the Manifest XML document, which contains meta-information about the archive files.

The resource offerings are packaged in an archive file whose name is: `RESOURCE_OFFERING_
<resource_offering_display_name>_<resource_offering_id>.zip`

Service Designs

The import process supports the import of sequence and topology design archives. Before you import a sequenced service design archive, complete the following prerequisites:

1. Import all process definitions that are referenced by the service design, including any referenced by resource offerings that are part of the service design. The process definitions must be imported to the CSA installation in which the service design will be imported. During import, process definitions are resolved by name. For process definitions that are associated with the Operations Orchestration process engine, the name corresponds to the full path to the Operations Orchestration flow, for example: `/Library/CSA/3.2/Providers/vCenter/vCenter Clone Server/Actions/vCenter Simple Compute Linux – Deploy`

Make sure that these flows have identical signatures and paths as the flows on the system from which the service design was exported. For instructions about how to import OO flows, see the Cloud Service Automation Configuration Guide.

2. When importing archives with one or more CloudSystem 8.x topology designs, the following process will be followed to determine the provider and resource pool associated with each design:

- If `-q/--forceCloudOSProvider` or `-r/--forceHPHelionOpenStackProvider`, and `-s/--forceResourcePool` options are specified in command line:

- a. Check target system for match of provider name specified. • If found, use that provider for import.

- If not found, fail topology design import with error provider not found.

- b. Check target system for match of resource pool name specified.

- If found, use that resource pool for import.

- If not found, fail topology design import with error resource pool not found for provider.

- If `-q/-r` and `-s` options are not specified in the command line:

- a. Check target system for match of provider name used in archive.

- If provider name exists on target system, use that provider for import.

- If provider name does not exist on target system, check for default provider in CSA resource management.

- o If default provider is set, use that provider for import.

- o If no default provider set, fail topology design import with error provider not found.

- b. If a provider is successfully matched by the name used in the archive, check the target system for a match of the resource pool name used in the archive.

- 1. If resource pool name exists on target system, use that resource pool for import.

2. If resource pool name does not exist on target system, check for default resource pool in CSA resource management.
 - a. If default resource pool is set and exists on target system, use that resource pool for import.
 - b. If no default is set, fail topology design import with error resource pool not found for provider.
 - c. If a default provider is used, check target system for default resource pool.
1. If default resource pool is set and exists on target system, use that resource pool for import.
2. If no default resource pool is set, Fail topology design import with error resource pool not found for provider.
3. In the case of a sequenced service design, the export operation does not export any custom-service component types that the user has created on the source system. If the service design you want to import has a dependency on any custom component types, the component palettes that contain these custom component types must be imported before the service design can be imported.
4. If you are importing a version of a service design that is an upgrade to another version of a service design, the later must be present on the target system and must also be published.

See the CSA online help for more information on upgrading service designs.

Content archive for service designs

Exporting a service design creates a content archive (.zip) file. The content archive contains XML and JSON documents for the service design you are exporting, as well as associated artifacts, dynamic property JSP files, icons for customizing the artifacts, and the Manifest XML document, which contains meta information about the archive files.

Import process for service designs

The import process imports archives of service designs and their supported artifacts. Supported artifacts for service designs include associated resource offerings. Service designs with the same internal name are considered to be functionally equivalent and are not imported.

Note: When you import a version of a service design that is an upgrade to another version of a service design, the import process checks for upgradability-rule violations by comparing the imported service design to its corresponding upgradable design. See the CSA online help for more information on upgradability rules, and on upgrading service designs.

Update process for service designs

During the update process, identical artifacts that exist on the target system are updated (overwritten) with the changes from the archive. Artifacts are created if they do not exist on the target system.

Note: Importing a service design using an update option fails if the service design being imported is upgradable to other service designs on the target system. See the CSA online help for more information on upgrading service designs.

Update preserveExisting process for service designs

This process imports all the artifacts present in an archive, whether they exist on the target system or not. During this operation, if there is an artifact with the same internal name in the system, the name, the display name, and the description of the artifact are modified internally; the display name and the description are appended with "Superseded on" and the date. The internal name, display name, and description of the artifact being imported remain intact.

During the import operation on a service design archive, if a service design has active service offerings associated with it, the subscriber options for the service design being imported must match that of the service design on the target system; otherwise, the import of the service offerings fails. If any functionally equivalent resource offerings already exist on the target system, these resource offerings are reused for binding with the service design and these resource offerings are not imported.

Note: Neither service-design versions that are an upgrade to other service designs, nor service designs that can be upgraded to other service designs, can be imported using the update `preserveOriginals` option.

Service Offerings

Prerequisite for service offerings

If you are importing a version of a service offering that is an upgrade to another version of service offering, the later must be present on the target system. See the CSA online help for more information on upgrading between service designs.

Content archive for service offerings

Exporting a service offering creates a content archive (.zip) file. The content archive contains XML documents for the service offering you are exporting, as well as associated artifacts, dynamic property JSP files, icons for customizing the artifacts, and the Manifest XML document, which contains meta information about the archive files.

Import process for service offerings

The import process imports archives of service offerings and their supported artifacts. Supported artifacts for service offerings include associated service designs and resource offerings. Service offerings with the same internal name are considered to be functionally equivalent and are not imported.

Update process for service offerings

During the update process, identical artifacts that exist on the target system are updated (overwritten) with the changes from the archive. Artifacts are created if they do not exist on the target system.

Update preserveExisting process for service offerings

This process imports all the artifacts present in an archive, whether they exist on the target system or not. During this operation, if there is an artifact with the same name in the system, the name, the

display name, and the description of the artifact are modified internally; the display name and the description are appended with "Superseded on" and the date. The name, display name, and description of the artifact being imported remain intact.

Note: Neither service offering versions that are an upgrade to other service offerings, nor service offerings that can be upgraded to other service offerings, can be imported using the update `preservOriginals` option.

Resource Environments

Content archive for resource environments

Exporting a resource environment creates a content archive (.zip) file. The content archive contains an XML document for the resource environment you are exporting, as well as the Manifest XML document, which contains meta information about the archive files.

Import process for resource environments

The import process imports archives of resource environments. Resource environments with the same internal name are considered to be functionally equivalent and are not imported.

Update process for resource environments

During the update process, identical artifacts that exist on the target system are updated (overwritten) with the changes from the archive. Artifacts are created if they do not exist on the target system.

Update preserveExisting process for resource environments

This process imports the resource environment present in the archive, whether it exists on the target system or not. During this operation, if there is an artifact with the same name in the system, the name, the display name, and the description of the artifact are modified internally; the display name and the description are appended with "Superseded on" and the date. The name, display name, and description of the artifact being imported remain intact.

Important: If providers of the same display name and provider type exist on the target system, use the associate ToProvider option (-p) to automatically associate to these providers to imported resource offerings. Otherwise, you must manually associate providers to resource offerings.

Catalogs

Content archive for catalogs

Exporting a service catalog creates a content archive (.zip) file. The content archive contains XML documents for the service catalog you are exporting, as well as associated artifacts, dynamic property JSP files, icons for customizing the artifacts, and the Manifest XML document, which contains meta information about the archive files.

Import process for service catalogs

The import process imports archives of service catalogs and their supported artifacts. Supported artifacts for service catalogs include associated service designs, resource offerings, service offerings, and resource environments. If the service catalog already exists, the catalog is updated with any added or removed supported artifacts. Service catalogs with the same internal name are considered to be functionally equivalent and are not imported.

Update process for service catalogs

During the update process, identical artifacts that exist on the target system are updated (overwritten) with the changes from the archive. Artifacts are created if they do not exist on the target system.

Update preserveExisting process for service catalogs

This process applies to the associated artifacts, but does not apply to the catalog itself. The process imports all the artifacts present in an archive, whether they exist on the target system or not. During this operation, if there is an artifact with the same name in the system, the name, the display name, and the description of the artifact are modified internally; the display name and the description are appended with "Superseded on" and the date. The name, display name, and description of the artifact being imported remain intact. During the import of a catalog, an organization identifier is required. You can specify this identifier organization using the `-o` option. If this is not specified in the command line, the organization identifier from the `ownedBy` field in the catalog's XML document is used. An exception is

generated if you do not supply an organization identifier during import and if the organization that the catalog is associated with on the source system does not exist on target system.

Note: When you import a catalog using the `preserveExisting` option, import of the following service offerings is skipped: catalog service offerings if they are upgrades of other service offerings, and catalog service offerings if they are upgradable to other service offerings. See the CSA online help for more information on upgrading catalogs.

Important: Importing the global shared catalog is not supported. You cannot associate a catalog with an organization with the “Provider” business role.

Configuration

The CAT is installed during CSA product installation, typically in `Tools\ContentArchiveTool\` in the CSA installation folder.

Configuration details

Config.properties file

The `config.properties` file must be in the same folder as the `content-archive-tool.jar` file, often under `<CSA install folder>\HPE\CSA\Tools\ContentArchiveTool`. The default property filename is `config.properties`, but this file can have any name. Use the `-c` option to specify the name of the file.

Sample configuration files

The `content-archive-tool.jar` can produce sample configuration files by executing the following at the command prompt: `java -jar content-archive-tool.jar -g`

The following sample configuration files are created:

- `config.properties.oracle`
- `config.properties.mssql`
- `config.properties.postgresql`

Configuration properties file parameters

The sample configuration file not needed by the database in use by CSA can be deleted. For example, if you are using a Microsoft SQL Server database, retain the MS SQL configuration file and if desired rename `config.properties` or other name of your choice. The Oracle configuration file can be deleted since it is not needed. This following table lists the parameters found in the `config.properties` file.

jdbc.driver ClassName	Database driver class (do not change this value)
<code>jdbc.dialect</code>	The database dialect. Do <i>not</i> change this value.
	When specifying an IPv6 address, it must be enclosed in square brackets.

jdbc.driver ClassName	Database driver class (do not change this value)
<p>jdbc.databaseUrl</p>	<p>Examples:</p> <p>Oracle (SSL not enabled): jdbc.databaseUrl=jdbc:oracle:thin:@//127.0.0.1:1521/XE</p> <p>Oracle (SSL not enabled, using an IPv6 address): jdbc.databaseUrl=jdbc:oracle:thin:@[f000:253c::9c10:b4b4]:1521:XE</p> <p>Oracle (SSL enabled, CSA checks the database DN): jdbc.databaseUrl=jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCPS)(HOST=<host>)(PORT=1521))) (CONNECT_DATA=(SERVICE_NAME=ORCL)) (SECURITY=(SSL_SERVER_CERT_DN="CCN=abc,OU=dbserver,O=xyz,L=Sunnyvale,ST=CA,C=US"))))</p> <p>where <host> is the name of the system on which the Oracle database server is installed and the values for SSL_SERVER_CERT_DN are for the DN of the Oracle database server</p> <p>MS SQL (SSL not enabled): jdbc.databaseUrl=jdbc:jtds:sqlserver://127.0.0.1:1433/example;ssl=require</p> <p>MS SQL (SSL not enabled, using an IPv6 address): jdbc.databaseUrl=jdbc:jtds:sqlserver://[::1]:1433/example;ssl=request</p> <p>MS SQL (SSL enabled): jdbc.databaseUrl=jdbc:jtds:sqlserver://127.0.0.1:1433/example;ssl=authenticate</p> <p>MS SQL (FIPS 140-2 compliant): jdbc.databaseUrl=jdbc:jtds:sqlserver://127.0.0.1:1433/example;ssl=authenticate</p> <p>PostgreSQL: jdbc.databaseUrl=jdbc:postgresql://127.0.0.1:5432/csadb</p>
<p>jdbc.username</p>	<p>Database user name</p>
<p>jdbc.password</p>	<p>Encrypted database password</p>
<p>csa_war.loc</p>	<p>The path for CSA.war location in CSA installation. You must change this path if CSA is not installed in the default location. Example for Windows: csa_war.loc=C:\\Program Files\\HPE\\CSA\\jboss-as-7.1.1.Final\\standalone\\deployments\\csa.war</p>

jdbc.driver ClassName	Database driver class (do not change this value)
	<p>Example for Linux: <code>csa_war.loc=/usr/local/hp/csa/jboss-as-7.1.1.Final/standalone/deployments/csa.war</code></p> <p>Note: You must manually change the <code>csa.war</code> file location information in <code>config.properties</code> on Linux installations because it is not generated in the Linux format.</p>

CLI Options

Invoke the Content Archive Tool from the command line as follows:

```
java -jar content-archive-tool.jar <options>
```

Use:

```
C:\Program Files\HPE\CSA\Tools\ContentArchiveTool>java -jar content-  
archive-tool.jar -h
```

Use:

```
-h | -e [[-a <Artifact Type>] [-n <Artifact Name>] | [-u <uuid of  
artifact>]] [-c <config property file>] [-t <target output folder>] [-j  
<oracle jars>] | -i [-v] [-f | -w] -z <individual zip archive| zip archive  
folder> [-c <config property file>] [-o <organization name>] [-r  
<provider name> -s <resource pool name>] [-p true|false] [-j <oracle  
jars>] | -v -z <individual zip archive| zip archive folder> [-c <config  
property file>] [-o <organization name>] [-r <provider name> -s <resource  
pool name>] [-j <oracle jars>] | -l | -g
```

Content Archive Tool command-line options and suboptions are shown in the following table.

Options	Associated Suboptions
-h, --help Display syntax and use information.	None
-e, --export Export artifacts	.-a, --artifact<artifact_type> Artifact type to be exported, otherwise all are exported.
	-n, --name <artifact_name> Provide artifact display name of artifact to be exported, otherwise all is exported.
	-u, --uuid <artifact_id> UUID of artifact to be exported.
	-c, --config <config_filename> Configuration property filename.

Options	Associated Suboptions
	-t, --target <target_folder> Target folder for archive; target output folder.
	-j, --jars Load Oracle JDBC JAR files. Note jar filenames are separated by spaces.
-i, --import Import artifact archives.	-v, --validate Validate before the archive is imported.
	-f, --updatePreserveExisting Create new artifact(s), duplicating any existing artifact(s) using the same name; then import all artifacts from archive.
	-w, --update Overwrite/update existing artifact(s) without duplication.
	-z, --zip <archive_folder> <archive_filename> Required; archive folder or filename. If folder, imports all CSA archives in folder. If filename, defaults to current folder unless folder path is specified.
	-c, --config <config_filename> Configuration property filename.
	-o, --orgName <organization_id> Organization identifier used for catalog import.
	-q, --forceCloudOSProvider <provider_name> Optional with topology design import; provider to use, must already be configured on target CloudOS system. -s (--forceResourcePool) must also be specified when using this option.
	-r, --forceHPHelionOpenStackProvider <provider_name> Force Helion OpenStack provider name. Optional with topology design import; provider to use, must already be configured on target Helion OpenStack system. -s (--forceResourcePool) must also be specified when using this option.
	-s, --forceResourcePool <resource_pool_name> Resource pool name. Optional with topology design import; resource pool to use, must already be defined on target CloudOS system. -r (--forceCloudOSProvider) must also be specified when using this option.
	-p, --rp [true false] Associate imported resource offerings and resource environments to resource providers on the target system with same display name and provider type.

Options	Associated Suboptions
	<p><code>-j, --jars <Oracle_JAR1 Oracle_JAR2 ...></code></p> <p>Load Oracle JDBC JAR files. Note jar filenames are separated by spaces.</p>
<p><code>-v, --validate</code></p> <p>Validate before the archive is imported.</p>	<p><code>-c, --config <config_filename></code></p> <p>Config property filename.</p>
	<p><code>-j, --jars <Oracle_JAR1 Oracle_JAR2 ...></code></p> <p>Load Oracle JDBC JAR files. Note jar filenames are separated by spaces.</p>
	<p><code>-o, --orgName <organization_id></code></p> <p>Organization identifier for export of catalog(s).</p>
	<p><code>-z, --zip <archive_folder> <archive_filename></code></p> <p>Required; archive folder or filename. If folder, validates all CSA archives in folder. If filename, defaults to current folder unless folder path is specified.</p>
<p><code>-l, --list</code></p> <p>List the supported valid artifact types.</p>	<p>None</p>
<p><code>-g, --generate</code></p> <p>Generate sample input config properties file.</p>	<p>None</p>

Communicating with MS SQL or Oracle Database using SSL

If SSL is enabled between CSA and MS SQL or the Oracle database, the URL property in the database properties file must be configured correctly, and additional command-line options might be required when using an Oracle database.

Important: The Content Archive Tool does not support DN verification.

Config options	CLI options	jdbc.databaseUrl value
<p>Oracle: CSA does not check the database DN, client authentication is enabled</p>	<pre>-Djavax.net.ssl.keyStore =<certificate_key_file>" - Djavax.net.ssl.keyStorePassword =<certificate_key_file_ password> -Djavax.net.ssl.keyStoreType =<certifyicate_key_file_ type> where <certificate_key_file> is the same keystore file defined by the certificate-key file attribute in the ssl element of the %CSA_HOME%\jboss- as- 7.1.1.Final\standalone\confi guration\standalone.xml file (for example, %CSA_HOME%\jboss-as- 7.1.1.Final\standalone\confi guration\keystore), <certificate_key_file_ password> is the password to the keystore file (for example, changeit), and <certificate_key_file_ type> is the keystore type (for example, JKS or PKCS12)</pre>	<pre>jdbc:oracle:thin:@(DESCRIPTION= (AADDRESS_LIST= (ADDRESS= (PROTOCOL = TCPS) (HOST = <host>) (PORT = 1521))) (CONNECT_DATA = (SERVICE_ NAME = ORCL))) where <host> is the name of the system on which the Oracle database server is installed.</pre>
Oracle	<none>	<pre>jdbc:oracle:thin:@(DESCRIPTION= (AADDRESS_LIST= (ADDRESS= (PROTOCOL =</pre>

Config options	CLI options	jdbc.databaseUrl value
e:CSA does not check the database DN, client authentication is NOT enabled		TCPS) (HOST = <host>) (PORT = 1521))) (CONNECT_DATA =(SERVICE_NAME = ORCL))) where <host> is the name of the system on which the Oracle database server is installed.
MS SQL: SSL is enabled	<none>	jdbc:jtds:sqlserver://127.0.0.1:1433/example;ssl=authenticate

Examples

Example 1: Display the Content Archive Tool Use/help

```
java -jar content-archive-tool.jar -h
```

Example 2: Generate a sample config.properties file to be used by this tool

```
java -jar content-archive-tool.jar -g
```

Example 3: Display a list of artifact types supported for export

```
java -jar content-archive-tool.jar -list
```

Example 4: Export all supported artifacts to the current folder. An archive will be created for each primary artifact

```
java -jar content-archive-tool.jar -e
```

Example 5: Export all service offerings to the current folder

```
java -jar content-archive-tool.jar -export -a
```

SERVICE_OFFERING, SERVICE_DESIGN, RESOURCE_OFFERING, CATALOG, RESOURCE_ENVIRONMENT, and SERVICE_OFFERING, COMPONENT_PALETTE are valid values for the -a option

Example 6: Export a resource offering with the display name vCenter Resource Offering to the current folder

```
java -jar content-archive-tool.jar -e -a RESOURCE_OFFERING -n "vCenter Resource Offering"
```

Example 7: Export an artifact with id 90cec2ff3b7d9a03013b7db4c6ff003f to the current folder

```
java -jar content-archive-tool.jar -export -uuid  
90cec2ff3b7d9a03013b7db4c6ff003f
```

Note: In examples 4 to 7, artifacts could be exported to a target folder instead of the current folder by providing the -t option with the value of the target folder. The following is an example that exports all catalogs to folder C:\temp\catalogs. `java -jar content-archive-tool.jar -export -archive CATALOG -target "C:\temp\catalogs"`

Example 8: Import all artifacts present in the specified archive

```
SERVICE_OFFERING_Sample_Service_Offering_  
90cec2ff3c0763bf013c076cf4f10083.zip from the current folder.
```

```
java -jar content-archive-tool.jar -i -z SERVICE_OFFERING_Sample_Service_
Offering_90cec2ff3c0763bf013c076cf4f10083.zip
```

Example 9: Import all archives stored in the folder C:\temp\archive

```
java -jar content-archive-tool.jar -i -z "C:\temp\archive"
```

Example 10: Import with validation all artifacts present in an archive SERVICE_OFFERING_Sample_Service_Offering_90cec2ff3c0763bf013c076cf4f10083.zip from the current folder

```
java -jar content-archive-tool.jar -import -v -zip SERVICE_OFFERING_
Sample_Service_Offering_90cec2ff3c0763bf013c076cf4f10083.zip
```

This operation validates whether or not the artifacts in the archive are already present in the system and provides a summary of the validation. You are then prompted to continue with the import operation. When Y (yes) is selected, the import operation continues by default. When N (no) is selected, the current archive is not imported. When Q (quit) is selected, all remaining import activity is terminated.

Example 11: Import all artifacts present in archive SERVICE_OFFERING_Sample_Service_Offering_90cec2ff3c0763bf013c076cf4f10083.zip from the current folder regardless of whether artifacts by the same name already exist on the target system.

```
java -jar content-archive-tool.jar -i -f -z SERVICE_OFFERING_Sample_
Service_Offering_90cec2ff3c0763bf013c076cf4f10083.zip
```

By default, the updatePreserveExisting (-f) operation validates whether or not the artifacts in the archive are already present in the system and provides a summary of validation. You are then prompted to continue with the import operation. When Y (yes) is selected, existing artifacts with the same name as artifacts in the archive are renamed, and all artifacts in the archive are then created on the target system. When N (no) is selected, the current archive is not imported. When Q (quit) is selected, all remaining import activity is terminated.

Example 12: Import a catalog and all the artifacts in the archive named CATALOG_Consumer_Catalog_90cec2ff3c0763bf013c076fbf7000c0.zip, associating the catalog with an organization named CONSUMER_ORG

```
java -jar content-archive-tool.jar -i -z CATALOG_Consumer_Catalog_
90cec2ff3c0763bf013c076fbf7000c0.zip -o CONSUMER_ORG
```

Note: Before performing this operation on the catalog archive, the organization CONSUMER_ORG should be created on the target system. If this organization is not present, the Content Archive Tool will associate the catalog to the organization it was associated with on the source system. If neither organization exists on the target system, the Content Archive Tool terminates with an exception.

Example 13: Import all artifacts and automatically associate imported resource offerings to resource providers with same display name and provider type on the target system.

```
java -jar content-archive-tool.jar -i -p true -z SERVICE_OFFERING_Sample_
Service_Offering_90cec2ff3c0763bf013c076cf4f10083.zip
```

Example 14: Import all artifacts preserving original artifacts on target system. Automatically associate the resource offerings imported with existing resource providers using the same display name and provider type on the target system.

```
java -jar content-archive-tool.jar -i -f -z SERVICE_OFFERING_Sample_
Service_Offering_90cec2ff3c0763bf013c076cf4f10083.zip -p true
```

Example 15: Import all artifacts preserving original artifacts from catalog archive: CATALOG_Consumer_Catalog_90cec2ff3c0763bf013c076fbf7000c0.zip

```
java -jar content-archive-tool.jar -i -f -z CATALOG_Consumer_Catalog_
90cec2ff3c0763bf013c076fbf7000c0.zip
```

Example 16: Import all artifacts preserving original artifacts from catalog archive and associate resource provider to resource offering and resource environment.

```
java -jar content-archive-tool.jar -i -f -z CATALOG_Consumer_Catalog_
90cec2ff3c0763bf013c076fbf7000c0.zip --rp true
```

Example 17: Import all artifacts present in the specified archive from the current folder. Because the archive includes topology design(s), a configured CloudOS provider and CloudOS system resource pool on the target system can be specified using the `-r` and `-s` sub-options respectively to override the provider and resource pool values found in the archive.

```
java -jar content-archive-tool.jar -i -v -z SERVICE_DESIGN_topo1_
90b72c4e425ae0db01425b0c1ae40020.zip -c
c:\work\temp\exportimport\cfg.properties.oracle -r CloudOS181 -s
localResourcePool
```

Example 18: Validate the service offering archive: SERVICE_OFFERING_Sample_Service_Offering_90cec2ff3c0763bf013c076cf4f10083.zip

```
java -jar content-archive-tool.jar -v -z SERVICE_OFFERING_Sample_Service_
Offering_90cec2ff3c0763bf013c076cf4f10083.zip
```

Example 19: Validate catalog archive CATALOG_Consumer_Catalog_90cec2ff3c0763bf013c076fbf7000c0.zip, where the catalog in the archive is to be associated with an organization named CONSUMER_ORG.

```
java -jar content-archive-tool.jar -v -z CATALOG_Consumer_Catalog_90cec2ff3c0763bf013c076fbf7000c0.zip -o CONSUMER_ORG
```

Example 20: Update existing artifacts from service offering archive SERVICE_OFFERING_Sample_ServiceOffering_90cec2ff3c0763bf013c076cf4f10083.zip.

```
java -jar content-archive-tool.jar -i -w -z SERVICE_OFFERING_Sample_ServiceOffering_90cec2ff3c0763bf013c076cf4f10083.zip
```

Example 21: Update existing artifacts from service offering archive SERVICE_OFFERING_Sample_ServiceOffering_90cec2ff3c0763bf013c076cf4f10083.zip

```
java -jar content-archive-tool.jar -i -j ojdbc6.jar orai18n-11.2.0.3.jar -v -z RESOURCE_OFFERING_offerings_1_90cef59c3e682fca013e68302a240063.zip
```

Note: In examples 4 through 21, it is assumed that the information about the database and `csa.war` location is stored in the `config.properties` file in the same folder as the `content-archive-tool.jar` file. Use the `-c` option to specify the complete path of the configuration file.

Troubleshooting

Issue: Cannot import or export artifacts that use the double quote (") character in their name. [158310]

Cause: Command-line artifact names that use the double quote (") character cause an error.

Workaround: Use a backslash before each double quote. For example:

```
java -jar content-archive-tool.jar Simple\"Compute\"Linux
```

Issue: During an export, unexpected behavior occurs if artifact names include special characters. [158317]

Cause: Issues occur if artifact names include special Windows command-line characters, such as < ! ^ () = ; , > |.

Workaround: Use a caret (^) before each special character. For example:

```
^< or ^!
```

Issue: Unexpected behavior during import and export when providing a folder name with trailing slashes as a value to `-z/--zip` or `-t/--target` sub-options in the command line. [158670]

Cause: Issues occur when there are trailing slashes in folder names when provided as values to `-z/--zip` or `-t/--target` sub-options.

Workaround: During an export, do not use trailing slashes.

For example:

Instead of:

```
"C:\PCA Tool\output folder\"
```

Use:

```
"C:\PCA Tool\output folder"
```