



HP Data Center Automation Appliance

Users Guide – HP DCAA Express Edition
Version 1.00

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Using HP DCAA

Concepts

HP Data Center Automation Appliance (DCAA) is a complete & heterogeneous IT operations solution running in a Virtual Appliance, allowing you to standardize, consolidate and automate IT operations in your Hybrid datacenter by providing a single solution for Provisioning, Security Patch Management, Audit & Compliance, Software management, as well as automating daily tasks using standard operating procedures (SOP).

HP DCAA Supports servers running on Windows, Linux and Solaris platforms, whether running on physical hardware, both HP and Non-HP, on a virtualized platform or in the cloud, therefore providing significant improvements in day to day IT Operations.

HP DCAA Administration Console

The HP DCAA Administration Console is the starting navigation access point to manage and use the HP DCAA system. The Administration Console allows you to access the HP DCAA components including Organizations, Providers, Designs, Offerings, Catalogs, Operations, and the Operations Portal. You can always click the **Data Center Automation Appliance** banner at the top of the screen to return to the HP DCAA dashboard.

[Organizations](#)

[Providers](#)

[Designs](#)

[Offerings](#)

[Catalogs](#)

[Operations](#)

[Operations Portal](#)

Organizations

Using the Organizations Interface

Item	Description
	Reload the data in this view.

Create Organization button	Create an organization.
	Delete a group DN from a role.
	Display a tooltip for the associated field by placing the cursor over this icon.

Informational Icons

Icon	Description
	When this icon is adjacent to an organization, it denotes the provider organization. There can be only one provider organization and it is automatically configured. You may modify the provider organization, as needed. However, you cannot delete it. When this icon is adjacent to a catalog, it denotes the global catalog. There can be only one global catalog and it is visible to all organizations. You may modify the global catalog, as needed. However, you cannot delete it.
	Indicates the field is required, and you must enter information in order to successfully complete the organization's configuration.

Concepts

An organization determines a member's entry point into the cloud system and associates its members with services and resources. An organization may be a company, business unit, department, or group. Membership in an organization is determined by the organization's LDAP (Lightweight Directory Access Protocol) directory. When a user logs in, LDAP authenticates the login credentials by verifying that the user name and password match an existing user in the LDAP directory.

At installation, a single consumer organization is set up. You can use the **Organizations Administration User Interface (UI)** to modify this default consumer organization, as needed.

Authorization or abilities of a member of an organization (such as creating a service design or managing cloud resources) are determined by predefined roles in HP Data Center Automation and membership to group DNs in the LDAP directory. In HP Data Center Automation, you assign a group DN to a predefined role which has predefined abilities. See [Access Control](#) for more information.

There are two types of organizations in HP Data Center Automation:

- **Provider Organization** - The provider organization hosts HP Data Center Automation, manages consumer organizations, and manages resources and services, including those offered by third-party or public clouds.
- Using the HP DCAA Administration Console, members of the provider organization can create one or more consumer organizations, manage configured organizations, and manage resources and services (such as designing, offering, and publishing resources and services for consumption).

- The organizations, resources, and services that can be managed are determined by the role(s) assigned to the members of the provider organization. For example, the DCAA Administrator manages all organizations, resources, and services, while the Consumer Service Administrator manages only consumer organizations. Additional roles include the Resource Supply Manager who manages resource providers and resource offerings, the Service Designer who manages service components and service designs, the Service Business Manager who manages service offerings and service catalogs, and the Service Operations Manager who manages subscriptions and service instances.
- There is only one provider organization for each instance of HP Data Center Automation Appliance and it is automatically set up during installation. You may modify the provider organization, as needed. However, you cannot delete it.

Consumer Organization - The consumer organization, using the Operations Portal, subscribes to or consumes the resources and services provided by the provider organization. There may be multiple consumer organizations configured by the provider organization. However, each consumer or subscriber sees only the information of the consumer organization of which he is a member (membership to a consumer organization is determined by the LDAP configuration of the consumer organization).

At installation, a single consumer organization is set up. You can use the **Organizations** area of the HP DCAA Administration Console to modify this default consumer organization, as needed.

See "[Authentication - LDAP](#)" for more information about configuring LDAP for the provider and consumer organizations.

Tasks

You can perform the following tasks in this UI:

- **Create an organization** - Click **Create Organization**, and provide a name for the organization.
- **Navigate to an organization** - Click the name of the organization to which you want to navigate. You can edit attributes after an Organization is created.

Summary

The **Summary** page shows only your current setup: a typical summary view will display Name, Description, Portal Customization, LDAP, Access Control, and Email Notifications. This page is a viewable summary only; you cannot make any changes in this screen. Go to the appropriate section in the Organization to make changes – see the tabs following summary – they are listed in order below.

General Information

Concepts

Use this area to provide profile information about the organization so that it is easily recognizable to you and your team.

Tasks

Before you create a new organization, or edit your existing organization, you need to provide the following general information about your Organization:

Item	Description
Organization Details	Shows the description of your organization detailed in Organization Description.
Organization Identifier	<p>A unique name that is assigned to the organization. For a consumer organization, this name is based on the name entered when the organization was created by the Administrator.</p> <p>The organization identifier is needed when launching the portal, and may also be needed when customizing the portal.</p>
Organization URL	The internal URL that hosts the organization.
Organization Display Name	A unique name that identifies the organization.
Organization Description	A brief description of the organization. Once a description is updated, it will appear in Organization Details .
Organization Logo	Shows the location of the logo file.

Then, you can do the following:

- You can **Save** your changes
- Reset your Organization to a default
- **Delete** the Organization

Once you have this information, you can begin creating or editing an organization. For more information, see the topic [Create Organization](#) in this document.

Best Practices

The Organizations Administrator can edit **Display Name**, **Description**, and **Picture URL** fields once an Organization is created. The **Edit Organization ID** check box below the **Organization ID** field allows the Administrator to change the Organization ID of an organization, which is the DN (distinguished name). This change will affect external applications, and it is not recommended.

Create Organization

Only consumer organizations may be created.

1. In the left navigation frame, click the **Create Organization** button.
2. Provide the following information:

Item	Description
Organization Name	A unique name that identifies the organization.

3. Click **Create**.
4. Configure the organization. See the following topics that describe how to provide information in the following areas:

Portal Customization

Portal customization allows you to customize an organization's Operations Portal.

Note: This section is not available to the provider organization.

To customize the Operations Portal

1. In the organization's navigation frame, select **Portal Customization**.
2. Provide or update the following information for portal customization:

Application Labeling

Item	Description
------	-------------

Application Name	Type a name that displays on the login screen and header of your organization's Operations Portal.
Portal Welcome Message	Type a welcome message that displays below the Application Name when a user logs into your organization's Operations Portal.
Copyright Statement	Type a copyright statement that displays on the login page below the Log In button of your organization's Operations Portal.

External Organization Links

Item	Description
Privacy Statement Link	Type the link to your organization's privacy statement that appears on the login page below the copyright statement.
Show Privacy Statement on Operations Portal	Check the box to display the privacy statement link on the login page of your organization's Operations Portal.
Terms and Conditions Link	Type the link to your organization's terms and conditions statement that appears when a subscriber is ordering a service.
Show Terms and Conditions on Operations Portal	Check the box to display the terms and conditions link when a subscriber is ordering a service.

Item	Description
Featured Category	Type a featured category to use when displaying service offerings in the Operations Portal. Service offerings in this category will display in the Featured Services tile of the Operations Portal.
Subscription End Date Options	<ul style="list-style-type: none"> • Allow Recurring Subscriptions - Check the box to allow recurring subscriptions, rather than requiring all subscriptions to be term subscriptions. • Max Term Subscription Period (months) - Select the maximum number of months (between 1 and 12) allowed for term subscriptions. When subscribers request a term subscription, they will not be able to specify an end date that is more than this number of months past the start date. For example, if the subscriber selects a requested start date of June 15 2014, and Max Term Subscription Period (months) is set at its default value of 12, the requested end date cannot be later than June 14, 2015. This setting has no impact on recurring subscriptions.

History Details	Select the Show Verbose Errors box to display the status of the actions executed during the lifecycle of a service.
------------------------	--

Application Enhancements

Themes

Item	Description
Theme	<p>Select a theme or type the name of a customized theme for your organization's Operations Portal. Themes define colors, fonts and the general look-and-feel of the Operations Portal. The following themes are shipped out-of-the-box:</p> <ul style="list-style-type: none"> • HP Simplified • HP Enterprise • HP Playful • Custom – Select Custom and type a customer theme name in the text box

Security Settings

Item	Description
Security Classification	<p>Select from the following security banner options:</p> <ul style="list-style-type: none">• No Banner - no banner displays in the Operations Portal.• Unclassified - The banner is light green and contains no content.• Unclassified FOUO - For official use only. The banner is light green and displays the text "FOUO."• Unclassified NOFORN - Not releasable to foreign nationals. The banner is light green and displays the text "NOFORN."• Confidential - The banner is light blue and displays the text "CONFIDENTIAL."• Confidential FOUO - The banner is light blue and displays the text "CONFIDENTIAL-FOUO."• Confidential NOFORN - The banner is light blue and displays the text "CONFIDENTIAL-NOFORN."• Secret - The banner is red and displays the text "SECRET."
Disclaimer	<p>Type text for the disclaimer for your organization's Operations Portal. The disclaimer appears on the login page of the Operations Portal.</p>

3. Click **Save**.

Dashboard Widgets

HP DCAA provides a set of out-of-the-box dashboard widgets that you can add to your Organization dashboard. These dashboard widgets include:

- Link
- Recent Subscriptions
- Clock

For more information on customizing dashboard widgets, see [Customize Dashboard Widgets](#).

Customize Dashboard Widgets

Out-of-the-box Dashboard widgets can be configured for an Organization's dashboard. Custom Widgets are created by changing the KeyPair values, and allow you to add functionality that appears as a tile on the Organization's dashboard.

KeyPair Value	Description
widget:DCAALink	This widget connects your Organization online to the main HP DCAA site.
widget:RecentSubscriptions	This widget tracks and displays the most recent subscriptions that are available for the Organization's users.
widget:Clock	This widget shows Date information on the dashboard, including Month, Day, and Year.
Custom Widgets	<p>Custom Widgets can be configured by clicking the blue Add KeyPair button at the bottom of the Customization screen.</p> <p>Provide an easily readable display name for the KeyPair, and input the properties for the widget in the Value box. Note that only 10,000 characters are allowed in the KeyPair Value box.</p> <p>For the Operations Portal to recognize a custom widget it must be named with the prefix 'widget:' See the format of default widgets for an example of this convention.</p>

Best Practices

If you want to delete a widget, click on the trashcan icon to the right of the widget in the Customization screen. Please note that this operation is **permanent** and cannot be undone.

Authentication - LDAP

Concepts

You can configure and manage multiple LDAP identity servers for your organization. You can connect multiple LDAP servers by adding configurations and adjusting their relative priority within an organization.

LDAP is used to:

- Authenticate a user's login.
- Authenticate a user's access to information.
- Authorize a user's access to information.

To completely configure access to HP DCAA, you must configure LDAP to authenticate a user's login, configure LDAP for an organization to authenticate a user's access to information, and configure access control for an organization to authorize a user's access to information.

From this area you can:

- Configure LDAP for authentication to log in to HP DCAA.
- Configure LDAP to access information in HP DCAA.

Tasks

To configure LDAP for an organization, provide or update the following information:

LDAP Server Information

Configure one or more LDAP servers and a user with access to the server.

Item	Description
Display Name	The display name for the LDAP server.
Hostname	The fully-qualified LDAP server domain name (server.domain.com) or IP address. Example: ldap.xyz.com

Port	The port used to connect to the LDAP server (by default, 389). Example: 389
SSL Connection	If the LDAP server is configured to require ldaps (LDAP over SSL), select the SSL Connection checkbox.
Base DN	Base distinguished name. The Base DN is the top level of the LDAP directory that is used as the basis of a search. Example: o=xyz.com
User ID (Full DN)	The fully distinguished name of any user with authentication rights to the LDAP server. If the LDAP server does not require a User ID or password for authentication, this value can be omitted. Example: uid=admin@xyz.com,ou=People,o=xyz.com
Password	Password of the User ID. If the LDAP server does not require a User ID or password for authentication, this value can be omitted.

Item	Description
Retype Password	Retype the password of the User ID.

LDAP Attributes

Enter the names of the attributes whose values are used for email notifications, authentication, and approvals in HP DCAA.

Item	Description
User Email	The name of the attribute of a user object that designates the email address of the user. The email address is used for notifications. If a value for this attribute does not exist for a user, the user does not receive email notifications. Default: mail
Group Membership	The name of the attribute(s) of a group object that identifies a user as belonging to the group. If multiple attributes convey group membership, the attribute names should be separated by a comma. Default: member, uniqueMember
Manager Identifier	The name of the attribute of a user object that identifies the manager of the user. Default: manager
Manager Identifier Value	The name of the attribute of a user object that describes the value of the Manager Identifier's attribute. For example, if the value of the Manager Identifier attribute is a distinguished name (such as cn=John Smith, ou=People, o=xyz.com) then the value of this field could be dn (distinguished name). Or, if the Manager Identifier is an email address (such as admin@xyz.com) then the value of this field could be email. Default: dn
User Avatar	LDAP attribute whose value is the URL to a user avatar image that will display for the logged in user portal. If no avatar is specified, a default avatar will be used.

User Login Settings

A user search-based login method is used to authenticate access to information.

Item	Description
User Name Attributes	<p>The name of the attribute of a user object that contains the username that will be used to log in. The value for this field can be determined by looking at one or more user objects in the LDAP directory to determine which attribute consistently contains a unique user name. Often, you will want a User Name Attribute whose value in a user object is an email address.</p> <p>Examples: userPrincipalName or sAMAccountName or uid</p>
User Searchbase	<p>The location in the LDAP directory where users' records are located. This location should be specified relative to the Base DN. If users are not located in a common directory under the Base DN, leave this field blank.</p> <p>Examples: cn=Users or ou=People</p>
User Search Filter	<p>Specifies the general form of the LDAP query used to identify users during login. It must include the pattern {0}, which represents the user name entered by the user when logging in. The filter is generally of the form <attribute>= {0}, with <attribute> typically corresponding to the value entered for User Name Attribute.</p> <p>Examples: userPrincipalName={0} or sAMAccountName={0} or uid={0}</p>
Search Option (Search Subtree)	<p>When a user logs in, the LDAP directory is queried to find the user's account. The Search Subtree setting controls the depth of the search under User Search Base.</p> <p>If you want to search for a matching user in the User Search Base and all subtrees under the User Search Base, make sure the Search Subtree checkbox is selected.</p> <p>If you want to restrict the search for a matching user to only the User Search Base, excluding any subtrees, unselect the Search Subtree checkbox.</p>

Access Control

Concepts

Business Roles currently available in Organizations are out-of-the-box in DCAA. They are as follows:

The **Consumer Organization Administrator** role can be thought of as a group administrator or manager. This role performs functions on behalf of other users that belong to the Service Consumer role, such as ordering a laptop for a new employee or approving a services order. A typical job role might be that of a Manager or Administrative Assistant, someone who is approving requests or processing orders within the Operations Portal as part of their daily tasks.

The **Service Consumer** role has basic level access privileges within organizations. This role can be thought of as a typical end user with full membership within the organization and full access to the Operations Portal.

1. There are currently two roles available: **Consumer Organization Administrator** and **Service Consumer**.
 - a. The **Consumer Organization Administrator** role can be thought of as a group administrator or manager. This role can perform functions on behalf of other users that belong to the Service Consumer role.
 - b. The **Service Consumer** role has basic level access privileges within organizations.
2. Click Add DN button below x or y to select or add a domain name (DN) for a group or organization.

Email Notifications

You can configure the SMTP server used for email notifications in this tab.

- 1) Enter Hostname,
- 2) Enter Port number.
- 3) Select a Connection Security method. There are two checkboxes available:
 - a. SSL
 - b. **Requires Authentication**, which forces the user to use the appropriate authentication method.
- 4) Next, Select a **User ID** and **Password**; make sure to **Retype Password** to confirm your selection.
- 5) In the **Email Source Settings** section, you can input a **Sender Email Address** and **Subject Prefix** for notification emails.
- 6) **Subscription Expiration Notification**: with this menu item, you can configure how long before a user is notified by email of their expired subscription. The available notification options are:
 - a. **A Day**
 - b. **Two Days**
 - c. **Three Days**
 - d. **A Week**
 - e. **Two Weeks**
 - f. **Three Weeks**
- 7) Once you have made your changes, click **Save**, or click **Reset** to discard changes.

Operations

This tab allows you to configure operations settings for a consumer organization. You can choose between **Fail Subscriptions on Provisioning Errors** or **Pause Subscriptions on Provisioning Errors**, and indicate whether **Subscribers** or **Operators** will be notified by email.

Tasks

- 1) Click the radio button for **Fail Subscriptions on Provisioning Errors**. If there are errors during provisioning, subscriptions will fail without notification.
- 2) Click the radio button for **Pause Subscriptions on Provisioning Errors**.
- 3) **Paused Subscription Notifications** will open below, and allow you to select **Subscribers** or **Operators** to notify when a provisioned server is paused.
- 4) The **Add Operator Users** button allows you to select and add Operator Users already on the network.
 - a) You can select one or more existing Service Operations Managers users
 - b) You can manually select a user on the network by user name
- 5) Once you have made your changes, click **Save**, or click **Reset** to discard changes.

Catalogs

This tab displays the available catalogs for an Organization, including the default catalog for an organization. You cannot edit or change the catalogs in this tab.

Providers

Concepts

Providers are internal and third party service components that supply HP DCAA with added functionality and Out of the Box components that HP DCAA users can subscribe to and use to manage cloud infrastructure and resources. For example, an HP Database and Middleware Automation provider allows for integration between disparate platforms while an HP Helion Public Cloud provider connects a public cloud network into the HP DCAA environment.

A provider corresponds to the specific instance of an application that HP DCAA can integrate with to help instantiate service designs. For example, to enable service designs that target HP Network Automation Environment infrastructure orchestration, you must first create a provider (with a provider type of HP Network Automation Environment) in the HP DCAA Administration Console.

NOTE: Locked items that show the lock icon () cannot be deleted.

Provider Types

A provider type allows you to classify providers for improved filtering and identification. HP DCAA includes some pre-defined, out-of-the-box provider types, including the **HP Server Automation** Provider. Each instance of a provider can have a single provider type, and each instance of a resource offering can also have a single provider type. In addition, resource offerings can be associated only with providers that share the same provider type.

This is what you will see in the initial HP DCAA Providers screen:

- **Provider** information – click on an individual **Provider** to see more information about the provider, including related Resource Providers and Components.
- View **Providers: By Type** allows you to sort Providers **By Type** or **By Environment**.
- **All Providers** tab – third-party and HP built providers can be found here. You can also create a provider using the **Create** button. See more info here in the [Create Provider](#) topic.
- **Components** tab – third-party and HP built components can be found here. You can also click on the **Manage** button to manage these components.

- For all Provider information tabs, the **Refresh** button will redisplay your selections if they have recently changed.

Resource Environments is a grouping mechanism for providers and have to be defined initially. When configured, they can be used as a way to influence the selection of resource providers during the provisioning process.

Available ways to group providers are by:

- Geographic location
- Org Structure
- Production readiness.

See the [Provision Servers](#) topic in this document for more info.

Tasks

You can do the following tasks in the Provider component:

- [Provider Information](#) – you can view and edit attributes.
- [Create Provider](#)
- [Manage Components](#)

Provider Information

1) Click on the Provider link. You will see the following attribute tabs:

- **Overview** - Shows the **Provider Type**. On the **Overview tab**, you can click **Edit** and change the **Display Name, Provider Description, UserID, Password, and ServiceAccessPoint**, which is the URL that hosts the provider and allows HP DCAA to perform management activities. You can also change the provider **Image** and enable **Default Settings**.
- **Properties** - you can Create Provider properties here. Click **Create** or the **Create Property** button to create properties. The four property **Types** are: **Boolean, Integer, List, and String**. You can change or edit the **Name, Display Name, Description** and the appropriate **Property Value** of the Provider.
- **Environments** – allows you to define and select resource environments. Click the **Select** or **Select Environments** button. Click on the **Available Resource Environments**, click the **Add / Remove** buttons to edit the resource list, then click **Save**.
- **Offerings** - This tab shows all the selected **Offerings** available to this Provider. To make any changes, click the **Select** button to open the **Select Resource Offerings** window. Click on the **Resource Offering**, then Click the **Add / Remove** buttons to edit the resource list, and then click **Save**.
- **Resource Pools** - allows you to define and select resource pools. Click the **Create** or the **Create Resources** button. You can enter or edit the **Display Name, Description,**

Known By Provider As, and **Resource Synchronization Action** attributes. You can also enable or disable **Default Settings**; when **Enabled**, this resource pool will participate in resource allocation for processing new subscriptions.

- **Components** - allows you to define and manage Components. Click the **Manage** or the **Manage Components** button.
- The Manage Provider Types icon, [] next to the Manage button. This allows you to **Create a Provider Type** or **Edit a Provider Type**.
 - Click on the **Provider Type**, then click on the **Create Provider Type** icon () to **Create a Provider Type**, or click on the **Edit Provider Types** icon () to edit the Display, Description, and Image of the Provider Type.
 - You can create or edit the **Display Name**, **Description**, and **Image** of the Provider Type.

NOTE: For all Provider information tabs, the **Refresh** button will redisplay your selections if they have recently changed.

Create Provider

To create a new Resource Provider, click the Create button. You can create a new **Display Name**, **Provider Description**, **UserID**, **Password**, and **ServiceAccessPoint** for the **Resource Provider**, which is the URL that hosts the provider and allows HP DCAA to perform management activities. You can also change the provider **Image** and enable **Default Settings**; when **Enabled**, this resource pool will participate in resource allocation for processing new subscriptions.

Manage Components

This feature allows you to define and manage Topology Components. Click the **Manage** or the **Manage Components** button.

Designs

Sequenced Designs

NOTE: HP DCAA 1.00 utilizes and supports *only* Sequenced Designs.

Concepts

A sequenced service design is a blueprint for an orderable service. Each design includes service
DCAA 1.00

components created from component types or component templates that define what is provisioned automatically. You can use service designs to create a complex set of automated elements to support consistency and repeatability of common manual tasks. These service designs then become the basis for service offerings, which support ITIL and ITSM best practices. A sequenced service design includes the following:

- A hierarchy of service components (see "[Service Components](#)"). The hierarchy of service components defines the execution process. In HP DCAA the hierarchy defines the connection rules, but the **Component Order** configured for each service component defines the order of execution that occurs when this design is provisioned.
- Resource bindings (see "[Resource Bindings](#)", which allow resource offerings to be assigned to service components.
- Lifecycle actions, which are needed to provision and de-provision service components.
- Properties (see "[Custom Service Component Properties](#)"), which allow you to configure user-defined properties for service components.
- Subscriber options (see "[Subscriber Options](#)", which allow you to expose service design options in the **Offerings** area of the HP DCAA Administration Console and the Operations Portal.

To navigate to the sequenced design area

- 1) In the HP DCAA Administration Console initial dashboard view, click the **Designs** tile.
- 2) Click the **Sequenced** tile, which takes you to the **All Designs** area for sequenced designs.
- 3) You will see three tiles: **Designer**, **Components**, and **Resource Offerings**.

To design a sequenced service

Follow these high-level steps to design a sequenced service:

- Based on the needs of your organization, create a plan for resource providers, components, lifecycle actions, and other design elements before you begin implementing your design.
- Make sure the resource providers and resource offerings (with lifecycle actions, as required) that are needed to deploy the service have been set up.
- Create component types, as needed (see the topic "[Create a Component Type](#)"), or use out-of-the-box component types.

- Create the service design (see ["Add a Service Design"](#)).
- Use the **Designer** (see ["Sequenced Designer"](#)) to create a hierarchy of service components (see ["Create a Service Component"](#)).
- Add resource bindings, as needed (see ["Create a Resource Binding"](#)).
- Create lifecycle actions for service components, as needed (["Create a Lifecycle Action for a Resource Offering"](#)).
- Create custom properties for service components, as needed (see ["Create Custom Service Component Properties"](#)).
- Create subscriber options for a service design, as needed (see ["Subscriber Options"](#)).
- Complete the service design (blueprint) and ensure the **Disabled** box is not selected (see ["Add a Service Design"](#)). This makes the service design available for eligible for selection as the basis of a service offering in the **Offerings** area.

View Service Designs

For more information about sequenced designs, see ["Sequenced Designs"](#).

To view service designs

In the left pane of **All Designs** area, view the list of service design tags. Click a tag to view the list of service designs associated with the selected tag.

Use the following icons and features to navigate and perform tasks in the Designs area:

Item	Description
	Indicates locked items, which cannot be edited or deleted.
	Type search text to filter the results based on a keyword search of display name and description.
	Click to display a tile view of the content.
	Click to display a list view of the content.
Refresh button	Click to refresh the data in this view.

	Click to manage tags.
Create button	Click to add a new item.

Item	Description
Import button	Click to import a service design
	Hover your cursor over this icon to see more information.
	Hover your cursor over this icon to see more information about the error condition.

Design Overview

For more information about sequenced designs, see ["Sequenced Designs"](#).

To see the design overview

1. In the left pane of the **All Designs** area, select the tag associated with the design whose details you want to view.
2. Select the design whose details you want to view.
3. View design details in the **Overview** tab.
4. For descriptions of the specific properties listed in this view, see the topic ["Add a Service Design" on the next page](#).

In this tab, you can also do the following:

- Click **Export** to export the service design. For more information, see ["Import and Export a Service Design"](#).
- Click **Save As** to save the service design with a different name. For more information, see ["Copy a Service Design"](#)
- Click **Edit** to edit the name and description of a service design. For more information, see ["Edit Service Design Properties"](#).
- Click **Delete** to delete the service design. For more information, see ["Delete a Service Design"](#).

You can also see design information in the following tabs:

- **Designer** tab - for more information see the topic "[Sequenced Designer](#)".
- **Subscriber Options** tab - for more information see the topic "[Subscriber Options](#)".
- *This tab is available only for sequenced designs.*

Add a Service Design

For more information about sequenced designs, see "[Sequenced Designs](#)".

To add a service design:

1. In left pane of the **All Designs** area, click **Create**.
2. Provide the information in the following table, and click **Create**.
3. When you access the **Designer** tab to begin structuring the service design, click **Create Root Component**. For more information, see "[Create a Service Component](#)".

Item	Description
Display Name	The name you provide for the service design.
Description	The description you provide for the service design.
URL	A Uniform Resource Locator (URL), which, if configured, provides a link in the Overview tab that opens a new browser window to the target location. You can use the URL target location to provide additional information about a service design.
Image	An image that displays for the service design. Click Change Image . Choose the image you want, and click Select . Click Upload to add your own image. Supported file extensions include .jpg, .jpeg, .gif, and .png. The recommended image size is 256 by 256 pixels, and the image will be scaled to the appropriate size. The images are stored in the %CSA_HOME%\jboss-as\standalone\deployments\csa.war\images\library folder of the HP DCAA server.

Item	Description
Additional Settings	<p>Disabled - Check the box to indicate that the availability of the service design is Disabled. When the box is not checked the availability is Enabled. Service Designs configured as Enabled appear in the service offering section as blueprints. When Disabled, no new service offerings can be created from the service design. If a service design is disabled after service offerings have been created, no new subscriptions can be created from those service offerings.</p>
Tags	<p>Tags - Click Select Tags to choose from a list of tags that you can define to provide a structure for organizing and grouping the service designs. For more information, see "Manage Tags".</p> <p>To remove a tag, hover the cursor over the tag you want to remove, and click the delete () icon.</p>

Service Design Validation

For more information about sequenced designs, see "[Sequenced Designs](#)".

The validation warning banner indicates that your service design has the following problem:

- The service design has at least one resource binding to a resource offering that has no enabled, associated provider. For more details, click **View Warnings**. You can then click an **Associated Service Component** display name, which takes you to that component in the service design hierarchy. If this service design problem is not corrected, the design cannot be successfully provisioned.

Edit Service Design Properties

For more information about sequenced designs, see "[Sequenced Designs](#)".

To edit properties of a service design

1. In the left pane of the **All Designs** area, select the tag associated with the design you want to edit.
2. Select the design you want to edit.
3. In the **Overview** tab, click **Edit**.
4. Edit the properties of the service design, as desired. For descriptions of the specific properties, see the topic "[Add a Service Design](#)".
5. Click **Save**.

Copy a Service Design

For more information about sequenced designs, see "[Sequenced Designs](#)".

To copy a service design

1. In the left pane of the **All Designs** area, select the tag associated with the design you want to copy.
2. Select the design you want to copy.
3. In the **Overview** tab, click the **Save As** button. Type a new name and description, as desired.
4. Click **Save**. After you click **Save**, the new service design is displayed.

All parts of a service design (such as the service component hierarchy, resource bindings, properties, and subscriber options) are copied. The copied service design appears in the **All Designs** area. After you copy a service design, any changes you make to the original or to the copy will not affect the other.

Delete a Service Design

For more information about sequenced designs, see "[Sequenced Designs](#)".

A service design cannot be deleted if any service offerings are created from it.

To delete a service design

1. In the left pane of the **All Designs** area, select the tag associated with the design you want to delete.
2. Select the design you want to delete.
3. In the **Overview** tab, click **Delete**.
4. Click **Yes** to confirm the deletion.

Import and Export a Service Design

For more information about sequenced designs, see "[Sequenced Designs](#)".

For information about importing resource offerings, see the topic "[Import and Export a Resource Offering](#)".

Prerequisites

Before you import a service design archive, complete the following prerequisites:

- 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 HP DCAA 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 HP Operations Orchestration process engine, the **name** corresponds to the full path to the HP Operations Orchestration flow (for example, /Library/CSA/3.2/Providers/vCenter/vCenter Clone Server/Actions/vCenter Simple Compute - Deploy). Make sure that these flows have identical signatures and identical paths as the flows on the system from which the service design was exported. For instructions about how to import OO flows, see the section "Import HP Operations Orchestration Flows" in this Guide.
- If the service design you want to import has a dependency on any custom component types, these custom component types must be imported before the service design can be imported.
- 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. By default, all images in the archive files must end in one of the following suffix values.

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

Importing and Exporting

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.

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.

Update preserving original 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.

Content archive for service designs

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

To import 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 does not succeed.

Note: When you import a design, any tags you have selected in the designs area do not affect the imported design. The imported design will contain the tags that were included when the design was exported, and new tags will be created on the system, as necessary, to match what was exported.

1. In the lower, right pane of the **All Designs** area, click **Import**.
2. Select or specify the **Archive File** (.zip file) that contains the service design you want to import. Archive filenames for service designs begin with SERVICE_DESIGN_.
3. Select an **Option**:
 - a. **Import** - imports new service designs (and associated resource offerings); does not update existing service designs. Note that you cannot import a service design with the same internal name as an existing service design.

- b. **Update** - imports new service designs (and associated resource offerings) and updates (overwrites) existing service designs. Check **Preserve Originals** to create backup copies of the original items, appending "Superseded on" and the date to the artifact display names and descriptions.
4. Click **Preview** to see a report of prospective results for the import process, including information about the artifacts and their status.
5. Click **Import**.
6. Click **View Detailed Report** to see a summary and details of the import process, including information about the artifacts and their status.
7. Click **Close**.

To export a service design archive

1. In the left pane of the **All Designs** area, select the tag associated with the design you want to export.
2. Select the design you want to export.
3. In the **Overview** tab, click **Export**.
4. Save the exported service design, if required by your browser.

When you export a service design archive, the service design and all referenced resource offerings are packaged in an archive file whose name is:

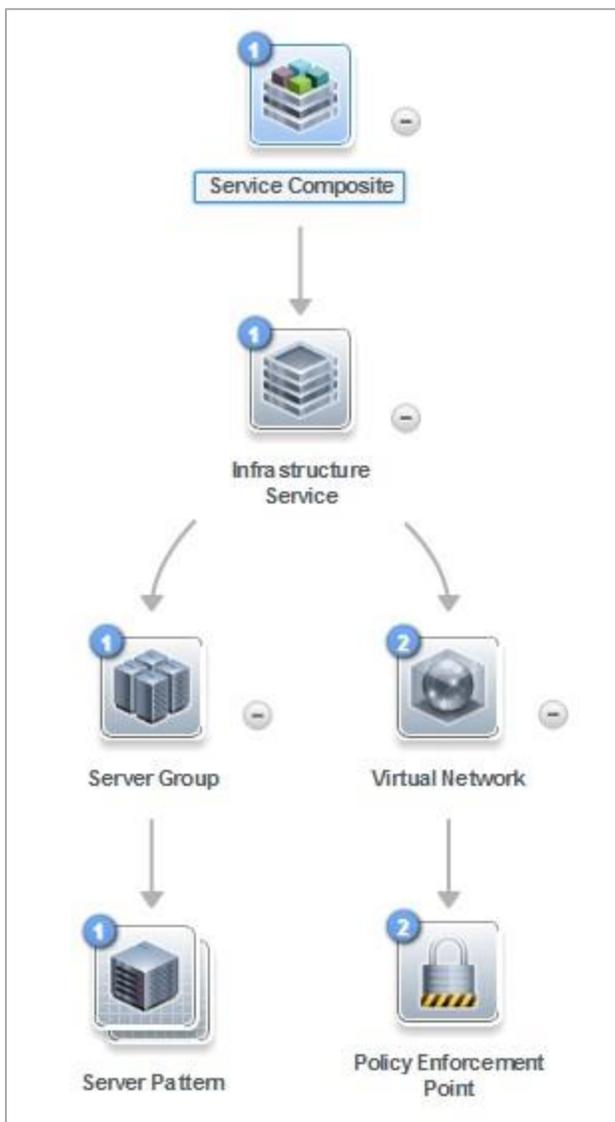
SERVICE_DESIGN_<service_design_display_name>_<service_design_id>.zip

Sequenced Designer

For more information about sequenced designs, see "[Sequenced Designs](#)".

The **Designer** allows you to design your sequenced services by creating a hierarchy of service components. A service component is an element of a service design. A service component has a component type that constrains its allowed children and assignable resource offerings. A service design starts with a root service component (Service Composite, in the image below).

An example hierarchy of service components, as shown below, has a Service Composite that contains an Infrastructure Service, which contains a Server Group and a Virtual Network. Also, the Server Group contains a Server (marked as a Pattern), while the Virtual Network contains a Policy Enforcement Point.



To see the component type of a service design element, hover your mouse over the icon for that element. Also, the icon for the element corresponds to the image specified for the component type.

To navigate to the sequenced designer:

1. In the DCAA Administration Console dashboard, click **Designs**, and then click **Sequenced**.
2. Select a tag or select **All Designs**.
3. In the right pane, select a service design.
4. Click the **Designer** tab.

To use the designer controls

The **Designer** provides the following controls to help you properly display your service design.

Icon	Description
	Zoom the display out or in: <ul style="list-style-type: none">• To zoom out, click the left controller box.• To zoom in, click the right controller box.• Move the slider control from left to right to zoom out and in. You can also use your mouse scroll wheel to zoom out and in.
	Click to reload the service design and reset the service components to their default positions.
	Click to automatically fit the service design within the display area.
	Hover over or select a service component to see a toolbar that allows you to create a new child service component or to edit and delete the selected service component.
	Click to collapse the service components in the service design.
	Click to expand the service components in the service design.

Service Components

For more information about sequenced designs, see "[Sequenced Designs](#)".

A Service Component is an element of a service design. A Service Component has a component type that constrains its allowed children and category of resource offerings (for more information, see the topic "[Create a Component Type](#)").

See the following related topics:

- ["Create a Service Component"](#)
- ["Delete a Service Component"](#)
- ["Edit Properties of a Service Component"](#)
- ["Custom Service Component Properties"](#)

Create a Service Component

For more information about sequenced designs, see ["Sequenced Designs"](#).

You can add children to the root service component or to any component that has one or more supported children configured for it.

To create a service component

1. In the left pane of the **All Designs** area, select the tag associated with the design to which you want to add a child service component.
2. Select the service design.
3. In the **Designer** tab, select the service component to which you want to add a child.
4. Click the **Create New Child Service Component**  icon.
5. Provide the following information:

Item	Description
Component Palette	Select the component palette that contains the component type you want to select for this service component, and then click Next . The list of component palettes displays only those palettes that are applicable to the service component for which you are creating a child. A component palette contains a group of component types from which you can choose when creating service components in a service design.

Item	Description
Component Type	<p>Select a component type for the service component you are creating, and then click Next. The list of component types displays only those types that are applicable to the service component for which you are creating a child. Component type properties provide a base set of attributes for the service component.</p> <p>For more information, see the topic "Components".</p>
Component Template	<p>Select a component template for the service component you are creating, and then click Next. A component template is a specialized version of a component type and is used to simplify service design creation. Component templates include customized settings for the properties and lifecycle actions that provide initial settings for the service design. When a template is added to a design, any default properties and lifecycle actions are automatically populated in that service component within the design. This list always includes a Default Template, which uses the settings as configured for the selected component type.</p>
Identification Details:	
Display Name	The name you provide for the service component.
Description	The description you provide for the service component.
Component Order	<p>Select a number to specify the deployment processing order for this service component relative to its sibling service components (that is, service components who share the same parent).</p> <p>Service components are processed in ascending order during service deployment and in descending order during undeployment.</p>
Operations Portal Options	<p>Select Visible to specify that this service component is visible in the Operations Portal. De-select it to specify that the service component will not be visible.</p> <p>Custom service component properties and lifecycle actions that have been configured to be visible in the Operations Portal will only be displayed in the Operations Portal if the associated service component is itself configured to be visible. The visibility of a service component does not affect visibility of its child service components, and it is not necessary for a parent of a service component to be visible for the child component to be visible in the Operations Portal.</p>

Item	Description
Pattern	<p>Select this box to mark the service component as a pattern. This indicates that the service component will not be automatically processed by the DCAA lifecycle engine. When you create a pattern service component, you must also create a Clone Pattern action in the parent service component. For example, the out-of-the-box component type, Server, is typically marked as a pattern, and its parent service component, Server Group, includes the Clone Pattern action. At subscription time, the Clone Pattern action creates one or more service component instances from this service component pattern. The root service component in a service design cannot be marked as a pattern. As a result, if you select a pattern as the root node, it will no longer function as a pattern.</p> <p>You can identify a service component that is marked as a pattern because its icon appears as a stacked, double image with a grid-like background, as shown below.</p> 

Delete a Service Component

For more information about sequenced designs, see "[Sequenced Designs](#)". When you delete a service component, all of its child service components are also deleted. **To delete a service component:**

1. Select the service component you want to delete.
2. Click the **Delete** () icon.
3. Click **Yes** to confirm the deletion.

Edit Properties of a Service Component

For more information about sequenced designs, see "[Sequenced Designs](#)".

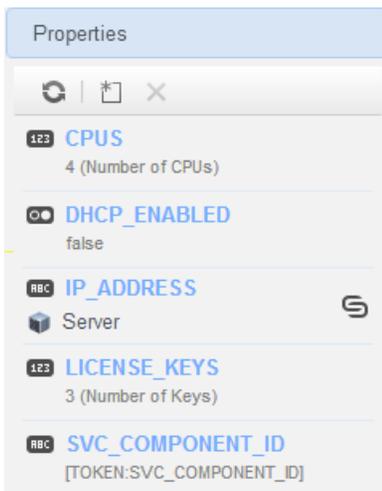
[To edit properties of a service component](#)

1. Select the service component whose properties you want to edit.
2. Click the **Edit** (✎) icon, or double click the service component display name or icon.
3. Edit the properties of the service design, as desired.
4. For descriptions of the specific properties, see the topic "[Create a Service Component](#)".

Custom Service Component Properties

For more information about service components, see "[Service Components](#)".

Custom service component properties are managed using the **Properties** pane (shown below) in the **Designer** tab.



Custom properties for service components are user-defined properties that you may want to create in the following situations:

- When a service component receives its value from a subscriber option. For example, you may want to get the number of CPUs for a server after its value has been specified in the Operations Portal. To do this, create a custom property (for example, NCPU) on the Server service component, and create a subscriber option property (for example, NCPU). Finally, use a target binding, as described in "[Subscriber Options](#)", to push the value from the subscriber option to the ServerNCPU property.

- When an action that runs on a service component or its associated resource offering expects a property value with a given name/value to exist on the service component. For example, an action may need to retrieve an ipAddress that is stored a Server service component.
- When a service design needs to receive the value of a property that is stored on another service component. For example, a Software Application Tier service component may need to know the service component ID of a Server Group. You can create a property on the Server Group service component called SVC_COMPONENT_ID, which has a token value of [TOKEN: SVC_COMPONENT_ID]. You would also create a property on the Software Application Tier service component whose value contains a source binding to the Server Group property (SVC_COMPONENT_ID). The property value is then pulled by the Software Application Tier from that SVC_COMPONENT_ID property on the Server Group. This use of custom service component properties to pull a value from another service component property is called a *source binding*. Another type of value binding is called *target binding*. For more information about target bindings, see "[Subscriber Options](#)".
- When you want to expose a property value in the Operations Portal. The property value can be explicitly defined on the service component, or may be set as the result of an action execution (for example, a HOSTNAME property might be set on a Server service component as part of deploying the Server).

See the following related topics:

- "[View Custom Service Component Properties](#)" below
- "[Create Custom Service Component Properties](#)"
- "[Delete Custom Service Component Properties](#)"
- "[Edit Custom Service Component Properties](#)"

View Custom Service Component Properties

For more information about custom service components, see "[Custom Service Component Properties](#)".

To view custom properties of a service component

1. In the left pane of the **All Designs** area, select the tag associated with the design that contains the service component.

2. Select the service design.
3. In the **Designer** tab, select the service component whose custom properties you want to view.
4. In the right pane, select **Properties**.
5. The **Properties** pane displays the custom properties of the selected component.

Create Custom Service Component Properties

For more information about custom service components, see "[Custom Service Component Properties](#)".

To create custom service component properties

1. In the left pane of the **All Designs** area, select the tag associated with the design that contains the service component.
2. Select the service design.
3. In the **Designer** tab, select the service component to which you want to add a custom property.
4. In the right pane, select **Properties**.
5. In the **Properties** pane tool bar, click the **Create** () icon.
6. Provide the following information:

Item	Description
Property Type	Select one of the following: <ul style="list-style-type: none"> • Boolean - A property whose value is true or false. • List - A property where you can define a list of values for the Subscriber to select. • Integer - A property whose value is a positive or negative whole number or zero. • String - A property whose value is a sequence of characters.

Property
Details

For Boolean properties:

- **Name** - A unique name for the property.
- **Display Name** - The display name for the property.
- **Description** - A description of the property.
- **Operations Portal & Service Offering Options:**
 - **Editable** - Indicates that this property can be made editable in the **Offerings** area and in the Operations Portal.
 - **Required** - Boolean properties are always required, which means that when a subscription is ordered, a value must be provided for this field. This option cannot be changed for Boolean properties.
 - **Value** - Select **true** or **false**.

For List properties:

- **Name** - A unique name for the property.
- **Display Name** - The display name for the property.
- **Description** - A description of the property.

Operations Portal & Service Offering Options:

- **Editable** - Indicates that this property can be made editable in the **Offerings** area and in the Operations Portal.
- **Required** – Select to indicate that when a subscription is ordered, a value must be provided for this field. Note that this field is available only when the **Enable Multi-Select** option is selected. Single-select list properties are always required; this field cannot be changed for single-select properties.

Remove Selected Value(s) icon () to remove a selected value. After adding a List property, you can choose a default value (or values, for multi-select lists) by selecting one or more values from the drop down list for the

Item	Description
	<p>Value Entry Method:</p> <ul style="list-style-type: none"> • Manual Entry - Click the Add Value (+) icon to add a new value, or click the property in the Subscriber Options tab. Click Save to save the default value selection. • Select Dynamic Query - Click the Script Selection () icon to select a Script Name. To add new scripts, place them in the folder: <pre>%CSA_HOME%\jboss- as\standalone\deployments\csa.war\propertysources</pre> <p>Note: The script is invoked at subscription ordering or modification time by the out-of-the-box DCAA user <code>csaReportingUser</code>, who has read-only access to HP DCAA.</p> <ul style="list-style-type: none"> ◦ Specify an HTTP Request Body to be passed to the script. The contents of the HTTP Request Body need to include the information required by the selected script to return the appropriate set of dynamic values. To include a token in the HTTP Request Body, click the Token Request () icon and select from the available tokens. The token is a DCAA system value that is automatically resolved internally when the property is read. Click Test Query to test the dynamic query results (note that tokens are resolved only at subscription time, and this test will pass literal values). <p>Note: The script is invoked at subscription ordering or modification time by the out-of-the-box DCAA user <code>csaReportingUser</code>, who has read-only access to HP DCAA.</p> <p>You can select from the following server-side tokens:</p> <ul style="list-style-type: none"> • Action Name - Resolves to the value of <code>ORDER</code> when initially ordering a subscription and to the value of <code>MODIFY_SUBSCRIPTION</code> when modifying an existing subscription. • Service Blueprint ID - Resolves to the Service Blueprint ID. • Service Instance ID - Resolves to the Service Instance ID.

Item	Description
	<ul style="list-style-type: none"> • Service Offering ID - Resolves to the Service Offering ID. • Service Request Organization ID - Resolves to the Organization ID associated with the Service Request. • Service Request User ID - Resolves to the User ID associated with the Service Request. • Subscription ID - Resolves to the Subscription ID created at subscription time. <p>You can also select the following client-side token:</p> <p>[CLIENT:<property_name>]- Allows you to have a dependency on a value from another list property, which means that if a value is selected in "Property A", for example, the list of values in "Property B" will change based on that selection. "Property A" and "Property B" must exist within the same Subscriber Option. Note that <property_name> refers to the property Name, and not its Display Name.</p> <p>For the Test Query functionality to work for the above example, you must first create and save "Property A" in the DCAA Administration Console before you create its dependent property, "Property B."</p> <p>Enable Multi-Select - Select to present options as check boxes in the Operations Portal.</p> <p>For Integer properties:</p> <ul style="list-style-type: none"> • Name - A unique name for the property. • Display Name - The display name for the property. • Description - A description of the property. <p>Operations Portal & Service Offering Options:</p> <ul style="list-style-type: none"> • Editable - Select to make this field editable in the Offerings area and in the Operations Portal.

Item	Description
	<ul style="list-style-type: none"> ◦ Required – Integer properties are always required, which means that when a subscription is ordered, a value must be provided for this field. This option cannot be changed for Integer properties. ◦ Value - Select or type a positive or negative whole number or zero. If you enter a decimal number, the value will be truncated to the nearest integer. The maximum allowed integer value is 2147483647 and the minimum is -2147483648; if you enter a value outside these bounds the value will be automatically converted to the closest maximum or minimum value. <p>Input Validation - Select Enable Input Validation to validate the value that the user enters for this property. When selected, the following fields are available:</p> <ul style="list-style-type: none"> • Minimum Value - Enter a number for the minimum value allowed, which means the value for the property must be greater than or equal to the number you enter. • Maximum Value - Enter a number for the maximum value allowed, which means the value for the property must be less than or equal to the number you enter. <p><i>For String properties:</i></p> <p>Name - A unique name for the property.</p> <p>Display Name - The display name for the property.</p> <p>Description - A description of the property.</p> <p>Operations Portal & Service Offering Options:</p> <ul style="list-style-type: none"> • Editable - Select to make this field editable in the Offerings area and in the Operations Portal. • Required – Select to indicate that when a subscription is ordered, a value must be provided for this field. Note that this field is available only when the Editable option is selected. • Value - Type a string of characters. • Confidential data - Select this box to mask the values so that they cannot be read in the user interface; no encryption of the value is performed.

Item	Description
	<ul style="list-style-type: none"> • Input Validation: Select Enable Input Validation to validate the value that the user enters for this property. <p>Choose an Input Restriction from the following list:</p> <ul style="list-style-type: none"> • Custom Regular Expression - Validates the value based on a regular expression, as specified in the Regular Expression text box. • Email Address - Checks that a valid email format is entered. • IPV4 Address - Checks that a valid IPV4 address is entered. • IPV6 Address - Checks that a valid IPV6 address is entered. • Non-Numeric Characters - Checks that no numeric characters are entered. • URL Address - Checks that a valid URL format is entered. • Minimum Length - Enter a number for the minimum length allowed for the value, which means the length of the value must be greater than or equal to the number you enter. • Maximum Length - Enter a number for the maximum length allowed for the value, which means the length of the value must be less than or equal to the number you enter.
Property Bindings	<p>Select the service component to which you want to push the value of this property. Then select the appropriate property from the list of compatible properties. This is called a target binding. For more information about target bindings, see "Subscriber Options".</p>

The following tokens are available for custom service component properties:

Token	Description
Parent Service Component ID ([TOKEN:PRN_COMPONENT_ID])	Resolves to the Service Component ID of the parent service component.

Token	Description
Service Blueprint ID ([TOKEN:SVC_BLUEPRINT_ID])	Resolves to the Service Blueprint ID.
Service Catalog ID ([TOKEN:SVC_CATALOG_ID])	Resolves to the Service Catalog ID used at subscription time.
Service Component ID ([TOKEN:SVC_COMPONENT_ID])	Resolves to the Service Component ID of the component associated with this action.
Service Component Type ([TOKEN:SVC_COMPONENT_TYPE])	Resolves to the Service Component Type (for example, Server) of the component associated with this action.
Service Instance ID ([TOKEN:SVC_INSTANCE_ID])	Resolves to the Service Instance ID created at subscription time.
Service Offering ID ([TOKEN:SVC_OFFERING_ID])	Resolves to the Service Offering ID.
Service Request Organization ID ([TOKEN:REQ_ORG_ID])	Resolves to the Organization ID associated with the service request.
Service Request User ID ([TOKEN:REQ_USER_ID])	Resolves the User ID associated with the service request.
Subscriber's Email Address ([TOKEN:SVC_SUBSCRIPTION_EMAIL])	Resolves to email address of the subscriber.
Subscriber's Organization ID ([TOKEN:USR_ORG_ID])	Resolves to the Organization ID associated with the subscriber.
Subscription ID ([TOKEN:SVC_SUBSCRIPTION_ID])	Resolves to the Subscription ID created at subscription time.

Edit Custom Service Component Properties

For more information about custom service components, see "[Custom Service Component Properties](#)"

To edit the custom properties of a service component:

1. In the left pane of the **All Designs** area, select the tag associated with the design that contains the service component.
2. Select the service design.
3. In the **Designer** tab, select the service component whose custom properties you want to edit.
4. In the right pane, select **Properties**.
5. Click the name of the custom property you want to edit.
6. For descriptions of the specific properties, see the topic "[Create Custom Service Component Properties](#)".

Delete Custom Service Component Properties

For more information about custom service components, see "[Custom Service Component Properties](#)".

A custom service component property cannot be deleted if other properties are bound to it. For more information about source bindings, see "[Custom Service Component Properties](#)". For more information about target bindings, see "[Subscriber Options](#)".

To delete custom properties from a service component

1. In the left pane of the **All Designs** area, select the tag associated with the design that contains the service component.
2. Select the service design.
3. In the **Designer** tab, select the service component from which you want to delete a custom property.
4. In the right pane, select **Properties**.
5. In the **Properties** pane select the custom properties you want to delete.

6. Click the **Delete** (X) icon.
7. Click **Yes** to confirm the deletion.

Resource Bindings

- For more information about sequenced designs, see "[Sequenced Designer](#)".
- For more information about resource offerings, see the topic "[Resource Offerings](#)".

A resource binding is a link in a service design between a resource offering and a service component. For example, a resource offering for a VMware vCenter VM template can be linked to a Server service component. The resource binding ensures that the resource offering will be provisioned when the Server service component is deployed.

You can also create resource bindings on component templates.

See the following related topics:

- "[Create a Resource Binding](#)" below
- "[Delete a Resource Binding](#)"
- "[Create Provider Selection Actions for Resource Bindings](#)"
- "[Edit Properties of a Provider Selection Action for Resource Bindings](#)"
- "[View Properties of a Resource Binding](#)"
- "[Edit Properties of a Resource Binding](#)"

Create a Resource Binding

For more information about resource bindings, see "[Resource Bindings](#)" above. This topic describes how to create a resource binding in the following ways:

- On a component template
- On a service component

To create a resource binding on a component template

1. In the left pane of the **Components** area, select the component palette that contains the component type whose template resource binding you want to create.
2. Click the component type whose template resource binding you want to create.
3. Select the **Templates** tab.
4. In the component templates list, click the component template whose resource binding you want to create.
5. At the bottom of the **Resource Bindings** tab, click **Create**.
6. In the **Create New Resource Binding** wizard, provide the information described in the table below.

To create a resource binding on a service component

1. In the left pane of the **All Designs** area, select the tag associated with the design that contains the service component.
2. Select the service design.
3. In the **Designer** tab, select the service component to which you want to add a resource binding.
4. In the right pane, select **Resource Bindings**.
5. In the toolbar, click the **Create** () icon.
6. In the **Create New Resource Binding** wizard, provide the following information:

Item	Description
Resource Category	Select the category of the resource offering you want to bind to the service component.
Resource Offering	Select the resource offering you want to bind to the service component. You cannot edit this selection after a resource binding has been created. For more information about Resource Offerings, see the topic " Resource Offerings ".

Provider Type	You see this field when you view the properties of a resource binding. The provider type is determined by the selected resource offering; you cannot edit the provider type.
---------------	--

Item	Description
Binding Order	<p>When a resource binding is created, it is automatically assigned a binding order number. The binding order specifies the order in which the associated resource offering will be provisioned relative to other resource bindings configured for the service component. Resource bindings are processed in ascending order during service deployment and in descending order during undeployment. The number automatically assigned is the next available number, starting with 1, 2, 3, etc.</p> <p>After a resource binding has been created, you can edit it to reset the binding order by selecting a number from 1 to 99. You are allowed to create duplicate binding orders, which will be processed in an indeterminate order.</p>

Delete a Resource Binding

For more information about resource bindings, see "[Resource Bindings](#)".

To delete a resource binding

1. In the left pane of the **All Designs** area, select the tag associated with the design you want to modify.
2. Select the service design.
3. In the **Designer** tab, select the service component whose resource binding you want to delete.
4. In the right pane, select **Resource Bindings**.
5. Highlight the resource binding you want to delete.
6. In the toolbar, click the **Delete** (X) icon.
7. Click **Yes** to confirm the deletion.

View Properties of a Resource Binding

For more information about resource bindings, see "[Resource Bindings](#)".

To view the properties of a resource binding

1. In the left pane of the **All Designs** area, select the tag associated with the design you want to view.
2. Select the service design.
3. In the **Designer** tab, select the service component whose resource binding you want to view.
4. In the right pane, select **Resource Bindings**.
5. Click the name of the resource binding you want to view.

Select one of the following tabs for more information:

- **Summary** tab - View the properties of the resource binding. For descriptions of the specific properties, see the topic "[Create a Resource Binding](#)".
- **Provider Selection** tab - View and create resource provider selection actions, which execute as part of the Pre-Transition substate of the Reserving lifecycle state. For more information, see "[Create Provider Selection Actions for Resource Bindings](#)".
- **Resource Accounting** tab - View and create accounting actions that execute during the Reserving and Un-reserving states when the resource binding is provisioned.
- **Measurable Properties** tab - View and create measurable properties on a resource binding.
- **Offering Lifecycle** tab - See a read-only view of the lifecycle actions associated with the resource offering used for this resource binding.
- **Offering Properties** tab - View a read-only list of properties for the resource offering used for this resource binding.

- For more information about Resource Offerings, see the topic "[Resource Offerings](#)".

Edit Properties of a Resource Binding

For more information about resource bindings, see "[Resource Bindings](#)".

This topic describes how to edit properties of a resource binding in the following ways:

- On a component template.
- On a service component.

To edit properties of a resource binding on a component template

1. In the left pane of the **Components** area, select the component palette that contains the component type whose template resource binding you want to edit.
2. Click the component type whose template resource binding properties you want to edit.
3. Select the **Templates** tab.
4. In the component templates list, click the component template whose resource binding properties you want to edit.
5. Click the **Resource Bindings** tab.
6. Select the display name of the resource binding you want to edit.

1. In the Summary tab, click the **Edit**  icon.
2. Edit the properties of the resource binding, as desired. For descriptions of the specific properties, see the topic "[Create a Resource Binding](#)".

To edit properties of a resource binding on a service component

3. In the left pane of the **All Designs** area, select the tag associated with the design you want to modify.
4. Select the service design.

5. In the **Designer** tab, select the service component whose resource binding you want to edit.
6. In the right pane, select **Resource Bindings**.
7. Click the name of the resource binding you want to edit.
8. In the **Summary** tab, click the **Edit** () icon.
9. Edit the properties of the resource binding, as desired. For descriptions of the specific properties, see the topic "[Create a Resource Binding](#)".

You can also see read-only information regarding resource bindings by clicking the **Lifecycle** and **Properties** tabs.

View Properties of a Provider Selection Action for Resource Bindings

For more information about resource bindings, see "[Resource Bindings](#)".

To view properties of a provider selection action for resource bindings

1. In the left pane of the **All Designs** area, select the tag associated with the design you want to view.
2. Select the service design.
3. In the **Designer** tab, select the service component whose provider selection action properties you want to view.
4. In the right pane, select **Resource Bindings**.
5. Click the name of the resource binding.
6. Select the **Provider Selection** tab.
7. Click the name of the action whose properties you want to view.
8. For descriptions of the specific properties in the **Summary** tab, see the topic "[Create Provider Create Provider Selection Actions for Resource Bindings](#)" on the next page.
9. Select the **Properties** tab to view the action inputs that will be passed to the process definition. For more information about the specific properties, see the topic "[Edit Properties of a Lifecycle Action for a Resource Offering](#)". Note that provider selection actions for resource bindings always execute during the Pre-Reserving lifecycle state.

Edit Properties of a Provider Selection Action for Resource Bindings

For more information about resource bindings, see "[Resource Bindings](#)".

To edit properties of a provider selection action for resource bindings

1. In the left pane of the **All Designs** area, select the tag associated with the design you want to modify.
2. Select the service design.
3. In the **Designer** tab, select the service component whose provider selection action properties you want to edit.
4. In the right pane, select **Resource Bindings**.
5. Click the name of the resource binding.
6. Select the **Provider Selection** tab.
7. Click the name of the action whose properties you want to edit.
8. For descriptions of the specific properties in the **Summary** tab, see the topic "[Create Provider Selection Actions for Resource Bindings](#)" below.
9. Select the **Properties** tab to edit the action inputs that will be passed to the process definition.

Create Provider Selection Actions for Resource Bindings

For more information about resource bindings, see "[Resource Bindings](#)".

You must create one or more provider selection actions for a resource binding. The provider selection actions execute during the Pre-Transition substate of the Reserving lifecycle state; the lifecycle state cannot be changed.

HP DCAA ships with internal actions to help with provider selection.

- If you have **not** configured resource pools on a provider, then the two provider selection actions most likely to be configured on a resource binding are the **Build Resource Provider List** action and the **Select Resource Provider** action, which should run in that order. To select the provider already selected by the parent service component, use the **Select Resource Provider from Parent** action instead of the two previously mentioned actions.

- If you have configured resource pools on a provider, then the two provider selection actions most likely to be configured on a resource binding are the **Build Resource Provider and Pool List** action and the **Select Resource Provider and Pool** action, which should run in that order. To select the provider and pool already selected by the parent service component, use the **Select Resource Provider and Pool from Parent** action instead of the two previously mentioned actions.

[See the following table for descriptions of the out-of-the-box internal actions that ship with HP DCAA:](#)

Table - HP DCAA 1.00 Internal Actions

Internal Action	Description	Applies To
Build Resource Provider and Pool List	<p>Builds a candidate list of resource providers and associated resource pools that meet the following requirements:</p> <ul style="list-style-type: none"> • Support the resource offering referenced in a resource binding. • Have an Availability of Enabled. • If the service offering that references the service design with this action is in a service catalog with resource environments selected, the candidate list is further restricted to only include resource providers in one or more of the selected resource environments. • The provider's resource pool has sufficient resource capacity. To determine this, you must consider all measurable properties as configured in the Measurable Properties tab for the resource bindings, as well as the optional Multiplier Property Name field. The resource pool must have enough resource capacity to support all the properties, which requires that each necessary resource type (for example: CPU, Memory, and Storage), based on the measurable properties, be configured on the pool either with a Resource Availability of Unlimited or Available. If Available, the difference between Total Available To DCAA and Current DCAA Utilization must be sufficient to support the measurable property requirements. 	Resource Binding

Internal Action	Description	Applies To
Build Resource Provider List	<p>Builds a candidate list of resource providers that meet the following requirements:</p> <ul style="list-style-type: none"> • Support the resource offering referenced in a resource binding. • Have an Availability of Enabled. • If the service offering that references the service design with this action is in a service catalog with resource environments selected, the candidate list is further restricted to only include resource providers in one or more of the selected resource environments. 	Resource Binding
Clone Pattern	<p>Clones a service component that is marked as a Pattern into one or more non-pattern service components. The number of service components created is determined by the value of the property specified in Name of the Property for Service Component Count.</p>	Service Component
Deploy Topology Based Service Component	<p>Initiates the deployment of a delegated topology service component. For more information, see the <i>Application Deployment on Realized Topology Instance using Sequenced Design</i> white paper.</p>	Service Component
Decrease Resource Utilization	<p>Decreases the utilization of one or more resources in a resource pool by the values of the measurable properties configured on a resource binding. This action should be configured in the Un-reserve section of the Resource Accounting tab on a resource binding.</p>	Resource Binding
Increase Resource Utilization	<p>Increases the utilization of one or more resources in a resource pool by the values of the measurable properties configured on a resource binding. This action should be configured in the Reserve section of the Resource Accounting tab on a resource binding.</p>	Resource Binding

Internal Action	Description	Applies To
Log Messages	Writes the user-specified Boolean Input, Integer Input, and String Input property values to the <code>csa.log</code> file. You can include this as an action on a Service Component, Resource Binding, or Resource Offering for use in troubleshooting.	<ul style="list-style-type: none"> • Resource Binding • Resource Offering • Service Component
Select Resource Pool from Provider	<p>This internal action is deprecated and may be removed in a future DCAA release. Use the Select Resource Provider and Pool in conjunction with the Build Resource Provider and Pool List action in place of this action. Selects a resource pool from the set resource pools associated with the selected resource provider. A resource pool must have an Availability of Enabled to be selected.</p> <p>The selected resource pool will be available to resource offering actions in the token <code>RSC_POOL_ID</code>.</p>	Resource Binding
Select Resource Provider	Selects a resource provider from the candidate list that was built by the Build Resource Provider List action. The selected resource provider will be available to resource offering actions in the token <code>RSC_PROVIDER_ID</code> . The selected provider will, <i>optionally</i> , be written to a property on the associated service component if the <code>Provider Property Name</code> input to the action is provided.	Resource Binding
Select Resource Provider and Pool	Selects a resource pool and provider from the candidate list that was built by the Build Resource Provider and Pool List action. The selected resource provider and pool will be available to resource offering actions in the token <code>RSC_PROVIDER_ID</code> and <code>RSC_POOL_ID</code> , respectively. The selected pool will, <i>optionally</i> , be written to a property on the associated service component if the <code>Pool Property Name</code> input to the action is provided.	Resource Binding

Internal Action	Description	Applies To
Select Resource Provider and Pool from Parent	Selects the resource pool and provider already chosen by a service component's parent service component, as identified by the Parent Component ID and Pool Property Name properties. The selected resource provider and pool will be available to resource offering actions in the token RSC_PROVIDER_ID and RSC_POOL_ID respectively. The selected pool will also be written to a Pool Property Name property on the associated service component.	Resource Binding
Select Resource Provider from Parent	Selects the resource provider already chosen by a service component's parent service component, as identified by the Parent Component ID and Provider Property Name properties. The selected resource provider will be available to resource offering actions in the token RSC_PROVIDER_ID. The selected resource provider will also be written to a Provider Property Name property on the associated service component.	Resource Binding
Undeploy Topology Based Service Component	Initiates the undeployment of a delegated topology service component. The service component must have a property named topologyId, with a value that is the id of the topology design to be undeployed. For more information, see the <i>Application Deployment on Realized Topology Instance using Sequenced Design</i> white paper.	Service Component

To create a provider selection action for resource bindings

1. In the left pane of the **All Designs** area, select the tag associated with the design you want to modify.
2. Select the service design.
3. In the **Designer** tab, select the service component to which you want to add a provider selection action.
4. In the right pane, select **Resource Bindings**.
5. Click the name of the resource binding.
6. Select the **Provider Selection** tab.

7. Select the **Create** icon (✚).

8. Provide the following information:

Item	Description
Process Engine	Select a process engine, which is a container for process definitions. You can select either the DCAA Internal process engine or an HP Operations Orchestration (OO) engine.
Process Definition	Select a process definition, which is configured to run a specified internal action (see the table above for the list of internal actions) or external action.
Display Name	The name you provide for the lifecycle action.
Description	The description you provide for the lifecycle action.
Execution Order	The execution order for the lifecycle action, which is relative to other provider selection actions on this resource binding, if applicable. Lifecycle actions are executed in ascending order.
Execution Properties	Specify the following: <ul style="list-style-type: none">• FailonError- If selected, this indicates that provisioning or de-provisioning will stop if the lifecycle action fails.• ErroronTimeout- If selected, this indicates that provisioning or de-provisioning will stop if the lifecycle action times out.
Timeout (seconds)	The time to wait until a timeout occurs for the lifecycle action. Set this field to zero (0) if you do not want the action to timeout.

Designer Tile

Create a sequenced Design:

- 1) Click the **Create** button.
- 2) Fill in the **Display Name** and **Description** fields.
- 3) Enter the **URL** which contains information about this design.
- 4) Change the **Image**.
- 5) Disable **Additional Settings** by selecting the checkbox; when this box is checked, no new service offerings can be created from this design.
- 6) Select **Tags** if any are required.
- 7) Click **Create**.

Edit an existing Sequenced Design:

- 1) In the left pane of the **All Designs** area, select the tag associated with the design whose details you want to view.
- 2) Select the design of an offering whose details you want to view or edit.
- 3) You will see three tabs: **Overview, Designer, and Subscriber Options**.
- 4) View design details in the [Overview](#) tab.
- 5) The [Designer Tab](#) allows you to design your sequenced services by creating a hierarchy of service components
- 6) The [Subscriber Options Tab](#) allows you to create sets of options for a service design.

Overview Tab

In the **Overview** tab, you can do the following:

- Click **Export** to export the service design. For more information, see [“Export a Service Design”](#).
- Click **Save As** to save the service design with a different name. For more information, see [“Copy a Service Design”](#).
- Click **Edit** to edit the name and description of a service design. For more information, see [“Edit Service Design Properties”](#).
- Click **Delete** to delete the service design. For more information, see [“Delete a Service Design”](#).

Export a Service Design

To export a service design archive

1. In the left pane of the **All Designs** area, select the tag associated with the design you want to export.
2. Select the design you want to export.
3. In the **Overview** tab, click **Export**.
4. Save the exported service design, if required by your browser.
5. When you export a service design archive, the service design and all referenced resource offerings

are packaged in an archive file whose name is:

SERVICE_DESIGN_<service_design_display_name>_<service_design_id>.zip

Copy a Service Design

5. In the left pane of the **All Designs** area, select the tag associated with the design you want to copy.
6. Select the design you want to copy.
7. In the **Overview** tab, click the **Save As** button. Type a new name and description, as desired.
8. Click **Save**. After you click **Save**, the new service design is displayed.

All parts of a service design (such as the service component hierarchy, resource bindings, properties, and subscriber options) are copied. The copied service design appears in the **All Designs** area. After you copy a service design, any changes you make to the original or to the copy will not affect the other.

Edit Service Design Properties

6. In the left pane of the **All Designs** area, select the tag associated with the design you want to edit.
7. Select the design you want to edit.
8. In the **Overview** tab, click **Edit**.
9. Edit the properties of the service design, as desired. For descriptions of the specific properties, see the topic "[Add a Service Design](#)".
10. Click **Save**.

Item	Description
Display Name	The name you provide for the service design.
Description	The description you provide for the service design.
URL	A Uniform Resource Locator (URL), which, if configured, provides a link in the Overview tab that opens a new browser window to the target location. You can use the URL target location to provide additional information about a service design.
Image	An image that displays for the service design. Click Change Image . Choose the image you want, and click Select . Click Upload to add your own image. Supported file extensions include .jpg, .jpeg, .gif, and .png. The recommended image size is 256 by 256 pixels, and the image will be scaled to the appropriate size. The images are stored in the: %CSA_HOME%\jboss- as\standalone\deployments\csa.war\images\library folder of the HP DCAA server.

Item	Description
Additional Settings	<p>Disabled - Check the box to indicate that the availability of the service design is Disabled. When the box is not checked the availability is Enabled. Service Designs configured as Enabled appear in the service offering section as blueprints. When Disabled, no new service offerings can be created from the service design. If a service design is disabled after service offerings have been created, no new subscriptions can be created from those service offerings.</p>
Tags	<p>Tags - Click Select Tags to choose from a list of tags that you can define to provide a structure for organizing and grouping the service designs. For more information, see "Manage Tags".</p> <p>To remove a tag, hover the cursor over the tag you want to remove, and click the delete  icon." () icon.</p>

Delete a Service Design

NOTE : A service design cannot be deleted if any service offerings are created from it.

5. In the left pane of the **All Designs** area, select the tag associated with the design you want to delete.
6. Select the design you want to delete.
7. In the **Overview** tab, click **Delete**.
8. Click **Yes** to confirm the deletion.

Designer Tab

Design Overview

5. In the left pane of the **All Designs** area, select the tag associated with the design whose details you want to view.
6. Select the design whose details you want to view.

7. View design details in the **Overview** tab.
8. For descriptions of the specific properties listed in this view, see the topic "[Add a Service Design](#)".

In this tab, you can also do the following:

- Click **Export** to export the service design. For more information, see "[Import and Export a Service Design](#)".
- Click **Save As** to save the service design with a different name. For more information, see "[Copy a Service Design](#)".
- Click **Edit** to edit the name and description of a service design. For more information, see "[Edit Service Design Properties](#)".
- Click **Delete** to delete the service design. For more information, see "[Delete a Service Design](#)".

You can also see design information in the following tabs:

- **Designer** tab - for more information see the topic "[Sequenced Designer](#)".
- **Subscriber Options** tab - for more information see the topic "[Subscriber Options](#)".
- **Note:** This tab is available only for sequenced designs.

Service Design Validation

The validation warning banner indicates that your service design has the following problem:

- The service design has at least one resource binding to a resource offering that has no enabled, associated provider. For more details, click **View Warnings**. You can then click an **Associated Service Component** display name, which takes you to that component in the service design hierarchy. If this service design problem is not corrected, the design cannot be successfully provisioned.

Edit Service Design Properties

1. In the left pane of the **All Designs** area, select the tag associated with the design you want to edit.
2. Select the design you want to edit.
3. In the **Overview** tab, click **Edit**.
4. Edit the properties of the service design, as desired. For descriptions of the specific properties, see the topic "[Add a Service Design](#)".

5. Click **Save**.

Import and Export a Service Design

For information about importing resource offerings, see the topic "[Import and Export a Resource Offering](#)".

Prerequisites

Before you import a 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 HP DCAA 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 HP Operations Orchestration process engine, the **name** corresponds to the full path to the HP Operations Orchestration flow (for example, `/Library/CSA/3.2/Providers/vCenter/vCenter Clone Server/Actions/vCenter Simple Compute - Deploy`). Make sure that these flows have identical signatures and identical paths as the flows on the system from which the service design was exported. For instructions about how to import OO flows, see the section "Import HP Operations Orchestration Flows" in this Guide.
2. If the service design you want to import has a dependency on any custom component types, these custom component types must be imported before the service design can be imported.

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. By default, all images in the archive files must end in one of the following suffix values. For information on adding additional suffix values, see the *HP Data Center Automation Installation and Administration Configuration Guide*.

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

Importing and Exporting

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.

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.

Update preserving original 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.

Content archive for service designs

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

To import 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 does not succeed.

Note: When you import a design, any tags you have selected in the designs area do not affect the imported design. The imported design will contain the tags that were included when the design was exported, and new tags will be created on the system, as necessary, to match what was exported.

8. In the lower, right pane of the **All Designs** area, click **Import**.
9. Select or specify the **Archive File** (.zip file) that contains the service design you want to import. Archive filenames for service designs begin with SERVICE_DESIGN_.
10. Select an **Option**:
 - a. **Import** - imports new service designs (and associated resource offerings); does not update existing service designs. Note that you cannot import a service design with the same internal name as an existing service design.
 - b. **Update** - imports new service designs (and associated resource offerings) and updates (overwrites) existing service designs. Check **Preserve Originals** to create backup copies of the original items, appending "Superseded on" and the date to the artifact display names and descriptions.
11. Click **Preview** to see a report of prospective results for the import process, including information about the artifacts and their status.
12. Click **Import**.
13. Click **View Detailed Report** to see a summary and details of the import process, including information about the artifacts and their status.
14. Click **Close**.

To export a service design archive

6. In the left pane of the **All Designs** area, select the tag associated with the design you want to export.
7. Select the design you want to export.
8. In the **Overview** tab, click **Export**.
9. Save the exported service design, if required by your browser.

When you export a service design archive, the service design and all referenced resource offerings are packaged in an archive file whose name is:

Subscriber Options

The **Subscriber Options** tab allows you to create sets of options for a service design. The option sets are made available in the **Offerings** area of the DCAA Administration Console, where they can be further refined by setting pricing for options, hiding options and setting values for option properties.

The subscriber options are then exposed to Subscribers in the Operations Portal. These options allow the user to select values that customize the service offering for their personal needs.

The option sets are made available in the Offerings area of the DCAA Administration Console, where they can be further refined by setting pricing for options, hiding options and setting values for option properties. The subscriber options are then exposed to Subscribers in the Operations Portal.

For example, you can create an option set called *Number of Servers*, which is configured as follows:

- The option set has three options, *Small*, *Medium*, and *Large*.
- Each option has a property called NSERVERS.
- Each option has a unique, specified value for NSERVERS, either *Small*(2 servers), *Medium*(4 servers), or *Large*(8 servers).
- A binding is created from the NSERVERS property to a corresponding NSERVERS property on a ServerGroup service component. This use of a subscriber option to push a value to a custom service component property is called a *target binding*, described below.
- In the Operations Portal, subscribers can select the option that provides the desired number of servers.

Target Bindings

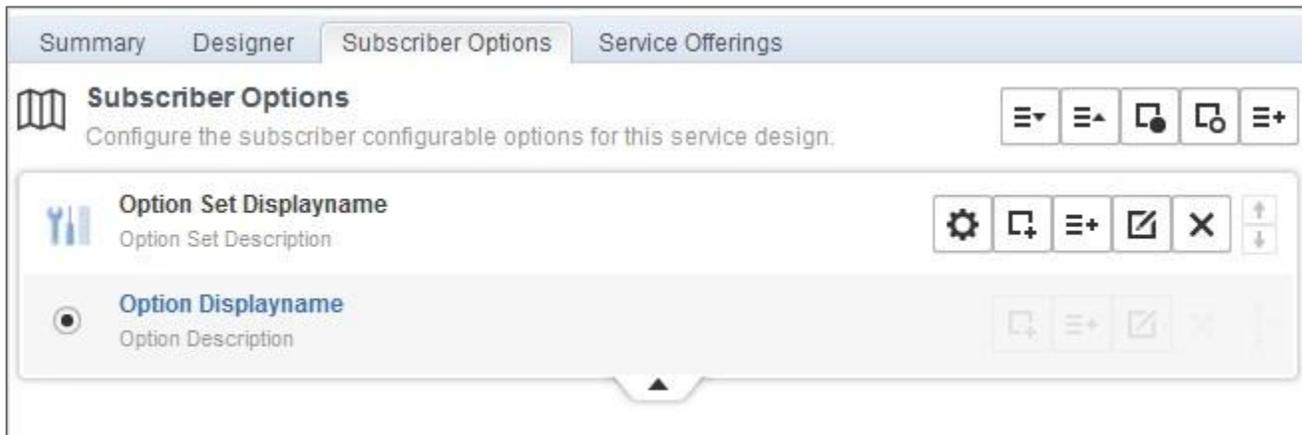
You may have a service component that is configured to expect a property value with a given name and specified value to be provided by a subscriber option. You can configure a binding on a subscriber option so that it sends the value to the appropriate service component property. This use of a subscriber option to push a value to a custom service component property is called a *target binding*.

For example, you may want to let the Subscriber select the number of CPUs for a server. You can create a custom service component property (for example, NCPU) on the Server component and specify a target binding that pushes the Subscriber-entered value to the corresponding NCPU Server property.

Another type of value binding is called *source binding*.

To use the subscriber options controls

The controls for working with subscriber options are shown and described below.



Subscriber Options Controls

Item	Description
	Click to expand all option sets.
	Click to collapse all option sets.
	Click to show all properties.
	Click to hide all properties.
	Click to add a new option or option set.
	Click to add a new option set for delegated topology components. This icon is available only for sequenced service designs that delegate execution to an HP DCAA topology-based design.
	Click to configure advanced settings.
	Click to create properties.

Subscriber Options Controls, continued

Item	Description
	Click to edit one of the following: <ul style="list-style-type: none">• Option set• Option• Property
	Click to delete one of the following: <ul style="list-style-type: none">• Option set• Option• Property
	Click to move the option set or option up or down in the list.
	Click to expand or collapse the option set.

NOTE: In the current release of DCAA, Subscriber Options are set to Read Only.

Components Tile

In Components, you can create service component types for use in HP DCAA.

Create a Component Type

A component type is a hierarchical classification of service components and is used in creating a service design. A component type contains rules that constrain how service designs can be constructed, helping a Service Designer to properly construct a service design. Component type constraints limit the types of service components that can be connected to components of this type within a service design. Resource category constraints limit the categories of resource offerings that can be bound to service components of this type.

1. In the left pane of the **Components** area, select the component palette in which you want to create a component type.
2. At the bottom of the right pane, click **Create**.
3. Provide the following information, and click **Create**.

Item	Description
Base Component Type	<p>Select the component palette from which you want to select a base component type, and then select a base component type from which the new component type will inherit properties and constraints. Component types are not required to have a Base Component Type. The lists display only component palettes and component types that are compatible with (that is, they do not create circular dependencies with) the palette in which you are creating the component type.</p> <p>This field cannot be modified after a base component type has been selected.</p>
Name	<p>A name for the component type. The component type name must be unique within a component palette. No white space is permitted; all letters are changed to upper case for this value. This field cannot be modified after a component type has been created.</p>
Display Name	<p>The name that displays for the component type.</p>
Description	<p>The description you provide for the component type.</p>
Image	<p>An image that displays for the component type. Click Change Image. Choose the image you want, and click Select. Click Upload to add your own image. Supported file extensions include .jpg, .jpeg, .gif, and .png. The recommended image size is 256 by 256 pixels, and the image will be scaled to the appropriate size. The images are stored in the %CSA_HOME%\jboss-as\standalone\deployments\csa.war\images\library folder of the HP DCAA server.</p>

Item	Description
Default Settings	<p>Select the following items as needed. These items specify the initial default values for service components:</p> <ul style="list-style-type: none"> <p>Consumer Visible - Select this box to specify that, by default, the service component is visible in the Operations Portal. Deselect it to specify that the service component will not be visible.</p> <p>Properties and lifecycle actions that have been configured as consumer visible will only display in the Operations Portal if the associated service component itself is configured to be visible. The visibility of a service component does not affect visibility of its child service components, and it is not necessary for a parent of a service component to be visible for the child component to be visible in the Operations Portal.</p> <p>Pattern - Select this box to mark the service component as a pattern by default. This indicates that the service component will not be automatically processed by the DCAA lifecycle engine. When you create a pattern service component, you must also create a Clone Pattern action in the parent service component. For example, the out-of-the-box component type, Server, is typically marked as a pattern, and its parent service component, Server Group, includes the Clone Pattern action. At subscription time, the Clone Pattern action creates one or more service component instances from this service component pattern.</p> <p>You can identify a service component that is marked as a pattern because its icon appears as a stacked, double image with a grid-like background, as shown here: </p>

Resource Offerings (Sequenced Designs)

Concepts

Note: Resource Offerings are used only with sequenced designs. They are not applicable to topology designs.

A resource offering links the capabilities of providers to the provisioning requirements of a service design. For example, you can create a resource offering that corresponds to a specific VMware vCenter VM DCAA 1.00

template that can be cloned by HP DCAA to create a VM.

A resource offering includes a user-specified set of lifecycle actions that is executed during the provisioning of the resource offering. A resource offering can also include actions that will be exposed to a subscriber in the Operations Portal.

Resource offerings are associated with service designs through resource bindings. When a service design is provisioned, each resource binding (and associated resource offering) is processed through the HP DCAA lifecycle. A provider that supports the resource offering is selected during the resource binding provisioning.

A resource offering may include one or more user-created properties that can be used to pass or exchange information with HP Operations Orchestration during the provisioning of the resource offering.

Scenarios

The following scenarios describe a few of the ways you can use resource offerings:

- A resource offering can be used to configure a *specific* capability offered by a provider (or a group of providers). For example, you can create a resource offering named Red Hat 5.3 64-bit that corresponds to a specific VMware vCenter VM template named rhe153x64, which when provisioned results in a Red Hat 5.3 64-bit VM being created. Such a resource offering would likely contain a user-created property, such as VM_TEMPLATE_NAME, that specifies the precise VM template name associated with the resource offering (in this case, rhe153x64). In this use of resource offerings, you need to create a resource offering for every VM template you wish to use in a service design.
- A resource offering can be used to configure a *general* capability offered by a provider (or a group of providers). For example, you can create a resource offering named vCenter VM Template that can be used to provision any VMware vCenter VM template. Such a resource offering requires that you create service component properties in the associated service designs that specify the precise VM template to be created. In this use of resource offerings, only a single resource offering is needed to expose VM template functionality to service designs.
- A resource offering can be used for the primary purpose of selecting a provider. Most resource offerings include lifecycle actions that are used to provision the resource offering, but some resource offerings have no such lifecycle actions and exist primarily to force provider selection in a resource binding. Typically, you would use this style of resource offering to select a provider at a group level in a service design (for example, for a Server Group) that is shared by all child components (for example, by all Server child components).

In this approach, you create one resource offering for the Server Group, (for example vCenter Server Group) and a separate resource offering for the Servers (for example, vCenter VM Template). When

associating vCenter Server Group to a Server Group, specify the provider selection actions to execute in the Resource Binding. When associating vCenter VM Template to a Server, specify the **Select Resource Provider from Parent** or the **Select Resource Provider and Pool from Parent** action in the Resource Binding. In such an approach, the vCenter Server Group probably will not have lifecycle actions that are invoked automatically during provisioning; however, this resource offering may include actions to be exposed to a subscriber (for example, an action such as Restart All VMs).

- A resource offering has a single provider type and a single category. For example, each of the resource offerings discussed above would have a provider type of VMware vCenter and a category of Compute.
- A resource offering can be exported to a .zip file and imported to the same or different HP DCAA installation. An exported resource offering includes all of its lifecycle actions and properties.
- A resource offering can also be copied, which allows you to share a set of lifecycle actions and properties across a number of resource offerings.

Best Practices

From the DCAA Administration Console dashboard, navigate to **Resource Offerings** by clicking **Designs-->Designs-->Resource Offerings**.

Note: Be sure you do not confuse a resource offering with a service offering. A service offering is an HP DCAA service design that is made available to a service catalog after additional information (such as pricing) has been added.

View Resource Offerings

For more information about resource offerings, see "[Resource Offerings \(Sequenced Designs\)](#)".

To view resource offerings

1. In the **By Provider Type** or **By Category** tab, select a **Provider Type** or **Category** whose list of offerings you want to see. For example, select **HP SiteScope** to see all offerings associated with that provider type, or select **Application** to see all offerings associated with that category.
2. For descriptions of the specific properties, see the topic "[Create a Resource Offering](#)" below.

Create a Resource Offering

For more information about resource offerings, see "[Resource Offerings \(Sequenced Designs\)](#)".

To create a resource offering

1. In the **By Provider Type** or **By Category** tab, select the provider type or category for the resource offering you want to create.

2. In the toolbar, click the **Create** (▼) icon.

3. Provide the following information:

Item	Description
Display Name	The name you provide for the offering.
Description	The description you provide for the offering.
Type	The provider type for this offering. This field cannot be changed after an offering is created.
Category	The category for this offering. This field cannot be changed after an offering is created. For more information, see " Categories ".

Import and Export a Resource Offering

For more information about resource offerings, see "[Resource Offerings \(Sequenced Designs\)](#)".

HP DCAA allows for the exporting and importing of many of the artifacts 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 system is supported by import and update operations. The import behavior only adds artifacts, whereas the update operation replaces matching artifacts. See the **Importing and Exporting** section below for more information.

Before you import a resource offering

Best Practices

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

2. Since some of the import and update options are destructive to existing data, you need to make sure you understand the differences between the options available to ensure you choose the option that matches your expectations.

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. By default, all images in the archive files must end in one of the following suffix values. For information on adding additional suffix values, see the *HP Cloud Service Automation Configuration Guide*.

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

Import requirements and prerequisites

Resource categories and provider types

Resource categories (such as Compute) and provider types (such as VMware vCenter) are resolved first by **name** and second by **display name** during import of a resource offering. Out-of-the-box resource categories and provider types have identical **name** values on all installations of HP DCAA, and automatically resolve correctly during import. User-created resource categories and provider types do not have a **name** match on different installations of HP DCAA, 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 on another HP DCAA 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.

Process Definitions

During an import operation, required dependencies may not exist on the system, which produces an import error that identifies the missing dependencies. For resource offerings this can include missing process definitions. These process definitions must be imported to the HP DCAA installation in which the resource offering will be imported. During import, process definitions are resolved by **name**. For process definitions that are associated with the HP Operations Orchestration process engine, the **name** corresponds to the full path to the HP Operations Orchestration flow, for example:

```
/Library/CSA/3.2/Providers/vCenter/vCenter Clone Server/Actions/vCenter Simple  
Compute - Deploy).
```

Make sure that all these flows have been imported prior to importing resource offerings. Make sure that these flows have identical signatures and identical paths as the flows on the system from which the resource offering was exported. For instructions about how to import HP Operations Orchestration flows, see the section "Import HP Operations Orchestration Flows" in the Operations Orchestration section of this Guide.

Importing and Exporting

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.

Update process for resource offerings

During the update process, identical resource offerings 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 that resource offerings are identified by name instead of functional equivalence for the update operation.

Update preserving original 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 name, display name, and description of the artifact being imported remain intact.

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, as well as icons for customizing the artifacts, and the Manifest XML document, which contains meta-information about the archive files.

To import a resource offering

1. In the **Offerings** tab, click the **Import**  icon.
2. Select or specify the **Archive File** (.zip file) that contains the resource offering you want to import. Archive filenames for resource offerings begin with RESOURCE_OFFERING_.
3. Select an **Option**:
 - a. **Import** - imports new resource offerings; does not update existing resource offerings.
 - b. **Update** - imports new resource offerings and updates (overwrites) existing resource offerings. The **Update** process uses the resource offering name to determine if the resource offering already exists on the target system. Check **Preserve Originals** to create a backup

copy of the original items, appending "Superseded on" and the date to the artifact display names and descriptions.

4. Click **Preview** to see a report of prospective results for the import process, including information about the artifacts and their status.
5. Click **Import**.
6. Click **View Detailed Report** to see a summary and details of the import process, including information about the artifacts and their status.
7. Click **Yes**.

To export a resource offering

1. In the **By Provider Type** or **By Category** tab, select a **Provider Type** or **Category**.
2. In the **Offerings** tab, highlight the resource offering you want to export, and click the **Export** () icon.
3. Save the exported resource offering, if required by your browser.

The resource offerings are packaged in an archive file whose name is:

```
RESOURCE_OFFERING_<resource_offering_display_name>_<resource_offering_id>.zip
```

How HP DCAA identifies matching artifacts

When you import a resource offering, HP DCAA determines if a functionally equivalent resource offering already exists on the system. If a functionally equivalent resource offering exists, then the import may be skipped depending on the options selected. Functional equivalence is determined by comparing the imported resource offering with other resource offerings that exist on the system, as follows:

- At a high level, two 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 substate, execution order, and action input properties and values.
- There are some additional attributes on properties and lifecycle actions that must be identical for equivalence.

For more specifics on 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:

Element	Necessary for Equivalence
property	<ul style="list-style-type: none"> • name • valueType • values • confidential – only for String property types
action	<ul style="list-style-type: none"> • processDefinition name • lifecycleState name • lifecycleSubstate name • lifecycleExecOrder • errorOnTimeout • failOnError • timeout • all properties must be identical, including the consumerVisible • consumerReadOnly elements for each property • consumerVisible
resourceCategory	<ul style="list-style-type: none"> • The <code>isCriticalSystemObject</code> determines if this is an out-of-box resourceCategory. If true, name determines equivalence, otherwise displayName determines equivalence.
providerType	<ul style="list-style-type: none"> • The <code>isCriticalSystemObject</code> determines if this is an out-of-box providerType. If true, name determines equivalence, otherwise displayName determines equivalence.

For more information about importing and exporting HP DCAA artifacts, see the *HP DCAA Content Archive Tool* document.

Delete a Resource Offering

For more information about resource offerings, see "[Resource Offerings \(Sequenced Designs\)](#)".

An offering cannot be deleted if it is used in a service design. When an offering is deleted, its associations to providers are automatically removed.

To delete a resource offering

1. In the **By Provider Type** or **By Category** tab, select a **Provider Type** or **Category**.
2. In the **Offerings** tab, select the offering you want to delete.
3. Select the **Delete** (X) icon.
4. Click **Yes** to confirm the deletion.

View Properties of a Resource Offering

For more information about resource offerings, see "[Resource Offerings \(Sequenced Designs\)](#)".

To view the properties of a resource offering

Click one of the following the tabs for a resource offering to see more information about it.

- Summary
- Providers
- Lifecycles
- Properties
- ServiceDesigns

Edit Properties of a Resource Offering

For more information about resource offerings, see ["Resource Offerings \(Sequenced Designs\)"](#).

To edit a resource offering

1. In the **Summary** tab, click the **Edit**  icon.
2. For descriptions of the specific properties, see the topic ["Create a Resource Offering"](#).

Copy a Resource Offering

For more information about resource offerings, see ["Resource Offerings \(Sequenced Designs\)"](#).

To copy a resource offering

1. In the **Offerings** tab, highlight the resource offering you want to copy.
2. Click the **Copy**  icon.

After you copy a resource offering, any changes you make to the original or to the copy will not affect the other.

Associate or Dissociate Providers with a Resource Offering

For more information about resource offerings, see ["Resource Offerings \(Sequenced Designs\)"](#).

For a resource offering to be successfully provisioned at subscription ordering time, at least one resource provider must be associated with the resource offering. Additional restrictions exist if resource environments are associated to service catalogs.

When you associate an offering with a provider, the following must be true for successful provisioning:

- The associated providers support the offering and can deploy it when a service instance is provisioned.
- If an offering is associated with multiple providers, the offering must be exactly the same on each of the associated providers. For example, the VMware vCenter template must be exactly the same on all the associated providers.

To associate providers with a resource offering

For an offering to be used in service designs, it must be associated with at least one provider.

1. In the **Offerings** tab, select the **Display Name** of the offering.
2. In the **Providers** tab, click the **Associate** (+) icon.
3. From the list of providers, select one or more you want to associate with the offering.
4. Click **Associate**.

To dissociate providers from a resource offering

1. In the **Offerings** tab, select the **Display Name** of the offering.
2. In the **Providers** tab, highlight the row of one or more providers to be dissociated.
3. Click the **Dissociate** (–) icon.
4. Click **Yes** to confirm.

Lifecycle Actions for Resource Offerings

For more information about resource offerings, see "[Resource Offerings \(Sequenced Designs\)](#)".

What is a resource offering lifecycle?

The **Lifecycle** tab allows you to specify the lifecycle actions that are needed to provision and de-provision resource offerings. A lifecycle action provides a link from a resource offering to an internal or external process definition, which runs to perform a specified action. The collection of actions defined for a resource offering is known as its lifecycle. In the following diagram you can see the resource offering lifecycle states, which are discussed in more detail below

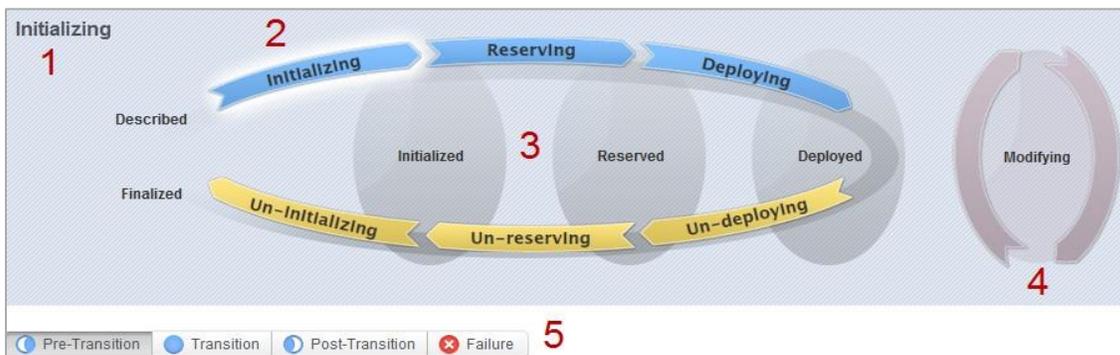


Image legend:

- 1 - Currently selected state
- 2 - Transition states
- 3 - Stable states
- 4 - Modifying state
- 5 - Substates

What is a lifecycle action?

A lifecycle action is a function that is either run automatically at a specified lifecycle state or substate, or that is exposed to the subscriber. Lifecycle actions contain the following information:

- A reference to a process definition, which contains the logic for executing the function.
- The property values that are inputs to the process definition.

What are lifecycle states?

A lifecycle state represents a step within the DCAA service provisioning and de-provisioning lifecycles.
DCAA 1.00

States are either transition states or stable states.

The following *transition states* are represented in the diagram as curved, arrow icons:

- Initializing
- Reserving
- Deploying
- Undeploying
- Un-reserving
- Un- initializing

The following *stable states* (except for Described and Finalized) are represented in the diagram as shaded, oval icons:

- Described - lifecycle actions cannot be specified at this state
- Initialized
- Reserved
- Deployed
- Finalized - lifecycle actions cannot be specified at this state

What is a modifying state?

The modifying state is a special transition state that indicates a subscriber has chosen to modify a subscription, and the changes are being processed by the lifecycle engine. The modifying state is shown in the diagram to the right of the other lifecycle states.

The only service components that are processed during the modifying state are those service components that have a Subscriber Option property that gets its value directly from a target binding, or those service components that have a source binding that gets its value indirectly from such a target binding.

The only resource offerings that are processed during the modifying state are those associated with service components that are processed during the modifying state.

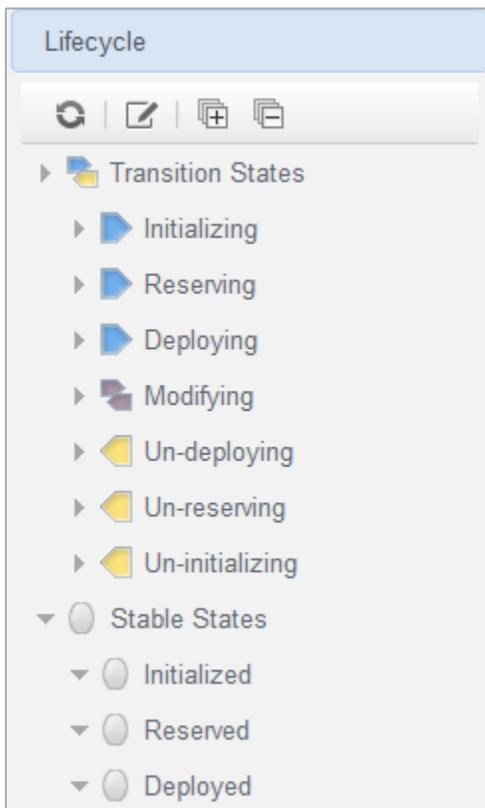
What are lifecycle substates?

A lifecycle substate is a further refinement of a lifecycle transition state. Stable states do not have substates. When defining a lifecycle action at a transition state, you must also specify the substate for the action. Substates are represented in the diagram as tabs just beneath the lifecycle diagram. The *substates* are:

- Pre-Transition
- Transition
- Post-Transition
- Failure

To see the list of all lifecycle actions for a resource offering:

1. In the **Offerings** tab select the **Display Name** of the offering for which you want to see a list of lifecycle actions.
2. In the **Lifecycle** tab, in the right pane (shown below) click the **Expand All**  icon. In the list, you can see all lifecycle actions configured for each state and substate.



View Properties of a Lifecycle Action for a Resource Offering

1. For more information about lifecycles, see "[Lifecycle Actions for Resource Offerings](#)".

To view the properties of a lifecycle action for a resource offering

2. In the **Offerings** tab select the **Display Name** of the resource offering whose lifecycle action properties you want to view.
3. In the **Lifecycle** tab, select the lifecycle state that contains the lifecycle action whose properties you want to view. For more information about states and substates, see "[Lifecycle Actions for Resource Offerings](#)".
4. Select the lifecycle substate (located directly beneath the lifecycle state diagram), if applicable, that contains the lifecycle action whose properties you want to view.
5. From the list of actions, select the **Display Name** of the lifecycle action whose properties you want to view.
6. For descriptions of the properties in the **Summary** tab, see the topic "[Create a Lifecycle Action for a Resource Offering](#)".
7. For descriptions of the properties in the **Properties** tab, see the topic "[Edit Properties of a Lifecycle Action for a Resource Offering](#)".

Create a Lifecycle Action for a Resource Offering

For more information about lifecycles, see "[Lifecycle Actions for Resource Offerings](#)".

Before you create lifecycle actions, be sure you have the latest process definitions from HP Operations Orchestration. For instructions about how to do this, see the section "Import HP Operations Orchestration Flows" in this *Guide*.

To create a lifecycle action for a resource offering

1. In the **Offerings** tab select the **Display Name** of the offering for which you want to create a lifecycle action.
2. In the **Lifecycle** tab, on the lifecycle state diagram, select the lifecycle state in which you want to create an action. For more information about states and substates, see "[Lifecycle Actions for Resource Offerings](#)".

3. Select the lifecycle substate (located directly beneath the lifecycle state diagram), if applicable, in which you want to create an action.
4. In the toolbar, select the Create  icon.
5. Provide the information described in the table below.
6. After creating a new lifecycle action, specify values for the action input properties as described in ["Edit Properties of a Lifecycle Action for a Resource Offering"](#).

Item	Description
Process Engine	Select a process engine, which is a container for process definitions. You can select either the Internal process engine or one of the HP Operations Orchestration (OO) engines.
Process Definition	Select a process definition, which is configured to run a specified internal action (see the table below for the list of internal actions) or external action.
Complete the following Identification fields:	
Display Name	The name you provide for the lifecycle action.
Description	The description you provide for the lifecycle action.
Operations Portal Options	<p>These options are available only for actions created in stable lifecycle states (Initialized, Reserved, and Deployed).</p> <ul style="list-style-type: none"> • Visible - When checked, this indicates that the lifecycle action will be available to be run in the Operations Portal. The box is checked by default for actions created in stable lifecycle states.
Execution Order	The execution order for the lifecycle action, which is relative to other lifecycle actions for this lifecycle state or substate, if applicable. Lifecycle actions are executed in ascending order.
Execution Properties	<p>Specify the following:</p> <ul style="list-style-type: none"> • Fail on Error - If selected, this indicates that provisioning or de-provisioning will stop if the lifecycle action fails. The default selection is false for actions created in the Un-deploying, Un-reserving, and Un-initializing states. • Error on Timeout - If selected, this indicates that provisioning or de-provisioning will stop if the lifecycle action times out.
Timeout (seconds)	The time to wait until a timeout occurs for the lifecycle action. Set this field to zero (0) if you do not want the action to timeout.

Note: See the table in this document, [“HP DCAA 1.00 Internal Actions”](#) for descriptions of the out-of-the-box internal actions that ship with DCAA.

Delete a Lifecycle Action from a Resource Offering

For more information about lifecycles, see ["Lifecycle Actions for Resource Offerings"](#).

To delete a lifecycle action from a resource offering

1. In the **Offerings** tab select the Display Name of the offering from which you want to delete a lifecycle action.
2. In the **Lifecycle** tab, on the lifecycle state diagram, select the lifecycle state from which you want to delete an action. For more information about lifecycles, see ["Lifecycle Actions for Resource Offerings"](#).

3. Select the lifecycle substate (located directly beneath the lifecycle state diagram), if applicable, from which you want to delete an action.
4. From the list of actions, highlight the action you want to delete.
5. In the toolbar, select the Delete () icon.
6. Click **Yes** to confirm the deletion.

Edit Properties of a Lifecycle Action for a Resource Offering

For more information about lifecycles, see "[Lifecycle Actions for Resource Offerings](#)".

To edit a lifecycle action for a resource offering

1. In the **Offerings** tab select the Display Name of the offering whose lifecycle action you want to edit.
2. In the **Lifecycle** tab, select the lifecycle state that contains the action you want to edit. For more information about states and substates, see "[Lifecycle Actions for Resource Offerings](#)".
3. Select the lifecycle substate (located directly beneath the lifecycle state diagram), if applicable, that contains the action you want to edit.
4. From the list of actions, select the **Display Name** of the action whose properties you want to edit.
5. In the **Summary** tab, you can edit properties as described in the "[Create a Lifecycle Action for a Resource Offering](#)".
6. In the **Properties** tab, you can specify action input properties whose values are passed to the process definition prior to invoking the action. Either type an input value or click the **Token Icon** () to select a token, which is a DCAA system value that is automatically resolved internally when the property is read. Token values are available only for string properties and are not available for Boolean or integer properties. See the table below for a description of the tokens available for resource offering lifecycle actions.

7. Input properties for actions defined on stable states can also be marked as **Visible** or **Editable**:

- a. Visible - indicates that this input property can be made visible in the Operations Portal.
- b. Editable - indicates that this input property can be edited in the Operations Portal.

The following tokens are available for resource offering lifecycle actions:

Token	Description
Parent Service Component ID ([TOKEN:PRN_COMPONENT_ID])	Resolves to the Service Component ID of the parent service component. The Service Component ID refers to the service component that the resource offering is associated with in a service design.
Resource Binding ID ([TOKEN:RSC_BINDING_ID])	Resolves to the Resource Binding ID that was created at subscription time.
Resource Subscription ID ([TOKEN:RSC_SUBSCRIPTION_ID])	Resolves to the Resource Subscription ID that was created from the Resource Offering at subscription time.
Selected Provider ID ([TOKEN:RSC_PROVIDER_ID])	Resolves to the Provider ID that was selected at subscription time.
Selected Resource Pool ID ([TOKEN:RSC_POOL_ID])	Resolves to the Resource Pool ID that was selected at subscription time.
Service Blueprint ID ([TOKEN:SVC_BLUEPRINT_ID])	Resolves to the Service Blueprint ID.
Service Catalog ID ([TOKEN:SVC_CATALOG_ID])	Resolves to the Service Catalog ID that was used at subscription time.
Service Component ID ([TOKEN:SVC_COMPONENT_ID])	Resolves to the Service Component ID. The Service Component ID refers to the service component that the resource offering is associated with in a service design.

Token	Description
Service Component Type ([TOKEN:SVC_ COMPONENT_TYPE])	Resolves to the Service Component Type (for example, Server). The Service Component Type refers to the service component that the resource offering is associated with in a service design.
Service Instance ID ([TOKEN:SVC_ INSTANCE_ID])	Resolves to the Service Instance ID created at subscription time.
Service Offering ID ([TOKEN:SVC_ OFFERING_ID])	Resolves to the Service Offering ID.
Service Request Organization ID ([TOKEN:REQ_ORG_ ID])	Resolves to the Organization ID associated with the service request.
Service Request User ID ([TOKEN:REQ_USER_ ID])	Resolves to the User ID associated with the service request.
Subscriber's Email Address ([TOKEN:SVC_ SUBSCRIPTION_ EMAIL])	Resolves to the subscriber's email address.
Subscriber's Organization ID ([TOKEN:USR_ORG_ ID])	Resolves to the Organization ID associated with the subscriber.
Subscription ID ([TOKEN:SVC_ SUBSCRIPTION_ID])	Resolves to the Subscription ID created at subscription time.

Move a Lifecycle Action for a Resource Offering

For more information about lifecycles, see "[Lifecycle Actions for Resource Offerings](#)".

To move a lifecycle action for a resource offering

1. In the **Offerings** tab select the **Display Name** of the offering whose you lifecycle action you want to move.
2. In the **Lifecycle** tab, select the lifecycle state that contains the action you want to move. For more information about states and substates, see "[Lifecycle Actions for Resource Offerings](#)".
3. Select the lifecycle substate (located directly beneath the lifecycle state diagram), if applicable, that contains the action you want to move.
4. From the list of actions, highlight the action you want to move.
5. In the toolbar, select the **Move**  icon.
6. Provide the following information:

Item	Description
Target Lifecycle State	The new state for the lifecycle action.
Target Lifecycle Substate	The new substate, if applicable, for the lifecycle action. For more information about states and substates, see " Lifecycle Actions for Resource Offerings ".
Target Lifecycle Execution Order	The execution order for the lifecycle action relative to other lifecycle actions for this lifecycle state. Lifecycle actions are executed in ascending order.

Custom Resource Offering Properties

For more information about resource offerings, see "[Resource Offerings \(Sequenced Designs\)](#)".

Custom properties for resource offerings are user-defined properties that are used for communicating properties and values to providers to customize the functional service they provide. The custom properties can be used to provide any information that is expected by an HP Operations Orchestration flow. For

example, you can use custom properties for a resource offering to provide a specific VM_ TEMPLATE_NAME value to an instance of VMware vCenter.

See the following related topics:

- ["View Custom Resource Offering Properties"](#)
- ["Create Custom Resource Offering Properties"](#)
- ["Delete Custom Resource Offering Properties"](#)
- ["Edit Custom Resource Offering Properties"](#)

View Custom Resource Offering Properties

For more information about custom offering properties, see ["Custom Resource Offering Properties"](#) on the [previous page](#).

To view custom properties for a resource offering

1. In the **Offerings** tab, click the **Display Name** of the offering whose custom properties you want to view.
2. In the **Properties** tab, you can see the custom properties created for the offering.

Create Custom Resource Offering Properties

For more information about custom offering properties, see ["Custom Resource Offering Properties"](#) on the [previous page](#).

To create a custom property for a resource offering

1. In the **Offerings** tab, click the **Display Name** of the offering whose custom properties you want to create.
2. In the **Properties** tab, click the **Create** () icon.
3. Provide the following information:

Item	Description
Type	<p data-bbox="506 302 808 331">Select one of the following:</p> <ul data-bbox="552 373 1253 764" style="list-style-type: none"><li data-bbox="552 373 1172 403">• Boolean - A property whose value is true or false.<li data-bbox="552 470 1214 499">• List - A property whose value is a list of String values.<li data-bbox="552 567 1253 638">• Integer - A property whose value is a positive or negative whole number or zero.<li data-bbox="552 705 1159 764">• String - A property whose value is a sequence of characters.

Item	Description
Property Details	<p><i>For Boolean properties:</i></p> <ul style="list-style-type: none"> • Name-A unique name for the property. • Display Name - The display name for the property. • Description - A description of the property. • Property Value- Select true or false. <p><i>For List properties:</i></p> <ul style="list-style-type: none"> • Name-A unique name for the property. • Display Name - The display name for the property. • Description - A description of the property. • Value Entry Method: - Select Manual Entry to provide Specified Values for this field, as described below. • Specified Values - Click the Add Value (+) icon to add a new value, or click the Remove Selected Value(s) icon () to remove a selected value. <p><i>For Integer properties:</i></p> <ul style="list-style-type: none"> • Name-A unique name for the property. • Display Name - The display name for the property. • Description - A description of the property. • Property Value - Select or type a positive or negative whole number or zero. If you enter a decimal number, the value will be truncated to the nearest integer. • The maximum allowed integer value is “2147483647”; the minimum integer value is “-2147483648”. If you enter a value outside these bounds the value will be automatically converted to the closest maximum or minimum value.

Item	Description
	<p><i>For String properties:</i></p> <ul style="list-style-type: none"> • Name-A unique name for the property. • Display Name - The display name for the property. • Description - A description of the property. • PropertyValue-Type a string of characters. • ConfidentialData-Select this box to mask the value so that they cannot be read in the user interface; no encryption of the value is performed.

Delete Custom Resource Offering Properties

For more information about custom properties for offerings, see "[Custom Resource Offering Properties](#)".

To delete custom properties from a resource offering

1. In the **Offerings** tab, click the **Display Name** of the offering whose custom properties you want to delete.
2. In the **Properties** tab, select the custom properties you want to delete.
3. Click the **Delete** () icon.
4. Click **Yes** to confirm the deletion.

Edit Custom Resource Offering Properties

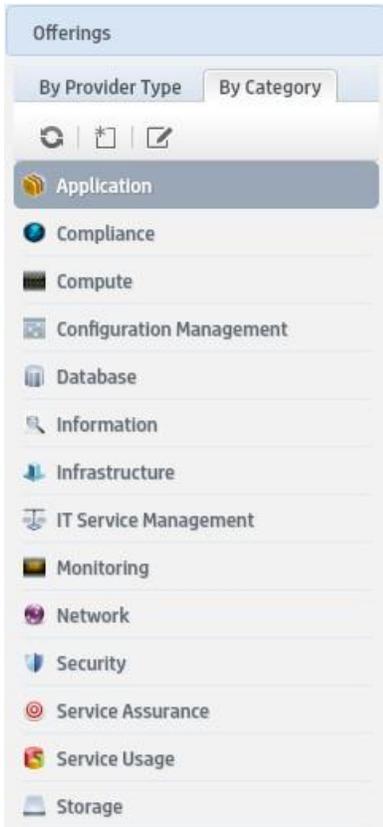
1. For more information about custom offering properties, see "[Create Custom Resource Offering Properties](#)".

To edit custom properties for a resource offering

2. In the **Offerings** tab, click the **Display Name** of the offering whose custom properties you want to edit.
3. In the **Properties** tab, click the **Name** of the property you want to edit.
4. Edit, as desired. For descriptions of the specific attributes, see "[Create Custom Resource Offering Properties](#)".

Categories

Categories allow you to classify resource offerings for improved filtering and identification. HP DCAA includes some pre-defined categories out-of-the-box (shown below), or you can create your own. A category is associated with a resource offering and can be used when assigning resource offerings to service designs.



Service components within a service design can accept offering assignments only for those offerings with a category that is supported by the service component type. For example, a **Server** service component can be associated with offerings from a category of *Compute* (among others), while a **Software Application Service** component can be associated with offerings with a category of *Application*. Categories are available by selecting the **By Category** tab in the left navigation pane.

View Categories

For more information about categories, see "[Categories](#)" on the previous page.

1. Select the **By Category** tab.
2. The categories list is displayed.

Create a Category

For more information about categories, see "[Categories](#)".

To create a category

1. In the left navigation pane, select the **By Category** tab.
2. In the left navigation pane toolbar, click the **Create** () icon.
3. Provide the following information:

Item	Description
Display Name	The display name you provide for the category.
Description	The description you provide for the category.
Image	An image that displays for the category. Click Change Image . Choose the image you want, and click Select . Click Upload Image to add your own image. Supported file extensions include .jpg, .jpeg, .gif, and .png. The recommended image size is 256 by 256 pixels, and the image will be scaled to the appropriate size. The images are stored in the %CSA_HOME%\jboss-as\standalone\deployments\csa.war\images\library folder of the HP DCAA server.

Delete a Category

For more information about categories, see "[Categories](#)".

A category cannot be deleted if any offerings are using it. Out-of-the-box categories also cannot be deleted.

To delete a category

1. In the **By Category** toolbar, click the **Edit** () icon.
2. In the **Edit Categories** properties sheet, select the category you want to delete.
3. Click the **Delete** () icon.
4. Click **Yes** to confirm the deletion.

Edit Properties of a Category

For more information about categories, see ["Categories"](#).

To edit a category

1. In the **By Category** toolbar, click the **Edit** () icon.
2. In the **Edit Categories** properties sheet, click the **Display Name** of a category.
3. For descriptions of the specific properties, see the topic ["Create a Category"](#).

Offerings

Concepts

You can configure default property values, attach documents to a service offering (e.g., service level agreements, terms and conditions) and add screenshots, which are images and captions that provide the user with a visual representation of the offering.

Offerings are published into a catalog before becoming available to subscribers in the HP Operations Portal. Any changes made to the HP DCAA offering are visible in the HP Operations Portal once it is published.

You can also create new offerings for any fulfillment system that is compatible with HP DCAA. For compatibility information, see the *HP DCAA Support Matrix*.

Best Practice

Important Note: HP recommends that you make a copy or version of the OOTB base offering or service design (1.0.0) *before* making any modifications. During routine HP maintenance updates, the 1.0.0 version of *all* service designs and service offerings will be updated and overwritten.

Tasks

Within **Offerings** you can create new offerings or modify existing offerings. You can also browse and search offerings and manage offering tags within **Offerings**.

You can do the following tasks in Offerings:

- [Create Offerings](#)
- [Modify Offerings](#)
- [Manage Tags](#)

Create Offerings

You can create Offerings from the All Offerings page.

Tasks

1. From the HP DCAA Administration Console, click the **Offerings** tile. The **All Offerings** page opens.
2. Click the **Create** button at the bottom of the **All Offerings** page.
3. Fill in the **Create Offerings** dialog fields:
 - a. Click **Service Design**. The **Select Design** window opens, allowing you to select a design from the drop-down list (For example, **Manage Servers Sequenced Design**).
 - b. Once selected, click **Close**.
 - c. Type the **Display Name** of the new offering.
 - d. Type the offering **Description**.
4. Select **Base Offering On** if you want to base your new offering off an existing offering, which will inherit attributes of that offering. If you skip this step, the new offering will be based on the initial basic service design you selected.
5. Click **Done** when finished.

6. Select an image to use as the offering icon. HP provides several icons to choose from, or you can import your own custom icon. To select an icon from the image library:
 - a. Click the **Change Image** button.
 - b. Scroll through the icons in the image library. When you find an icon you like, select it. The selected icon will display a highlighted background.
 - c. Click the blue **Select** button. Your icon will appear under **Image**.
7. To create a custom icon:
 - a. Click the **Change Image** button.
 - b. Click the green **Upload** button.
 - c. Select an appropriately sized icon from your system, and then click **Open**. Note the following recommendations:
 - File type: PNG
 - Image size: 256x256
 - File size: Maximum 1 MB
 - d. Click the **Select** button. The new icon appears in the image library for you to select.
 - e. Select the new image from the image library, and then click **Select** to finish.
8. Select **Tags** from the **Select Tags** link below image if there are tags associated with the Offering.
7. When you finish, click **Create**. The new offering appears in the All Offerings page list.

Modify Offerings

To modify offerings, use the configuration settings available on the following tabs:

- [Overview](#)
- [Publishing](#)
- [Options](#)
- [Pricing](#)
- [Documents](#)

- [Screenshots](#)
- [Versions](#)

Overview

Concepts

The **Overview** tab allows you to view details, edit, and delete the selected service offering.

You can view the **Display Name, Version Name, Description, Access Control, Default Approval Policy Selected Service Design, Image, Tags**, and the content of the offering on this tab.

Tasks

The following options are available from the **Overview** details page:

- **Save As** – allows you to make a copy of an offering using the existing service design and version.
- **Create New Version**– allows you to create a new version of an offering using your existing service design. NOTE: you can only change the version, display name, image, tags, and description of the new version offering; you cannot change the service design.
- **Export**– this option will automatically create a zip file containing the entire offering, which can then be emailed to another user.

Publishing

Concepts

Service offerings are published into one or more catalogs so that they are available in the Operations Portal. Offerings can be published into the Global Shared Catalog, which is shared among all organizations, or into an organization-specific catalog. Within a catalog, **Categories** reflect logical groupings of related services. You can publish an offering only *once* to a catalog.

Tasks

To publish an Offering, click on the **Publish** button, then complete the following fields:

- **To Catalog** - Select from the list of available catalogs or click **Search** to filter the list.
- **In Category** - Categories are filtered according to your catalog selection.
- **Approval Policy** - Within HP DCAA, there are three types of approval policies:
 - The *default* approval policy is **No Approval**. It is very common practice to not have a policy associated with an offering.
 - **Catalog Level Policy** (front-end): This approval policy is evaluated first. If the request is approved, the back-end approval is then evaluated. Changing the approval policy here does not change the default catalog approval policy. Note that you cannot configure an approval policy for offerings published in the Global Shared Catalog.
 - **Delegated Policy** (back-end): These are policies that are defined for services/offerings from an aggregation source before being aggregated into a catalog. If you order this service, HP DCAA recognizes an approval is necessary and allows you to set it in the Operations Portal.

Once you have selected a catalog, category, and approval policy for your offering, click **Publish**.

Once your offering is published, you can change the approval policy or unpublish the offering within the **Publishing** tab.

- **Unpublish** - If you want to change the attributes of a published service offering, e.g., add documents, change options, add screenshots, you can unpublish the service offering by clicking **Unpublish** button. Click **Unpublish**, make the necessary changes, then click **Publish** to re-publish the offering.
- **Change Approval** – click on this button if you want to change the approval policy for an offering already published in the catalog.

Best Practice

Using the **Unpublish** feature retains the properties and attributes of an offering you have created but need to change. Use this option rather than rebuilding a totally new offering with slightly different properties from your original offering.

You can click to sort your catalogs by clicking on the **Catalog Organization**, **Category**, or **Approval Policy** links. Click once to sort by ascending order; click again to sort in descending order.

Options

Concepts

On the **Options** tab, you can view properties chosen for an entire offering.

Typically, properties and attributes are chosen at the time of offering is created. Once an Offering is published, they are viewable in the **Options** tab, but are not editable.

Properties include:

- **Device Management** (includes Remediate Patch and Software Policies for a Device Group or Individual Server)
- **Email Notifications**
- **Server Information** (includes Provision a network-booted Server and New Virtual Server, Provision Server, New Virtual Server Details, Virtual Server – Attributes, Storage Options, and Network Options)
- **Server Attributes** (includes Attach Server to a Customer or Device Group)
- **Ticket ID**

Tasks

The following tasks are available:

Hide/Show Properties	Click this link to show or hide properties within an option set.
	Collapse the option set and options.
	Expand the option set and options.
	Show or hide an option set, option, or property; determines visibility in the Operations Portal.
	Lock or unlock an option set to disallow or allow the subscriber to modify the default option selections within an option set. When an option set or property is locked, all options within the option set are also locked.
	Edit the option set name or option name.
	Add or update the image associated with the option set or option.
	Move the option down within an option set.
	Move the option up within an option set.
	Drag and drop the option within an option set.
	Collapse the entire option set, including options and properties

For the main four types of service designs available in HP DCAA, the following is a table of which options will display in the Options tab:

Options for Service Designs

DCAA Offering	Properties
Manage Servers	Email Notifications, Ticket ID
Install Server Automation (SA) Agent	Server Details
Provision Servers	Server Information, Server Attributes, Email Notifications, Ticket ID
Server Policy Remediation	Device Management, Email Notifications, Ticket ID

Pricing

Concepts

Pricing is setup within an offering when it is created. Once an offering is published, you will not be able to change pricing within Offerings.

Tasks

You can view the following information:

Service Offering Pricing

Item	Description
Base Initial Price	The base price for the service offering, excluding the price of all selected options.
Base Recurring Price	The price charged for each recurring period.

Currency	The desired currency for the service offering.
Recurring Period	The desired recurring period for the service offering pricing, which indicates how often the recurring price is charged.

Option Name:

Option name includes the following options:

- **Device Management**
- **Email Notification and Ticket ID (Optional)**
- **Server Details**
- **Server Information**

Selected Totals:

- **Initialwith Options**
- **Recurringwith Options**

Documents

Concepts

You can attach documents of any type, such as service level agreements or terms and conditions, to service offerings. You have the option of making documents visible in the Operations Portal. File size per document should not exceed 15 MB, total size of all documents attached cannot exceed 100 MB.

Tasks

Once a document is added, you have the following options:

- **Visibility** - Click the eye icon if you want this document visible to users in the Operations Portal.
- **Delete**

The Administrator can choose to disable the Visibility and Delete options on the offering. You can attach a document into an offering at the time of its creation, however you cannot edit the document once it has been published.

Best Practices

- You can add multiple documents to an offering at one time.
- You can rearrange the order of multiple documents by dragging and dropping.
- Use **Reset** to revert back to any unsaved edits (such as a file name change) or to completely reset the form and clear out all unsaved documents.

Screenshots

Concepts

Screenshots are images and captions associated with a service offering that provide visual representations of the offering's views exposed in the Operations Portal. File size per image should not exceed 15 MB; total size of all images attached cannot exceed 100 MB. Images must be in JPG or 24-bit PNG format with a maximum size of 5000 x 5000 pixels.

Tasks

Once a screenshot is added, you have the following options:

- **Visibility** - Click the eye icon (👁️) if you want this image visible to users in the Operations Portal.
- **Delete**
- **Edit Screenshot Name** - The caption defaults to the associated screenshot name, but can be edited (including removing the file extension).

Best Practices

- You can add multiple screenshots to an offering at the time of creating your offering.
- You can rearrange the order of multiple screenshots by dragging and dropping during creation. You cannot edit the screenshot at a later time.
- Use **Reset** to revert back to any unsaved edits (such as a file name change) or to completely reset the form and clear out all unsaved images.
- You can attach a screenshot into an offering at the time of its creation, however you cannot edit the screenshot once the offering has been published. You must unpublish your offering, then re-publish it. See the [Publishing](#) topic in this document.

Versions

The Versions tab lists the multiple offering versions based on the same offering or sequenced design. It also allows you to create a new version from a listed offering.

Click **Create New Version** to create an offering. See the topic [Create Offering](#) in this document for more information.

Clicking on the **Admin** button in the top right corner of the screen allows you to access HP DCAA Product Licensing information, and **Logout** of the appliance.

Clicking on the **Help** will take you to other HP DCAA content and resources available at www.hp.com/go/dcaa.

Manage Tags

Tags are user-defined, color-coded labels and images used to provide a structure for organizing and grouping service offerings. Once associated to an offering, tags display with the offering name in **Browse Designs**. The only pre-created category is labeled **All**, which is where all offerings are stored if you do not create any tags. You cannot edit, delete, or assign the **All** category. An offering can be assigned to multiple tag categories.

Catalogs

Concepts

Use the **Catalogs** area of the **HP DCAA Administration Console** to create and manage service catalogs. These service catalogs allow you to publish service offerings to the Operations Portal.

You can start using the **Catalogs** area by configuring the automatically created default catalog (Global Shared Catalog) or you can manually create a new catalog and associate it with an organization. Multiple catalogs can be associated with the same organization. Any changes made to the Global Shared Catalog will be visible in every organization's Operations Portal. The Global Shared Catalog does not contain **Access Control** or **Approval Policies**, and cannot be deleted or imported.

Tasks

- **Create** a catalog - Choose the organization the service catalog will be associated with, along with

the name, description, and image. Then configure the catalog by providing information in the following pages, organized by these tabs:

- **Overview**
 - Access Control
 - Approval Policies
 - **Categories**
 - **Offerings**
 - **Environments**
- **Import** a catalog – you can import an existing catalog from another organization. The **Import Catalog** feature allows you to select **Archive File**, **Choose Organization** that hosts the catalog, and then select an Option to either **Import** or **Update** the catalog. Once you have made your selections, click **Import** to process the request.
 - Click on the **Card View** or **Table View** to change how the catalogs are displayed.

Overview

Concepts

The **Overview** tab provides a detailed summary of the selected catalog, including information about default approval policy, access control, and published offerings. This tab allows you to view the **Display Name, Description, Organization, Access Control, Default Approval Policy, and Image** of the catalog. You can also see how many Published Offerings and Categories are associated with this catalog. You can also Export the Catalog of available offerings into a WinZip file for use with external systems.

Tasks

Tasks available:

- **Edit** - Allows you to edit the name, description, and image associated to the catalog.
- **Export**

Access Control

Concepts

Access Control is used to assign LDAP groups to a catalog. You can choose whether a service catalog is visible to all authenticated users of a consumer organization or just a subset of users.

To make a catalog visible to all authenticated users of a consumer organization, determine the LDAP groups that have been added to the **Organizations** area of the Propel Management Console and ensure all the same LDAP groups appear in the **Access Control** area for the service catalog. Otherwise, you will get an error message. For a manually created service catalog, this action happens automatically when the catalog is created. For an organization's automatically created catalog, you must manually add these LDAP groups.

Tasks

Tasks available:

- **Add Group** - Before you add a group, LDAP groups need to be configured in the Propel Management Console Organizations area. **Add Group** is used to manage access control by adding LDAP groups to the catalog. You can select from existing named DN's or enter your own name for the group or organization unit DN, and then enter a group or organization unit DN.
- **Edit** - Used to change a group name or a group DN.
- **Delete**

Best Practices

You can sort the groups shown in ascending/descending order by clicking on the **Organization/Group** link.

Approval Policies

Concepts

The **Approval Policies** area is used to manage approval policies for the selected catalog. This tab is only available when configuring a user-defined catalog (not the Global Shared Catalog).

Approval Policies are based on one of three template types (see table below). None of these templates are pre-configured as they are LDAP dependent. When a catalog is first created, an approval policy is automatically created from the **User Context Template**.

Template Types:

<p>Named Approver Template</p>	<p>Use this template to assign one or more users from the organization as approvers for all subscription requests. You can also set the number of approvals required for a subscription request to be fulfilled.</p> <p>If selected, provide the following information:</p> <ul style="list-style-type: none"> • Add Approver - Provide the LDAP user name of the approver you want to add, and click Add Approver. Repeat to add more approvers. • Minimum Approvals - Select the minimum number of approvals required for a subscription request to be fulfilled. • Check Automatic Approval, if desired, and provide the following information: <ul style="list-style-type: none"> ○ Automatic Approve/Deny - Select one of the following replies: <ul style="list-style-type: none"> ▪ Approved - Automatically approve the request when the specified Wait Time for Automatic Approval (in days) period has elapsed. ▪ Denied - Automatically deny the request when the specified Wait Time for Automatic Approval (in days) period has elapsed. ○ Wait Time for Automatic Approval (in days) - Select the number of days after which, if no response is made, the automatic approval or rejection will occur.
---------------------------------------	--

<p>Named Group Template</p>	<p>Use this template to base approvals on an LDAP group.</p> <p>If selected, provide the following information:</p> <p>Add Group - Select or type the DN for the LDAP group or organizational until you want to use for approvals. The members of the selected group (at the time of the request) will be set as approvers of the request.</p> <p>Minimum Approvals - Select the minimum number of approvals required for a subscription request to be fulfilled.</p> <p>Check Automatic Approval, if desired, and provide the following information:</p> <ul style="list-style-type: none"> • Automatic Approve/Deny - Select one of the following replies: <ul style="list-style-type: none"> ○ Approved - Automatically approve the request when the specified Wait Time for Automatic Approval (in days) period has elapsed. ○ Denied - Automatically deny the request when the specified Wait Time for Automatic Approval (in days) period has elapsed. • Wait Time for Automatic Approval (in days) - Select the number of days after which, if no response is made, the automatic approval or rejection will occur.
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User Context Template	<p>Use this template to base approvals on LDAP membership settings and structure, as configured in the Organizations area of the .Propel Management Console</p> <p>If selected, provide the following information:</p> <ul style="list-style-type: none"> • Approval Levels - Select the number of managers in the organization chain who will be asked to approve the request. For example, if you select two, the subscriber's first- and second-level manager will be required to approve the request. • Check Automatic Approval, if desired, and provide the following information: • Automatic Approve/Deny - Select one of the following replies: <ul style="list-style-type: none"> ○ Approved - Automatically approve the request when the specified ○ Wait Time for Automatic Approval (in days) period has elapsed. ○ Denied - Automatically deny the request when the specified Wait Time for Automatic Approval (in days) period has elapsed. • Wait Time for Automatic Approval (in days) - Select the number of days after which, if no response is made, the automatic approval or rejection will occur.
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Tasks

Tasks available:

- **Edit** an existing approval policy - All fields are editable except for the **Approval Policy Template**.
- **Delete** a policy - Deletes the policy that you created (not the template itself).
- **Add** a policy - Enter a name, select one of the four template types, and use the checkbox if the policy should be automatically approved.
- **Set Default Policy** - The default policy used when publishing service offerings.

Best Practices

- When you create an approval policy, make sure that all approvers are granted access to the catalogs for which they will be approving subscription requests.
- You can sort policies in ascending/descending order by clicking on the **Approval Policy Name** link.

Categories

Concepts

Categories are used to group service offerings within a service catalog. The **Categories** tab provides a way to manage the categories within the selected catalog. The list of categories can be organized alphabetically in ascending or descending order by clicking the up / down arrow. This view includes the number of offerings assigned to each category.

Tasks

Available tasks:

- **Add Category** - Provide a name for the new category.
- **Edit** - Allows you to change the **Display Name**.
- **Delete** - You cannot delete a category that has any service offerings assigned.

Offerings

Concepts

The **Offerings** tab shows service offerings that have been published into the selected catalog including the date and category. A published service offering displays in the Operations Portal in the category to which it was assigned. By default, a service offering inherits its approval process and approval policy from the default set in the service catalog.

Tasks

Available tasks:

- **Change Approval** - You can change the approval policy for an offering in a catalog if another policy is available.
- **Unpublish** - Unpublishing removes the service offering from the category.
- **Add Offering** – allows you to add an existing offering and publish it into the catalog within a new category.
- **Link to the offering** - The name of the published offering within **Catalogs** is a link that opens the offering in the Overview tab of the **Offerings** component in the HP DCAAM Management Console. Click on the offering link to view and edit the contents of the offering. You can return to Catalogs by clicking on the **Catalogs** tab on the HP DCAA dashboard, which will open a new tab where you can login to Catalogs.

- The **All Categories** drop-down list allows you to sort the available offerings in the catalog by individual category, such as Accessory, Application Servers, and Backup Services. You will then be able to view and select offerings from that category.

Best Practices

The **Add Offering** button allows you to add and publish an offering directly into the catalog you are currently using. You can publish the offering into a new category so it is viewable by a different set of customers.

Environments

Concepts

This option allows you to select Resource Environments for HP DCAA. You can sort the various available resource environments in ascending or descending order.

Tasks

Available tasks:

Select Environments – allows you to choose from various (OS) environments.

- Click the **Select Environments** button.
- Use the **Add / Remove** buttons to add or remove environments.
- Click **Save** when finished.

Operations

The Operations component allows you to view how the users of a given organization are handling subscription requests over time. Perhaps more training or exposure is needed for a certain group of users – this component gives a complete snapshot, allowing you to see who is successful or needs more guidance in using HP DCAA offerings and services.

When you login to Operations, you will see the name of the catalog and all User types that subscribe to services in that particular catalog.

Ex. **Operations** - **Server Automation Consumer Organization**

User Name	Subscription Summary	Request Summary
consumer consumer@csaconsumer.com	10 0 0 0 0 7	0 Last Request Date 03/23/2015 10:09:14 AM
consumerAdmin consumerAdmin@csaconsumer.com	0 0 0 0 0 0	0 Last Request Date None

On the **Users** page, you can view and sort services by clicking on **User Name**. This page includes these categories for sorting: **Email Address, Most Active Subscriptions, Most Pending Subscriptions, Most Paused Subscriptions, Most Canceled Subscriptions, Most Expired, Most Failed Subscriptions, Most Pending Requests, and Most Recent Request Date**. Click on the most relevant attribute, then click **Refresh** or click on the User type you want more detail on (Ex. **consumerAdmin**).

The Operations status window is organized into these three categories:

User Name | Subscription Summary | Request Summary

This screen displays the User types and the status of all services each User is subscribed to, giving a useful service usage snapshot.

View Subscriptions window below 'Subscription Summary' has 6 features: **Active, Pending, Paused, Canceled, Expired, and Failed**. If you hover over each status icon (see example below) the name of the icon appears. Click on the user link to get more granular detail about the activity level of this group of Users.

To view subscriber information for an organization

1. In the left pane of the **Operations** area, select the name of the organization whose subscriber information you want to view; the subscriber information displays in the **Users** tab. Note that the list of subscribers shown is the list of users who have logged into the Operations Portal at least once.
2. Use the drop-down box to select an option for sorting.

3. You see the following information for each user:

Note: Only subscriptions submitted by the subscriber are included in the list of subscriptions; any subscriptions submitted for a group the subscriber belongs to (that were not submitted by the subscriber) are not included in the list. Subscriptions submitted for a group are identified by the Group () icon.

Item	Description
User Name	The user name (and associated email address) that the Subscriber uses to log into the Operations Portal.
Subscription Summary	<p>The number of subscriptions with the status:</p> <ul style="list-style-type: none"> <li data-bbox="462 730 602 800"> Active <li data-bbox="462 821 626 890"> Pending <li data-bbox="462 911 602 953"> Paused <li data-bbox="462 989 643 1058"> Canceled <li data-bbox="462 1079 607 1136"> Expired <li data-bbox="462 1157 594 1213"> Failed <p>For a more detailed description of each status, see "View Subscriptions for a User" below.</p>
Request Summary	<p>The number of requests in the following state:</p> <ul style="list-style-type: none"> <li data-bbox="462 1451 724 1507"> Pending Approval <p>Last Request Date -The date of the most recent subscription request made by this subscriber.</p>

Request Summary shows subs pending approval and the **Last Request Date** of a subscription.

Refresh button updates all of the above services in the Operations summary screen.

Clicking on the catalog link (Server Automation in the example below) will also redisplay all Users.

Operations Portal

Overview

The Operations Portal is the initial entry point your users will have to the rest of the HP DCAA system.

Sidebar menu:

You will find the following features on the Sidebar Menu, located in the upper left hand portion of your screen:

- Dashboard
- Browse Catalog
- Notifications
- Review Requests
- Requests
- Subscriptions
- My Services

Dashboard

You will find the following navigation features on the Dashboard:

- The **Services** Banner lists the **New Releases** and **Most Requested Offerings**.
- **Services** lists the following Offerings: **All Services**, **New Releases**, **Featured Services**, and **Popular Services**.
- **Manage Subscriptions**: Here you will find **All Subscriptions** and **Expiring Soon**, and **Most Requested** offerings. These offerings vary based on the most requested or used offerings in your HP DCAA environment.

- **More Actions:** Here you will find **Notifications / My Services / My Orders / Review Requests**
- **Discover More:** this section includes the functional Widgets OOTB: Recent Subscriptions, Date/Time, link to HP DCAA

Browse Catalog

The following fields in **Browse Catalog** gives you the ability to find and sort offerings using a variety of methods:

- Search Window – allows the user to search for an offering by name, version, or service design.
- All Categories:
 - Accessory
 - Server Management
- All Service Types
 - Approval Required
 - No Approval Required
- Sort
 - Newest First
 - Oldest First
 - Most Expensive
 - Least Expensive
 - Reverse Alphabetical
- Display – Click on the **Card View** (Tile View) or **Table View** to change how the catalogs are displayed.

Within **Browse Catalog**, you can click on any **Offering** to view its details and make changes to it.

To see more information on managing or making changes to individual Offerings, look at these two topics in this document:

HP DCAA Specific Offerings - Server Management Category

NOTE: for HP DCAA specific Offerings, the **Show More Details** button (ON | OFF) is switched to **ON** by default when viewing any offering. This button allows for more detail on selecting offerings, and should be in the ON position for best results.

Install Server Automation (SA) Agent

Installs the HP Server Automation Agent. This service offering installs the management agent on a target server to be discovered and managed by HP Server Automation for application provisioning and ongoing lifecycle management. **Note:** HP DCAA supports installing the SA agent one server at a time.

Subscribing to the Offering / Server Details

Select the details of the Server to Manage:

1. Log on to the **Operations Portal** (<https://< ipaddress>:8079>)
2. Click **All Services**.
3. Select the offering **Install Server Automation Agent**.
4. Create a **Server IP** or **Hostname**– this is a **required** field.
5. Enter the **Administrator User Name** for the user with Admin rights on the server – this is a **required** field.
6. Enter the **Administrator User Password** – this is a **required** field.
7. **OS Family** – select the Server OS family for the server from the dropdown menu.
8. **Facility** – select one of the facilities listed, where the server is hosted.



● Details of Server to Manage

1. Server IP or Hostname

ghs_02

2. Administrator User name

Enter user with Admin rights on server

BLantey

3. Administrator User Password

Enter Admin user password

4. OS Family

Select Server OS Family

Unix

5. Facility

Select Facility in SA

Appliance

 Cart

 Checkout

1. Perform **Checkout**: include **Subscription Name** and service **Description, Subscribing Period** (the time period your subscription will operate). *Optionally*, you can **Attach Documents** to the service that are relevant to the user subscribing to the service.
2. Subscribe to the service by selecting **Submit Request**.



Order Information

Provide a meaningful name for your service. This name will be used as the primary listing method of your subscribed services.

Subscription Name

Install Server Automation (SA) Agent (1.0.0)

Description



Subscription Period

Recurring Subscription Term Subscription

Start Date

3/23/15

Pick Date

End Date

Pick Date



Attach Documents

Attach File

Summary

The service configuration options you've chosen. You can always make changes before checkout.



Install Server Automation (SA) Agent (1.0.0)

Published on Mar 18, 2015 8:28:30 AM

Your Configuration

Server Details

Details of Server to Manage

1. Server IP or Hostname (ghs_02)
2. Administrator User name (stuffymcgee)
3. Administrator User Password ([*****])
4. OS Family (Unix)
5. Facility (Appliance)

Edit Options

Submit Request

Manage Servers

Manage the entire server lifecycle. This service offering allows you to deploy and remediate pre-defined software policies and applications, scripts and patch policies to individual servers.

Subscribing to the Offering

1. Log on to the **Operations Portal**: (`https://< DCAA_hostname or ipaddress >:8079`)
2. Click **All Services**.
3. Select the offering **Manage Servers**.

4. Select server name from the available dropdown which lists all managed servers in HPSA.



Manage Servers (1.0.0)

Server Management

Manage the entire server lifecycle. This service offering allows you to deploy and remediate pre-defined software applications, scripts and patch policies to individual servers.

Published on Mar 18, 2015 9:03:38 PM

Show More Details is **On**



Device Management

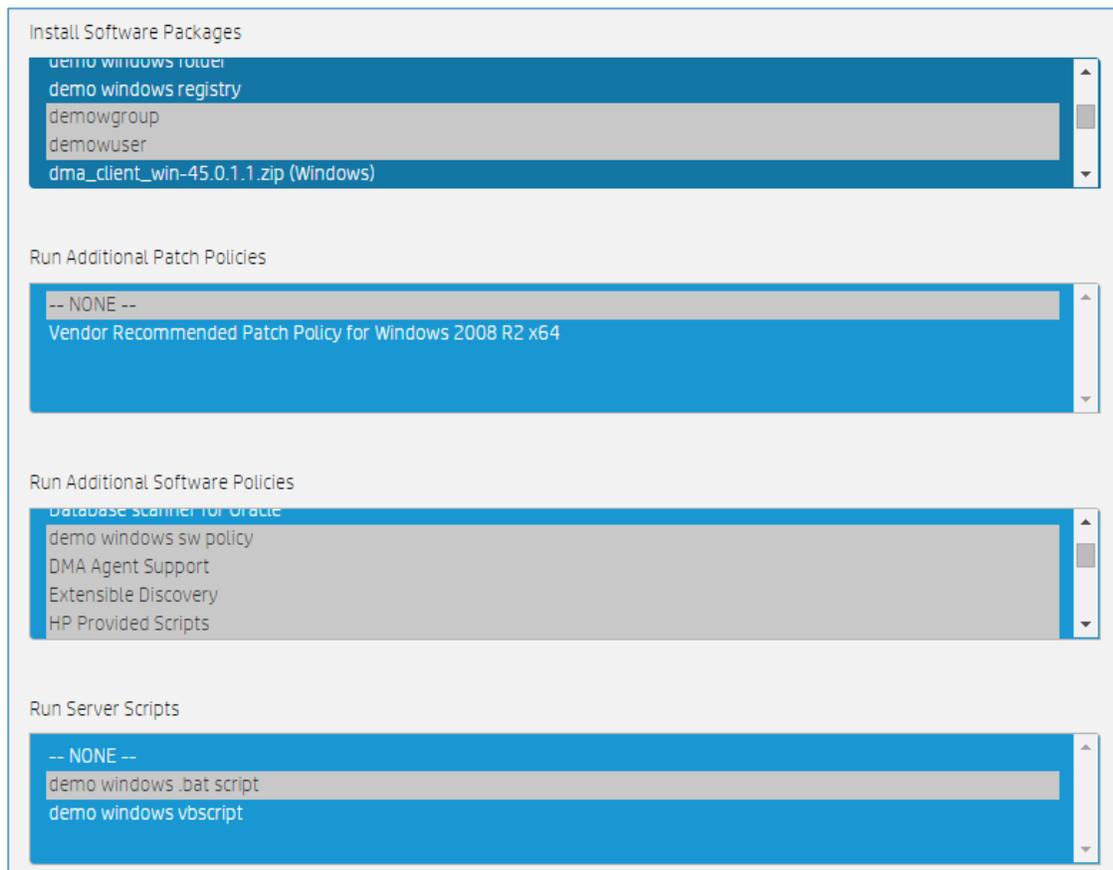
- Attach additional Patch and Software Policies , Install Software Packages , Run Server Scripts

Select additional options to run.To bypass an option,select --NONE--

1. Server Name

copper2.copper.qa.opsware.com

5. If subscriber selects **Install Software Package** option, the dropdown list shows all available packages for the selected server; one or more packages can be selected at a time. To skip this option, select "--NONE--" in the dropdown list.
6. Subscriber can choose to run additional software and patch policies as applicable to the selected server; as before, one or more policies can be selected at a time. To skip any option, select "--NONE--" in dropdown list.



NOTE: Ubuntu Patch Policies can be found under the **Run Additional Software Policies** list.

7. If subscriber chooses to run a server script on the selected server, it can be chosen from the **Run Server Scripts** option which will list the applicable scripts present in SA. To skip this option, select "--NONE--".
8. **NOTE:** While Running PowerShell scripts, or if a software package or policy contains a PowerShell script, permission must be granted on the managed server by running the following command in the PowerShell command prompt: `set-executionpolicy unrestricted`.
9. Additional options to send e-mail notifications and attach a ticket ID to track a job in SA are also available for the subscriber. These options are not mandatory, and can be used only when necessary.
10. Perform **Checkout** and submit after reviewing all the subscription details.

11. When the subscription becomes active, click on the subscription to see details.

Provision Servers

This offering allows you to provision the Operating System (OS) for the physical / virtual VMware or non-VMware virtual servers on your network.

Subscribing to the Offering

1. Log on to the **Operations Portal**: (`https://< DCAA_hostname or ipaddress >:8079`)
2. Click **All Services**.
3. Select the offering **Provision Servers**.

The screenshot displays the HP Data Center Automation Appliance Operations Portal. On the left is a blue sidebar menu with options: Dashboard, Browse Catalog, Notifications, Review Requests, Requests, Subscriptions, and My Services. The main content area shows the 'Browse Catalog' page with a search bar and filters for 'All Categories', 'All Service Types', and 'Alphabetical'. Four service offerings are listed:

- Install Server Automation (SA) Agent (1.0.0)**: Server Management. Install the HP Server Automation Agent. This service offering installs the management agent on target servers to be discovered and managed by HP Server Automation for application provisioning and ongoing lifecycle management. **Recently Added**. Global Shared Catalog. Published On Mar 16, 2015 8:58:30 PM.
- Manage Servers (1.0.0)**: Server Management. Manage the entire server lifecycle. This service offering allows you to deploy and remediate pre-defined software applications, scripts and patch policies to individual servers. **Recently Added**. Global Shared Catalog. Published On Mar 16, 2015 9:03:38 PM.
- Provision Servers (1.0.0)**: Server Management. OS Provisioning for physical or virtual servers. This service offering provisions operating system baselines onto a bare metal physical server or multiple virtual servers, allowing you to select from pre-defined options. **Recently Added**. Global Shared Catalog. Published On Mar 19, 2015 12:51:34 PM.
- Server Policy Remediation (1.0.0)**: Server Management. This service offering allows you to remediate pre-defined software applications, scripts and patch policies to individual servers or device groups.

4. Options: you will see options for provisioning a **New Physical Server** and **A New Virtual Server**. For more information, see the topics for adding [New Physical Server](#) and adding a [New Virtual Server](#), below.

Provision Servers - top / bottom page

The screenshot shows the top page of the 'Provision Servers' service. The header includes the HP logo, 'Data Center Automation Appliance', a shopping cart icon with '0 Items', and a user profile icon labeled 'consumer'. Below the header, there are navigation links for 'Browse Catalog' and 'Browse Catalog Details'. The main content area features a gear icon and the title 'Provision Servers (1.0.0)'. Underneath, it says 'Server Management' and provides a brief description: 'OS Provisioning for physical or virtual servers. This service offering provisions operating system baselines onto a bare metal physical server or multiple virtual servers, allowing you to select from pre-defined options.' A toggle switch for 'Show More Details' is currently turned 'On'. The 'Server Information' section is expanded, showing a radio button selected for 'Provision a network booted Server'. Below this, there are three steps: '1. Select Unprovisioned Server' with a dropdown menu showing 'copper26.copper.qa.epsware.com-VMware-VMware Virtual Platf...', '2. Select OS Build Plan' with a dropdown menu showing 'CentOS 5 X86_64 Install', and '3. Host Name Prefix' with a text input field. At the bottom of the page, there are 'Cart' and 'Checkout' buttons.

The screenshot shows the bottom page of the 'Provision Servers' service. The header is identical to the top page. The main content area features a document icon and the title 'Server Attributes'. Below this, there are two checkboxes: 'Attach Server to a Customer' and 'Attach Server to a Device Group'. The next section is titled 'Email Notifications and Ticket ID (Optional)' and includes two checkboxes: 'Send Email Notifications about the Job' (with a sub-note: 'The email ID will be notified about the job status') and 'Attach Ticket ID' (with a sub-note: 'This Ticket ID will be attached to the job'). At the bottom, there is a radio button for 'New Virtual Server(s)' with a sub-note: 'VMware Virtual Server Details'. At the bottom of the page, there are 'Cart' and 'Checkout' buttons.

5. Complete the details and click **Checkout**.

6. Verify the details and edit options.
7. Click **Submit Request**.

10. Open the Subscriptions tab to monitor the status of your subscription.

The screenshot shows the HP Data Center Automation Appliance interface. The top navigation bar includes the HP logo, the text "Data Center Automation Appliance", a shopping cart icon with "0 Items", and a user profile icon labeled "consumer". Below the navigation bar, there is a breadcrumb trail: "Dashboard" > "Subscriptions (10)".

The main content area displays a list of subscriptions. Each subscription entry includes an icon, a title, a status, a user, a date, and a "Cancel" button. The subscriptions listed are:

Subscription Name	Status	User	Date	Action
Server Policy Remediation (1.0.0)	Terminated Subscription	consumer	March 19, 2015 - (Auto-Renew)	Cancel
Manage Servers (1.0.0)	Active Subscription	consumer	March 19, 2015 - (Auto-Renew)	Cancel
Provision Servers (1.0.0)	Active Subscription	consumer	March 19, 2015 - (Auto-Renew)	Cancel
Provision Servers (1.0.0)	Terminated Subscription	consumer	March 19, 2015 - (Auto-Renew)	Cancel
Install Server Automation (SA) Agent (1.0.0)	Active Subscription	consumer	March 18, 2015 - (Auto-Renew)	Cancel

To Provision a New Physical Server or Virtual Server

New Physical Server:

- 1) On the **Server Information** page, Click on the **Provision a network booted Server** radio button.
- 2) Select the **Unprovisioned Server** from the dropdown list of available servers.
- 3) Select the **OS Build Plan**.
- 4) Create a name for the server in the **Host Name Prefix** field.

Regarding **Server Attributes**, you can *optionally* choose to **Attach a Server** to a **Customer** or a **Server Group**:

- 1) Select **Attach Server to a Customer**.
- 2) Select the appropriate **Customer** name from the dropdown.
- 3) Select **Attach Server to a Device Group**.
- 4) Select from available device groups; this field is required if you are attaching to device groups.
- 5) **Email Notifications and Ticket ID**: you can send information about provisioning the server, including job information, to an email. This feature is optional and not required.
 - 1) Click on **Send Email Notifications**; enter an **Email ID**.
 - 2) Click on **Attach Ticket ID**; a ticket ID# will be included with your email notification.

New Virtual Server (VMware)

NOTE: this option is located at the bottom of the **Server Information** page.

Click on the **New Virtual Server** radio button to start. A New Virtual Server Details selection page will appear with the following options:

- 1) Select your **Hypervisor**
- 2) Select the **Number of Virtual Servers**
- 3) Select the **Number of CPUs**
- 4) Enter the **Memory in MB** to allocate for the VM
- 5) Create a **Hostname**
- 6) Create an **Inventory Folder** name.
- 7) Virtual Server Attributes:
 - **Virtual Server-Storage Options**
 - **Virtual Server- Network Options**
- 8) **OS Provisioning**
- 9) **Email Notifications and Ticket ID (Optional)**

Server Policy Remediation

This service offering allows you to remediate pre-defined software applications, scripts and patch policies to individual servers or device groups.

Subscribing to the Offering

1. Log on to the **Operations Portal** (<https://<ipaddress>:8079>)
2. Click **All Services**.
3. Select the offering **Server Policy Remediation**.

4. Select one of the options **Remediate Patch and Software Policies on a Device Group** or **Remediate Patch and Software Policies on Individual Server**.
 5. If subscriber selects **Remediate Patch and Software Policies on a Device Group**, select static or dynamic device group and policy remediation option from dropdown.
-



Device Management

Options available to manage device groups or an individual server.

- Device Group : Remediate Patch and Software Policies

Use this option to manage a group of servers.

1. Device Group

Linux

Policy Remediation

Select from one of the options.

Full Remediation

- Individual Server : Remediate Patch and Software Policies

Use this option to manage a single server.

7. If subscriber selects Remediate Patch and Software Policies on Individual server, select server name and remediation option from dropdown.
-

● Individual Server : Remediate Patch and Software Policies

Use this option to manage a single server.

1. Server Name

copper2.copper.qa.opsware.com

Policy Remediation

Select from one of the options.

Full Remediation

8. Additional options to send e-mail notification and attach ticket ID can also be selected, but are not mandatory.



Email Notifications and Ticket ID (optional)

Options to get email notifications about the job and add a ticket ID to the job.

Send Email Notifications about the Job

The email ID will be notified with the job status.

Email Address

abc@xyz.com

Attach Ticket ID

This ticket ID will be attached to the job.

Ticket ID

tk123

9. Perform checkout and submit the subscription.

10. After the subscription is active, click on the subscription to see details.

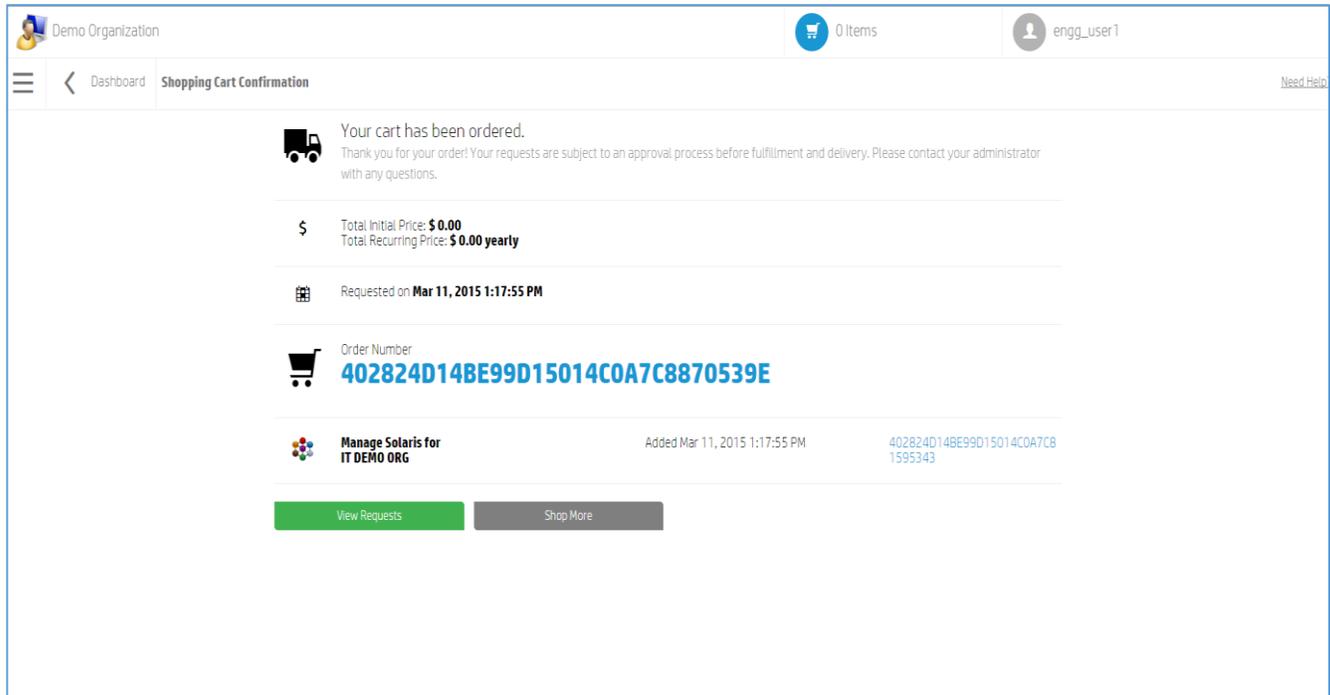
NOTE: Ubuntu Server Patch policies are listed under software policies; you may use either full remediation or software remediation for Ubuntu systems.

Cart and Checkout

Once you have made your selections on any Offering, you are ready to click on your **Cart**, **Checkout** and create subscription services. Your offerings will be placed in a shopping cart to allow you to checkout one offering, or continue shopping for additional offering subscriptions.

NOTE that the **Cart** and **Checkout** at the bottom of the page change from red to green once all options have been selected on a given Offering. At this time, you can click **Cart** or **Checkout**:

- Click **Edit configuration**, which allows you to change the selected options, or click **Remove the Item**.
- Click **Continue Shopping** to go back to **Browse Catalog** window and make additional selections.
- Click Checkout to publish the subscription. There are two additional steps:
 - 1) Step 1 - **Add Subscription Names**: type in a unique name in **Subscription Name** field to provide a unique name and description to distinguish your service offering. Click **Continue** to go to Step 2;
 - 2) Step 2 – **Provide Order Information**: if this subscription belongs to a group, click the **Group Ownership** slider, then select the group(s) that will own this subscription.
 - 3) Next, configure the **Subscription Period**, which is the time period governing all subscriptions in your cart, such as **Recurring**, **Term**, or you can select a specific **Start Date** and **End Date** for the subscription.
 - 4) Finally, you can Attach Documents related to this subscription, such as contracts or terms and conditions for the subscription.
 - 5) When you are finished, click **Submit Cart**.
- You should see an order confirmation which will look like this:



- Click on **View Requests** to see this request or others you have made, or **Shop More** to create another subscription. While on this page you can also press the Delete button to delete the subscription.

Canceling a subscription

You can cancel and delete a subscription for any offering at any time. Complete the following steps to cancel a subscription:

1. Click **All Subscriptions**.
2. Locate the subscription you want to cancel.
3. Click **Cancel Subscription** to the right.
4. Click **Delete** on the lower right of the **Canceled** subscription detail page.
5. If email is added to the subscription, the recipient will be notified that the subscription is now cancelled.

Operations Orchestration - Documentation

The table below lists the available documentation and video content available for Operations Orchestration. Tasks are organized by the relevant HP DCAA topic and document page number.

OO Studio will be used primarily in HP DCAA to design and edit OO flows. Please refer to the available documentation in the Operations Orchestration Reference Table below for further reference:

Operations Orchestration Reference Table

Tasks	Document Name	Topic	Page	Link to Doc
Get started with OO, understand the personas, component and concepts	Concepts Guide	Getting Started with OO		go
Monitor and troubleshoot executions	Central Guide	Running and Monitoring Flows	130	go
Getting started with Studio Start authoring new content	Studio Guide	Getting Started with HP OO Studio – Major Steps in the Workflow	21	go
Remote debugger (Using the appliance's Central with the Studio Remote Debugger)	Studio Guide	Debugging a Remote Central with Studio	269	go
Deploying Content	Central Guide	Deploying and Managing Content Packs	95	go
Import HP Operations Orchestration Flows	Central Guide	Deploying and Managing Content Packs	95	go
Purge execution data using Purging Flows	OnBoarding Purging Flows	Purging execution data	3	go
Purge execution data using OO REST API	API Guide	<ul style="list-style-type: none"> PurgeDebuggerExecutionEvents PurgeExecutionStepData,InputsandOutputs 	63 64	go
See the full HP OO Documentation & Videos	Documentation Library List			go

Support Issues

You can visit the HP Software Support Online website at:
<http://www.hp.com/go/hpsupport>

This website provides contact information and details about the products, services, and support that HP Software offers.

HP Software online support provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valued support customer, you can benefit by using the support website to:

- Search for knowledge documents of interest
- Submit and track support cases and enhancement requests
- Download software patches
- Manage support contracts
- Look up HP support contacts
- Review information about available services
- Enter into discussions with other software customers
- Research and register for software training

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract. To register for an HP Passport ID, go to:

<http://h20229.www2.hp.com/passport-registration.html>

To find more information about access levels, go to:

http://h20230.www2.hp.com/new_access_levels.jsp

Support Matrices

For complete support and compatibility information, see the support matrix for the relevant product release. All support matrices and product manuals are available here on the HP Software Support Online website:

http://h20230.www2.hp.com/sc/support_matrices.jsp

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