



Configuring Categories and Service Items for Services

This chapter contains the following topics:

- [Configuring the Service Catalog Home Page](#), page 1
- [Configuring Categories and Service Items for Services](#), page 1

Configuring the Service Catalog Home Page

Configuring the Service Catalog Home page requires various sections to be configured such as Top-left, Top-center, Middle-Left, Middle-Right, Bottom-Left, Bottom-Center, and Bottom-Right.

- **Top (Left and Center):** In this section you can provide the general information. This section doesn't have the services or the categories associated with it to display them.
- **Middle (Left and Right):** This section is for displaying the Categories and Sub-Categories . You can associate the services only with the sub-categories and these can be found by navigating the tree.
- **Bottom (Left, Middle, and Right):** This section is for displaying Categories and its list of services. You cannot define or associate any sub-categories in this section.

You can also configure the Browse option on the Service Catalog Home Page.

To configure the Service Catalog home page, you need to create and configure various categories and subcategories . When the Service Catalog module is enabled, the showcase sections on the home page remains empty until you have defined and configured the categories and services to be displayed on it. For more information on configuring categories, see [Creating Categories](#). Additionally, while configuring the categories, you need to define the location where the information is displayed in the carousel on the Service Catalog Home Page. For more information on showcase location, see Extension Tab Attributes table in [Creating Categories](#).

Configuring Categories and Service Items for Services

Services are designed in Prime Service Catalog by service designers and made available in the Service Catalog portal for an end user to order. This chapter describes the service designing tasks like creating categories,

associating categories to the services, configuring a service item to manage the life cycle of a service, and so on.

This chapter includes configuring categories, service items, and standards which are basic building blocks for designing the services.

Categorizing Services

Categories on the service catalog homepage helps customers find a service that meets their needs. The category hierarchy is completely user-configurable. Services can be associated with multiple categories. Categories sub module in Service Designer module is used to create and manage categories and category structure in your catalog.

When the Service Catalog module is enabled, the showcase sections on the home page remains empty until you have defined and configured the categories and services to be displayed on it. In addition, the search facets as filters for narrowing down search results can also be defined, along with the custom attributes, known as Extensions, in the Service Designer user interface. The attributes configured in the Extensions component are automatically displayed in the Extensions tab of the Services component for all services. The values assigned to the extension attributes are accessible through nsAPI GET service definition operations.

Categories can be navigated through the top-left category browser or the middle carousel sections where key categories are showcased. In the figure below, there are services grouped using categories.

Creating Categories

When you create a new category it is automatically added to the “Consumer Service Catalog” root category.



Note Ensure that you remove the category from the root category for the catalog if needed, and associate it with appropriate categories and subcategories for your catalog.

Step 1 Choose **Service Designer > Categories**.

Step 2 Select **New > New Category** and enter the information required for the new category.

- In the **Name** field, there is a limit of 60 characters.
- In the **Description** field, there is a limit of 255 characters.

Note Do not use **or from URL** field as you cannot add a category description from a URL. Instead use category’s Presentation tab for descriptive information for a category.

Step 3 Click **Add This Category** to create a category. After the category is created, you can define its visual presentation, and configure its other attributes. For configuring categories, see [Configuring a Category](#).

You can delete a category if you no longer need it by choosing the category and clicking **Delete**.

Configuring a Category

Using this procedure, you can set display options, determine the visual presentation, and customize the attributes of a category.

Before You Begin

Create a category or select an existing category. For information, see [Creating Categories](#).

Step 1 Choose **Service Designer > Categories**.

Step 2 Select a category from the Categories list pane and customize using the following tabs:

- Use the General tab to determine how categories and subcategories display in the Service Catalog and click **Save**. Selections made on these category tabs are visible within My Services. For details on each field, see [Table 1: Field Configuration for Service Designer Categories General](#).
- Use the HTML tools on the Presentation tab to format how your category displays in My Services. After configuring the presentation of the category click **Save**. For details on each field, see [Table 2: Field Configuration for Service Designer Categories Presentation](#).
- Define custom attributes for categories, in the **Extensions** tab. For details on the configurations done in this tab, see [Configuring a Category](#). The attributes configured in the Extensions component are automatically displayed in the **Extensions** tab of the Services component for all services. The values assigned to the extension attributes are accessible through nsAPI GET service definition operations.

Note You can view the **Extensions** tab only if an administrator has enabled the Service Catalog feature in the **Administration** module.

Step 3 To preview the changes, do the following:

- Save changes to the categories and associated services and update the page.
- In the other browser session, refresh the My Services or Service Catalog page display to see the new category hierarchy.

Table 1: Field Configuration for Service Designer Categories General

Field	Definition
Name	The name of the category.
Description	Descriptive text to describe what kind of products or services can be found within this category. This description displays with the category link in the catalog.
Display Style	Use the drop-down menu to choose whether to: <ul style="list-style-type: none"> • Display categories only. • Display categories and subcategories under them. If you display subcategories, the category appears in My Services module. The portal also displays all of its subcategories as bullet points with active navigation links directly beneath each bullet in the display.

Field	Definition
Appears in categories	<p>A list of the “parent” categories in which this category appears.</p> <p>To add this category to more categories, click Include in More.</p> <p>To remove this category from other categories, check the check boxes and click Remove.</p>
Subcategories in this category	<p>A list of the subcategories or “child” categories which appear in this category.</p> <p>To display more subcategories in this category, click Display More Categories.</p> <p>To remove subcategories from this category, check the check boxes and click Hide.</p>
Services in this category	<p>A list of the services which appear in this category. To display more services in this category, click Display More Services.</p> <p>To remove services from this category, check the check boxes and click Hide.</p> <p>You can also add a service to a category from the General tab for that service in Service Designer.</p>

Table 2: Field Configuration for Service Designer Categories Presentation

Field	Definition
<p>Select an Image to Insert</p>	<ul style="list-style-type: none"> • To add an image from the list of images currently available in the system, choose the image in the list by clicking its radio button, and then click Add Selected Files. • To add a new image, click Browse to locate and choose the image, click Attach to upload the image to the system, choose the image in the list by clicking its radio button, and then click Add Selected Files. • To add a new image, provide a URL reference to the image rather than attaching the image directly. This method will help you to manage the images separately, or host it on a content delivery network (CDN) to provide faster image delivery for WAN deployment. <p>Images which represent categories can be in JPG, TIF, PNG, or GIF format. SVG image type is also supported when the category is displayed in the Service Catalog module. By default, images are resized to 50 x 50 pixels in the Service Catalog or 64 (width) x 57 (height) pixels in My Services module. You can change these pixel sizes by using a custom style sheet (CSS).</p> <p>Note The type of images that can be attached to a category or a service is defined in Administration > Security option. You cannot attach an image until this option in the Administration tab is set. Category images should be created to the default (or custom) size and aspect ratio. You may use any image editing software to ensure that the size and aspect ratio of the image matches those dimensions. If the image is not sized correctly, it is resized by the browser and may appear stretched, pixelated, or distorted. Depending upon how you have customized Service Catalog using the custom CSS capabilities, you might also want to consider developing custom icons with a transparent background, or a border.</p>
<p>Category Details</p>	<p>Choose whether you want to show (and format) content in the Top, Middle, or Bottom of the category display area in the catalog by clicking the Show radio button for the section.</p> <p>If you choose to show multiple sections, click the section name (Top, Middle, or Bottom) you want to format.</p>

Field	Definition
Top URL	Enter a URL to display within the section. The URL that you enter here must be fully qualified, beginning with "http://".
HTML Editor	Use the included HTML editor to enter and format text or graphics (this is chosen by default). Or, to insert HTML code, click Source to disable the HTML editing tools and enter your coding directly. Click Source again to return to the HTML editor to display the rendered HTML code.

Table 3: Extension Tab Attributes

Attribute	Description
Category Attributes	<p>Select New > New Category Attribute Enter the following details:</p> <ul style="list-style-type: none"> • ◦ Display Name ◦ Name ◦ Attribute Type <p>Click Add This Category Attribute</p>

Attribute	Description	
Showcases	<p>You can use the fields in the Showcases attribute to define the categories that must be displayed in the Service Catalog home page.</p>	<p>Browse Categories: Select categories that must be displayed in the Browse Categories tab. Select a category that has subcategories associated with it. The application does not display any categories when you hover over the Browse Categories tab if you have not selected a category that has subcategories and services associated with it.</p> <p>Top-Left, Top-Center: Select categories that must be displayed in the Heros band.</p> <p>Middle-Left, Middle-Right: Select categories that must be displayed in the secondary carousel band. The subcategories and services associated with this category can be navigated using the carousels.</p> <p>Bottom-Left, Bottom-Center, Bottom-Right: Select categories that must be displayed in the bottom panel. The subcategories and services associated with this category are listed in the band.</p>

Attribute	Description	
Search Facets	<p>You can configure Search facets to define multiple filters for search criteria. You can further configure multiple values for each search facet such that the application accepts one or any of those values only.</p> <p>Prime Service Catalog provides the Rating facet out-of-box that cannot be edited. This means that additional values cannot be added/modified to this facet . Using this facet, users can filter offerings based on ratings. The Ratings facet cannot be associated to a service, but whenever a review changes a facet is automatically associated to the service with the corresponding values. This Facet is hence hidden in the Extensions Tab in Service Designer module. These out-of-box rating facet cannot be imported or exported to an external system through Catalog Deployer.</p> <p>Note The rating facet cannot be localized.</p> <p>For example an operating system search facet can have values such as Windows 7, Windows 9, Linux, and Mac OS. The user must provide any or all of the above values only.</p> <p>Navigate to a category that has services associated with it in the Browse Categories tab in the Service Catalog home page. The Narrow Results column on the left-hand side of the Service Catalog page displays the Search Facets that you configured.</p>	<p>Select New > New Search Facet Enter the following details:</p> <ul style="list-style-type: none"> • ◦ Display Name ◦ Name ◦ Data Type ◦ Multivalue: Select this check box to specify if the search facet has to accept any or all of the facet values ◦ Facet Values: Click Add Facet Value to define multiple values. Click on the check box to mandate a facet value to the Search Facet. <p>Click Save to save the configuration.</p>

Attribute	Description	
Service Attributes	You can customize the service definition by defining your own service attributes. For example, you can create attributes to customize the display of a service using an image, or a video, or even display some data like the review date or replacement offer.	Select New > New Service Attribute Enter the following details: <ul style="list-style-type: none"> ◦ Display Name ◦ Name ◦ Data Type ◦ Type: Is a predefined type that displays the attribute value. Click Add This Service Attribute

Removing Categories, Subcategories, and Services

You may need to remove the categories in which a category displays, the subcategories that display in a category, or services from a category.

To remove, categories, subcategories, and services:

-
- Step 1** Choose **Service Designer > General tab** and choose the **Categories** component.
- Step 2** Click the name of the category for which you want to remove categories, subcategories, or services. The details for that category display on the right in the Category window.
- Step 3** To remove a category in which this category displays:
- Check the check boxes next to the categories you want removed.
 - Click **Remove**.
- Step 4** To remove a subcategory from this category:
- Check the check boxes next to the subcategories you want removed.
 - Click **Hide**.
- Step 5** To remove a service from this category:
- Check the check boxes next to the services you want removed.
 - Click **Hide**.

Step 6 Click **Save** to save your changes.

Defining Service Items for a Service

Configuring a Service Item during service design enables you to manage the lifecycle of a service. The life cycle starts at the time the service item is available as a corporate asset, to when it is provisioned through a service request to a Service Catalog user, updates or changes to the item to when it is no longer allocated to the requesting user and becomes available to be reassigned.

For example, service item may be physical, such as a physical hardware device (for example, a cell phone or data center server), or it could be creating a service such as ordering a VM using Service Designer, which ends as soon as the service request is complete and delivered to the end user. You could create service item and design it such that the service also enables you to get notification when the VM is delivered.

A service request may deliver multiple service items, particularly in the case of an employee on-boarding service, which may provide a cell phone, a laptop, a network login, email access, and multiple software applications.

Service Item Manager is a module of Service Catalog that allows users to design service items and also manage the service items that have been ordered from service catalog.

Service Items and Standards Database Tables

All data and configuration details relating to service items are maintained in the Metadata Repository (MDR). The MDR is implemented as a set of database tables within the Service Catalog transactional database.

Each service item type has a corresponding table in the transactional database that stores service item instances. The name of the table is the service item name as specified when the service item is defined plus the prefix "Si" for "Service Item". Once a service item has been saved, its name cannot be changed. The display name can be modified. However, any dynamic data retrieval rules based on that service item would be invalidated.

Each attribute of the service item corresponds to a column in the database table. In addition to columns corresponding to the attributes specified for the service item, Service Catalog adds three columns used for processing and retrieving service items

Advantages of using Service Item Manager within Cisco Prime Service Catalog over Configuration Management Databases (CMDBs):

- When delivering a service to an end user, delivery performers often need the context of what other service items that user already has. Looking that up "from the CMDB" requires access to several disparate systems and the knowledge to traverse them to find this information, which makes it complex to maintain and use.
- The Service Item Manager allows you to configure the service form such that end users easily find the service items they have been provisioned for. Service Item Manager enables end users and their managers to find the service items and the associated service items and potentially resolve discrepancies, if any, with the items (according to asset systems or CMDBs) in the service catalog module without any pre requisite knowledge CMDB, and its constituent parts.
- Further, even companies with mature CMDBs have some items that are either not tracked at all (neither in a CMDB *nor* an asset system), or have incomplete information, making the job of managing them

difficult. For example, software licenses are not the types of items typically stored in a CMDB. Likewise, cell phones may very well be tracked, but perhaps in an existing system that does not record the business context data or status of the service item that is truly needed for delivering follow-on services to end users.

- In cloud management, the generation of new VMs, infrastructure elements, update of status of these objects, happens at a high rate. CMDB and traditional ITSM tools imposes change control that slow changes down, and often doesn't have the performance characteristic to handle high change rates. This is in contradiction of the requirement of cloud. In Prime Service Catalog, Service Items can be specified as an object type managed within the service catalog to handle these high change rates.

Role to Access Service Item Manager

Site administrators can use the Organization Designer module to grant user access to Service Item Manager and the Administration module to configure how end users can access service items in My Services.

To define a service item, you must have Service Lifecycle Management roles assigned using Organization Designer.

Roles and capabilities, managed with the Organization Designer module, allow site administrators to control access to functionality provided by the Service Item Manager module. The Service Item Manager role will allow administrators to view the service items assigned to all Service Catalog users.

The Service Item Manager roles should be assigned sparingly. Granting a user the capability to manage standards data or define standards means that user can edit all standards definitions and all standards data. A similar caveat applies to the capabilities controlling service item definitions and data.

For more information, see Capabilities for Service Item Manager section in [Cisco Prime Service Catalog Administration and Operations Guide](#)

Configuring Access to My Service Items

Access to the Service Items tab and Service Items portlet in My Services can be controlled in three ways:

- Global access for all users must be turned on via an Administration setting.
- Once the ability to view Service Items has been activated, users with appropriate roles are able to view the My Items portlet and the Service Items tab.
- Individual users can choose to hide the portlet via a Profile setting.

Administration Setting for My Items Portlet

The My Items Portlet is no longer necessary in the **Service Catalog** module. My Stuff replaces it with richer feature set .

However, if you want to show My Services module's My Items portlet to a user, the Administration module setting "View Service Items Portlet" must be turned on. To review or modify this setting, choose **Administration > Settings > Customizations**. Look in the My Services section for the "View Service Items Portlet" setting.

Turn this setting on to allow users to see the My Items portlet on the My Services home page, or off to omit the portlet from the page.

Roles with Service Item Access Capability

RBAC capabilities control the access to the service item information for an individual. Roles are also available out of the box for users who need to have such access:

Role	Description
My Services 360-Degree Consumer	Enables end-users to access those portions of the Service Catalog to which they are entitled, to view service component details or initiate requests for services, and to view and manage the service items delivered to themselves as part of catalog services.
My Services 360-Degree Professional	Enables end-users to access those portions of the Service Catalog to which they are entitled, to view service component details or initiate requests for services, and to view and manage the service items delivered to anyone in their business units as part of catalog services.

The My Items portlet and Service Items tab only appear if the end user has been granted the “My Services 360-Degree Consumer” or “My Services 360-Degree Professional” role or any custom role that contains the following permissions:

- Read- All SI instance data subscribed by self.
- Read- All SI instance data for SIs in my business units
- Read- All Instance data fro All SIs in my Business Units and their Sub units.

Creating a Service Item Group

A Service Item group is a logical grouping of various service items. You must create a service item group to add related service items. For example, create a service item group called hardware to be able to add various service items like laptop, mouse, and so on. Service Item Groups can be created as a Custom Integration from the Integrations module. For more details on creating Service Item Group, see section Creating Custom Integrations in [Cisco Prime Service Catalog Administration and Operation Guide](#).

Once the Service Item Groups are created, you can manage them from Service Item Manager module. You must have Service Lifecycle Management roles assigned and appropriate permissions to access Service Item manager.

Creating Service Items

If you are a service designer or an administrator, you have to first create service items, create services that delivers them, and then make these services orderable. The service items are displayed in the Prime Service Catalog module home page. Users view the list of service items and order them as required. The service item is provisioned via a service request to a Service Catalog user.

Service items can be added to the Service Catalog repository in several ways:

- A user requests a service which provisions a new service item via a Service Item Task. For more information, see [Defining Service Item task in a Delivery Plan](#) and [Configuring an External Task](#).
- The Service Item Import utility is used to import service item definitions and instances. For more information, see [Importing Service Items from an External System](#) and [Importing Standards](#).
- A Service Link file adapter is used to import service item definitions and instances. For more information, see [Importing Service Items from an External System](#) and [Importing Standards](#).
- A service item administrator manually adds the item through the Manage Service Items tab. For more information, see [Managing Service Item Attributes](#).

Before You Begin

Create Service Item group. See [Creating a Service Item Group](#).

Step 1 Choose **Service Item Manager > Design Service Items**.

Step 2 Click the plus sign (+), and then select **Service Item**.

Step 3 In the Add New Service Item popup window, enter the required information for the new Service Item. Then fields are described in the table below.

Table 4: Service Item Attributes

Field	Description
Name	<p>Unique Display Name, and a Name for the service item.</p> <ul style="list-style-type: none"> ◦ Once a service item has been created, its name cannot be changed. You can change the display name of the service item. ◦ The Display Name is the user-friendly version of the name; it may contain spaces. The display name is used in the My Items Portlet and as the basis for the caption for a Service Item-based dictionary. ◦ The Display Name must be unique within a site. ◦ The Name field is the name by which the system references the service item and its data. The item name can contain only alphanumeric characters and the underscore (_), with no embedded spaces. It must begin with an alphabetic character. It corresponds to a table that is dynamically created and maintained in the Service Catalog transactional database. Service Item Manager creates the database table with the same name as the item name with a prefix of "Si".
Service Item Group	Associate the service item with one of the groups.

Field	Description
Has Status	<p>When this option is checked, a service item attribute called status is created automatically.</p> <p>Note When this option is enabled, the “Status” attribute is system-controlled and is linked to other service item properties such as Operations. Therefore, you can delete a status only when there is no operation associated with it. To delete a status just uncheck the Has Status check box. When you delete status for a service item, the application:</p> <ul style="list-style-type: none"> • ◦ Deletes the list of statuses defined for the SI ◦ Deletes status and next status associations ◦ Deletes status and associated services associations
Hide in Service Catalog	Check the Hide in Service Catalog check box , if you want to hide the Service Item and the associated request in Service Catalog > My Stuff page.
Custom View URL	Enter Custom View URL for a service item so that when a service item is selected in the left pane of Service Catalog > My Stuff, the corresponding right pane displays the content of the custom URL. This is an optional field. For more information see, Adding a Custom Web Page For Displaying Service Items

- Step 4** Click **Add** and the Service Item that you created is displayed in the Service Items panel on the left under associated group.
- Step 5** On the bottom of the page, click **Add** to add the attributes to the Service Item, as shown below. Each attribute, or row, is a service item instance. The Display Name for each instance will become a column header for the grid.
- Step 6** On the bottom of the page, click **Save** after you have added all the attributes. To further configure the service item, see [Configuring Service Items](#).

Configuring Service Items

After you create a service item, you should configure the service item such that the workflow of the service item is managed automatically.

- Define the service items that can be displayed on the Service Catalog page, or create a separate web page to display list of service items on the Service Catalog homepage. See [Configuring Service Item Definition](#).
- Associate multiple services to a service item for displaying associated services when a service item is chosen for ordering. See [Associating Services for a Service Item](#).
- Define the actions to be executed against a service item instance when certain conditions are met. See [Understanding Service Items Policies](#).
- Create custom-defined statuses for the service item. See [Configuring Custom-Defined Status For a Service Item](#).

- Ensure only a certain state transitions occur by defining finite state transition for a service item. See [Defining a Finite State Transition for a Service Item](#).
- Define permissions on which service item types and instances the user can access and which actions (create/update/delete/view) are allowed. See [Defining Permissions to Perform Operations for Service Item Types](#).
- Displaying Out-of-Box service item attributes on My Stuff page in the Service Catalog. See [Customizing My Products & Services Page](#).

Configuring Service Item Definition

After [Creating Service Items](#), customize the service item definitions using the below procedure.

Procedure

Step 1 Choose **Service Item Manager > Design Service Items > Service Item Definition**.

Step 2 Enter the required information for the service item definition.

- Check the Hide in Service Catalog option, if you want to hide the Service Item and the associated request in **Service Catalog > My Stuff** page.

Note Use this option to hide service items that are meant as infrastructure data elements used in the service provisioning workflow.

- Enter **Custom View URL** to display a web page you have designed to show the Service Items on the **Service Catalog > My Stuff** page, the corresponding right pane displays the content of the custom URL. This is an optional field. For more information see, [Adding a Custom Web Page For Displaying Service Items](#).

Note **Hide in Service Catalog** and **Custom View URL** features are useful if the service item type is maintained for the service delivery orchestration process, and not for the end users to interact with directly.

Step 3 Click **Save**.

You can also configure custom attributes in the **Item Attributes** window when you create a new service item. You can add, update, or delete attributes. The service item attributes define various components of the service item, and also helps you prepare for the service item workflow. For more information on Service Item attributes, see [Table 4: Service Item Attributes](#) table.

Adding a Custom Web Page For Displaying Service Items

By default, when a Service Item type is selected from the tree view, the standard My Stuff grid with Service Item attributes are displayed. You can customize the right pane view to display a web page you have designed to show the Service Items.

To add a custom web-page for the Service Item view in Service Catalog > My Stuff:

-
- Step 1** Choose **Service Item Manager > Design Service Items > Service Item Definition**.
- Step 2** Select the Service Item from the tree view.
- Step 3** Enter the required URL in the Custom View URL field.
For example: /RequestCenter/custom/CustomServiceItemView.html
- Note** As a best practice, place the HTML files in the same machine where the application is installed, in the path /RequestCenter/custom.
- Step 4** Click **Save**.
-

Associating Services for a Service Item

The **Associated Services** sub tab of the **Design Service Items** tab allows service designers to associate a service item with one or more services. Associating a service with a service item allows Service Catalog and My Services users to use shortcuts to order services applicable to service items previously assigned to them. When a service item is chosen, all associated services for which the user has ordering permission are displayed in My Stuff.

You can also add conditions for these associated services. Only if a condition is met, these services will be shown in My Stuff. For more details, see [Adding Conditions to an Associated Service](#).

When you click on an associated service, the service form appears. If service has been configured correctly, the service form is prefilled with information on the user's service item.

All services that include a Service Item Task to create, update, or delete a service item should be associated with that service item type.

-
- Step 1** Choose **Service Item Manager > Design Service Items > Associated Services**.
- Step 2** Click **Add Services**.
- Step 3** Select a service from the list of services.
- Step 4** Scroll down, if there are multiple services and Click **Add**.
- Step 5** Click **Save**.
These associated services are displayed as related services in **My Services > Service items > Related services**.
-

To delete an associated service:

To delete an associated service for a service item, choose the associated service by clicking on it (use Ctrl+Click or Shift+Click to choose multiple services), and click **Delete**.

To control the related services that can be ordered based on status definition:

Choose the associated service and select status definitions check box as required to modify the display of the related services for a service item depending on the status of the service item. For example, if the service item is a virtual machine and the related services are Start VM and Stop VM. The states defined are online and offline. You can Start VM only when the status of the VM is offline.

**Note**

If you have created a status definition for the service item as defined in Managing Status Definition, the status definition check box appears in Associated Service Window.

Adding Conditions to an Associated Service

Using this procedure you can add one or more conditions to an associated service. Only if the conditions are met, these associated services will be shown to a user in My Stuff.

-
- Step 1** Choose **Service Item Manager > Design Service Items > Associated Services**.
- Step 2** Select an associate service from the list of services, and click **Add Condition**.
- Step 3** Enter the attribute type , operation, and the value for the attribute type. Only when the attribute has this value, this associate service is displayed.
Note User can specify multiple conditions using OR , AND Operation to build any expression.
- Step 4** Click **Add** and save the changes made to the associated service.
-

Understanding Service Items Policies

Policies are used to define the actions to be executed against a service item instance when certain conditions are met. A typical example is that when a virtual machine is approaching its expiration date, an automatic notification is sent to its owner as a reminder. Other policy actions may include triggering a service request to process the service item, or logging an alert for administrators, or preventing a new service request from being submitted. Policies may be defined to be specific to an account or generic to all accounts.

The policies are categorized into four types, namely: Capacity, Quota, Timebound, and Event-based policies.

Capacity- When you define a capacity policy, you enforce a limit for the usage of an attribute. An action is performed when the usage exceeds the defined limit. Before you define a capacity policy, you must define the service item attribute that has to be managed by the capacity policy. See [Managing Service Item Attributes](#).

When you configure a service item attribute as a capacity attribute, the following attributes are generated to be used for capacity management:

- ◦Used {AttributeName}, for example, "UsedVCPU" - Used by the application to track how much of the capacity is used. This value is not user-modifiable.
- ◦Req {AttributeName}, for example, "ReqVCPU" - Used by service designer to pass the capacity change required in service requests or update operations in service item APIs.

You can use capacity policy to track your own resource consumption such as type of storage network, usage of each of the elements in the network, and take necessary actions accordingly if you are a service provider.

Examples of Capacity policy:

- ◦You may define a policy that sends an email when the capacity of the storage area network reaches 80% of the capacity.

- **Quota** - The quota policy is executed when an Item Attribute reaches the threshold% of maximum value. Each quota policy is specific to an account and cannot be applied to multiple accounts. Before you define a quota policy you must:
 - Define the service item attribute that has to be managed by the quota policy. See [Managing Service Item Attributes](#).
 - Ensure a quota is already defined in an agreement that corresponds to the account being referenced in the quota policy. This is maintained under **Demand Management > Agreement**. The service item that is subject to quota management should already be included in the agreement quota with an appropriate aggregate method (see [Configuring Billing Rates Based on Usage](#) for more information).
 - When specifying a quota policy, select the appropriate aggregate method that tracks the quota consumption. The “Sum” aggregate method manages the quota based on the sum of a specific attribute consumed by all service item instances (for example, sum of disk size for all datastores owned by the account). The “Count” aggregate method manages the quota simply based on the service item count (for example, total number of virtual machines owned by the account).

Examples of Quota Policy:

- ◦ A policy that sends an email when the count of the virtual machine for an account reaches 70% of the quota.
- A policy that orders a service when the storage of the virtual disk for an account reaches 75% of the quota.
- **Timebound** - This policy is executed when the date attributes of the service item reaches or exceeds the defined value. A poller evaluates the time bound policies at a time interval of every 30 minutes by default and performs actions as necessary. You can enable/disable the poller in the support.properties file. For more information about configuration files, see [Cisco Prime Service Catalog Administration and Operations Guide](#).

Examples of Timebound Policy:

- A policy that sends an email to the owner of a software subscription one month before the subscription expiration to remind the person to renew the subscription.
- A policy that revokes the subscription to a software on the lease expiration date.

To see the example of how you can terminate a lease using this policy, see [Configuring Timebound Policy](#).

To define this policy on a service item, there must be at least one service item attribute of attribute type “DateTime”.

- **Event based** - Event based policies support three conditions:
 - An action is triggered when a service item attribute reaches a particular value.
 - An action is triggered when a service item attribute reaches a particular value, or when the attribute value has been modified.
 - An action is triggered when the service item attribute satisfies certain conditions. You can define a condition for a service item attribute, to determine if the particular value 'is equal to', 'is not equal to', 'contains' or 'does not contain' based on the options you can select from the logical operator drop-down list to trigger an event. You can either enter the value for the service item attribute or

select from the namespace icon. You can add multiple conditions and more than one service item attribute for a particular value.

Examples of Event-based Policy:

- ◦ Perform action when attribute is updated - Create a policy that records a policy alert when the status of the virtual machine becomes offline.
- ◦ Perform action when conditions are met - Create a policy with conditions that record a policy alert when the RAM value has reached its maximum limit and sends an email when the status of production HANA database goes offline and the backup server is active.

Policy Actions

One or more actions may be performed when the policy condition is satisfied. The predefined actions are:

- Stop submission- Prohibit the requester from making another request to consume the service item. This action is not applicable to the time bound policy type.
- Order Service- Spawn a request for a service within the catalog to allow a supporting operation to take place. If you choose to order a service when a condition is satisfied, then you must also:
 - Select a service from a list of existing service definitions
 - Specify the values to be passed to the service form. Any namespaces referenced will be resolved to the actual values based on the context when the service is ordered. For more information, see [Namespace Usage](#).
- Send email- If you choose to send an email when the policy condition is satisfied you must also select an email template from the email template drop-down list. You can define email templates in **Administration > Notifications**, just like any other email templates used for service delivery.
- Policy alert- Log the policy trigger occurrence that serves as an audit trail for administrators to review. If you send a policy alert to the application you must also provide a descriptive message for the alert. You can also use namespaces to specify the service item attribute that will be resolved when the message is displayed.

To view the list of policy alerts when the condition is satisfied, add the Policy Alert portlet to any existing portal pages in Service Portal module. Choose **Service Portal > Edit Page > Add Content > Reserved portlets**. Click **Policy alerts** check box. Policy alerts are logged for Policy alert and Order Service actions.

Configuring a Service Item Policy

Each policy type has one or more policy templates. The policy templates are rules that define when to perform an action. You can further define parameters for the condition and also specify the action to be taken when the conditions are satisfied.

Before You Begin

Understand the types of Service Item Policies in Prime Service Catalog. See [Understanding Service Item Policies](#).

Step 1 Choose **Service Item Manager > Design Service Items > Policy**.

Step 2 Select a service Item from the list panel and click **Add Policy**.

Step 3 Enter the attributes for the new policy type. The table below describes some of these attributes.

Step 4 Click **Add** on the Actions page and choose an action from the list.

Step 5 Click **Next** and verify the Policy you created in the Policy Summary page and click **Done**.

Note If you choose an account attribute for a policy, then the policy becomes applicable to the service items associated with the account. If not, the policy is applicable to all service items.

Table 5: Service Item Policy Attributes

Field	Description
Policy Type	Select the Policy Types as Capacity, Quota, Timebound, and Event-based policies.
Template	Select the type of actions to be executed against a service item instance when certain conditions are met.
Setup Condition	<p>Define conditions in the Setup Condition page. The Setup Condition page options vary based on the template you choose.</p> <ul style="list-style-type: none"> For capacity and quota policies, the service item attributes appear only if you have defined them in Service Item Definition tab > Add Service Item Attribute table > Managed By field. See Managing Service Item Attributes. For a capacity or quota policy, you need to define it against a service item attribute that is numeric. For event-based policy, you can configure multiple conditions if you choose the template option Perform action when conditions are met. These multiple conditions are evaluated based on the and/or logical operators and the associated action is triggered based on a particular value.

To view the list of policies defined already for a service item, click on a service item from the Service Items list panel and select the **Policy** tab. You can choose to see all the policies for an account using the **Filter by account** field.

Configuring Timebound Policy

Time bound policies can be put in place to enforce lease management. For example, you may set up a time bound policy to ensure that the virtual machine is stopped on the lease expiration date. In this procedure you send an email and stop the virtual machine.

-
- Step 1** Choose **Service Item Manager** > **Design Service Items**.
 - Step 2** Select a Virtual Machine service item from the list panel that lists the Service Items on left hand side window. Click **Policy** tab.
 - Step 3** In the Policy tab, click **Add Policy**.
 - Step 4** In the **Name** field, enter Stop VM on lease expiration, choose Time-bound in the **Type** field. Click **Next**.
 - Step 5** In the Template page, choose template: Perform action when system date is equal to attribute value". Click **Next**.
 - Step 6** In the Condition page, do not enter any information in the Account field. Select **LeaseExpiryDate** value in the Service Item attribute field. Click **Next**.
 - Step 7** In the Action page, Click **Add** and select **Policy Alert**. In the Policy Alert Window, enter a message and click **OK**.
 - Step 8** Click **Add** again and select Order Service. A new window displays the services. Choose **Stop VM** and click **Add**.
 - Step 9** Click **Next**. A Policy Summary page that describes the policy type, condition, and the action is displayed.
 - Step 10** Click **Done**.
-

Configuring Custom-Defined Status For a Service Item

Status definition tab is displayed only if you click on the Has Status icon when you create or update the service item. You can create custom-defined statuses for the service item. A service item can have multiple statuses. For example the virtual machine service item can be online, offline, commissioned, decommissioned, deleted, and so on.

You can also define a status transition to enforce that the service item could be transitioned from the previous state to the defined state. "Any" is a default state that allows status transition of a service item to any status from the previous state.



Note You can add a maximum of 20 status definitions.

To add a status definition

-
- Step 1** Choose **Service Item Manager** > **Design Service Items** > **Status Definition**.
 - Step 2** In the **Status Name** window, Click **Add** and an empty line opens at the bottom of the grid, where you can type the status definition.
 - Step 3** Click **Save**.
-

Defining a Status Transition

To delete one or more status definition, choose the status definition by clicking on it (use Ctrl+Click or Shift+Click to choose multiple attributes), and click **Remove Selected**.

To define a status transition

-
- Step 1** Choose **Service Item Manager > Design Service Items > Status Definition**.
- Step 2** Select the status on the **Status Name** window.
- Step 3** Click **Add** in the **Next Status(es) Transition Allowed** window. An empty line opens at the bottom of the grid with a drop-down list that contains the statuses already defined.
- Step 4** Choose the next status transition you want to define from the drop-down list. This list contains statuses that you defined in the Status name.
- Step 5** Click **Save**.
If the service item already has the **Status** attribute defined and there are service item instances populated with certain values for the Status attribute, you can still enable the **Has Status** setting. When you do so, the system takes over the control of the Status attribute, extracts all status values in use and automatically populates the Status definition tab with a list of the unique values.
-

Defining a Finite State Transition for a Service Item

Using service items operations, you can define a finite state to ensure only a certain state transitions occur for a service item. For example, an offline VM can only be started, but not stopped.

The default operations that could be performed in the life cycle of a service item are create, update, and delete. You can also add more operations to the service item lifecycle that gets saved in the SIBD.

You can monitor the operations performed in the lifecycle of a service item **under** Service Item Manager > Manage Service Items > History.

Before You Begin

- Create a status definition. See [Configuring Custom-Defined Status For a Service Item](#).
- Add Associated Services for a Service Item. See [Associating Services for a Service Item](#).

To add a Service Item Operation

-
- Step 1** Choose **Service Item Manager > Design Service Items > Operations**.
- Step 2** Click **Add** and specify the various attributes for the new operation. The following table describes these attributes.
- Step 3** Click **Save**.

Table 6: Service Item Operations Attributes

Field	Description
Name	Enter a name of the operation.
Resulting Status	<p>This field lists the predefined statuses. Choose the status that you want the service item to be in, when the operation or the service item task is executed.</p> <p>The drop-down displays the list of statuses that were added in Design Service Items > Status Definition tab.</p> <p>Note If you uncheck and then check the Has Status check box in the Service Item Definition window, the Resulting Status will be set to the first available status in the drop-down list.</p>
Associated Services	<p>Select one of the associated services for the service item from the drop-down.</p> <p>The drop-down displays the list of services that were added in Design Service Items > Associated Services tab.</p>
Billable	<p>Select this checkbox to trigger a billable event and make an operation available for the billing rate table definition.</p> <p>For example billable event can be “Provision a VM” or “Delete a VM”, which incurs or stops the charges for a subscribing user. For more information on this billing rates, see Configuring a Billable Rates.</p>

To delete an operation, select an operation from the Operation Summary table and click Remove Selected.

Defining Permissions to Perform Operations for Service Item Types

The read/write access to service items in Service Item Manager is governed by capabilities and permissions granted to the user. Capabilities control which tabs and panes the user can use. Permissions control which service item types and instances the user can access and which actions (create/update/delete/view) are allowed.

The Role-based Access Control (RBAC) for service items can be maintained in Organization Designer as well as the Permissions tab under Define Service Items. In Organization Designer, RBAC permissions are granted to a role and the role is in turn granted to the user directly (to the person himself) or indirectly (to an organizational unit or group that the person belongs to). In Service Item Manager, the permissions are granted with or without the use of a role. The use of roles allow easier tracking and maintenance and is generally recommended.

To add permissions:

-
- Step 1** Choose **Service Item Manager > Design Service Items > Permissions**.
The Permission Summary window lists the permissions assigned to the selected service item.
- Step 2** Click the magnifying glass icon in the Role field, select a role and click the **Select** button.
- Step 3** Select a permission from the **Permissions To** drop down list.
For more information on permissions that can be added, see Service Item Manager module in Assigning Permissions section in [Cisco Prime Service Catalog Administration and Operations Guide](#).
- Step 4** Click **Add**.
-

To delete permissions select a role from the **Permission Summary** table and click **Delete**.

Customizing My Products & Services Page

This section describes procedures to customize My Products & Services page of Service Catalog module.

Displaying Out-of-Box Service Item Attributes

All service items have a set of out-of-box service item attributes and you can also configure custom-defined attributes for a service. Custom-defined attributes are displayed along with these out-of-box attributes in the **My Stuff** page. For more information about configuring custom-defined attributes, see [Managing Service Item Attributes](#), on page 24. By default, all the out-of-box service item attributes are displayed in My stuff.

-
- Step 1** Choose **Service Item Manager > Design Service Items > Subscription Attributes Configuration**.
- Step 2** If you do not want to display an attribute, clear the **Show in My Stuff** checkbox for the required subscription attributes and click **Save**.
-

To rearrange the service item attributes, select the attribute and click on the up or down arrows on the right side to place the attribute in the desired order. Click **Save**.

Managing Service Item Attributes

You can create custom attributes in the Item Attributes window of the content panel when you create a new service item. You can add, update, or delete attributes. The service item attributes define various components of the service item, and also helps you prepare for the service item workflow.

**Note**

Do not add attributes maintained as part of the Service Item Subscription or Service Item History to the service item definition. Such attributes, including the Customer ID, RequisitionID and other aspect of service item usage, are described in the [Service Item-Based Dictionary](#).

After the definition is changed, existing service items will have blank values for the added attributes. Administrators can use the Manage Service Items option to provide values for these new attributes.

If a Service Item-Based Dictionary has already been created, any changes made to the service item definition need to be applied manually to the dictionary. As long as the name of a field added to the dictionary exactly matches the name of the corresponding attribute in the service item, the relationship between the field and attribute is maintained.

To add a new attribute:

- Step 1** Choose **Service Item Manager > Design Service Items > Service Item Definition**.
- Step 2** In the **Item Attributes window**, click **Add**. An empty line opens at the bottom of the grid, where you can type the service item definition.
- Step 3** Update various attributes by clicking on each column.
- Step 4** Click **Save**.

Table 7: Service Item Attributes

Field	Description
Display Name	Enter a name for the attribute. This name is displayed in the My Stuff window.
Name	Enter a name for the attribute.
Attribute Type	<p>Choose an attribute type from the drop down list. It can be a string data type, integer, string (max), and so on. You can also add a service item type as an attribute type for a service item. This is to support the design of hierarchical service items when designing components for an application stack. Use the option "Is Reference" for this hierarchical service item, if you want the child service item to be used by multiple parent.</p> <p>Note All the CRUD operations for this hierarchical service item is supported only through REST API. These CRUD operations applies only to each Service Item type. For more information on the REST API for the hierarchical service item, see <i>Cisco Prime Service Catalog Integration Guide</i>. Some examples for:</p> <ul style="list-style-type: none"> • Hierarchical Service Item Attribute Type : For a service item of type "Laptop", you can add another service item "Hard disk" as an attribute type. • Other Attribute Types: Consider virtual server as a service item; the attribute type for the service item attribute RAM could be integer, and the attribute type for the Expiration date is DateTime

Field	Description
Managed By	If you have planned to define a capacity or a quota policy for the service item attribute, you must select the policy type from the drop down list. This is an optional field. See Configuring a Service Item Policy , on page 19.
Accessible In My Stuff	Select the check box if you wish to make the service item attributes available in Service Catalog > My Stuff settings menu. Using the settings menu you can display or hide the attributes in the My Stuff grid.
Show In My Stuff Grid	Select the check box if you wish to display the service item attributes in the Service Catalog > My Stuff grid by default.
Is Friendly Name	You can select any one of the item attributes as a friendly name. This friendly name is displayed instead of the name attribute value in the Service Catalog > My Stuff grid.
Is Reference	Select this check box if there is an already pre-existing object of the associated type. Keep it unchecked if there is an object that is "owned" by this service item.
Multi-value	Select this check box if this attribute is an array, that is it can store more than one value.

Importing Service Items from an External System

You can import Service item from an automated or semiautomated system external to Service Catalog. Service Catalog can then track service item provisioning and other updates. Service item data can be imported at any time, to synchronize Service Catalog data with other records that may have been maintained externally. In addition to importing service item data, the service item definition itself can be imported, either with or without corresponding data. This automates the definition of the service item, so that it does not have to be done manually.

You can import service items and standards using one of the following methods:

- The Import Data option in Service Item Manager allowing administrators to import service items on demand from file. See [Importing Service Item from File](#), on page 27.
- A request can include a Service Link task to import service items or standards. See [Importing Service Items and Standards using Service Link](#).

Importing Service Item from File

You can import data and definition for service items from an external source, using Service Item Manager > **Import from File** option. The file to be imported must use ANSI encoding—either ASCII or UTF-8. Unicode encoding is not supported. You can select either **Data** or **Definition** option to import only those portions of the file, or you can select both. If you choose to import both and the XML file contains only a definition section, the system only imports the definition.

When service item data is imported, an entry is added to the Service Item History table and the Service Item Subscription is created or updated, as appropriate.

The table below summarizes the behavior of the Import Utility when importing service item definitions or data from file. This behavior also applies to a Service Link Service Item task, described later.

Table 8: Import Utility Behavior

Definition/Data	Conflict Resolution	Description
Definition	Overwrite	The import replaces the existing Service Item definition with the definition contained in the import. For an existing service item, existing data is preserved when column names between the old and new versions match.
	Merge	The import can be used to merge new columns into the existing Service Item definition. A new Service Item is created if the item does not already exist.
	Insert	The import fails if the service item already exists. If the service item does not exist, the service item and underlying database table are created.
Data	Overwrite	Update (overwrite) any existing service items with a matching item found in the import; insert any new items in the import file. If the import file does not contain a value for an attribute of the service item, then the value of the attribute is set to null for that service item, even if the service item previously existed and the attribute had a value.

Definition/Data	Conflict Resolution	Description
	Merge	Update any existing service items with a matching item found in the import; insert any new items found in the import file. There are two conditions in which the attributes of an existing service item will NOT be updated: (1) the import file does not contain the property tag for this attribute; (2) the service item attribute already had a non-null/zero value. In either of these cases, the existing attribute value will not be overwritten.
	Insert	Insert any new Service Items found in the import; existing Service Items are unchanged.

**Note**

The description field for attribute does not exist on the UI. It is optional in the SI Import file.

Configuring Status for a Service Item

You can ensure that an associated service for a service item is orderable only when the service item is in certain statuses. Here is an example of how you can achieve that:

- Step 1** Enable **Has Status** for the service item.
- Step 2** Add custom statuses in the **Status Definition > Status window**. For example a virtual machine service item may have these statuses defined: Active, Being Reconfigured, Inactive.
- Step 3** Add status transitions to prevent invalid status changes. For example, a virtual machine in Inactive status cannot be turned back to **Being Reconfigured**. See [Configuring Custom-Defined Status For a Service Item, on page 21](#).
- Step 4** On the Associated Services sub tab, select the check boxes for the associated services that are allowed to be ordered only when a service item is in certain statuses. For example, the service "Extend VM Lease" is allowed for Active status only.
- Step 5** Add operations in the Operations tab and the corresponding resulting status such that it co relates.
For example:

Table 9: Operations tab and corresponding Results

Operation	Resulting Status
Provision	Active
Terminate	Inactive

Operation	Resulting Status
Initiate Reconfiguration	Being reconfigured
Complete Reconfiguration	Active

End User's View of Service Items

Service items are automatically assigned to a person when they are provisioned via service requests. Service items can also be assigned directly to a Service Catalog user through the manual Assign feature in Service Item Manager. Manual assignment is particularly useful if users have been assigned service items in an external system and that data must be brought into Service Catalog.

Service Catalog and My Services offers a service item view (My Stuff or Service Item Portlet) that enable users to see the service items that have been provisioned to them and to request further changes and additions to these items. The My Services Consumer role (the default role assigned to all users, to allow them to submit service requests) does not include the ability for users to view and search on their service items. This functionality is provided by the My Services 360-Degree Consumer role, which includes the capability to "Access Service Item Instance Data" and a personal preference setting allowing each user to show or hide the My Items portlet.

A similar view is available in the Service Catalog module, under the Manage Your Stuff spotlight on the top right-hand section of the home page.

Viewing My Service Items

If you are using the Service Catalog module navigate to Service catalog> Manage My Stuff> My Stuff to access and order services associated with service items.

Viewing Service Items in the Old My Services Option

My Services offers a **Service Items** tab and **My Items** portlet that allow users to access and order services associated with service items. Service items are assigned to a person when they are provisioned via service requests, or when the items are assigned directly to the person using the Service Item Manager module.

The My Items portlet displays the five service items most recently provisioned to the user. Click on the **More** link in the My Items portlet or the **Service Items** tab to see a complete list of service items. In addition, the service items that each user can access depend on the read/write permissions he has been granted. Users are always given read/write access to service items that they own.

Managing Service Items on an External System

Some service items you create and track in Service Catalog may already be tracked to some degree in an external Asset Management System (AMS), or in a target platform such as a hypervisor. Laptops and workstations, as well as virtual machines and virtual applications, are good examples of such service items. Using an external system depends on number of factors, including the maturity of the external system, the

nature and quality of data in that system, the frequency by which the system changes and whether there are events in the system that you wish to have trigger changes in Service Catalog. Also which attributes (that is, data elements) of service items you want the end users of Service Catalog to see. For example, things like the Manufacturer, Make, and Model of a laptop; or the GUID of a virtual machine, are not going to change and therefore do not necessarily need to be stored and updated in Service Catalog. To get data from an external system use:

- ◦ A data retrieval rule that queries the external database, based upon the Asset ID. For information on data retrieval rules, see [Creating Dynamic Data Retrieval Rules](#).
- A Service Link that provides a “process API” that is easily built into the workflows for services.
- Web services adapter to get data from the external system in an inbound message.

Best Practices When Using an External System:

- 1 Store the Asset ID only in Service Catalog.** The only attribute for the Laptop SI is the Name (into which you write the Asset ID from the external system). The end-user in My Services sees only *that* . When this laptop is referred to in service requests, you use one of the methods to pull the current data (Make, Model, Manufacturer, Disk Space, and Memory) from the external system onto the form:
- 2 Store the Asset ID, plus attributes that won’t change, in Service Catalog.** Assume the attributes for the Laptop SI are the Name (Asset ID), Make, Model, and Manufacturer. An initial Asset ID lookup brings those attributes onto the form from the external system, and stores them in the Service Catalog database. When this laptop is referred to in service requests, you use one of the two methods mentioned above to pull current data for Disk Space and Memory from the external system onto the service form. (In other words, Disk Space and Memory are never stored in Service Catalog.)
- 3 Same as #1 or #2, but enhance the service item data with business-contextual data.** This is really just a variation on the two approaches listed above. The business data gathered during the processes of requesting services and fulfilling those requests is captured and written as service item attributes in Service Catalog. This data is never stored in the external system.
- 4 Store all attributes in Service Catalog, the single “system of record”.** An initial load (via Import) is done to populate Service Catalog with all laptops. From then on, everything affecting laptops is handled via Service Catalog service requests. *Now* the question becomes updating the external system. You could do this either manually or via a Service Link agent.
- 5 Store all attributes in Service Catalog; changes may occur both in Service Catalog and in the external system.** As in #4 above, but there may be events occurring in the external system that need to be reflected in Service Catalog. For example, you may not want to consult the external system to see the list of laptops currently in inventory (that is, not assigned to anyone); maybe you want all those stored in Service Catalog for easier data retrieval. In this case, you could use the Import API or Service Item Listener Adapter to handle updates from the external system to Service Catalog.