Red Hat CloudForms 4.6

General Configuration

A guide to configuring and tuning Red Hat CloudForms

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Abstract

This guide provides instructions on configuring CloudForms Management Engine, including appliance settings, access control, web console appearance, and registration. Information and procedures in this book are relevant to CloudForms Management Engine administrators. This guide is for the Red Hat CloudForms 4.6 and Red Hat CloudForms Management Engine version 5.9. If you have a suggestion for improving this guide or have found an error, please submit a Bugzilla report at http://bugzilla.redhat.com against Red Hat CloudForms Management Engine for the Documentation component. Please provide specific details, such as the section number, guide name, and CloudForms version so we can easily locate the content.

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CHAPTER 1. SETTINGS OVERVIEW

The settings menu is located at the top right of the Red Hat CloudForms user interface.

To view or modify global settings for your appliance, click your username to open the settings dropdown menu, and click **My Settings** to modify. The availability of each menu item depends on the role assigned to your user account. For more information on roles, see Section 4.2.9, “Roles”.

The following is a list of the menu items available from the settings menu:

- **My Settings**
  This menu is available to all Red Hat CloudForms users. The settings in this menu control how elements in the user interface are displayed, time profiles, and tags for the currently logged-in individual user.

- **Tasks**
  This menu allows you to view virtual machine SmartState Analysis tasks that can be tracked through the console. The status of each task is displayed, including time started, time ended, what part of the task is currently running, and any errors encountered.

- **Configuration**
  This menu allows you to specify enterprise, region, zone, and server settings for your Red Hat CloudForms infrastructure. Diagnostics such as logs and the status of processes are also shown here. The **Configuration** menu is available only to super administrators and administrators.

CHAPTER 2. MY SETTINGS

The options under the **My Settings** menu allow you to configure options specific to the user account with which you log in to the Red Hat CloudForms user interface, such as the default view displayed on login, and personal tags. You can also configure the color scheme, button options, and external RSS feeds on the main dashboard.

2.1. VISUAL SETTINGS

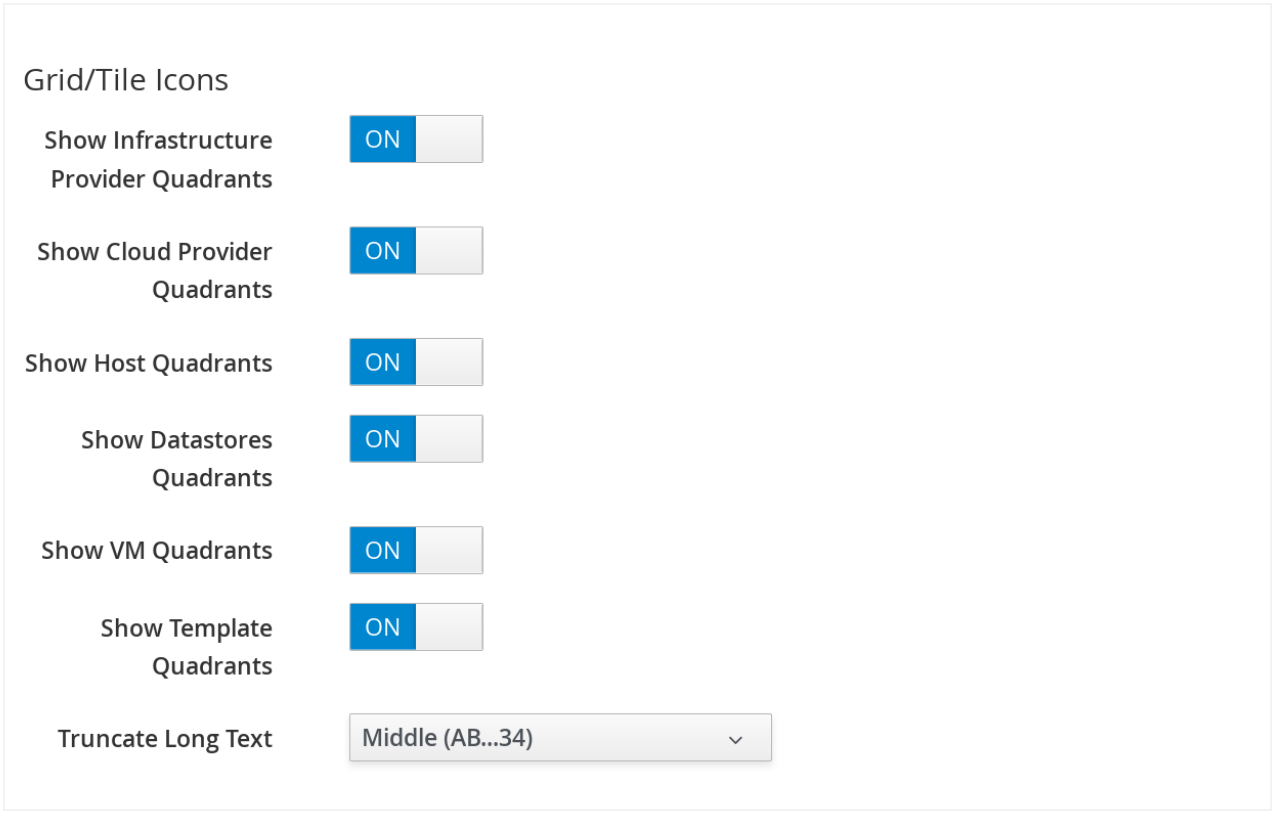
The options under the **Visual** menu allow you to configure how user interface elements are displayed in the web user interface. For all options, click **Save** to update the settings, or click **Reset** to undo any unsaved changes that have been made on the current screen.

2.1.1. Grid and Tile Icons

This group of settings is used to control the view of your virtual thumbnails. Each thumbnail can be viewed as a single icon or as an icon with four quadrants. Use the quadrant view to see a component's properties at a glance.

Use the following procedure to change grid and tile icons:

1. From the settings menu, navigate to **My Settings**, then click on the **Visual** tab.
2. In **Grid/Tile Icons**, set items to **ON** to display all four quadrants for the item, or **OFF** to display only one icon.
3. Click **Save**.



- Set **Show Infrastructure Provider Quadrants** to **ON** to see the four icons in your provider under **Compute → Infrastructure → Providers**.

- Set **Show Cloud Provider Quadrants** to **ON** to see the four icons in your hosts under **Cloud** → **Providers**.
- Set **Show Host Quadrants** to **ON** to see the four icons in your hosts under **Compute** → **Infrastructure** → **Hosts**.
- Set **Show Datastores Quadrants** to **ON** to see the four icons in your datastores under **Compute** → **Infrastructure** → **Datastores**.
- Set **Show VM Quadrants** to **ON** to see the four icons in your virtual machines under **Compute** → **Infrastructure** → **Virtual Machines**.
- Set **Show Template Quadrants** to **ON** to see the four icons in your templates under **Compute** → **Infrastructure** → **Virtual Machines** → **Templates**.

Set any of the above options to **OFF** to see only one icon instead of four quadrants.

- Use the **Truncate Long Text** list to specify how the names of items are displayed if they are too long to show in full. Select the option based on the pattern shown.

2.1.2. Setting Default Items Per Page

Use the following procedure to set the default number of items to display on each resource page.

1. From the settings menu, navigate to **My Settings**, then click on the **Visual** tab.
2. In the **Default Items Per Page** area, select the default number of items to display for each view from the corresponding drop down list.

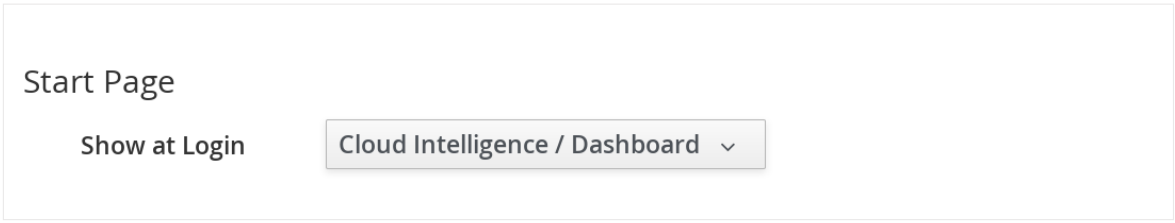
3. Click **Save**.

2.1.3. Setting the Start Page

Use the following procedure to set the default start page after logging in. For example, instead of going to the **Red Hat CloudForms** dashboard, you can set the default start page to see a list of your virtual machines.

1. From the settings menu, navigate to **My Settings**, then click on the **Visual** tab.

2. In the **Start Page** area, select the page to display at login.

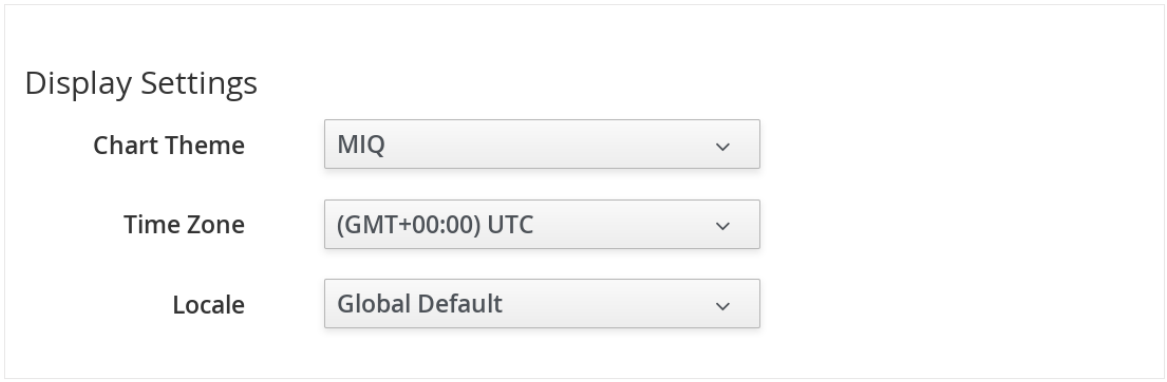


3. Click **Save**.

2.1.4. Setting Display Settings

Use the following procedure to set your own themes, colors, and time zone for the console. These settings are specific to the logged-on user.

1. From the settings menu, navigate to **My Settings**, then click on the **Visual** tab.
2. Make selections from **Display Settings** for the following items:



   a. Use **Chart Theme** to select a group of colors and font sizes specifically for charts.

   b. Use **Time Zone** to select the time zone in which to display the console.

NOTE

In time zones where clocks are set forward for daylight savings time, the time zone correctly displays as EDT (Eastern Daylight Time) in the console. When the clocks are set back, it correctly displays as EST (Eastern Standard Time).

   c. Use **Locale** to select the language in which to display the console.

3. Click **Save**.

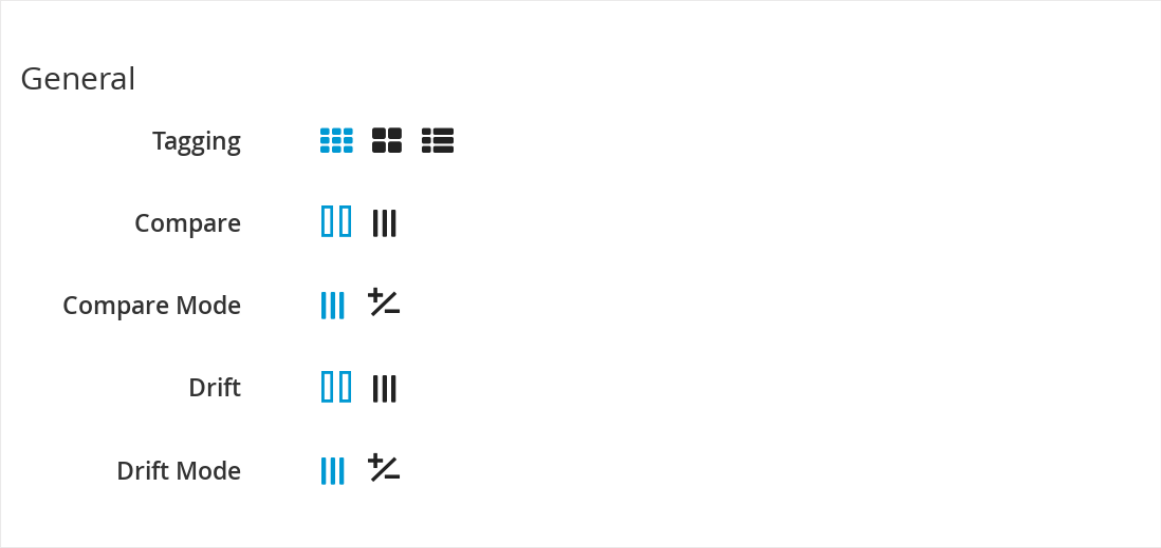
2.2. DEFAULT VIEWS

The options under the **Default View** menu allow you to configure the default layout used to display individual screens in the Red Hat CloudForms user interface. The options you select under this menu specify the default options for each screen, but you can also change the layout for each screen using the layout buttons on each screen.

2.2.1. Setting Default Views for the User Interface

Use the following procedure to set general view options:

1. From the settings menu, navigate to **My Settings**, then click on the **Default Views** tab.
2. In the **General** area, click the appropriate button for the way you want to view each type of screen listed. The selected view shows as a blue icon.



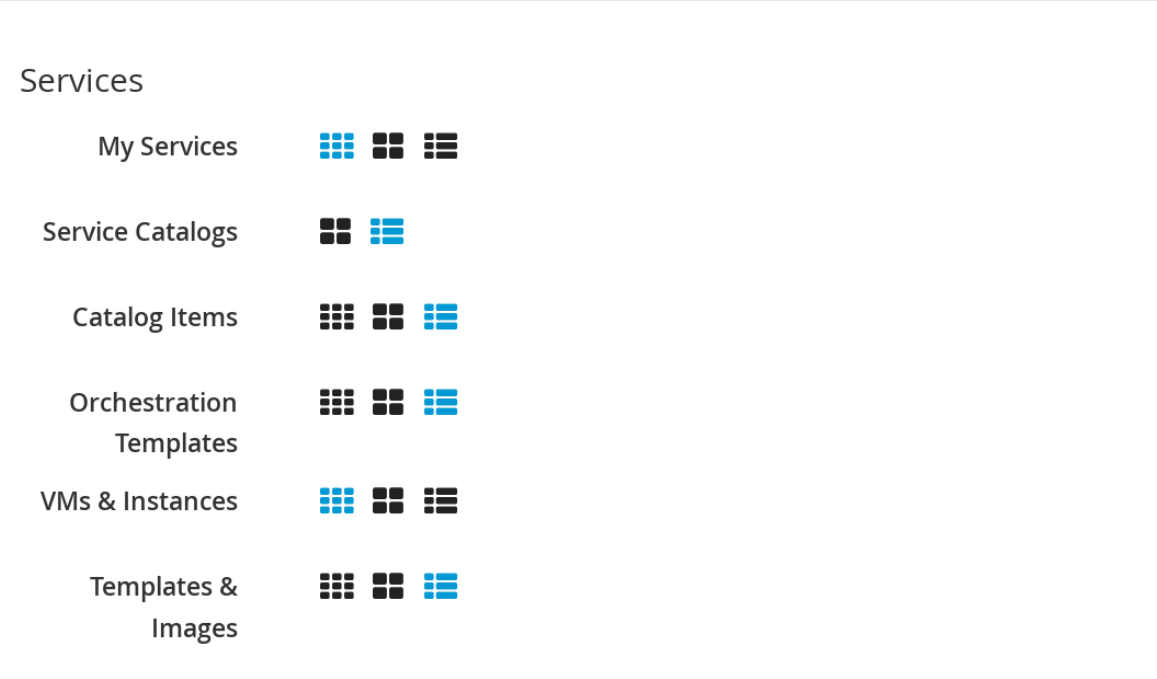
3. Click (**Grid View**) to view virtual thumbnails or icons.
4. Click (**Tile View**) for a view that combines the virtual thumbnail with some text properties that describe the items.
5. Click (**List View**) to view a detailed text listing.
6. Click (**Expanded View**) for an expanded view.
7. Click (**Compressed View**) for a compressed view.
8. Click (**Exists Mode**) to view only whether an attribute exists or not.
9. Click **Save**.

2.2.2. Setting Default Views for Services

Use the following procedure to set default views for services in the **Compute → Services** tab.

1. From the settings menu, navigate to **My Settings**, then click on the **Default Views** tab.

2. In the **Services** area, click the appropriate button for the way you want to view each item.



   - Click (**Grid View**) to view virtual thumbnails or icons.
   - Click (**Tile View**) for a view that combines the virtual thumbnail with some text properties that describe the items.
   - Click (**List View**) to view a text listing.

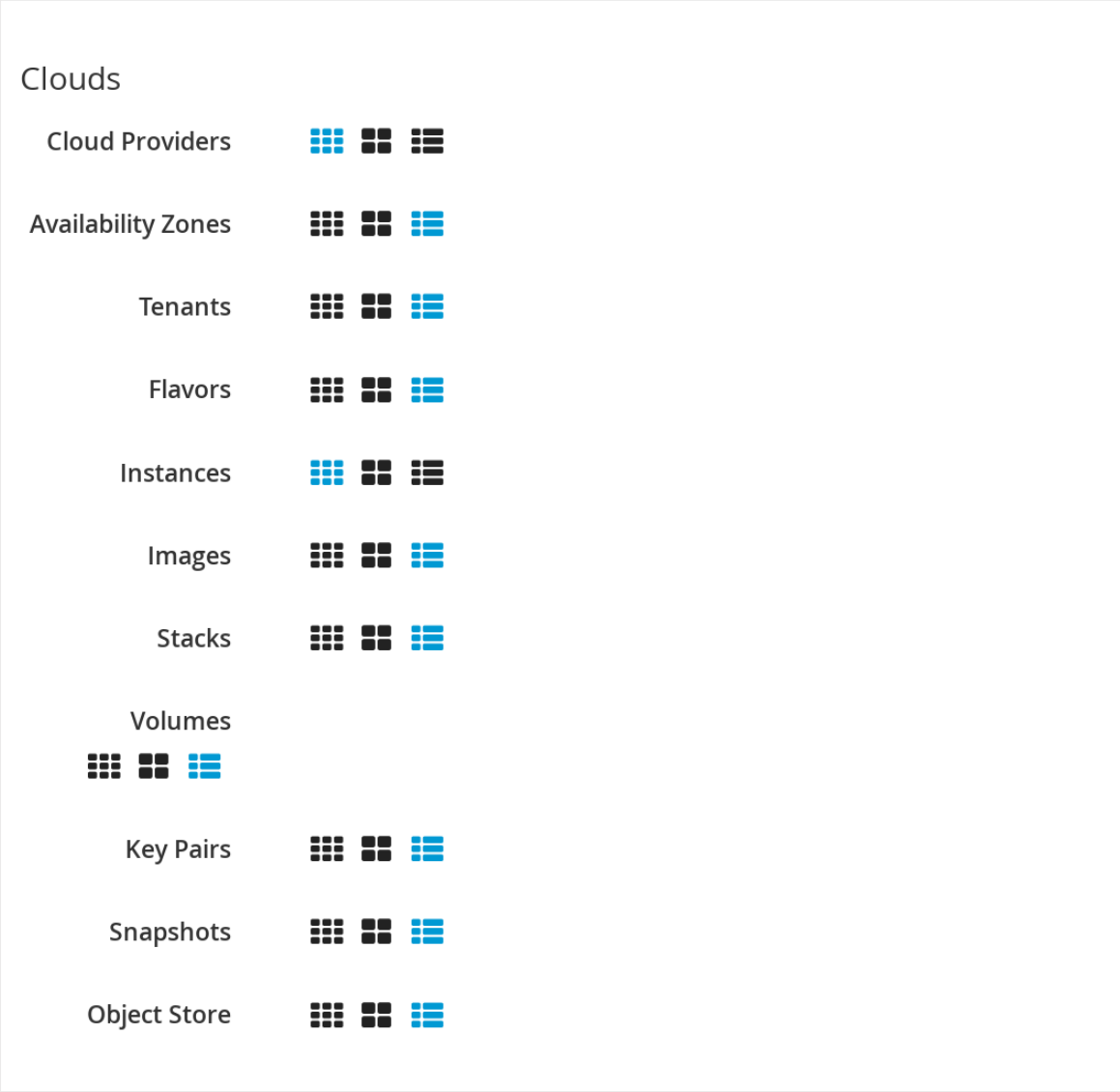
3. Click **Save**.

2.2.3. Setting Default Views for Clouds

Use the following procedure to set default views for clouds in the **Compute → Clouds** tab.

1. From the settings menu, navigate to **My Settings**, then click on the **Default Views** tab.

2. In the **Clouds** area, click the appropriate button for the way you want to view each item.



- Click (**Grid View**) to view virtual thumbnails or icons.
- Click (**Tile View**) for a view that combines the virtual thumbnail with some text properties that describe the items.
- Click (**List View**) to view a detailed text listing.

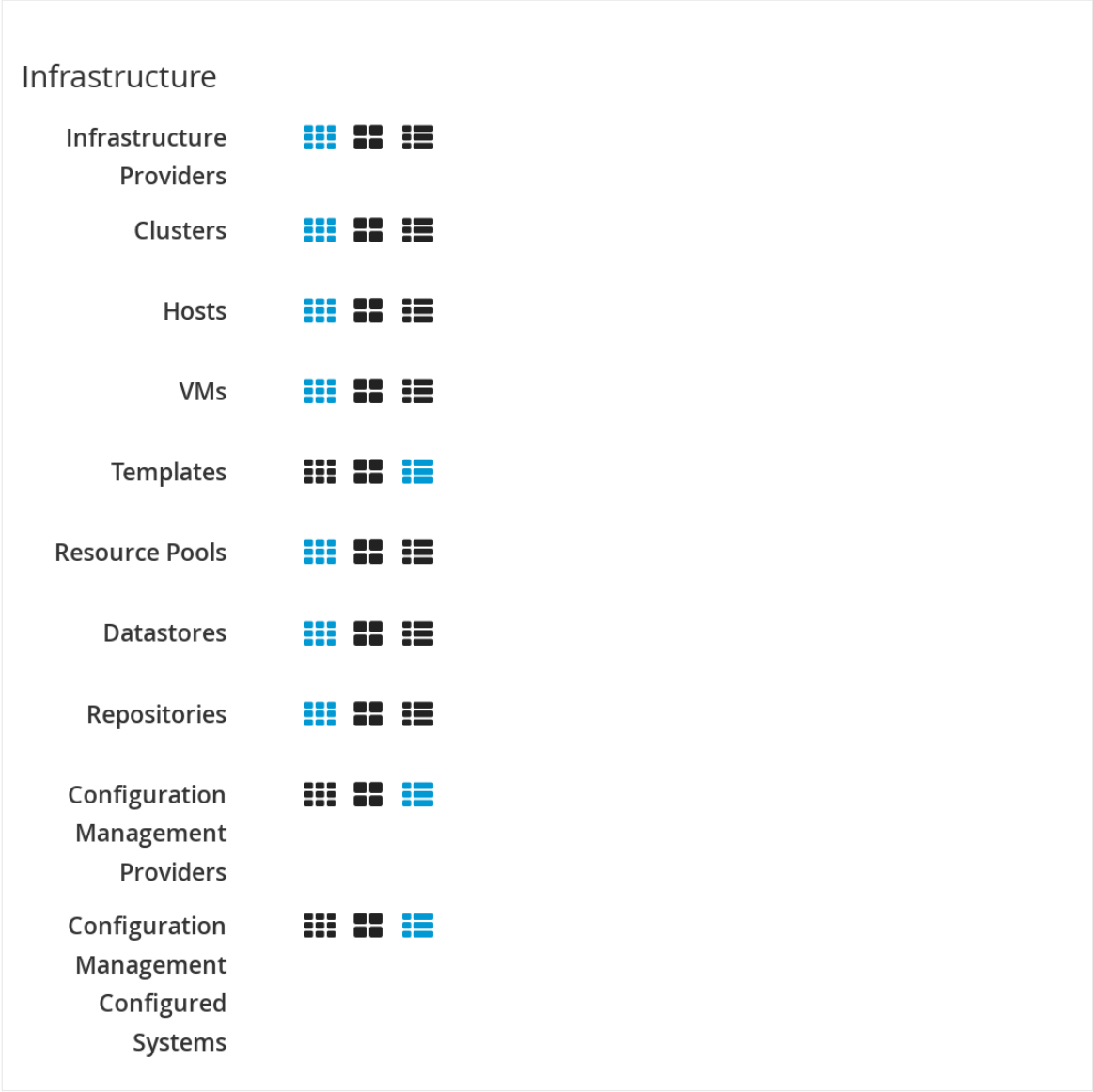
3. Click **Save**.

2.2.4. Setting Default Views for Infrastructure Components

Use the following procedure to set default views for infrastructure components in the **Compute → Infrastructure** tab.

1. From the settings menu, navigate to **My Settings**, then click on the **Default Views** tab.

2. In the **Infrastructure** area, click the appropriate button for the way you want to view each item.



- Click (**Grid View**) to view virtual thumbnails or icons.
- Click (**Tile View**) for a view that combines the virtual thumbnail with some text properties that describe the items.
- Click (**List View**) to view a detailed text listing.

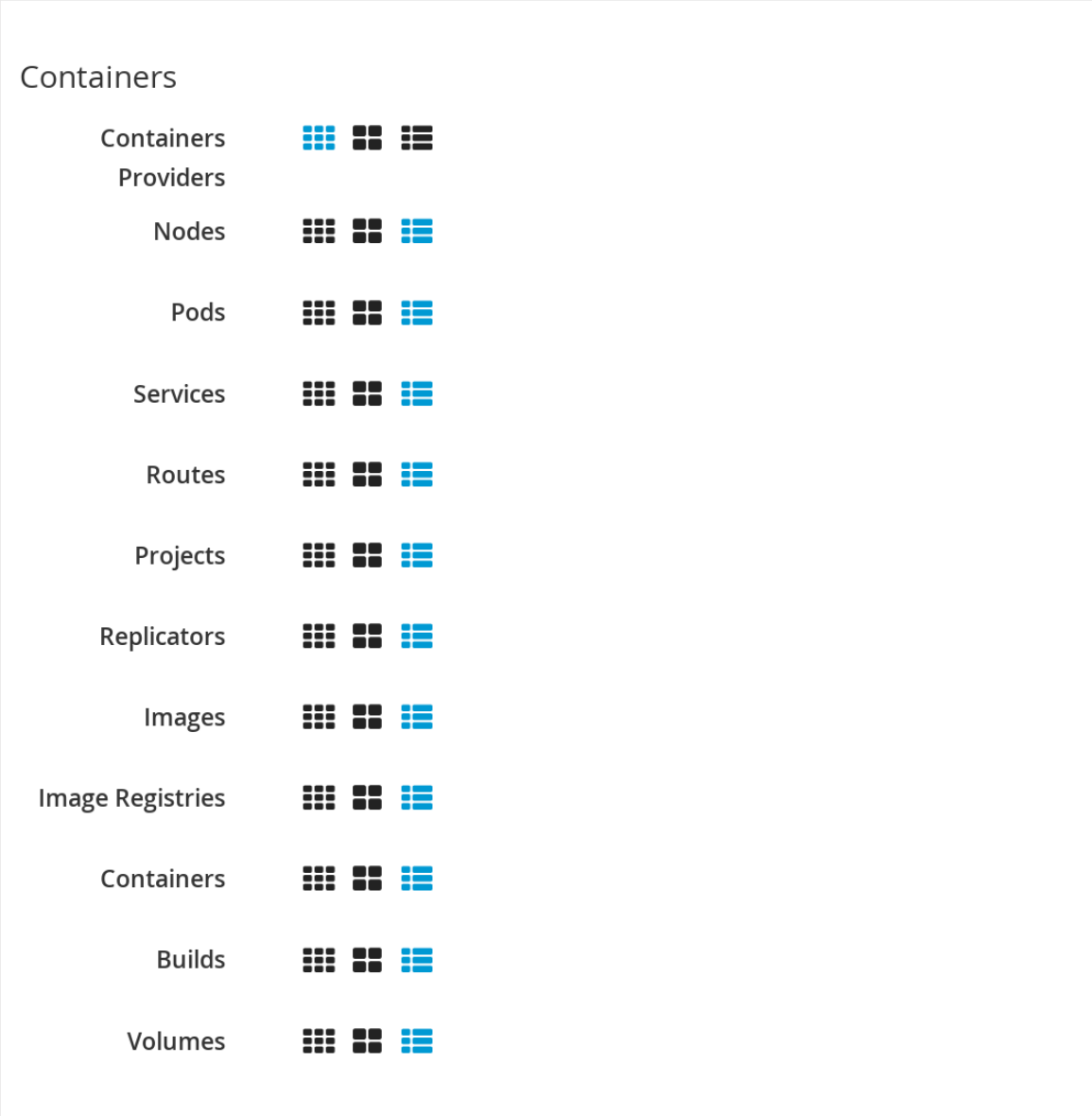
3. Click **Save**.

2.2.5. Setting Default Views for Containers

Use the following procedure to set default views for containers in the **Compute → Containers** tab.

1. From the settings menu, navigate to **My Settings**, then click on the **Default Views** tab.

2. In the **Containers** area, click the appropriate button for the way you want to view each item.



- Click (**Grid View**) to view virtual thumbnails or icons.
- Click (**Tile View**) for a view that combines the virtual thumbnail with some text properties that describe the items.
- Click (**List View**) to view a text listing.

3. Click **Save**.

2.3. DEFAULT FILTERS

The options the **Default Filters** menu allow you to configure the default filters displayed for your hosts, virtual machines, and templates. These settings are available to all users.

2.3.1. Setting Default Filters for Cloud

To set default filters for cloud components:

1. From the settings menu, navigate to **My Settings**, then click on the **Default Filters** tab.

2. From the **Cloud** folder, check the boxes for the default filters that you want available. Items that have changed show in blue text.

3. Click **Save**.

2.3.2. Setting Default Filters for Containers

To set default filters for containers:

1. From the settings menu, navigate to **My Settings**, then click on the **Default Filters** tab.

2. From the **Containers** folder, check the boxes for the default filters that you want available. Items that have changed show in blue text.

3. Click **Save**.

2.3.3. Setting Default Filters for Infrastructure

To set default filters for infrastructure components:

1. From the settings menu, navigate to **My Settings**, then click on the **Default Filters** tab.

2. In the **Infrastructure** folder, select the default filters that you want available. Items that have changed show in blue text.

3. Click **Save**.

2.3.4. Setting Default Filters for Services

To Set Default Filters for Services:

1. From the settings menu, navigate to **My Settings**, then click on the **Default Filters** tab.

2. In the **Services** folder, select the default filters that you want available. Items that have changed show in blue text.

3. Click **Save**.

2.4. TIME PROFILES

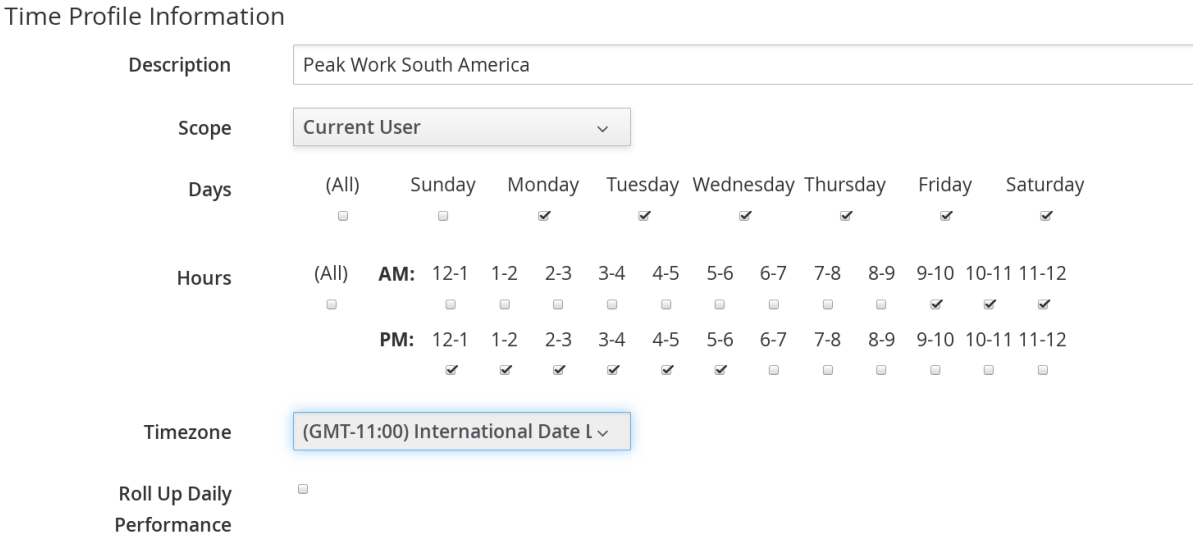
The options under the **Time profiles** menu allow you to specify the hours for which data is displayed when viewing capacity and utilization screens. Time profiles are also used to configure performance and trend reports, and for **Optimize** pages.

2.4.1. Creating a Time Profile

To create a time profile:

1. From the settings menu, navigate to **My Settings**, then click on the **Time Profiles** tab.

2. Click  (**Configuration**), and  (**Add a new Time Profile**).



3. Type a meaningful name in the **Description** field.

4. Select the users who can access the time profile from the **Scope** list:

   - Select **All Users** to create a time profile that is available to all users. Only the super administration and administration roles can create, edit, and delete a global profile.

   - Select **Current User** if this time profile should only be available to the user creating it.

5. Check the **Days** and **Hours** for the time profile.

6. For **Timezone**, you can select a specific time zone or, you can let the user select a time zone when displaying data.

7. If you select a specific time zone, you also have the option to **Roll Up Daily Performance** data. This option is only available to users with the administration or super administration role. Enabling the **Roll Up Daily Performance option** reduces the time required to process daily capacity and utilization reports and to display daily capacity and utilization charts.

8. Click **Add**.

NOTE

The following relationships exist between time zones and performance reports:

- The configured time zone in a performance report is used to select rolled up performance data, regardless of the user's selected time zone.
- If the configured time zone is null, it defaults to UTC time for performance reports.
- If there is no time profile with the report's configured time zone that is also set to roll up capacity and utilization data, the report does not find any records.

For non-performance reports, the user's time zone is used when displaying dates and times in report rows.

2.4.2. Editing a Time Profile

To edit a time profile:

1. From the settings menu, navigate to **My Settings**, then click on the **Time Profiles** tab.
2. Check the time profile you want to edit.
3. Click  (**Configuration**), and  (**Edit selected Time Profile**).
4. Make the required changes.
5. Click **Save**.

2.4.3. Copying a Time Profile

To copy a time profile:

1. From the settings menu, navigate to **My Settings**, then click on the **Time Profiles** tab.
2. Check the time profile you want to copy.
3. Click  (**Configuration**), and  (**Copy selected Time Profile**).
4. Make the required changes.
5. Click **Save**.

2.4.4. Deleting a Time Profile

To delete a time profile:

1. From the settings menu, navigate to **My Settings**, then click on the **Time Profiles** tab.

2. Check the time profile you want to delete.
3. Click  (**Configuration**), and  (**Delete selected Time Profiles**).
4. Click **Save**.

CHAPTER 3. TASKS

The options under the **Tasks** menu allow you to view and control currently running tasks in Red Hat CloudForms. The status of each task is displayed, including time started, time ended, what part of the task is currently running, and any errors encountered.

3.1. MY VM AND CONTAINER ANALYSIS TASKS

The **My VM and Container Analysis Tasks** menu allows you to view all tasks running on virtual machines and containers for the currently logged-in user.

From the **My VM and Container Analysis Tasks** menu, you can:

- See jobs that the logged on user created for the SmartProxy either through a schedule or by manually initiating a SmartState Analysis of a virtual machine or container.
- See if a job completed successfully, resulted in an error, or is running.
- See the reason for an error.
- Filter the tasks by status and state.
- View the owner or host of the virtual machine or container referenced.
- Delete a task either explicitly or older than another task.

3.1.1. Filtering the VM and Container Analysis Task List

This procedure describes how to filter the virtual machine and container analysis task list. You can filter the task list by zone, time period, task status, and task state.

To filter the virtual machine and container analysis task list:

1. From the settings menu, select **Tasks**.
2. Click **My VM and Container Analysis Tasks**.
3. From the **Zone** list, select a specific zone, or select **<All Zones>**.
4. From the **24 Hour Time Period** list, select the period of time to view the tasks.
5. For **Task Status**, select the check boxes next to the status to view.
6. From the **Tasks State** list, select the state to view.
7. Click **Apply**.

3.1.2. Deleting a Task from the VM and Container Analysis Task List

To delete a task from the list of virtual machine and container analysis tasks:

1. From the settings menu, select **Tasks**.
2. Click **My VM and Container Analysis Tasks**.

3. Select the tasks to delete. From the **Delete** menu:
    a. Click **Delete** to delete the selected tasks.
    b. Click **Delete Older** to delete the tasks older than the selected tasks.
    c. Click **Delete All** to delete all tasks.
4. Click **OK**.

3.2. MY OTHER UI TASKS

The **My Other UI Tasks** menu allows you to view all tasks running in the user interface for the currently logged-in user.

3.2.1. Filtering the My Other UI Tasks List

This procedure describes how to filter the user interface analysis task list. You can filter the task list by time period, task status, and task state.

To filter the other user interface task list:

1. From the settings menu, select **Tasks**.
2. Click **My Other UI Tasks**.
3. From the **24 Hour Time Period** list, select the period of time to view the tasks.
4. For **Task Status**, select the check boxes next to the status to view.
5. From the **Tasks State** list, select the state to view.
6. Click **Apply**.

3.2.2. Deleting a My Other UI Task

To delete a task from the list of other user interface tasks:

1. From the settings menu, select **Tasks**.
2. Click **My Other UI Tasks**.
3. Select the tasks to delete. From the **Delete** menu:
    a. Click **Delete** to delete the selected tasks.
    b. Click **Delete Older** to delete the tasks older than the selected tasks.
    c. Click **Delete All** to delete all tasks.
4. Click **OK**.

3.3. ALL VM AND CONTAINER ANALYSIS TASKS

The **All VM and Container Analysis Tasks** menu allows you to view all tasks running on virtual machines and containers for all users.

From the **All VM and Container Analysis Tasks** menu, you can:

- See jobs that all users have created for the SmartProxy either through a schedule or by manually initiating a SmartState Analysis of a virtual machine or container.
- See if a job completed successfully, resulted in an error, or is running.
- See the reason for an error.
- Filter the tasks by status and state.
- View the owner or host of the virtual machine or container referenced.
- Delete a task either explicitly or older than another task.

3.3.1. Filtering the VM and Container Analysis Task List

This procedure describes how to filter virtual machine analysis task lists. You can filter the task list by zone, time period, task status, and task state.

To filter the virtual machine and container analysis task list:

1. From the settings menu, select **Tasks**.
2. Click **All VM and Container Analysis Tasks**.
3. From the **Zone** list, select a specific zone, or select **<All Zones>**.
4. From the **24 Hour Time Period** list, select the period of time to view the tasks.
5. For **Task Status**, select the check boxes next to the status to view.
6. From the **Tasks State** list, select the state to view.
7. Click **Apply**.

3.3.2. Deleting a VM and Container Analysis Task

To delete a task from the list of all virtual machine and container analysis tasks:

1. From the settings menu, select **Tasks**.
2. Click **All VM and Container Analysis Tasks**.
3. Select the tasks to delete. From the **Delete** menu:
   a. Click **Delete** to delete the selected tasks.
   b. Click **Delete Older** to delete the tasks older than the selected tasks.
   c. Click **Delete All** to delete all tasks.
4. Click **OK**.

3.4. ALL OTHER TASKS

The **All Other Tasks** menu allows you to view all tasks for all users. This menu is only accessible when you are logged in as the **admin** user.

3.4.1. Filtering the All Other Tasks List

This procedure describes how to filter the list of all other tasks. You can filter the task list by time period, task status, and task state.

To filter the all other tasks list:

1. From the settings menu, select **Tasks**.
2. Click **All Other Tasks**.
3. From the **24 Hour Time Period** list, select the period of time to view the tasks.
4. For **Task Status**, select the check boxes next to the status to view.
5. From the **Tasks State** list, select the state to view.
6. Click **Apply**.

3.4.2. Deleting a Task from the All Other Tasks List

To delete a task from the list of all other tasks:

1. From the settings menu, select **Tasks**.
2. Click **All Other Tasks**.
3. Select the tasks to delete. From the **Delete** menu:
    a. Click **Delete** to delete the selected tasks.
    b. Click **Delete Older** to delete the tasks older than the selected tasks.
    c. Click **Delete All** to delete all tasks.
4. Click **OK**.

CHAPTER 4. CONFIGURATION

The options under the **Configuration** menu allow you to configure global options for your Red Hat CloudForms environment, view diagnostic information, and view analytics on the servers in the environment. The menu displays the Red Hat CloudForms environment at the enterprise, zone, and server levels.

There are four main areas:

- **Settings**
  This menu allows you to configure global settings for your Red Hat CloudForms infrastructure. You can also create analysis profiles and schedules for these profiles.

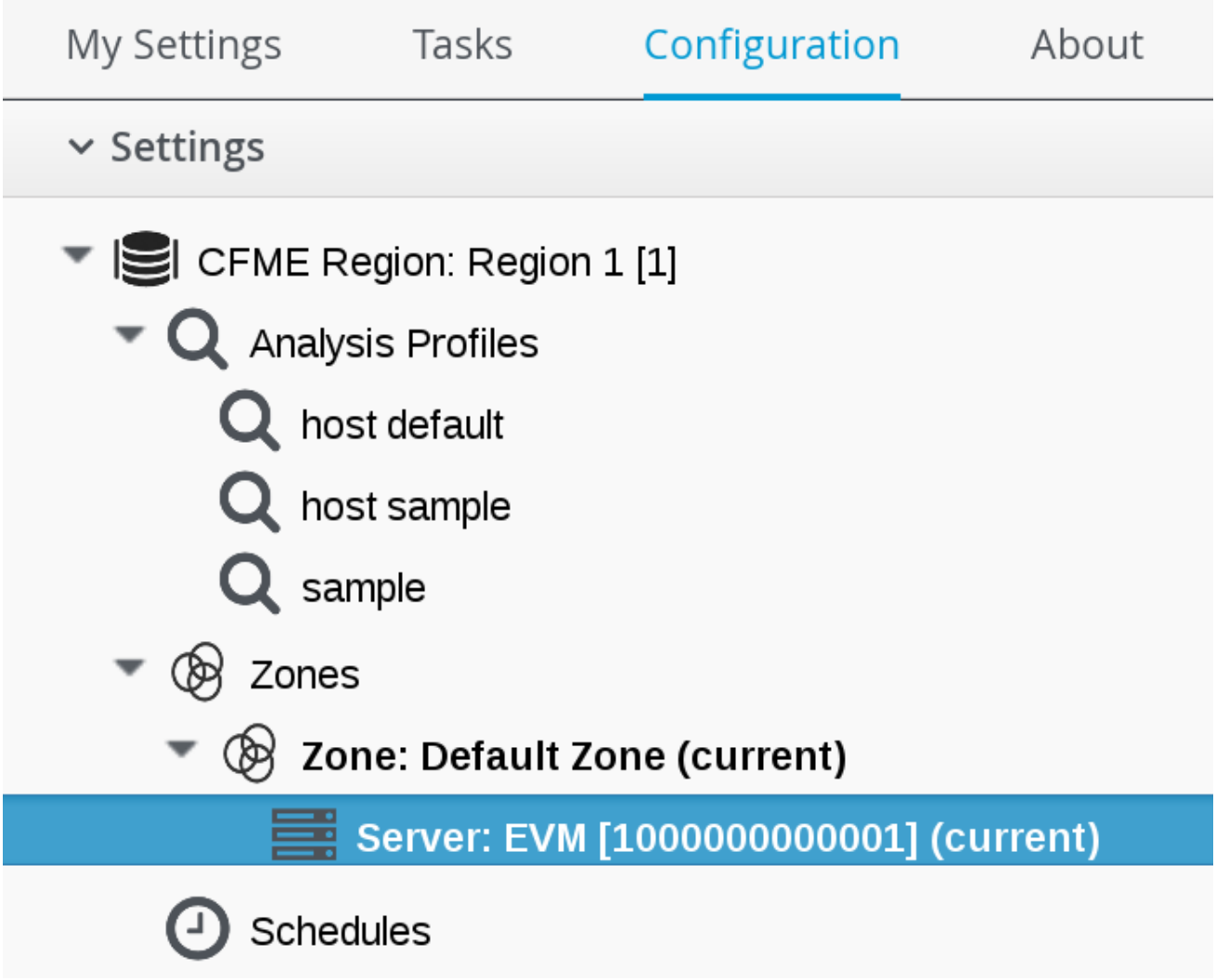
- **Access Control**
  This menu contains options for configuring users, groups, roles, and tenants.

- **Diagnostics**
  This menu displays the status of your servers and their roles and provides access to logs.

- **Database**
  specify the location of your Virtual Machine Database (VMDB) and its login credentials.

4.1. SETTINGS

The options under the **Settings** area provide a hierarchical view of options that allow you to configure global options for the infrastructure of your Red Hat CloudForms environment. At the top level, you have **Settings** including users, LDAP Groups, account roles, capacity and utilization collection, tag categories, values, and imports, custom variable imports, and license uploads. When you click on **Settings** and expand it, you can configure**Analysis Profiles**, **Zones**, and **Schedules**.



When you go the **Settings** accordion, you are automatically taken to the server list under **Zones**.

4.1.1. Regions

Use **Regions** for centralizing data which is collected from public and private virtualization environments. A region is ultimately represented as a single database for the VMDB. Regions are particularly useful when multiple geographical locations need to be managed as they enable all the data collection to happen at each particular location and avoid data collection traffic across slow links between networks.

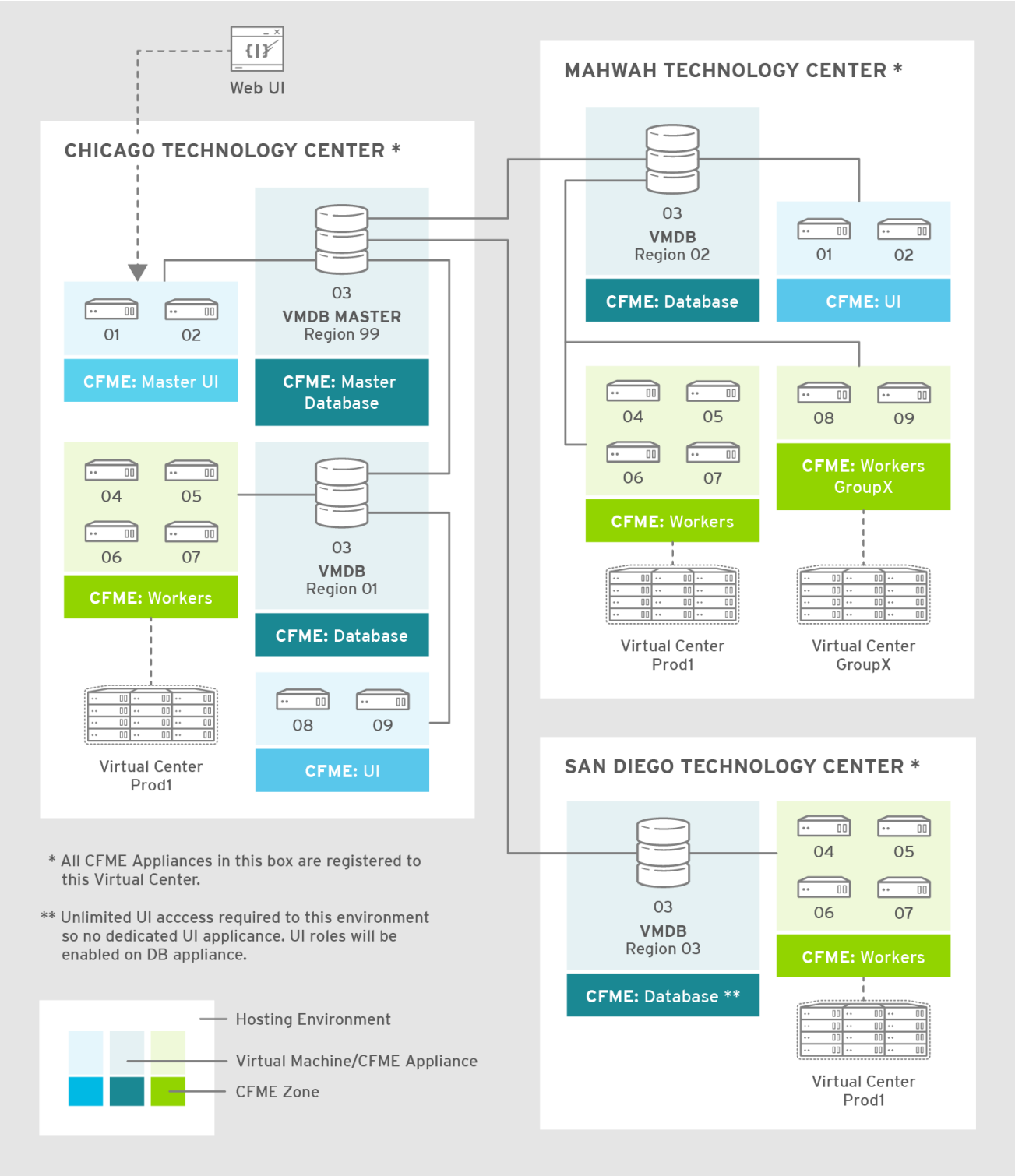
When multiple regions are being used, each with their own unique ID, a master region can be created to centralize the data of all the children regions into a single master database. To do this, configure each child region to replicate its data to the master region database (Red Hat recommends use of region 99). This parent and child region is a one-to-many relationship.

Regions can contain multiple zones, which in turn contain appliances. Zones are used for further segregating network traffic along with enabling failover configurations. Each appliance has the capability to be configured for a number of specialized server roles. These roles are limited to the zone containing the appliance they run on.

Only one failover type of each server role can run in a zone. If multiple appliances have the same failover role, the extras are used as backups that activate only if the primary appliance fails. Non-failover server roles can run on multiple appliances simultaneously in a

zone, so resources can be adjusted according to the workload those roles are responsible for.

The following diagram demonstrates an example of the multiple regions working together in a Red Hat CloudForms environment.

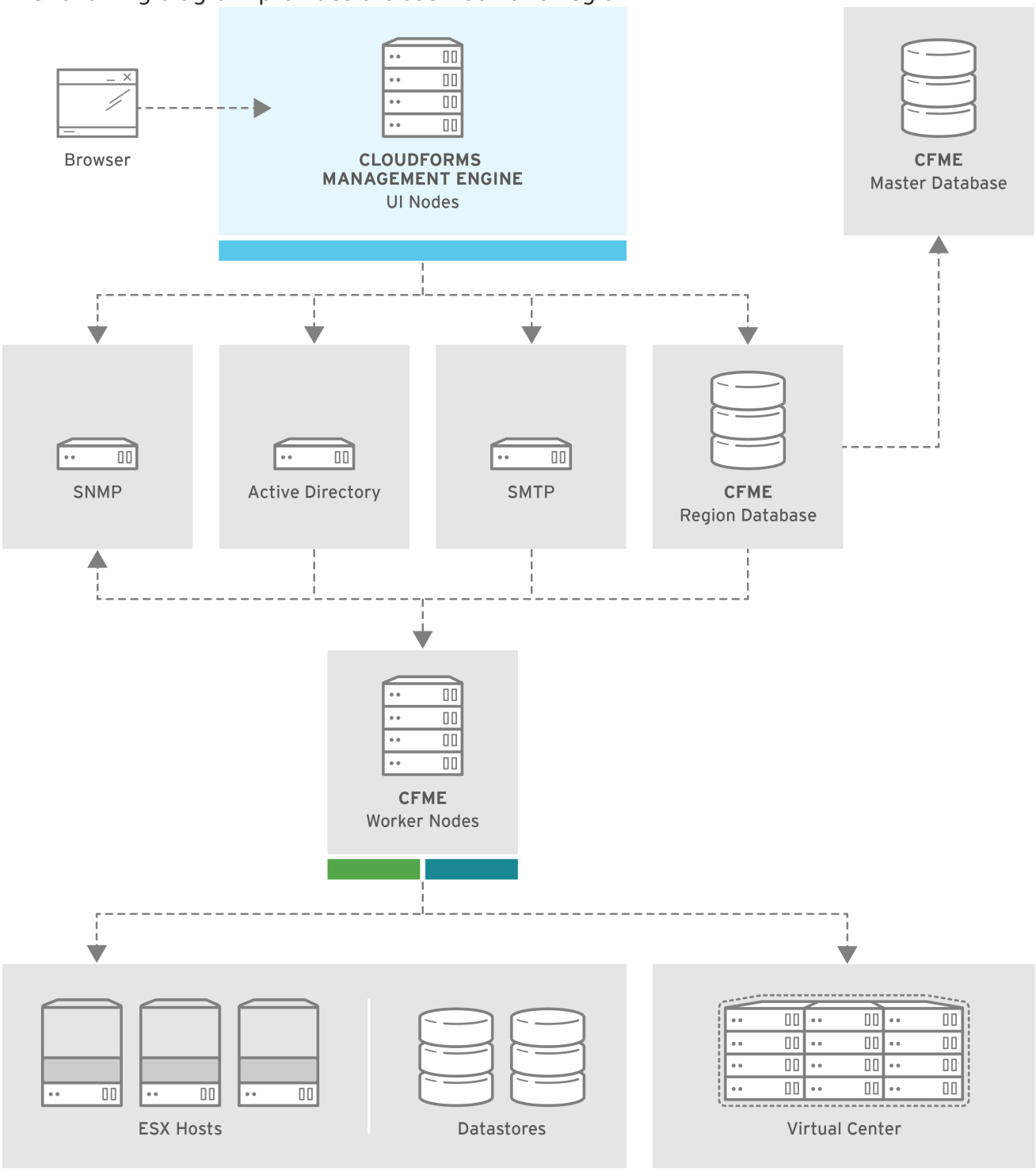


The Master appliance is located in Chicago and contains a master region and a subregion that manages the worker appliances. The Mahwah technology center contains a single subregion that manages two zones. Likewise the San Diego technology center contains a single subregion managing a single zone.

NOTE

- Replicating a parent region to a higher-level parent is not supported.
- Parent regions can be configured after the child regions are online.

The following diagram provides a closer look at a region:



In this region, we have several Red Hat CloudForms appliances acting as UI nodes and worker nodes. These worker nodes execute tasks on the providers in your environment. The Region also uses a region database that reports to a master database on the main Red Hat

CloudForms appliance. All appliances can connect to the authentication services (Active Directory, LDAP, Identity Management), outgoing mail (SMTP), and network services (SNMP).

4.1.1.1. Region Scope

Regions are used to consolidate data from multiple VMDBs to a central database. The database at the top level, the master VMDB, cannot be used for operational tasks such as SmartState Analysis or Capacity and Utilization data collection. It is intended for use as a reporting database that includes all information across multiple subordinate regions. The subordinate regions replicate their information to the master.

NOTE

The subordinate regions are not aware of each other from a database perspective. You cannot see information from one subordinate region in another. The only VMDB with data visibility to all subordinate regions is the top level.

Master Regions Scope

- Reports all information from all subordinate VMDBs reporting up to it.
- Can perform power operations on virtual machines from subordinate regions.
- Controls its own access control list.

Subordinate Regions Scope

- Each subordinate controls its own access control independent of the other regions.
- Can only do work (such as SmartState Analysis and Capacity and Utilization collection) in its own region.
- Has no knowledge of the other regions.
- Replicates its data up to the master region.

4.1.1.2. Region Settings

In the **Region** area, set items that apply to your entire Red Hat CloudForms infrastructure such as users, LDAP Groups, capacity and utilization collection, company tags and tag categories, and licensing. Regions are also used for database replication.

4.1.1.3. Capacity and Utilization Collections

4.1.1.3.1. Capacity and Utilization Collection Settings

Use **C & U Collection Settings** to select specifically which clusters and datastores you want to collect usage data for. By selecting a cluster, you are choosing to collect data for all hosts and virtual machines that are part of that cluster. You must also have a server with the Capacity & Utilization **Coordinator**, **Data Collector**, and **Data Processor** roles enabled as well. See Section **Server Control Settings**.

After a provider has been discovered and its relationships refreshed, view the clusters, hosts, and datastores from the settings menu. Navigate to **Configuration**, then click on the **Settings** → **Region** → **C & U Collection** tab.

4.1.1.3.2. Enabling a Cluster, Host, or Datastore for Capacity and Utilization Collection

To enable a cluster, host, or datastore for Capacity and Utilization Collection:

1. From the settings menu, select **Configuration**, then click on the **Settings** accordion.
2. Select **Region**, then click on the **C & U Collection** tab.
3. In the **Clusters** area, check all clusters and hosts that you want to collect data for.
4. In the **Datastores** area, check all datastores that you want to collect data for.
5. Click **Save**.

NOTE

1. As new clusters, hosts, and datastores are discovered, you will need to come back to this configuration to enable collection of capacity and utilization data unless you have used the **Collect for All** check boxes.
2. **Collect for All Clusters** must be checked to be able to collect capacity and utilization data from cloud providers such as Red Hat OpenStack Platform or Amazon EC2.

4.1.1.4. Tags

4.1.1.4.1. Company Tag Categories and Tags

Red Hat CloudForms allows you to create your own set of tags and tag categories. Use tags to create a customized, searchable index for your resources. Depending on your database type, your tags may be case sensitive. After creating these values, you can apply them to your resources. There are two kinds of tags.

- **Company tags** which you will see under **My Company Tags** for a resource. Create company tags from the settings menu. Navigate to **Configuration**, then click the **Settings** accordion, then **Region** → **My Company Tags**. A selection of company tags is provided to you by default as samples. These can be deleted if you do not need them, but are not recreated by Red Hat CloudForms.
- **System tags** are assigned automatically by Red Hat CloudForms.

4.1.1.4.2. Creating a Tag Category

To create a tag category:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then **Region**, then click on the **My Company Categories** tab.

3. Click **Add** under the **Actions** column to create a new category.
4. In the **Category Information** area:

- Use **Name** to create a short name that refers to category in the VMDB.

NOTE

The **Name** and **Single Value** fields cannot be changed after the category has been added.

- Use **Description** to type a brief explanation of how the category should be used. This shows when you try to add a value to the category.
- Use **Long Description** to type a detailed explanation of the category.
- Set **Show in Console** to **ON** when the category is ready for use in the console. For example, you want to populate values for the category before exposing it to users.
- Set **Single Value** to **ON** for categories that can only have a single value assigned to a resource. For example, a virtual machine can only be assigned to one location, but could belong to more than one department. This cannot be changed after the category is created.
- Set **Capture C & U Data by Tag** to **ON** for the ability to group capacity and utilization data by this tag category. To use this, be sure to assign this tag to all the resources that you want to group by.

5. Click **Add**.

Repeat these steps for each category you need. After you have created the category, you can add values to it.

IMPORTANT

If no values are created for a category, you are unable to assign a value from that category nor be able to filter by that category.

4.1.1.4.3. Deleting a Tag Category

To delete a tag category:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then **Region**, then click on the **My Company Categories** tab.
3. Click **Delete** under the **Actions** column for the category you want to delete.
4. Click **OK** to confirm.

NOTE

When you delete a tag category, the category values are removed, and any tags from the category are unassigned from all resources.

4.1.1.4.4. Creating a Company Tag

To create a company tag:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then **Region**, then click on the **My Company Tags** tab.
3. In the **Choose a Category** area, select a category from the **Category** list.

NOTE

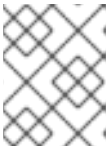
- Some categories only allow one value to be assigned to a resource.
- For some databases such as **PostgreSQL**, tags are case sensitive. For example, filtering by *Linux* in title case give you different results from filtering by *linux* in lower case.

4. Click **Add** under the **Actions** column, and type a **Name** and **Description** for your new value.
5. Click **Add** once again to add the new entry to the table.

4.1.1.4.5. Deleting a Company Tag

To delete a company tag:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then **Region**, then click on the **My Company Tags** tab.
3. Click **Delete** under the **Actions** column next to the tag to delete it.



NOTE

When you delete a tag, the tag is also deleted from any resource to which it was assigned.

4. Click **OK** to confirm.

4.1.1.4.6. Importing Tags for Virtual Machines

You can import a **CSV** file with tag assignments into the VMDB. For the import to be successful, be aware of the following:

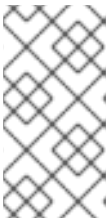
- The file must be in the following format, with one line for each virtual machine. One virtual machine per tag must be on a separate line even if you are assigning multiple tags of the same category.
- You must use the display names of the category and the display name for the tag for the import to work.

```
name,category,entry
evm2,Provisioning Scope,All
evm2,Exclusions,Do not Analyze
evm2,EVM Operations,Analysis Successful
rhel6,Department,Presales
rhel6,Department,Support
```

4.1.1.4.7. Importing Tags for a Virtual Machine from a CSV File

To import tags for a virtual machine from a CSV file:

1. Make sure the **CSV file** is in the required format.
2. From the settings menu, select **Configuration**.
3. Click on the **Settings** accordion, then **Region**, then click on the **Import Tags** tab.
4. Click **Choose file** to go to the location where the file is located.
5. Click **Upload**.



NOTE

If there are any problems with the file, such as an incorrect column name, unknown virtual machine, unknown tag, or multiple values for a tag that should have only one, an error message will appear in the console for those records.

6. Click **Apply**.

4.1.1.4.8. Importing Custom Values for Virtual Machines and Hosts

You can import a **CSV** file with asset tag information into the VMDB for a virtual machine or import custom values for hosts. For the import to be successful, the file must be in the following format, with one line for each virtual machine or host.

- There are two columns.
- The first line of the file must have the column names as shown below.
- The column names are case sensitive.
- Each value must be separated by a comma.

Virtual Machine Import Example

```
name,custom_1
Ecommerce,665432
Customer,883452
SQLSrvr,1090430
Firewall,8230500
```

For virtual machines, the value for custom_1 will show in the **VM Summary** page as the **Custom Identifier** page as the **Custom Identifier** in the **Properties** area. All of the custom values will show in the **Custom Fields** area.

Host Import Example

```
hostname,custom_1,custom_2
esx303.galaxy.local,15557814,19948399
esxd1.galaxy.local,10885574,16416993
esxd2.galaxy.local,16199125,16569419
```

For hosts, the value for custom_1 will show in the **Host Summary** page as the **Custom Identifier** in the **Properties** area. All of the custom values will show in the **Custom Fields** area.

4.1.1.4.9. Importing Asset Tags for a Virtual Machine from a CSV File

To import asset tags for a virtual machine from a CSV file

1. Make sure the **CSV file** is in the required format.
2. From the settings menu, select **Configuration**.
3. Click on the **Settings** accordion, then **Region**, then click on the **Import** tab.
4. Select the type of custom variable you want to import, either **Host** or **VM**.
5. Click **Choose file** to go to the location where the custom variable file is located.
6. Click **Upload**.

NOTE

If there are any problems with the file, such as an incorrect column name, unknown virtual machine or host, a message appears.

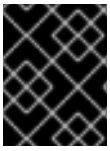
7. Click **Apply**.

4.1.1.5. Registering Red Hat CloudForms

You can register appliances, edit customer information, and apply CloudForms updates from the **Red Hat Updates** tab, accessible from the settings menu, and navigating to **Configuration → Region** in the user interface. You can register your appliance to either Red Hat Content Delivery Network (CDN) or to a Red Hat Satellite server, which assign the necessary update packages to the Red Hat CloudForms server. The subscription management service you register with will provide your systems with updates and allow additional management.

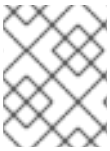
The following tools are used during the update process:

- **`Yum`** provides package installation, updates, and dependency checking.
- **`Red Hat Subscription Manager`** manages subscriptions and entitlements.
- **`Red Hat Satellite Server`** provides local system registration and updates from inside the customer's firewall.



IMPORTANT

The update worker synchronizes the VMDB with the status of available Red Hat CloudForms content every 12 hours.



NOTE

Servers with the **`RHN Mirror`** role also act as a repository for other appliances to pull Red Hat CloudForms package updates.

4.1.1.5.1. Registering Appliances

Before you can access and apply package updates, you must register and subscribe the Red Hat CloudForms appliance to either Red Hat Content Delivery Network (CDN) or to a Red Hat Satellite server.

You need the following to register your appliance:

- Your Red Hat account login or Red Hat Network Satellite login
- A Red Hat subscription that covers your product

To register your appliance with Red Hat Subscription Management or Red Hat Satellite 6, first configure the region with your registration details. These settings will apply to all appliances in this region.

To configure registration for a region:

1. Log in to the appliance as the **`admin`** user.
2. From the settings menu, select **Configuration**.
3. Select **Region** in the accordion menu and click the**Red Hat Updates** tab.
4. Click **Edit Registration**.
5. Configure registration details for the Red Hat CloudForms appliance using one of two available options:
    a. To register with Red Hat Subscription Management:

i. In **Register to**, select **Red Hat Subscription Management**.

ii. Enter the **Red Hat Subscription Management Address**. The default is **`subscription.rhn.redhat.com`**.

iii. Enter the **Repository Name(s)**. The default is **`cf-me-5.8-for-rhel-7-rpms rhel-server-rhscl-7-rpms`**, which are the Red Hat CloudForms repository and the Red Hat Software Collections repository.

iv. To use a HTTP proxy, select **Use HTTP Proxy** and enter your proxy details.

v. Enter your Red Hat account information and click **Validate**.

vi. After your credentials are validated, click **Save**.

b. To register with Red Hat Satellite 6:

i. In **Register to**, select **Red Hat Satellite 6**.

ii. Enter the **Red Hat Satellite 6 Address**. The default is **`subscription.rhn.redhat.com`**.

iii. Enter the **Repository Name(s)**. The default is **`cf-me-5.8-for-rhel-7-rpms rhel-server-rhscl-7-rpms`**, which are the Red Hat CloudForms repository and the Red Hat Software Collections repository.

iv. To use a HTTP proxy, select **Use HTTP Proxy** and enter your proxy details.

v. Enter your Red Hat Satellite account information and click **Validate**.

vi. After your credentials are validated, click **Save**.

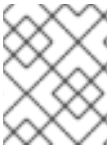
Your appliance now appears in the **Appliance Updates** list as **`Not registered`**.

To register your appliance:

1. Select the appliance from the **Appliance Updates** list.
2. Click **Register** to subscribe the appliance and attach subscriptions.

Registering and attaching subscriptions takes a few minutes. The subscription process is complete when the appliance reports that it is **`Subscribed`** under **Update Status**, and **`Registered`** under **Last Message**.

You can now apply updates to your appliance.



NOTE

To update your appliances, see Updating Red Hat CloudForms in *Migrating to Red Hat CloudForms 4.6*.

4.1.1.5.2. Subscription Management for Virtual Environments

Customers can license Red Hat CloudForms for a limited set of providers. This ability is enabled by providing entitlement certificates that describe the features to be enabled. Red Hat CloudForms can be shipped as a bundled product with other Red Hat products like Red

Hat OpenStack Platform and Red Hat OpenShift, providing advanced management capabilities to these products.

Entitlements provides the following enhancements:

- Ability to enable or disable providers based upon a certificate.
- Active subscription with Red Hat Cloud Data Network for delivery to Red Hat CloudForms.
- Ability to remain in its own Red Hat CloudForms channel.
- Ability to add providers even if no certificate is found.
- In the presence of a certificate, providers are limited as per SKU, the certificate is supporting.
- Ability to support the provider to SKU mapping.
- Providers remain fully functional even after adding or removing SKU associated with certificates.

4.1.1.6. Customizing the Help Menu

Red Hat CloudForms allows administrators to customize the help menu. Use this feature to define menu labels, URLs and how each window opens for users.

NOTE

Any change to the help menu will take effect upon a full page reload.

Customize the help menu using the following steps:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then **Region**.
3. Click on the **Help Menu** tab.
4. Provide custom **Menu item labels** and an associated **URL** for each. Define how each window should open by selecting from the options in the **Open in** menu.
5. Click **Submit**.

4.1.2. Profiles

4.1.2.1. Creating an Analysis Profile

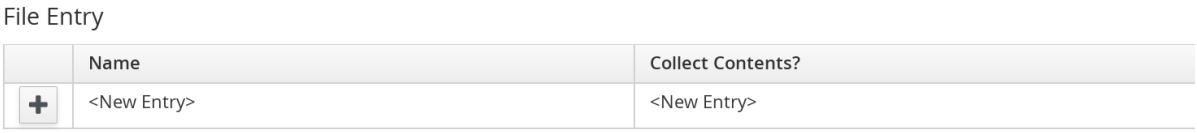
You can create an analysis profile by referring to the sample profiles provided in the console. You can copy the sample profile or create a new one.

4.1.2.2. Creating a Host Analysis Profile

To create a host analysis profile:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then click **Analysis Profiles**.
3. Click (**Configuration**), and (**Add Host Analysis Profile**).
4. In the **Basic Information** area, type in a **Name** and **Description** for the analysis profile.

5. Click **File** to collect information about a file or group of files.
6. From the **File Entry** area, click (**Click to add a new entry**) to add a file or group of files.



   - Check **Collect Contents** to not only check for existence, but also gather the contents of the file. If you do this, then you can use the contents to create policies in Red Hat CloudForms Control.

7. Click **Event Log** to specify event log entries to collect.
8. From the **Event Log Entry** area, click (**Click to add a new entry**) to add a type of event log entry. Type in a **Name**. You can type in a specific message to find in **Filter Message**. In **Level**, set the value for the level of the entry and above. Specify the **Source** for the entry. Finally, set the # number of days that you want to collect event log entries for. If you set this to 0, it will go as far back as there is data available.

9. Click **Add**.

4.1.2.3. Creating a Virtual Machine Analysis Profile

To create a virtual machine analysis profile:

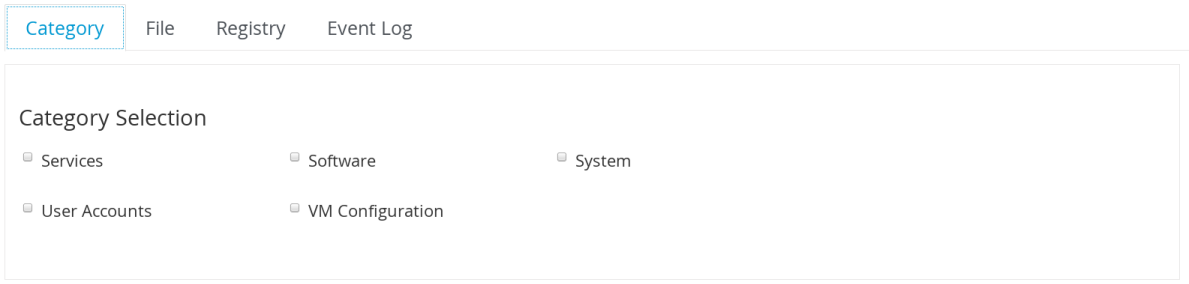
1. From the settings menu, select **Configuration**.

2. Click on the **Settings** accordion, then click **Analysis Profiles**.

3. Click (**Configuration**), and (**Add VM Analysis Profile**).

4. In the **Basic Information** area, type in a **Name** and **Description** for the analysis profile.

5. You begin in the **Category** tab. From the **Category Selection** area, check the categories you want to collect information for. This is available for virtual machine profiles only.



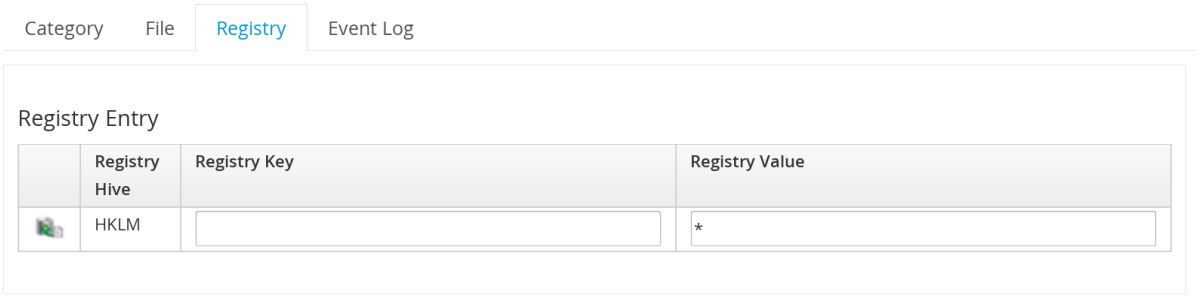
6. Click the **File** tab to collect information about a file or group of files.

7. From the **File Entry** area, click (**Add this entry**) to add a file or group of files, then type a name. For virtual machines, specify the file to check for. Check the box under **Collect Contents** if you want to collect the file contents as well. The files can be no larger than 1 MB.

8. Click the **Registry** tab to collect information on a registry key.

9. From the **Registry Entry** area, type your **Registry Key** and **Registry Value**. To evaluate whether a registry key exists or does not exist on a virtual machine, without providing a value, type * in the **Registry Value** field. Then, you do not need

to know the registry value to collect the keys. This is available for virtual machine profiles only.



10. Click **Event Log** to specify event log entries to collect.

11. From the **Event Log Entry** area, complete the fields to add a type of event log entry. You can type in a specific message to find in **Filter Message**. In **Level**, set the value for the level of the entry and above. Specify the **Source for the entry**. Finally, set the # (number) of days that you want to collect event log entries for. If you set this to 0, it will go as far back as there is data available.

12. Click **Add**.

4.1.2.4. Editing an Analysis Profile

To edit an analysis profile:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then click **Analysis Profiles**.
3. Check the analysis profile you want to edit.
4. Click  (**Edit the selected Analysis Profiles**).
5. Make any changes.
6. Click **Save**.

The changes are added to the analysis profile. The virtual machines or hosts must be re-analyzed to collect the new or modified information.

4.1.2.5. Copying an Analysis Profile

To copy an analysis profile:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then click **Analysis Profiles**.

3. Check the analysis profile you want to copy.
4. Click (**Copy the selected Analysis Profiles**).
5. Type a new **Name** and **Description**.
6. Make required changes.
7. Click **Add**.

4.1.2.6. Setting a Default Analysis Profile

If you want to set an analysis profile to be used for all virtual machines, you can create a default profile.

To create a default analysis profile:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then click **Analysis Profiles**.
3. Click on the analysis profile you want to set as the default.
4. Click (**Edit the selected Analysis Profile**).
5. For a virtual machine profile, enter **`default`** in lower case in **Name**. For a host profile, enter host default.

6. Click **Save**.

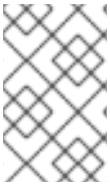
4.1.3. Zones

You can organize your Red Hat CloudForms Infrastructure into zones to configure failover and isolate traffic. A provider that is discovered by a server in a specific zone gets monitored and managed in that zone. All jobs, such as a SmartState Analysis or VM power operation, dispatched by a server in a specific zone can get processed by any Red Hat CloudForms appliance assigned to that same zone.

Zones can be created based on your own environment. You can make zones based on geographic location, network location, or function. When first started, a new server is put into the default zone.

Suppose you have four Red Hat CloudForms appliances with two in the East zone, appliances A and B, and two in the West zone, appliances C and D. VC East is discovered by

one of the Red Hat CloudForms appliances in the Red Hat CloudForms Eastern zone. If Appliance A dispatches a job of analyzing twenty virtual machines, this job can be processed by either Appliance A or B, but not C or D.



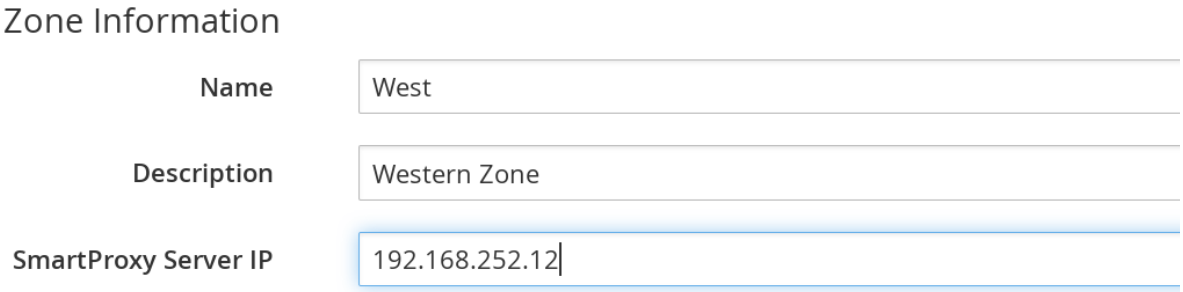
NOTE

Only users assigned the super administrator role can create zones. There must always be at least one zone. The **Default Zone** is provided and cannot be deleted.

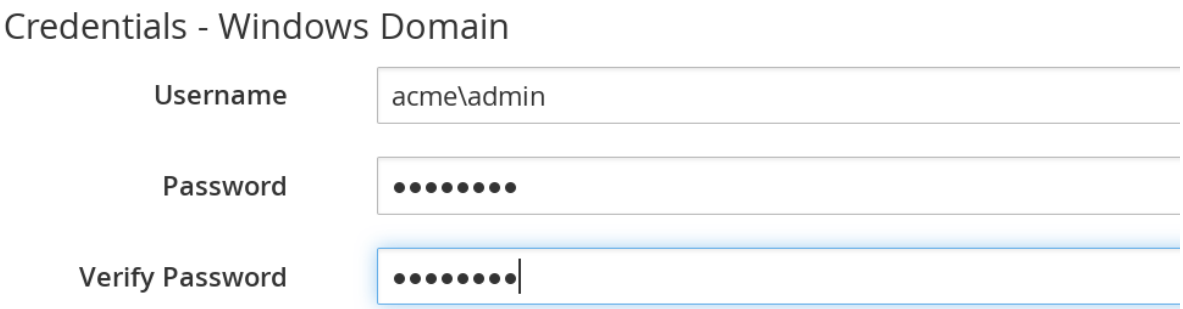
4.1.3.1. Creating a Zone

To create a zone:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then click **Zones**.
3. Click  (**Configuration**), and  (**Add a new Zone**) to create a zone.
4. In the **Zone Information** area, type in a **Name** and **Description** for the new zone.



5. Use **SmartProxy Server IP** to specify the IP address of the server that you want SmartProxies installed in this zone to report to. If this is not set, then the IP address of the server that deployed the SmartProxy is used. This does not apply to embedded SmartProxies.
6. Optionally, you can configure **NTP servers** for the entire zone in the NTP Servers area. These settings will be used if the NTP servers have not been set for the appliance in the **Operations → Server** page.
7. In the **Credentials → Windows Domain** area, type in Windows domain credentials to be able to collect running processes from Windows virtual machines that are on a domain.



8. In the **Settings** area, set the number for **Max Active VM Scans**. The default is **`Unlimited`**.
9. Click **Save**.

4.1.3.2. Deleting a Zone

To delete a zone:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then click **Zones**.
3. Click the zone you want to remove.

NOTE

You cannot delete a zone if there are servers assigned to it.

4. Click  (**Configuration**), then click  (**Delete this Zone**).
5. Click **OK** to confirm.

4.1.3.3. Editing a Zone

To edit a zone:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then click **Zones**.
3. Click the zone you want to edit.
4. Click  (**Configuration**), then click  (**Edit this Zone**).
5. Make the required changes.
6. Click **Save**.

4.1.3.4. Adding SmartProxy Affinity to a Zone:

Enable SmartProxy Affinity for zones containing servers with the SmartProxy role to run a SmartState Analysis.

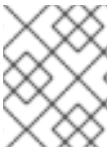
To add SmartProxy Affinity to a zone:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then click **Zones**.
3. Click the zone in which you want to enable SmartProxy Affinity.
4. Click the **SmartProxy Affinity** tab and click the appropriate server.

5. Click **Save**.

4.1.4. Servers

Server settings enables you to control how each Red Hat CloudForms server operates including authentication, logging, and email. If you have multiple servers in your environment that are reporting to one central VMDB, then you can edit some of these settings from the console by specifying which server you want to change.



NOTE

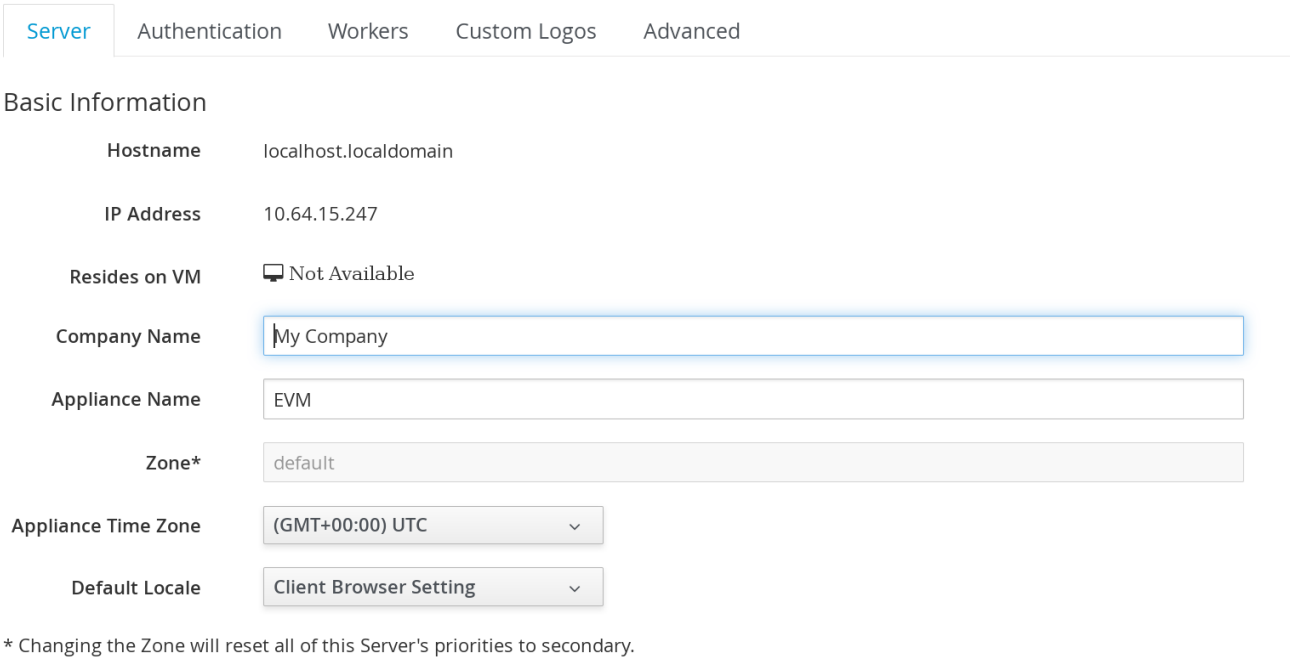
The server selection options are only available if you have multiple servers sharing one VMDB.

4.1.4.1. Changing Server Settings

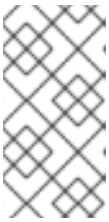
To change server settings:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then click **Zones**.
3. Click the zone where the Red Hat CloudForms server is located.
4. In the **Servers** area, click on the Red Hat CloudForms server.
5. Click **Server**.
6. Make any required changes.
7. Click **Save**.

4.1.4.1.1. Basic Information Settings



- Use **Company Name** (maximum 20 characters) to customize the interface with your company's name. You will see the company name when you are viewing or modifying the tags of an infrastructure object or virtual machine.
- Specify the **Appliance Name** (maximum 20 characters) you want displayed as the appliance that you are logged into. You will see this in the upper right corner of the interface with the name of the consoles logged on user.
- Use **Zone** to isolate traffic and provide load balancing capabilities. Specify the zone that you want this Red Hat CloudForms appliance to be a member of. At startup, the zone is set to default.
- Use **Appliance Time Zone** to set the time zone for this server.



NOTE

This is the time zone used when created scheduled analyses. This is not the same as the **Time Zone** parameter, which is found by navigating to the settings menu, then **My Settings**, then exploring the **Display Settings** area, and is the time zone displayed in the console.

- Use **Default Locale** to specify the default language for this server.

4.1.4.1.2. Server Control Settings

A server role defines what a server can do. Red Hat recommends that Database Operations, Event Monitor, Reporting, Scheduler, SmartState Analysis, User Interface, Provider Inventory, Provider Operations, and Web Services be enabled on at least one server in each zone. These roles are enabled by default on all servers.

- Use **Default Repository SmartProxy** to set the SmartProxy from which you refresh your virtual machine repositories. This host must have access to your repositories to analyze its virtual machines.

NOTE

- Only super administrators can change server roles.
- If you are using more than one Red Hat CloudForms appliance, be sure to set this on all of the appliances.

4.1.4.1.3. Server Roles

NOTE

- Server roles that are in an active/active high availability configuration *(load balancing and failover protection)* are active in more than one location; whereas, roles that are in an active/passive *(primary/secondary in the case of CloudForms)* high availability configuration *(failover protection)*, if more than one CloudForms server in a specific zone or region has this role, only one will be active *(primary)* at a time and a failover has to occur to the passive *(secondary)* appliance with that role.
- For information on region and zone diagnostics and server role priorities, see Section 4.3, “Diagnostics”.

Server Role	Description	Zone or Region Aware	Primary/Secondary or Active/Active
Automation Engine	Use this role if you want to use this CloudForms server to process automation tasks.	N/A	Active/Active
Capacity and Utilization Coordinator	The Capacity & Utilization Coordinator role checks to see if it is time to collect data, somewhat like a scheduler. If it is time, a job is queued for the Capacity and Utilization Data Collector. The coordinator role is required to complete Capacity and Utilization data collection. If more than one CloudForms server in a specific zone has this role, only one will be active at a time.	Zone	Primary/Secondary
Capacity & Utilization Data Collector	The Capacity & Utilization Data Collector performs the actual collection of capacity and utilization data. This role has a dedicated worker, and there can be more than one CloudForms server with this role in a zone.	Zone	Active/Active

Server Role	Description	Zone or Region Aware	Primary/Secondary or Active/Active
Capacity & Utilization Data Processor	The Capacity & Utilization Data Processor processes all of the data collected, allowing CloudForms to create charts. This role has a dedicated worker, and there can be more than one CloudForms server with this role in a zone.	Zone	Active/Active
Database Operations	Use Database Operations to enable this CloudForms server to run database backups or garbage collection.	Zone	Active/Active
Embedded Ansible	This role is disabled by default. The Embedded Ansible role supports Ansible Automation Inside functionality. Enable this role to configure playbook repositories and run playbooks natively to back service catalog items. **NOTE**: Enable the Provider Inventory server role in the same zone as the Embedded Ansible server role to ensure proper functionality.	Region	Primary/Secondary
Event Monitor	This role is enabled by default and provides the information shown in timelines. The Event Monitor is responsible for the work between the CloudForms server and your providers. It starts 2 workers for each provider. One worker, the monitor, is responsible for maintaining a connection to a provider, catching events, and putting them on the CloudForms message queue for processing. The second worker, the handler, is a message queue worker responsible for delivering only those messages for a provider. You should have at least one of these in each zone.	Zone	Primary/Secondary

Server Role	Description	Zone or Region Aware	Primary/Secondary or Active/Active
Git Repository	The Git Repositories Owner server role supports importing domains into automate from a git repository. This feature is available from the Automate > Import/Export screen in the CloudForms user interface.	Region	Primary/Secondary
Notifier	Use this role if you will be using CloudForms Control or Automate to forward SNMP traps to a monitoring system or send e-mails. See Section 4.1.4.1.6, “Configuring SNMP” for details on creating SNMP alerts. If more than one CloudForms server in a specific region has this role, only one will be active at a time.	Region	Primary/Secondary
Provider Inventory	This role is enabled by default. This role is responsible for refreshing provider information including EMS, hosts, virtual machines, and clusters, and is also responsible for capturing datastore file lists. If more than one CloudForms server in a specific zone has this role, only one will be active at a time. Required in the same zone as a CloudForms appliance with the Embedded Ansible role enabled.	Zone	Primary/Secondary
Provider Operations	This role is enabled by default. This role sends stop, start, suspend, shutdown guest, clone, reconfigure, and unregister to the provider, directly from the console or through a policy action if you have CloudForms Control. More than one CloudForms server can have this role in a zone.	Zone	Active/Active

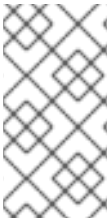
Server Role	Description	Zone or Region Aware	Primary/Secondary or Active/Active
RHN Mirror	An appliance with RHN Mirror enabled acts as a server containing a repository with the latest CloudForms packages. This also configures other appliances within the same region to point to the chosen RHN Mirror server for updates. This provides a low bandwidth method to update environments with multiple appliances.	N/A	Active/Active
Reporting	This role is enabled by default. The Reporting role specifies which CloudForms servers can generate reports. If you do not have a CloudForms server set to this role in a zone, then no reports can be generated in that zone. You should have at least one of these in each zone.	Zone	Active/Active
Scheduler	This role is enabled by default. The Scheduler sends messages to start all scheduled activities such as report generation and SmartState analysis. This role also controls all system schedules such as capacity and utilization data gathering. One server in each region must be assigned this role or scheduled CloudForms events will not occur. If more than one CloudForms server in a specific region has this role, only one will be active at a time.	Region	Primary/Secondary

Server Role	Description	Zone or Region Aware	Primary/Secondary or Active/Active
SmartProxy	Enabling the SmartProxy role turns on the embedded SmartProxy on the CloudForms server. The embedded SmartProxy can analyze virtual machines that are registered to a host and templates that are associated with a provider. To provide visibility to repositories, install the SmartProxy on a host from the CloudForms console. This SmartProxy can also analyze virtual machines on the host on which it is installed. Enabling the SmartProxy role on an appliance requires selecting the SmartProxy Affinity for a zone to run a SmartState Analysis. By default, no selections are enabled under SmartProxy Affinity.	Zone	Active/Active
SmartState Analysis	This role is enabled by default. The SmartState Analysis role controls which CloudForms servers can control SmartState Analyses and process the data from the analysis. You should have at least one of these in each zone.	Zone	Active/Active

Server Role	Description	Zone or Region Aware	Primary/Secondary or Active/Active
User Interface	This role is enabled by default. The Web Services role must also be enabled with this role to log into the user interface, as the User Interface role queries the API to receive tokens for login. Uncheck User Interface if you do not want users to be able to access this CloudForms server using the CloudForms console. For example, you may want to turn this off if the CloudForms server is strictly being used for capacity and utilization or reporting generation. More than one CloudForms server can have this role in a zone.	Zone	Active/Active
Web Services	This role is enabled by default. The Web Services role provides API access and must be enabled if the User Interface role is enabled to log into the user interface. You can also enable the Web Services role to provide API-only access to the server. Uncheck Web Services to stop this CloudForms server from acting as a web service provider. More than one CloudForms server can have this role in a zone.	N/A	Active/Active
Websocket	This role enables starting or stopping websocket workers required for proxying remote consoles.	N/A	Active/Active

4.1.4.1.4. VMware Console Settings

If you are using the Red Hat CloudForms control feature set, then you have the ability to connect to a Web console for virtual machines that are registered to a host. To use this feature, you must have VNC installed, VMware's WebMKS SDK enabled in CloudForms, or the VMRC native desktop application installed for your environment.



NOTE

See vendor documentation to ensure you are installing appropriate applications for your virtual infrastructure. Once you have installed the required software, you must specify its version in the CloudForms configuration settings.

- If you select **VNC**, type in the port number used. This port must be open on the target virtual machine and the VNC software must be installed there. On the computer that you are running the console from, you must install the appropriate version of Java Runtime if it is not already installed.
- If you select **VMware WebMKS**, select the appropriate version.
- If using **VMware VMRC** desktop application, be sure that you have fulfilled the requirements for your vCenter version. The correct version of the VMRC desktop application from VMware must be installed on the client computer. To do this, log into the vCenter Web Service and attempt to open a virtual machine console. The vSphere Web Client must be installed on vCenter version 5, and the provider must be registered to it. For vCenter version 4, the VMware vCenter Management Webservices must be running.

4.1.4.1.5. NTP Servers Settings

In the **NTP Servers** area, you can specify the NTP servers to use as source for clock synchronization here. The NTP settings specified here will override Zone NTP settings. Enter one NTP server hostname or IP address in each text box.

4.1.4.1.6. Configuring SNMP

You can use Simple Network Management Protocol (SNMP) traps to send alerts for various aspects of a Red Hat CloudForms environment.

Requirements

- Configure your SNMP management station to accept traps from Red Hat CloudForms appliances. Consult your management station’s documentation.
- Each appliance that could process SNMP traps must have the **`snmpd`** and **`snmptrapd`** daemons running.
- The region where the appliances are located must have the **`Notifier`** role enabled and the failover role priority set.

To enable the **snmpd** and **snmptrapd** daemons

1. Access each SNMP processing appliance using SSH.
2. Set the SNMP daemons to run on start up:

```
# chkconfig --level 2345 snmpd on
# chkconfig --level 2345 snmptrapd on
```

3. The daemons run automatically when the appliance is restarted, but must be started manually now.

```
# service snmpd start
# service snmptrapd start
```

To enable the notifier role:

1. Access each SNMP processing appliance using their web interfaces.
2. From the settings menu, select **Configuration** → **Settings**.
3. Select the zone where the EVM server is located, and select the EVM server.
4. In the **Server Control** area, set the **Notifier** server role option to **ON**.
5. Click **Save**.

To set the failover priority role:

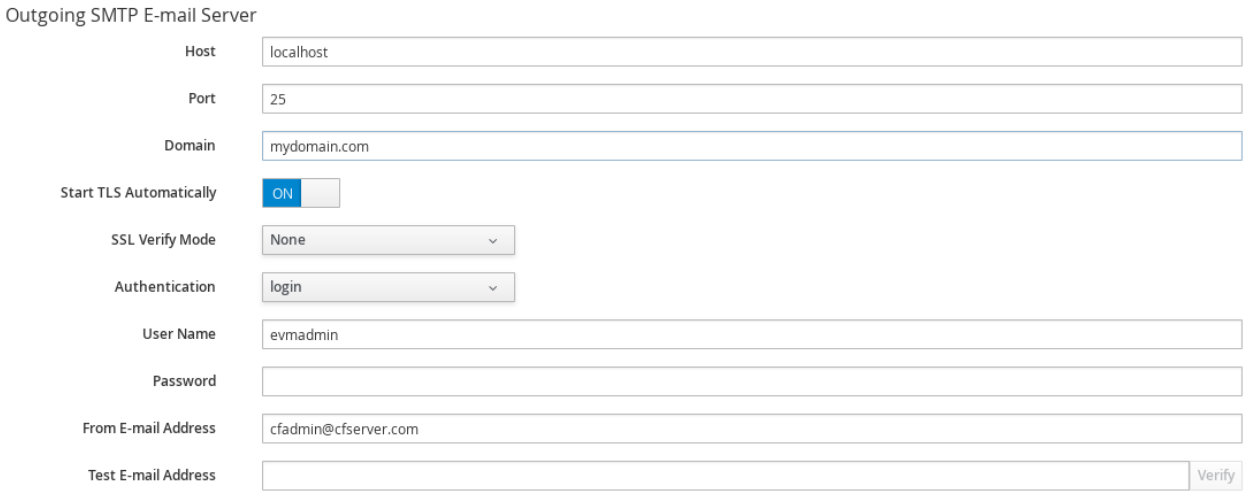
1. From the settings menu, select **Configuration** → **Diagnostics**.
2. Select the zone where the EVM server is located.
3. Click **Roles by Servers** or **Servers by Roles** to view your servers.
4. In the **Status of Roles for Servers** in **Zone Default** Zone area, click the role that you want to set the priority for.
5. Click  (**Configuration**), and  (**Promote Server**) to make this the primary server for this role.

4.1.4.1.7. Outgoing SMTP Email Settings

To use the email action in Red Hat CloudForms, set an email address to send emails from.

NOTE

To be able to send any emails from the server, you must have the Notifier server role enabled. You can test the settings without the role enabled.



- Use **Host** to specify the host name of the mail server.
- Use **Port** to specify the port for the mail server.
- Use **Domain** to specify the domain name for the mail server.
- Set **Start TLS Automatically** on **ON** if the mail server requires TLS.
- Select the appropriate **SSL Verify Mode**.
- Use the **Authentication** drop down to specify if you want to use **login**, **plain**, or no authentication.
- Use **User Name** to specify the user name required for login authentication.
- Use **Password** to specify the password for login authentication.
- Use **From E-mail Address** to set the address you want to send the email from.
- Use **Test E-mail Address** if you want to test your email settings. Click **Verify** to send a test email.

4.1.4.1.8. Web Services Settings

Web services are used by the server to communicate with the SmartProxy.

- Set **Mode** to invoke to enable 2-way Web services communication between the Red Hat CloudForms appliance and the SmartProxy. Set **Mode** to disabled to use Web services from the SmartProxy to the Red Hat CloudForms appliance only. When the Red Hat CloudForms appliance has work for the SmartProxy, the work will be placed

in a queue in the VMDB. The work will be completed either when the Red Hat CloudForms appliance is able to contact the SmartProxy or when the next SmartProxy heartbeat occurs, whichever comes first.

- If **Web Services** are enabled, you have the option to use **ws-security**.

4.1.4.1.9. Logging Settings

- Use **Log Level** to set the level of detail you want in the log. You can select from **fatal**, **error**, **warn**, **info**, and **debug**. The default setting is *info*.

4.1.4.1.10. Custom Support URL Settings

- Use **URL** to specify a specific URL that you want to be accessible from the **About Product Assistance** area.
- Use **Description** to set a label for the **URL**.

4.1.4.2. Authentication

Use the **Authentication** tab to specify how you want users authenticated on the console. You can use the VMDB or integrate with LDAP, LDAPS, Amazon, or an external IPA server.

NOTE

See *Managing Authentication* for information on configuring different types of authentication for CloudForms.

4.1.4.2.1. Changing Authentication Settings

To change authentication settings:

1. From the settings menu, select **Configuration**.
2. Click the **Settings** accordion, then click **Zones**.
3. Click the zone where the server is located.

4. Click the server.
5. Click the **Authentication** tab.
6. Use **Session Timeout** to set the period of inactivity before a user is logged out of the console.
7. Set the authentication method in **Mode**.
8. Click **Save**.

4.1.4.3. Workers

Use the Workers page to specify the number of workers and amount of memory allowed to be used for each type.

NOTE

Only make these changes when directed to by Red Hat Support.

4.1.4.3.1. Changing Settings for a Worker

To change the settings for a worker

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then click **Zones**.
3. Click the zone where the server is located.
4. Click on the server.
5. Click **Workers**.
6. Go to the type of worker you have been directed to change.
7. If applicable, change Count or Memory Threshold using the dropdown boxes.
8. Click **Save**.

4.1.4.4. Database

Use the Database page to specify the location of your Virtual Machine Database (VMDB) and its login credentials. By default, the type is PostgreSQL on the Server.

NOTE

The server may not start if the database settings are changed. Be sure to validate your new settings before restarting the server.

4.1.4.4.1. Changing a Database Setting

To change a database setting:

1. From the settings menu, select **Configuration**.

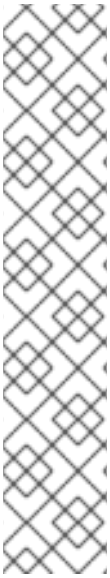
2. Click on the **Settings** accordion, then click **Zones**.
3. Click the zone where the server is located.
4. Click on the server.
5. Click the **Database** tab.
6. In the **Database** area, select the **Type** of database. You can select from **External Database on another CFME appliance**, **External Postgres Database**, and **Internal Database on this CFME Appliance**.
   - Use **Hostname** to specify the IP address or hostname of the external database server.
   - Use **Database Name** to specify the name of your VMDB.
   - Specify the **User Name** to connect to the VMDB.
   - Use **Password** and **Verify Password** to specify the password for the user name.
7. Click **Validate** to check the settings.
8. Click **Save**.
9. Click **OK** to the warning that the server will restart immediately after you save the changes.

During the restart, you are unable to access the server. When the restart is complete, the new database settings are in effect.

4.1.4.5. Customization and Logos

4.1.4.5.1. Custom Logos

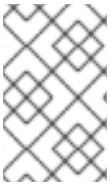
Use **Custom Logos** to display your own logo in the corner of the CloudForms user interface and on the login screen. Use the procedures below to upload a custom logo to the user interface, and to customize the login background and login panel text on the user interface.



NOTE

- If you have upgraded from an earlier Red Hat CloudForms version and your custom logo was already in use before migration, although your logo image file is still in place in **`vmdb/public/upload`** you may have to uncheck and recheck the option to **Use Custom Logo Image** to re-enable displaying your custom logo. See Section 4.1.4.5.2, “Uploading a Custom Logo to the User Interface” for the procedure on how to access the **Use Custom Logo Image** option, or if you want to upload another custom logo to the user interface and customize the login background image and login panel text.
- Additionally, ensure the option to use configuration settings for the tenant under **Access Control** is set to **Yes**; see Section 4.1.4.5.5, “Displaying the Custom Configuration Settings” for the procedure on how to set the configuration settings.

4.1.4.5.2. Uploading a Custom Logo to the User Interface

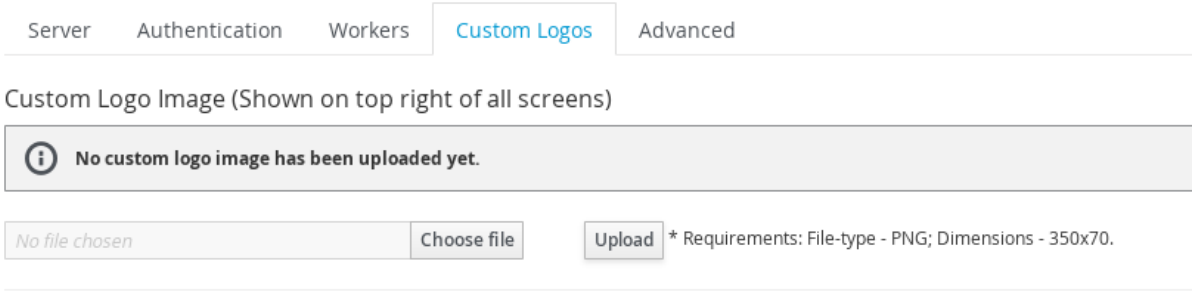


NOTE

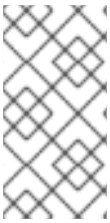
Make sure the desired logo is accessible from the computer where you are running the CloudForms user interface. The file must be in portable network graphics (png) format with dimensions of 350 px x 70 px.

To upload a custom logo to the user interface:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then click **Zones**.
3. Click the zone where the Red Hat CloudForms server is located.
4. Click on the server.
5. Click the **Custom Logos** tab.



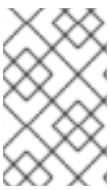
6. In **Custom Logo Image (Shown on top right of all screens)**, click **Choose file** to go to the location where the logo file is located.
7. Click **Upload**. The icon is displayed above the file name box, and an option is shown to use the logo.
8. Check **Use Custom Logo Image** to add the logo to your user interface.
9. Click **Save**.



NOTE

To enable displaying your custom logo, ensure the option to use configuration settings for the tenant under **Access Control** is set to **Yes**. See Section 4.1.4.5.5, “Displaying the Custom Configuration Settings” for the procedure on how to set the configuration settings.

4.1.4.5.3. Customizing the Login Background

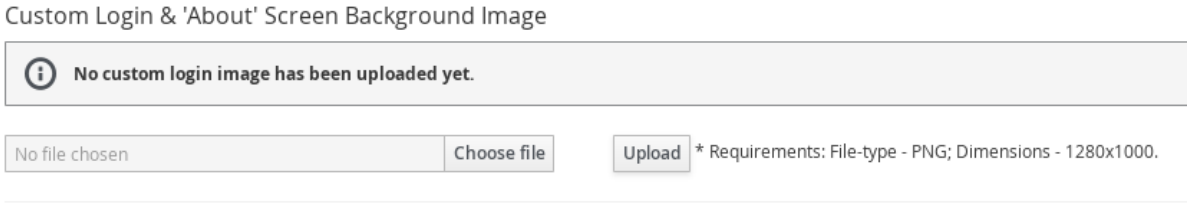


NOTE

Make sure the background image that you want to use is accessible from the computer where you are running the user interface. The file must be in PNG format with dimensions of 1280 px x 1000 px.

To customize the login background:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then click **Zones**.
3. Click the zone where the server is located.
4. Click on the server.
5. Click the **Custom Logos** tab.
6. In **Custom Login & *About* Screen Background Image**, click **Choose file** to go to the location where the background image file is located.



7. Click **Upload**. The icon is displayed above the file name box, and an option is shown to use the logo.
8. Check **Use Custom Login Background Image** to add the background image to the login screen of the user interface.
9. Click **Save**.

4.1.4.5.4. Customizing the Login Panel Text

To customize the login panel text:

1. From the settings menu, select **Configuration**.
2. Navigate to **Settings** → **Configuration**.
3. Click on the **Settings** accordion, then click **Zones**.
4. Click the zone where the server is located.
5. Click on the server.
6. Click the **Custom Logos** tab.
7. In **Custom Login Panel Text**, enter the text that you want to display on the login screen.
8. Click **Use Custom Login Text** to switch it to **Yes**.

9. Click **Save**.

4.1.4.5.5. Displaying the Custom Configuration Settings

To enable displaying your custom logo in the corner of the Red Hat CloudForms user interface and on the login screen:

1. From the settings menu, select **Configuration**.
2. Click the **Access Control** accordion.
3. Click **Tenants**, then click **My Company**.
4. Click (**Configuration**), then click (**Edit this item**).

5. Click **Use Configuration Settings** to switch it to**Yes**.
6. Click **Save**.

4.1.4.6. Advanced Settings

You may be instructed by Red Hat to edit some configuration settings manually. This feature is available for a limited number of options and can only be used by users assigned the super administrator role. Changing settings using this procedure may disable your Red Hat CloudForms server.

NOTE

Only make manual changes to your configuration files if directed to do so by Red Hat.

4.1.4.6.1. Editing Configuration Files Manually

To edit configuration files manually:

1. From the settings menu, click **Configuration**.
2. Click on the **Settings** accordion, then click **Zones**.
3. Click the zone where the server is located.
4. Click on the server.
5. Click the **Advanced** tab.
6. Select the configuration file to edit from the **Configuration File to Edit** area.
7. Make the required changes.
8. Click **Save**.

4.1.4.6.2. Configuration Parameters

Table: authentication

Parameters	Description
amazon_key	If using Amazon for the authentication mode, specify your Amazon Key. This is the same as Amazon Access Key in Configuration-Operations-Server-Amazon Settings in the appliance console. Default: blank
amazon_secret	If using Amazon for the authentication mode, specify your Amazon Secret. This is the same as Amazon Secret Key in Configuration-Operations-Server-Amazon Settings in the appliance console. Default: blank
basedn	If using ldap for the authentication mode, specify your Base DN. This is the same as Base DN in Configuration-Operations- Server-LDAP Settings in the appliance console. Default: blank
bind_dn	The user name to bind to the LDAP server. This user must have read access to all users and groups that will be used for Red Hat CloudForms authentication and role assignment. This is the same as Bind DN in Configuration-Operations-Server-LDAP Settings in the appliance console. Default: blank
bind_pwd:	The password for the bind_dn user. This is the same as Bind Password in Configuration-Operations- Server-LDAP Settings in the appliance console. Default: blank
get_direct_groups	Use this to get the LDAP roles from the LDAP users' home forest. This is the same as Get Roles from Home Forest in the Authentication page for the Red Hat CloudForms Server. Default: true
group_memberships_max_depth	When traversing group memberships in the LDAP directory it will stop at this value. Default: 2
ldaphost	Use ldaphost to specify the fully qualified domain name of your LDAP server. This is the same as LDAP Host Name in Configuration-Operations-Server-LDAP Settings in the appliance console. Default: blank
ldapport	Specify the port of your LDAP server. This is the same as LDAP Port in Configuration-Operations- Server-LDAP Settings in the appliance console. Default: 389
mode	Use database to use the VMDB for security. Use ldap or ldaps to use directory services. This is the same as Mode in Configuration-Operations-Server-Authentication in the appliance console. Default: database

Parameters	Description
user_type	Use userprincipalname to type the user name in the format of user@domainname. Use mail to login with the user's e-mail address. Use dn-cn for Distinguished Name (CN=<user>) or dn-uid Distinguished Name (UID=<user>) to use just the user name, but be sure to enter the proper user_suffix for either one. This is the same as User Type in Configuration-Operations- Server-LDAP Settings in the appliance console. Default: userprincipalname
user_suffix	Domain name to be used with user_type of dn-cn or dn-uid. This is the same as User Suffix in Configuration-Operations- Server-LDAP Settings in the appliance console. Default: blank

Table: coresident_miqproxy

Parameters	Description
use_vim_broker	Specify if you want the coresident SmartProxy to use a shared connection through the VIM broker to communicate with the VC or ESX host for SmartState Analysis. If it is disabled, then each SmartProxy SmartState Analysis would create its own connection. Default: true
concurrent_per_ems	Specify the number of co-resident SmartProxy SmartState Analyses that can be run against a specific management system at the same time. Default: 1
concurrent_per_host	Specify the number of co-resident SmartProxy SmartState Analyses that can be run against a specific host at the same time. Default: 1
scan_via_host	If you change scan_via_host to false, Red Hat CloudForms will use the Management System to scan which is limited by the concurrent_per_ems setting instead of the concurrent_per_host setting. Note this will greatly increase traffic to the Management System. Default: true

Table: ems_refresh

Parameters	Description

Parameters	Description
capture_vm_created_on_date	Set to false to turn off historical event retrieval. Set to true to turn on. By setting the flag to true Red Hat CloudForms will try to set the "ems_created_on" column in the vms table after an ems refresh for new VMs and any VMs with a nil "ems_created_on" value. Red Hat CloudForms looks at event information in our database as well as looking up historical event data from the management system. This is optional since the historical lookup could timeout. Default: false
collect_advanced_settings	Set to false if you do not want to collect advanced Virtual Machine settings during a management system refresh. This will increase the speed of the refresh, but less data will be collected. If the parameter is not listed, then the value is true. Default: true
ec2	
get_private_images	For EC2 refreshes only; whether or not to retrieve private images. Default: true
get_public_images	For EC2 refreshes only; whether or not to retrieve public images. Default: false. Warning: setting get_public_images to true loads several thousand images in the VMDB by default and may cause performance issues.
get_shared_images	For EC2 refreshes only; whether or not to retrieve shared images. Default: true
public_images_filters	For EC2 refreshes only; a filter to reduce the number of public images. Default: all public images
ignore_terminated_instances	For EC2 refreshes only; whether or not to ignore terminated instances. Default: true
full_refresh_threshold	The number of targeted refreshes requested before they are rolled into a full refresh. For example, if the system and/or the user target a refresh against 7 VMs and 2 Hosts (9 targets), when the refresh actually occurs it will do a partial refresh against those 9 targets only. However, if a 10th had been added, the system would perform a full EMS refresh instead. Default: 100
raise_vm_snapshot_complete_if_created_within:	Raises vm_snapshot_complete event for a snapshot being added to VMDB only if the create time in Virtual Center is within the configured period of time. This prevents raising events for old snapshots when a new VC is added to Red Hat CloudForms. Default: 15.minutes
refresh_interval	Scheduler does a periodic full EMS refresh every refresh_interval. Default: 24.hours

Table: host_scan

Parameters	Description
queue_timeout	Time period after which a host SmartState analysis will be considered timed out. Default: 20.minutes

Table: log

Parameters	Description
level	Specify the required level of logging for the Red Hat CloudForms appliance. Possible levels from most detailed to least detailed are: debug, info, warn, error, fatal. This is the same as Log Level in Configuration-Operations-Server-Logging in the appliance console and applies immediately to the evm.log file. Default: info
level_aws	Specify the level of logging for Amazon Web Services communications. Possible levels from most detailed to least detailed are: debug, info, warn, error, fatal. This applies to the aws.log file. Default: info
level_aws_in_evm	Specify what level of Amazon Web Services communication log should be also shown in evm.log. Possible levels from most detailed to least detailed are: debug, info, warn, error, fatal. Default: error
level_fog	Specify the level of logging for Fog communications. Possible levels from most detailed to least detailed are: debug, info, warn, error, fatal. This applies to the fog.log file. Default: info
level_fog_in_evm	Specify what level of Fog communication log should be also shown in evm.log. Possible levels from most detailed to least detailed are: debug, info, warn, error, fatal. Default: error
level_rails	Specify the level of logging for Rails. Possible levels from most detailed to least detailed are: debug, info, warn, error, fatal. Once changed, this applies immediately to the production.log file. Default: info
level_rhevm	Specify the level of logging for Red Hat communications. Possible levels from most detailed to least detailed are: debug, info, warn, error, fatal. This applies to the rhevm.log file. Default: warn
level_rhevm_in_evm	Specify what level of Red Hat communication log should be also shown in evm.log. Possible levels from most detailed to least detailed are: debug, info, warn, error, fatal. Default: error

Parameters	Description
level_vim	Specify the level of logging for VIM (communication with VMware ESX and Virtual Center). Possible levels from most detailed to least detailed are: debug, info, warn, error, fatal. This applies to the vim.log file. Default: warn
level_vim_in_evm	Specify what level of vim logging should be also shown in evm.log. Possible levels from most detailed to least detailed are: debug, info, warn, error, fatal. Default: error

Table: db_stats

Parameters	Description
enabled	Specify if you want to keep track of the number of queries, size of queries, number of responses, size of response, min/max for each, number of established connections at for each server process. This information will show in the EVM log. Default: false
log_frequency	How frequently in seconds the process will log the database statistic in seconds. Default: 60

Table 3.7. callsites

Table: log

Parameters	Description
enabled	Specify if you want keep track of the code that is accessing the database. Enabling call sites will decrease performance because of the amount of information tracked. The db_stats: enabled parameter must be set to true to use this. Default: false
depth	Specify how many levels in the call stack to track for each database access. Default: 10
min_threshold	Do not keep track of code that does not access the database this many times per log_frequency. Default: 10
path	Set the path for the Red Hat CloudForms appliance log. This is the same as Log Path in Configuration-Operations- Server-Logging in the appliance console. Default: If no value is present, the path is /var/www/miq/vmdb/log.
line_limit	Limit how many characters are retained in a single log line. 0 means no limit. Default: 0

Table 3.8. collection

Parameters	Description
ping_depot	Whether to use TCP port ping to the log depot before performing log collection. Default: true
ping_depot_timeout	Specify how long in seconds to wait for response from log depot before deciding that the TCP port ping failed. Default: 20
current	When collecting logs, specifies what is considered current logging as opposed to archived logging. Default: :pattern: log/*.log log/apache/*.log log/*.txt config/* /var/opt/rh/rh-postgresql94/lib/pgsql/data/*.conf /var/opt/rh/rh-postgresql94/lib/pgsql/data/pg_log/* /var/log/syslog* /var/log/daemon.log* /etc/default/ntp* /var/log/messages* /var/log/cron* BUILD GUID VERSION
archive	Specifies what is considered archived logging. The default pattern is blank which means *.gz files in the log directory.

Table 3.9. log_depot

Parameters	Description
uri	Specify the URI for the log depot. This is the same as the URI in **Configuration → Diagnostics → Collect Logs** in the appliance console. Default: blank

Parameters	Description
username	Specify the user name for the log depot. This is the same as the user ID in **Configuration → Diagnostics → Collect Logs** in the appliance console. Default: blank
password	Specify the password for the user for the log depot. This is the same as the password in **Configuration → Diagnostics → Collect Logs** in the appliance console. Default: blank

Table: performance

Parameters	Description
capture_threshold	
vm	Amount of time in minutes to wait after capture before capturing again. Default: 50.minutes
host	Amount of time in minutes to wait after capture before capturing again. Default: 50.minutes
ems_cluster	Amount of time in minutes to wait after capture before capturing again. Default: 50.minutes
storage	Amount of time in minutes to wait after capture before capturing again. Default: 120.minutes
capture_threshold_with_alerts	
host	Amount of time in minutes to wait after capture before capturing again. This value is used instead of capture_threshold for Hosts that have alerts assigned based on real time Capacity & Utilization data. Default: 20.minutes
ems_cluster	Amount of time in minutes to wait after capture before capturing again. This value is used instead of capture_threshold for clusters that have alerts assigned based on real time Capacity & Utilization data. Default: 50.minutes
vm	Amount of time in minutes to wait after capture before capturing again. This value is used instead of capture_threshold for VMs that have alerts assigned based on real time Capacity & Utilization data. Default: 20.minutes
concurrent_requests	

Parameters	Description
vm	Amount of time in minutes to wait after capture before capturing again. This value is used instead of capture_threshold for VMs that have alerts assigned based on real time Capacity & Utilization data. Default: 20.minutes
hourly	Number of concurrent VC requests to make when capturing hourly raw metrics. Default: 1
realtime	Number of concurrent VC requests to make when capturing real time raw metrics. Default: 20
history	
initial_capture_days	How many days to collect data for on first collection. Default: 0
Keep_daily_performances	How long to keep daily performance data in the VMDB. Default: 6.months
keep_realtime_performances	How long to keep realtime performance data in the VMDB. Default: 4.hours
keep_hourly_performances	How long to keep hourly performance data in the VMDB. Default: 6.months
purge_window_size	When the purge needs to delete rows which are older than the keep_realtime_performances, keep_hourly_performances, and keep_daily_performances values, this value sets how many rows to delete in each batch. For example, a value of 1000 will cause us to issue ten 1,000 row deletes. Default: 1000

Table 3.11. repository_scanning

Parameters	Description
defaultsmartproxy	Specify the SmartProxy for repository scanning. This is the same as Default Repository Smartproxy in Configuration-Operations-Server-VM Server Control in the appliance console. Default: blank

Table 3.12. server

Parameters	Description
case_sensitive_name_search	Specify if you want the search by name on configuration item screens to be case senstive. Default: false

Parameters	Description
company	Specify the label you want to use for your company’s tagging. This is the same as Company Name in Configuration-Operations-Server-Basic Info. Default: "My Company"
custom_logo	Specify if you want to use a custom logo. This is the same as Use Custom Logo in Configuration-Custom Logo-Logo Selection. Default: false
events	
disk_usage_gt_percent	For Red Hat CloudForms operational alerts, specify at what threshold the disk usage alerts will be triggered. Default: 80
heartbeat_timeout	How long to wait until the server heartbeat is considered timed out. if the timeout is exceeded, other appliances in the zone/region can vie for the roles active on the timed out Red Hat CloudForms appliance. Default: 2.minutes
host	Red Hat CloudForms Server’s IP address. Default: blank
hostname	Red Hat CloudForms Server’s hostname. Default: localhost.localdomain
listening_port	Specify the port number on which the web server is listening. Note that this does not set the port that VMDB listens on. When deploying the SmartHost from the Red Hat CloudForms appliance, it tells the SmartHost (miqhost) what port to talk to the VMDB on. Default: "443"
mks_version	Specify the version of the VMware MKS Plugin to use for the VM Console. This is the same as VMware MKS Plugin Version in Configuration-Operations- Server-VM Console. Default : 2.1.0.0
name	Set the name to display for the Red Hat CloudForms appliance that you are logged on to in the appliance console. This is the same as appliance Name in Configuration-Operations- Server-Basic Information. Default : EVM

Parameters	Description
role	Specify the roles for this Red Hat CloudForms Server, separated by commas without spaces. The possible values are automate, database_operations, ems_inventory, ems_metrics_collector, ems_metrics_coordinator, ems_metrics_processor, ems_operations, event, notifier, reporting, scheduler, smartproxy, smartstate, user_interface, web_services. This is the same as Server Roles in Configuration-Operations- Server- Server Control. Default: database_operations, event, reporting, scheduler, smartstate, ems_operations, ems_inventory, user_interface, web_services
session_store	Where to store the session information for all web requests. The possible values are sql, memory, or cache. SQL stores the session information in the database regardless of the type of database server. Memory stores all the session information in memory of the server process. Cache stores the information in a memcache server. Default: cache
startup_timeout	The amount of time in seconds that the server will wait and prevent logins during server startup before assuming the server has timed out starting and will redirect the user to the log page after login. Default: 300
timezone	Set the timezone for the Red Hat CloudForms appliance. Default: UTC
vnc_port	If using VNC for remote console, the port used by VNC. Default: 5800
zone	Set the Zone for this appliance belongs. This is the same as Zone in Configuration-Operations- Server-Basic Information. Default : default
:worker_monitor	Starts and monitors the workers. Parameters specified here will override those set in the workers:default section.
poll	How often the worker monitor checks for work. This value only is only used when the worker has no more work to do from the queue. It will wait for an amount of time determined by the poll value and poll method. Therefore, if there is constant work on the queue, the worker will not wait in between messages. Default: 15.seconds
miq_server_time_threshold	How much time to give the server to heartbeat before worker monitor starts to take action against non-responding server. Default: 2.minutes

Parameters	Description
nice_delta	Tells the worker monitor what Unix "nice" value to assign the workers when starting. A lower number is less nice to other processes. Default: 1
sync_interval	Time interval to sync active roles and configuration for all workers. Default: 30.minutes
wait_for_started_timeout	How long to wait for a started worker to heartbeat before considering the worker timed out. Default: 10.minutes
kill_algorithm	
name	Criteria used to start killing workers. Default: used_swap_percent_gt_value
value	Value of the criteria used. Default: 80
start_algorithm	
name	After server startup, criteria that must be met to decide if the Red Hat CloudForms Server can start a new worker. Default: used_swap_percent_lt_value
value	Value of criteria used. Default: 60

Table: session

Parameters	Description
interval	Set the time interval in seconds for checking inactive sessions in appliance console. Default: 60
timeout	Set the time period in seconds in which inactive console sessions are deleted. This is the same as Session Timeout in Configuration-Operations-Server-Authentication in the appliance console. Default: 3600
memcache_server	If you choose memory for session_store, you need to specify the memcache_server to retrieve the session information from. Default: 127.0.1.1:11211
memcache_server_opts	Options to send to memcache server. : blank
show_login_info	Specify whether or not you want to see login info on start page. Default: true

Table: smartproxy_deploy

Parameters	Description
queue_timeout	Timeout for host smartproxy deploy job. Default: 30.minutes

Table 3.15. smtp

Parameters	Description
host	Specify the hostname of the smtp mail server. This is the same as Host in Configuration-Operations-Server-Outgoing SMTP E-mail Server. Default: localhost
port	Specify the port of the smtp mail server. This is the same as Port in Configuration-Operations-Server-Outgoing SMTP E-mail Server. Default: "25"
domain	Specify the domain of the smtp mail server. This is the same as Domain in Configuration-Operations-Server-Outgoing SMTP E-mail Server. Default: mydomain.com
authentication	Specify the type of authentication of the smtp mail server. This is the same as Authentication in Configuration-Operations-Server-Outgoing SMTP E-mail Server. Default: login
user_name	Specify the username required for login to the smtp mail server. This is the same as User Name in Configuration-Operations-Server-Outgoing SMTP E-mail Server. Default: evmadmin
password	Specify the encrypted password for the user_name account. This is the same as Password in Configuration-Operations-Server-Outgoing SMTP E-mail Server. Default: blank
from	Set the address that you want to send e-mails from. This is the same as From E-mail Address in Configuration-Operations-Server-Outgoing SMTP E-mail Server. Default: cfadmin@cfserver.com

Table 3.16. snapshots

Parameters	Description
create_free_percent	Ensures the % of free space available on the main datastore (datastore where vmx file is located) can support the % growth of the snapshot. The default is to require space for 100% of the provisioned size of all disks that are taking part in the snapshot. A value of 0 means do not check for space before creating the snapshot. Default: 100

Parameters	Description
remove_free_percent	Ensures the % of free space available on the main datastore (datastore where vmx file is located) has the % free space available to support the snapshot deletion process. Note that the deletion process consists of first composing a new snapshot then removing it once the original snapshot to be deleted has been collapsed in the VM. The default is to require 100% of the size of all disks to complete this process. A value of 0 means do not check for space before removing the snapshot. Default: 100

Table 3.17. webservices

Parameters	Description
contactwith	Set to ipaddress to contact miqhost using the IP address. Set to hostname to contact miqhost by its hostname. Set to resolved_ipaddress to take the hostname and resolve it to an IP address. Default: ipaddress
mode	Set to invoke to use webservices. Set to disable to turn off webservices. This is the same as Mode in Configuration-Operations- Server-Web Services in the appliance console. Default: invoke
nameresolution	If set to true, the hostname will be resolved to an IP address and saved with the host information in the VMDB. Default: false
security	If Web Services are enabled, you can set this to ws-security. This is the same as Security in Configuration-Operations- Server-Web Services in the appliance console. Note: This is not currently supported. Default: none
timeout	Specify the web service timeout in seconds. Default: 120
password	Specify the encrypted password for the user_name account. This is the same as Password in Configuration-Operations-Server-Outgoing SMTP E-mail Server. Default: blank
use_vim_broker	Controls if the vim_broker is used to communicate with VMware infrastructure. Default: true

Table: workers

Parameters	Description
worker_base	

Parameters	Description
defaults	If the following parameters are NOT explicitly defined for a specific worker, then these values will be used.
count	Number of this type of worker. Default: 1
gc_interval	How often to do garbage collection for this worker. Default: 15.minutes
poll	How often the workers checks for work. This value only is only used when the worker has no more work to do from the queue. It will wait for an amount of time determined by the poll value and poll method. Therefore, if there is constant work on the queue, the worker will not wait in between messages. Default: 3.seconds
poll_method	If set to normal, the worker checks for work the number of seconds set in the poll parameter. If set to escalate, the worker will increase the time between checks when there is no work to be done. Default: normal
poll_escalate_max	The maximum number of time to wait between checks for work. Poll_method must be set to escalate for this option to be used. Default: 30.seconds
heartbeat_freq	How often to "heartbeat" the worker. Default: 60.seconds
heartbeat_method	Set which way to dispatch work. Possible values are sql or drb. Default: drb
heartbeat_timeout	How long to wait until the worker heartbeat is considered timed out. Default: 2.minutes
parent_time_threshold	How long to allow the parent to go without heartbeating before considering the "parent' not responding. For workers, the worker monitor is the parent. For Worker monitor, the Server is the parent. Default: 3.minutes
memory_threshold	How much memory to allow the worker to grow to before gracefully requesting it to exit and restart. Default: 150.megabytes
nice_delta	Tells the worker monitor what Unix "nice" value to assign the workers when starting. A lower number is less nice to other processes. Default: 10
restart_interval	How long to let a worker remain up before asking it to restart. All queue based workers are set to 2.hours and every other worker does not get restarted by a 0.hours value. Default: 0.hours

Parameters	Description
starting_timeout	How long to wait before checking a worker’s heartbeat when it is starting up to mark it as not responding, similar to a grace period before you begin monitoring it. Default: 10.minutes
event_catcher	Associated with Event Monitor Server Role. Captures ems events and queues them up for the event_handler to process. Parameters specified here will override those set in the worker_base:default section.
ems_event_page_size	Internal system setting which sets the maximum page size for the event collector history. This should not be modified. Default: 100
ems_event_thread_shutdown_timeout	Internal system setting which determines how long the event catcher at shutdown will wait for the event monitor thread to stop. This should not be modified. Default: 10.seconds
memory_threshold	How much memory to allow the worker to grow to before gracefully requesting it to exit and restart. Default: 2.gigabytes
nice_delta	Tells the worker monitor what Unix "nice" value to assign the workers when starting. A lower number is less nice to other processes. Default: 1
poll	How often the workers checks for work. This value only is only used when the worker has no more work to do from the queue. It will wait for an amount of time determined by the poll value and poll method. Therefore, if there is constant work on the queue, the worker will not wait in between messages. Default: 1.seconds
event_catcher_redhat	Contains settings that supersede the event_catcher for event_catcher_redhat.
event_catcher_vmware	Contains settings that supersede the event_catcher for event_catcher_vmware.
poll	How often the workers checks for work. This value only is only used when the worker has no more work to do from the queue. It will wait for an amount of time determined by the poll value and poll method. Therefore, if there is constant work on the queue, the worker will not wait in between messages. Default: 1.seconds
event_catcher_openstack	Contains settings that supersede the event_catcher for event_catcher_openstack.

Parameters	Description
poll	How often the workers checks for work. This value only is only used when the worker has no more work to do from the queue. It will wait for an amount of time determined by the poll value and poll method. Therefore, if there is constant work on the queue, the worker will not wait in between messages. Default: 15.seconds
topics	List of AMQP topics that should be monitored by Red Hat CloudForms when gathering events from OpenStack.
duration	Qpid Specific. Length of time (in seconds) the receiver should wait for a message from the Qpid broker before timing out. Default: 10.seconds
capacity	Qpid Specific. The total number of messages that can be held locally by the Qpid client before it needs to fetch more messages from the broker. Default: 50.seconds
amqp_port	Port used for AMQP. Default: 5672
schedule_worker	Settings for Scheduler Server Role and any other work that runs on a schedule. Parameters specified here will override those set in the worker_base:default section.
db_diagnostics_interval	How frequently to collect database diagnostics statistics. Default: 30.minutes
job_proxy_dispatcher_interval	How often to check for available SmartProxies for SmartState Analysis jobs. Default: 15.seconds
job_proxy_dispatcher_stale_message_check_interval	How often to check for the dispatch message in the queue Default: 60.seconds
job_proxy_dispatcher_stale_message_timeout	Kill a message if this value is reached. Default: 2.minutes
job_timeout_interval	How often to check to see if a job has timed out. Default: 60.seconds
license_check_interval	How often to check for valid license. Default: 1.days
memory_threshold	How much memory to allow the worker to grow to before gracefully requesting it to exit and restart. Default: 150.megabytes
nice_delta	Tells the worker monitor what Unix "nice" value to assign the workers when starting. A lower number is less nice to other processes. Default: 3

Parameters	Description
performance_collection_interval	Controls how often the schedule worker will put performance collection request on the queue to be picked up by the collection worker. Default: 3.minutes
performance_collection_start_delay	How long after Red Hat CloudForms Server has started before starting capacity and utilization collection, if collection needs to be done. Default: 5.minutes
poll	How often the workers checks for work. This value only is only used when the worker has no more work to do from the queue. It will wait for an amount of time determined by the poll value and poll method. Therefore, if there is constant work on the queue, the worker will not wait in between messages. Default: 15.seconds
server_logs_stats_interval	How often to log the Red Hat CloudForms Server statistics. Default: 5.minutes
server_stats_interval	How often to collect the Red Hat CloudForms Server statistics. Default: 60.seconds
session_timeout_interval	How often to check to see if a UI (appliance console) session has timed out. Default: 30.seconds
storage_file_collection_interval	How often to perform file inventory of storage locations. Default: 1.days
storage_file_collection_time_utc	What time to perform file inventory of storage locations. Default: "06:00"
vdi_refresh_interval	How often to refresh vdi inventory. Default: 20.minutes
vm_retired_interval	How often to check for virtual machines that should be retired. Default: 10.minutes
vm_scan_interval	How often to check virtual machines to see if scan needs to be done. Default: 10.minutes
smis_refresh_worker	Settings for Storage Inventory Server Role and any other work that runs on a schedule. Parameters specified here will override those set in the worker_base:default section
poll	How often the workers checks for work. This value only is only used when the worker has no more work to do from the queue. It will wait for an amount of time determined by the poll value and poll method. Therefore, if there is constant work on the queue, the worker will not wait in between messages. Default: 15.seconds

Parameters	Description
connection_pool_size	Maximum number of database connections allowed per process. Default: 5
memory_threshold	How much memory to allow the worker to grow to before gracefully requesting it to exit and restart. Default: 1.gigabytes
nice_delta	Tells the worker monitor what Unix "nice" value to assign the workers when starting. A lower number is less nice to other processes. Default: 3
smis_update_period	How frequently to update smis information. Default: 1.hours
status_update_period	How frequently to update smis status. Default: 5.minutes
stats_update_period	How frequently to update smis statistics. Default: 10.minutes
vim_broker_worker	Launched for any of these roles: Capacity & Utilization Collector, SmartProxy, SmartState Analysis, Management System Operations, Management System Inventory. Also launched if the use_vim_broker setting is on. Provides connection pooling, caching of data to and from the VMware infrastructure. Parameters specified here will override those set in the workers:default section.
heartbeat_freq	How often to heartbeat the worker. Default: 15.seconds
memory_threshold	How much memory to allow the worker to grow to before gracefully requesting it to exit and restart. Default: 1.gigabytes
nice_delta	Tells the worker monitor what Unix "nice" value to assign the workers when starting. A lower number is less nice to other processes. Default: 3
poll	How often the workers checks for work. This value only is only used when the worker has no more work to do from the queue. It will wait for an amount of time determined by the poll value and poll method. Therefore, if there is constant work on the queue, the worker will not wait in between messages. Default: 1.seconds
reconnect_retry_interval	Period after which connection is retried. Default: 5.minutes
vim_broker_status_interval	Internal system setting which configures how much time to wait after receiving event updates before checking for more updates. Default: 0.seconds

Parameters	Description
wait_for_started_timeout	Time between the worker’s preload and startup time before considering the worker timed out. Default: 10.minutes
ui_worker:	Settings for User Interface Server Role. Parameters specified here will override those set in the worker_base:default section.
connection_pool_size	Maximum number of database connections allowed per process. Default: 5
memory_threshold	How much memory to allow the worker to grow to before gracefully requesting it to exit and restart. Default: 1.gigabytes
nice_delta: 1	Tells the worker monitor what Unix "nice" value to assign the workers when starting. A lower number is less nice to other processes. Default: 1
poll	How often the workers checks for work. This value only is only used when the worker has no more work to do from the queue. It will wait for an amount of time determined by the poll value and poll method. Therefore, if there is constant work on the queue, the worker will not wait in between messages. Default: 60.seconds
web_service_worker	Settings for Web Services Server Role. Parameters specified here will override those set in the worker_base:default section.
connection_pool_size	Maximum number of database connections allowed per process. Default: 5
memory_threshold	How much memory to allow the worker to grow to before gracefully requesting it to exit and restart. Default: 1.gigabytes
nice_delta	Tells the worker monitor what Unix "nice" value to assign the workers when starting. A lower number is less nice to other processes. Default: 1
poll	How often the workers checks for work. This value only is only used when the worker has no more work to do from the queue. It will wait for an amount of time determined by the poll value and poll method. Therefore, if there is constant work on the queue, the worker will not wait in between messages. Default: 60.seconds
queue_worker_base	Base class of all queue workers that work off of the queue..
defaults	If the following parameters are NOT explicitly defined for a queue worker, then these values will be used.

Parameters	Description
cpu_usage_threshold	How much cpu to allow the worker to grow to before gracefully requesting it to exit and restart. Default: 100.percent
queue_timeout	How long a queue message can be worked on before it is considered timed out. Default: 10.minutes
memory_threshold	How much memory to allow the worker to grow to before gracefully requesting it to exit and restart. Default: 400.megabytes
restart_interval	Queue workers restart interval. Default: 2.hours
poll_method	If set to normal, the worker checks for work the number of seconds set in the poll parameter. If set to escalate, the worker will increase the time between checks when there is no work to be done. Default: normal
generic_worker	Performs work that is not classified as any specific type of work. Processes all normal priority or non-specific queue items. Parameters specified here will override those set in the queue_worker_base:default section
count	Number of this type of worker. Default: 4
ems_refresh_worker	Performs all ems (management system) refreshes to keep the vmdb in sync with the state of the components of the virtual infrastructure in the various management systems. Parameters specified here will override those set in the queue_worker_base:default section
poll	How often the workers checks for work. This value only is only used when the worker has no more work to do from the queue. It will wait for an amount of time determined by the poll value and poll method. Therefore, if there is constant work on the queue, the worker will not wait in between messages. Default: 10.seconds
memory_threshold	How much memory to allow the worker to grow to before gracefully requesting it to exit and restart. Default: 2.gigabytes
nice_delta	Tells the worker monitor what Unix "nice" value to assign the workers when starting. A lower number is less nice to other processes. Default: 7
restart_interval	Queue workers restart interval. Default: 2.hours
queue_timeout	How long a message can be worked on before it is considered timed out. Default: 120.minutes

Parameters	Description
event_handler	Associated with Event Monitor Server Role. Handles all events caught by the event catcher worker. Parameters specified here will override those set in the workers:default section. Parameters specified here will override those set in the queue_worker_base:default section
cpu_usage_threshold	How much cpu to allow the worker to grow to before gracefully requesting it to exit and restart. The value of 0 means that this worker will never be killed due to CPU usage. Default: 0.percent
nice_delta	Tells the worker monitor what Unix "nice" value to assign the workers when starting. A lower number is less nice to other processes. Default: 7
perf_collector_worker	Connects to VC/ESX to collect the raw performance data. Same as the Capacity & Utilization Data Collector Server Role. Parameters specified here will override those set in the queue_worker_base:default section count. Number of this type of worker. Default: 2
count	Number of this type of worker. Default: 2
poll_method	If set to normal, the worker checks for work the number of seconds set in the poll parameter. If set to escalate, the worker will increase the time between checks when there is no work to be done. Default: escalate
nice_delta	Tells the worker monitor what Unix "nice" value to assign the workers when starting. A lower number is less nice to other processes. Default: 3
perf_processor_worker	Processes the raw performance data into a reportable format. Same as the Capacity & Utilization Data Processor Server Role. Parameters specified here will override those set in the queue_worker_base:default section
count	Number of this type of worker. Default: 2
poll_method	If set to normal, the worker checks for work the number of seconds set in the poll parameter. If set to escalate, the worker will increase the time between checks when there is no work to be done. Default: escalate
memory_threshold	How much memory to allow the worker to grow to before gracefully requesting it to exit and restart. Default: 400.megabytes

Parameters	Description
nice_delta	Tells the worker monitor what Unix "nice" value to assign the workers when starting. A lower number is less nice to other processes. Default: 7
priority_worker	Performs all high priority queue items including many tasks on behalf of the UI. UI requests are normally executed by a priority worker so they will not to block the UI. Parameters specified here will override those set in the queue_worker_base:default section
count	Number of this type of worker. Default: 2
memory_threshold	How much memory to allow the worker to grow to before gracefully requesting it to exit and restart. Default: 200.megabytes
nice_delta	Tells the worker monitor what Unix "nice" value to assign the workers when starting. A lower number is less nice to other processes. Default: 1
poll	How often the workers checks for work. This value only is only used when the worker has no more work to do from the queue. It will wait for an amount of time determined by the poll value and poll method. Therefore, if there is constant work on the queue, the worker will not wait in between messages. Default: 1.seconds
reporting_worker	Compiles reports. Settings for Reporting Server Role. Parameters specified here will override those set in the queue_worker_base:default section
count	Number of this type of worker. Default: 2
nice_delta	Tells the worker monitor what Unix "nice" value to assign the workers when starting. A lower number is less nice to other processes. Default: 7
smart_proxy_worker	Performs the embedded scanning of virtual machines. Settings for SmartProxy Server Role. Parameters specified here will override those set in the queue_worker_base:default section
count	Number of this type of worker. Default: 3
memory_threshold	How much memory to allow the worker to grow to before gracefully requesting it to exit and restart. Default: 600.megabytes
queue_timeout	How long a queue message can be worked on before it is considered timed out. Default: 20.minutes
restart_interval	Queue workers restart interval. Default: 2.hours

4.1.5. Schedules

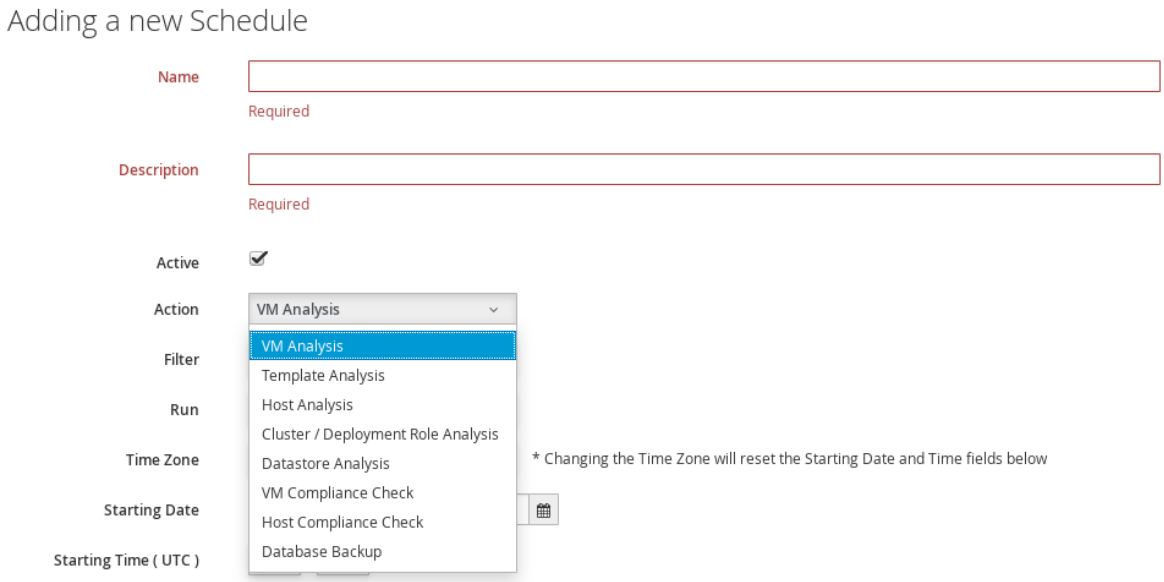
4.1.5.1. Scheduling SmartState Analyses and Backups

From the **Schedules** area in **Settings**, you can schedule the analyses of virtual machines, hosts, clusters, and datastores to keep the information current. Depending on which resource you want to analyze, you can filter which ones to analyze. You may also specify only one virtual machine or perform an analysis on all virtual machines. In addition, you can schedule compliance checks, and database backups.

4.1.5.1.1. Scheduling a SmartState Analysis or Compliance Check

To schedule a SmartState Analysis or Compliance Check:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then click **Schedules**.
3. Click  (**Configuration**), and  (**Add a new Schedule**).
4. In the **Basic Information** area, type in a **Name** and **Description** for the schedule.
5. Select **Active** to enable this scan.
6. From the **Action** list, select the type of analysis to schedule. Based on the type of analysis you choose, you are presented with one of the following group boxes:



- **VM Analysis**: Displays **VM Selection** where you can choose to analyze **All VMs**, **All VMs for Provider**, **All VMs for Cluster**, **All VMs for Host**, **A single VM**, or **Global Filters**.
- **Template Analysis**: Displays **Template Selection** where you can choose to analyze **All Templates**, **All Templates for Provider**, **All Templates for Cluster**, **All Templates for Host**, **A single Template**, or **Global Filters**.
- **Host Analysis**: Displays **Host Selection** where you can choose to analyze **All Hosts**, **All Hosts for Provider**, **A single Host**, or **Global Filters**.

NOTE

You can only schedule host analyses for connected virtual machines, not repository virtual machines that were discovered through that host. Since repository virtual machines do not retain a relationship with the host that discovered them, there is no current way to scan them through the scheduling feature. The host is shown because it may have connected virtual machines in the future when the schedule is set to run.

- **Cluster / Deployment Role Analysis**: Displays **Cluster Selection** where you can choose to analyze **All Clusters**, **All Clusters for Provider**, or **A single Cluster**.
- **Datastore Analysis**: Displays **Datastore Selection** where you can choose to analyze **All Datastores**, **All Datastores for Host**, **All Datastores for Provider**, **A single Datastore**, or **Global Filters**.
- **VM Compliance Check**: Displays **VM Selection** where you can choose to analyze **All VMs**, **All VMs for Provider**, **All VMs for Cluster**, **All VMs for Host**, **A single VM**, or **Global Filters**.
- **Host Compliance Check**: Displays **Host Selection** where you can choose to analyze **All Hosts**, **All Hosts for Provider**, **All Hosts for Cluster**, **A single Host**, or **Global Filters**.
- **Database Backup**: Under **Type**, displays **Network File System** and **Samba**. See Section 4.1.5.2, “Scheduling a Database Backup” for details on scheduling a database backup.

7. By applying **Global Filters** within any of the above items, you can designate which virtual machines or hosts to analyze.
8. In **Run**, set the frequency of the analysis to run. There are further options based on which **Run** option you choose.
   - Click **Once** to have the analysis run only one time.
   - Click **Daily** to run the analysis on a daily basis. You will be prompted to select the number of days between each analysis.
   - Click **Hourly** to run the analysis hourly. You will be prompted to select the number of hours between each analysis.
9. Select a **Time Zone**.

NOTE

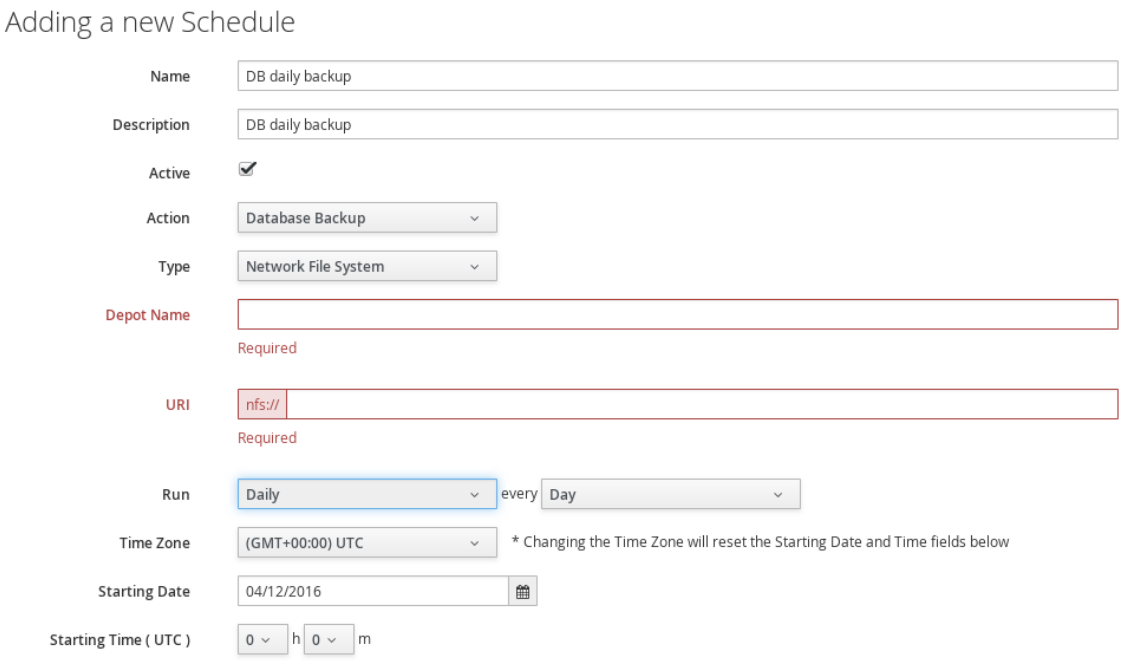
If you change the **Time Zone**, you will need to reset the stating date and time.

10. Type or select a date to begin the schedule in **Starting Date**.
11. Select a **Starting Time** based on a 24 hour clock in the selected Time Zone.
12. Click **Add**.

4.1.5.2. Scheduling a Database Backup

To schedule a database backup:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then click **Schedules**.
3. Click (**Configuration**), and (**Add a new Schedule**).
4. In the **Basic Information** area, type in a **Name** and **Description** for the schedule.



5. Select **Active** to enable this backup schedule.
6. From the **Action** list, select **Database backup**.
7. In the **Database Backup Settings** area, select a type of server to put the backups. You can either use **Network File System** or **Samba**.
   - If selecting **Samba**, enter the **Depot Name**, **URI**, **User ID**, and a valid **Password**. Then, click **Validate** to check the settings.
   - If you choose **Network File System**, enter the **Depot Name** and **URI**.
8. In **Run**, set the frequency of the analysis to run. There are further options based on which **Run** option you choose.
   - Click **Once** to have the backup run only one time.
   - Click **Daily** to run the backup on a daily basis. You will be prompted to select the number of days between each backup.
   - Click **Hourly** to run the backup hourly. You will be prompted to select the number of hours between each backup.
9. Select a **Time Zone**.

NOTE

If you change the **Time Zone**, you will need to reset the stating date and time.

10. Type or select a date to begin the schedule in **Starting Date**.
11. Select a **Starting Time** (UTC) based on a 24 hour clock in the selected time zone.
12. Click **Add**.

4.1.5.2.1. Modifying a Schedule

To modify a schedule:

1. From the settings menu, select **Configuration**.
2. Click on the **Settings** accordion, then click **Schedules**.
3. Click the schedule that you want to edit.
4. Click (**Configuration**), and then click (**Edit this Schedule**).
5. Make the required changes.
6. Click **Save**.

4.2. ACCESS CONTROL

From the settings menu, select **Configuration**. Click on the **Access Control** accordion to see a hierarchy of the configurable items for users, groups, roles, and tenants. You can add and modify users, groups, account roles, tenants, and projects.

NOTE

For information about tenancy in CloudForms, and the difference between a tenant and project, see Tenancy in the *Deployment Planning Guide*.

4.2.1. Creating a Tenant

To create a tenant:

1. From the settings menu, select **Configuration**.
2. Click on the **Access Control** accordion, then click **Tenants**.
3. Click on the top-level **Tenant**, click (**Configuration**), and (**Add child Tenant to this Tenant**) to create a tenant.
4. Enter a name for the tenant in the **Name** field.
5. Enter a description for the tenant in the **Description** field.
6. Click **Add**.

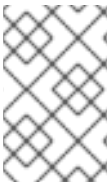
4.2.2. Creating a Project

To create a project:

1. From the settings menu, select **Configuration**.
2. Click on the **Access Control** accordion, then click **Tenants**.
3. Click on the **Tenant** where you want to add a **Project**, click (**Configuration**), and (**Add Project to this Tenant**) to create a project.
4. Enter a name for the project in the **Name** field.
5. Enter a description for the project in the **Description** field.
6. Click **Add**.

4.2.3. Managing Tenant and Project Quotas

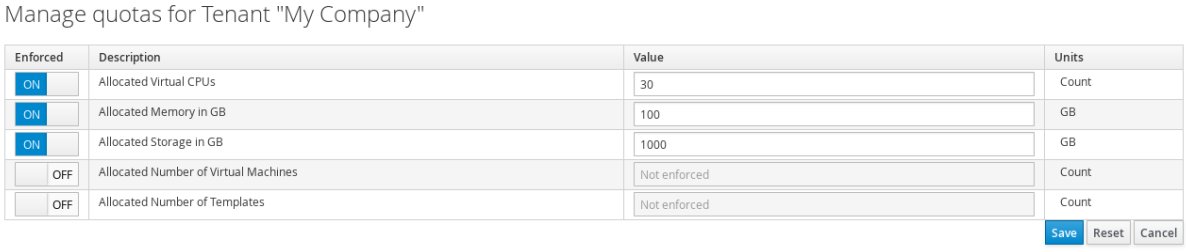
Use the following procedure to allocate or edit quotas for tenants and projects.



NOTE

Quota is allocated based on the user's current group. If the user belongs to multiple groups, you must change to the desired group before allocating or editing group quota. See Section 4.2.7, "Groups" for more details.

1. From the settings menu, select **Configuration**.
2. Click on the **Access Control** accordion, then click **Tenants**.
3. Click on the **Tenant** or **Project** where you want to add a quota, click (**Configuration**), and (**Manage quotas for the Selected Item**) to create a quota.
4. In the list of pre-built quotas, switch **Enforced** next to the quota item you want to enable to **Yes**.
5. In the **Value** field, enter the constraints you want to apply to the quota.



6. Click **Save**.

4.2.4. Tagging Tenants and Projects

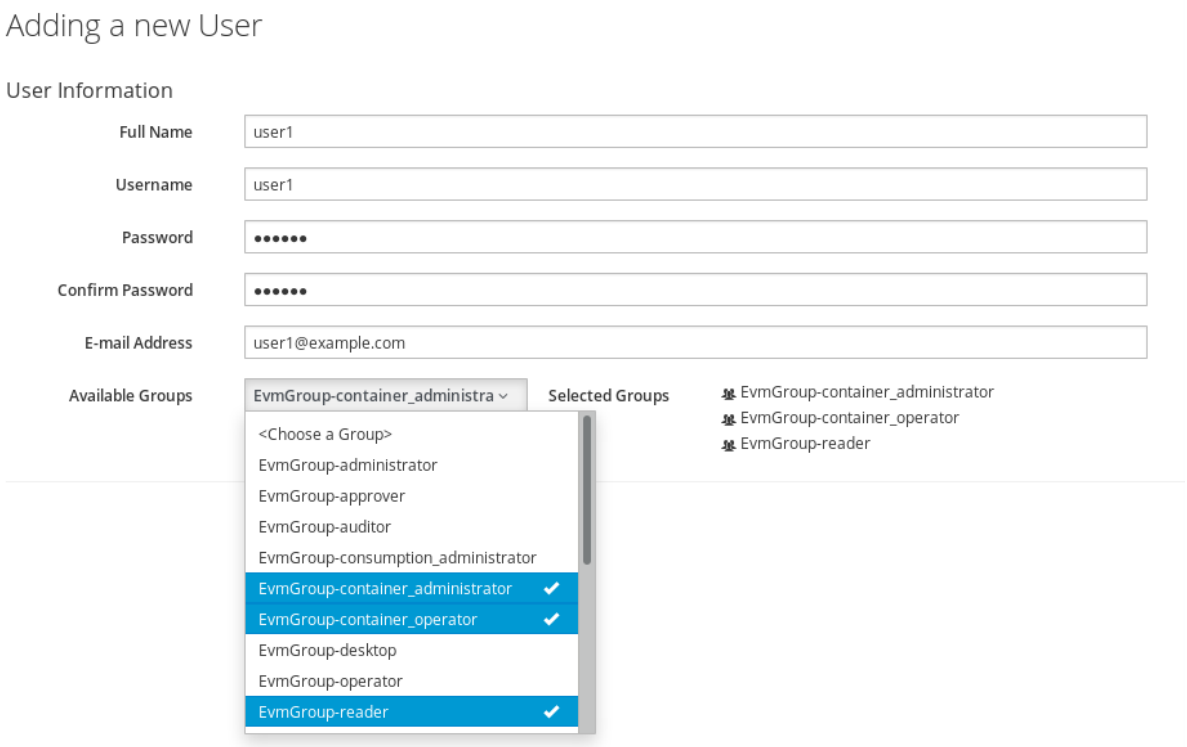
To tag tenants and projects:

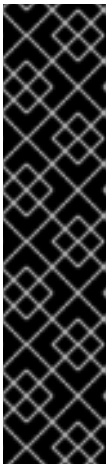
1. From the settings menu, select **Configuration**.
2. Click on the **Access Control** accordion, then click **Tenants**.
3. Select the tenant or project, then click **Policy**, and select **Edit My Company Tags for this Tenant**.
4. In **Tag Assignment**, click **Select a customer tag to assign**, and select a tag from the list. In the next column, set a corresponding value.
5. Click **Save**.

4.2.5. Creating a User

To create a user:

1. From the settings menu, select **Configuration**.
2. Click on the **Access Control** accordion, then click **Users**.
3. Click  (**Configuration**), and  (**Add a new User**) to create a user.
4. Enter a **Full Name**, **Username**, **Password** with confirmation, and **Email Address** for the user. An email address is required; omitting the user email address can result in unsuccessful provisioning requests.





IMPORTANT

- If you are using LDAP, but did not enable **Get User Groups from LDAP** in your server's **Authentication** tab, you will need to define a user. The UserID must match exactly the user's name as defined in your directory service. Use all lowercase characters to ensure the user can be found in the VMDB.
- When the user logs in, they use their LDAP password.
- For more information on configuring LDAP authentication in CloudForms, see Configuring LDAP or LDAPS Authentication in *Managing Authentication*.

5. Select one or more groups from **Available Groups**.
6. Click **Add**.

4.2.6. Deleting a User

For security reasons, delete any user that no longer needs access to the information or functions of the server.

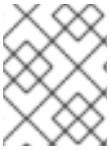
To delete a user:

1. From the settings menu, select **Configuration**.
2. Click on the **Access Control** accordion, then click **Users**.
3. Select the user you want to delete.
4. Click  (**Configuration**), and  (**Delete selected Users**) to delete a user.

4.2.7. Groups

User groups create filters and assign roles to users. You can either create your own groups, or leverage your LDAP directory service to assign groups of users to account roles. For a list of what each pre-defined account role can do, see Section 4.2.9, "Roles".

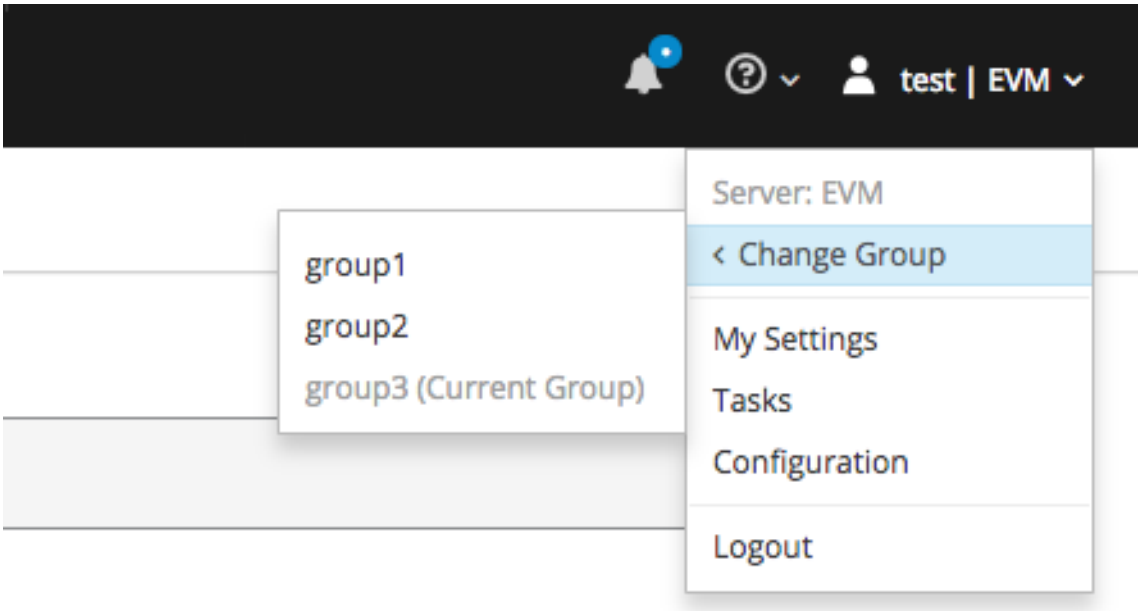
A user can exist in multiple groups. However, a group can only be assigned one account role.



NOTE

See Assigning CloudForms Account Roles Using LDAP Groups in *Managing Authentication*.

If a user belongs to multiple groups, you can change the user's current group by navigating to the settings menu, clicking **Change Group**, then selecting the desired group. The **Current Group** affects quota and other settings for the user.

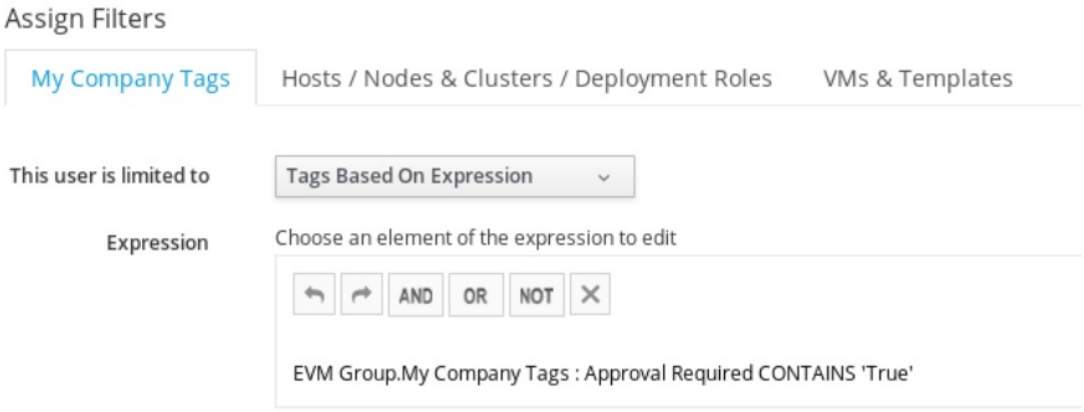


4.2.8. Creating a Group

To create a user group:

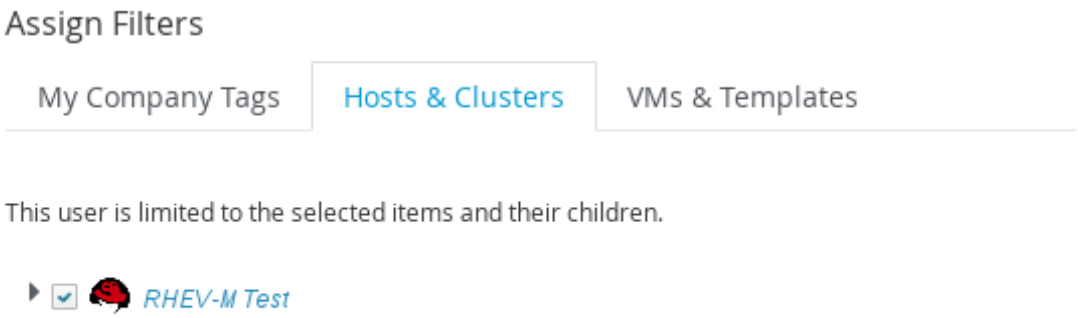
1. From the settings menu, select **Configuration**.
2. Click on the **Access Control** accordion, then click **Groups**.
3. Click (**Configuration**), and (**Add a new Group**) to create a group.
4. Enter a name for the group in the **Name** field. To ensure compatibility with tags, use underscores in place of spaces. For example, Red Hat CloudForms-**`test_group`**.
5. Select a **Role** to map to this group. For a description of each CloudForms role, see Section 4.2.9.1, “Account Roles and Descriptions”.
6. Select the **Project/Tenant** this group must belong to.
7. Limit what users in this group can view by selecting filters in the **Assign Filters** area.
   a. Click the **<My Company> Tags** tab to select the tags that users in this group can access. Resources with the selected tags attached can be accessed by this group. Select tags using one of the options in the **This user is limited to** list:
      - Select **Specific Tags**, then check the boxes for the tags that you want to limit this user to. The items that have changed will show in blue italicized font.
      - Select **Tags Based On Expression**, then create tags based on an expression using AND, OR, or NOT. This allows you to further limit the resources accessible to a user: for example, to specify a combination of tags

that must exist on a resource.



b. Click the **Host & Clusters** tab.

   i. Check the boxes for the host and clusters that you want to limit this user to. The items that have changed will show in blue italicized font.



c. Click the **VMs & Templates** tab. This shows folders that you have created in your virtual infrastructure.

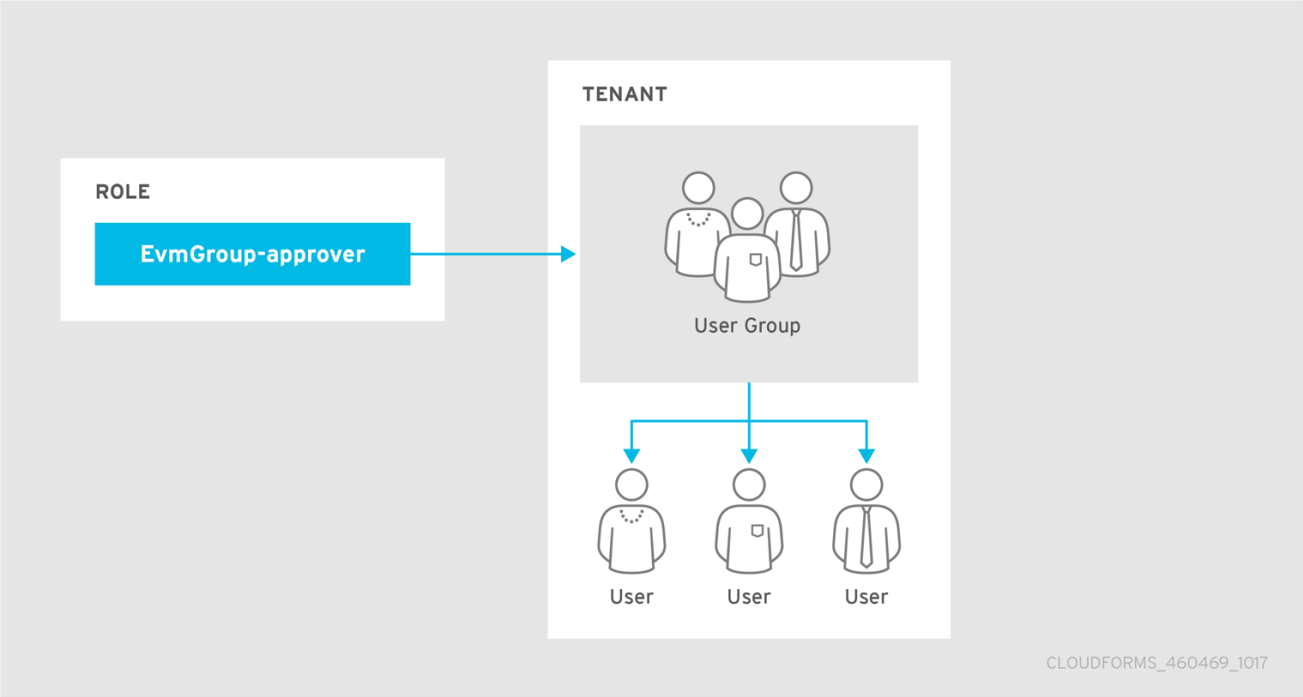
   i. Check the boxes for the folders that you want to limit this user to. The items that have changed will show in blue italicized font.

8. Click **Add**.

After creating a group, assign one or more users to the group by editing a user.

4.2.9. Roles

When you create a group, you must specify a role to give the group rights to resources in the console. The group's role determines the scope of access for the users that are members of the group.



Red Hat CloudForms provides a default group of roles, but you can also create your own, or copy and edit the default groups.

NOTE

If you have enabled **Get Role from LDAP** under **LDAP Settings**, then the role is determined by the LDAP user's group membership in the directory service. See Configuring LDAP or LDAPS Authentication in *Managing Authentication*.

To view details of a role and its level of access:

1. From the settings menu, select **Configuration**.
2. Click on the **Access Control** accordion, then click **Roles**.
3. Click on a role from the list to display role information and the product features the role can access (marked by a checkmark). You can expand the categories under **Product Features** to see further detail.

The table below shows a summary of the functions available to each role.

4.2.9.1. Account Roles and Descriptions

Role	Description
Administrator	Administrator of the virtual infrastructure. Can access all infrastructure functionality. Cannot change server configuration.
Approver	Approver of processes, but not operations. Can view items in the virtual infrastructure, view all aspects of policies and assign policies to policy profiles. Cannot perform actions on infrastructure items.

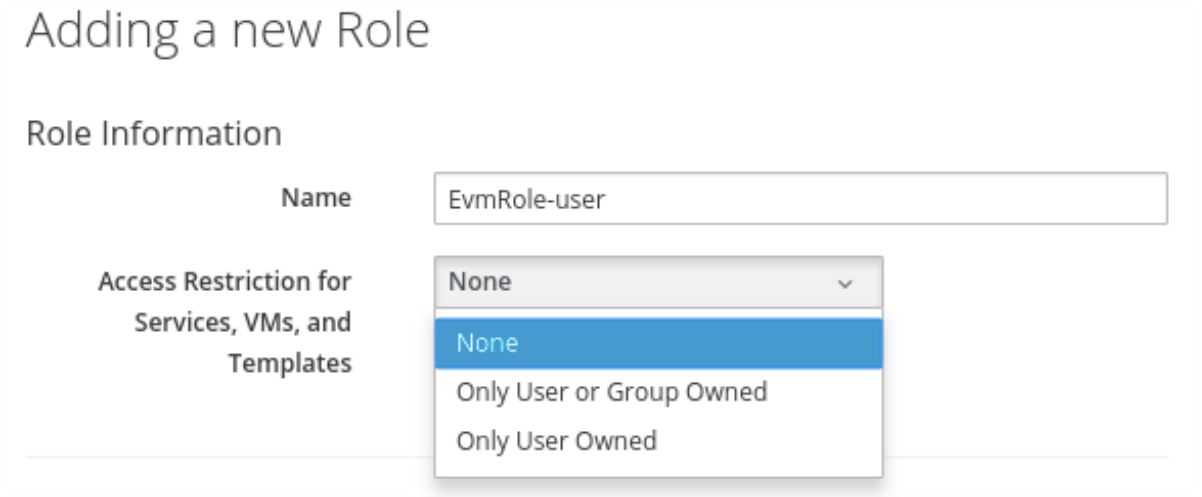
Role	Description
Auditor	Able to see virtual infrastructure for auditing purposes. Can view all infrastructure items. Cannot perform actions on them.
Container Administrator	Administrator with capabilities to configure, view and execute tasks on all containers and related underlying infrastructure. Has access to Nodes, Pods and Projects dashboards.
Container Operator	This role can view and execute tasks related to containers and related underlying infrastructure. The Container Operator has access to locked versions of the same dashboards as the Container Administrator.
Desktop	Access to VDI pages.
Operator	Performs operations of virtual infrastructure. Can view and perform all functions on virtual infrastructure items including starting and stopping virtual machines. Cannot assign policy, but can view policy simulation from Virtual Machine page.
Security	Enforces security for the virtual environment. Can assign policies to policy profiles, control user accounts, and view all parts of virtual infrastructure. Cannot create policies or perform actions on virtual infrastructure.
Super Administrator	Administrator of Red Hat CloudForms and the virtual infrastructure. Can access all functionality and configuration areas.
Support	Access to features required by a support department such as diagnostics (logs). Can view all infrastructure items and logs. Cannot perform actions on them.
Tenant Administrator	Configures settings applicable to a Tenant. Sets Branding, maps groups/roles, configures LDAP credentials, and configures dashboard settings.
Tenant Quota Administrator	Configures quota limits for the tenant, applying usage constraints for CPU, Memory, Storage, Maximum number of VMs, and Maximum number of Templates.
User	User of the virtual infrastructure. Can view all virtual infrastructure items. Cannot perform actions on them.
User Limited Self Service	Limited User of virtual machines. Can make provision requests. Can access some functions on the virtual machine that the user owns including changing power state.

Role	Description
User Self Service	User of virtual machines. Can make provision requests. Can access some functions on the virtual machine that the user owns and that the user's LDAP groups own including changing power state.
Vm User	User of virtual machines. Can access all functions on the virtual machine including changing power state and viewing its console. Cannot assign policy, but can view policy simulation from virtual machine page.

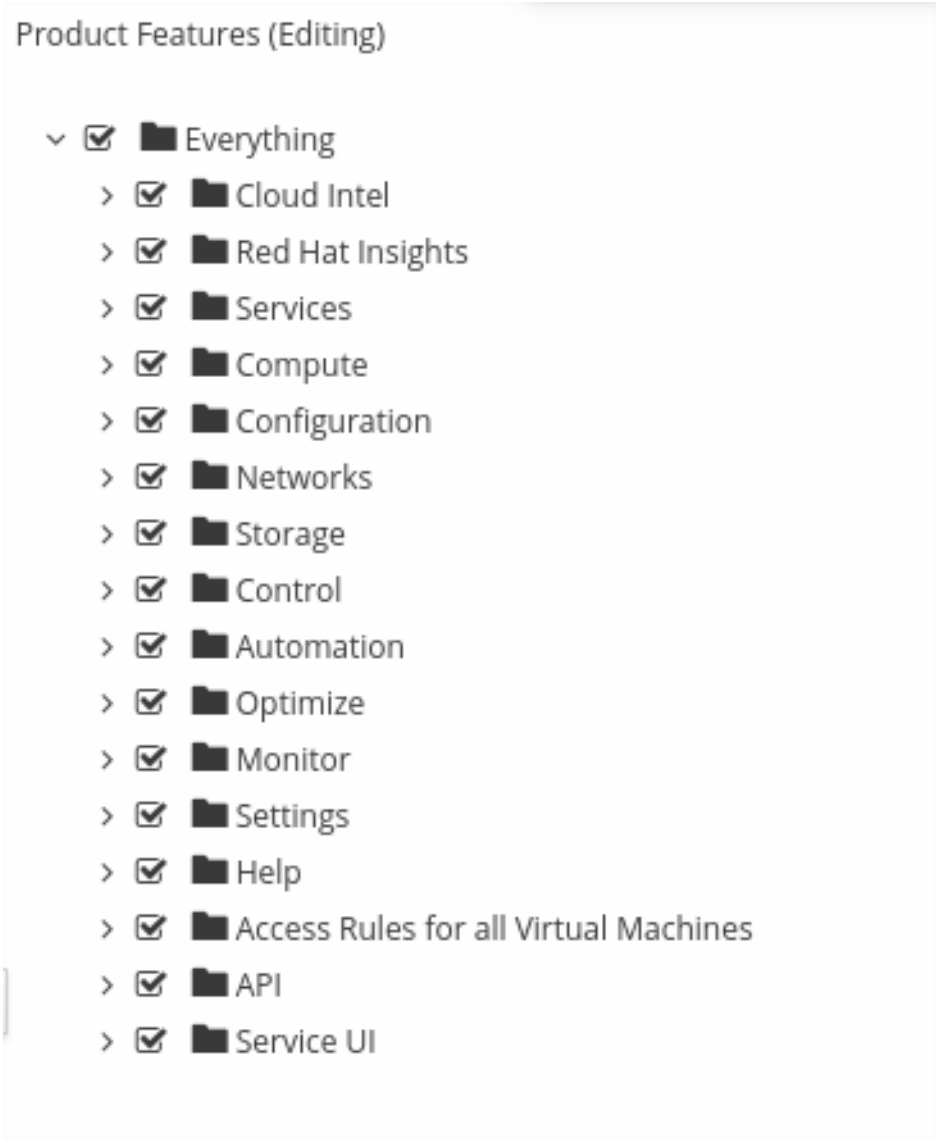
4.2.10. Creating a Role

To create a role:

1. From the settings menu, select **Configuration**.
2. Click on the **Access Control** accordion, then click **Roles**.
3. Click (Configuration), and (Add a new Role). Alternatively, you can copy an existing role to a new role by clicking **Copy this to a new Role**.
4. In the **Role Information** area, type a name for the new role. For **Access Restriction for Services, VMs, and Templates**, select if you want to limit users with this role to only see resources owned by the user or their group, owned by the user, or all resources (**None**):



5. Under **Product Features (Editing)**, navigate to the appropriate feature and enable or disable it:



6. Click **Add**.

4.3. DIAGNOSTICS

From the settings menu, select **Configuration**. Click on the **Diagnostics** tab to see the status of the different Red Hat CloudForms roles and workers for each server, view and collect logs, and gather data if there are any gaps in capacity and utilization information. The Diagnostics area is designed in a hierarchy.

- At the **region** level, you can see replication status, backup the VMDB, and run garbage collection on the VMDB.
- At the **zone** level, you can see Red Hat CloudForms roles by servers and servers by roles. In addition, you can set log collection values for a specific zone, and collect gap data for capacity and utilization.
- At the **server** level, you can see the workers for each server, set log collection values for a specific server, and view current logs.

4.3.1. Region Diagnostics

Using the console, you can set the priority of server regional roles, review and reset replication, and create backups of your database either on demand or on a schedule.

Regions are used primarily to consolidate multiple VMDBs into one master VMDB for reporting while zones are used to define functional groups of servers. There can be only one region per VMDB, but multiple zones per region (or VMDB). Some server roles are aware of each other across Red Hat CloudForms appliances at the region level. This means that redundancy and failover rules apply at the region level. You can also set priorities for the server roles that provide failover.

4.3.1.1. Server Role Priorities

If you have multiple servers in your environment with duplicate failover roles, then you can set the priority of the server role.

- Only server roles that support failover can be marked as primary. These roles only allow one server to be active at a time. These are **Notifier**, **Capacity & Utilization Coordinator**, **Event Monitor**, **Scheduler**, **Storage Inventory**, and **Provider Inventory**.
- All other server roles are additive. The more servers with that role in a zone the more work that can be performed.

There are three role priorities.

- **Primary**: There can only be one primary per zone or region per role. When an appliance is started, the system looks to see if any role is set to primary. If that is the case, the role is activated on that appliance and deactivated from the secondary. In the console, primary roles are shown in bold letters. The text turns red if the server goes down. You must actively set the primary priority.
- **Secondary**: This is the default priority. There can be multiple secondaries. When an appliance is started, if no primary is found in the zone, the first appliance to start takes the role. In the console, secondary roles are displayed normally with the word "secondary".
- **Tertiary**: If all appliances with primary roles or secondary roles were down, one of the tertiary would be activated. The reason for tertiary is to ensure that if a server with crucial roles such as Provider Inventory or Event Monitor goes down, you have a way to associate those roles to different appliances by organizing the priorities. Tertiary roles simply show as active in the console.

4.3.2. Region Aware Server Roles

Role	More than one per Region	Can have Priority Set
Automation Engine	Y	N
Database Operations	Y	N
Notifier	N	Y

Role	More than one per Region	Can have Priority Set
Reporting	Y	N
Scheduler	N	Y
User Interface	Y	N
Web Services	Y	N

4.3.3. Setting the Priority of a Failover Role

To set the priority of a failover role:

1. From the settings menu, select **Configuration**.
2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.
3. Depending on how you want to view your servers, click either the **Roles by Servers** tab or the **Servers by Roles** tab.
4. In the **Status** of **Roles for Servers** in **Zone Default Zone** area, click on the role that you want to set the priority for.
5. Click  (**Configuration**), and  (**Promote Server**) to make this the primary server for this role.
6. Click  (**Configuration**), and  (**Demote Server**) to demote the priority of this server for this role.

4.3.4. Zone Diagnostics

The console provides a way to see all the server roles that a server has been assigned and if these roles are running. This is especially helpful when you have multiple servers with different server roles. For each zone you can also set a central place for all logs to be collected, and collect capacity and utilization data that may be missing.

4.3.4.1. Viewing the Status of Server Roles

To view the status of server roles:

1. From the settings menu, select **Configuration**.
2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.
3. Depending on how you want to view your servers, click either **Roles by Servers** or the **Servers by Roles**.

4.3.4.2. Zone Aware Server Roles

Role	More than one per Region	Can have Priority Set
Automation Engine	Y	N
Capacity & Utilization Coordinator	N	Y
Capacity & Utilization Data Collector	Y	N
Capacity & Utilization Data Processor	Y	N
Database Operations	Y	N
Event Monitor	N	Y
Provider Inventory	N	Y
Provider Operations	Y	N
Notifier	N	Y
Reporting	Y	N
Scheduler	N	Y
SmartProxy	Y	N
SmartState Analysis	Y	N
User Interface	Y	N
Web Services	Y	N

4.3.4.2.1. Removing an Inactive Server

To remove an inactive server:

1. From the settings menu, select **Configuration**.
2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.
3. Click on the name of the server in the tree view.
4. Click  (**Delete Server**). This button is available only if the server is inactive.

4.3.4.3. Zone Log Collections

If you have multiple servers reporting to one central VMDB, then you can collect the configuration files and logs from the console of any of the servers. While you can set this

either at the zone or server level, settings at the server level supersede the ones at the zone level.

Log depot options include:

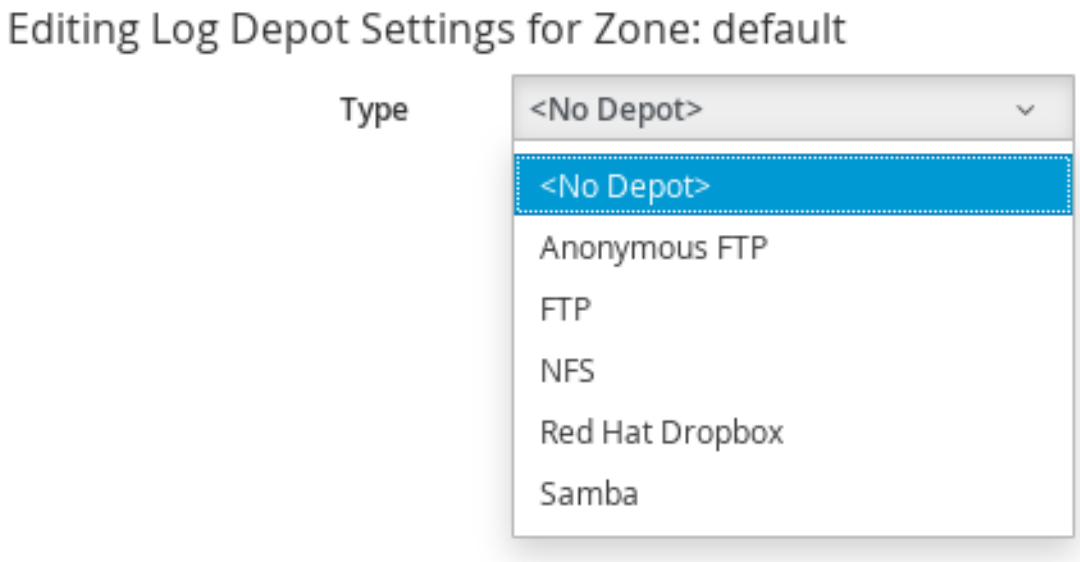
- Anonymous File Transfer Protocol (FTP)
- File Transfer Protocol (FTP)
- Network File System (NFS)
- Red Hat Dropbox
- Samba

See your network administrator if you need to set up one of these shares. You will also need a user that has write access to that location.

4.3.4.3.1. Setting the Location of the Log Depot

To set the location of the log depot:

1. From the settings menu, select **Configuration**.
2. Click the **Diagnostics** accordion, then click the **Zone** that you want to view.
3. Click **Collect Logs**.
4. Click (**Edit**).
5. Select the **Type** of share.
6. Using the fully qualified domain name (**FQDN**) of the depot server, type in the appropriate settings for the **URI**.



7. If required, enter your user **ID** and **password** then click **Validate** to confirm the settings.

8. Click **Save**.

4.3.4.3.2. Collecting and Downloading Logs from All Servers in a Zone

To collect and download logs from all servers in a zone:

1. From the settings menu, select **Configuration**.
2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.
3. Click the **Collect Logs** tab.
4. Click  (**Collect all logs**). All files in the logs directory as well as configuration files are collected from the selected zone.
5. Click **OK**. The status of the log retrieval shows in the Red Hat CloudForms console.

4.3.4.4. Capacity and Utilization Repair

Under certain circumstances, it is possible that Red Hat CloudForms is not able to collect capacity and utilization data. This could be due to password expiration, a change in rights to the cloud provider and this change didn't provide enough granularity to the Red Hat CloudForms service account, or network connectivity. The gap data is collected directly by extracting the monthly performance data. Gap collection need to be completed for each zone individually. Therefore, the procedure below need to be repeated for each zone.

4.3.4.4.1. Repairing Capacity and Utilization Data

To repair capacity and utilization data:

1. Log in to a Red Hat CloudForms appliance located in the zone for which you want to gather the data.
2. From the settings menu, select **Configuration**.
3. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.
4. Click **C & U Gap Collection**.
    a. Select the appropriate **Timezone**.

    NOTE

    Do not select more than one week unless instructed to do so by Red Hat Support.

    b. Select a **Start Date**.
    c. Select an **End Date**.
5. Click **Submit**.

After the gap collection has completed for this zone, repeat these same steps for the next zone. You can check for completion by going to the clusters page and checking for the capacity and utilization data for the time period specified.

4.3.5. Server Diagnostics

Under **Diagnostics** for a server, you can view the status of Red Hat CloudForms workers running on the server, set log collection setting for only that server, and view the server's current Red Hat CloudForms and audit logs.

4.3.5.1. Workers

The **Workers** tab enables you to see the status of and restart Red Hat CloudForms workers.

You can see additional information on and restart the following items:

- **C & U Metrics Collectors** that collects capacity and utilization data.
- **C & U Metrics Processors**, which processes the collected capacity and utilization data.
- **Event Handlers** put events from the Event Monitor into the VMDB and starts Red Hat CloudForms processes if needed base on that information.
- **Event Monitors** that communicate with the external cloud provider to deliver up to date event information.
- **Generic Workers** that perform long running and priority processes.
- **Priority Workers** that perform high priority, short processes.
- **Schedule Workers** that maintains any items that run on a schedule.
- **Session Broker** that maintains a single connection to the cloud providers .
- **Refresh Workers** that runs the refresh processes.
- **Reporting Workers** that generate reports.
- **SmartProxy Workers** that run SmartState Analyses on virtual machine.
- **User Interface Worker** that allows users access to the console.
- **Web Services Worker** that maintains Red Hat CloudForms Web services.
- **VM Analysis Collectors** that run and process SmartState Analyses on virtual machines.

4.3.5.1.1. Reloading Worker Display

To reload worker display:

1. From the settings menu, select **Configuration**.
2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.
3. Select the server that you want to view.
4. Click the **Workers** tab.

5. Click  (**Refresh Current Workers display**).

4.3.5.1.2. Restarting a Worker

To restart a worker:

1. From the settings menu, select **Configuration**.
2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.
3. Select the server that you want to view.
4. Click on the **Workers** tab.
5. Click on the worker you want to restart.
6. Click  (**Configuration**), then  (**Restart selected worker**).
7. Click **OK**.

4.3.5.2. Server and Audit Logs

4.3.5.2.1. Collecting Server Logs and Configuration Files

While you can designate a central location to collect logs for all servers in a specific zone, you can override those values for a specific server. To do this, designate a log depot location to store the files.

Log depot options include:

- Anonymous File Transfer Protocol (FTP)
- File Transfer Protocol (FTP)
- Network File System (NFS)
- Red Hat Dropbox
- Samba

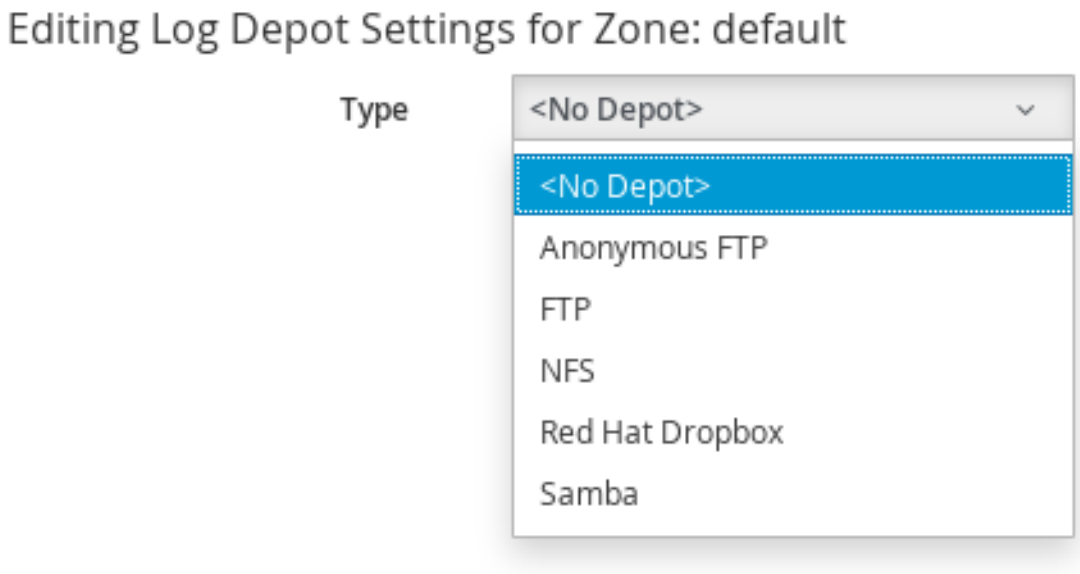
See your network administrator to set up one of these shares. You also need a user that has write access to that location. Settings at the server level supersede the ones at the zone level.

4.3.5.2.2. Setting the Location of the Log Depot for a Specific Server

To set the location of the log depot for a specific server

1. From the settings menu, select **Configuration**.
2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.
3. Select the server that you want to collect logs for.
4. Click on the **Collect Logs** tab.

5. Click  (**Edit Log Depot Settings for the selected Server**).
6. Select the **Type** of share.



7. Using the fully qualified domain name (**FQDN**) of the depot server, type in the appropriate settings for the **URI**.
8. Enter your user ID and password, then click **Validate** to confirm the settings.
9. Click **Save**.

4.3.5.2.3. Collecting the Current Log Set of a Server

To Collect the Current Log Set of a Server

1. From the settings menu, select **Configuration**.
2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.
3. Select the server that you want to collect logs for.
4. Click on the **Collect Logs** tab.
5. Click  (**Collect**), then click  (**Collect current logs**). All current log files in as well as configuration files are collected.
6. Click **OK**. The status of the log retrieval shows in the Red Hat CloudForms console.

4.3.5.2.4. Collecting All Log Sets from a Server

To Collect All Log Sets from a Server

1. From the settings menu, select **Configuration**.
2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.
3. Select the server that you want to collect logs for.

4. Click **Collect Logs**.

5. Click  (**Collect**), then click  (**Collect all logs**). All files in the logs directory as well as configuration files are collected.

6. Click **OK**. The status of the log retrieval shows in the Red Hat CloudForms console.

4.3.5.2.5. Viewing the Server, Audit, and Production Logs

The server and audit logs roll over daily. The previous logs are stored as zipped files in the `/var/www/miq/vmdb/log` folder. The current logs can be easily viewed and downloaded from the settings menu; select **Configuration**, then click on the **Diagnostics** accordion.

Use the server log to see all actions taken by the server including communication with the SmartProxy and tasks.

4.3.5.2.6. Viewing the Server Log

To view the server log:

1. From the settings menu, select **Configuration**.

2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.

3. Select the server that you want to view.

4. Click **CFME Log**.

The Red Hat CloudForms server automatically retrieves the last 1000 lines of the log.

4.3.5.2.7. Reloading the Server Log

To reload the server log:

1. From the settings menu, select **Configuration**.

2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.

3. Select the server that you want to view.

4. Click **CFME Log**.

5. Click  (Reload the Log Display).

4.3.5.2.8. Downloading the Server Log

To download the server log:

1. From the settings menu, select **Configuration**.

2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.

3. Select the server that you want to view.

4. Click **CFME Log**.

5. Click  (**Download the Entire EVM Log File**).

NOTE

Use the **Audit Log** to see changes to the user interface and authentication.

4.3.5.2.9. Viewing the Audit Log

To view the audit log:

1. From the settings menu, select **Configuration**.
2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.
3. Select the server that you want to view.
4. Click **Audit Log**.

The server automatically retrieves the last 1000 lines of the log.

4.3.5.2.10. Reloading the Audit Log

To reload the audit log:

1. From the settings menu, select **Configuration**.
2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.
3. Select the server that you want to view.
4. Click **Audit Log**.
5. Click  (**Reload the Audit Log Display**).

4.3.5.2.11. Downloading the Audit Log

To download the audit log:

1. From the settings menu, select **Configuration**.
2. Click on the Diagnostics accordion, then click the Zone that you want to view.
3. Select the server that you want to view.
4. Click Audit Log.
5. Click  (**Download the Entire Audit Log File**).

4.3.5.2.12. Viewing the Production Log

Use the production log to see all actions performed using the console.

To view the production log:

1. From the settings menu, select **Configuration**.
2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.
3. Select the server that you want to view.
4. Click **Production Log**.

The Red Hat CloudForms server automatically retrieves the last 1000 lines of the log.

4.3.5.2.13. Reloading the Production Log

To reload the production log:

1. From the settings menu, select **Configuration**.
2. Click on the Diagnostics accordion, then click the Zone that you want to view.
3. Select the server that you want to view.
4. Click **Production Log**.
5. Click  (**Reload the Product Log Display**).

4.3.5.2.14. Downloading the Production Log

To download the production log:

1. From the settings menu, select **Configuration**.
2. Click on the **Diagnostics** accordion, then click the **Zone** that you want to view.
3. Select the server that you want to view.
4. Click **Production Log**.
5. Click  (**Download the Production Log File**).

4.4. DATABASE OPERATIONS

4.4.1. Viewing Information on the VMDB

The **Database** accordion displays a summary of VMDB information, a list of all tables and indexes, settings for the tables, active client connection, and database utilization.

To view information on the VMDB:

1. From the settings menu, select **Configuration**.
2. Click the **Database** accordion.
3. Click **VMDB** in the tree view on the left.
4. Click the appropriate tab to view the desired information:

- **Summary**: displays statistics about the database.
- **Tables**: displays a clickable list of all the tables.
- **Indexes**: displays a clickable list of all the indexes.
- **Settings**: displays a list of all tables, their descriptions, and other valuable Information.
- **Client Connections**: displays all current connections to the VMDB.
- **Utilization**: displays usage charges for the disk and index nodes.

4.4.2. Database Regions and Replication

Regions are used to create a central database for reporting and charting. Do not use the database at the top level for operational tasks such as SmartState analysis or capacity and utilization data collection. Assign each server participating in the region a unique number during the regionalization process, then set your subordinate regions to replicate to the top region.

IMPORTANT

All Red Hat CloudForms databases in a multi-region deployment must use the same security key.

4.4.2.1. Creating a Region

In principle, a region is created when you set up your Red Hat CloudForms environment on the first appliance for the region. However, you can also create a region on an appliance where a database has already been set up. This process involves dropping and rebuilding the existing database to accommodate the new region number, and takes several minutes to complete.

WARNING

Performing this procedure destroys any existing data and cannot be undone. Back up the existing database before proceeding. By default, new appliances are assigned region 0. Do not use this number when creating a region because duplicate region numbers can compromise the integrity of the data in the database.

1. Log in to the appliance as the **root** user.
2. Enter **`appliance_console`**, and press **Enter**.
3. Press any key.
4. Select **`Stop EVM Server Processes`**.
5. Enter **`Y`** to confirm.

6. Choose **`Configure Database`**.
7. Enter a database region number that has not been used in your environment. Do not enter duplicate region numbers because this can corrupt the data.
8. Enter **`Y`** to confirm.
9. The menu reappears after all processes are complete.
10. Select **`Start EVM Server Processes`**.
11. Enter **`Y`** to confirm.
12. Select **Quit** to exit the advanced settings menu.

4.4.3. Configuring Database Replication and Centralized Administration

To configure database replication, you must configure one Red Hat CloudForms instance to act as a global copy, and one or more other instances to act as remote copies. This database replication relationship can only be configured on Red Hat CloudForms instances that are of the same version.

NOTE

Configuring database replication in this version of CloudForms automatically enables centralized administration, eliminating the need for further configuration.

Centralized administration in Red Hat CloudForms supports life cycle management operations that can be initiated from the global copy and processed and executed on the remote copy.

IMPORTANT

- You must configure at least one remote copy before you can configure the global copy. Changes to the role of a Red Hat CloudForms instance take several minutes to take effect.
- The region number must be unique on each Red Hat CloudForms instance where replication is configured. See Section 4.4.2.1, “Creating a Region” for instructions on how to create a region.

4.4.3.1. Configuring a Remote Copy

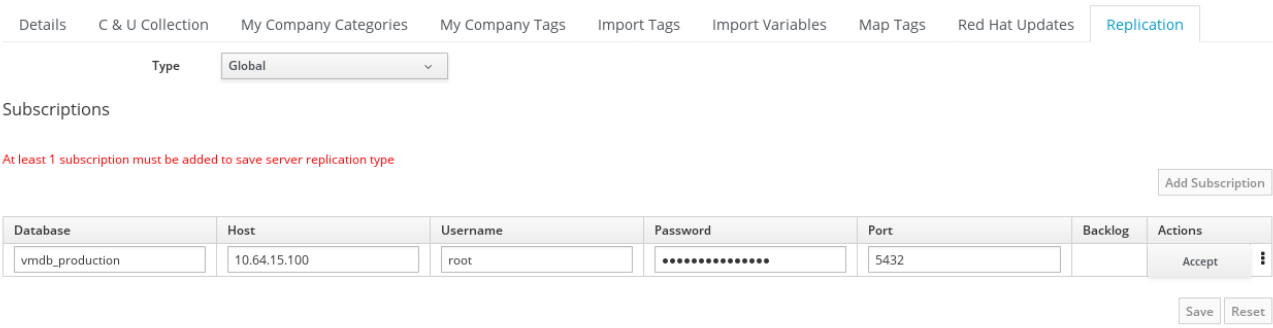
Configure a Red Hat CloudForms instance to act as a remote copy from which data will be replicated to the global copy.

1. Navigate to the settings menu.
2. Click **Configuration**.
3. Click the **Settings** accordion.
4. Click the region where the instance is located.

5. Click **Replication**.
6. Select **Remote** from the **Type** list.
7. Click **Save**.

4.4.3.2. Configuring the Global Copy

Configure a Red Hat CloudForms instance to act as the global copy to which data is replicated from the remote copies.



1. Navigate to the settings menu.
2. Click **Configuration**.
3. Click the **Settings** accordion.
4. Click the region where the instance is located.
5. Click **Replication**.
6. Select **Global** from the **Type** list.
7. Click **Add Subscription**.
   a. Enter the name of the database on the remote copy in the **Database** field.
   b. Enter the IP address or fully qualified domain name of the remote copy in the **Host** field.
   c. Enter the name of a database user able to access the database in the **Username** field.
   d. Enter the password of the database user in the **Password** field.
   e. Enter the port by which the database is accessed in the **Port** field.
   f. In **Actions**, click **Accept**. You can also **Update** your subscription if required, or click the menu on the right in order to **Validate** or **Discard**.
8. Click **Save**.

NOTE

Once you configure a Red Hat CloudForms instance to act as a global copy, and one or more other instances to act as remote copies, centralized administration is automatically enabled after the initial data sync is complete.

Database replication and centralized administration are now enabled on your instances. Centralized administration supports life cycle management operations, including virtual machine power operations and retirement, that can be initiated from the global copy and processed and executed on the remote copy.

See the section on *Centralized Administration* in the Deployment Planning Guide for an overview of the feature.

4.4.3.3. Resetting Database Replication

You can reset the replication relationship between the global copy and remote copies by temporarily removing and re-enabling the subscription from the global copy.

1. From the settings menu, select **Configuration**.
2. Click the **Settings** accordion.
3. Click the region where the instance is located.
4. Click **Replication**.
5. Remove the subscription:
    a. Click the actions button for the subscription to reset.
    b. Click **OK**.
6. Click **Save**.
7. Re-add the subscription:
    a. Click **Add Subscription**.
    b. Enter the name of the database on the remote copy in the **Database** field.
    c. Enter the IP address or fully qualified domain name of the remote copy in the **Host** field.
    d. Enter the name of a database user able to access the database in the **Username** field.
    e. Enter the password of the database user in the **Password** field.
    f. Enter the port by which the database is accessed in the **Port** field.
8. Click **Save**.

4.4.4. Backing Up and Restoring a Database

4.4.4.1. Running a Single Database Backup

To run a single database backup:

1. From the settings menu, select **Configuration**.
2. Click the **Diagnostics** accordion and click the **Region** name.
3. Click the **Database** tab.
4. If you have created a backup schedule and want to use the same depot settings, select the schedule in the **Backup Schedules** box.
5. If you do not want to use the settings from a backup schedule, select a type of server for storing the backups from the Type drop-down list in the **Database Backup Settings** box. You can use **Network File System** (NFS) or **Samba**.
   - If you select **Samba**, enter the **URI**, **User ID**, and a valid **Password**. Click **Validate** to check the settings.
   - If you select **Network File System**, enter the **URI**.
6. Click **Submit** to run the database backup.

4.4.4.2. Restoring a Database from a Backup

If a database is corrupt or fails, restore it from a backup. You can restore a backup from a local file, NFS, or Samba.

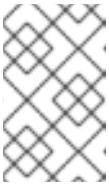
To restore a database from a backup:

1. Save the database backup file as **/tmp/evm_db.backup**. Red Hat CloudForms looks specifically for this file when restoring a database from a local backup.
2. If you are restoring a database backup on a high availability environment, stop the **regmgrd** service. This is not required in other CloudForms configurations.

   ```
   # systemctl stop rh-postgresql95-repmgr
   ```

3. Log in to the appliance as the **root** user.
4. Enter **appliance_console**, and press **Enter**.
5. Select **Stop EVM Server Processes** to stop processes on all servers that connect to this VMDB.
6. Enter **Y** to confirm.
7. After all processes are stopped, press **Enter** to return to the menu.
8. Press **Enter** again to manually configure settings.
9. Select **Restore Database From Backup**, then specify the location to restore the backup from in the **Restore Database File** menu:
   a. If you saved the database backup file locally as **/tmp/evm_db.backup**, select **Local file**. You can also restore from a **Network File System (nfs)** or **Samba (smb)**.

b. Specify the location of the backup file.



NOTE

The appliance console menu may respond slowly if connections are open and the server is still shutting down. If this occurs, wait a minute and try again.

10. Enter **Y** to keep the database backup after restoring from it. Enter **N** to delete it.
11. Press **Y** to confirm.
12. After the backup completes, press **Enter** to return to the menu.
13. Press **Enter** again to manually configure settings.
14. Select **Start EVM Server Processes** to restart all processes on servers that connect to this VMDB.
15. Enter **Y** to confirm.
16. If you are restoring a database backup on a high availability environment, start the **regmgrd** service. This is not required in other CloudForms configurations.

```
# systemctl start rh-postgresql95-repmgr
```

4.4.5. Performing a Binary Backup and Restoring the Database

Preserve data at the file system level by performing a binary backup. This includes all databases, users and roles, and other objects.

NOTE

This procedure uses the **pg_basebackup** utility to perform a remote database backup and create a full replacement of the PostgreSQL data directory, capturing the exact state of the database when the backup finishes. For more information on the **pg_basebackup** utility, see the PostgreSQL documentation.

4.4.5.1. Performing a Binary Backup

Create a binary backup and store it as a **gzip** tar file inside the CloudForms backup directory.

IMPORTANT

PostgreSQL superuser or user with *Replication* permissions are required to perform this procedure.

1. SSH into the database server as the **root** user or provide PostgreSQL superuser credentials.
2. Run the **pg_basebackup** command to create the backup.

```
# pg_basebackup -x -h hostname -U root -Ft -z -D filename
```

- where:

  -h *hostname*

  > Specifies the IP address of the database server.

  -D *filename*

  > Specifies the name of the directory created to contain the backup.

4.4.5.2. Restoring a Database from the Backup

Restore your PostgreSQL binary backup using the following steps. This process will require stopping both EVM and PostgreSQL services before restoring data.

1. Copy the existing backup to the target VM

   ```
   # scp filename/base.tar.gz root@hostname:/var/www/miq
   ```

2. SSH to the target VM.no

   ```
   # ssh root@hostname
   ```

3. Stop both the EVM and PostgreSQL servers.

   ```
   # systemctl stop evmserverd
   # systemctl stop $APPLIANCE_PG_SERVICE
   ```

4. Rename the existing data directory.

   ```
   # mv /var/opt/rh/rh-postgresql95/lib/pgsql/data /var/opt/rh/rh-
   postgresql95/lib/pgsql/data.backup
   ```

5. Create a clean data directory.

   ```
   # mkdir /var/opt/rh/rh-postgresql95/lib/pgsql/data
   ```

6. Unzip the tar file to the new directory.

   ```
   # tar -xzf /var/www/miq/base.tar.gz -C /var/opt/rh/rh-
   postgresql95/lib/pgsql/data
   ```

7. Correct permissions.

   ```
   # chown postgres:postgres /var/opt/rh/rh-postgresql95/lib/pgsql/data
   # chmod 700 /var/opt/rh/rh-postgresql95/lib/pgsql/data
   ```

8. Restart the PostgreSQL and EVM servers.

```
# systemctl start $APPLIANCE_PG_SERVICE
# systemctl start evmserverd
```

4.4.6. Running Database Garbage Collection

The database server collects garbage automatically, but Red Hat may occasionally direct you to run database garbage collection manually in order to reclaim unused space in your VMDB.

To run database garbage collection:

1. From the settings menu, select **Configuration**.
2. Click the **Diagnostics** accordion and click the **Region** name.
3. Click the **Database** tab.
4. In the **Run Database Garbage Collection Now** box, click **Submit**.

4.4.7. Changing the Database Password

Use the following procedures to change the password on appliances containing an internal database, and on worker appliances.

To change the password for an external database, use the procedure in Section 4.4.7.2, “Changing the Password on the Worker Appliances”.

NOTE

See Appliance Types in the *Deployment Planning Guide* for a summary of different types of appliances.

4.4.7.1. Changing the Password on the Database Appliance

Red Hat CloudForms provides a default database password for the internal PostgreSQL database.

To change the password, you need to stop the CloudForms service, change the password for the PostgreSQL database, run a command to change the password in the configuration file that **evmserverd** uses to access the server, and restart the CloudForms appliance.

1. Stop the CloudForms service:
   a. SSH into the appliance.
   b. To stop the CloudForms service, run the following command:

   ```
   service evmserverd stop
   ```

2. Use **pgadmin** to change the password for your CloudForms database (default is **vmdb_production**). If you do not have **pgadmin**, you can change the password by running:

   ```
   psql -U root -d vmdb_production
   ```

a. At the vmdb# prompt, type:

```
ALTER USER root WITH PASSWORD 'newpassword';
```

b. To exit **psql**, type:

```
\q
```

3. Change the password in the configuration file that **evmserverd** uses to access the server:

```
/var/www/miq/vmdb/tools/fix_auth.rb --databaseyml --password
newpassword
```

4. Restart the CloudForms service:

```
service evmserverd start
```

5. Verify that you can log in to the CloudForms console.

4.4.7.2. Changing the Password on the Worker Appliances

1. Stop the CloudForms service:

a. SSH into the appliance.

b. To stop the CloudForms service, run the following command:

```
service evmserverd stop
```

2. Change the password in the configuration file that **evmserverd** uses to access the server:

```
/var/www/miq/vmdb/tools/fix_auth.rb --databaseyml --password
newpassword
```

3. Restart the CloudForms service:

```
service evmserverd start
```

IMPORTANT

In a high availability environment, if using the same PostgreSQL user for replication, you must also change the password in the **/var/lib/pgsql/.pgpass** file on every database node.

Additionally, if the password for the user being used for region-to-region replication is changing, users must also change the password in the replication subscription screen. See Section 4.4.3.2, “Configuring the Global Copy”.

4.4.8. Adding a New Appliance to an Existing Region with a Non-default Password

1. Create the new appliance.
2. Start the appliance, but do not go into any of the configuration options, instead **SSH** into the new appliance.
3. In the **/var/www/miq/vmdb** directory, create a file called **REGION**. Its only contents should be the number of the Region that it is joining. (You could also just copy the **REGION** file from the VMDB appliance.)
4. Edit the **database.yml** file in the **/var/www/miq/vmdb** directory. (You may want to save from the original.)
   a. Replace the contents of the **"production"** section with the contents of the **"base"** section.
   b. Edit the **"host"** parameter to match the IP of the appliance hosting the VMDB.
   c. Save the new **database.yml**.
5. Run the following command to change the password in the configuration file that **evmserverd** uses to access the server:

```
/var/www/miq/vmdb/tools/fix_auth.rb --databaseyml --password
newpassword
```

6. Restart the new worker appliance:

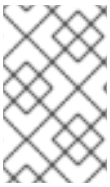
```
service evmserverd restart
```

4.4.9. Configuring Scheduled Database Maintenance

You can schedule hourly or periodic database maintenance through the appliance console. Performing regular PostgreSQL database maintenance helps to maintain a more responsive Red Hat CloudForms environment.

Hourly database maintenance tasks, such as reindexing, are useful for highly active database tables such as metrics, workers, and servers.

You also may want to perform periodic database maintenance to truncate empty metrics tables and reorganize the database. Periodic maintenance can be configured to run hourly, daily, weekly, or monthly, at a specified hour and on a specified day.



NOTE

Periodic maintenance can impact appliance performance while it is running. Red Hat recommends scheduling periodic maintenance infrequently, and at off hours.

To configure hourly and periodic database maintenance:

1. Log in to the appliance as the **root** user.

2. Enter **`appliance_console`**, and press **Enter**.

3. Press any key.

4. Select **Configure Database Maintenance** to configure the automatic database maintenance schedule through a dialog.

    a. For **Configure Hourly Database Maintenance?** Type **`y`** or **`n`**.

    b. For **Configure Periodic Database Maintenance?** Type **`y`** or **`n`**.

The next options depend on the periodic database maintenance frequency you choose, and are specified using the same dialog. The dialog finishes configuration with a **"Database maintenance configuration updated"** message when complete.

To reset your database maintenance settings, enter **Configure Database Maintenance** again from the appliance console menu, and confirm that you want to unconfigure the settings in the configuration dialog. This deletes the current settings.

To configure a new database maintenance schedule, enter the **Configure Database Maintenance** menu item once again and configure the values using the dialog.

CHAPTER 5. SMARTPROXIES

The embedded SmartProxy can analyze virtual machines that are registered to a host and templates that are associated with a provider.

5.1. INSTALLING THE SMARTPROXY FROM THE CONSOLE

The server comes with one SmartProxy version already available. It can also be installed on an ESX Server version 3.0.2, 3.5 or 4.

IMPORTANT

Contact Red Hat before installing a new SmartProxy on an ESX Server.

Requirements:

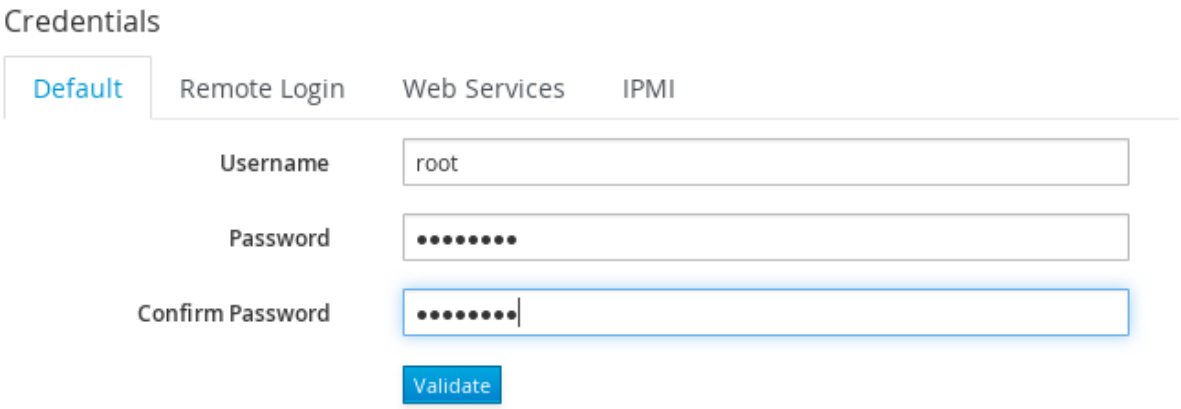
- On ESX, SSH (Secure Shell) must be enabled. This is usually port 22.
- 300 MB free disk space to install and run the SmartProxy.
- Administrator or root credentials.
- The host must already be in the VMDB either by discovery or manually.

5.2. ENTERING CREDENTIALS AND OPERATING SYSTEM FOR THE TARGET HOST

Set the credentials and operating system for the target host to prepare for the installation of SmartProxy.

To Enter Credentials and Operating System for the Target Host:

1. Navigate to **Compute** → **Infrastructure** → **Hosts**.
2. Select the host you want to edit.
3. Click  (**Configuration**), then  (**Edit this item**).
4. In **Credentials**, click the **Default** tab and enter your login credentials. If you are using domain credentials, the format for User ID must be in the format of **<domainname>\<username>**. For ESX hosts, if SSH login is disabled for the default user, click the **Remote Login** tab and enter a user with remote login access.



IMPORTANT

If the target is a Windows host, disconnect all network connections between the Windows proxy and the target. If an existing connection uses a different set of credentials than those set in the console, the installation may fail.

5. Click **Validate** to verify the credentials.

6. If you added the host manually instead of **Host Discovery** or **Provider Refresh** finding it, select the host's operating system from the **Host Platform** drop-down box to ensure the host platform is available.

7. Click **Save**.

When remotely installing on Windows hosts, the SmartProxy file is first copied to a Windows proxy. That computer then installs the file to the target host. The Windows proxy is the same as when you select the Default Repository SmartProxy box. You can locate this by navigating to the settings menu and selecting **Configuration**, then clicking on the desired server, then the **Server** tab, and exploring the **Server Control** area.

CHAPTER 6. ABOUT

Click the question mark icon () at the top right of the Red Hat CloudForms user interface to open a dropdown menu with links to Red Hat CloudForms documentation and the Red Hat Customer Portal, and for information about the current CloudForms session.

- Click **Documentation** to open a list of guides. Click the title of a document to view it as a PDF in a new web browser tab.
- Click **Red Hat Customer Portal** to open the Red Hat Customer Portal in a new web browser tab.
- Click **About** to open a pop-up window showing information about the CloudForms version and the session of the logged-in user.

CHAPTER 7. RED HAT INSIGHTS

Red Hat Insights is a service that uses the collective knowledge of Red Hat Certified Engineers to help users proactively diagnose systems and avoid critical downtime situations. Red Hat Insights does this by having systems periodically check in, similar to Red Hat Subscription Management.

Red Hat Insights provides an easy to use dashboard that enables system administrators and IT operations managers to quickly identify key risks to stability, security, or performance. A glance at the display allows users to sort by category, view details of the impact and resolution, and then quickly determine what systems are affected.

NOTE

- To use Red Hat Insights, the CloudForms appliance must be registered to Red Hat Subscription Management or Satellite (version 6.1 or newer).
- Red Hat Insights is available as a technology preview in this release of Red Hat CloudForms. For more information on the support scope for features marked as technology previews, see Technology Preview Features Support Scope.

The Red Hat Insights plugin has the following options:

- Actions
- Overview
- Rules
- Inventory

The following sections describe each of these tabs in more detail.

7.1. OVERVIEW TAB

The Overview tab provides summary information on the following:

- Current service release information for Red Hat Insights - view a synopsis of the latest updates as well as links to related information.
- Actions Summary - View a assessment of issues, ranked by severity affecting your deployment. Click through to view available actions.
- Newest Systems - Review the most recently registered systems in your deployment, and click through to view your inventory.
- Optimize Your Experience - View a categorization of issues and the number of systems affected. Issues fall under performance, security, stability, and availability. Click through on reported issues to view more information.

7.2. ACTIONS TAB

The Actions tab offers a quick visual indication of the number of vulnerabilities associated

with your systems, as well as the category and severity risks. A **Featured Topics** section provides detailed overviews of associated risks facing a system, as well as actions to take to resolve the issue.

7.2.1. Actions Detail

Users can click on a issue type in the Actions tab to view a detailed list of systems at risk. The action detail page further provides A list of rules applicable to each vulnerable system. Rules are additionally assessed for the **Likelihood**, **Impact** and **Total Risk** to monitored systems.

7.3. RULES TAB

Rules enable easy addition of rules which operate on customer uploaded archives. It allows developers to focus on a single archive at a time while being able to process large amounts of data.

The Rules tab provides tools to search and filter for rules and associated systems. Each rule displays visual information for **Impact**, **Likelihood**, **Total Risk**, and the assessed **Risk of Change** as well as linking through to impacted systems. Enable or disable rules from this view.

7.3.1. States

For management purposes, rules may be placed under one of four active states:

- **Active** - Rules which have been pushed to the master branch, are in prod and the content has been approved. This is the only state where the rules are displayed to customers.
- **Needs Content** - Plugins that the system has identified are in our master branch, hits have been found but do not have an entry / content written for them.
- **Inactive** - Once a rule is created from Needs Content, it will by default move to Inactive. Inactive can be used as a staging area as rules are written or to temporarily remove an active rule from the customer’s view if further work needs to be completed. Rules can be deleted in this state
- **Retired** - Plugins or error info entries which are no longer in use. - Rules can be deleted in this state

7.3.2. Info Listed

You will find the following information available for each rule on the list

- **Error Key** - The returned key the plugin provides to alert detection.
- **Plugin** - Name of the plugin located in the master branch, ex: plugin.swappiness == plugins/swappiness.py
- **Description** - The 50 character "title" the customer sees during the drill down of issues.
- **Category** - Security, Stability, Performance.

- **Severity** - Warn, Error, Info.
- **Count** - The current amount of hosts the plugin has been detected by when the rules last ran.

7.4. INVENTORY TAB

The Inventory tab helps you discover the issues within your system. This tab lists the hostname of the system, the system type, the time of last check in and the status. You can filter the list by using  (**Actions**) for all systems that require actions and  (**No Actions**) for all systems that are working without issues and require no actions. Filter the list by **System Status** and **System Health** attributes or use the search tool to find a system in your inventory.

APPENDIX A. DEFAULT ROLES

This section outlines the default roles provided in Red Hat CloudForms and the product features to which they are granted access.

A.1. EVMROLE-SUPER_ADMINISTRATOR

The **EvmRole-super_administrator** is granted access to the following product features.

Table A.1. EvmRole-super_administrator

Product Feature
everything

A.2. EVMROLE-ADMINISTRATOR

The **EvmRole-administrator** is granted access to the following product features.

Table A.2. EvmRole-administrator

Product Feature
about
all_vm_rules
automation_manager
embedded_automation_manager
availability_zone
host_aggregate
compute
flavor
floating_ip
bottlenecks
chargeback
catalog
cloud_network

Product Feature
cloud_object_store_container
cloud_object_store_object
control_explorer
dashboard
datacenter
storage
storage_pod
ems_cloud
ems_network
ems_cluster
ems_infra
ems_infra_admin_ui
ems_physical_infra
container_dashboard
ems_container
ems_container_deployment
configuration_job
container_project
container_route
container_service
container_replicator
container_group
container

Product Feature
container_node
persistent_volume
container_build
container_image_registry
container_image
container_topology
ems_middleware
middleware_server
middleware_deployment
middleware_datasource
middleware_topology
cloud_topology
infra_topology
host
infra_networking
miq_ae_class_explorer
miq_ae_customization_explorer
miq_ae_class_import_export
miq_ae_class_log
miq_ae_class_simulation
miq_task_all_ui
miq_task_my_ui

Product Feature
my_settings
policy_simulation
policy_log
miq_report
miq_request
miq_template
orchestration_stack
physical_server
physical_infra_topology
planning
policy_import_export
provider_foreman_explorer
pxe
resource_pool
rss
security_group
service
timeline
usage
utilization
vm_explorer
vm

Product Feature
vm_cloud_explorer
vm_infra_explorer
sui_services
sui_notifications

A.3. EVMROLE-APPROVER

The **EvmRole-approver** is granted access to the following product features.

Table A.3. EvmRole-approver

Product Feature
about
all_vm_rules
compute
chargeback
chargeback_reports
customization_template_view
iso_datastore_view
control_explorer
dashboard
ems_cluster_show
ems_cluster_show_list
ems_cluster_perf
ems_cluster_tag
ems_cluster_timeline
ems_infra_show

Product Feature
ems_infra_show_list
ems_infra_tag
ems_infra_timeline
ems_physical_infra_console
ems_physical_infra_tag
ems_physical_infra_view
ems_physical_infra_tag
host_show
host_show_list
host_perf
host_tag
host_timeline
my_settings_default_views
my_settings_time_profiles
my_settings_visuals
miq_report_run
miq_report_saved_reports
miq_report_schedules
miq_report_view
miq_request_control
miq_request_view
miq_task_my_ui
miq_template_check_compliance

Product Feature
miq_template_perf
miq_template_policy_sim
miq_template_show
miq_template_show_list
miq_template_snapshot
miq_template_tag
miq_template_timeline
physical_infra_topology_view
physical_server_view
policy_log
policy_simulation
pxe_image_type_view
pxe_server_view
resource_pool_show
resource_pool_show_list
resource_pool_tag
rss
service_view
storage_show
storage_show_list
storage_pod_show
storage_pod_show_list
storage_perf

Product Feature
storage_tag
timeline
usage
vm_check_compliance
vm_console
vm_webmks_console
vm_cloud_explorer
vm_explorer
vm_infra_explorer
vm_vnc_console
vm_vmrc_console
cockpit_console
vm_perf
vm_policy_sim
vm_show
vm_show_list
vm_snapshot
vm_tag
vm_timeline
vm_chargeback
sui_services_view
sui_vm_details_view
sui_vm_console

Product Feature
sui_vm_web_console
sui_vm_tags
sui_orders_view
sui_notifications

A.4. EVMROLE-AUDITOR

The **EvmRole-auditor** is granted access to the following product features.

Table A.4. EvmRole-auditor

Product Feature
about
automation_manager
embedded_automation_manager
bottlenecks
compute
chargeback
chargeback_reports
customization_template_view
iso_datastore_view
control_explorer
dashboard
ems_cluster_view
ems_cluster_tag
ems_infra_view
ems_infra_tag

Product Feature
ems_infra_check_compliance
ems_physical_infra_console
ems_physical_infra_tag
ems_physical_infra_view
host_show
host_show_list
host_perf
infra_networking_view
infra_networking_tag
instance_view
instance_check_compliance
instance_policy_sim
instance_tag
image_view
image_check_compliance
image_policy_sim
image_tag
iso_datastore_view
host_view
host_check_compliance
host_tag
miq_task_my_ui
my_settings_default_views

Product Feature
my_settings_time_profiles
my_settings_visuals
miq_report_run
miq_report_saved_reports
miq_report_schedules
miq_report_view
miq_template_view
miq_template_check_compliance
miq_template_policy_sim
miq_template_snapshot_view
miq_template_tag
physical_infra_topology_view
physical_server_view
planning
policy_log
policy_profile
policy_simulation
pxe_image_type_view
pxe_server_view
resource_pool_show
resource_pool_show_list
resource_pool_tag
rss

Product Feature
service_view
storage_show
storage_show_list
storage_perf
storage_tag
storage_pod_show
storage_pod_show_list
timeline
usage
utilization
vm_view
vm_check_compliance
vm_compare
vm_console
vm_drift
vm_webmks_console
vm_cloud_explorer
vm_explorer
vm_infra_explorer
vm_vnc_console
vm_vmrc_console
cockpit_console
vm_perf

Product Feature
vm_show
vm_show_list
vm_snapshot_view
vm_tag
vm_timeline
vm_chargeback
sui_services_view
sui_vm_details_view
sui_vm_console
sui_vm_web_console
sui_vm_tags
sui_notifications

A.5. EVMROLE-DESKTOP

The **EvmRole-desktop** is granted access to the following product features.

Table A.5. EvmRole-desktop

Product Feature
about
all_vm_rules
automation_manager
compute
dashboard
ems_physical_infra
miq_request_admin

Product Feature
miq_request_view
miq_template_clone
miq_template_compare
miq_template_drift
miq_template_edit
miq_template_refresh
miq_template_miq_request_new
miq_template_perf
miq_template_publish
miq_template_show
miq_template_show_list
miq_template_timeline
my_settings_default_views
my_settings_time_profiles
my_settings_visuals
physical_server
physical_infra_topology
physical_server_view
provider_foreman_explorer
vm_clone
vm_compare
vm_console
vm_webmks_console

Product Feature
vm_cloud_explorer
vm_explorer
vm_infra_explorer
vm_vnc_console
vm_vmrc_console
cockpit_console
vm_drift
vm_edit
vm_refresh
vm_reset
vm_guest_restart
vm_miq_request_new
vm_perf
vm_publish
vm_show
vm_show_list
vm_guest_shutdown
vm_start
vm_stop
vm_suspend
vm_pause
vm_shelve
vm_shelve_offload

Product Feature
vm_timeline
vm_chargeback
sui_services_view
sui_vm_details_view
sui_vm_console
sui_vm_web_console
sui_vm_start
sui_vm_stop
sui_vm_suspend
sui_orders_view
sui_orders_operations
sui_notifications

A.6. EVMROLE-OPERATOR

The **EvmRole-operator** is granted access to the following product features.

Table A.6. EvmRole-operator

Product Feature
about
all_vm_rules
automation_manager
embedded_automation_manager
compute
chargeback
chargeback_reports

Product Feature
dashboard
datastore
ems_cluster_analyze
ems_cluster_compare
ems_cluster_drift
ems_cluster_show
ems_cluster_show_list
ems_cluster_perf
ems_cluster_tag
ems_cluster_timeline
ems_infra_new
ems_infra_delete
ems_infra_discover
ems_infra_edit
ems_infra_refresh
ems_infra_scale
ems_infra_show
ems_infra_show_list
ems_infra_tag
ems_infra_timeline
ems_physical_infra_new
ems_physical_infra_console
ems_physical_infra_delete

Product Feature
ems_physical_infra_discover
ems_physical_infra_edit
ems_physical_infra_refresh
ems_physical_infra_tag
ems_physical_infra_view
physical_server_view
physical_infra_topology_view
host_new
host_analyze
host_compare
host_discover
host_drift
host_edit
host_refresh
host_show
host_show_list
host_perf
host_tag
host_timeline
my_settings_default_views
my_settings_time_profiles
my_settings_visuals
miq_report_run

Product Feature
miq_report_saved_reports
miq_report_schedules
miq_report_view
miq_task_my_ui
miq_template_analyze
miq_template_check_compliance
miq_template_compare
miq_template_drift
miq_template_edit
miq_template_perf
miq_template_refresh
miq_template_show
miq_template_show_list
miq_template_snapshot
miq_template_sync
miq_template_tag
miq_template_timeline
pxe
resource_pool_show
resource_pool_show_list
resource_pool_tag
rss
service_view

Product Feature
provider_foreman_explorer
storage_delete
storage_scan
storage_show
storage_show_list
storage_perf
storage_tag
timeline
usage
vm_analyze
vm_check_compliance
vm_collect_running_processes
vm_compare
vm_console
vm_webmks_console
vm_cloud_explorer
vm_explorer
vm_infra_explorer
vm_vnc_console
vm_vmrc_console
cockpit_console
vm_drift
vm_edit

Product Feature
vm_perf
vm_refresh
vm_reset
vm_guest_restart
vm_show
vm_show_list
vm_guest_shutdown
vm_snapshot
vm_start
vm_stop
vm_suspend
vm_pause
vm_shelve
vm_shelve_offload
vm_sync
vm_tag
vm_timeline
vm_chargeback
sui_services_view
sui_vm_details_view
sui_vm_console
sui_vm_web_console

Product Feature
sui_vm_tags
sui_vm_start
sui_vm_stop
sui_vm_suspend
sui_notifications

A.7. EVMROLE-SECURITY

The **EvmRole-security** is granted access to the following product features.

Table A.7. EvmRole-security

Product Feature
about
all_vm_rules
compute
chargeback
chargeback_reports
control_explorer
dashboard
datastore
ems_cluster_show
ems_cluster_show_list
ems_cluster_perf
ems_cluster_tag
ems_cluster_timeline
ems_infra_show

Product Feature
ems_infra_show_list
ems_infra_tag
ems_infra_timeline
ems_physical_infra_tag
ems_physical_infra_view
physical_server_timeline
host_show
host_show_list
host_perf
host_tag
host_timeline
my_settings_default_views
my_settings_time_profiles
my_settings_visuals
miq_report_run
miq_report_saved_reports
miq_report_schedules
miq_report_view
miq_task_my_ui
miq_template_check_compliance
miq_template_compare
miq_template_drift
miq_template_perf

Product Feature
miq_template_policy_sim
miq_template_show
miq_template_show_list
miq_template_snapshot_add
miq_template_snapshot_delete
miq_template_snapshot_delete_all
miq_template_snapshot_revert
miq_template_tag
miq_template_timeline
policy_log
policy_simulation
resource_pool_show
resource_pool_show_list
resource_pool_tag
rss
service_view
storage_show
storage_show_list
storage_perf
storage_tag
timeline
usage
vm_check_compliance

Product Feature
vm_compare
vm_drift
vm_cloud_explorer
vm_explorer
vm_infra_explorer
vm_perf
vm_policy_sim
vm_show
vm_show_list
vm_snapshot_add
vm_snapshot_delete
vm_snapshot_delete_all
vm_snapshot_revert
vm_tag
vm_timeline
vm_chargeback
sui_services_view
sui_vm_details_view
sui_vm_snapshot_create
sui_vm_snapshot_delete
sui_vm_tags
sui_notifications

A.8. EVMROLE-SUPPORT

The **`EvmRole-support`** is granted access to the following product features.

Table A.8. EvmRole-support

Product Feature
about
all_vm_rules
compute
chargeback
chargeback_reports
control_explorer
dashboard
datastore
ems_cluster_show
ems_cluster_show_list
ems_cluster_perf
ems_cluster_tag
ems_cluster_timeline
ems_infra_show
ems_infra_show_list
ems_infra_tag
ems_infra_timeline
ems_physical_infra_console
ems_physical_infra_tag
ems_physical_infra_view

Product Feature
host_show
host_show_list
host_perf
host_tag
host_timeline
miq_task_my_ui
my_settings_default_views
my_settings_time_profiles
my_settings_visuals
miq_report_run
miq_report_saved_reports
miq_report_schedules
miq_report_view
miq_template_check_compliance
miq_template_compare
miq_template_drift
miq_template_perf
miq_template_policy_sim
miq_template_show
miq_template_show_list
miq_template_snapshot
miq_template_tag
miq_template_timeline

Product Feature
physical_infra_topology_view
physical_server_view
policy_log
policy_simulation
resource_pool_show
resource_pool_show_list
resource_pool_tag
rss
service_view
storage_show
storage_show_list
storage_perf
storage_tag
timeline
usage
vm_check_compliance
vm_collect_running_processes
vm_console
vm_webmks_console
vm_cloud_explorer
vm_explorer
vm_infra_explorer
vm_vnc_console

Product Feature
vm_vmrc_console
cockpit_console
vm_compare
vm_drift
vm_perf
vm_policy_sim
vm_show
vm_show_list
vm_snapshot
vm_tag
vm_timeline
vm_chargeback
sui_services_view
sui_vm_details_view
sui_vm_console
sui_vm_web_console
sui_vm_tags
sui_notifications

A.9. EVMROLE-USER

The **EvmRole-user** is granted access to the following product features.

Table A.9. EvmRole-user

Product Feature
about

Product Feature
all_vm_rules
compute
chargeback
chargeback_reports
dashboard
datastore
ems_cluster_show
ems_cluster_show_list
ems_cluster_perf
ems_cluster_tag
ems_cluster_timeline
ems_infra_show
ems_infra_show_list
ems_infra_tag
ems_infra_timeline
ems_physical_infra_console
ems_physical_infra_show
ems_physical_infra_show_list
ems_physical_infra_tag
ems_physical_infra_timeline
host_show
host_show_list
host_perf

Product Feature
host_tag
host_timeline
miq_task_my_ui
my_settings_default_views
my_settings_time_profiles
my_settings_visuals
miq_report_run
miq_report_saved_reports
miq_report_schedules
miq_report_view
miq_request_admin
miq_request_view
miq_template_check_compliance
miq_template_compare
miq_template_drift
miq_template_perf
miq_template_show
miq_template_show_list
miq_template_snapshot
miq_template_tag
miq_template_timeline
physical_infra_topology_view
physical_server_view

Product Feature
resource_pool_show
resource_pool_show_list
resource_pool_tag
rss
service_view
storage_show
storage_show_list
storage_perf
storage_tag
timeline
usage
vm_check_compliance
vm_console
vm_webmks_console
vm_cloud_explorer
vm_explorer
vm_infra_explorer
vm_vnc_console
vm_vmrc_console
cockpit_console
vm_compare
vm_drift
vm_perf

Product Feature
vm_show
vm_show_list
vm_snapshot
vm_tag
vm_timeline
vm_chargeback
sui_services_view
sui_vm_details_view
sui_vm_console
sui_vm_web_console
sui_vm_tags
sui_orders_view
sui_orders_operations
sui_notifications

A.10. EVMROLE-USER_LIMITED_SELF_SERVICE

The **EvmRole-user_limited_self_service** is granted access to the following product features.

Table A.10. EvmRole-user_limited_self_service

Product Feature
about
all_vm_rules
catalog_items_view
compute

Product Feature
miq_request_admin
miq_request_view
my_settings_default_views
my_settings_visuals
service_edit
service_delete
service_reconfigure
service_tag
service_retire_now
service_view
svc_catalog_provision
vm_clone
vm_cloud_explorer
vm_filter_accord
vm_guest_restart
vm_guest_shutdown
vm_infra_explorer
vm_miq_request_new
vm_publish
vm_reset
vm_retire_now
vm_show
vm_show_list

Product Feature
vm_snapshot_view
vm_start
vm_stop
vm_suspend
vm_pause
vm_shelve
vm_shelve_offload
vm_tag
sui_core
sui_services
sui_vm
sui_orders
sui_svc_catalog_view
sui_svc_catalog_cart
sui_cart

A.11. EVMROLE-USER_SELF_SERVICE

The **EvmRole-user_self_service** is granted access to the following product features.

Table A.11. EvmRole-user_self_service

Product Feature
about
all_vm_rules
automation_manager
embedded_automation_manager

Product Feature
ems_physical_infra_console
catalog_items_view
compute
miq_template_clone
miq_template_drift
miq_template_edit
miq_template_perf
miq_template_refresh
miq_template_show
miq_template_show_list
miq_template_snapshot
miq_template_sync
miq_template_tag
miq_template_timeline
my_settings_default_views
my_settings_visuals
miq_request_admin
miq_request_view
provider_foreman_explorer
service_edit
service_delete
service_reconfigure
service_tag

Product Feature
service_retire_now
service_view
svc_catalog_provision
vm_console
vm_webmks_console
vm_clone
vm_cloud_explorer
vm_console
vm_webmks_console
vm_drift
vm_edit
vm_filter_accord
vm_guest_restart
vm_guest_shutdown
vm_infra_explorer
vm_miq_request_new
vm_perf
vm_publish
vm_refresh
vm_reset
vm_retire_now
vm_show
vm_show_list

Product Feature
vm_snapshot
vm_start
vm_stop
vm_suspend
vm_pause
vm_shelve
vm_shelve_offload
vm_sync
vm_tag
vm_timeline
vm_chargeback
vm_vmrc_console
vm_vnc_console
cockpit_console
sui

A.12. EVMROLE-VM_USER

The **EvmRole-vm_user** is granted access to the following product features.

Table A.12. EvmRole-vm_user

Product Feature
about
all_vm_rules
automation_manager
embedded_automation_manager

Product Feature
compute
miq_request_admin
miq_request_view
miq_template_analyze
miq_template_check_compliance
miq_template_clone
miq_template_drift
miq_template_edit
miq_template_perf
miq_template_show
miq_template_show_list
miq_template_snapshot
miq_template_sync
miq_template_tag
miq_template_timeline
my_settings_default_views
my_settings_visuals
provider_foreman_explorer
vm_analyze
vm_check_compliance
vm_clone
vm_cloud_explorer
vm_collect_running_processes

Product Feature
vm_compare
vm_console
vm_webmks_console
vm_drift
vm_explorer
vm_guest_restart
vm_guest_shutdown
vm_infra_explorer
vm_miq_request_new
vm_perf
vm_policy_sim
vm_publish
vm_refresh
vm_reset
vm_retire_now
vm_show
vm_show_list
vm_snapshot
vm_start
vm_stop
vm_suspend
vm_pause
vm_shelve

Product Feature
vm_shelve_offload
vm_sync
vm_tag
vm_timeline
vm_chargeback
vm_vmrc_console
vm_vnc_console
cockpit_console
sui_vm_details_view
sui_vm_console
sui_vm_web_console
sui_vm_tags
sui_vm_retire
sui_vm_start
sui_vm_stop
sui_vm_suspend
sui_orders_view
sui_orders_operations
sui_notifications

A.13. EVMROLE-TENANT_ADMINISTRATOR

The **EvmRole-tenant_administrator** is granted access to the following product features.

Table A.13. EvmRole-tenant_administrator

Product Feature
about
automation_manager
embedded_automation_manager
availability_zone
host_aggregate
all_vm_rules
compute
cloud_network
cloud_subnet
flavor
floating_ip
bottlenecks
chargeback
catalog
cloud_tenant
control_explorer
dashboard
datacenter
storage
ems_cloud
ems_network
ems_cluster
ems_infra

Product Feature
ems_physical_infra
host
load_balancer
miq_ae_class_explorer
miq_ae_customization_explorer
miq_ae_class_import_export
miq_ae_class_log
miq_ae_class_simulation
miq_task_all_ui
miq_task_my_ui
my_settings
network_port
network_router
policy_simulation
policy_log
miq_report
miq_request
miq_template
orchestration_stack
planning
policy_import_export
provider_foreman_explorer
pxe

Product Feature
rbac_group
rbac_role_view
rbac_tenant
rbac_user
resource_pool
rss
security_group
service
timeline
usage
utilization
vm_explorer
vm
vm_cloud_explorer
vm_infra_explorer
sui_services
sui_notifications

A.14. EVMROLE-TENANT_QUOTA_ADMINISTRATOR

The **EvmRole-tenant_quota_administrator** is granted access to the following product features.

Table A.14. EvmRole-tenant_quota_administrator

Product Feature
about

Product Feature
automation_manager
embedded_automation_manager
availability_zone
host_aggregate
all_vm_rules
flavor
bottlenecks
compute
chargeback
catalog
cloud_tenant
control_explorer
dashboard
datacenter
storage
ems_cloud
ems_cluster
ems_infra
ems_physical_infra
host
miq_ae_class_explorer
miq_ae_customization_explorer
miq_ae_class_import_export

Product Feature
miq_ae_class_log
miq_ae_class_simulation
miq_task_all_ui
miq_task_my_ui
my_settings
policy_simulation
policy_log
miq_report
miq_request
miq_template
orchestration_stack
planning
policy_import_export
provider_foreman_explorer
pxe
rbac_tenant_view
rbac_tenant_manage_quotas
resource_pool
rss
security_group
service
timeline
usage

Product Feature
utilization
vm_explorer
vm
vm_cloud_explorer
vm_infra_explorer
sui_services
sui_notifications

A.15. EVMROLE-CONSUMPTION_ADMINISTRATOR

The **EvmRole-consumption_administrator** is granted access to the following product features.

Table A.15. EvmRole-consumption_administrator

Product Feature
dashboard
chargeback
miq_report

A.16. EVMROLE-CONTAINER_ADMINISTRATOR

The **EvmRole-container_administrator** is granted access to the following product features.

Table A.16. EvmRole-container_administrator

Product Feature
vms_filter_accord
instances_filter_accord
datacenter_controller
storage

Product Feature
storage_pod
dashboard
miq_report
consumption
chargeback
pictures
control_explorer
generic_object
generic_object_definition
my_settings
tasks
about
ems_container
middleware_server_group
container_group
container_node
container_replicator
container_image
container_image_registry
persistent_volume
container_build
container_template
container_service

Product Feature
container_route
container_project
container
container_topology
container_dashboard
ems_infra_dashboard
instance_view
vm_view
miq_cloud_networks
miq_arbitration_settings
miq_arbitration_rules
redhat_access_insights_admin
ems_container_ad_hoc_metrics
monitor
monitor_alerts
alert_status
alert_action
ems_infra
rbac_user
ops_settings

A.17. EVMROLE-CONTAINER_OPERATOR

The **EvmRole-container_operator** is granted access to the following product features.

Table A.17. EvmRole-container_operator

Product Feature
vms_filter_accord
instances_filter_accord
dashboard_view
miq_report_saved_reports_view
miq_report_view
miq_report_control
chargeback_reports
my_settings
tasks
ems_container_view
ems_container_check_compliance
container_group_view
container_group_check_compliance
container_node_view
container_node_check_compliance
container_replicator_check_compliance
container_image_view
container_image_scan
container_image_check_compliance
container_image_registry_view
persistent_volume_view
container_build_view
container_template_view

Product Feature
container_service_view
container_route_view
container_project_view
container_filter_accord
container_view
container_control
container_topology
container_dashboard
instance_view
vm_view
ems_container_ad_hoc_metrics
monitor
monitor_alerts
alert_status
alert_action
ems_infra
rbac_user
ops_settings

A.18. EVMROLE-READER

The **`EvmRole-reader`** is granted access to the following product features.

Table A.18. EvmRole-reader

Product Feature
auth_key_pair_cloud_view

Product Feature
automation_manager_configuration_script_view
automation_manager_configured_system_view
automation_manager_providers_view
availability_zone_view
bottlenecks
catalog_items_view
cloud_network_view
cloudobject_store_container_view
cloud_object_store_object_view
cloud_subnet_view
cloud_tenant_view
cloud_topology
cloud_volume_backup_view
cloud_volume_snapshot_view
cloud_volume_view
configuration_job_view
configuration_script_view
configured_systems_filter_accord_view
container_build_view
container_dashboard
container_filter_accord
container_group_view
container_image_registry_view

Product Feature
container_image_view
container_node_view
container_project_view
container_replicator_view
container_route_view
container_service_view
container_template_view
container_topology
container_view
customization_template_view
dashboard_view
embedded_automation_manager_credentials_view
embedded_configuration_script_payload_view
embedded_configuration_script_source_view
ems_block_storage_view
ems_cloud_view
ems_cluster_view
ems_container_view
ems_infra_view
ems_physical_infra_view
ems_middleware_view
ems_network_view
ems_object_storage_view

Product Feature
flavor_view
floating_ip_view
host_aggregate_view
host_view
image_view
infra_networking_view
infra_topology
instance_view
iso_datastore_view
load_balancer_view
middleware_datasource_view
middleware_deployment_view
middleware_domain_view
middleware_messaging_view
middleware_server_view
middleware_topology
miq_ae_class_log
miq_ae_domain_view
miq_report_saved_reports_view
miq_report_schedule_view
miq_report_view
miq_request_view
miq_template_snapshot_view

Product Feature
miq_template_view
my_settings
network_port_view
network_router_view
network_topology
orchestration_stack_view
orchestration_templates_view
persistent_volume_view
physical_infra_topology_view
physical_server_view
planning
policy_log
provider_foreman_view
pxe_image_type_view
pxe_server_view
rbac_group_view
rbac_role_view
rbac_tenant_view
rbac_user_view
redhat_access_insights_overview
resource_pool_view
rss
security_group_view

Product Feature
service_view
st_catalog_view
storage_view
tasks
timeline
utilization
virtual_template_show
vm_cloud_explorer
vm_explorer
vm_infra_explorer
vm_snapshot_view
vm_view
sui_services_view
sui_orders_view
sui_notifications