



IBM SmartCloud Entry
User Guide, Version 3.1





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Note

Before using this information and the product it supports, read the information in “Notices” on page 25.

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IBM SmartCloud Entry User Guide

With IBM SmartCloud® Entry 3.1, you can easily request the deployment of resources with a web-based application.

IBM SmartCloud Entry provides common public or private cloud operations such as:

- Provisioning and de-provisioning of virtual machines
- Drafting and cloning instances
- Capturing instances
- Starting and stopping virtual machines as part of an instance
- Resizing existing virtual machines

Note:

- IBM SmartCloud Entry is aligning more closely with OpenStack terminology. For reference, see “Key concepts” on page 2.
- The operations available to you depend on how your administrator configures the environment.

What's New

IBM SmartCloud Entry includes new support and features in this release.

Feature updates:

- Support for Microsoft Hyper-V hypervisor by using OpenStack technologies. OpenStack is an open source cloud-computing platform for public and private clouds.
From a user perspective, IBM SmartCloud Entry supports the following features with Microsoft Hyper-V:
 - Secure Shell (SSH) key management
 - Deploy (basic and advanced options) and resize disk
 - Suspend and resume
 - Back up and restore
 - Projects, approvals, expirations, billing, and metering
- The IBM SmartCloud Entry Hyper-V virtual appliance comes preconfigured with OpenStack services to allow IBM SmartCloud Entry to manage Microsoft Hyper-V environments.
- Ability to suspend and resume an instance on all cloud types.
- Ability to deploy multiple instances with a single deployment

Note: Only available if the administrator configured it for your environment.

- Ability to copy an existing instance definition, rather than the entire image, by using the New Based On feature.
- Ability to set user Secure Shell (SSH) keys during deployment to VMware vCenter, and Hyper-V environments.
- Ability to resize a disk during deployment is now available for the VMControl cloud type.
- Ability to manage multiple cloud types at once, including Hyper-V.

Support updates:

- IBM® Systems Director VMControl™ 2.4.3 support
- Safari browser on an iPad

Note: The IBM SmartCloud Entry Administrators Guide contains a more thorough list of the details and features available to IBM SmartCloud Entry administrators.

Key concepts

The IBM SmartCloud Entry uses many different types of virtualization infrastructure environments. These environments use different terminology for the same concepts and are described in the following table.

Note: IBM SmartCloud Entry is aligning more closely with OpenStack terminology. For example, workload and appliance are now referred to as an instance and image. OpenStack is an open source cloud-computing platform for private and public clouds. For information about OpenStack, see <http://www.openstack.org/>

Table 1. A terminology comparison between the virtualization infrastructure type and the IBM SmartCloud Entry equivalent term

Virtualization infrastructure type	Term	Definition	IBM SmartCloud Entry equivalent
VMware	Template	A blueprint of a virtual machine containing the metadata and one or more disk images that can be used to create new virtual machines.	Image
VMware	Virtual machine	A runnable instance of a virtual computer, similar to a physical computer that runs an operating system and applications.	Instance
VMControl	Workload (with a single virtual machine)	A virtual computer, similar to a physical computer that runs an operating system and applications.	Instance
VMControl	Virtual appliance (resulting in a single virtual machine)	An image of a virtual machine that can be used to create new virtual machines.	Image
OpenStack	Flavor	A flavor is a hardware configuration for the provisioning of virtual machines. Each flavor has a unique combination of resource configurations and sizes.	Flavor

In addition to terminology differences between environments, there are also many key concepts that you must understand.

Projects

IBM SmartCloud Entry projects provide a management realm to group images and instances that only the members of that project can see and manage.

Requests

Requests are any actions that require administrator approval before they can complete. IBM SmartCloud Entry sends an approval request when a user attempts an operation that a IBM SmartCloud Entry administrator has enabled to require approvals.

Accounts

Enabling the billing operation in IBM SmartCloud Entry activates the account feature. An account includes a balance, an owner, an account balance threshold, account members, and invoices. The account members are charged for the instances that they deploy.

Note: Only IBM SmartCloud Entry administrators can create accounts, but an IBM SmartCloud Entry user can be assigned as an account owner.

Basic and advanced deployments

Users deploy an image by using the basic deployment form. Project owners or administrators can use the basic or the advanced deployment forms. They can also configure which deployment settings are shown on the basic deployment form.

Setting up your user profile

Before you log on to IBM SmartCloud Entry for the first time, you must request an account through your system administrator. You also must know the URL for your IBM SmartCloud Entry server.

Procedure

1. Point your web browser to the URL for your IBM SmartCloud Entry server and log in. The URL looks similar to the following example, where *SCE hostname* is the name of your IBM SmartCloud Entry host and *port number* is the port number: `http(s)://SCE hostname:port number/cloud/web/login.html`
2. If you do not have an account, click **Request Account** to request that the administrator create an account for you.

Note:

- You must receive your account information before you can continue.
 - If you do not know the URL for your IBM SmartCloud Entry server, contact your IBM SmartCloud Entry administrator to manually request an account.
3. Open the User Profile window by clicking your user name in the upper right banner and selecting *Show user preferences* from the drop-down list.
 4. Update your user profile information to include an email address and request email notifications.

Tip: If you do not enable email notification, then an administrator must re-create your user account anytime you forget your password. All of your IBM SmartCloud Entry information is lost.

Results

Your user profile is now ready for use.

Projects

You can request access to projects on the **Projects** page.

To access projects, click the **Access** tab and then click the **Projects** tab to view the list of available projects.

IBM SmartCloud Entry *projects* are groups of virtual images and instances that are visible only to the members of that project.

IBM SmartCloud Entry comes with a default project called the Public project, to which all users belong. All virtual images and instances that are created outside of the IBM SmartCloud Entry are, by default, assigned to the Public project.

Project membership roles

When you are added as a member of a project, one of three membership roles are assigned to you.

Owner

A project owner has administrator authority to the project and its contents. The project owner primarily manages the contents of the project and who has authority to the project and its contents.

User

A project user has the authority to use the project and the objects within the project. For example, a project user can deploy a virtual image to the project. A user can also view and potentially restore backup images of virtual machines created by other users, depending on the way the administrator has set up the project and the roles. The project user primarily handles their own deployments.

Viewer

A project viewer has authority only to view the project and the virtual images and instances contained in the project.

Managing projects

For projects that you own, you can set expiration policies and approval policies that affect the instances deployed in that project.

Procedure

1. Click the **Access** tab and then the **Projects** tab.
2. Click the name of the project in the table to display the project properties.
3. Click **Edit**.
4. Expand the title of the item you want to work with: **Expiration Policies** or **Approval Policies**.
5. Set your policies for your projects, or select **Use cloud default** to use the policies set by your administrator.

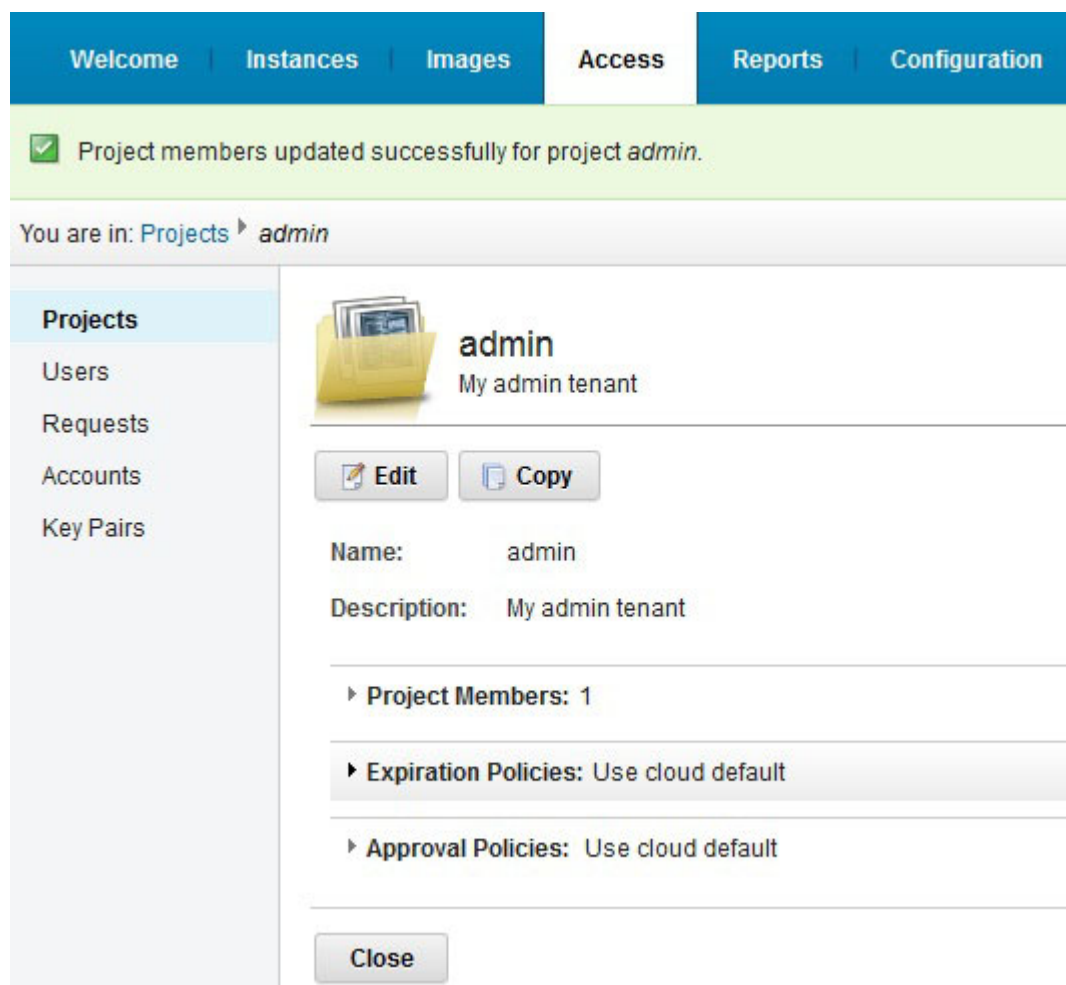


Figure 1. Expiration and approval policies

What to do next

For more information about expiration policies and approval policies, see the IBM SmartCloud Entry Administrators Guide.

Requesting project membership

You can request access to a project at any time.

Procedure

1. In the projects list, click the name of the project to which you want to request access.
2. Click **Request Access**.

Results

An email notification is sent to the project creator requesting your access to the project. If the project creator account was deleted, or the project creator does not have email notifications enabled, the email will be sent to the IBM SmartCloud Entry administrator.

Deleting an existing project

As a project owner, you can delete a project at any time.

About this task

When a project is deleted from IBM SmartCloud Entry, all of the virtual images and instances contained in the project are transferred to the public project.

Procedure

1. In the projects list, select the project you want to delete.

Restriction: You cannot delete the default Public project.

2. Click the **Delete selected projects** icon.

Images

In the **Images** tab, you can see the images that are available for deployment, view their properties, and deploy them.

In IBM SmartCloud Entry, each image has a status associated with it. If the status is *OK*, then the image is ready to be deployed. Click the refresh arrow to update the status.

To view the properties of an image, click the name of the image.

If the list of images does not contain the image you want, ensure that the current cloud, project, and architecture filters are set correctly.

Viewing image properties

You can view image properties such as the image name, description, last modification date, specification version, revision comments, and logs. If you have project owner authority, you can also configure and modify the image name, description, and project. For more information on how to configure images, see the IBM SmartCloud Entry Administrators Guide.

About this task

Click the image name to view the image properties page. Click **Edit** to modify the image properties. Remember that modifications that you make to an image in IBM SmartCloud Entry might not be reflected in the underlying virtualization infrastructure.

Deploying an image

You can deploy an image with either basic configuration options or advanced configuration options. Advanced configuration options are only available if the administrator enables them for your environment.

Procedure

1. Click the name of the image you want to deploy.
2. In the Image Details properties page, click **Deploy**.

Note: The IBM SmartCloud Entry cloud administrator can configure IBM SmartCloud Entry to allow users to use the advanced deployment functions. If enabled, click **More > Advanced deploy** to display the advanced deployment form.

Advanced deployment

With advanced deployment, administrators can configure the options, so users have the ability to suspend and resume instances. This option is only visible in a Power® virtualization environment. The KVM, VMware, and Hyper-v environments support the suspend action by default.

If your administrator enables the multiple instances on a single deployment function, you can deploy multiple instances through a single deployment. The deployed instances use the deployment name as the prefix of each single instance. The new names also use **-x** as the suffix, where **x** is the index of that instance.

If the deployment approval process is enabled, you receive a single approval request. Your administrator can change the number of deployment instances while reviewing the request. The metering and billing functions remain in affect for each of the single deployment instances.

You might also be able to set fields, such as **Virtual Machine Customization**, **Virtual Machine Personality Files**, and more.

For more information about using the advanced options, see the IBM SmartCloud Entry Administrators Guide.

Basic deployment

With a basic deployment, minimal configuration options, including name, description, project, flavors (if using OpenStack), processor information, and memory, are displayed. These options are configured by the administrator, so the options available to you might be different.

Note:

- Only the members of the selected project can see the instance that is created as a result of the image deployment.
- If approvals are enabled, deployment does not complete until the request is approved by the administrator.
- If billing is enabled, you must be a member of an account that is not delinquent for the deployment to proceed.
- The expiration period and approvals policy settings for deployment depends on the policies that are set in the project.

Instances

You can use the **Instances** tab in the IBM SmartCloud Entry to manage instances after they are created. You can specify the instances to view based on architecture, project, or cloud.

If the list of instances does not contain the instance you want, ensure that the current cloud, project, and architecture filters are set correctly.

Instance properties

On the Instance properties page, you can view the instance status, perform actions on the instance, or view summary information about the instance.

Status

In IBM SmartCloud Entry, instances have a status that is associated with them. If your instance status is not set to OK, click the instance to view more information, including the logs if they are available.

Summary information and actions

To access the Instance properties page, click the name of the Instance. From the Instance properties page, you can perform the following tasks:

- Capture the instance
- Change the priority of the instance (If using VMControl, supported in VMC 2.4.2 or later)
- Move the instance to another project

- Copy the instance definition by using the **New based on** feature
- Resize the instance
- Stop or start the instance
- Suspend or resume the instance (If using VMControl, supported in VMC 2.4.2 or later)
- View pending requests for this instance (if approvals are enabled)
- View the virtual machine properties, instance timestamps, storage volumes, server images, and log entries
- View the deployment definition

Note:

- If approvals are enabled, then some of these actions require administrator approval.
- Some of these actions can be performed by the project owner only.

Copying an instance definition

You can copy an existing instance definition to create a similar instance. This option copies information such as flavors (if applicable) or number of processors, configuration values, network configurations, and so on. However, it will not copy any of the existing software or data on the instance.

About this task

To copy the configuration information of an existing instance, click the instance you want to copy, and then click **More > New Based on**.

On the Deploy - Copy of instance page, you can rename the new instance and change the values.

Note: Modifications that you make to the basic properties (such as name and description) of an instance in IBM SmartCloud Entry are not reflected in IBM Systems Director VMControl, VMware, or OpenStack. You can trace the values used in the virtualization managers through the **Cloud Name** property.

Changing the global priority of an instance

When relocating an instance from host to host, you can change the global priority of an instance that is deployed to a pool.

To set the priority of an instance, click **Priority** and select the priority that you want for the instance. When the instance is updated, the following message is displayed:

instance *instance name* has been saved.

Remember: This function only applies to VMControl 2.4.2 or later.

Capturing an instance

This capture can be used to create a new virtual image, based on that instance, that can then be deployed at a later time.

About this task

This task is specific to VMware and OpenStack. For instructions to capture an instance on VMControl, speak to your administrator or see the IBM SmartCloud Entry Administrators Guide.

Procedure

1. Click the instance you want to capture and click **More > Capture**.

Note: If there is not enough information available, you are prompted to enter the required information before the instance is captured.

2. Go to the **Images** tab to see the new image.

Results

You see a new image named "*instance_name unique_identifier*" in the Capturing state, where *instance_name* is the name of the instance that you captured and *unique_identifier* is a unique identifier for the new image.

You can track the capture progress by clicking the image to see details.

Note:

- If approvals are enabled, then the approval must be completed before the capture occurs.

Resizing an instance (VMControl)

You can modify the amount of resources that are used by the virtual machines.

Before you begin

If your instance is running on a KVM, make sure that the instance is stopped before you continue the procedure.

Procedure

1. Click the name of the instance that you want to resize.
2. Click **More > Resize...** to open the Resizing instance page.
3. Update the number of processors, processing units, and memory resources to be allocated to the virtual machine in your instance.
4. Click **Resize**.

Tip: If you see zeros in the fields you updated, it can take up to two hours for the updated values to be reflected.

Note: If approvals are enabled, then the approval must be completed before the instance is resized.

Resizing an instance (VMware)

You can modify the amount of resources used by the virtual machines provisioned by your instance running on VMware. Depending on how your VMware virtual machines are configured, you can add memory and virtual processors while your virtual machine is running.

About this task

Increasing the size of the virtual machine disks makes more space available on the disk, but does not change the size of the partitions and the file systems. There are commands that must be run on the guest operating system to increase the size of the file system. For more information about how to change the size of the file system after storage is added, see your operating system documentation.

For more information about how a running virtual machine handles changes in memory and processor, see the VMware documentation and your operating system documentation.

Procedure

1. Click the name of the instance that you want to resize.
2. Click **More > Resize**.
3. Update the number of processors and memory resources to be allocated to the virtual machine in your instance.

The settings that can be resized when a virtual machine is in the started state depend on how the virtual machine is configured on VMware. For more information about changing values from the virtual machine, see the IBM SmartCloud Entry Administrators Guide.

4. Click **Resize**.

Note: If approvals are enabled, then the approval must be completed before the instance is resized.

Resizing an instance (OpenStack)

You can modify the amount of resources that are used by the virtual machines.

About this task

Stop the instance before you continue the procedure.

Procedure

1. Click the name of the instance that you want to resize.
2. Click **More > Resize...** to open the Resizing instance page.
3. Under the **Hardware** section, update the **OpenStack Flavor** to be allocated to the virtual machine in your instance.

Note:

- The flavor details change depending on the size flavor that you select.
- When you update the flavor, the processor, memory, and storage size fields accept integers only. Any fractional data is omitted.
- If you are changing the storage size, you can update to a larger disk size only.

4. Click **Resize**.

Note: If approvals are enabled, then the approval must be completed before the instance is resized.

Suspending or resuming an instance

You can suspend and resume instances if the virtual machines on the instance meet certain conditions.

Before you begin

Make sure that the virtual machines in the instance meet the following conditions before you suspend or resume an instance:

- The virtual machines are not deployed in a shared storage pool. (VMControl only)
- The virtual machines are not running AIX® 6.1 or SLES 11 SP1. (VMControl only)

Note: If you are using VMControl, only 2.4.2 or later is supported.

Procedure

1. From the **Instances** tab, select the name of the instance that you want to suspend or resume.
2. To suspend an instance, and all of the virtual machines on the instance, click **Suspend**.
3. To resume an instance, and all of the virtual machines on the instance, click **Resume**.

Viewing the virtual machines in an instance

The virtual machines that belong to the instance are displayed in the Instance properties page, along with their current state and IP address (if it is known to the IBM SmartCloud Entry).

Procedure

Click the instance name to display the Instance properties page.

- If there is a single virtual machine associated to this instance, expand the **Virtual Machine Properties** section to view the operating details.

- If there are multiple virtual machines associated to this instance, select the virtual machine name from the table to view the operating details.

Viewing pending requests for an instance

About this task

If approvals are enabled, actions pertaining to this instance may require administrator approval. The pending requests for an instance are displayed in the Instance properties page. This page also displays the requesting user, request status, action that is requested, and date of the request. Click the request ID to view more details about the pending request.

Viewing instance timestamps and logs

About this task

The instance metrics are located in the **Timestamps** section of the instance properties page.

The instance logs are located in the **Logs** section on the instance properties page. A list of all of the logs for the instance is shown.

Virtual machine properties

You can view summary information and perform actions on the virtual machine by selecting a virtual machine from the Instance page.

From the virtual machine properties page, you can:

- Add storage
- Set the capture credentials (for use during a virtual machine capture)
- View storage volume information
- View virtual machine properties

Adding storage to a virtual machine

You can add storage to the virtual machine.

Before you begin

Note: This task applies to VMControl and VMware only.

If you want to add auxiliary storage to a Power virtual machine (on VMControl), then the virtual machine must be in a system pool. A KVM virtual machine is not required to be in a system pool, but it must be stopped before storage can be added. You cannot add storage to a virtual machine that is deployed in a shared storage pool. Make sure that the virtual machine you want to add storage to is not deployed into a shared storage pool.

Procedure

1. On the Instances page, select the instance that contains the virtual machine that requires extra storage.
2. If there are multiple virtual machines that are associated to that instance, locate the host name of the virtual machine that requires the additional storage. Click the host name to open the properties page.
3. Click **Edit**.
4. Expand the storage volumes section.
5. Click the **Add** icon to add extra storage to the virtual machine.
6. Provide the required information, and then click **Add** again.

Note:

- If you delete the instance, the disks are also deleted.
- The disks are attached to the virtual machine, but they are not mounted or formatted. Refer to your guest operating system documentation for instructions on how to mount and format new disks.
- (VMControl only) The name that you specify in Step 2 is treated as a prefix and is automatically appended with a counter number by VMControl. For example, if you specify a disk named **Disk**, then VMControl displays that disk name as **Disk1**. The next time that a disk is added, the disk name is shown as **Disk2**, and so on.

7. Wait for the process to complete before attempting to add extra storage.

Note: You can also remove storage using a similar process from the **Instances** page.

Secondary disk storage (VMControl):

When you are using secondary disks, there are some additional items for your consideration.

- If the approval lifecycle is enabled, the administrator must approve the request before the secondary disk is created and attached to a virtual machine.
- Before creating a secondary disk, see “Secondary disk limitations with VMControl” on page 19 for additional considerations.

After a disk is created and added to a virtual machine, the disk appears as another physical disk available to the operating system of the virtual machine. In order to use the disk to store data, it must be mounted onto the file system of the virtual machine, which in turn requires that the disk be formatted with a file system that the operating system can read and update. The steps for mounting and formatting a disk are operating system dependent, but the following list includes information about the commands you can use.

For example, on an AIX virtual machine, use these commands to make a secondary disk usable:

cfgmgr

Configures the device and gets the new disk to appear as an hdisk*.

lspv List the physical volumes, verifying that the disk is in the list.

mkvg Create a volume group, specifying a volume group name such as datavg and specifying the physical volume name such as hdisk1.

lsvg Verify the volume group is listed.

mkdir /test

Define a mount location named test.

crfs -v jfs -g datavg -m /test -a size=16M -a frag=512 -a nbpi=1024 -A yes

Create a file system named test on datavg and automatically mount it following a reboot.

mount /test

Mount the device at the specified directory.

For a Linux virtual machine, use these commands for formatting and mounting the disk:

fdisk -l

List the disks, noting the device name of the new disk, such as xvd*.

mkfs -t ext3 /dev/xvdd

Format the disk xvdd.

mkdir /my_storage

Define a mount location named my_storage.

mount /dev/xvdd /my_storage

Mount the device xvdd at the my_storage directory. It might be helpful to mount it with the auto option, or edit the /etc/fstab file to automatically mount at a system reboot.

Your disk is ready for use after it is formatted and mounted.

Backing up virtual machine images

You can back up a virtual machine image in your instance. This function creates a copy of the virtual machine image and cloud configuration that can be restored later. Additionally, you can manage these backup images.

About this task

Details about the backup image are as follows:

- The backup image is an exact copy of the virtual machine image and the cloud configuration. No image cleanup is performed.
- The backup image cannot be deployed as a new instance. It can be used only to restore the associated virtual machine image and cloud configuration.
- Only the project owner (or an administrator) has access to restore the backup virtual machine images and backup virtual machine.
- If you are using an OpenStack cloud, only one instance backup operation is allowed at the same time. If another user is running a backup and you start one on the same instance, you receive an error that states there is a conflicting request. To perform a backup, you must wait until the other backup is finished.
- If the instance is deleted using IBM SmartCloud Entry, the associated backups are also deleted.

Note: The newly saved virtual machine is not made available as an image for other deployment actions.

Saving a virtual machine image

You can save a virtual machine image to restore the associated virtual machine disks and configuration files. To save a virtual machine image, you create a server image to be used as a backup for the virtual machine image.

Before you begin

To save a virtual machine image on VMControl, make sure that your system complies with the requirements detailed in one of the following topics:

- Backup virtual machine from an SCS repository section in the IBM SmartCloud Entry Administrators Guide
- Capture support and requirements in an SCS-based Power virtualization environment (v6.2.x)
- Capture support and requirements in an SCS-based Power Systems™ virtualization environment (v6.3.x)

About this task

If your administrator enabled the approval lifecycle for Save Image requests, then the request is sent to an administrator for approval before any action is taken. After the request is approved, the virtual machine is stopped and a copy is saved.

If the approval lifecycle is not enabled, then the Save request is sent to the system for processing in the background.

Procedure

1. On the **Instances** page, click the instance that contains the virtual machine.

Note: If there are multiple virtual machines associated to the instance, click the virtual machine name from the table to view the virtual machine details.

2. Click **Edit**.
3. Expand the **Server Image** section.
4. Click the **Save Image** icon. If the hypervisor is PowerVM®, then the virtual machine must be stopped.
5. Optional: If you reach the maximum number of saved images, you are asked to confirm whether the system should delete the oldest saved image.
6. Optional: Click **Yes** to allow the system to delete the oldest saved image, or click **No** and manually delete a saved image to make room for the new saved image, and then click **Save Image** again.
7. If the virtual machine is running, click **Yes** to stop the virtual machine. After the save operation is complete, the virtual machine is restarted.
8. Enter the name of the saved image and, optionally, a description.
9. Click **Save**.

Restoring a saved image

You can restore a saved image, which replaces the contents of a current virtual machine.

About this task

If your administrator configured restoration operations to use the approval lifecycle, then the request is submitted to your administrator for approval. The restore operation does not start until the administrator approves the request. If the approval lifecycle is not enabled, the restore operation starts immediately.

Procedure

1. On the **Instances** page, click the instance name that contains the server image you want to restore.

Note: If there are multiple virtual machines associated to the instance, select the virtual machine name from the table to view the virtual machine details.

2. Expand the **Server Image** section.
3. Select the image that you want to restore.
4. Click **Restore** and **Yes**.
5. Confirm that you want the contents of your current virtual server replaced with the saved copy. Any changes made since the save was performed are lost.

Managing saved images

You can view a list of your saved images or delete them.

Procedure

1. On the **Instances** page, click the instance name that contains the image you want to manage.

Note: If there are multiple virtual machines associated to the instance, select the virtual machine name from the table to view the virtual machine details.

2. Click **Edit**.
3. Expand the **Server Image** section.
4. Locate the saved image that you want to work with.
5. To delete a saved image, select the saved image and click **Delete**.

Remember: When you delete an instance, all of the saved images are also deleted.

6. Confirm that you want to delete the saved image.

Requests

You can use the Requests tab to view and withdraw instance requests. If the administrator enabled approval policy support, then many actions could require administrator approval before they can complete.

For example, when you deploy an image to create an instance, an instance request is created and submitted to an administrator for approval. The instance status is set to Pending until the administrator handles the approval request.

To view the status of your requests, select the **Access** tab and then click the **Requests** tab.

Withdrawing a request

You can withdraw a request from the approval queue at any time.

Procedure

1. Select the **Requests** tab.
2. Select the request. If you do not see the request, make sure that **View** is set correctly.

Tip: You can expand the Comments section and click the **Add Comment** to enter more comments about the request.

3. Click **Withdraw**.

Resubmitting a rejected request

If an administrator rejects your request, you can modify your request or provide additional comments to resolve any issues and resubmit your request.

Procedure

1. Select the **Requests** tab.
2. Select the rejected request. If the rejected request is not in the list, make sure that the **View** list is set to Resolved Requests.
3. To change any of the request parameters before resubmitting the request, expand the **Request Details** section.
4. To enter additional information needed for your request, expand the **Comments** section and click **Add Comment**.
5. Click **Resubmit**.

Accounts

You can view information for those accounts of which you are either an owner or a member.

Accounts are required when IBM SmartCloud Entry billing is enabled. Guidelines for IBM SmartCloud Entry billing are:

- Only IBM SmartCloud Entry administrators can create accounts, but you can be made an account owner.
- You can deploy instances only if you are an account member and the account has a positive balance with which to pay for server use.
- Only account owners and IBM SmartCloud Entry administrators can manage accounts.
- Accounts have a balance, an owner, an account balance threshold, account members, and invoices.

- The *balance* is a monetary balance of the account. The cost of each request and running deployment is subtracted from the balance over time.
- The account *owner* is the IBM SmartCloud Entry user profile that is accountable for crediting and paying the account.
- The *account balance threshold* is a value that represents the amount at which the account balance becomes a *low balance*. If the balance drops to zero, the account is delinquent.
- The *account members* are IBM SmartCloud Entry users that belong to the account. When account members deploy instances in IBM SmartCloud Entry, the instances are billed to their account.
- Each instance has an *invoice*. An account can have many invoices which are viewable from the Account properties window.

Viewing or managing an account

You can view the properties of any account, or manage the accounts that you own.

About this task

To view account properties or manage accounts that you own, select the **Access** tab and click **Accounts**. Then, you can select the account that you want to work with in the account table.

Deleting an account

You can delete an account only if you are the owner of the account, and only when the account is not associated with any active instances.

Procedure

1. In the account table, select the account you want to delete.
2. Click the **Delete** icon and confirm the deletion.

Key pairs

You can use the Key Pairs tab to create key pairs and import public keys for the OpenStack cloud.

The key pair is used to enable an SSH connection to the virtual machine. To use the key pair, the public key is added to the instance at deployment time. The private key is then used to encrypt the connection using your terminal application (for example, PuTTY).

To work with key pairs, click the **Key Pairs** tab that is in the **Access** tab.

Note: The key pairs tab is only visible after the administrator has created an OpenStack cloud.

To create a key pair, complete the following steps:

1. Click the **Create a new key pair** icon.
2. Enter the key pair name.
3. Click **Save**.
4. After the new key pair is created, a window shows you the private key that is used to encrypt the connection. You can also click the **Download** button to download the private key created.

To import a key pair, complete the following steps:

1. Click the **Import a public key** icon.
2. Enter the key pair name, and the public key content or click the **Browse** button to select a public key file that is used to import the public key.
3. Click **Import**.

Events

You can see events such as instance completion, instance failure, new account requests, and new accounts created.

In the Events tab, which is available on the Reports tab, you can see all public system events. This view includes all of the events that occur on any resources in projects of which you are a member.

Usage metering

You can see how many of each type of resources you are using with each virtual machine and adjust as necessary for your billing purposes.

In the **Usage metering** tab, which is available on the **Reports** tab, you can see the statistics of the resources in use, including processors, memory, and storage, for each virtual machine associated with a project. For example, you can see what state a virtual machine is in, how much processor time it uses, how much memory it uses (in GB hours), and how much storage it uses (in GB hours).

To view usage information for the virtual machines allocated to a project, use the filter options to specify the project, user name, architecture, or hypervisor, and click **Apply Filter**. You can then click the name of a virtual machine to see more specific information about that server.

Resource usage

In the Resource Usage panel, you can see the statistics of the resources in use, including architecture type, processors, memory, and storage.

There are two types of architecture: Power and x86. The processors, memory, and storage resources are used in multiple clouds. In the Resource Usage panel, you can see the total usage of every kind of resource by each type of architecture. When you move the mouse over a bar in the chart, a tooltip appears showing the details of each cloud's use of processors, memory, and storage. The following image shows the tooltip that appears for the resource usage information.

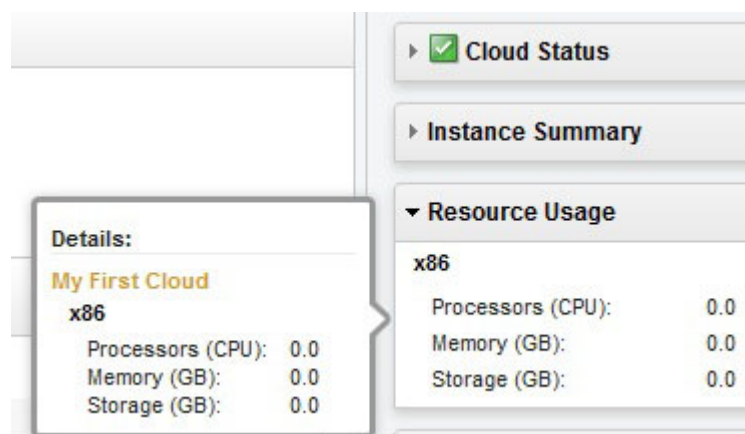


Figure 2. Resource usage information

Cloud status

In the Cloud Status panel, you can see whether there is a problem with any of the clouds or the connections to the clouds. In the later case, the instances might still be running. The status shows OK or an error.



Figure 3. Cloud status

Without an operational cloud that is in the OK state, the IBM SmartCloud Entry functions are very limited. Verify that there are no communication problems with the cloud.

Troubleshooting

Use this section to troubleshoot and resolve problems with IBM SmartCloud Entry.

Cached display

When you install or upgrade to IBM SmartCloud Entry version 3.1, your browser might not update the images from a previous version of the software.

Be sure to clear your browser's cache after you upgrade to, or install, IBM SmartCloud Entry version 3.1.

Saving image exception

If the virtual machine is not created by the current IBM SmartCloud Entry, you receive an error message when you save an image backup of the virtual machine.

IBM SmartCloud Entry requires the details of the virtual machine to create an image backup. If this error occurs, you receive the following message:

CYX4755E: Instance "*instance name*" does not have a customization and its virtual machine cannot be saved.

Note: *Instance name* is the name of the instance that contains the virtual machine.

Error message language

Some error messages appear in a language other than the language that you set for the IBM SmartCloud Entry user interface.

These error messages appear in the language set in your operating system. If the error message does not appear in the language that you want, verify your settings in both the IBM SmartCloud Entry user interface and the operating system.

Secondary disk limitations with VMControl

In some cases, you might not be able to add new storage or delete existing disks on a virtual machine running in an instance.

The following limitations might apply to your environment:

- Secondary disks can only be added to an existing virtual machine if the selected virtual image was deployed to a POWER® system pool.
- After disks are added to a running virtual machine, you can only delete a disk if you are deleting the instance action. You cannot resize, detach, or reattach a disk with IBM SmartCloud Entry.
- Administrative assistance might be required to detach a disk.
- Administrative assistance might be required to completely delete a disk.
- VMControl can attach new storage only when the previous storage attachment job is complete. If you attempt to attach storage while another storage attachment job is still active, the new storage attachment fails.

Complete the following steps to delete a disk:

1. Log in to the virtual machine and remove the disk using the following command:

```
rmdev -dev hdisk1
```
2. Log in to the IBM Systems Director VMControl user interface and complete the following steps:
 - a. Stop the virtual machine.
 - b. Edit the virtual machine.
 - c. Go to the **Virtual Disks** tab.
 - d. Get a list of the virtual disks.
 - e. For the disk you want to remove, record the physical volume name, such as hdisk33, and the storage server name, such as SCE_VIOS1.
 - f. Click OK to finishing editing the virtual machine.
3. Log in to the VIOS using the physical volume name previously recorded and complete the following steps:
 - a. Run the following command:

```
lsdev -dev hdisk33 -attr
```
 - b. In the output of the command, find the `unique_id` property and record the 32-character disk ID, starting from the 6th character. For example, if the `unique_id` is 33213600507680280815880000000000007A04214503IBMfcp, then you would record 60050768028081588000000000000007A.
4. Log on to the IBM Storwize® V7000 user interface and complete the following steps:
 - a. On the **All Volumes** tab, search for the unique disk ID previously recorded to find the logical unit number (LUN).
 - b. Right click the LUN and then click Delete.

Tip: For other storage systems, these steps are similar.

5. Log in to the VIOS again and run the following commands to remove the disk for each VIOS:

```
rmvdev -vdev hdisk33  
rmdev -dev hdisk33
```

Note: If there are two physical volumes configured for redundancy and the LUN is mapped to both of the physical volumes, repeat steps 3 through 5 on each VIOS. The hdisk name might be different on each VIOS. For example, on VIOS1, it could be hdisk33 and on VIOS2, it could be hdisk17.

A new disk created for a virtual machine cannot be detached and later reattached to a virtual machine on a different host. The disk was created and attached to a specific host VIOS where the virtual machine was


originally created. After a disk is detached, it must be rediscovered in the VIOS where the virtual machine that created it resides. As a result, the disk might not be accessible to another virtual machine in the pool.

Internet Explorer display

When you are using IBM SmartCloud Entry in Internet Explorer 9 or Internet Explorer 10, you might see that layout and formatting makes the screen difficult to navigate.

When you are accessing IBM SmartCloud Entry with Internet Explorer 9 and Internet Explorer 10, the browser might render the web user interface in Compatibility View mode by default.

Switch from Internet Explorer Compatibility View mode to the standard mode with the following steps:

1. To switch from Compatibility View mode to the standard mode, click on the Compatibility View button, located on the right side of the address bar (highlighted in green in the following image).
- 
- The image shows a close-up of the Internet Explorer address bar. On the right side of the address bar, there is a small icon representing Compatibility View. This icon is highlighted with a green rectangular box.
2. If the Compatibility View button is not visible, press F12.
 3. Depending on which version of Internet Explorer you are using, continue with one set of the following steps:
 - If you are using Internet Explorer 9, click **Browser Mode: IE9 > Internet Explorer 9** to select the standard mode of viewing. Notice that the only checkmark in the menu is in front of **Internet Explorer 9**.

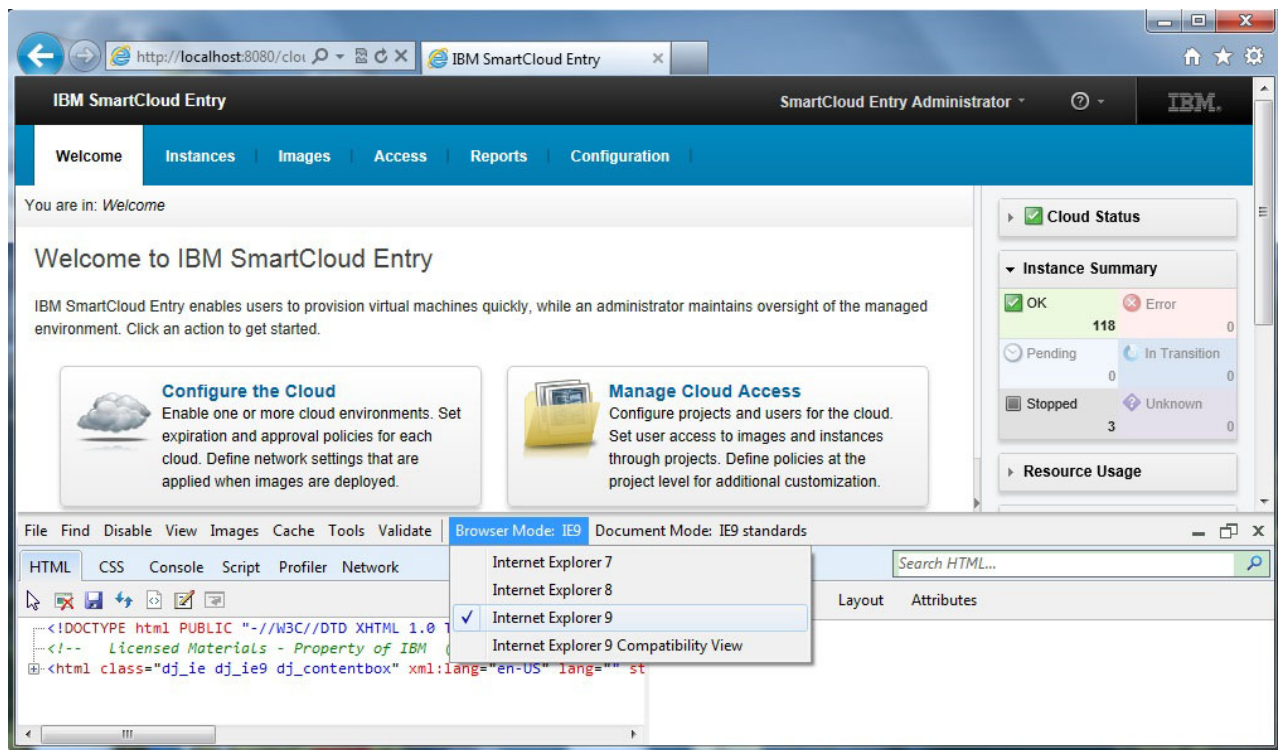


Figure 5. Browser Mode: IE9 menu

- If you are using Internet Explorer 10, click **Browser Mode: IE10 > Internet Explorer 10** to select the standard mode of viewing. Notice that the only checkmark in the menu is in front of **Internet Explorer 10**.

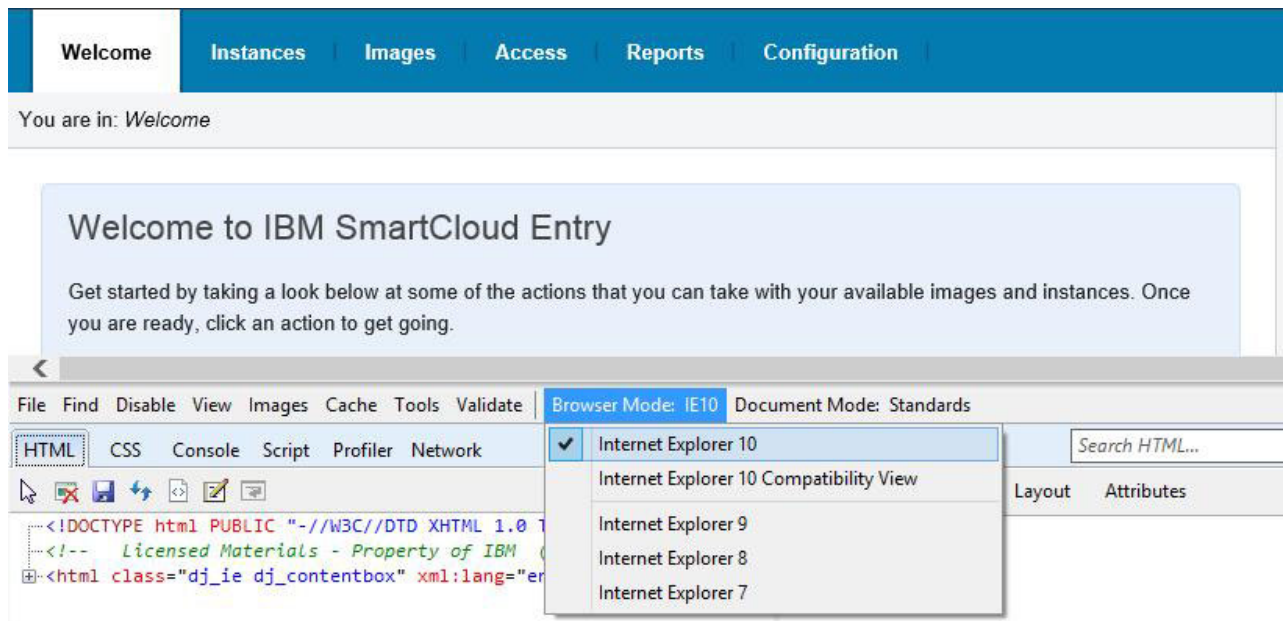


Figure 6. Browser Mode: IE10 menu

Tip: If Internet Explorer, which is accessing IBM SmartCloud Entry, switches from standard mode to Compatibility View mode automatically, clear the option in **Tools > Internet options > Advanced > Automatically recover from page layout errors with Compatibility View**.

Login fails

If your user login fails because the session times out, there might be a problem with the timezone setting.

Verify that the IBM SmartCloud Entry server and client time and timezone match. For example, on the server, if the timezone is Coordinated Universal Time +08:00, the time is 11:27. For the client, the timezone is Coordinated Universal Time +07:00, and the time should be 10:27.

Note: The client is the clock for the system where the IBM SmartCloud Entry user interface is being run (such as a personal computer).

Accessibility

IBM SmartCloud Entry does not interfere with the accessibility features for supported browsers. For a comprehensive list of accessibility features please visit the accessibility support page for the supported browser that you are using. For a list of supported browsers, see the IBM SmartCloud Entry Administrator Guide.

The publications for this product are in Adobe Portable Document Format (PDF) and should be compliant with accessibility standards. If you experience difficulties using the PDF files and want to request a web-based format for a publication, email a request to the following address:

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