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1 Preface

IBM® CloudBurst 1.1 is a private, onsite cloud of virtual computing resources in a single box. These resources can be provisioned and enabled to provide virtual server resources for application development, testing, and other activities that normally have to wait on physical hardware to be procured and deployed.

This document describes the tasks and features of the IBM CloudBurst user interface.
2 Working with the cloud

IBM CloudBurst identifies four user roles that can log on to the IBM CloudBurst console:

- **Cloud administrator:** Users in this role are the administrators of the cloud. Only cloud administrators can define new teams, user accounts and their associated roles, allow resource allocations and changes, check the status of projects and monitor the servers for all customers and users, and approve or deny provisioning requests made by team administrators.

- **Cloud manager:** Users in this role are the read-only administrators of the cloud. They can check the status of projects and monitor the virtual servers for any team. The cloud manager can generate reports for all projects, and for all teams.

- **Team administrator:** Users in this role can log on to the IBM CloudBurst console, create users’ accounts for other colleagues within the same company, place requests for provisioning servers and check the status of projects, and monitor the servers belonging to their company. They can also log on and use the provisioned servers and applications.

- **Team user:** Users in this role can log on to the IBM CloudBurst console and check the servers provisioned for their company; they can log on and use the servers and applications associated with their company.
2.1 Supported Web browsers

The following Web browsers are supported for the IBM CloudBurst console:

- Microsoft® Internet Explorer 6
- Microsoft Internet Explorer 7
- Mozilla Firefox 3

The suggested minimum screen resolution is 1024x768.

2.2 Logging on to the IBM CloudBurst console

The IBM CloudBurst console is accessed from the following URL on one of the supported Web browsers listed in Section 2.1.

http://10.160.0.101/cloud/

The following image displays the Welcome page for IBM CloudBurst:

![Figure 1 Welcome page](image-url)
To display the cloud home page for your user ID, complete the following steps from the Welcome page:

1. In the **User ID** field, type your user ID.
2. In the **Password** field, type the password that is associated with your user ID.
3. Click the **Log in** button. The IBM CloudBurst home page is displayed.

The tasks that are available on the home page vary based on your login credentials. The next sections include information about the tasks that are available for each CloudBurst role.

### 2.3 Cloud administrator operations

This section includes information for about cloud administrator operations. The following image displays the home page for the cloud administrator:

![Cloud Administrator home page](image)

**Figure 2 Cloud Administrator home page**

The home page includes a menu bar of tasks. The following options are available from the menu bar of the cloud administrator home page:

- **Home**
- **Reports**
• Manage Teams
• Manage Cloud Users
• Admin Tasks
• Manage Images
• About

2.3.1 Creating a team

To create a team, click Manage Teams on the menu bar. The list of current teams is displayed:

![Manage Teams page](image)

Figure 3 Manage Teams page

To add a team, complete the following steps from the Add New Team section:

1. In the Name field, type the name of the team.
2. Click Add.

To deactivate an active team, click Deactivate. A confirmation message is displayed. After you deactivate that team, that team’s users are no longer able to log on to the cloud. To re-activate that team, click Re-activate.
2.3.2 Managing users

The following sections include information on how to manage users.

Create a user

To create a user, select **Manage Cloud Users** on the menu bar. The list of current cloud users is displayed:

![Manage Cloud Users page](image)

From the Manage Cloud Users page, the following tasks are available:

- Create a new user
- Change/Unlock the password of a user
- View or modify details of a user
- Delete a user

To create a new user, complete the following steps in the **Create New User** section:

1. If the New User dialog is not displayed to the right, click the **New User** button. The fields are displayed to the right.
2. In the **User ID** field, type the user ID for the new user.
3. (Optional) In the **First Name** field, type the first name of the new user.
4. (Optional) In the **Last Name** field, type the last name of the new user.
5. From the **Role** menu, select one of the following options:
   - Cloud Administrator
   - Cloud Manager
   - Team Administrator
   - Team User
6. (Optional) In the **Email** field, type the e-mail address for the new user.
7. In the **Password** field, type the password the new user will use to access the IBM CloudBurst console.
8. In the **Confirm Password** field, retype the password the new user will use to access the IBM CloudBurst console.
9. (Optional) In the **Telephone** field, type the telephone number of the new user.
10. (Optional) In the **Address** field, type the geographic location of the new user.
11. (Optional) To have an e-mail sent to the new user, select the **Send a notification email to the user** check box.

### Change user password

To change the password for a cloud user, complete the following steps from the Manage Cloud Users page:

1. From the **Cloud Users** list, select the user that you want to change the password for, and then click **Change Password/Unlock**.
2. The fields to change the password for the specified user are displayed to the right.
3. In the **New Password** field, type the new password for the specified user.
4. In the **Confirm New Password** field, retype the new password for the specified user. The **Current Password** field appears for the Cloud Manager and Team User to put the current password of the user.
5. To save the new password information, click **Change Password**.

### Change user details

To change the details for a specific user, complete the following steps from the Manage Cloud Users page:

1. From the **Cloud Users** list, select the user that you want to change the details for, and then click **View/Modify User**.
2. The user details are displayed to the right.
3. To change the details for the user, type the new information in the fields provided.
4. To save the changes, click **Change Details**.

### Delete user

To delete a user, complete the following steps from the Manage Cloud Users page:
1. From the Cloud Users list, select the user that you want to delete and click **Delete User**.
2. A message is displayed.
3. To delete the user, click **OK**.

After you delete a user, that user is unable to access the IBM CloudBurst console.

### 2.3.3 Monitoring the status of the project

The cloud administrator can monitor the status of all team projects. Team projects have one of the following states:

- Completed
- Provisioning
- Deprovisioning/Terminating
- Active
- Failed
- New

The following image displays a list of team projects:

**Figure 5 Team projects list**
The cloud administrator can view the project details for a specific project by clicking a project in the list. The following image displays the project details page:

![Project Details page](image)

The following details are displayed on the Project Details page:

- Project Name
- Team
- Project State
- Start Date
- Requested By User
- Requested Server Count
- End Date
- Project Type
- Active Server Count
- Duration

To view additional information about each provisioned server, click a server in the **Project Infrastructure** list.
The following information is displayed:

- Server name
- Hardware configuration (number of CPUs, memory, and storage)
- Base Image
- Status
- IP Address
- OS Type
- Pool/Type (the pool where from the physical resources have been allocated)
- Admin Password (user is root for Linux®, administrator on Microsoft Windows®)
- Mgmt Name/IP
- Installed software
- Monitoring data (CPU usage, memory free, storage free)
- Basic information on the physical server that hosts the provisioned server
- Remote control; in this section, the cloud administrator can complete the following tasks remotely (For more information about these tasks, see Section 2.3.4.):
  - Power on the server
  - Power off the server
  - Restart the server
  - Reset the server password
- Backup
- Restore

**Note:** The Restore option is available only if the backup of selected virtual machines has already been completed.

From the Project Details page, you can also perform the following tasks on a project:

- Add/Remove Servers
- Change Project Dates
- Terminate Project
- Delete Project
- Show Report
- Refresh

Links for each of these tasks are located on the bottom of the Project Details page.

**Add or remove servers**

To add or remove servers from a project, click **Add/Remove Servers**. This displays a list of servers. The following image is an example:

![Add/Remove servers](image)

*Figure 8 Add/Remove servers*
To remove a server, select the checkbox for a server in the column below the trash can icon. To add a server, click Add Servers to Project. For more information about adding servers to a project, see Section 2.5.2.

Change project dates
To change the dates of a project, or to terminate a project before its end date, click Change Project. Enter the new end date(s) and click Submit Change.

2.3.4 Remote Control tasks
If a virtual machine is active, the cloud administrator or team administrator can perform various remote control operations on the virtual machine.

Power On
The Power On option enables you to power on a virtual machine if it was accidentally stopped, or in case of power loss.

Power Off
If a virtual machine is not needed for a period of time, you can choose to power it off by clicking Power Off.

Restart
If you need to restart a virtual machine, click Restart. This powers down the machine and then restarts it.

Note: It is recommended that you shut down the operating system before powering off a virtual machine or restarting remote control operations. This helps prevent disk corruption.

Reset Password
The Reset Password option sets the root Administrator password to a new system generated value that is updated in the user interface. Your ability to reset the password depends on the ability to first access the virtual machine. If the machine is unreachable (for example, if it is powered off), or if the user has deleted the ssh keys file (used by IBM CloudBurst to login remotely without password), then password reset will fail.

Backup
If you want to save a copy of a virtual machine, you can do so by clicking Backup. This can be done as a safeguard against corruption or failure with the running virtual machine, or as a mechanism to roll-back the virtual machine to a known. The backup performs a VMWare clone operation on the running virtual machine and saves it to disk for later restore. The backup operation saves only one generation of backup. If you create a backup, and then later attempt another backup, the previous backup is overwritten. If you remove the virtual machine for which a backup was made, or if you terminate the entire project, all backups of virtual machines are destroyed by the system.


**Restore**
If you have previously performed a backup operation, you can restore that backup. The **Restore** operation replaces the current running virtual machine with the restored machine. After you restore it, you can no longer access the original running virtual machine, and changes in data since the last backup are lost. There is only access to the restored version.

2.3.5 **Approve or reject a project request**

The cloud administrator controls the use of cloud resources. One administrative task is to approve or reject a team administrator’s request for new resources.

Team administrator requests for resources appear on the cloud administrator’s home page as a project with a status of pending. A pending status indicates a new project, a request for a change in project resources, or a date change for an existing project.

The cloud administrator can view the project details page, check how many resources have been requested and for how long, and then decide to approve or reject the request. To approve the project request, click **Approve Project Request**. To reject the project request, click **Reject Project Request**. When a project request is approved, the cloud provisions the requested resources.

Note: Approval is not required for project termination requests.

The following image displays a project that is pending approval:
Figure 9 Pending approval example
2.3.6 Viewing reports

The cloud administrator can view reports to keep track of the use of the resources on the cloud, in terms of provisioned servers and software licenses. Here is how a report for a specific project is presented:

![Project Report](image)

**Figure 10 Project report**

A project report includes the following information:

- Team
- Project name
- Server name
- Server IP
- Start Date
- Current State
- Duration
- Software List

To export the report to a Comma Separated Values (CSV) format, click **Export**. The following fields are exported to the CSV file:
• Team
• Project ID
• Project Name
• Server Name
• IP Address
• Server Type
• Machine Performance
• Software
• Current State
• Begin Time
• End Time
• Duration

2.3.7 Admin tasks

The cloud administrator can perform the following administrative tasks:

• Delete a deactivated team: This deletes a team that has been deactivated. It removes all history data associated with past projects for that team.
• Terminate all failed projects: This terminates all projects in the system that are in a failed state.
• Delete all completed/terminated projects: This removes the projects from the CloudBurst console. The project history data still persists in the database, however.
• Purge deleted project data: When you purge project data, it is gone forever and is irretrievable.

To perform these tasks, click Admin Tasks in the menu bar. The list of tasks is displayed. From there, click the Admin task that you would like to complete.

2.3.8 Managing images

The cloud administrator can add and remove VM images that can be requested for use in cloud projects. To work with a specific image, complete the following steps:

1. In the menu bar at the top, click Manage Images.
2. The Manage Images page is displayed.
3. From the drop-down box, select a virtual resource cloud to work with.
4. A list of images is displayed:
To delete an image from the pool, click **Delete**. A confirmation appears. After you delete the image from the pool, this operation can not be undone.

To add a new image to the pool, type the appropriate information in the fields provided and then click **Add Image**. See the ‘Installing a new CloudBurst image’ section below.

As the cloud administrator, you must register new image templates into the system to be used by provisioning requests. IBM CloudBurst provides a procedure to import new images created by the customer into the system to be used as templates. This procedure is a two-step process. The following steps are involved:

1. Copy the VMWare image to the x3650 machine running VMWare Virtual Center.
2. Import the image into VirtualCenter as a new template.

After uploading the image to VirtualCenter, you can provide details of the template to IBM CloudBurst. You first select the resource cloud. For IBM CloudBurst there is only one default resource cloud (VMWare on blades). You can view existing images in the system for the pool and their default values. You can also delete an image from the system (you must also delete the image from VirtualCenter if desired). You can register the new image in the system by providing the name of the image to be seen by end users, the filename of the image in VirtualCenter, the version of the image, the OS type included in the image.
(SLES, RHEL, Windows, etc.), and the minimum and recommended values for CPU, memory, and disk.

**Installing a VMware Linux or Windows Image for CloudBurst**

To install a VMware or Windows image for IBM CloudBurst, complete the following steps:

1. To create a new VMware Virtual Machine, complete the following steps:
   a. Log in to Virtual Center or ESXi/ESX using Virtual Center Client.
   b. Select **File -> New -> Virtual Machine**, or use the shortcut key (Ctrl + N)
   c. Select **Typical Wizard Type** and then click **Next**.
   d. Fill in Name: <virtual machine name> and Location : <select the Inventory location to create the VM> and then click **Next**.
   e. Select the Datastore (for example, storage for virtual machine) and then click **Next**.
   f. Select Guest Operating System as "Linux" and select the correct version (for example, Red Hat Enterprise 5 32-bit/Suse Linux Enterprise Server 10 32-bit), and then click **Next**.
   g. Select CPUs with default values, and then click **Next**.
   h. Select Memory as default values and then click **Next**.
   i. Select Network as default values and then click **Next**.
   j. Select Virtual Disk Capacity, Disk Size = <Keep as minimum as possible for installation> and then click **Next**.
   k. Click **Finish**.

2. Complete the following steps to configure VMware Virtual Machine to boot using ISO Image.
   a. Select **Inventory - > Virtual Machines and Templates**
   b. Look for Virtual Machine created above steps. Right-click the Virtual Machine and select **Edit Settings**.
   c. In the Virtual Machine Properties Hardware tab, select CD/DVD Driver 1 and on Right select Device Type option as Datastore ISO file.
   d. Click the Browser and browse through the datastore to select the ISO image.
   e. In the Device Status, click the **Connect at power on** checkbox.
3. To power on the virtual machine and open the console, complete the following steps:
   a. Right-click the Virtual Machine and then select **Power On**.
   b. Right-click the Virtual Machine and then select **Open Console**.

4. To install an operating system, complete the following steps
   - For Linux: Installing a Linux for CloudBurst image is the same as the standard install with partition table meeting any of following types:
     1. Partition table without VolGroup:
        - boot partition
        - root partition
        - swap partition (optional)
     2. Linux installation Default VolGroup partition table:
        - Single VolGroup with partition table listed in #1
        - Note: Disable Linux firewall to the image
     3. Suse Linux Enterprise require compilation of resize2fs, the steps for compilation
        - Download e2fsprogs source code from the project web site (http://e2fsprogs.sourceforge.net/ext2.html).
        - Login to a SLES virtual machine as root and install gcc (compiler) tools
        - Unzip e2fsprogs under /usr/local/src
        - Go to /usr/local/src/e2fsprogs-*
        - Run ./configure script
        - Run make command
        - After compilation is finished change to /usr/local/src/e2fsprogs-*/resize directory
        - Run make resize2fs.static
        - Copy the resulted resize2fs.static file under /opt/IBM/tivoli/tpm/repository/Cloud/helper_tools/resize2fs directory on TPM server as tioadmin user. Keep in mind you need to rename from resize2fs.static to resize2fs on the destination server
   - For Windows: Installing a Windows for CloudBurst Image is the same as standard install with file system as NTFS. The windows image should be packaged with cygwin installable and post install scripts,
The steps to prepare cloud_cygwin_install.zip

1. Create c:\temp\cygwin directory  
2. Go to www.cygwin.com  
3. Download setup.exe into c:\temp\cygwin. Start setup.exe.  
4. Click Next  
5. Select Download Without Installing. Click Next  
6. Type c:\temp\cygwin for a directory. click Next  
7. Choose right connection settings  
8. Select mirror to donwload from. click next  
9. Choose packages to download. Make sure you the following packages are included (this is the minimum set required):

alternatives  
ash  
base-files  
base-passwd  
bash  
bzip2  
coreutils  
crypt  
csih  
cygrunsrv  
cygutils  
cygwin  
cygwin-doc  
db  
diffutils  
editrights  
expat  
findutils  
gawk  
gdbm  
gettext  
grep  
groff  
gzip  
less  
libiconv  
login  
man  
minires  
ncurses  
openssh  
openssl  
pcre
perl
popt
readline
rebase
run
sed
tar
tcp_wrappers
termcap
termminfo
texinfo
tzcode
unzip
which
zip
zlib

10. Click next and wait for download to finish
11. Click Finish
12. Open c:\temp\cygwin
13. There should be a directory with the URL of the mirror chosen during the install
Figure 12 Cygwin download URL folder

14. Open this directory
15. Move release folder and setup.ini file to c:\temp\cygwin
16. Go to c:\temp\cygwin
17. Remove the mirror URL folder
18. Now, your c:\temp\cygwin folder should look like this:
19. Zip `c:\temp` into `cloud_cygwin_install.zip` (remember to include `c:\temp` into the archive)
20. Put the new archive in the file repository

- Installing Cloud post install framework on windows images
  1. Upload `cloud_postinstall.zip` and `cloud_cygwin_install.zip` to the Windows VM.
  2. Unzip both `cloud_postinstall.zip` and `cloud_cygwin_install.zip` under `C:\`
  3. Shutdown windows
- The Virtual Center should be configured with sysprep installables.
  1. Download the system installable from the copy them into Virtual Center server location. `E:\Documents and Settings\All Users\Application Data\VMware\VMware VirtualCenter\sysprep\<os folder>\`
Below picture shows the sysprep installable for Microsoft Windows 2003

Figure 15 Microsoft Windows 2003 Sysprep installable folder

5. Install VMware tools into Virtual Machine (Refer VMware Virtual Center User document)

6. To convert the Virtual Machine into a Virtual Machine template, right-click the Virtual Machine and select Convert to Template.

Note: Make sure to do the following before converting a Virtual Machine to a Virtual Machine Template:

- Remove ISO Image attached to Virtual Machine.

Installing a new CloudBurst image
To install a new IBM CloudBurst image, complete the following steps:

1. To upload an image using Virtual Center Client, complete the following steps:
   a. Log in to VMware Virtual Center using VMware Virtual Client.
   b. Select Inventory -> Datastores, or use the Ctl + Shift + D shortcut keys
   c. In the left Datastores pane, select Image repository datastore (ex: image_repo_disk)
   d. In the Right pane Browse Datastore.
   e. In the Datastore Browser window, click "Upload files from your local machine to datastore", select "Upload Folder", and then point to VMware virtual template folder in local.

2. To upload a Virtual Appliance using Virtual Center Client, complete the following steps:
a. Log in to VMware Virtual Center using VMware Virtual Client.

b. Click the **Inventory** button.

c. Select **File -> Virtual Appliance -> Import**.

d. In the Import Virtual Appliance Wizard, complete the following steps:

i. In the Import Location, select **Import from file** and select the appliance (ovf) file, and then click **Next**.

ii. Click **Next**.

iii. In the **Name** and **Location** fields, fill in Name and select the Datacenter in the Inventory location, and then click **Next**.

iv. In the Host/Cluster, select the cluster used by the CloudBurst and click **Next**.

v. In the Datastore, select the VMware repository datastore and click **Next**.

vi. Click **Finish**.

e. To convert the Virtual Machine just imported to template, right-click the Virtual Machine and select **Convert to Template**.

3. To add an image using the IBM CloudBurst console, complete the following steps:

a. Log in to the IBM CloudBurst console as a cloud administrator.

b. From the menu bar, select **Manage Images**.

c. From the **Choose a Pool** dropdown, select **VMware System x**.

d. Complete the following image details

- **Name**: Image descriptive name that needs to be displayed in the Cloud Catalog list.

- **File Location**: Path of the vmtx file in datastore ex, if the VMName is Test it will be Test/Test or Test/Test.vmtx

- **Version**: OS Version

- **OS**: OS Name

- **Install as**: Select **VMware Linux Image** for Linux OS images and **VMware Microsoft Windows Image** for Windows OS images.

- **Parameters for this Image Type**:

  1. For Linux OS image:
Image root Password: <root user password>

2. For Windows OS image:

Image Administrator Password: <Administrator password>

Windows Product Key: <Windows OS product key>

- **Minimum**: CPU, memory in MB and storage in GB

  Note: The minimum disk/storage specified here must be at least the size of the ‘base’ image that was added to Virtual Center.

- **Recommended**: CPU, memory in MB and storage in GB

  e. Enter additional parameters required for the image type. This can include the administrator/root password for the ‘base’ image and the product key for Windows.

  f. Click Add Image.

### 2.4 Cloud manager operations

The following image displays the home page for the cloud manager:
The cloud manager has access to the following options from the menu bar:

- Home
- Reports
- My Profile
- About

The cloud manager can also monitor the status of a project and generate reports in CSV format. For information about monitoring the status of a project, see Section 2.3.3.

Note: The cloud manager has read-only access to the Project Details.

### 2.4.1 Viewing reports

The cloud manager can view project reports. For information about viewing reports, see Section 2.3.6.
2.4.2 Managing your profile

The cloud manager can change user details and modify password information by clicking My Profile in the menu bar. For more information about changing user details and modifying password information, see Section 2.3.2.

2.5 Team administrator operations

The following image displays the home page for the team administrator:

![Figure 17 Team administrator home page](image)

The home page for the team administrator includes a menu bar of tasks. The following options are available from the menu bar of the cloud administrator home page:

- Home
- Reports
- Manage Cloud Users
- Admin Tasks
- About

The team administrator does not have access to creating and managing teams.
2.5.1 Managing users

The team administrator can also manage users that belong to the same team. The process for managing users is similar to the process used by the cloud administrator. On the menu bar, click Manage Cloud Users. The Manage Cloud Users page is displayed.

The following tasks are available to the team administrator:

- Add a new user
- Change/Unlock the password of a user
- View or modify details of a user
- Delete a user

For more information about completing each task, see Section 2.3.2.

2.5.2 Creating a project

The team administrator can create projects, where a project is a set of servers and applications that are automatically provisioned on the cloud. For each project, the administrator specifies a start date and end date. The resources for the project are allocated only for this timeframe. A de-provisioning warning email is sent before the project termination date.

To request a new project, click Request New Cloud Project in the menu bar.

Requesting a new project is a three-step process:

1. Browse available infrastructure and choose dates
To select dates for the new project, complete the following steps:

1. In the **Start Date** field, type the date that the new project should start.
2. In the **End Date** field, type the date that the new project should end.
3. To allocate resources until the termination of the project is explicitly requested, deselect the **End Date** checkbox.

On this step, the team administrator can also check the availability of the virtual resources on the cloud, grouped by pools and in terms of number of CPU, memory, and storage.

To advance to the next step, click **Next**.

2. **Select servers and configure software**
The **Select servers and configure software** step is divided into the following areas:

- Complete New Project Details
- Select and Configure your Virtual Machines

To add the new project details, complete the following steps:

- In the **Project Name** field, type a name for the new project. The project name can be up to 125 characters.
- In the **Description** field, type a description for the new project.

To select and configure your virtual machines, complete the following steps:

1. From the **Choose a Virtual Resource Cloud** drop-down, select a cloud.
2. From the **Choose an Image** drop-down, select the base image to be installed on the virtual machines.
3. Next, choose the resources to allocate to the virtual machine:
   - CPU units to assign to the virtual machine
   - Memory for each server (in MB): the memory allocated for the virtual machine
• Disk space for each server (in GB): the size of the disk for the virtual machine
• Number of virtual CPUs: the number of CPUs for each server. The Number of Virtual CPUs must be equal to or greater than the number of CPUs.
• Number of VMs: how many virtual machines of the chosen specification to add.

4. To proceed to the next step, click **Next Step**.
5. To enable monitoring, select the checkbox that is displayed. This installs monitoring agents.
6. To add the virtual machines to your project, click **Add VMs to Project**.
7. The virtual machines are added to the **Your Virtual Machines** list.
8. To repeat this configuration step, select an image from the **Choose an Image** drop-down and proceed.

**Note:** The monitoring agent allows cloud users to see server resource utilization through the cloud management console. The installation is set by default.

To remove a set of servers the list of virtual machines, click **Remove**.

When the definition of the project is complete, click **Next** to proceed to the third step.
3. Submit request

The Submit request step page summarizes the project. Click Submit to request resources, Previous to continue to configure the project, or Cancel to stop the configuration process.

To request the project, click Submit.

To continue return to the previous step, click Previous.

When the request is submitted, the project goes into a pending status for approval by the cloud administrator.
2.5.3 Monitoring the status of a project

The team administrator can monitor the status of projects that the cloud administrator has approved. The status of each project that has been approved for a team administrator is displayed on the home page.

To read about the process for checking project status, see Section 2.3.3 for more information about monitoring the status of a project.

2.5.4 Viewing reports

The team administrator can also view reports for a project. To view a report, click Reports in the menu bar. For more information about viewing reports, see Section 2.3.6.

2.5.5 Admin tasks

There are two Admin tasks available to the team administrator. To perform an Admin task, click Admin Tasks from the menu bar. The following Admin tasks are available:

- Terminate all failed projects
- Delete all completed/terminated projects

To complete an Admin task, click one of the links provided.

2.6 Team user operations

The following image displays the home page for a team user:
The menu bar on the team user home page includes the following options:

- Home
- Reports
- My Profile

The team user can also view project status.

2.6.1 Monitoring the status of a project
For information about monitoring the status of a project, see Section 2.3.3.

2.6.2 Viewing reports
For information about viewing reports, see Section 2.3.6.

2.6.3 Managing your profile
The team user can change user details and modify password information by clicking My Profile in the menu bar. For more information about changing user details and modifying password information, see Section 2.3.2.
2.7 Context sensitive help links

Context sensitive help provides information about the IBM CloudBurst interface. To view help for a specific page, click the help icon (👋) that is located in the top right of each page.

The following example displays the online help for a specific page:

![Figure 22 Online help](image)

3 Administrative functions

The system administrator might need to perform various system maintenance operations on the management stack, or troubleshoot issues with the system. This section includes information about system administrative functions with IBM CloudBurst.

3.1 Backup and Recovery of the IBM CloudBurst Management Stack

The IBM CloudBurst management stack is a set of VMWare virtual machine images preinstalled on the hardware. By default, the solution is preconfigured for VMWare VirtualCenter to create automatic backups of the management virtual machines (TPM,
ITM, NFS) nightly. You can reconfigure the default backup schedule if needed. You also manually delete unneeded backups if you need to free up space.

If a failure occurs, you must restore an old version of the failed virtual machine from VMWare Virtual Center. You must also verify the state of running virtual machines in the system compared to what is running in VirtualCenter. If there are unknown virtual machines in VirtualCenter, you must inform users to pull critical data off the virtual machines and delete them after all data is copied. If there are virtual machines in IBM CloudBurst that do not exist in VirtualCenter, you must remove the virtual machines, and/or terminate the projects with the virtual machines that are missing in VirtualCenter.

### 3.2 Configuring automatic snapshot-based Management Server backup

You can configure an automatic snapshot-based Management Server backup. The following list includes the management servers and their names, which is based on the IBM CloudBurst standard names:

- IBM Tivoli Provisioning Manager Deployment Engine: `cloudburst-tpmde.ibm.com`
- IBM Tivoli Provisioning Manager: `cloudburst-tpm.ibm.com`
- Network Files System: `cloudburst-nfs.ibm.com`
- IBM Tivoli Monitoring: `cloudburst-itm.ibm.com`

To configure an automatic snapshot-based Management Server backup, log in to VMware Virtual using Virtual Client and complete the following steps for each server that you want to back up:

1. Select **File -> New -> Scheduled Task.**
2. In the **Select a Task to Schedule** from drop-down list, select **Make a snapshot of a virtual machine.** The following steps include the procedures for completing the wizard.
3. In the **Select Virtual Machine** step, select the Management virtual server to snapshot and click then **Next.**
4. In the **Description** and **Snapshot** fields, complete the following steps:
   a. In the **Name** field, type in the Snapshot name.
   b. In the **Description** field, type the description.
   c. Click **Next.**
5. In the **Schedule Task** step, complete the following steps:
   
a. In the **Task Name** field, type a descriptive name for the task.
b. In the **Task Description** field, type a description for the task.
c. For the **Frequency**, select **Daily**.
d. For the **Start Time**, select the time to be started.
e. For the **Interval**, select the interval to be cloned. For every day, select 1.
f. Click **Next**.

6. Click **Finish**.

### 3.3 Restoring Management Servers

You can also restore Management Servers. To restore a Management Server, log in to VMware Virtual Center using VMware Virtual Client, and then complete the following steps for each Management Server:

1. Click the **Inventory** button.

2. In the **Virtual Machine and Templates** list, select the management server from the list.

3. Right-click the server, and then select **Go to -> Snapshot -> Snapshot management**.

4. In the Snapshot, select snapshot to the one to restore, and then click **Go to**.

5. To restore the Management Server, click **Close**.

Restoring Tivoli Provisioning Manager requires some manual steps to ensure that Virtual Center is in sync with it. To restore Tivoli Provisioning Manager, complete the following steps:

1. Open the Tivoli Provisioning Manager Maximo URL.

2. On the main page, select **Go To -> IT Infrastructure -> Provisioning Inventory -> Provisioning Computers**.

3. Press the enter key to list all of the computers.

4. To clean up the Virtual Center, delete all of the virtual machines that are present in Virtual Center.

5. The computer names in the TPM Computers list maps to the Virtual Machine name in the Virtual Center.
Complete the following steps to delete the Virtual Server in the Virtual Center.

1. Log in to Virtual Center using Virtual Center Client.
2. Select **Inventory - > Virtual Machines and Templates**.
3. To delete a virtual machine, right-click the virtual machine and select **Power Off**.
4. To delete the virtual machine, right-click the virtual machine and select **Delete from Disk**.

### 3.4 Best practices for OS images

The following list includes some best practices to consider with operating system images:

- Create the image disk as small as possible for installing operating system and software.
- The Windows OS image file system should be NTFS.
- Make sure Linux images are disabled with the firewall.
- Delete all of the root SSH public and private keys.
- Install VMware VM tools for the image.

### 3.5 E-mail Notifications

The IBM CloudBurst console can send e-mail notifications to cloud users if it is configured to do so. The following table displays the types of e-mail notifications that can be sent, when they are sent, and who receives them:

<table>
<thead>
<tr>
<th>Type of notification</th>
<th>Then notification is sent</th>
<th>Who receives the notification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome notification to the CloudBurst console, and new user credentials</td>
<td>When the new user is created</td>
<td>The new user only</td>
</tr>
<tr>
<td>New project or project change (dates or add/remove servers), pending approval</td>
<td>When approval is required</td>
<td>All users with approve permissions (currently Cloud Administrators only)</td>
</tr>
<tr>
<td>Project servers are ready</td>
<td>When a project either completed successfully or partially successfully</td>
<td>The user who requested the project only</td>
</tr>
<tr>
<td>Provisioning failure occurred</td>
<td>When a project either failed, or partially failed</td>
<td>All users with approve permissions (currently Cloud Administrators only)</td>
</tr>
<tr>
<td>Deprovisioning failure occurred</td>
<td>When a failure occurred during project deprovisioning</td>
<td>All users with approve permissions (currently Cloud Administrators only)</td>
</tr>
<tr>
<td>Event</td>
<td>Occurrence</td>
<td>Recipients</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Project changes (add/remove servers) completed successfully</td>
<td>When project changes are (add/remove servers) successful</td>
<td>User who requested the project, and all users that have requested changes</td>
</tr>
<tr>
<td>Failure during project changes (add/remove servers)</td>
<td>When a failure occurs during project changes (add/remove servers)</td>
<td>All users with approve permissions (currently Cloud Administrators only)</td>
</tr>
<tr>
<td>New project request approved or rejected</td>
<td>When a new project request is either approved or rejected</td>
<td>User who requested project only</td>
</tr>
<tr>
<td>During user-initiated password reset process</td>
<td>During the user-initiated password reset process</td>
<td>User requesting password reset from the login screen</td>
</tr>
<tr>
<td>Upcoming deprovisioning (end-of-project) warning</td>
<td>A configurable number of days prior to the end of a project. Default is 7 days and 3 days (twice).</td>
<td>User who requested project and all users that have requested changes</td>
</tr>
</tbody>
</table>

*Table 1 E-mail notifications*
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