CumuLogic Admin Guide

January 2014

Table of Contents

Terminology

- **CumuLogic Image** – The base CentOS 6.x image contains all the prerequisite packages defined in the Image section.
- **Target Cloud** – Refers to one or more Infrastructure-as-a-Service clouds (IaaS) such as Amazon EC2, Citrix CloudPlatform, VMware vCloud, Eucalyptus, HP Cloud or any other OpenStack- or CloudStack-powered clouds.
- **Services** – Application infrastructure services such as databases, load balancers, cache servers, messaging etc. Each tier of infrastructure is delivered "as a service."
- **Email Templates** – Templates for emails sent out by the CumuLogic platform that you can customize based on your requirements.
- **VM Pool** – A dedicated resource pool of pre-provisioned virtual machines, which can be used in the absence of one of the supported IaaS clouds to provision services and deploy applications.
- **Subscriptions** – Pre-packaged service bundles created for your users to deploy specific services in just a few clicks without having to go through all selection options.

Once you have completed the installation of CumuLogic Cloud Services Platform (please refer to the Installation Guide), you need to perform some administration tasks to integrate the platform with your IaaS cloud.

This Administration Guide will walk you through the following tasks:

- Creating and managing user accounts
- Understanding and creating images, and how to add them to the platform
- Configuring various service defaults and global settings, such as notifications and support email addresses that the platform will use to notify you in case of failures, email notification templates, etc.
- Creating and using VM pools
- Creating subscription bundles

CumuLogic Admin Console

After installing the CumuLogic Platform, login as “admin”. The Admin Console is accessible from http://<domain-name>/cl, where the domain-name is the DNS name or the IP address of your Platform Controller Server.

CumuLogic Installer creates “admin” and “a default “cumulogic” user during installation.

Admin Dashboard

Login as “admin”. Your landing page is the Admin Dashboard. The dashboard provides information about all the images, users and services that are provisioned. The dashboard also provides shortcuts to configure defaults for services, import images, etc.

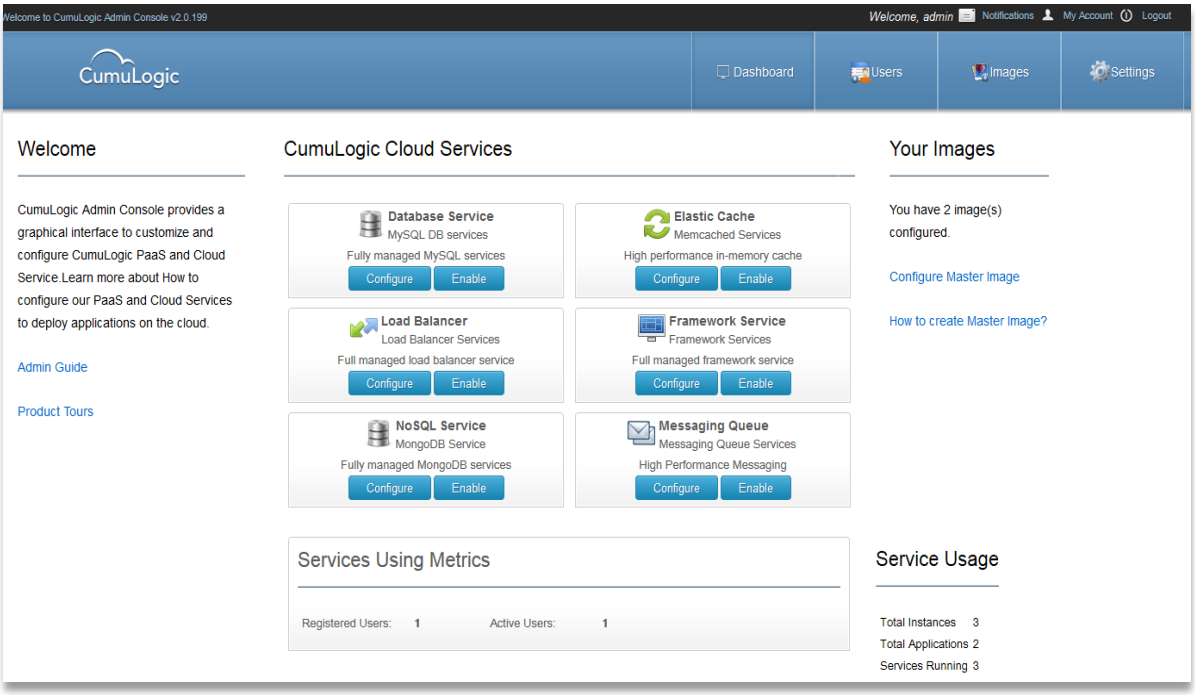


Image Template Management

CumuLogic Controller provisions the application frameworks and services on the target IaaS cloud using the image template, provided that it meets the pre-requisites listed below.

Creating CumuLogic Image

Follow these steps to create CumuLogic image:

1. Launch a VM instance with the base CentOS 6.x or RHEL image template in your cloud. It is recommended that the VM has a minimum 10GB root volume.

2. Install the following packages on the VM instance if not already installed:

   - openssh-clients
   - openssh-server
   - openssl library {Example for CentOS 6.2: `openssl098e.x86_64`}
   - java-1.6.0-openjdk
   - libaio
   - zip/unzip/bzip2/gzip
   - perl
   - erlang

   Example -

   ```
   # yum install -y openssh-clients.x86_64 openssh-server.x86_64
   openssl098e.x86_64 java-1.6.0-openjdk.x86_64 libaio.x86_64
   zip.x86_64 unzip.x86_64 bzip2.x86_64  gzip.x86_64 perl.x86_64
   perl-Time-HiRes.x86_64 perl-Compress-Zlib.x86_64
   ```

   To Install "erlang" you need to add epel-repo,

   ```
   1) rpm -Uvh
      http://download.fedoraproject.org/pub/epel/6/x86_64/epel-
      release-6-8.noarch.rpm

   2) yum install -y erlang
   ```

3. Cleanup the instance before taking a snapshot by removing the following files:

   # /etc/udev/rules.d/70-persistent-net.rules (if it exists)
   rm -f /etc/udev/rules.d/70-persistent-net.rules

4. **Disable iptables** – service iptables stop and chkconfig iptables off

5. Check and set umask to "022"
6. Update file descriptor limit to 10240 by editing /etc/security/limits.conf and add below entries,

```
*       soft    nofile  10240
*       hard    nofile  10240
```

7. Disable SELinux. Check with "sestatus" command, if it is disabled.
   Edit /etc/selinux/config and set it to 'disabled' & type: 'setenforce disabled' to change it immediately.

8. Reboot the vm instance and check.
9. Remove the /etc/udev/rules.d/70-persistent-net.rules (if it exists)

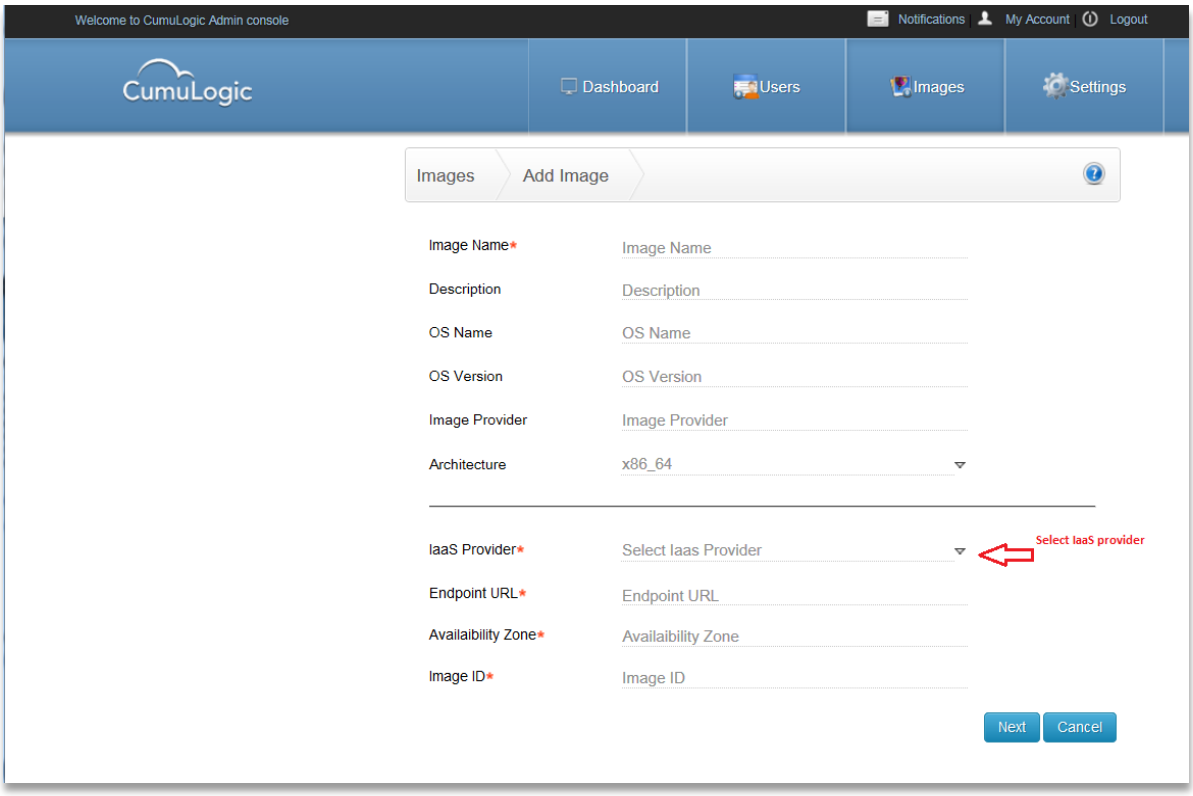
   rm -f /etc/udev/rules.d/70-persistent-net.rules

10. Take a snapshot and create an image
11. Test the image by launching a VM with this image
12. Use Image-ID to import the image on the Add Image screen

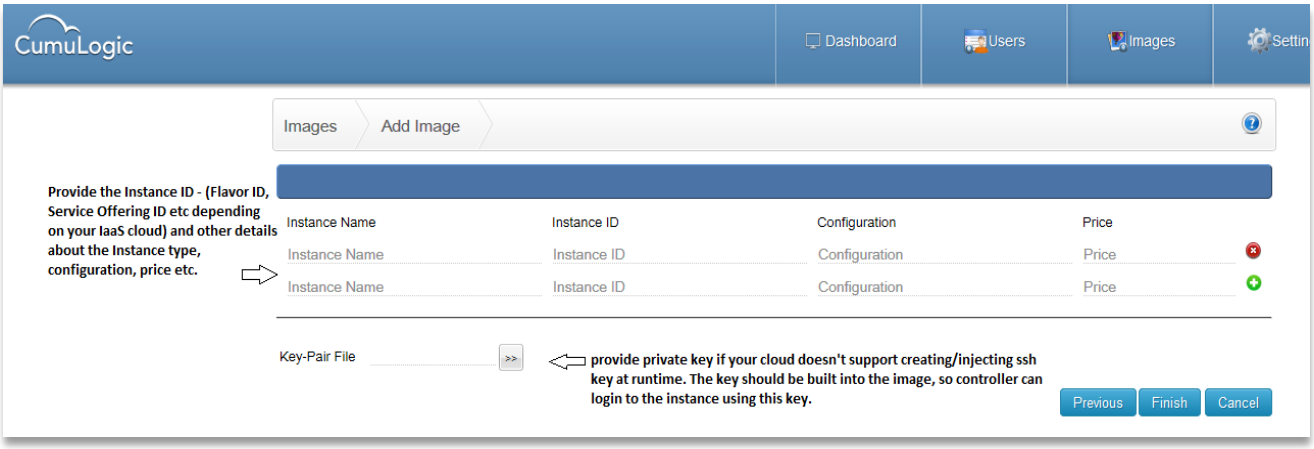
CumuLogic Controller uses ssh to login to the VM to configure during provisioning and it will provision the VM with the ssh key.

If your IaaS cloud does not support **SSH key creation at runtime**, you will need to create a root ssh key and copy the id_rsa to /root/.ssh/authorized_keys in addition to copying the id_rsa.pub file as .pem and importing it along with the image. This key will be used by the CumuLogic Controller to login to the instances created with this image.

Once you have the image created in the target cloud, you can add the image details on "Add Image" screen by clicking on "Images => Add Image."



Click on for details on each field and follow onscreen instructions.



SSH Key Pair File

You can import the keypair along with the image from the "Add Image" screen. The SSH key is required for configuring and managing the VMs. You can provide the KeyFile if your image template has a key built-in and your cloud (IaaS) does not provide the capability to create a SSH key via APIs, and your IaaS cloud doesn't allow to inject the key into the VM during provisioning. Most of the current clouds allow you to create the key at runtime, so you can ignore this field. CumuLogic Controller will create a keypair and use it during provisioning VMs.

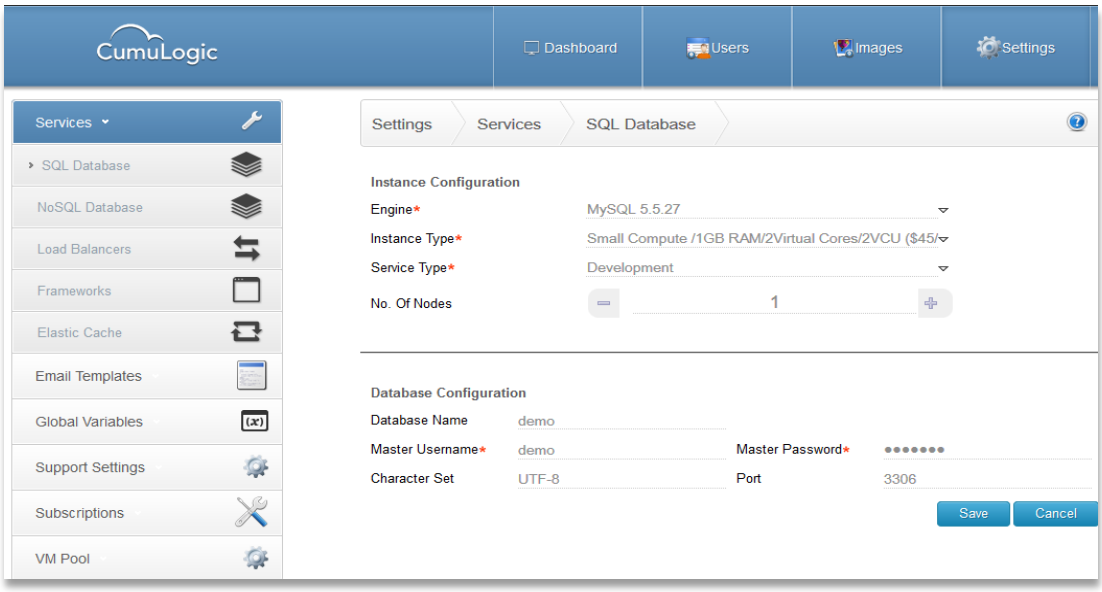
Upon successful import, CumuLogic Controller can now use these images for provisioning with the keypair if you provided one.

Managing Global Settings

In the "Settings" screen menu on Admin Console, you can customize and manage some of the global settings, service defaults etc.

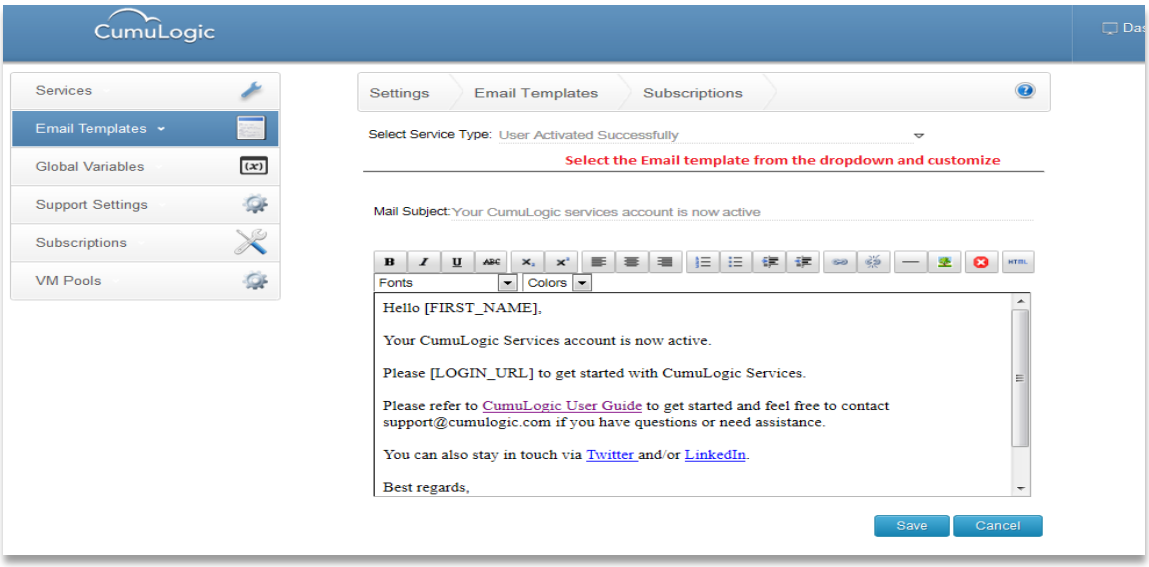
Services

Under Services, you can define the default values for various services, including databases, load balancers, frameworks, elastic cache, etc. As admin you can define the defaults for engine, availability zone, size of the instance, Service Tag, (production/dev/qa/testing, etc.), and default number of nodes. Users can override the defaults by manually selecting different options from the dropdown menu during a service launch. However, when no values are specified, default values will be used.



Email Templates

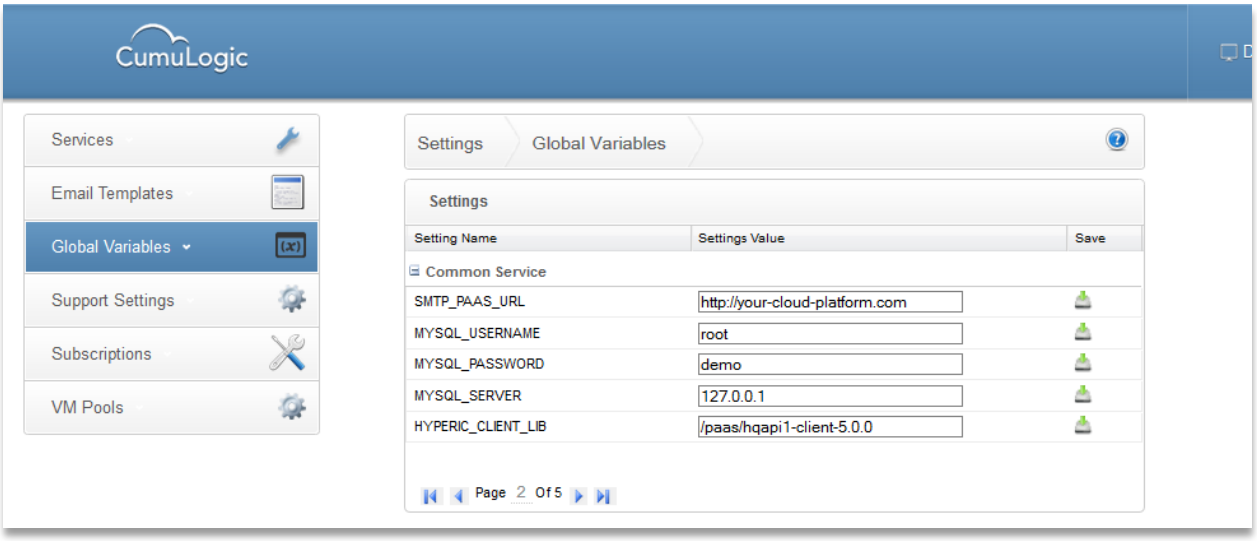
Under **Email Templates**, you can edit the templates used for the emails sent out from the CumuLogic platform. The emails are completely customizable. Select a template from the dropdown, edit the subject/body of the email and save.



Global Variables

Under Global Variables, as the name suggests, you can configure global settings for the platform.

In the Global Variables section, you can set various system variables, such as admin email, default snapshot frequency, SMTP host and credentials. These SMTP credentials are used to send emails from the Controller.

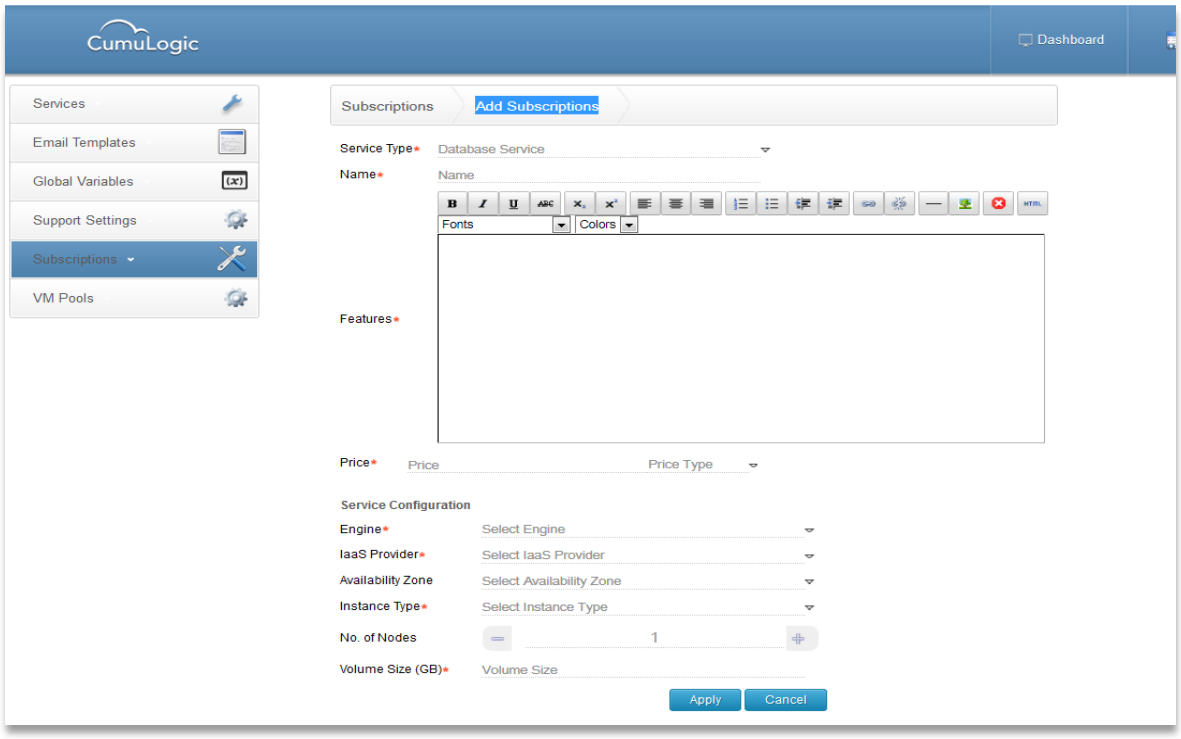


Support Settings

You can customize information about Support email/contact and Address for your organization. This support information is what your customers/users will see under the Support screen on the user dashboard.

Subscriptions

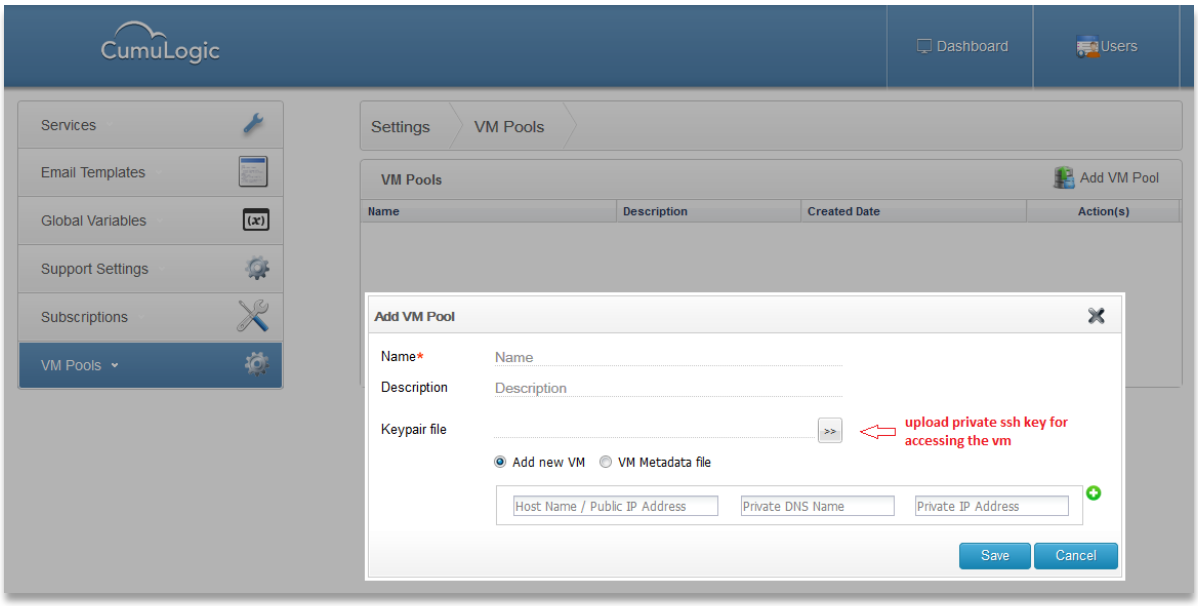
Under Subscriptions, you can create pre-packaged service bundles so your users can deploy specific services in just a few clicks without having to go through all available options. These are useful to reduce the number of configuration steps users need to take while provisioning services.



VM Pools

Under VM Pool, you can configure a dedicated resource pool of pre-provisioned virtual machines. This is particularly useful in the absence of one of the supported IaaS to provision services and deploy applications. All the VMs in the pool should have the same ssh key built into them. You will need to upload the key while adding the machines to the pool. The CumuLogic Controller will use this key while configuring the services on the VMs. Since the controller is going to use the VMs to configure services, the VMs should meet the base image criteria described in the Image section.

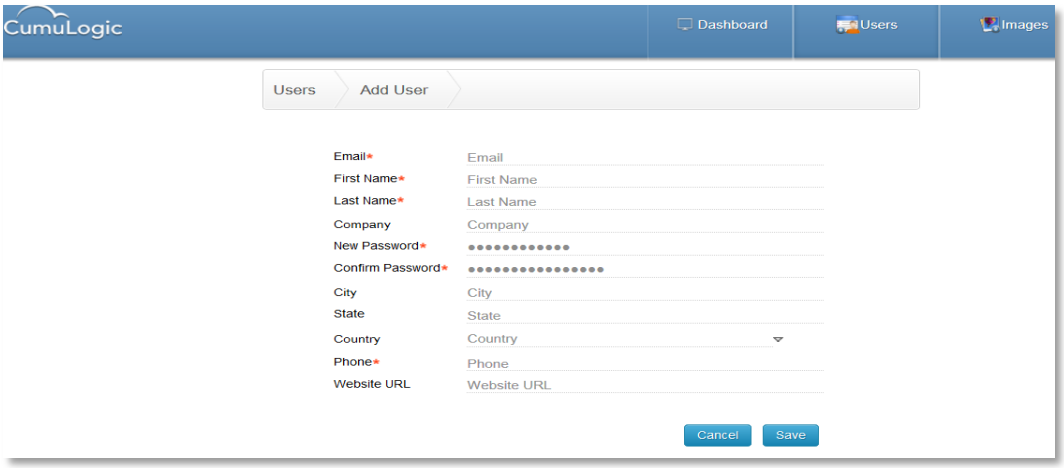
After adding the VM pools, the Admin can create a target cloud (Refer to Target Cloud section to learn how to create target cloud) with the available VM pool and assign the target cloud to select users. You can add more than one VM pool and assign the target clouds for each VM pool to multiple users. Each VM pool is treated as a separate target cloud. You cannot span the target cloud or deployment across multiple VM pool.



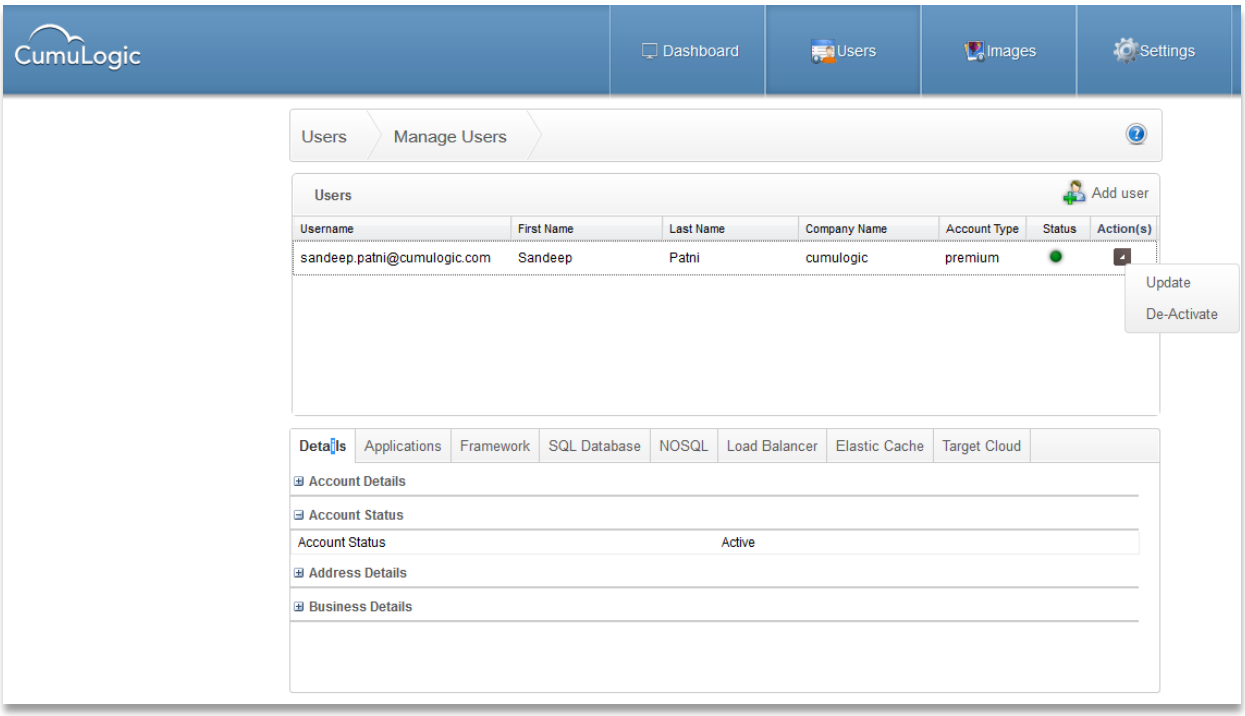
Managing Users

As Admin you can manage user accounts from the **User Management** screen.

There is a default user "cumulogic" created for your convenience. You can change the password for this user from the Admin Console. You can now register additional users by clicking on "Add User" and follow the on-screen instructions.



You can activate/deactivate user's accounts by clicking on user name and select the appropriate action from the pop-up. You can also monitor the status of the services provisioned in the user accounts by selecting the particular service tab in the bottom pane.



Target Cloud and CumuLogic Controller Interaction Checklist

Follow this checklist to ensure that your cloud is functioning as expected with CumuLogic platform:

1) Confirm that the target cloud URI is accessible from CumuLogic platform, specifically that there is no network isolation between the end point URI and the Controller. You can verify this by making an API call from the Controller to the target cloud.
2) Check that you are able to launch a VM on the target cloud from the Controller using the APIs on the command line.
3) CumuLogic Controller should have network access to the VM provisioned in the target cloud.

Configuring Target Cloud

You need to add valid target IaaS cloud credentials to be able to provision VMs in the given cloud. You can add the target cloud by clicking on "Add Target Cloud" under My Account => Target Clouds screen.

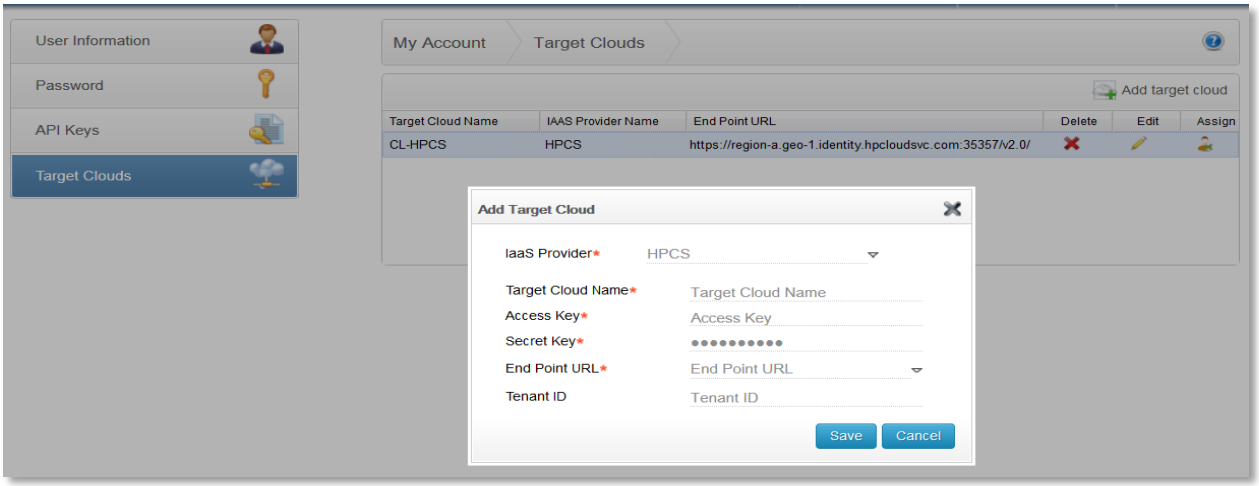
Depending on your environment, you can add a target cloud from the Admin Console and share it across multiple users, or have individual users add their own target cloud credentials. For example each user for a Cloud Service provider will have their own credentials, and In Enterprises, each user may not have direct access to the IaaS cloud. In that case central IT will be able to add Target Cloud under Admin Console and assign to select users. You can add more than one target clouds.

The credentials will vary depending on your IaaS cloud. Select your cloud type from the dropdown and provide appropriate credentials.

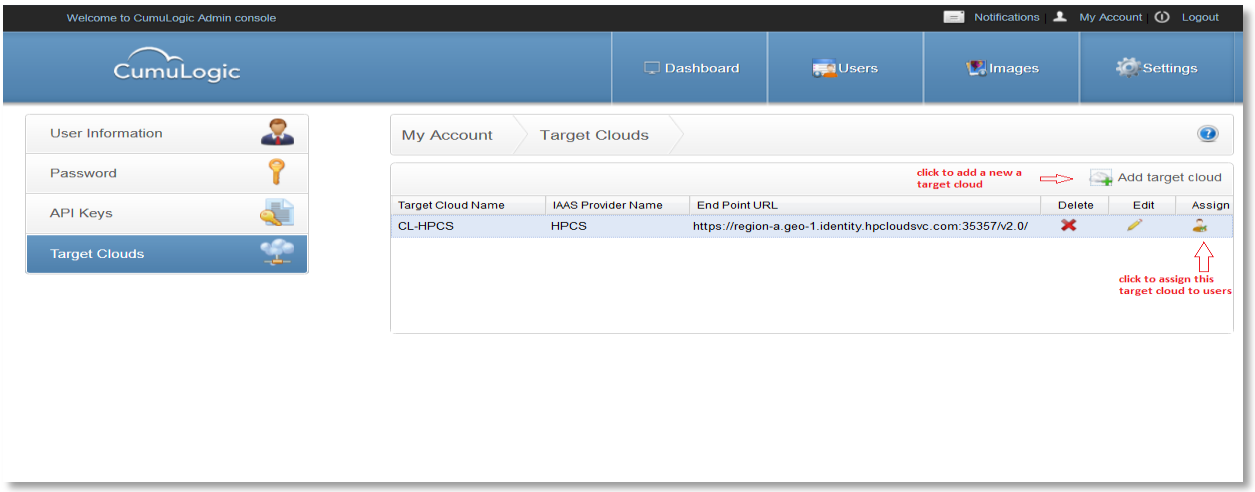
For some **OpenStack** implementations with keystone security like the HP Cloud, you will provide URI, AccessKey, SecretKey, TenantID. For other implementations, you will need to provide URI, username/Password/Tenant ID.

For **Apache CloudStack**, you need to provide URI, AccessKey, SecretKey, ZoneId.

For **EC2** you will provide Account Number, AccessKey, SecretKey and so on.



You can see the list of currently added target clouds as illustrated below. You can edit or delete the existing target cloud list.



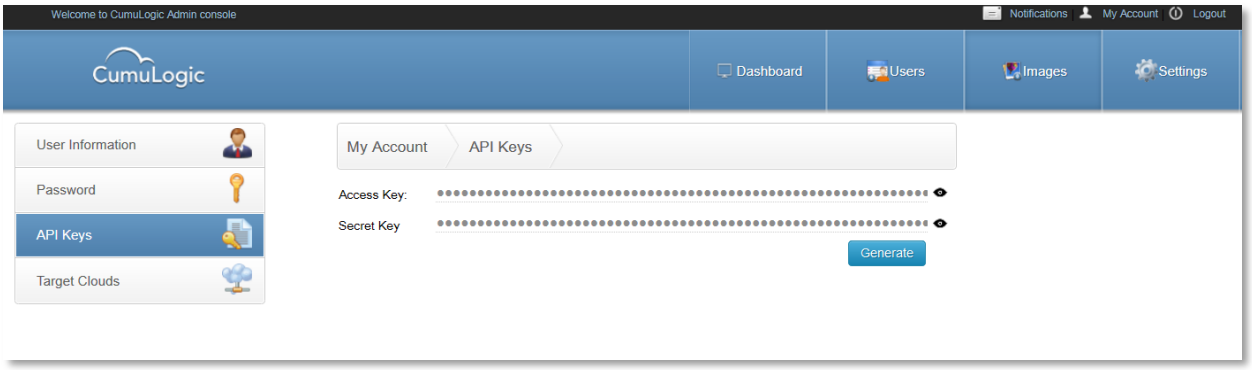
CumuLogic platform users can provide their own credentials to the target IaaS clouds in their account. It is also possible for the admin to assign the target cloud credentials to the users. This is useful for private clouds where all authorized users will have access to the cloud and the platform. If you want to assign the target cloud to additional users at any given time, you can click on the "Assign" action for the target cloud from the list, and then select the user from the list to assign/un-assign.

The target cloud credentials entered for each user by the admin will appear in the User Console. User will see the target cloud list in the target cloud dropdown on various services launch screen.

Admin API Keys

CumuLogic platform provides a RESTful API for you to perform all admin functions. From My Account => API Keys screen, you can generate and download your API Access Key and Secret Key. You can use these keys to authenticate on the Controller.

Please refer to the **API Guide** for details on available API and their options.



You have now completed the configuration and your CumuLogic platform is ready for users to deploy applications.

Please refer to the Getting Started Guide and User Guide at http://www.cumulogic.com/resources/documentation to get started with CumuLogic platform.