



CC1 - Cracow Cloud One

Release 2.0

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The CC1 system consists of a cloud controller (CLM) and at least one cluster controller (CM). Administrative responsibilities reflect this structure.

- The main task of the **cloud** administrator is basic management of user accounts and clusters.
- The **cluster** administrator decides on the allocation of resources on each CM to the user as well as configures the CM parameters to ensure good functionality of the local infrastructure.

CM ADMINISTRATION

CM administration panel is available by logging on to the `https://<www_interface_address>/cm_admin` where `<www_interface_address>` is the IP address of the WI interface. Panel administration module is shown in Figure *CM administration panel*. The list of available actions is broad. The following key points will be discussed for the different menu bar item.

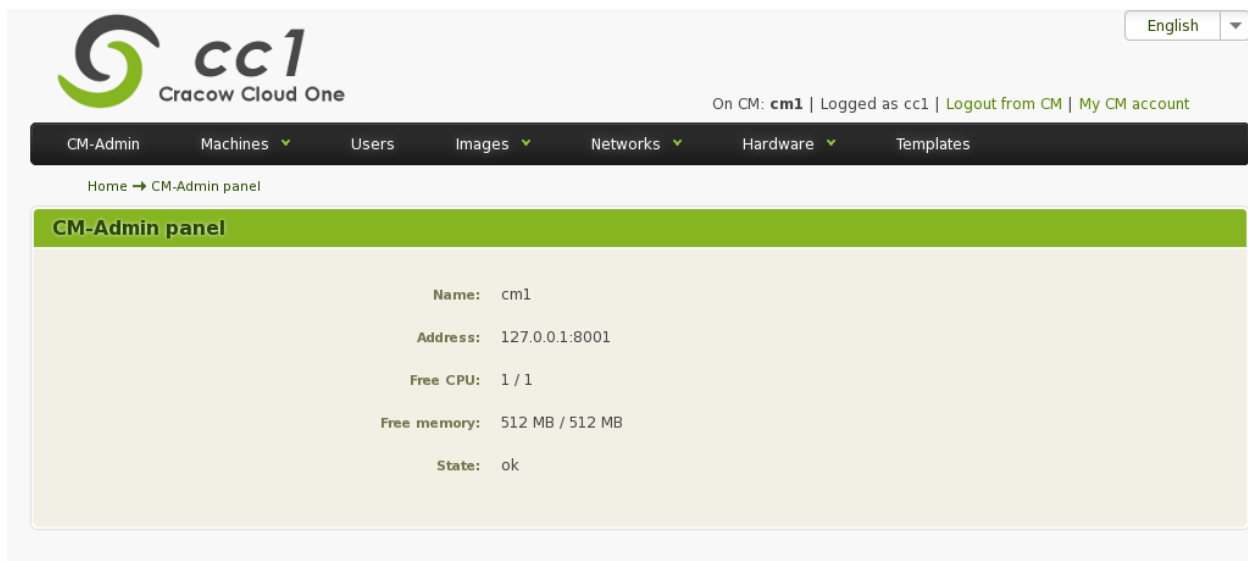


Figure 1.1: CM administration panel

1.1 Virtual machines

Actions in this group allow you to display the list of all virtual machines running on a cluster including filtering by individual user. Clicking on the VM description line opens the VM control panel. A detailed description of this panel is given in the *CCI User guide*. An additional element is the action **Erase** to remove the user's virtual machine with a *fail* status. This situation signals a serious problem with the worker node or with the operation of the whole system. This requires a thorough examination by the system administrator, therefore this option is not given to the user. A special locking mechanism is introduced to deactivate the problematic node automatically. This way one can avoid starting another VM on the faulty node. When the problem is solved, the node can be enabled according to the instructions in Sec. [Hardware](#).

1.2 Users

This item displays a list of all users. The CM administrator assigns the resources to every user. Modification of resource allocation is done using the action **Change account quota** and the **Edit account quota** button. You can set a maximum value for the number of cores, RAM, size of hard drive space (total size of private and virtual disk size), the number of allocated IP addresses used and the maximum number of points in a given month. The second action **set admin** is used to assign CM admin rights to the user.

1.3 Images

As images are:

- virtual machines images,
- virtual disk images,
- ISO files.

Actions available for each of those include:

- deleting,
- editing,
- copying.

1.3.1 VM images

VM images keep VM's operating system state.

Additional actions are possible for VM images via the panel **Images-> VM images**:

Move to public images action changes the image category from private to public.

Register allows one to upload new private VM image from a given http location.

1.4 Networks

Menu item **Networks** consists of three sections:

Users networks allows you to view the existing networks.

Available pools can be used to add new address pool (the **Add pool** button) and to block or remove the existing pool.

Public IPs

1.5 Hardware

The main purpose of this item is to display the menu for the management of working nodes and disk arrays. In both cases, there are buttons for adding new elements. In the case of operations on the nodes we have a number of important items in the **Actions** menu. These actions are also available from the panel **Show details**:

Create virtual machine allows you to run a new machine on a given node. This function is useful for testing the operation of the node after removing the previously observed problem. This operation can also be performed on the blocked node.

Edit allows you to modify the parameters of the node. Typical parameters for the libvirt/KVM virtualization environment are shown in Figure *Node edit form*. The same form is used for the **Add node** action.

Mount storage manual installation of all or selected storages. Used exceptionally in cases where the automatic mechanism fails.

Remove to remove the node from the CM database. Node is not modified.

Lock / Unlock Lock or unlock the node, depending on its condition. In the case of problems (virtual machine in state *fail*) node is automatically locked. One has to solve the problem, check for correct operation using action **Create new machine** and then unlock the node.

1.6 Templates

Templates define the most important parameters of the virtual machine, such as the number of cores and RAM available.

This section allows you to add virtual machine templates, edit them and delete. The administrator defines the cost of a VM created from a template - the number of points, which the user is charged per hour of use.

Edit node [X]

* Field required

Libvirt configuration

Username: * ⓘ

Node address: * ⓘ

Network transport: * ⓘ

Libvirt driver: * ⓘ

Libvirt path (suffix): ⓘ

Node capacity

HDD Total [MB]: * ⓘ

Cpu Total: * ⓘ

Memory Total [MB]: * ⓘ

Figure 1.2: Node edit form

CLM ADMINISTRATION

CLM administration panel is available by logging on to the `https://<www_interface_address>/clm_admin` where `<www_interface_address>` is the IP address of the Web interface (WI).

Administrative tasks include managing users, managing CM clusters and publishing messages with built-in information system.

2.1 User administration from CLM

In the most general case the registration includes the following steps (the procedure is described in more detail in the User's Guide):

- filling in the registration form (name, email address etc.),
- email address confirmation
- manual activation of the user by the administrator.

There are also simplified versions of the registration, that can be defined in configuration files `/etc/cc1/clm/settings.py`.

Registration settings - `/etc/cc1/clm/settings.py`

```
# Should new accounts be activated
# after email confirmation (True)
#or manual activation by clmadmin (False)
AUTOACTIVATION = False

# Is mailer in use?
MAILER_ACTIVE = False
```

In particular, one can skip the step of email confirmation. This is the default setting after the installation. This does not require an email server to be present. It is possible to set an automatic activation of the user without the need for manual activation. This last option is not recommended, but may be useful in specific cases, such as hands-on tutorials, etc.

When new account is signed up, email notification is sent to each CLM admin.

Administration panel displaying all users of the system is shown in Figure *CLM administration panel*.

Possible actions are:

- Account information** view the account details of an user. Edit account parameters.
- Set admin** to give administrator rights

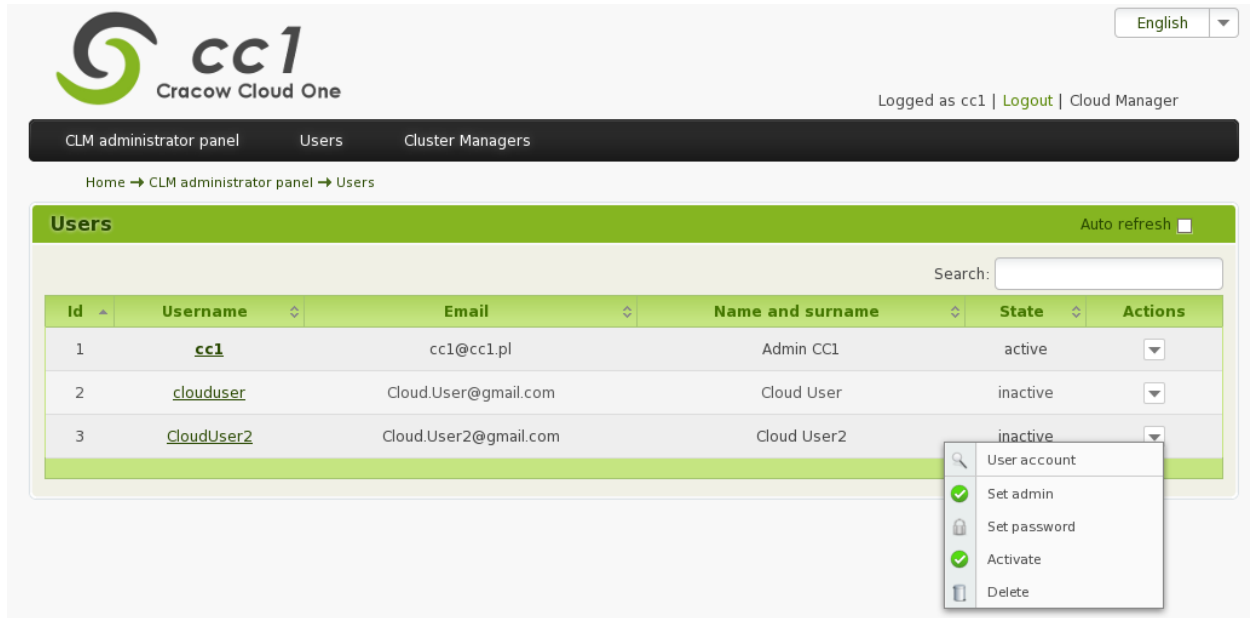


Figure 2.1: CLM administration panel

Set password Set a password for the user

Activate / Block set an account active or blocked. The status of blocked account becomes *Email confirmed* which prevents access to the system.

Delete remove the user account. This operation is possible only when the user is not activated. Once activated, the user can only be blocked.

2.2 CM administration from CLM

At least one CM is required in the system. New CM can be added at any time thereafter. There are three actions available on the appropriate administrative panel (Figure *CM administration from CLM*).

Edit allows you to edit the CM parameters such as name, IP address and communication port.

Remove removes the CM entry from the database. CM cluster resources remain intact but the cluster is no longer available. This operation should be performed only in case of complete liquidation of the cluster.

Lock/Unlock lock / unlock access to cluster. Locking and unlocking does not affect the internal state of the cluster. Virtual machines are not stopped.

The screenshot displays the CC1 Cracow Cloud One administrator interface. At the top left is the CC1 logo. The top right shows the language set to English and the user logged in as 'cc1' with options for Logout and Cloud Manager. A navigation bar includes 'CLM administrator panel', 'Users', and 'Cluster Managers'. Below this is a breadcrumb trail: 'Home → CLM administrator panel → Cluster Managers'. The main content area is titled 'Cluster Managers' and features an 'Auto refresh' checkbox. A table lists the cluster managers with columns for ID, Name, Address, Port, State, and Action. One entry is shown with ID 1, Name cm1, Address 127.0.0.1, and Port 8001. An action menu is open over the 'Action' column, showing options for Edit, Remove, and Lock. A '+ Create a new CM' button is located at the bottom left of the table area.

ID	Name	Address	Port	State	Action
1	cm1	127.0.0.1	8001		<ul style="list-style-type: none">EditRemoveLock

Figure 2.2: CM administration from CLM

PRODUCTION SYSTEM'S REPLICATION

Todo

System replication description
