CloudSME Platform
Resource Registration Guide

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Glossary

CBP	CloudBroker Platform
Admin	Administrator of your organization
OS	Operating System

Introduction

The "CloudSME Platform Resource Registration Guide" has been designed for those, who would like to have his/her own cloud resources available for usage through the CloudSME Platform (hereinafter referred to as CloudBroker Platform). The guide consists of two chapters, i.e.

- Resource Registration, and
- Price Setting

You will learn how to successfully register your cloud resource, add an instance type, region and storage and eventually – to set prices for your resource usage.

Each chapter consists of the detailed description of the subject matter, visualized with screenshots.

Resource Registration

Resources are the web services providing various cloud infrastructures, where you can use the application software within the CloudBroker Platform. Currently such resource as Amazon EC2 is available within the platform, and such resource types as Amazon EC2, CloudSigma, Eucalyptus, OpenStack (EC2 and Nova) and OpenNebula are supported.

As a resource provider, you can add your own public, i.e. offered by partner organizations or cloud providers, or private, i.e. in-house or hosted, resource of the supported type.

So let's go ahead and add you own resource!

Creating New Resource

Your first step in terms of making your resource available within the CBP is creation of a new resource. To create a new resource, either click on the "Resources" tab in the navigation menu or follow a "Resources" link in the dashboard. Once the Resource List page is opened, click on the "New" button.

Please see the figure below:

Figure 1.1: Resources List page.

You will then see a wizard for creating a new resource. The first step is to specify the setting for a resource itself. On the "Entry Options" sub-sub-tab the following fields need to be filled in:

- "Resource type" (by selecting the type of resource you would like to add among the supported ones, currently these are Amazon EC2, CloudSigma, Open Stack, Open Nebula and Eucalyptus). The fields below shall be displayed depending on the credentials required for each resource type. For example in case with Amazon EC2 resource type, you shall fill in the following:

- "Specifier" (unique string identifier that will be included into your resource name)

- "AWS Account ID" (specify the ID of your account within the resource)

- "Access key ID" (specify the ID of your access key to the resource)

- "Secret Access Key" (specify the Secret Access Key for your Access Key ID)

Please see the figure below:

Figure 1.2: Create New Resource page. Entry Options sub-sub-tab.

Once you have finished filling out the "Entry Options" sub-sub-tab, click on the "Expert Options" to find some additional resource parameters, i.e.:

- "Maximum nodes" (specify the maximum number of nodes that can run simultaneously within the resource)

- "Website" (specify the website of your resource)

- "Use global security group" (select this option for each region within your resource to use one security group. In case this option is not selected, for each access within the region a new security group shall be created)

- "Visibility" (set the visibility option for your resource:

    o "private" so that your resource will be accessible for the administrators in your organization only

    o "protected" so that your resource will be accessible for all users in your organization

    o "public" so that your resource will be accessible for all users within the CBP)

- "Resource behavior type" (select behavior type for you resource depending on if you would like to grant resource accounts to other CBP users so that they could deploy their software onto you resource (please see the Resource Accounts Registration and Usage guide for detailed information about resource accounts))

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- "Check for runaway instances" (select this option for the Platform to automatically check for all instances on the resource and kill any non-CBP instances)

- "Instances have access to internet" (if not selected, the following limitations apply: jobs take 40+ additional seconds to complete; no external storage can be used)

- "Deployments generated on sub-accounts are global per resource" (if unchecked, deployments generated on sub-accounts are available through sub-account only (please see the Resource Accounts Registration and Usage guide for detailed information about resource accounts))

- "Default storage credentials are shared between all resource accounts" (if unchecked, resource account credentials will be used as storage credentials for the resource accounts (please see the Resource Accounts Registration and Usage guide for detailed information about resource accounts))

- "Use proxy" (this option is disabled by default, click on the "Proxy Server Enabled" image to enable proxy. Once enabled, the following proxy settings will appear:

  - Proxy hostname (specify the hostname of your proxy here)

  - Proxy username (specify the username for your proxy here)

  - Proxy password (specify the password for your proxy here)

  - Proxy private key (upload the private key file for your proxe here), and

  - "Public Proxy" (if selected, the public IP of an instance to be used and, and if deselected – the internal one))

- "Description" (add the description of your resource here)

Please see the figure below:

Figure 1.3: Create New Resource page. Expert Options sub-sub-tab.

Once you have populated "Entry Options" and "Expert Options" tab, you can either press "Save resource and autogenerate S3 storage, EC2 regions and instance types" or press "Save resource and create region manually".

The button "Save resource and autogenerate S3 storage, EC2 regions and instance types" can be useful for the providers who would like to create an Amazon resource. By pressing the button, S3 storage, EC2 regions and instance types will be created automatically.

In case you would like to create S3 storage, EC2 regions and instance types manually, you should press "Save resource and create region manually". Please note, to create a new region manually, you should have an active storage. Please see "Adding New Storage" chapter of this manual for details.

Note: When editing your resource, please note that the contents of all credential fields except the "Account ID" field shall be blank for security reasons. To change the resource credentials, type in the new credentials into the corresponding fields and save your changes. To keep the existing credentials, just leave the credentials fields blank as is.

Adding New Region

Now you need to create a new region for your resource. Regions are separate and completely independent cloud installations within a cloud, its constituent parts. You need to create a new region in order to activate your resource.

To add a region, you can use the resource creation wizard. Once you specify resource settings, press "Save resource and create region manually". You will then see a form for adding a new region. The following fields need to be filled in on the "Entry Options" page:

- "Name" by specifying the name for your region

- "Resource" by selecting a resource you would like to add your region for. Please note, that a region can be created independently from a resource, which would-be a storage only region. To create a storage only region you need to select the option "No resource – this is a storage only region" from the "Resource" dropdown

- "EC2 Region URL" by specifying the URL to access the region

- "EC2 clusters" (select this option if cluster compute instances can be launched within your region)

- "EC2 High I/O" (select this option if high I/O instances can be launched within your region)

- "Storage" by specifying the storage you would like to use for users' file storing. Please note that a region without a storage can be created. To create such region you need to select "I have no storage to connect" option from the Storage dropdown and then specify a storage region

- "Storage region" needs to be specified in case a region is created without a storage. Here you should specify from which region a storage should be used

Please see the figure below:

Figure 1.4: Create New Region step. Entry Options sub-sub-tab.

Once you have finished filling out the "Entry Options" sub-sub-tab, click on the "Expert Options" to fill in additional necessary region settings:

- "Maximum nodes" (specify the maximum number of nodes that can run simultaneously within the region)

- "Region surcharge [%]" by specifying a surcharge that will be applied to all fees related to this region (please see Price Setting chapter of this manual to find out more about fees for your resources)

- "Description" by specifying your region description here.

Please see the figure below:

Figure 1.5: Create New Region step. Expert Options sub-sub-tab.

Once you have specified all the necessary setting for the region, you can either press "Save region and proceed to instance type creation" or "Save this region and create another one" button. The latter will allow you to create another region for your resource while the former will take you to the next step, i.e. adding a new instance type.

To create a new region, you can also navigate to the "Regions" sub-tab under the "Resources" tab in the navigation menu to get to the Regions List page and then click on the "New" button there.

Please see the figure below:
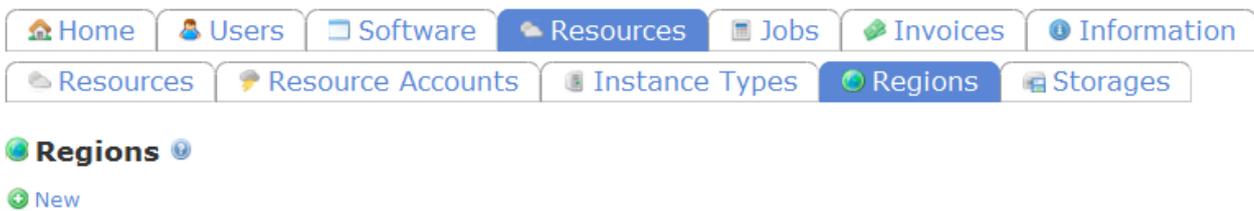
Figure 1.6: Regions List page.

Regions can also be added by the following means:

a) On the Resources List select the "Add Region" option from the "Actions" dropdown for your resource entry, or

b) On the Resource Details page select the "Add Region" option from the "Actions" dropdown that is located on the bottom of the page.

Once your region is saved, it is displayed on the Regions List page.

Please see the figure below:

Regions
New

Name	Resource	Storage	Region surcharge [%]	Active	
My Region	Amazon EC2 MyOrganization New Cloud	Amazon S3 Simul8 Corporation US Standard	5	true	Actions

Figure 1.7: Regions List page.

You can also go to the Region Details Page where you can view all information on your region. To do this, click on the region name.

Your newly created region is already active and ready to be used.

Adding New Instance Type

Now you need to add an instance type, i.e. a particular sort of a virtual or physical machine available within your cloud resource.

To add manually a new instance type using the resource creation wizard, just press "Save region and proceed to instance type creation" button once you specified all the required settings for your region.

You will then see a form for adding a new instance type. The following mandatory fields need to be filled in on the "Entry Options" page:

- "Human readable name" (specify the human readable name for your instance type that will be visible to the users)

- "Resource" (select the resource you would like to add your instance type to)

- "Architecture" (specify the architecture of your instance type, i.e. i386 or x86_64)

- "CPUs" (specify the number of CPUs of your instance type, i.e. the number of physical or virtual CPU sockets that are present in this instance type)

- "CPU cores" (specify the number of CPU cores of your instance type, i.e. the number of cores that are available in each of the instance type's CPU sockets defined above)

- "Hyperthreading" (This flag specifies if hyperthreading is turned on for this instance type and should be used by the platform for counting the total number of cores. The total number of cores is then doubled compared to the number without hyperthreading in place)

- "Memory [GB]" (specify the amount of memory (in GB) of your instance type)

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- "API name" (specify the API name of your instance type)

Please see the figure below:

Figure 1.8: Create New Instance Type page. Entry Options sub-sub-tab.

Once you have finished filling out the "Entry Options" sub-sub-tab, click on the "Expert Options" and see the following optional instance type settings:

- "Maximum nodes" (specify the maximum number of nodes that can run simultaneously within the resource)

- "EC2 Clusters" (select this option if your instance type belongs to cluster compute instance types)

- "EC2 High I/O" (select this option if your instance type belongs to high I/O instance types)

- "Root storage [GB]" (specify the amount of root storage (in GB) of your instance type)

- "Instance storage [GB]" (specify the amount of instance storage (in GB) of your instance type)

- "Remote directory" (Specify the custom directory for your instance store here or leave blank to use the default home folder)

- "Description (some HTML tags and attributes can be used)" (put the description of your instance type here)

Please see the figure below:

Figure 1.9: Create New Instance Type page. Expert Options sub-sub-tab.

Once you have specified all the necessary setting for the instance type, you can either press "Save instance type and proceed to resource activation" or "Save this instance type and create another one" button. The latter will allow you to create another instance type for your resource while the former will take you to the next step, i.e. activating your resource.

You can also add an instance type by navigating to the "Instance Types" sub-tab under the "Resources" and then clicking on the "New" button located on the Instance Types List page.

Please see the figure below:

Figure 1.10: Instance Types List page.

Instance Types can also be added by the following means:

a) On the Resources List select the "Add Instance Type" option from the "Actions" dropdown for your resource entry, or

b) On the Resources Details page select the "Add Instance Type" option from the "Actions" dropdown that is located on the bottom of the page.

Once your instance type is saved, it is displayed on the Instance Types List page.
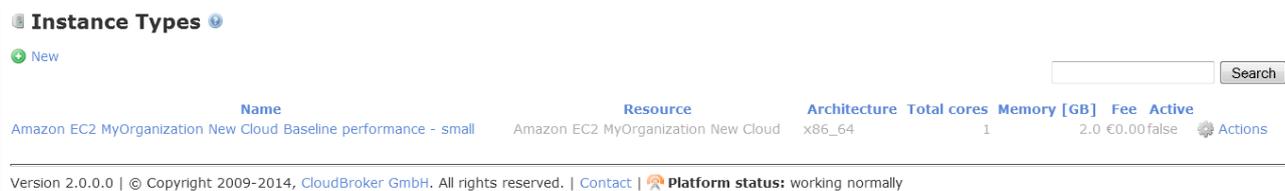
Please see the figure below:

Figure 1.11: Instance Types List page.

You can also go to the Instance Type Details Page where you can view all information on your instance type. To do this, click on the corresponding instance type name.

Activating New Instance Type

If you have created an instance type using a resource creation wizard, your instance type is automatically activated once created. But if you have created your instance type using "New" button on Instance Types List page, you will need to activate the instance type manually. The process of activation is described below in detail.

On the Instance Types List you might have noticed that your newly added instance type entry is grayed out. It means that the instance type is not active (please note that its "active" parameter is set to false), i.e. you cannot run jobs using it yet. To activate your instance type, select "Activate" action on the Instance Type List or Instance Type Details page.
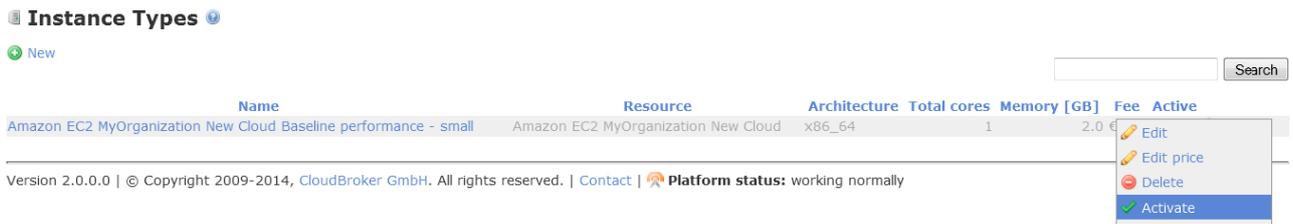
Please see the figure below:

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Figure 1.12: Instance Types List page. Instance Type Activation.

Once your instance type is activated, its "active" parameter will be switched to from "false" into "true". Please see the figure below:
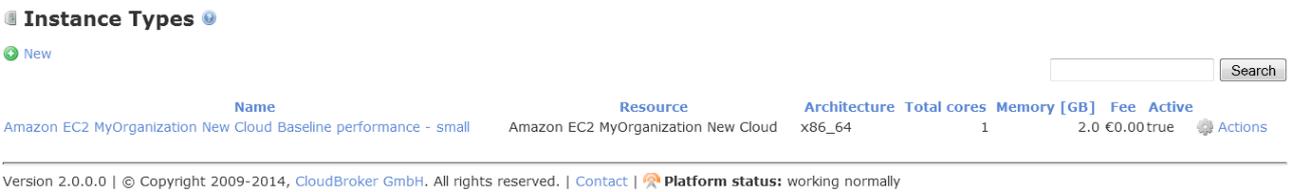

Figure 1.13: Instance Types List page.

Activating Your Resource

Now that you have created the instance type, storage and region for your cloud resource, you have everything to make it available within the platform. The only thing left is activating your resource.

After filling out all the instance type settings in the resource creation wizard, press "Save instance type and proceed to resource activation" button.

You will be redirected to the resource details page where an "Activate resource" button will be available.
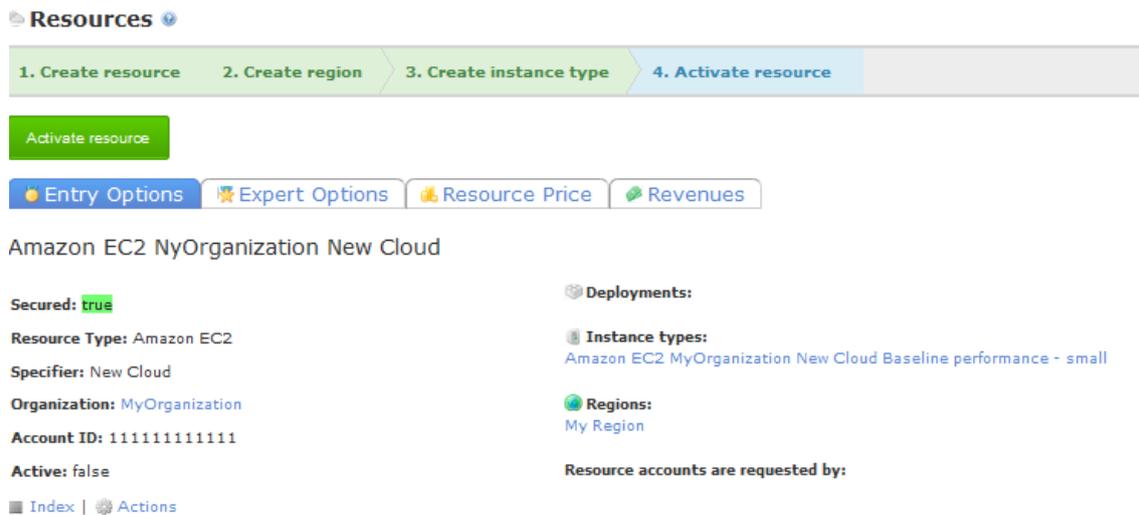
Figure 1.14: Resources Details page. Resource Activation.

To activate your resource, just press the "Activate resource" button.

You can also activate your resource beyond the resource creation wizard. To do this, navigate to the Resources List page and select the "Activate" action from the "Actions" dropdown menu for your resource entry.
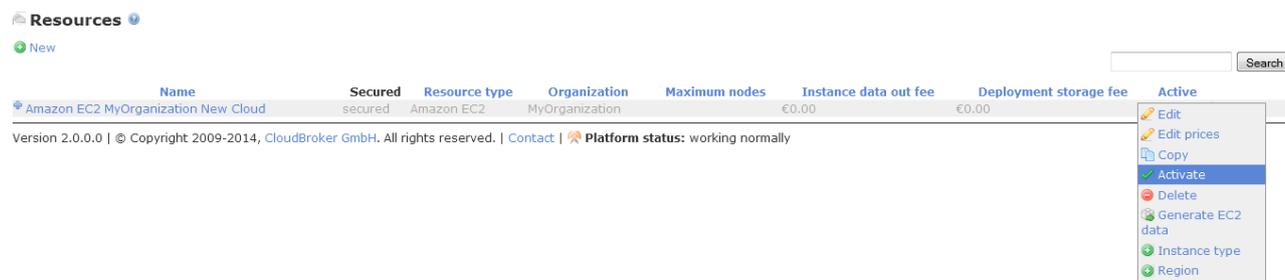
Please see the figure below:

Figure 1.15: Resources List page. Resource Activation.

Congratulations, you have just activated your own cloud resource! Now you can see the "true" value for the "active" parameter of your resource entry, meaning you have made the first step towards running jobs on your own resource!

Please see the figure below:

Figure 1.16: Resources List page.

In order to run jobs on your resource, there are two things left to be done, such as creating your software product and deploying it on your resource.

In case you need detailed information about the software deployment or job submission procedures, please refer to the "CloudBroker Platform Software Deployment Guide" or the "CloudBroker Platform Job Submission Guide", respectively.

Adding New Storage

To create new regions for your resource, you need to create a storage first, i.e. the place to keep all your users' data files. Separation of cloud compute and storage resources enables you to add a completely separate storage resource of the following supported types: Amazon S3, Walrus, Rados S3 or OpenStack S3.

In order to add a new storage, go to the "Storages" sub-tab under the "Resources" tab in the navigation menu to get to the Storages List page and then click on the "New" button there.
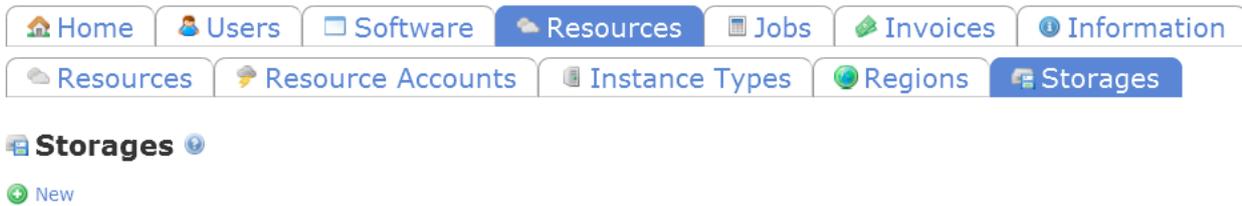
Please see the figure below:

Figure 1.17: Storages List page.

A form for adding a new storage will then be displayed to you. The following mandatory fields need to be filled in on the "Entry Options" page:

- "Storage type" by selecting one of the supported storage types, i.e. Swift, S3 Compatible, SCP, Amazon S3. The fields below shall be displayed depending on the credentials required for each storage type. For example in case with Amazon S3 storage type, you shall fill in the following:

- "Specifier " (set the unique string identifier that will be included into your storage name)

- "Access Key ID" (by specifying your authentication credentials)

- "Secret Access Key" (by specifying your authentication credentials)

Please see the figure below:

Figure 1.18: Create New Storage page. Entry Options sub-sub-tab.

Once you have finished filling out the "Entry Options" sub-sub-tab, click on the "Expert Options" and see the following optional storage parameters:

- "Private URL" (specify if instances should access storage by private URL)

- "Visibility" by set the visibility option for your storage (please see the description of the options under "Creating New Resource" section)

- "Website" (specify the website of your storage here)

- "Description" (put the storage description here).

Please see the figure below:

Figure 1.19: Create New Storage page. Expert Options sub-sub-tab.

After filling out the storage form, click on the "Save" button. Once the storage is saved, you will be redirected to the Storage Details page, where you can view all information on your storage. You can also see it on the Storage List page.

Please see the figure below:

Figure 1.20: Storages List page.

Note: When editing your storage, please note that the contents of all credential fields except the "Identifier string" field shall be blank for security reasons. To change the storage credentials, type in

the new credentials into the corresponding fields and save your changes. To keep the existing credentials, just leave the credentials fields blank as is.

Activating New Storage

Just like in case with instance type, the newly created storage needs to be activated first (please note that its "active" parameter is set to false on the Storages List page). To activate your storage, select the "Activate" action in front of the corresponding storage entry.
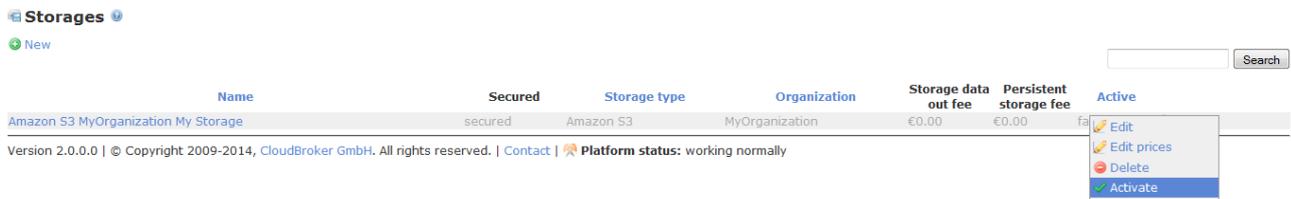
Please see the figure below:

Figure 1.21: Storages List page. Storage Activation.

After you have activated your storage, it is then ready for usage! Note that the "active" parameter of the storage is now set to "true".

Please see the figure below:

Figure 1.22: Storages List page.

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Price Setting

Now that your cloud resource is available within the CBP, it is time to set the prices on it and start to generate revenues from its usage by the CBP users.

As an owner, you can set the prices on your resource, as well as on your instance type and storage. Once you create a new resource, instance type or storage entry, the default price that is applicable for all CBP users is automatically created for each of such entries. By default, all prices are set to zero.

Below you will find out how to set your desired prices on each of your resource entries.

Resource Prices

To manage the prices on your resource, navigate to the "Resource Prices" sub-sub-tab that is available from your resource details page.

Currently you only have your default resource price specified. To edit it, click on the "Edit prices" button.
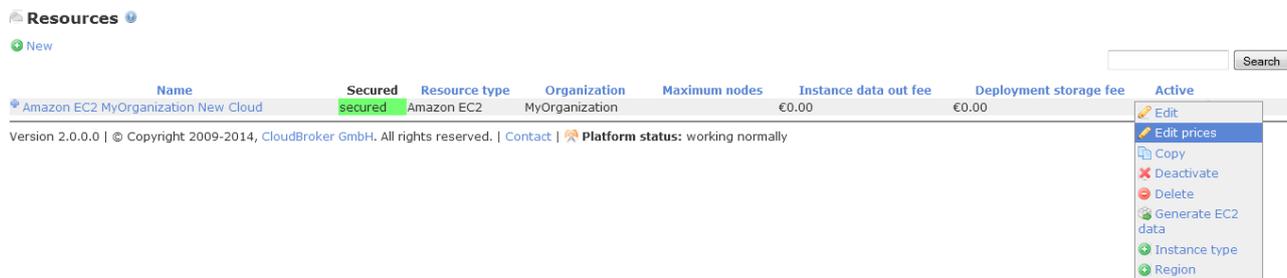
Please see the figure below:

Figure 2.1: Resource Prices page.

You can also edit resource prices by clicking on "Edit Prices" button available under Actions menu on the Resource List Page.

Please see the figure below:

Figure 2.2: Resource List page – Edit prices.

The form for editing resource prices has "Entry Options" sub-sub-tab for filling in.

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The "Entry Options" sub-sub-tab has the following mandatory fields to be filled in, i.e.:

- "Gross instance data out fee [EUR/GB]" (set the price per GB for transferring the data files from the virtual machine instance)

- "Gross deployment storage fee [EUR/GB]" (set the price for image storage per GB per month)

- "Windows surcharge [%]" (set the surcharge that is to be applied to all compute prices for Windows instances)

Please see the figure below:

Figure 2.3: Create Resource Price page

After filling out the resource price creation form, click on the "Save" button. You will then be redirected to the Resource Price Details page, where you can view all information on your resource price:

- "Fee type" (type of the fee to be charged for the resource usage)

- "Region" (contains all the available regions for the resource)

- "Gross fee [EUR/GB]" (fees specified by you in the prices editing form)

- "Region surcharge" (a surcharge that will be applied to all fees related to this region, specified by you on the Region Creation step)

- "Region surcharge amount [EUR/GB]" (the amount of the surcharge that will be applied to all fees related to this region)

- "Platform surcharge" (surcharge percent collected by the CBP for the resource)

- "Platform surcharge amount [EUR/GB]" (surcharge amount collected by the CBP for the resource)

- "Net fee [EUR/GB]" (the final prices, inclusive all the surcharges)

Please see the figure below:

Figure 2.4: Resource Prices List page.

Instance Type Prices

The procedure of management your instance type prices is the same as of the resource prices: First navigate to the "Instance Type Prices" sub-tab under the "Resources" tab and select the "Edit Prices" option under the "Actions" dropdown menu for the instance type to edit its prices.

Please see the figures below:

Figure 2.5: Instance Type List page

To manage the prices on your instance type, navigate to the "Instance Price" sub-sub-tab that is available from your Instance type details page.

Currently you only have your default instance price specified. To edit it, click on the "Edit prices" button.

Please see the figure below:

Figure 2.6: Instance Type Prices page.

On the "Entry Options" sub-sub-tab there are the following mandatory fields:

- "Gross instance runtime fee [EUR]" (set the price for the instance runtime per hour).

Please see the figure below:

Figure 2.7: Create Instance Type Price page. "Expert Options" sub-sub-tab.

After filling out the resource price creation form, click on the "Save" button. You will then be redirected to the Instance Price Details page, where you can view all information on your resource price:

- "Fee type" (type of the fee to be charged for the instance usage)

- "Region" (contains all the available regions for the instance type)

- "Gross fee [EUR]" (fees specified by you in the prices editing form)

- "Region surcharge" (a surcharge that will be applied to the fee related to this region, specified by you on the Region Creation step)

- "Region surcharge amount [EUR]" (the amount of the surcharge that will be applied to the fee related to this region)

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- "Platform surcharge" (surcharge percent collected by the CBP for the instance type)

- "Platform surcharge amount [EUR]" (surcharge amount collected by the CBP for the instance type)

- "Net fee [EUR]" (the final price, inclusive all the surcharges)

Please see the figure below:

Figure 2.8: Instance Prices details page

Storage Prices

In case with storage prices, two storage prices per storage can exist and this is the default prices entry that are created automatically when you create a new storage.

To edit your default storage prices, go to the "Storage Prices" sub-tab under the "Resources" tab and select the "Edit Prices" action under the "Actions" dropdown menu associated with your storage on the Storage List page.

Please see the figure below:

Figure 2.9: Storage List page.

You will then be redirected to the "Entry Options" sub-sub-tab, where the following pricing fields should be filled in:

- "Gross storage data out fee [EUR]" (set the price per data transfer out of persistent storage in GB)

- "Gross persistent storage fee [EUR]" (set the price per data storage on persistent storage in GB per month)

Please see the figure below:

Figure 2.10: Edit Storage Price page. "Entry Options" sub-sub-tab.

After filling out the "Entry Options" form, click on the "Save" button to update your storage price. You will then be redirected to the Storage Price Details page, where you can view all information on your storage price:

- "Fee type" (type of the fee to be charged for the storage usage)

- "Region" (contains all the available regions for the storage)

- "Gross fee [EUR]" (fees specified by you in the prices editing form)

- "Region surcharge" (a surcharge that will be applied to the fee related to this region, specified by you on the Region Creation step)

- "Region surcharge amount [EUR]" (the amount of the surcharge that will be applied to the fee related to this region)

- "Platform surcharge" (surcharge percent collected by the CBP for the instance type)

- "Platform surcharge amount [EUR]" (surcharge amount collected by the CBP for the storage)

- "Net fee [EUR]" (the final price, inclusive all the surcharges)

Please see the figure below:

Fee type	Region	Gross fee	Region surcharge percent	Region surcharge amount	Platform surcharge percent	Platform surcharge amount	Net fee
Storage data out fee	My Region	€0.10	5.0%	+€0.01	24.0 %	+€0.03	€0.14
Persistent storage fee	My Region	€0.10	5.0%	+€0.01	24.0 %	+€0.03	€0.14

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Figure 2.11: Storage Prices Details page.

Viewing Resource Revenues

You can also view the revenues generated from the usage of your resources by the platform users. To view your resource revenues, go to the Resource Price Details page and click on the "Revenues" sub-sub-tab. For the storage and instance types revenues, go to the Storage Price Details page and Instance Type Details page correspondingly and then click on the "Revenues" sub-sub-tab.

Acknowledgment