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Cloud.ru Advanced hostprovider

Cloud.ru Advanced is a hostprovider that allows you to simultaneously create several virtual machines (VMs) in the Cloud.ru Advanced cloud.

Version CURRENT Language: EN

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Planning guide

Olga Semme

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To use the Cloud.ru Advanced hostprovider, ensure that the following conditions are met:

- A project is created in Cloud.ru Advanced.
- A subnet is created.
- Accessibility must be ensured from the host with ADCM to the subnet where the virtual machine is created.
- The user under whose name the virtual machine is created has the right to create a virtual machine.

NOTE

The Cloud.ru Advanced hostprovider does not allow you to perform all actions available in the Cloud.ru Advanced console.

Installation and configuration

Olga Semme

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Step 4. Configure a hostprovider

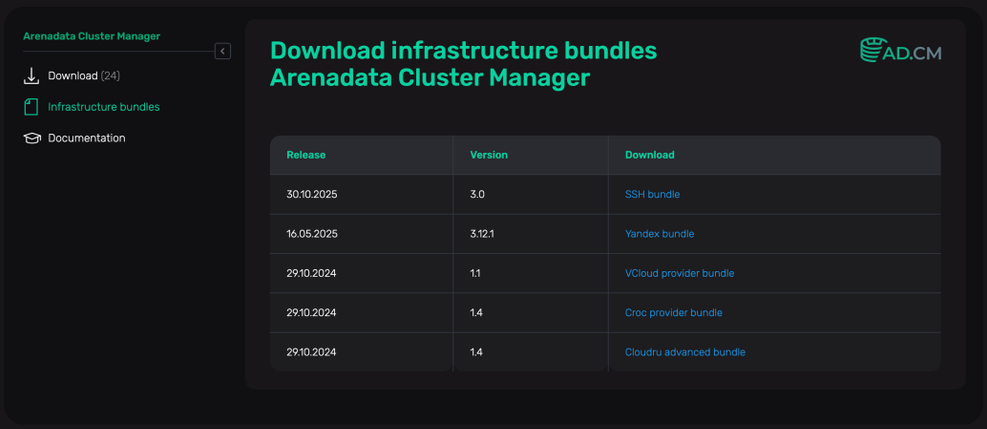
This article describes how to install and configure the Cloud.ru Advanced hostprovider via ADCM.

A typical installation sequence for the Cloud.ru Advanced hostprovider includes the following steps.

Step 1. Download a hostprovider bundle

Hostprovider distributions for ADCM come in bundles. Regarding the Cloud.ru Advanced hostprovider, a bundle is a regular archive that includes a description and logic to interact with the Cloud.ru Advanced cloud. The steps for downloading a bundle are given below:

1. Go to https://network.arenadata.io/ and select ***Arenadata Cluster Manager***.
2. Navigate to ***Infrastructure bundles*** and select the required bundle from the table.



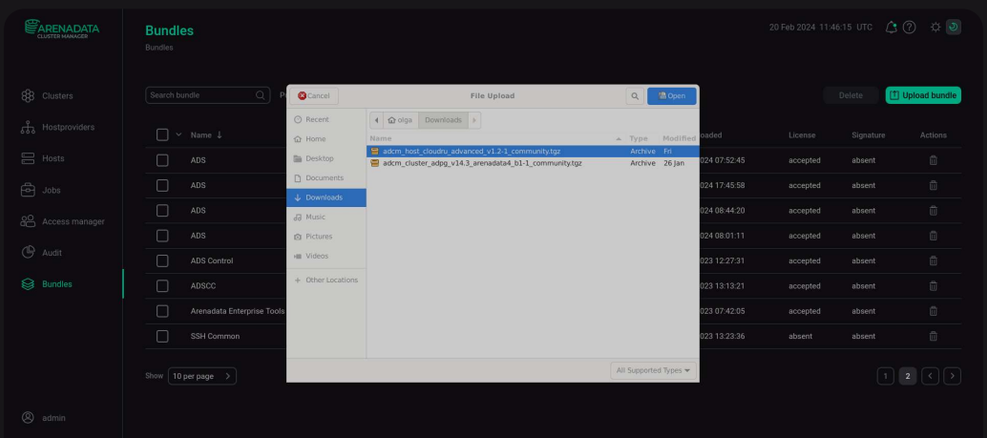
Infrastructure bundles page for ADCM

The bundle for the Cloud.ru Advanced hostprovider is called ***Cloudru advanced bundle***.

Step 2. Upload a hostprovider bundle to ADCM

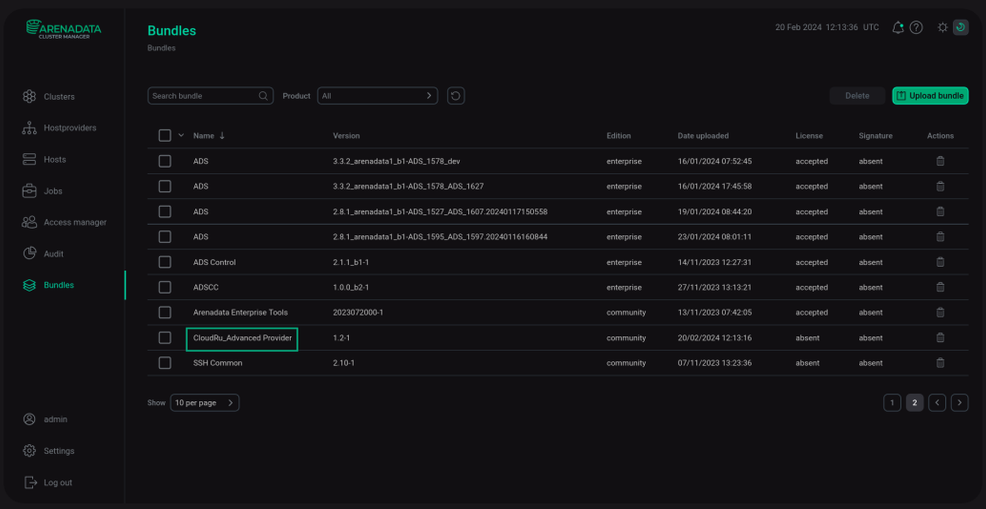
To upload a bundle to ADCM, follow the steps:

1. Select the ***Bundles*** item in the left navigation menu and click ***Upload bundle***.
2. Select a bundle in the Open File Dialog.



Upload a bundle

3. As a result of the performed actions, a bundle is displayed on the ***Bundles*** page.

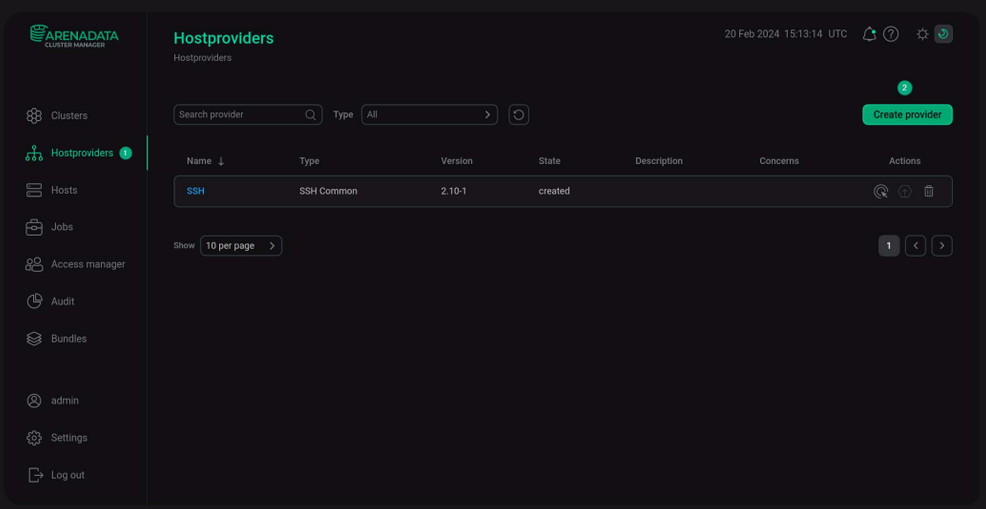


The result of successful uploading a bundle

Step 3. Create a hostprovider based on the uploaded bundle

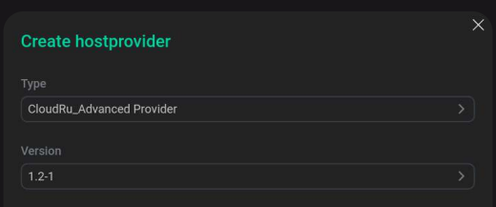
To add a new hostprovider to ADCM on the base of the uploaded bundle, follow the steps:

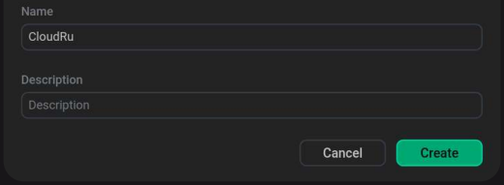
1. Select the ***Hostproviders*** item in the left navigation menu and click ***Create provider***.



Create a new hostprovider

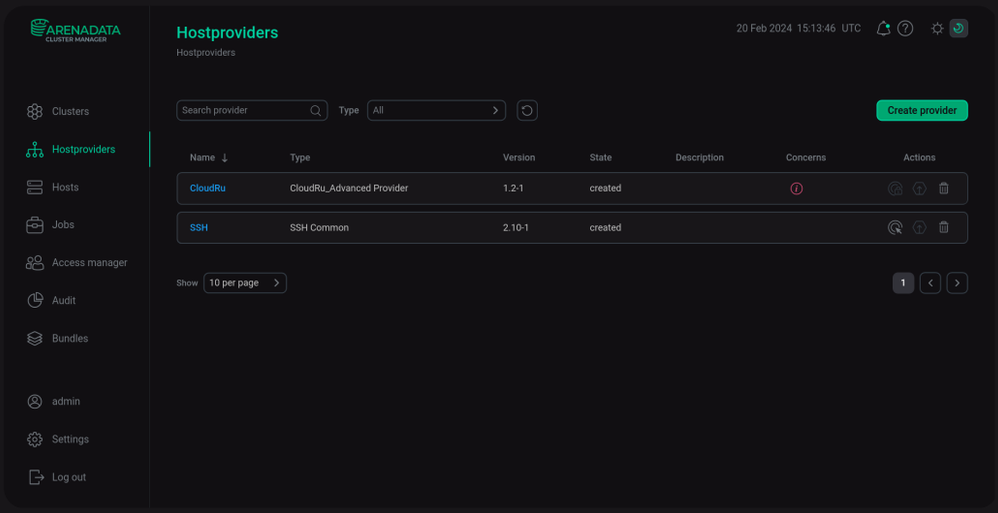
2. In the opened window:
   - Select an uploaded bundle in the ***Type*** field.
   - Select a bundle version in the ***Version*** field. Several versions become available in the case of different versions of the same bundle being uploaded.
   - Enter a hostprovider name in the ***Name*** field.
   - Enter a hostprovider description in the ***Description*** field if necessary.
   - Click ***Create***.





Fill in hostprovider parameters

3. As a result of the performed actions, the created hostprovider is displayed on the ***Hostproviders*** page.

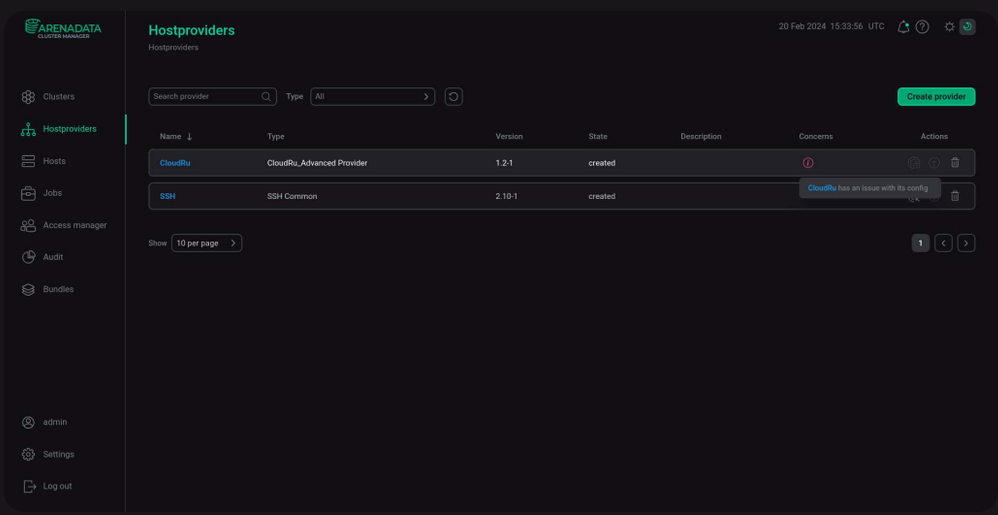


The result of adding a hostprovider successfully

Step 4. Configure a hostprovider

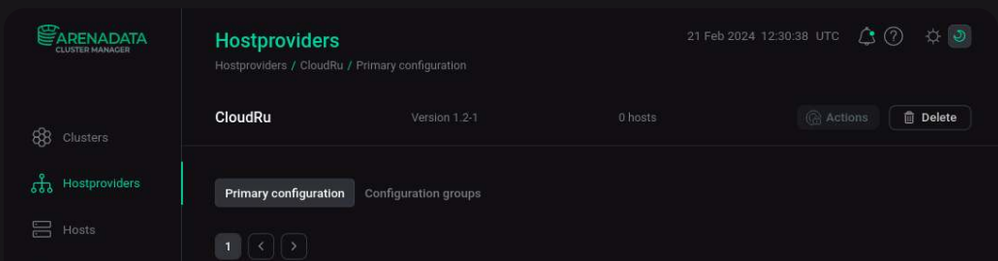
In order to configure the access to the cloud, follow the steps:

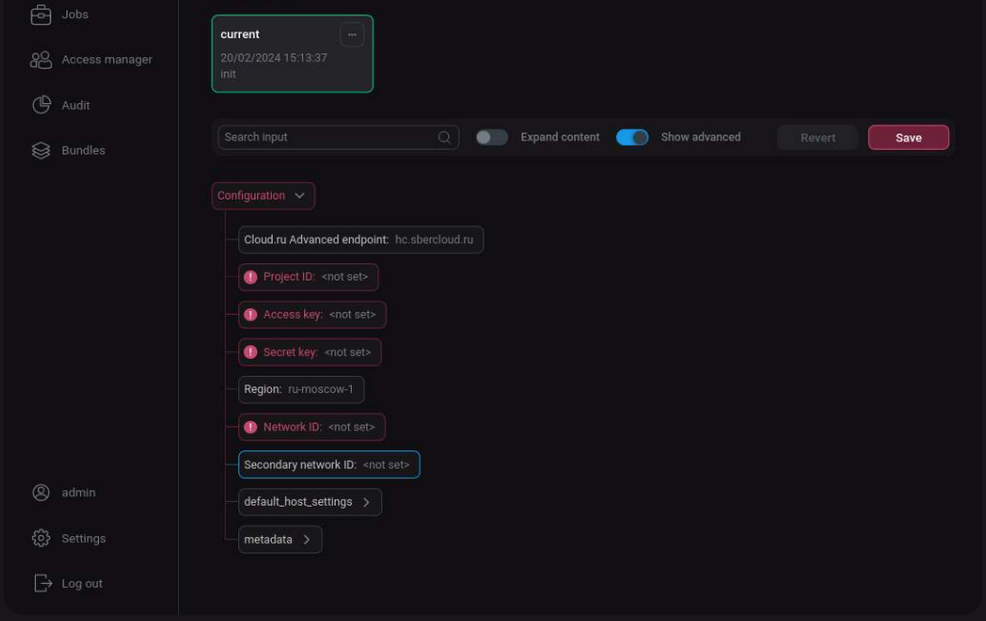
1. Select a hostprovider on the ***Hostproviders*** page. To do this, click a hostprovider name in the ***Name*** column. Alternatively, you can hover over the icon in the ***Concerns*** column and follow the link in the pop-up window that opens. The icon indicates the presence of critical errors in the current hostprovider configuration (e.g. mandatory fields).



Go to configuring a hostprovider

2. In the next window, switch on the ***Show advanced*** toggle, fill in hostprovider parameters, and click ***Save***. The fields highlighted in red are mandatory.





Configure a hostprovider

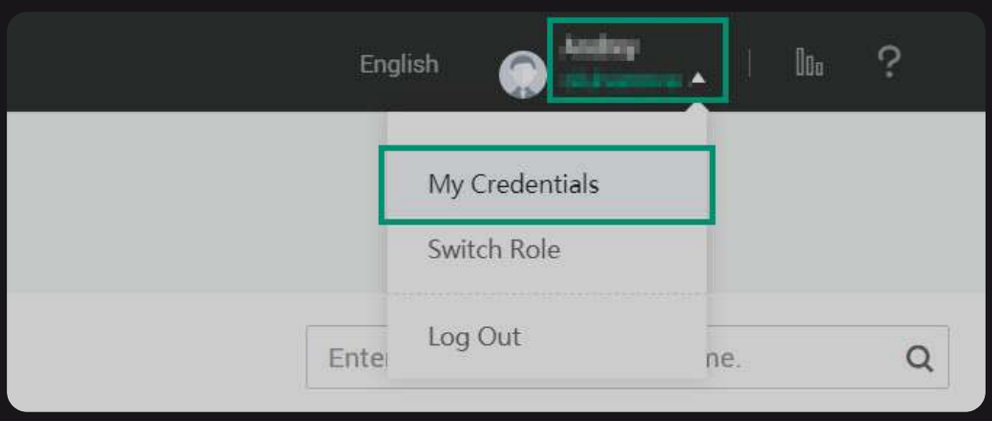
Hostprovider configuration parameters are listed below:

- ***Cloud.ru Advanced endpoint***

Mandatory	Description	Default value
Yes	A field in which you can set a custom endpoint. Used to connect to a private installation of Cloud.ru Advanced	hc.sbercloud.ru

- ***Project ID***

Mandatory	Description
Yes	Identifier of the project where cloud resources are managed. How to find the Project ID is shown in the figure below (for detailed information, you can refer to the How to find out the Project ID? article)



Go to Project ID

- ***Access key***

Mandatory	Description
Yes	Access authentication key. For detailed information about obtaining keys, you can refer to the Creating access keys article

- ***Secret key***

Mandatory	Description

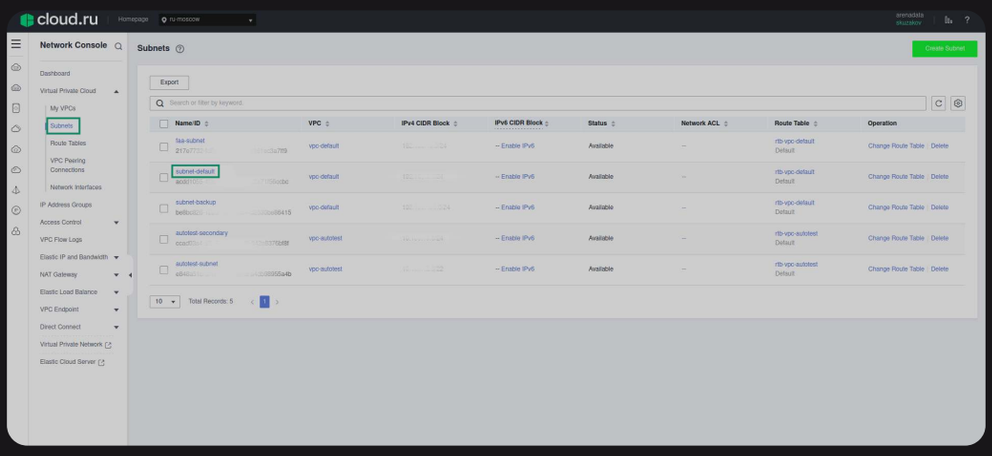
Yes	Secret authentication key. For detailed information about obtaining keys, you can refer to the Creating access keys article

- ***Region***

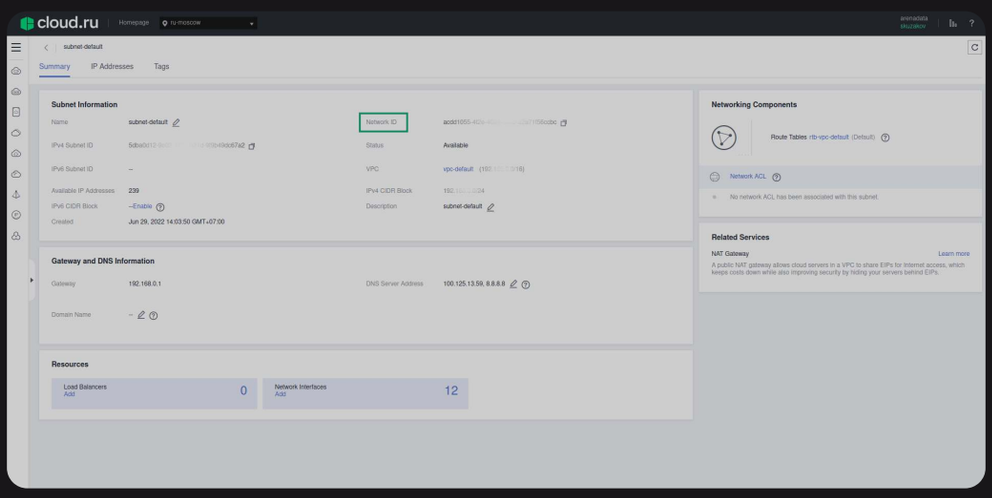
Mandatory	Description	Default value
No	Availability zone – Cloud.ru Advanced data centers located in different regions of Russia. Currently, Cloud.ru Advanced has one zone	ru-moscow-1

- ***Network ID***

Mandatory	Description
Yes	Subnet for working with the hostprovider. To select a subnet, you need to go to the ***Virtual Private Cloud*** section, then to the ***Cloud networks*** block, where you select the required subnet (***Subnet***), as shown in the pictures below. Network ID is in the ***Network ID*** column



Virtual Private Cloud



Subnet ID of the required subnet

- ***Secondary network ID***

Mandatory	Description
No	A second network interface that can be added for a virtual machine on the network with the identifier ***Network ID*** in Cloud.ru Advanced. To connect a second network interface, you must explicitly specify the ***Network ID*** parameter and also set the ***Assign secondary NIC*** parameter to `true` (in the ***instance*** group of host configuration parameters when the ***Show advanced*** switch is enabled). Subnets for network interfaces can be the same yet all subnets must be within the same VPC

- ***default_host_settings*** group

Parameter	Mandatory	Description

Labels	No	An optional field where you can you can set default label values for all created VMs. If the label values in the hostprovider settings and the ***Labels*** field are set simultaneously when creating a VM, then priority is given to the latter
Security Group IDs	No	An optional field where you can set default ***Security Group IDs*** values for all created VMs. If the security group ID values in the hostprovider settings and the ***Security Group IDs*** field are set simultaneously when creating a VM, then priority is given to the latter

- ***metadata*** group

Parameter	Mandatory	Description
Ssh keys	No	A field where you can add user SSH keys that will be created when the virtual machine is initialized. Typically, a public SSH key consists of a mandatory part (key) and an optional part (after a space, `username` or `username@hostname` is specified). When creating a hostprovider, specify the username after a space, as shown in the figure below

SSH key with username

Manage a Cloud.ru Advanced hostprovider

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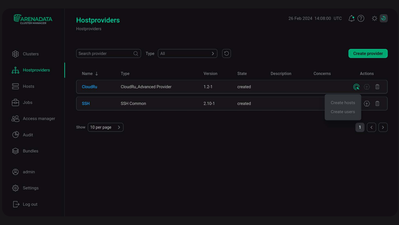
This article describes the main actions available in the ADCM interface for managing the Cloud.ru Advanced hostprovider.

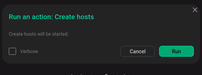
Actions with the hostprovider are performed on the ***Hostproviders*** page.

Click the icon to open a list of available actions and select an action to perform.



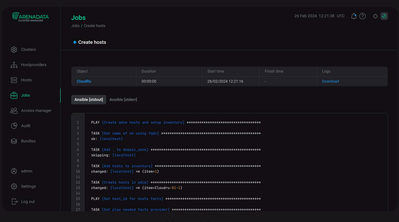
Hostprovider actions

When you select an action, ADCM displays a dialog box to confirm your selection. In this dialog box, you can select the ***Verbose*** check box to view additional information about the execution of the action on the ***Jobs*** page.



Action confirmation

Once an activity is started, ADCM displays its execution progress and result on the ***Jobs*** page. From this page you can go to the page of an individual task (by clicking on the task name) to see the internal stages of its execution and analyze errors if they occur.



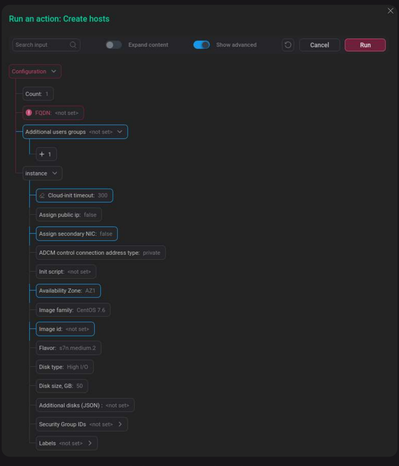
Create hosts job page

Actions available for the hostprovider:

- ***Create hosts*** — creates a group of virtual machines.

> **NOTE**
>
> Do not use the ***Create hosts*** action for products that require FQDNs. Use the Create host → Init action on the ***Hosts*** page instead.

After selecting an action in the window that opens, set the ***Show advanced*** switch to active, fill in the necessary parameters, and click ***Run***. Required parameters are highlighted in red.



Configuration parameters for creating hosts

The purpose of the parameters is given below.

Hosts configuration parameters

Group	Parameter	Description	Default value
—	Count	Number of the created VM	1
—	FQDN	A prefix for names of virtual machines. Every name is formed according to the `<FQDN>-<VM number>.<Domain zone>` template. VM numbers start with `1`. If there is only one virtual machine to be created and a numbering suffix is not needed, a host should be created on the ***Hosts*** page	—
—	Additional users groups	Adds the user to additional Linux groups when the virtual machine is initialized. For example, in an Altlinux image, the user `ansible` should be added to the `wheel` group	—
instance	Cloud-init timeout	Timeout for cloud-init to finish running tasks, in seconds	300
	Assign public ip	Set to `true` if a public IP address needs to be added	false
	Assign secondary NIC	Set to `true` if it is necessary to connect an additional network interface to a virtual machine in the specified subnet	false
	ADCM control connection address type	Private or public address for connecting to a virtual machine	private
	Init script	Initialization script	—
	Availability Zone	Cloud.ru Advanced data centers located in different regions of Russia. Currently, Cloud.ru Advanced has three zones: `ru-moscow-1a`, `ru-moscow-1b`, `ru-moscow-1c`	AZ1
	Image family	A family of operating systems on the basis of which virtual machines will be created. The newest image from the specified family will be used	CentOS 7.6
	Image id	Latest imageID for the provided ***Image Family***	—
	Flavor	A VM configuration that defines the characteristics of its resources. The template determines the number and type of CPU, the amount of RAM, and some other VM parameters	s7n.medium.2
	Disk type	Disk type. One of: `High I/O`, `Ultra-High I/O`	High I/O
	Disk size, GB	Disk size	50
	Additional disks (JSON)	Additional disk parameters in JSON format. For example: `[{ "name": "disk1", "type": "SAS", "size": 20 }, { "name": "disk2", "type": "SSD", "size": 10 }]`	—
	Security Group IDs	An optional field where you can set default Security Group ID value for all created virtual machines. If the ***Security Group IDs*** values are set simultaneously in the hostprovider settings and when creating the VM, then priority is given to the latter	—
	Labels	Sets the labels values for the created virtual machine. If the ***Labels*** values are set simultaneously in the hostprovider settings and when creating the VM, then priority is given to the latter	—

- ***Create users*** — creates users. When the action runs, the users specified in the ***metadata*** group during configuration of the Cloud.ru Advanced hostprovider are created on all virtual machines.

Create hosts with Cloud.ru Advanced hostprovider

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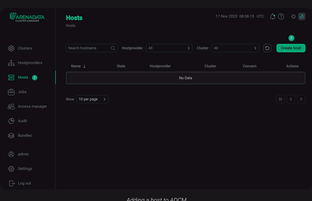
This article describes how to create hosts via ADCM based on the Cloud.ru Advanced hostprovider.

IMPORTANT

Before adding hosts to ADCM based on the Cloud.ru Advanced hostprovider, make sure that the hostprovider is installed in ADCM.

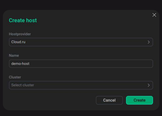
The steps for adding hosts to ADCM based on the Cloud.ru Advanced hostprovider are given below:

1. Select the left navigation menu item ***Hosts*** and on the page that opens, click ***Create host***.



Adding a host to ADCM

2. In the window that opens:
   - Select the hostprovider in the ***Hostprovider*** field. Note that hostproviders appear in the list with the names assigned to them when they were added to ADCM.
   - Enter the host name in the ***Name*** field.
   - Click ***Create***.

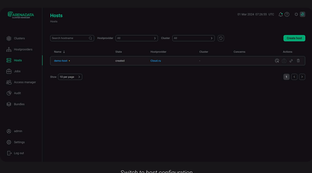


Description of the host to be added

CAUTION

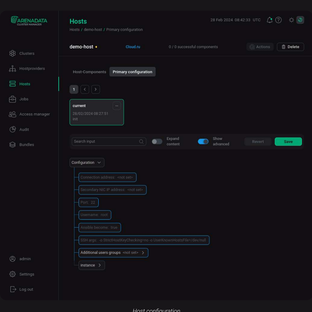
- When creating hosts for the ADH and ADPS products, you should define an FQDN in the ***Name*** field (e.g. `test.ru-central1.internal`). The maximum FQDN length is 38 symbols for ADH and 49 symbols for ADPS.
- For the ADS and ADS Control products, FQDNs are required if the ADPS product is used. The maximum FQDN length for ADS hosts is 48 symbols.
- For the ADQM product, FQDNs are required if Kerberos authentication is used.
- ADB starting with the 6.23.3.44 version supports both FQDN and short host names. For the previous ADB versions, it is not recommended to use FQDNs (as FQDNs cause errors during the ***Expand*** action and a workaround is needed).
- In other cases, both short host names and FQDNs are allowed in the ***Name*** field.

3. Return to the ***Hosts*** page and switch to configure the added host. To do this, click the hostname in the ***Name*** column.



Switch to host configuration

4. In the window that opens, select the ***Primary Configuration*** tab, activate the ***Show advanced*** switch, fill in the required parameters and click ***Save***. Required parameters are highlighted in red. Additionally, you can fill in any parameters whose default values need to be changed.



Host configuration

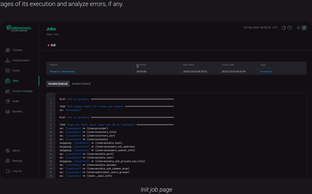
The purpose of the parameters is given below.

Hosts configuration parameters

Group	Parameter	Description	Default value
–	Connection address	IP address of the virtual machine for connecting via SSH	–
–	Secondary NIC IP address	IP address of the second network interface of the virtual machine	–
–	Port	SSH port	22
–	Username	Username for connecting to the virtual machine via SSH	root
–	Ansible become	When set to `true`, by default sets `root` rights to this user	true
–	SSH args	Additional SSH connection options	-o StrictHostKeyChecking=no -o UserKnownHostsFile=/dev/null
–	Additional users groups	Adds the user to additional Linux groups when the virtual machine is initialized. For example, in an Altlinux image, the user `ansible` should be added to the `wheel` group	–
instance	Login	The user that will be created for the VM	–
	Public SSH key	Public SSH key for user	–
	Cloud-init timeout	Timeout for cloud-init to finish running tasks, in seconds	300
	Assign public ip	Set to `true` if a public IP address needs to be added	false
	Assign secondary NIC	Set to `true` if it is necessary to connect an additional network interface to a virtual machine in the specified subnet	false
	Assign internal ip	Internal IP address attached to the instance	–
	ADCM control connection address type	Private or public address for connecting to a virtual machine	private
	Init script	Initialization script	–
	Availability Zone	Cloud.ru Advanced data centers located in different regions of Russia. Currently, Cloud.ru Advanced has three zones: `ru-moscow-1a`, `ru-moscow-1b`, `ru-moscow-1c`	AZ1
	Image family	A family of operating systems on the basis of which virtual machines will be created. The newest image from the specified family will be used	CentOS 7.6
	Image id	Latest imageID for the provided ***Image Family***	–
	Flavor	A VM configuration that defines the characteristics of its resources. The template determines the number and type of CPU, the amount of RAM, and some other VM parameters	s7n.medium.2
	Disk type	Disk type. One of: `High I/O`, `Ultra-High I/O`	High I/O
	Disk size, GB	Disk size	50
	Additional disks (JSON)	Additional disk parameters in JSON format. For example: `[{ "name": "disk1", "type": "SAS", "size": 20 }, { "name": "disk2", "type": "SSD", "size": 10 }]`	–
	Security Group IDs	An optional field where you can set default Security Group ID value for all created virtual machines. If the ***Security Group IDs*** values are set simultaneously in the hostprovider settings and when creating the VM, then priority is given to the latter	–
	Labels	Sets the labels values for the created virtual machine. If the ***Labels*** values are set simultaneously in the hostprovider settings and when creating the VM, then priority is given to the latter	–

5. Return to the ***Hosts*** page. In the line containing the added host, click the icon and select the ***Init*** action. Then confirm the action in the window that opens.

   Once an action is started, ADCM displays its execution progress and result on the ***Jobs*** page. From this page you can go to the page of an individual task (by clicking on the task name) to see the internal stages of its execution and analyze errors, if any.



Init job page

Manage hosts with Cloud.ru Advanced hostprovider

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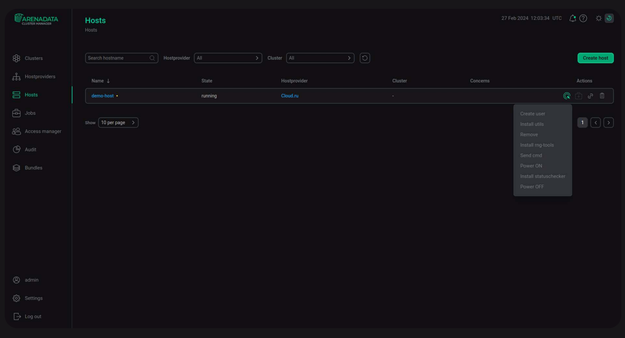
This article describes the main actions available in the ADCM interface for managing hosts created using the Cloud.ru Advanced hostprovider.

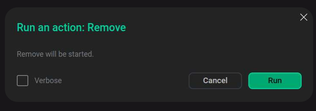
Actions with the host are performed on the ***Hosts*** page.

To manage the host, click the icon to open the list of available actions and select the action to perform.



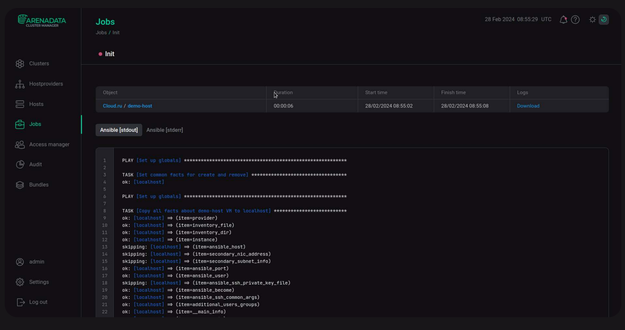
Hosts actions

When you select an action, ADCM displays a dialog box to confirm your selection. In this dialog box, you can select the ***Verbose*** check box to view additional information about the execution of the action on the ***Jobs*** page.



Action confirmation

Once an action is started, ADCM displays its execution progress and result on the ***Jobs*** page. From this page you can go to the page of an individual task (by clicking on the task name) to see the internal stages of its execution and analyze errors, if any.



Init job page

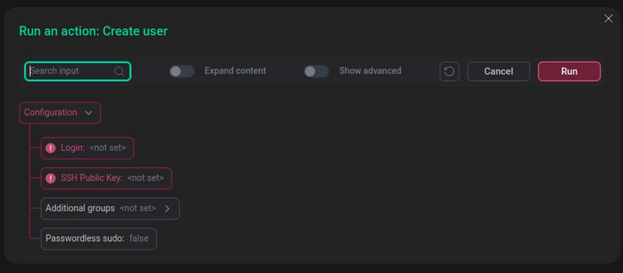
The set of available actions depends on the host state:

For a new host (host state `created`) the following action is available:

- ***Init*** — starts the creation of a virtual machine in the Cloud.ru.

For an initialized host (host state `running`), the following actions are available:

- ***Create user*** — creates a user. After selecting an action, fill in the required parameters and click ***Run***.



Creating a new user on the host

  The parameters are described below:

  - ***Login*** — name of the user to be created.
  - ***SSH Public Key*** — public SSH key of the user being created. Must start with `ssh-rsa`.
  - ***Additional groups*** — Linux groups to which the user will be added (optional).
  - ***Passwordless sudo*** — when checked, the user will be able to elevate their rights to `sudo` without being prompted for a password and will also be added to the `adcm_sudo` group.

- ***Install utils*** — installs the specified packages.
- ***Remove*** — removes a virtual machine from Cloud.ru Advanced and ADCM.
- ***Send cmd*** — sends a bash command to the host after initialization.
- ***Install rng-tools*** — installs the rngd utility, which is used to fill the kernel entropy pool.
- ***Power ON*** — turns on the virtual machine.
- ***Install statuschecker*** — installs a daemon that periodically checks the status of the server and services installed via ADCM.
- ***Power OFF*** — shuts down the virtual machine.

For a host that has errors (host state `failed`), the following actions are available:

- ***Init***
- ***Remove***
- ***Power ON***
- ***Power OFF***

Release notes

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1.4

Date: 09.10.2024

Misc/Internal

Updated dependencies

1.3

Date: 09.09.2024

Bug fixes

Fixed an issue with the availability of CentOS 7 repositories

Misc/Internal

The concept of working with SSH keys has been changed

1.2

Date: 31.01.2024

New features

Added the ability to connect a second network interface to the created virtual machine and to set virtual machine's MTU to `8888`

1.1

Date: 23.11.2023

New features

Added a new action for the host: ***Send cmd*** — sends a bash command to the host after initialization

1.0

Date: 18.04.2023

New features

The first version of Cloud.ru Advanced hostprovider has been released. After this version is installed, you can perform the following actions:

- with hosts:
  - ***Create user*** — creating a user.
  - ***Install utils*** — installing of the specified packages.
  - ***Remove*** — removing a virtual machine from Cloud.ru Advanced and ADCM.
  - ***Install rng-tools*** — installing of the rngd utility, which is used to fill the kernel entropy pool.
  - ***Power ON*** — turning on the virtual machine.
  - ***Install statuschecker*** — installing of a daemon that periodically checks the status of the server and services installed using ADCM.
  - ***Power OFF*** — switching off the virtual machine.
- with hostprovider:
  - ***Create hosts*** — creating a group of virtual machines.
  - ***Create users*** — creating a user.