OpenStack Provider's Guide

For Parallels Automation

Revision 1.0 (November 26, 2014)

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Preface

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Documentation Conventions

Before you start using this guide, it is important to understand the documentation conventions used in it.

Typographical Conventions

The following kinds of formatting in the text identify special information.

Formatting convention	Type of Information	Example
Special Bold	Items you must select, such as menu options, command buttons, or items in a list.	Navigate to the QoS tab.
	Titles of modules, sections, and subsections.	Read the Basic Administration module.
Italics	Used to emphasize the importance of a point, to introduce a term or to designate a command line placeholder, which is to be replaced with a real name or value.	These are the so-called *shared VEs*. To destroy a VE, type `vzctl destroy VEid`.
Important	An important note provides information that is essential to the completion of a task. Users can disregard information in a note and still complete a task, but they should not disregard an important note.	**Important**: The device drivers installed automatically during Setup are required by your system. If you remove one of these drivers, your system may not work properly.

Note	A note with the heading “Note” indicates neutral or positive information that emphasizes or supplements important points of the main text. A note supplies information that may apply only in special cases—for example, memory limitations, equipment configurations, or details that apply to specific versions of a program.	**Note**: If Windows prompts you for a network password at startup, your network is already set up and you can skip this section.
`Monospace`	The names of commands, files, and directories.	Use `vzctl start` to start a VE.
Preformatted	On-screen computer output in your command-line sessions; source code in XML, C++, or other programming languages.	Saved parameters for VE 101
Preformatted Bold	What you type, contrasted with on-screen computer output.	**# rpm –V virtuozzo-release**
CAPITALS	Names of keys on the keyboard.	SHIFT, CTRL, ALT
KEY+KEY	Key combinations for which the user must press and hold down one key and then press another.	CTRL+P, ALT+F4

General Conventions

Be aware of the following conventions used in this book.

- Modules in this guide are divided into sections, which, in turn, are subdivided into subsections. For example, Documentation Conventions is a section, and General Conventions is a subsection.
- When following steps or using examples, be sure to type double-quotes ("), left single-quotes (`), and right single-quotes (') exactly as shown.
- The key referred to as RETURN is labeled as ENTER on some keyboards.
- Commands in the directories included into the PATH variable are used without absolute path names. Steps that use commands in other, less common, directories show the absolute paths in the examples.

Feedback

If you have found a mistake in this guide, or if you have suggestions or ideas on how to improve it, please send your feedback using support@mamasu.es. Please include in your report the guide's title, chapter and section titles, and the fragment of text in which you have found an error.

Change Log

Version	Date	Description	Author
1.0	November 26, 2014	Initial version	Cristina Pérez

Introduction

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About This Guide

This guide describes the integration of Parallels Automation with OpenStack Services.

This document was developed by The Mamasú Agency. For additional information, please contact support@mamasu.es.

Audience

This guide is intended for:

- Providers that use Parallels Automation and want to sell OpenStack services to customers.

Terms and Abbreviations

API	Application Program Interface.
APS	Application Packaging Standard, an open standard that was designed to simplify the delivery of SaaS applications in the cloud-computing industry.
IaaS	Infrastructure as a Service.
PA	Parallels Automation, which includes both POA and PBA.
PBA	Parallels Business Automation.
POA	Parallels Operations Automation.
SaaS	Software as a Service.

Business Model Overview

This chapter contains an outline of how the integration of OpenStack and PA is used by the end customer and the list of OpenStack features that are supported within the integration package.

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About OpenStack

OpenStack is a global collaboration of developers and cloud computing technologists producing the ubiquitous open source cloud-computing platform for public and private clouds.

This APS allows providers to manage OpenStack resources and offer them to their customers as an IaaS solution.

With each subscription the customer will be able to know detailed information about resource usage and manage virtual environments directly from Parallels Automation panels.

OpenStack Services Provided

There are two different business models related to this product.

Pay as you go

Resource Name	Resource Class	Limit	Auto-Provide
Application	Application Service Reference	1	N/A
Datacenter	Application Service Reference	1	N/A
IPPool	Application Service Reference	Unlimited	N/A
Image	Application Service Reference	Unlimited	N/A

Organization	Application Service	1	Yes
UnmanagedVE	Application Service	Unlimited	N/A
FloatingIP	Application Counter (unit-hours)	Unlimited	N/A
CPU	Application Counter (unit-hours)	Unlimited	N/A
ISO counter (Slot X)	Application Counter (unit-hours)	Unlimited	N/A
DiskSize	Application Counter (MB-hours)	Unlimited	N/A
Memory	Application Counter (MB-hours)	Unlimited	N/A
TrafficOUT	Application Counter (MB-hours)	Unlimited	N/A

Flat

Resource Name	Resource Class	Limit	Auto-Provide
Application	Application Service Reference	1	N/A
Datacenter	Application Service Reference	1	N/A
IPPool	Application Service Reference	Unlimited	N/A
Image	Application Service Reference	Unlimited	N/A
Organization	Application Service	1	Yes
UnmanagedVE	Application Service	Unlimited	N/A
FloatingIP	Application Counter (unit)	Unlimited	N/A
CPU	Application Counter (unit)	Unlimited	N/A
DiskSize	Application Counter (KB)	Unlimited	N/A
Memory	Application Counter (KB)	Unlimited	N/A
TrafficOUT	Application Counter (KB)	Unlimited	N/A

Service Hierarchy Exposed by OpenStack

- App
    - DC
        - Heat template
        - Images
        - IPPools
            - IP
- Organization
    - UnmanagedVE
        - IPAssigned
    - HeatStack
        - IPAssigned

Integration Workflow

The integration workflow looks as follows:

DEPLOYMENT

Please refer to the Deployment Guide for more detailed information. This action is performed once and consists of:

1. Deploying OpenStack application endpoint.
2. Importing OpenStack application package.
3. Creating service instance in the Provider Control Panel.

PA INTEGRATION

1. Creating the required resource types. For further details, please refer to the Resource Creation section of this guide.
2. Creating the service templates. For further details, please refer to the Service Template Creation section of this guide.

Localization List

OpenStack has been localized in the following languages for each category:

1. Customer interface
   English
2. PA task manager error logging:
   English
3. OpenStack API error messaging:
   English

Revision History

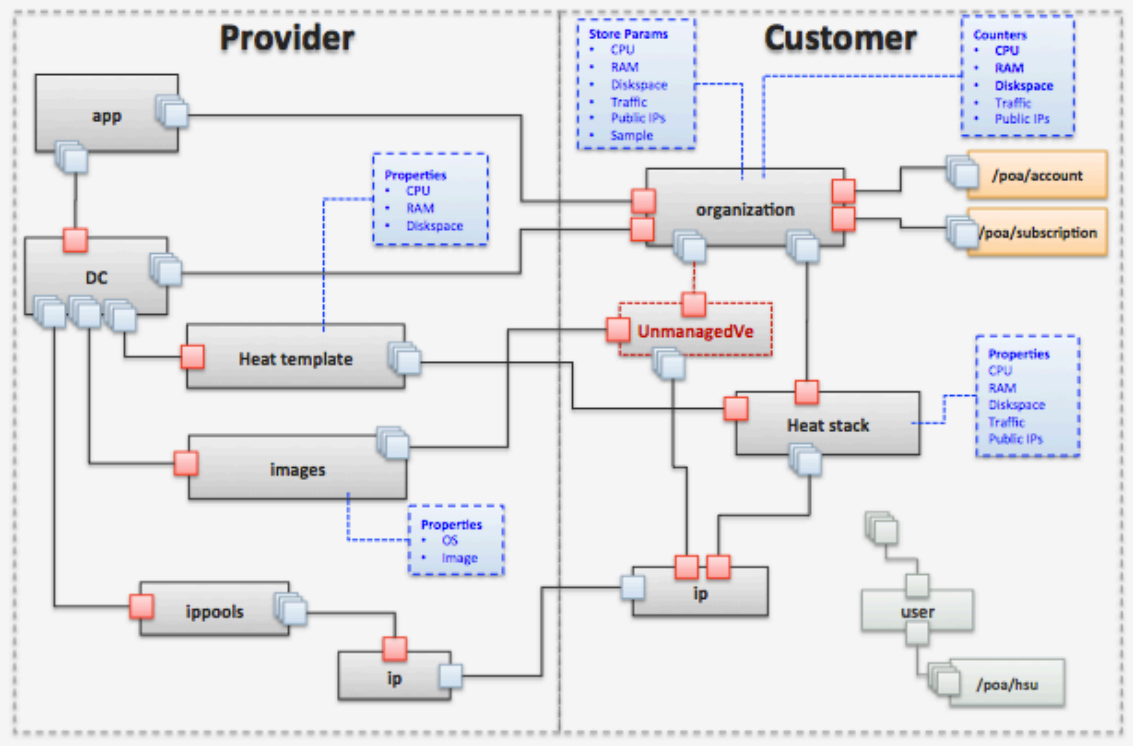
1.0 Build 53	Initial APS package

Technical Overview

This chapter contains an outline of how the integration of OpenStack and PA is performed and the list of OpenStack features that are supported within the integration package.

General Architecture

The following scheme represents the architecture of POA and OpenStack integration:



Components

Parallels Admin	Parallels Customer Manager
Imports APS package	Provisions new subscriptions
Configures package settings	Manages OpenStack instances
Configures service types for package	Checks OpenStack projects' resource usage

PA Integration

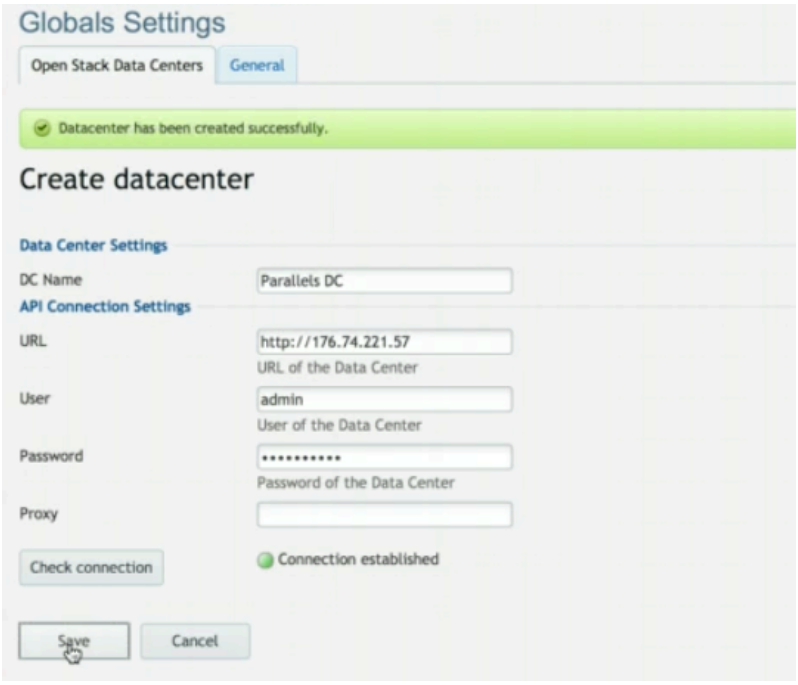
Configuring Services for Selling - POA

Learn about how to configure the service templates that are necessary to create OpenStack APS subscriptions for sale.

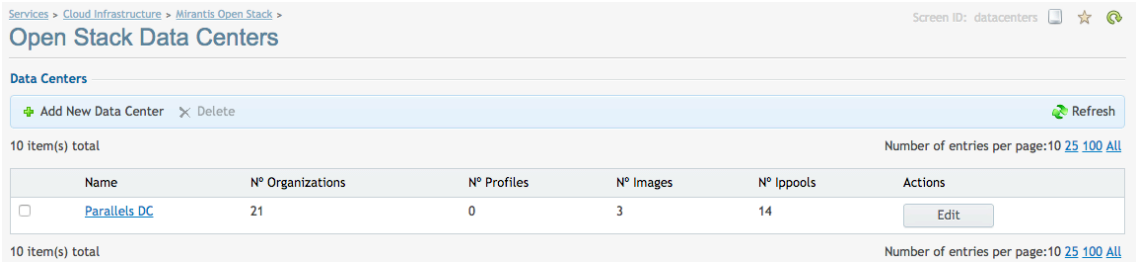
Instance Configuration

- In the POA Provider Control Panel, navigate to **Services>Applications.**
- Select “OpenStack”, then go to the **Instances** tab. Click on **OpenStack** again.

- Click on **Add New Data Center**.
- Specify the settings of the new data center, then click on **Save**:
    - DC Name: name of the data center.
    - URL: URL of the data center.
    - User: user of the data center.
    - Password: password of the data center.
    - Proxy: leave this field blank, as it is not used.

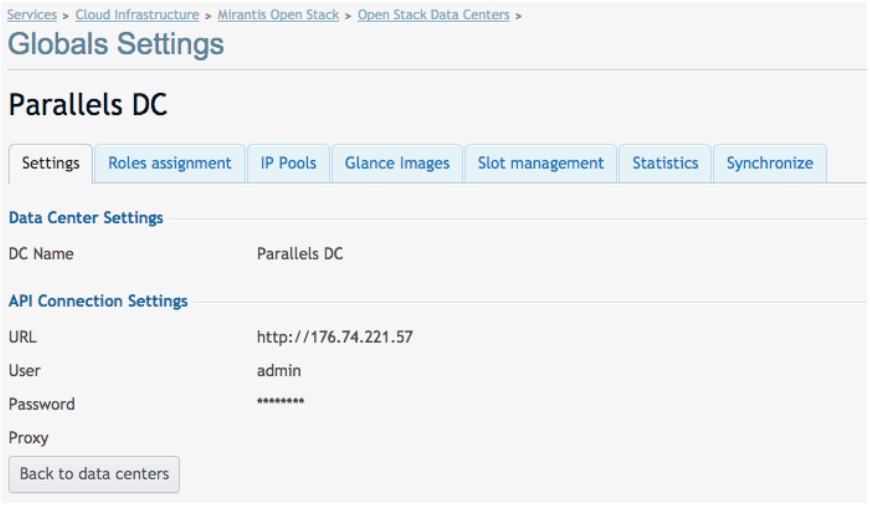


- Now you are in the OpenStack data center's list. From here, you can edit the data center's details by clicking on **Edit.**



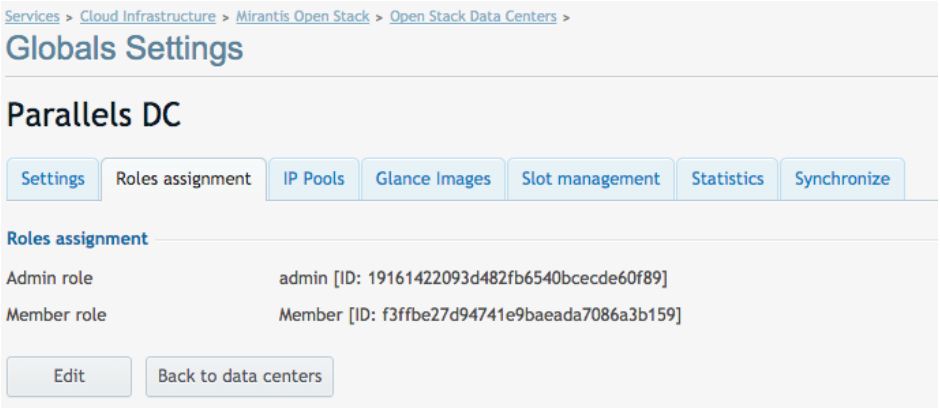
- By clicking on the data center's name, you can see all the information related to this data center.

Settings

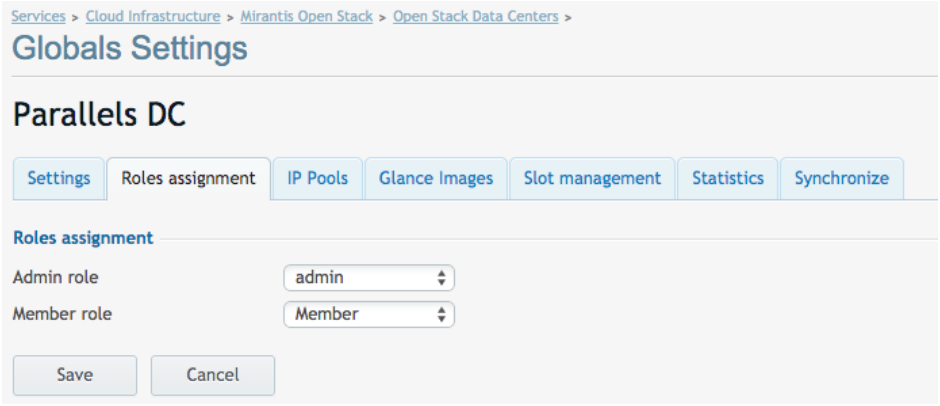


Roles Assignment

- From this tab you can configure the roles that will be used from the API to manage user permissions.

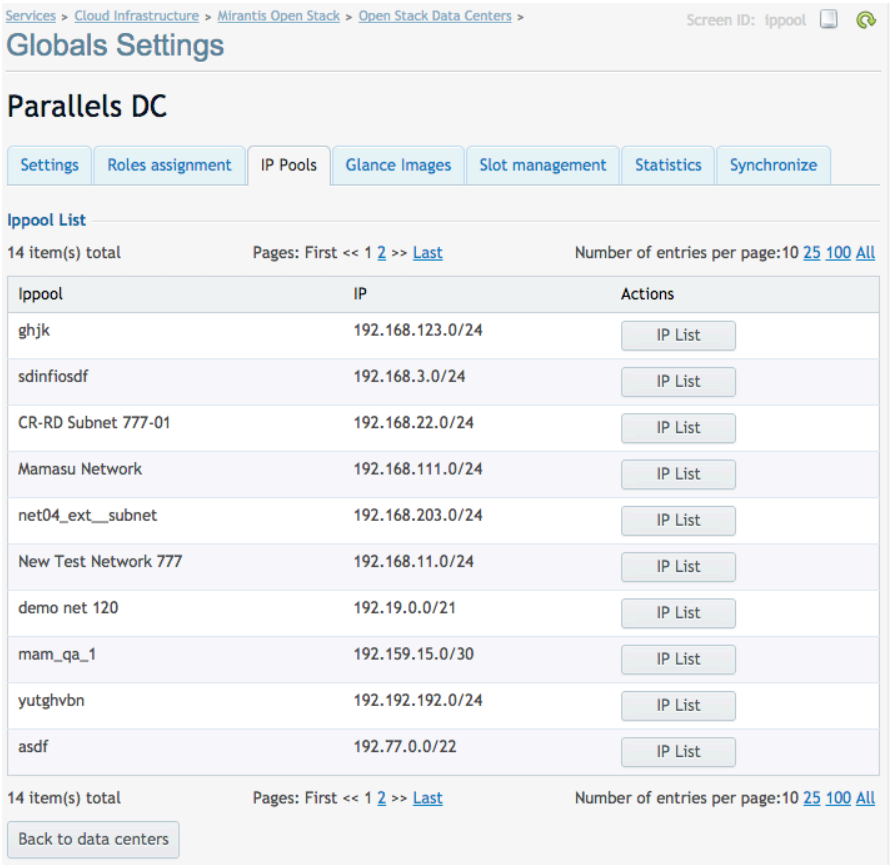


- You can select the role by clicking on the dropdown list.

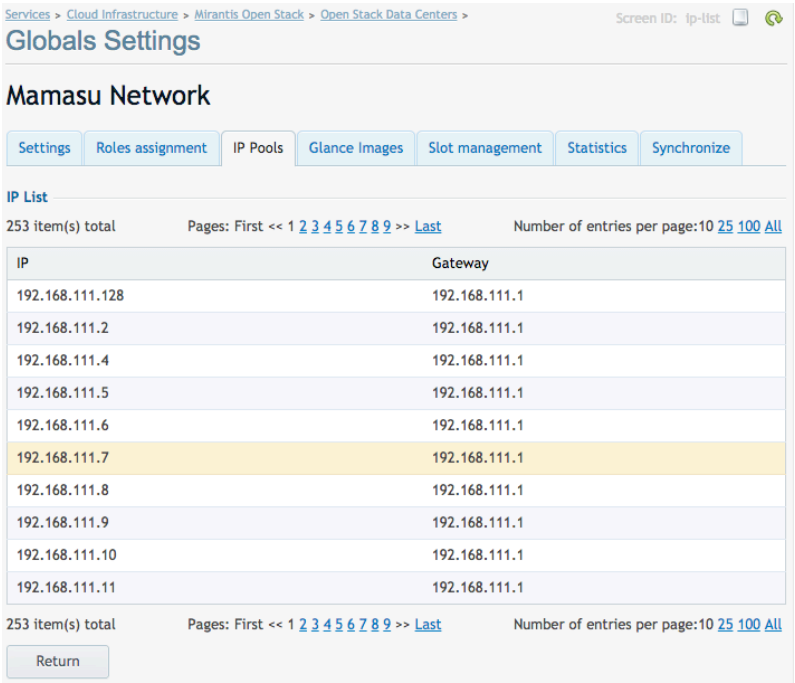


IP Pools

- In the **IPPools** tab you can retrieve the pools from the API.
- Once you are in this tab, IP Pools will be automatically retrieved and created on PA.

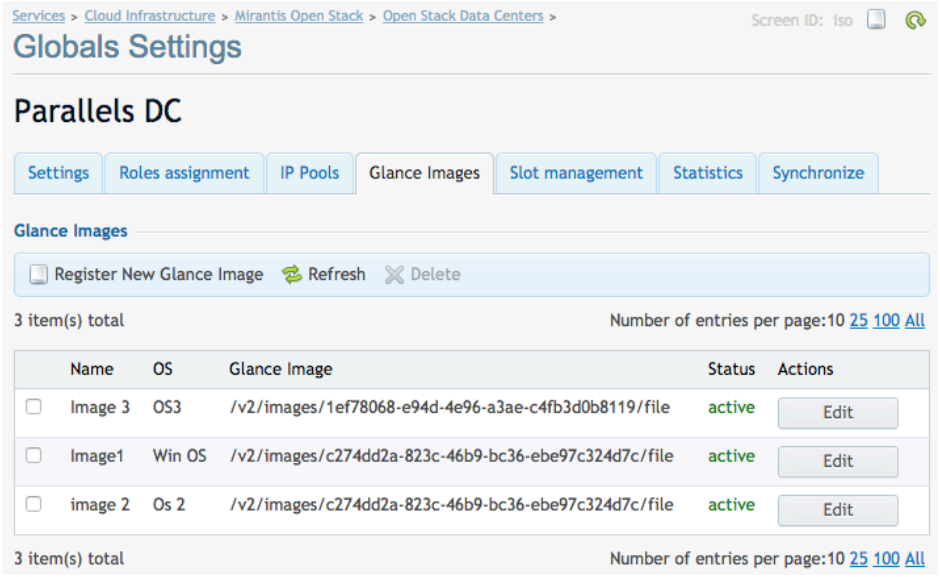


- By clicking on the **IP List** button, you can see the whole list of available IP inside this subnet.

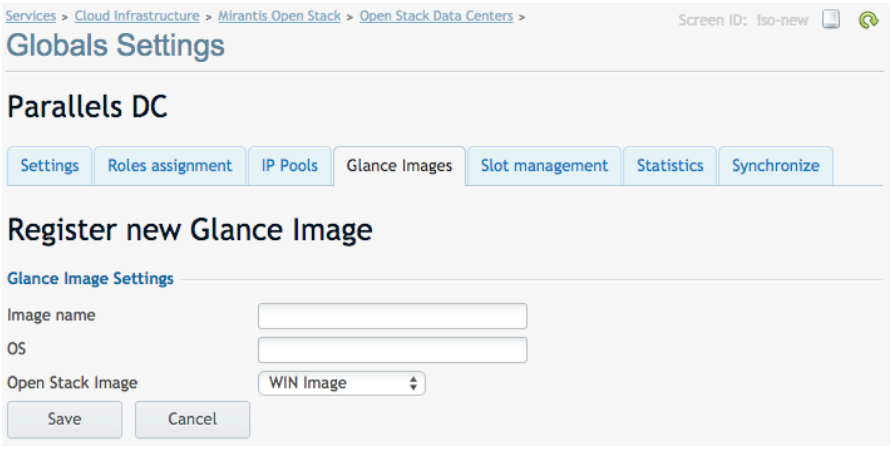


Glance Images

- From the **Glance Images** tab you can manage images based on OpenStack ISO.

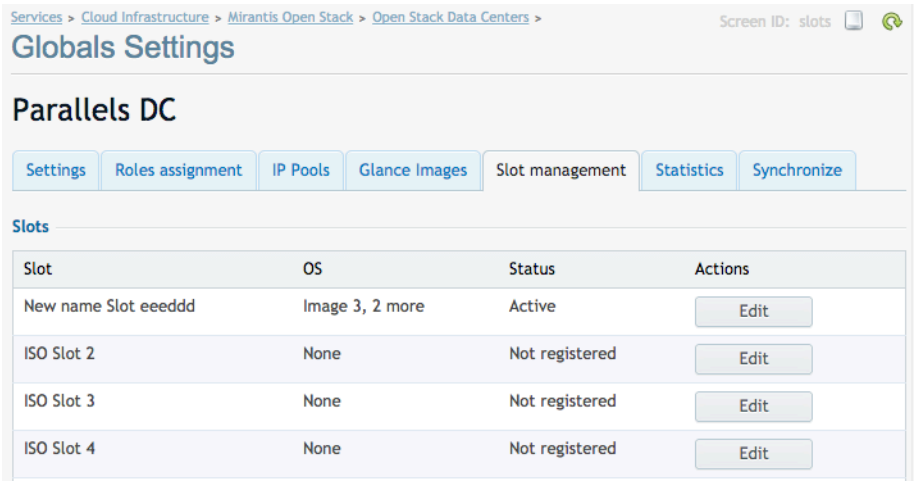


- To create a new image, click **Register New Glance Image** and specify the settings, then click **Save**:
    - ISO name: name of the ISO.
    - OS: operating system.
    - OpenStack ISO: select image from the dropdown list. This list is retrieved from the API.

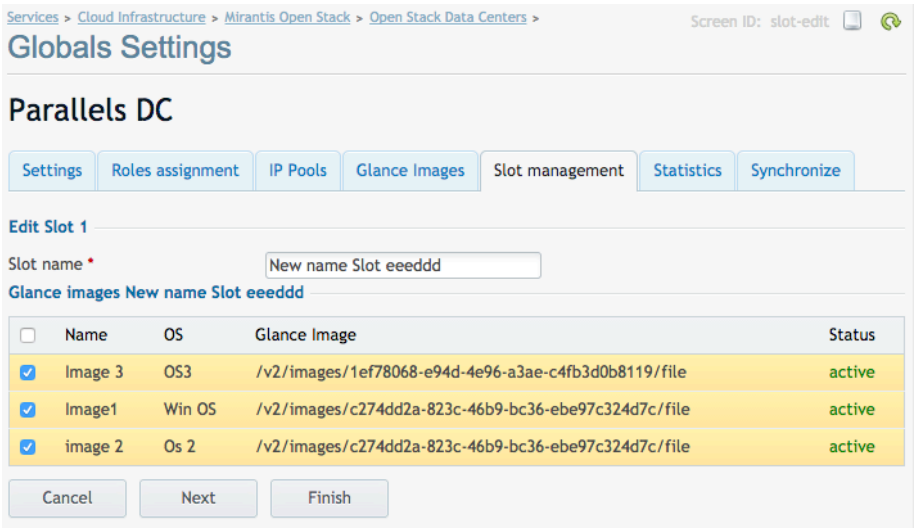


Slot Management

There is a mapping system that allows the provider to count the number of hours an instance has been working and then bill the customer for the usage of an image. This system is based on a slot mechanism that relates each slot defined in this tab with a counter in the customer's resource.

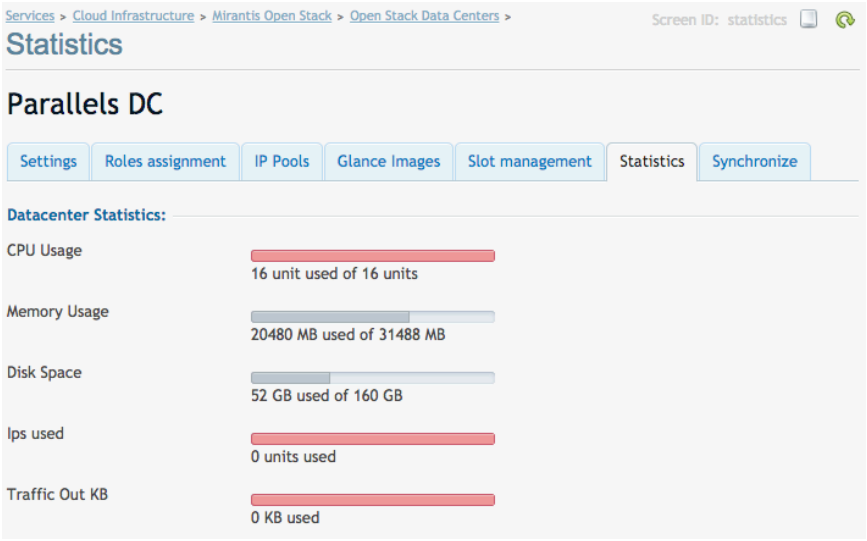


- By clicking on **Edit**, you can edit the name of each slot and specify which images are billed through this slot.



Statistics

From this tab you can check the summary of resource usage of the current data center.



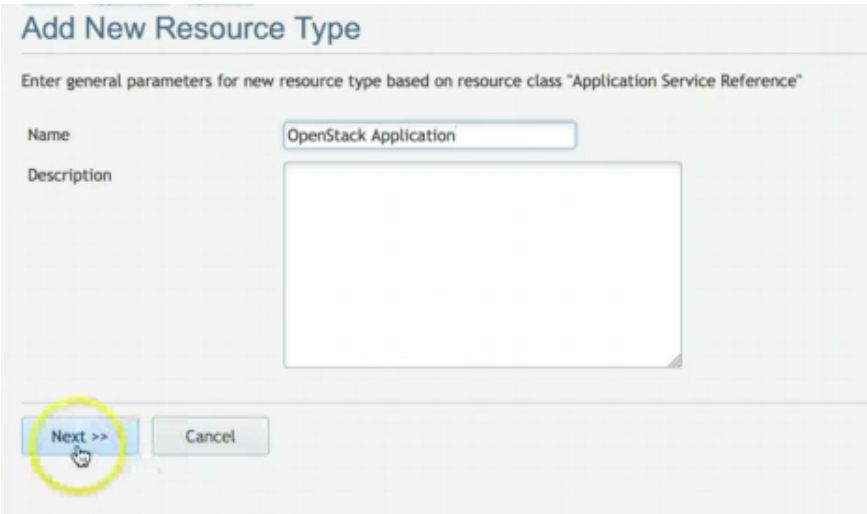
Resource Creation

Application Service Reference

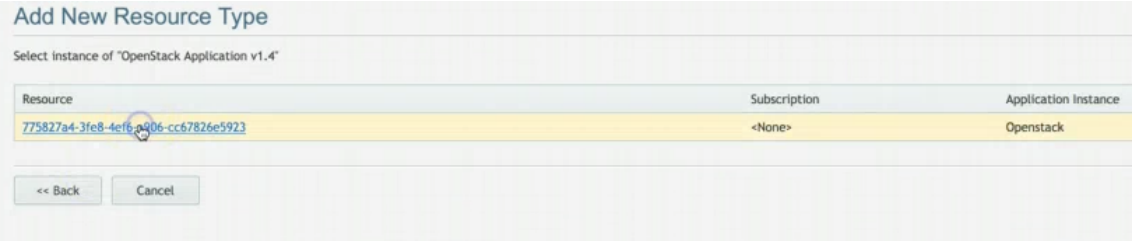
- In the POA Provider Control Panel, navigate **Services>Applications**.
- Click **OpenStack** in the **APS Packages** tab.
- Go to the **Resource Types** tab.

Creating an APS Application Resource

- Click on **Create**, then on **Application Service Reference**.
    - Name: enter the name of the application and the type of resource. In this case, *OpenStack Application*.
    - Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.



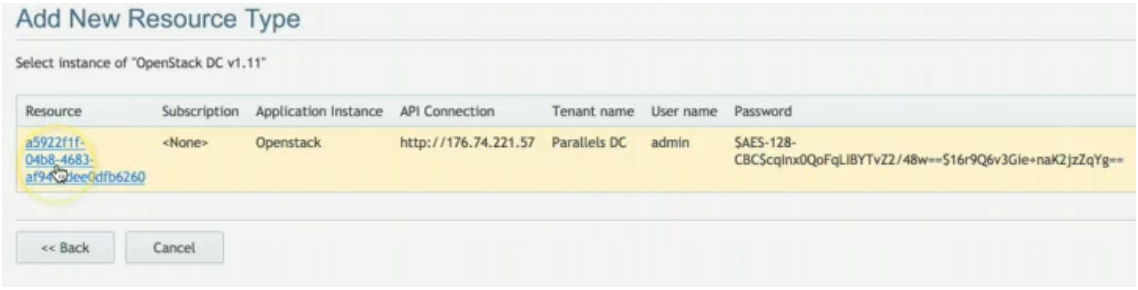
- Click **Next**, then **OpenStack Application** and then select the instance.



- Click **Finish**. The resource has been created.

Creating a Data Center Resource

- Click on **Create**, then on **Application Service Reference**.
    - Name: enter the name of the application and the type of resource. In this case, *OpenStack Data Center*.
    - Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.
- Click **Next**, then **OpenStack Data Center** and then select the instance.



- Click **Finish**. The resource has been created.

Creating an IP Pool Resource

- Click on **Create**, then on **Application Service Reference**.
    - Name: enter the name of the application and the type of resource. In this case, *OpenStack IP Pool*.
    - Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.
- Click **Next**, then **OpenStack IP Pool**.

- Select the instance.
- Click **Finish**. The resource has been created.

Creating an Image Linux Resource

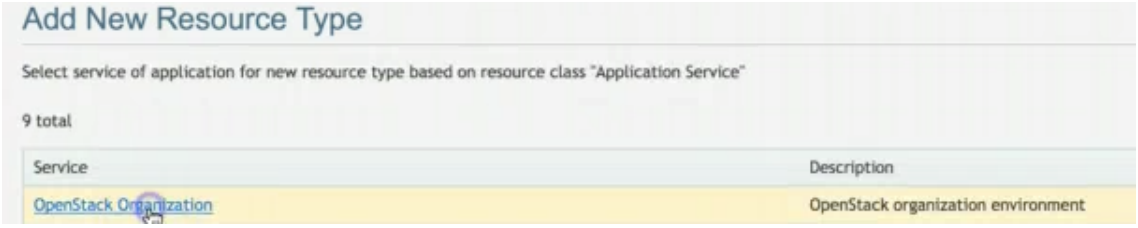
- Click on **Create**, then on **Application Service Reference**.
    - Name: enter the name of the application and the type of resource. In this case, *OpenStack Image Linux*.
    - Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.
- Click **Next**.

- Click **OpenStack Image** and then select the instance.
- Click **Finish**. The resource has been created.

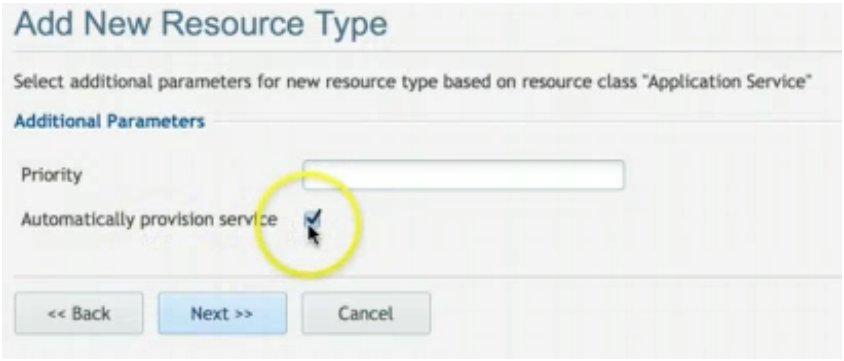
Application Service

Creating an Organization resource

- Click on **Create**, then on **Application Service**.
    - Name: enter the name of the application and the type of resource. In this case, *OpenStack Organization*.
    - Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.
- Click **Next**, then **OpenStack Organization**.



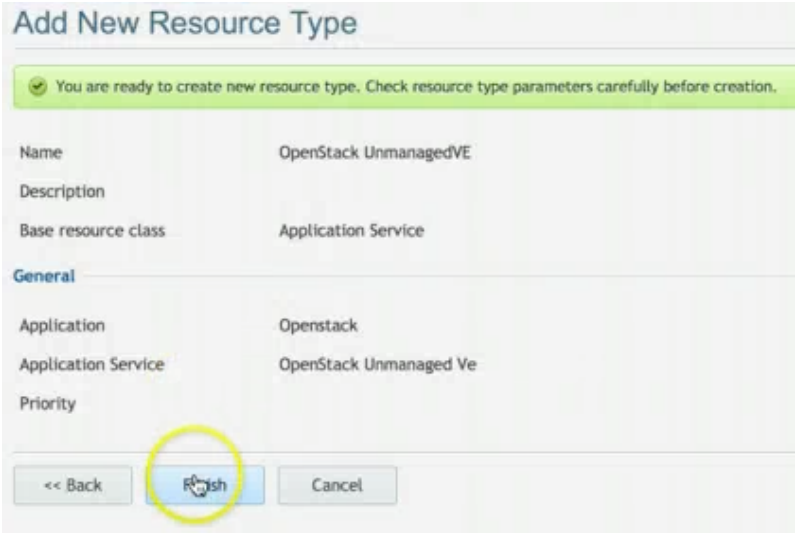
- Tick the “Automatically provision service” checkbox.



- Click **Next**, then **Finish**. The resource has been added.

Creating an Unmanaged Virtual Environment resource

- Click on **Create**, then on **Application Service**.
    - Name: enter the name of the application and the type of resource. In this case, *OpenStack Unmanaged VE*.
    - Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.
- Click **Next**, then **OpenStack Unmanaged VE**.
- Leave the “Automatically provision service” box unchecked.
- Click **Next**, then **Finish**. The resource has been added.



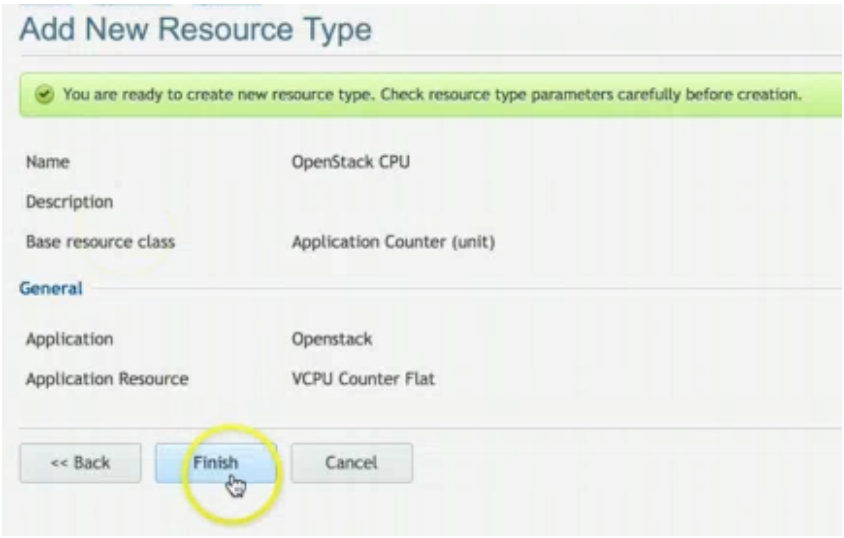
Important

The next step is to create the application counters for the Flat service type.

Application Counter (unit)

Creating a CPU resource

- Click on **Create**, then on **Application Counter (unit)**.
    - Name: enter the name of the application and the type of resource. In this case, *OpenStack CPU*.
    - Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.
- Click **Next**, then **VCPU Counter Flat**.
- Click **Finish**. The resource has been added.



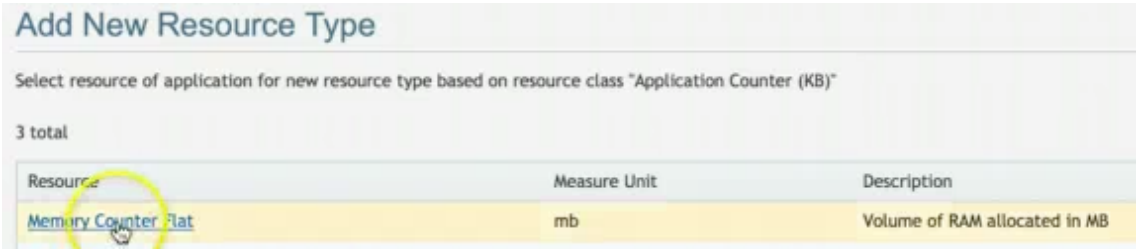
Creating a floating IP resource

- Click on **Create**, then on **Application Counter (unit)**.
    - Name: enter the name of the application and the type of resource. In this case, *OpenStack Floating IP*.
    - Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.
- Click **Next**, then **IPs Counter Flat**.
- Click **Finish**. The resource has been added.

Application Counter (KB)

Creating a memory resource

- Click on **Create**, then on **Application Counter (KB)**.
    - Name: enter the name of the application and the type of resource. In this case, *OpenStack RAM*.
    - Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.
- Click **Next**, then **Memory Counter Flat**.



- Click **Finish**. The resource has been added.

Creating a disk size resource

- Click on **Create**, then on **Application Counter (KB)**.
    - Name: enter the name of the application and the type of resource. In this case, *OpenStack DiskSize*.
    - Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.
- Click **Next**, then **Disk Size Counter Flat**.
- Click **Finish**. The resource has been added.

Creating a traffic out resource

- Click on **Create**, then on **Application Counter (KB)**.
    - Name: enter the name of the application and the type of resource. In this case, *OpenStack Traffic.*
    - Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.
- Click **Next**, then **Traffic Out Counter Flat**.
- Click **Finish**. The resource has been added.

Important

To create application counters for the Pay as you go service type, you must select Unit-hours or Megabyte-hours.

Application Counter (unit-hours)

Creating a CPU resource

- Click on **Create**, then on **Application Counter (unit-hours)**.
    - Name: enter the name of the application and the type of resource. In this case, *OpenStack CPU PAYG*.
    - Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.
- Click **Next**, then **IPs Usage PAYG**.
- Click **Finish**. The resource has been added.

Creating a floating IP resource

- Click on **Create**, then on **Application Counter (unit-hours)**.
    - Name: enter the name of the application and the type of resource. In this case, *OpenStack Floating IP PAYG*.
    - Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.
- Click **Next**, then **IPs Usage PAYG**.
- Click **Finish**. The resource has been added.

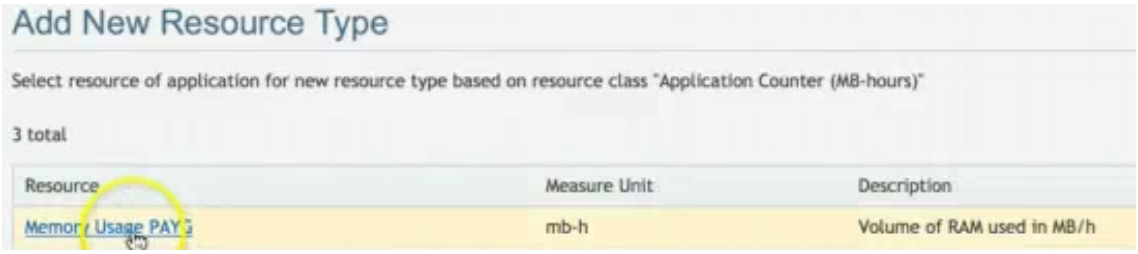
Application Counter (MB-hours)

Creating a memory resource

- Click on **Create**, then on **Application Counter (MB-hours)**.

- Name: enter the name of the application and the type of resource. In this case, *OpenStack RAM PAYG*.
- Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.

- Click **Next**, then **Memory Usage PAYG**.



- Click **Finish**. The resource has been added.

Creating a disk size resource

- Click on **Create**, then on **Application Counter (MB-hours)**.
  - Name: enter the name of the application and the type of resource. In this case, *OpenStack DiskSize PAYG*.
  - Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.
- Click **Next**, then **Disk Size Usage PAYG**.
- Click **Finish**. The resource has been added.

Creating a traffic out resource

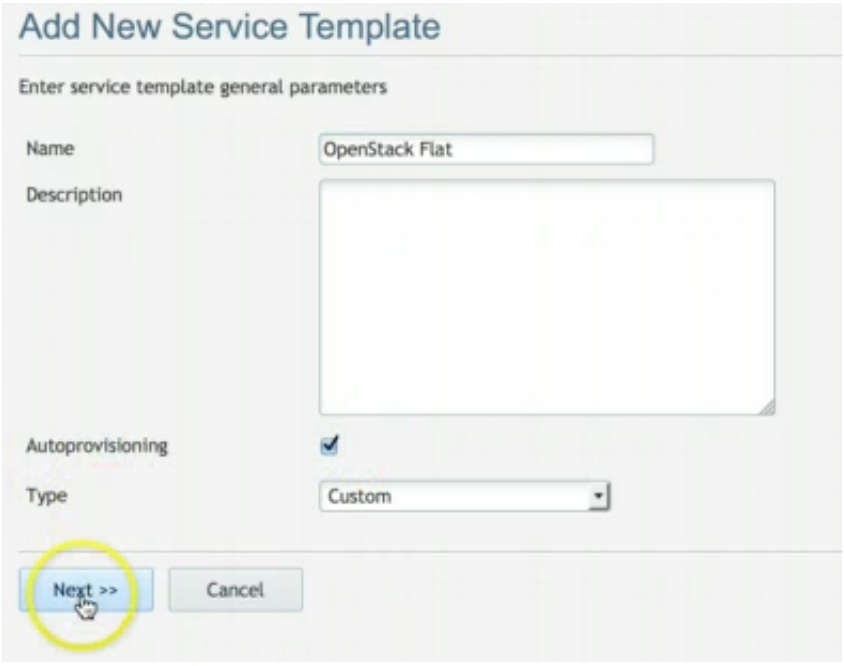
- Click on **Create**, then on **Application Counter (MB-hours)**.
  - Name: enter the name of the application and the type of resource. In this case, *OpenStack Traffic PAYG.*
  - Description: this field is used to describe the type of resource. You can leave it blank or enter the information you wish.
- Click **Next**, then **Traffic Out Usage PAYG**.
- Click **Finish**. The resource has been added.

Service Template Creation

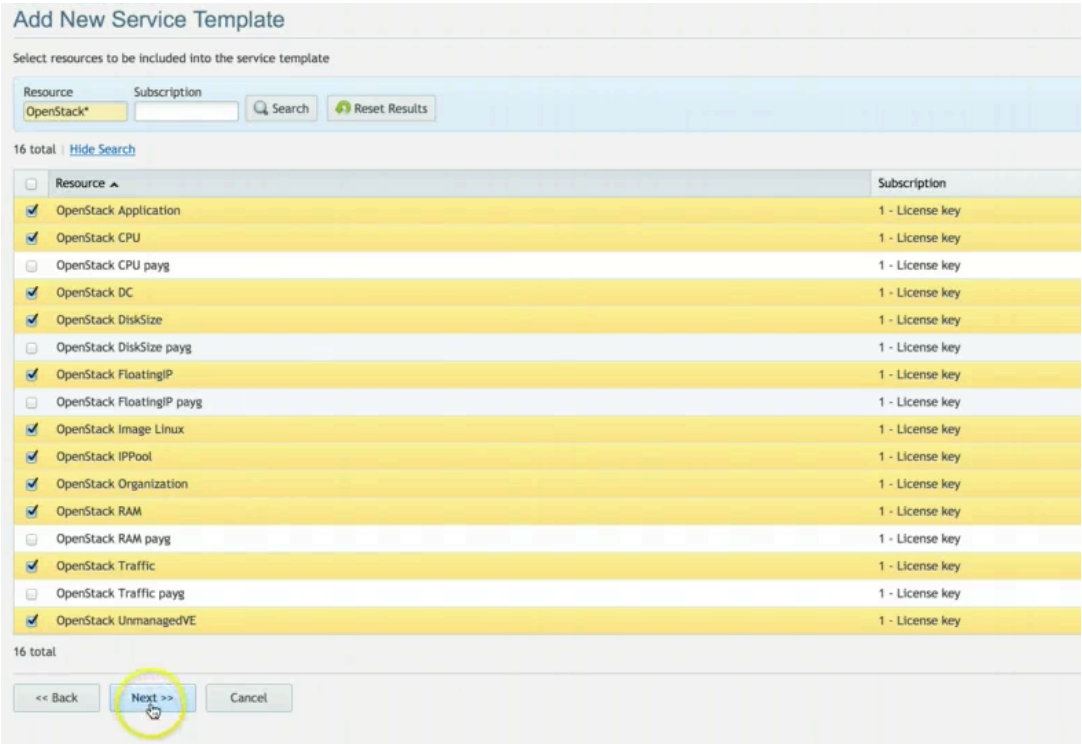
Flat Service Template

- In the POA Control Panel, navigate to **Products>Service Templates**.
- Click **Add New Service Template**.
- Configure the service template's general parameters:
  - Name: enter the name, for example: *OpenStack Flat*.

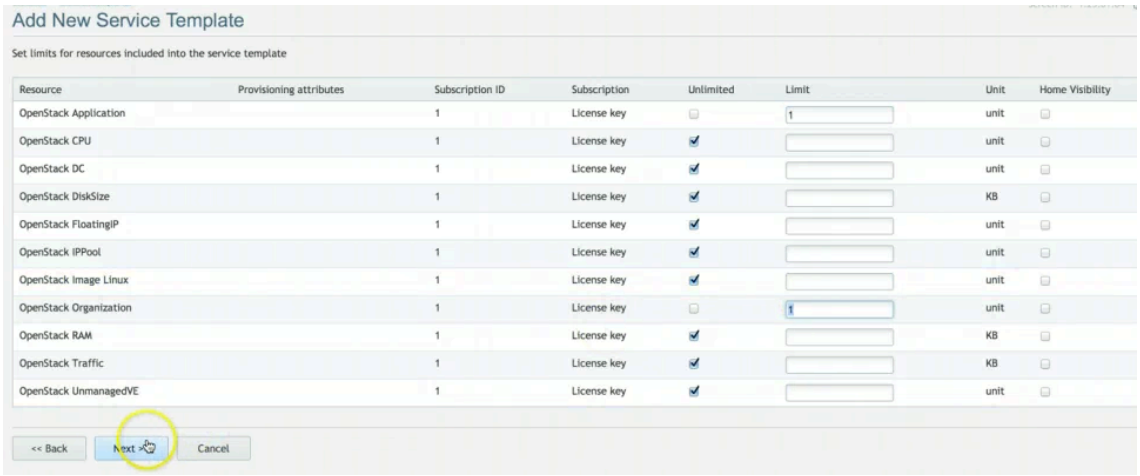
- Description: this field is used to describe the template. Leave it blank or enter the information you wish.
- Tick the “Autoprovisioning” checkbox.
- Type: set the type as “Custom”.



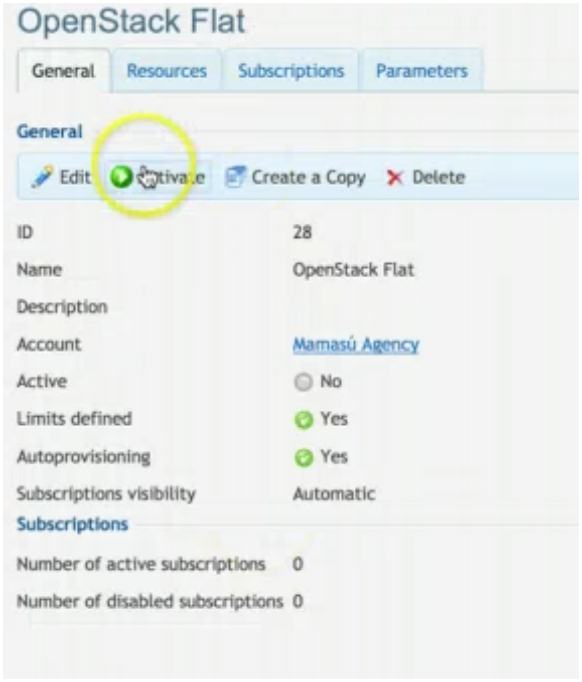
- Click **Next**. The template has been created.
- Select the resources created earlier except for the Pay as you go subscription resources, then click **Next**.



- Set the limits for the resource types included in the service template.
    - For Application and Organization, uncheck the Unlimited checkbox and set the limit as 1.
    - For the rest, leave the Unlimited checkbox marked.

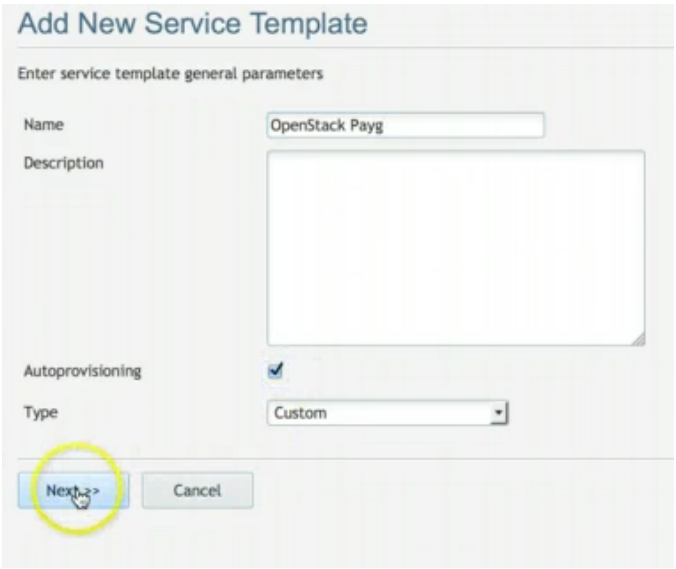


- Click **Next**, then **Finish**.
- To activate the service template:
    - Open the newly created service template (OpenStack Flat).
    - In the **General** section, click **Activate.**

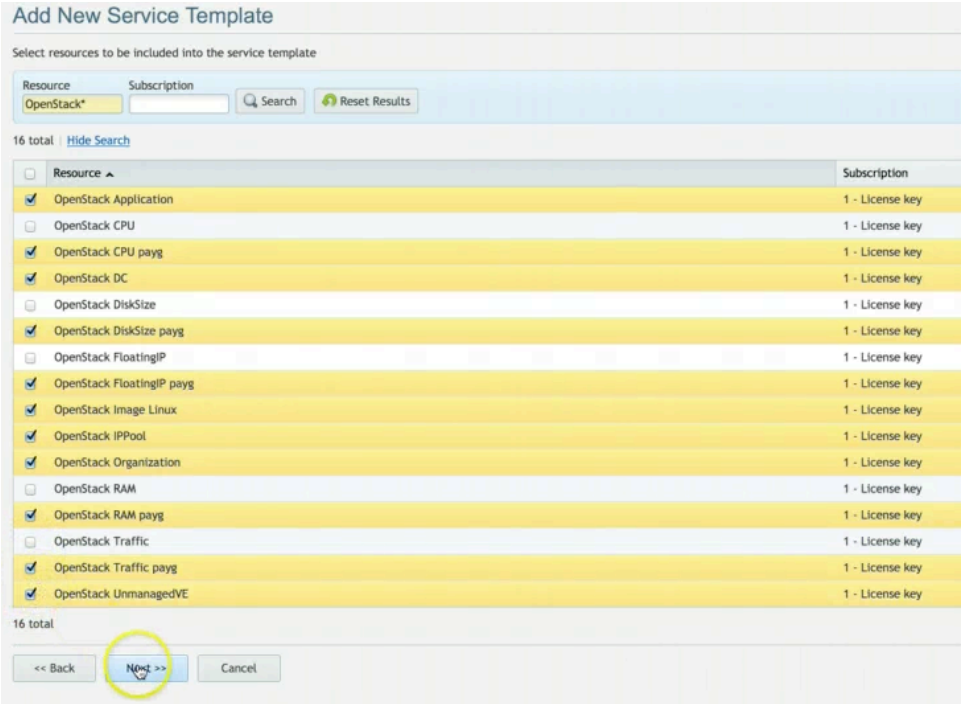


Pay as you go Service Template

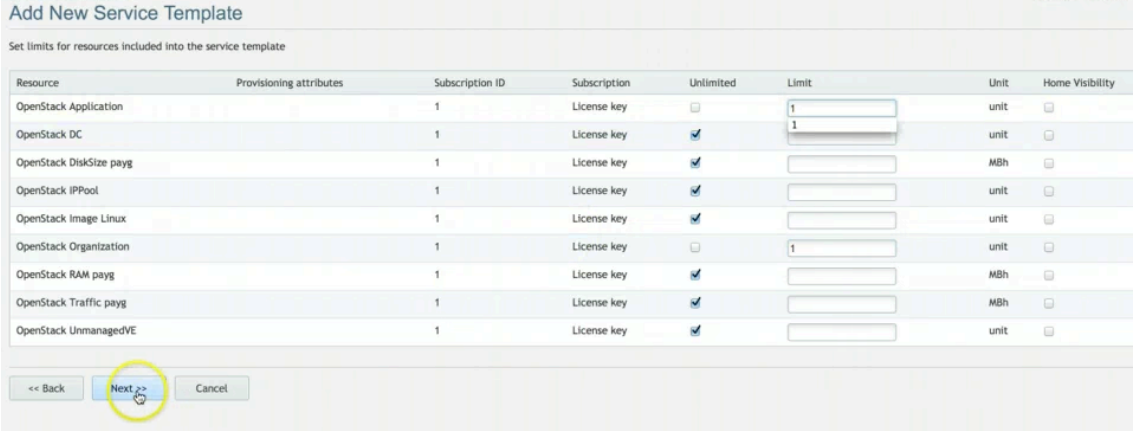
- In the POA Control Panel, navigate to **Products>Service Templates**.
- Click **Add New Service Template**.
- Configure the service template's general parameters:
  - Name: enter the name, for example: *OpenStack PAYG*.
  - Description: this field is used to describe the template. Leave it blank or enter the information you wish.
  - Tick the "Autoprovisioning" checkbox.
  - Type: set the type as "Custom".



- Click **Next**. The template has been created.
- Select the resources created earlier except for the Flat subscription resources, then click **Next**.



- Set the limits for the resource types included in the service template.
    - For Application and Organization, uncheck the Unlimited checkbox and set the limit as 1.
    - For the rest, leave the Unlimited checkbox marked.



- Click **Next**, then **Finish**.
- To activate the service template:
    - Open the newly created service template (OpenStack Pay as you go).
    - In the **General** section, click **Activate.**