Murano User Guide

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v0.1

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Abstract

This document is intended for individuals who wish to use our product or intend to contribute.

Table of Contents

Chapter 1. How can I use Murano Service?

Murano is intended to get opportunity for non-experienced users to deploy reliable Windows-based environments extremely simple. This document describes process of creation virtual Windows Environment with different services.

Document change history

The following table describes the most recent changes:

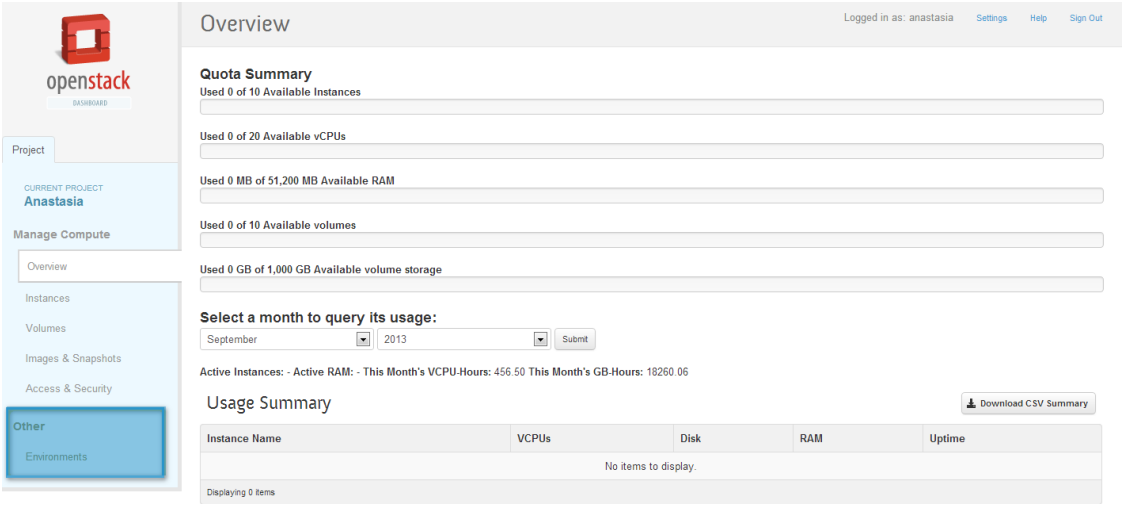
Revision Date	Summary of Changes
September. 4, 2013	• Initial document creation.

Chapter 2. Murano dashboard plugin

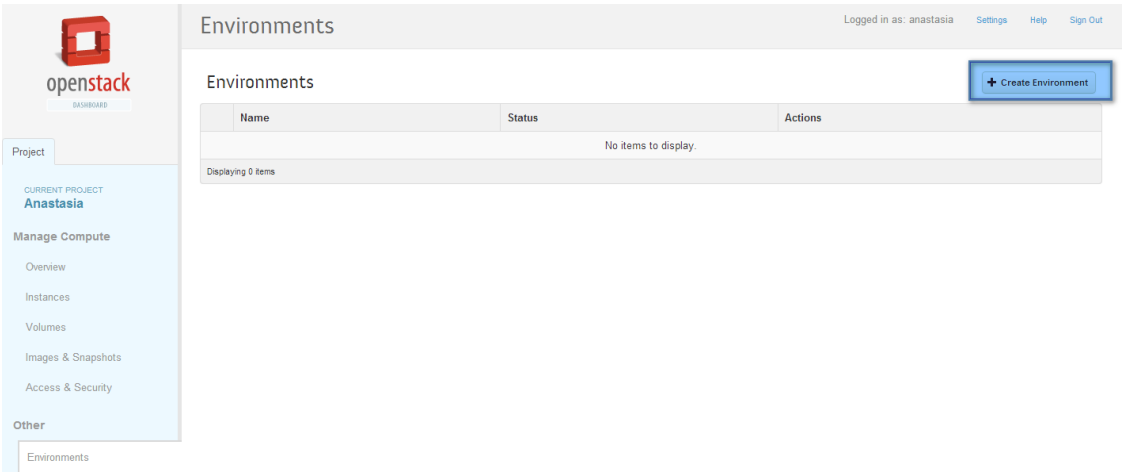
To use Murano you should be familiar with Openstack. Murano Dashboard is just a plugin to Openstack dashboard - Horizon. Please visit horizon user guide [http://docs.openstack.org/user-guide/content/] first to see how dashboard is organized and how to login to it.

Creating environment

Once you installed all Murano components and login to horizon dashboard successfully you will see Environments panel:



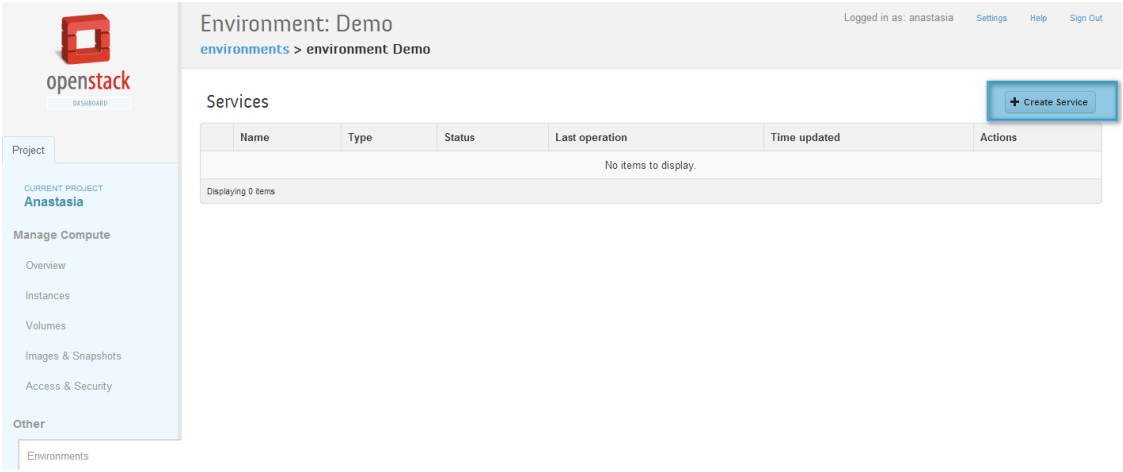
First thing you need to do is to create an environment - virtual Windows Data Center which will contain different Windows services. Navigate to the "Environments" page and click the "Create Environment". After setting name to your virtual environment it will be created. Just created environment has status *Ready to configure*.



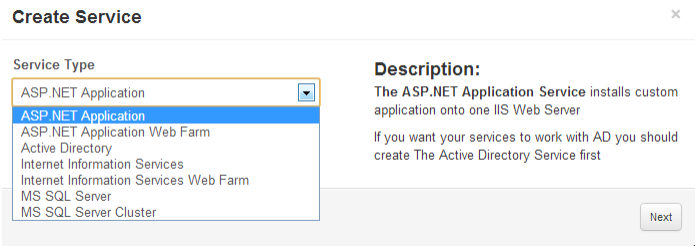
Creating service prototype

All services should be created in the context of Environment - virtual Windows Data Center. After Environment is created services prototypes and then deploy the Environment. When deploy process is done instances with your service will be spawned in Openstack. To create service prototype navigate to

environment services by clicking on the environment name (or on the "Services" button) and click the "Create Service" button.



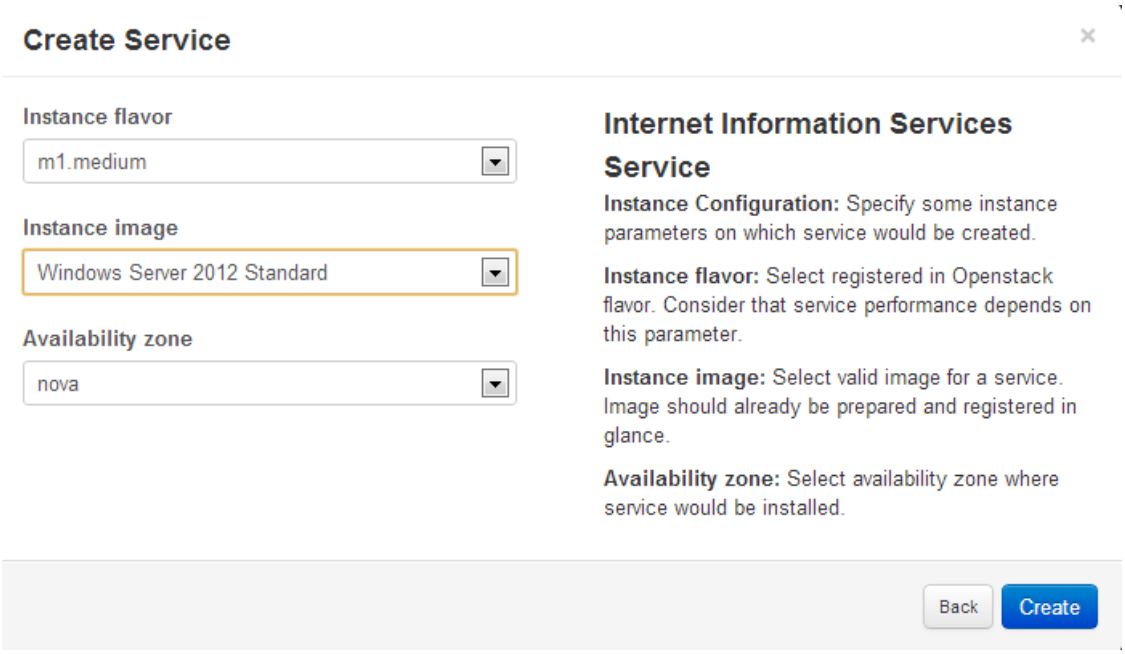
You have opportunity to create one of the following services:



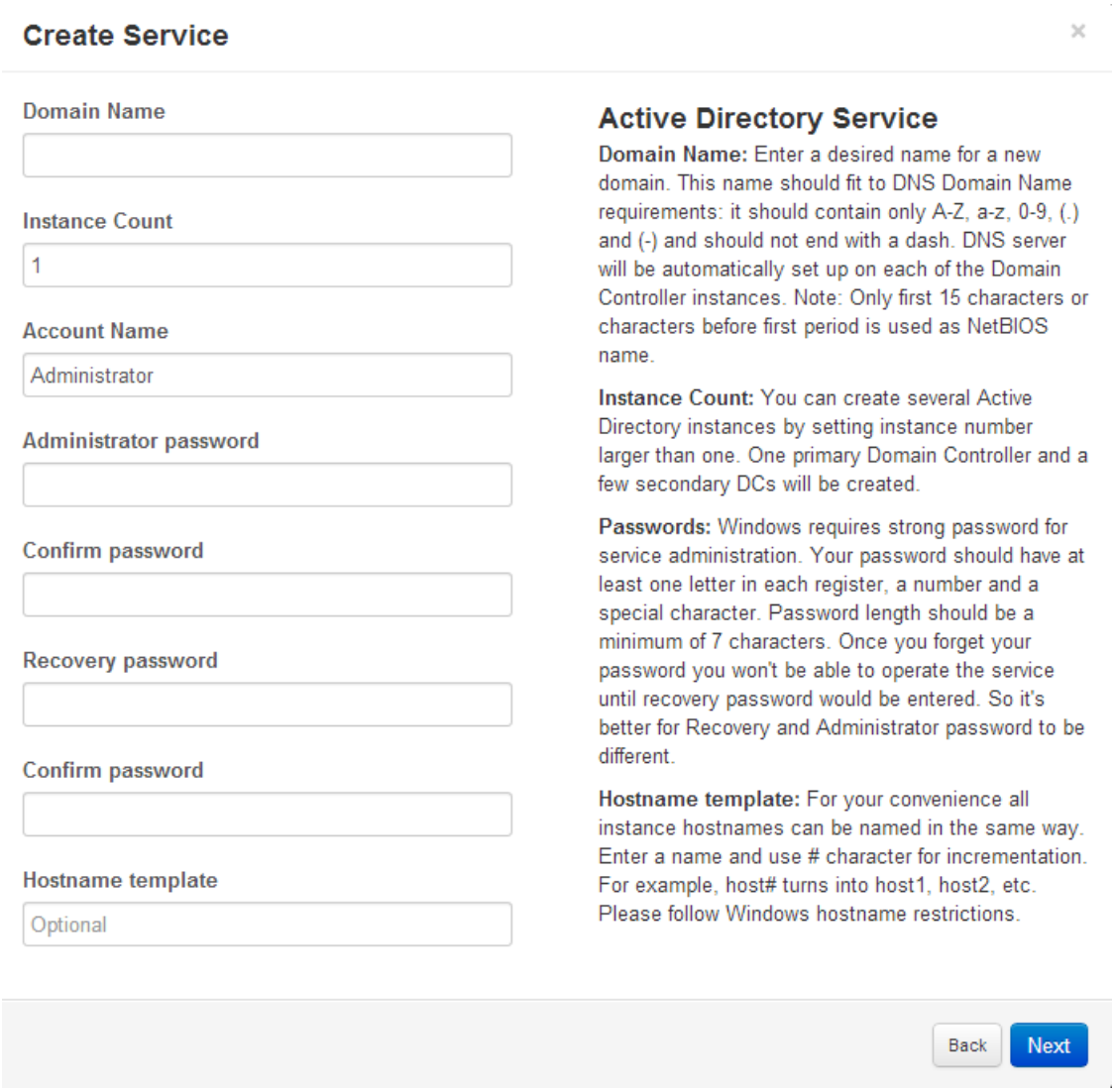
Once you choose service that you want to create click "Next" and fill the form. Forms for each service are specific. To see more information about filling the form for a specified service follow one of the link below:

- **Active Directory:** Active Directory is a directory service implemented by Microsoft for Windows domain networks. In one installation in addition to primary Domain Controller you can add optional count of secondary Domain Controllers. Any other services you are intending to create can be joined to that domain.
- **Internet Information Service:** IIS is a web server and a set of feature extension modules.
- **Internet Information Web Farm Service:** Murano installs the Web Farm Framework on the controller server, configures the primary server and prepares the secondary servers. In addition load balancer is installed to monitor service statuses.
- **ASP.NET Service:** is a server-side Web application framework designed for Web development to produce dynamic Web pages. Service is able to install custom application onto one IIS Web Server. Murano installs all needed components and make proper configuration.
- **ASP.NET Farm Service:** ASP.NET Farm Service installs a custom application on a load-balanced array of IIS servers
- **MS SQL Service:** Microsoft SQL Service is a relational database management system.
- **SQL Server Failover Cluster:** Murano installs all needed components and configures your SQL Server Cluster the way you want.

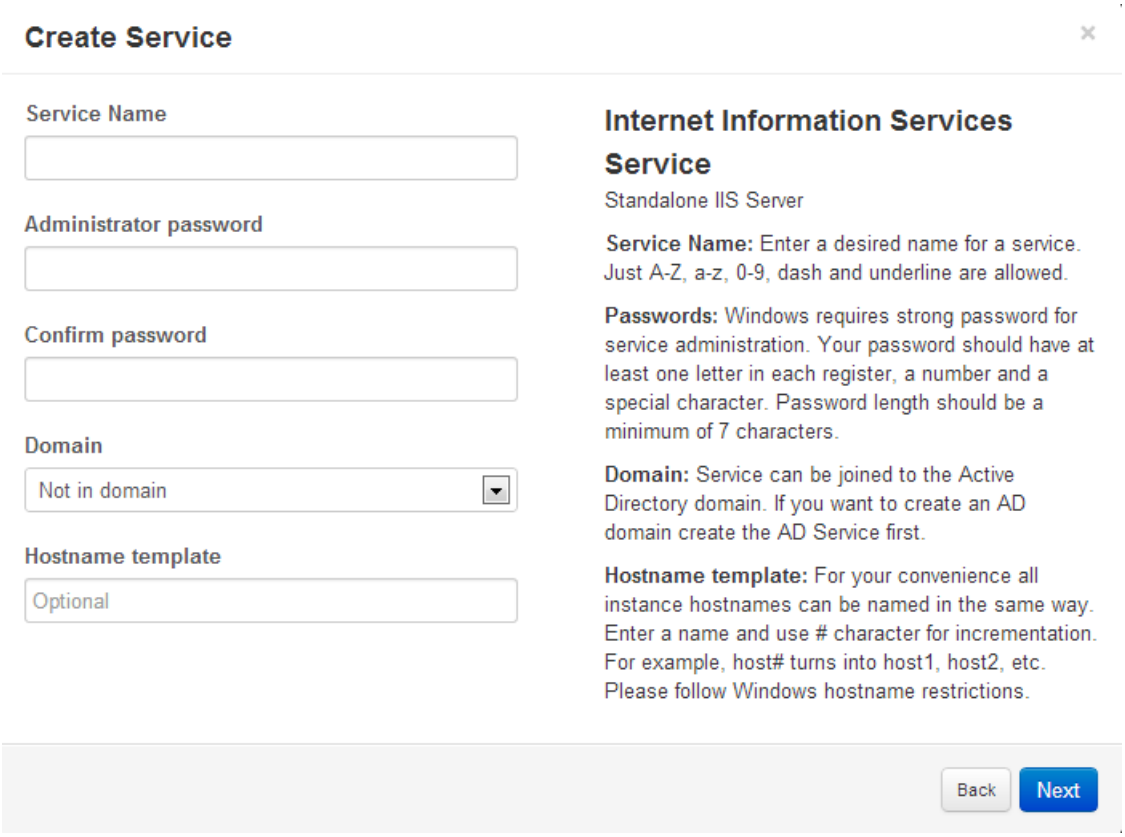
On the last step of creating service prototype you have opportunity to set the hardware flavor of the instance which will be created - and the image with the operating system, which will be installed on the instance. Also you may select availability zone, if there are more then one in your environment.


Create Service
Instance flavor
m1.medium
Instance image
Windows Server 2012 Standard
Availability zone
nova
Internet Information Services Service
Instance Configuration: Specify some instance parameters on which service would be created.
Instance flavor: Select registered in Openstack flavor. Consider that service performance depends on this parameter.
Instance image: Select valid image for a service. Image should already be prepared and registered in glance.
Availability zone: Select availability zone where service would be installed.
Back
Create

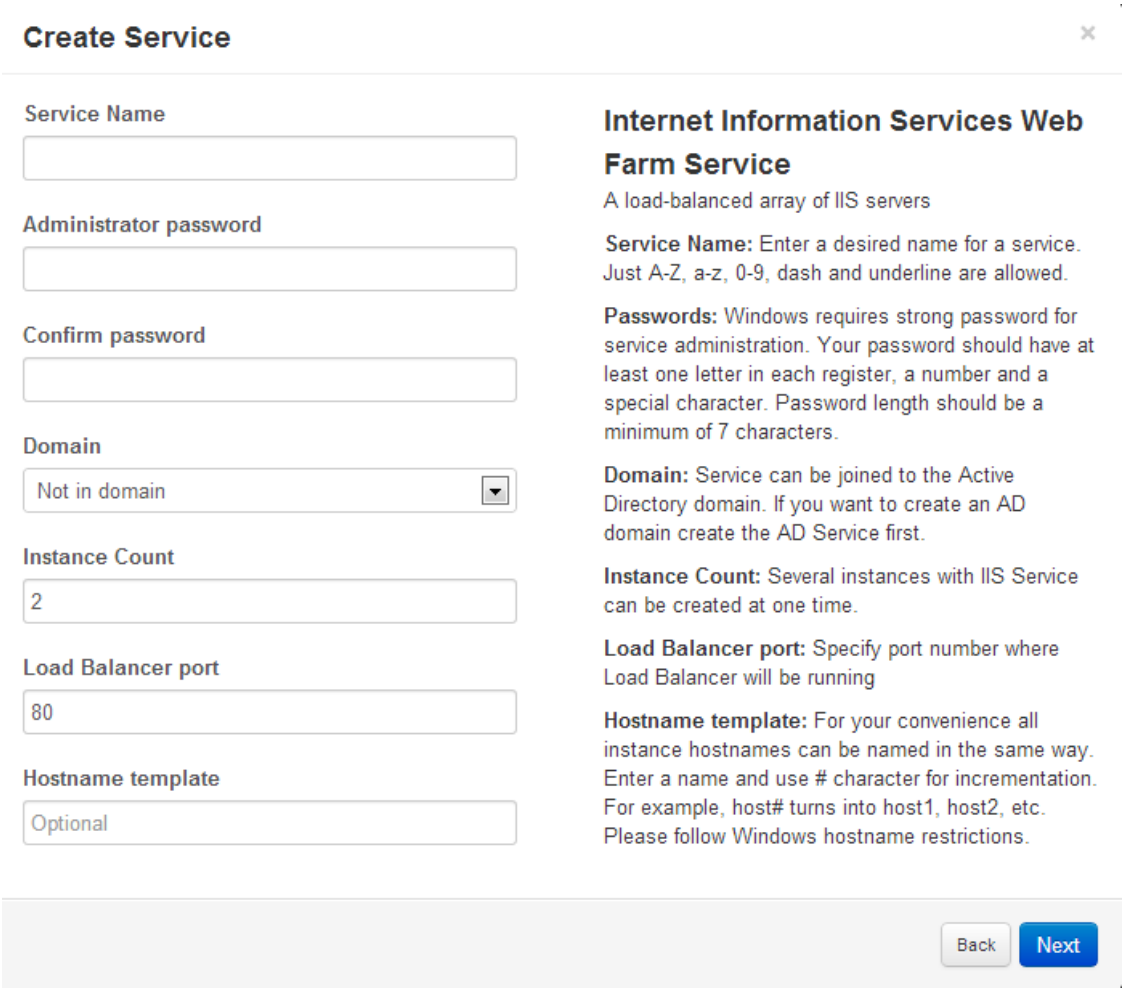
Active Directory



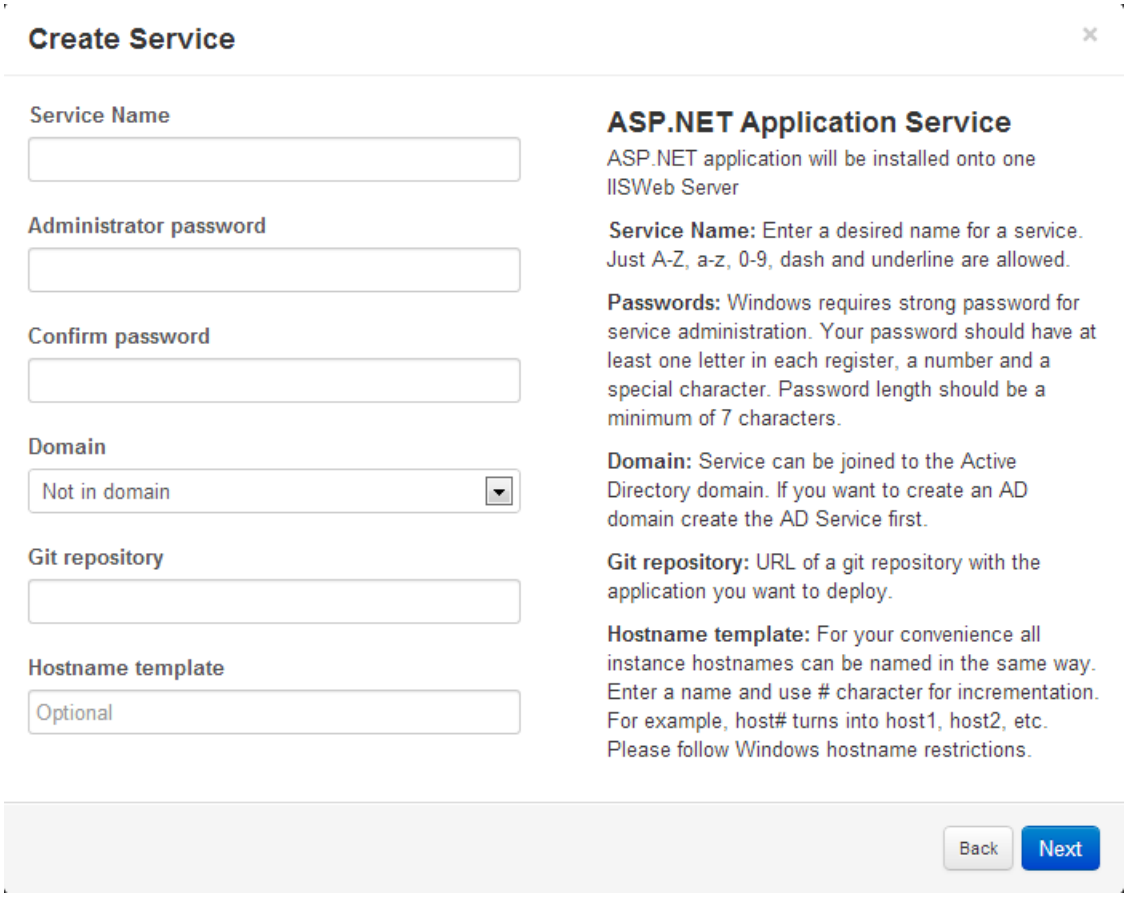
Internet Information Service



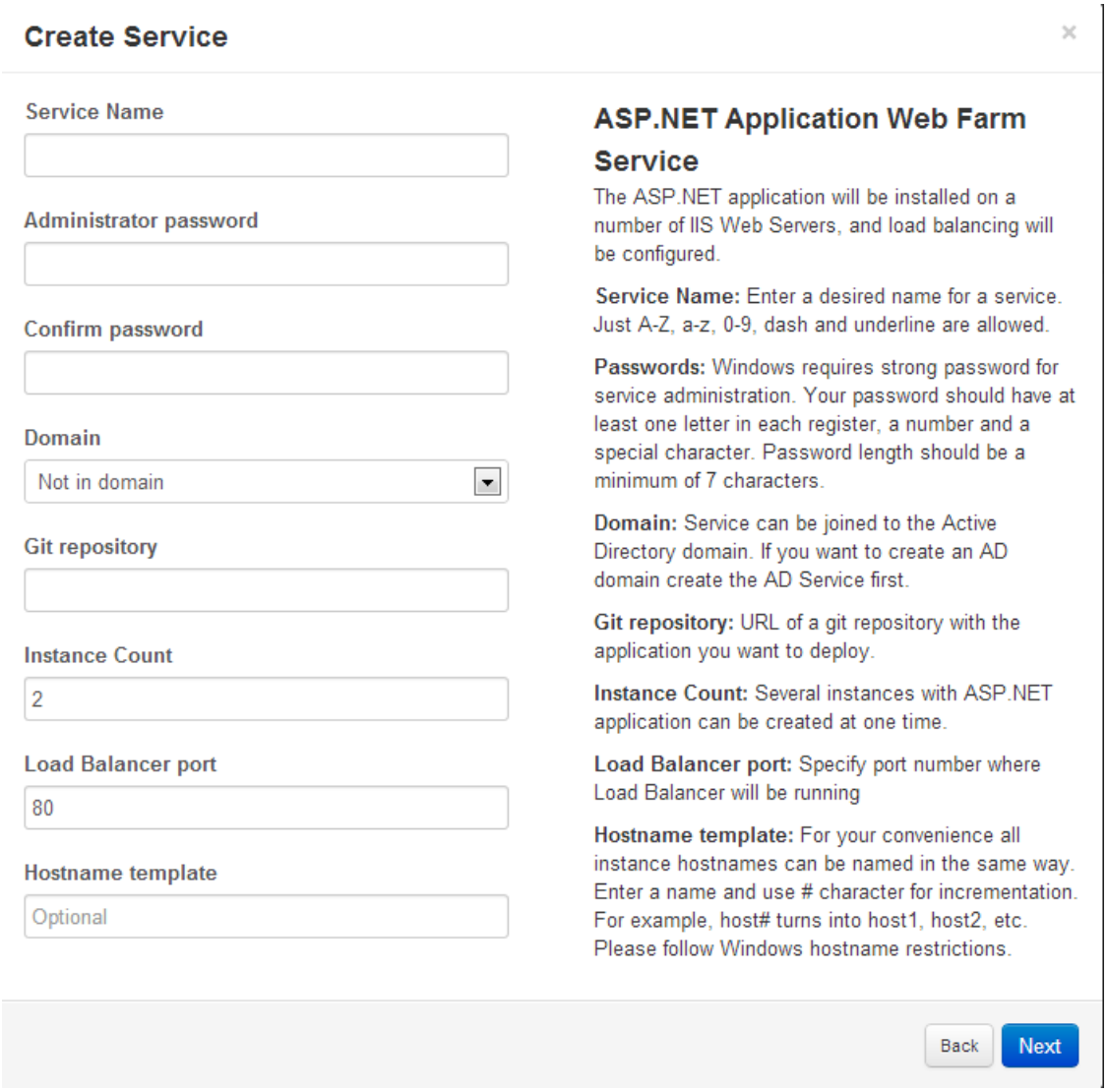
Internet Information Web Farm Service



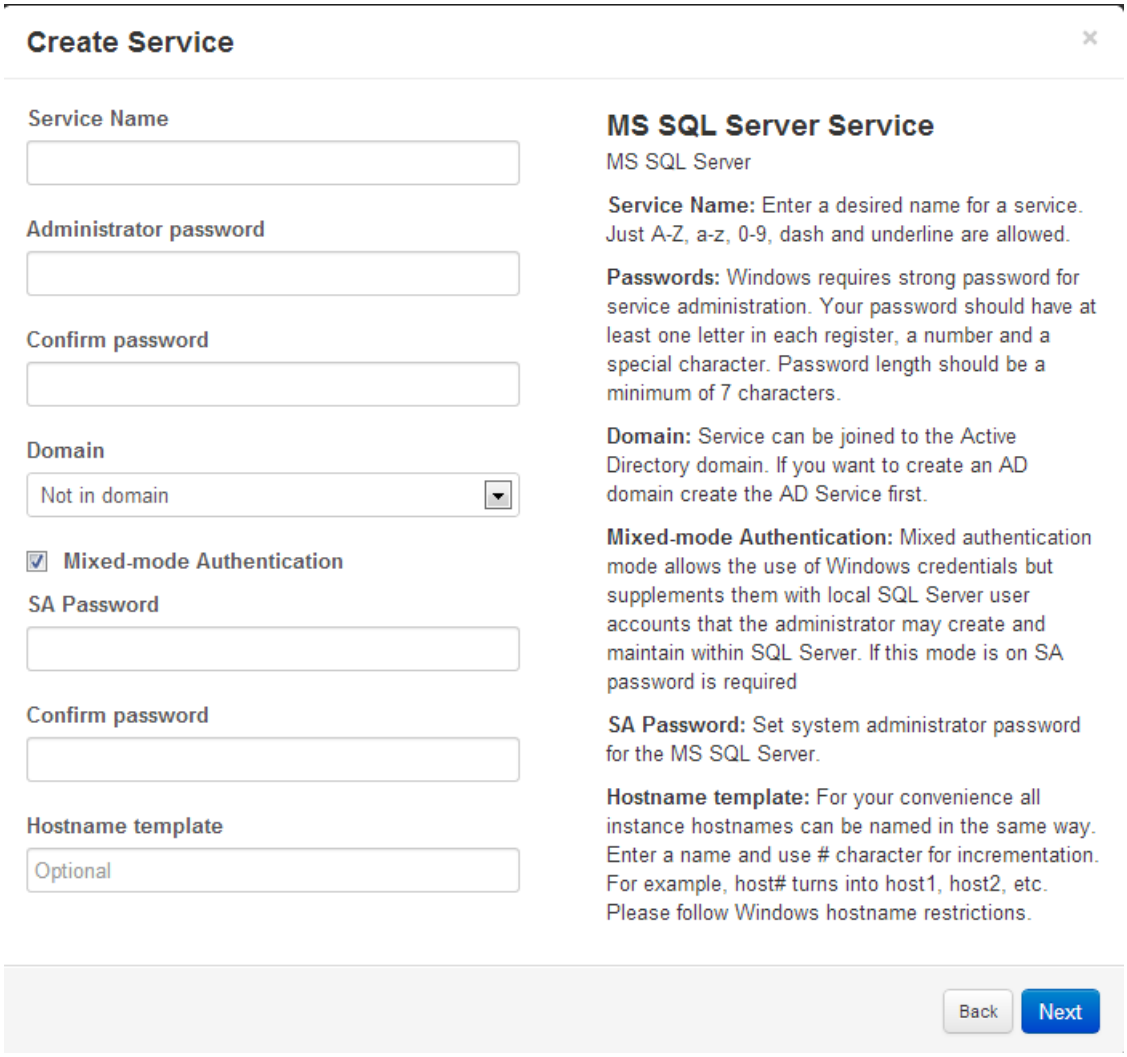
ASP.NET Service



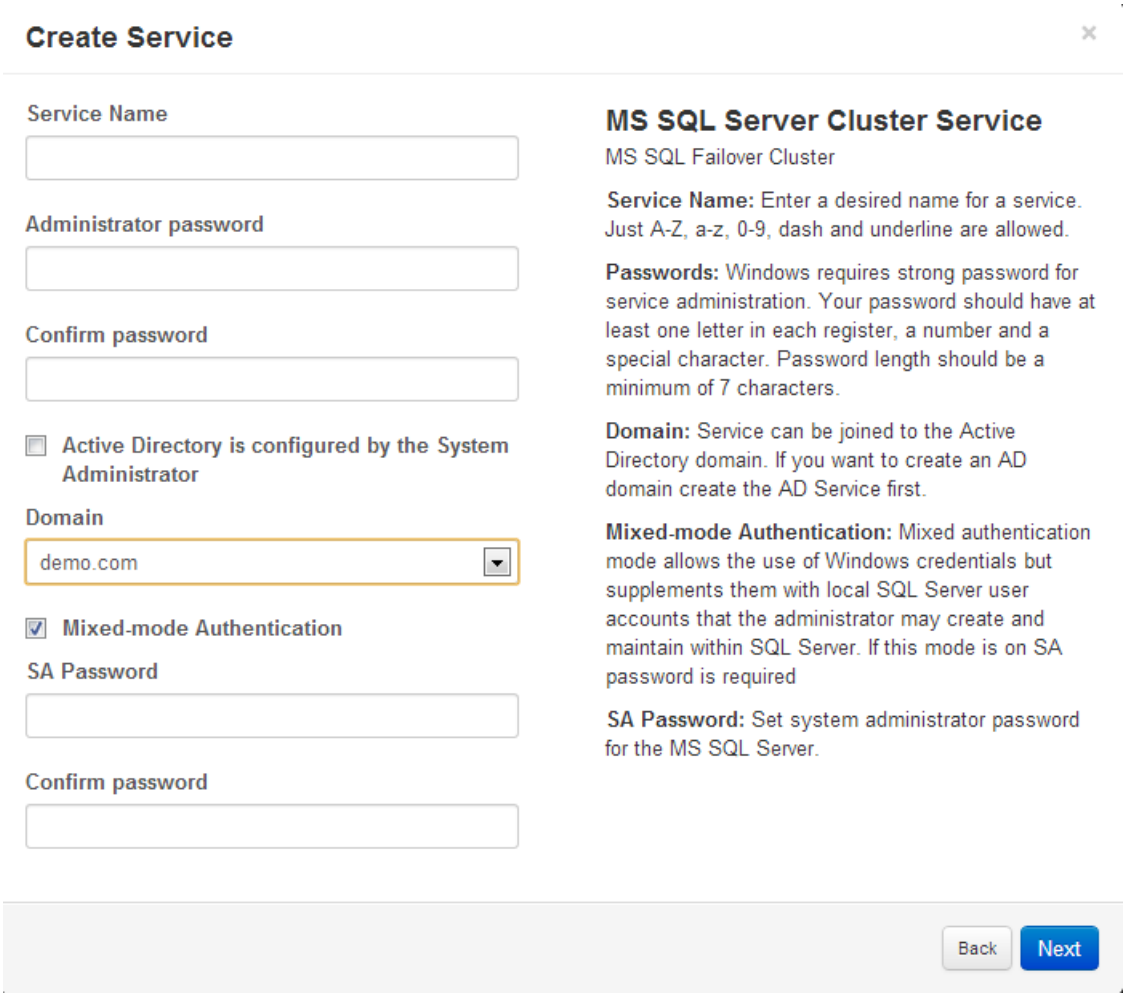
ASP.NET Farm Service

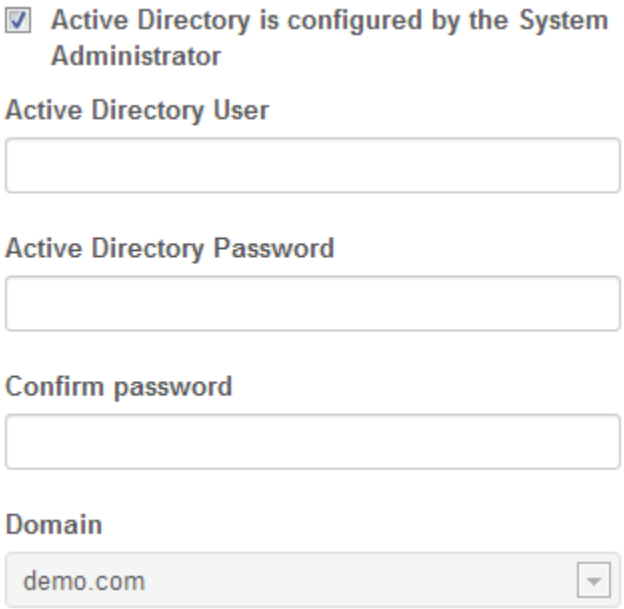


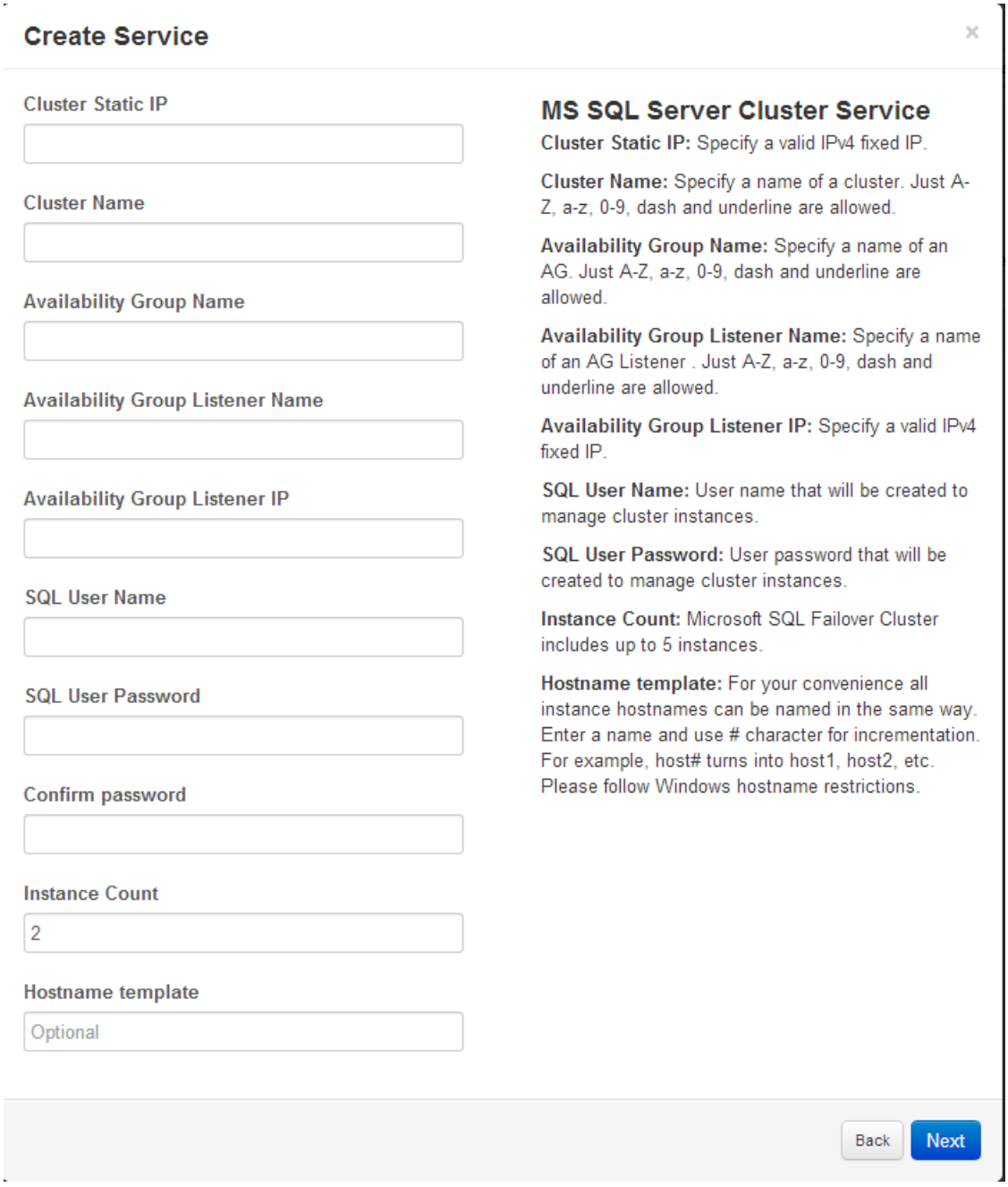
MS SQL Service



SQL Server Failover Cluster

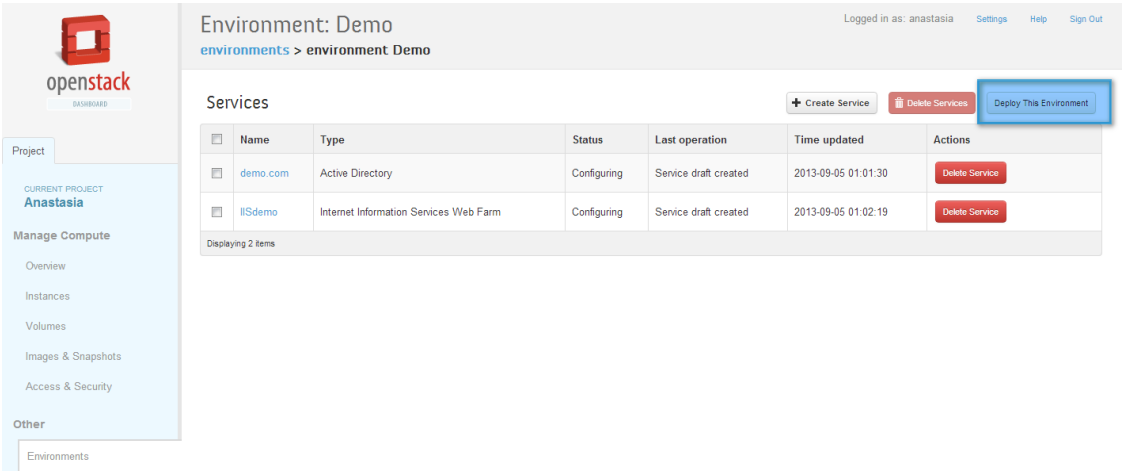




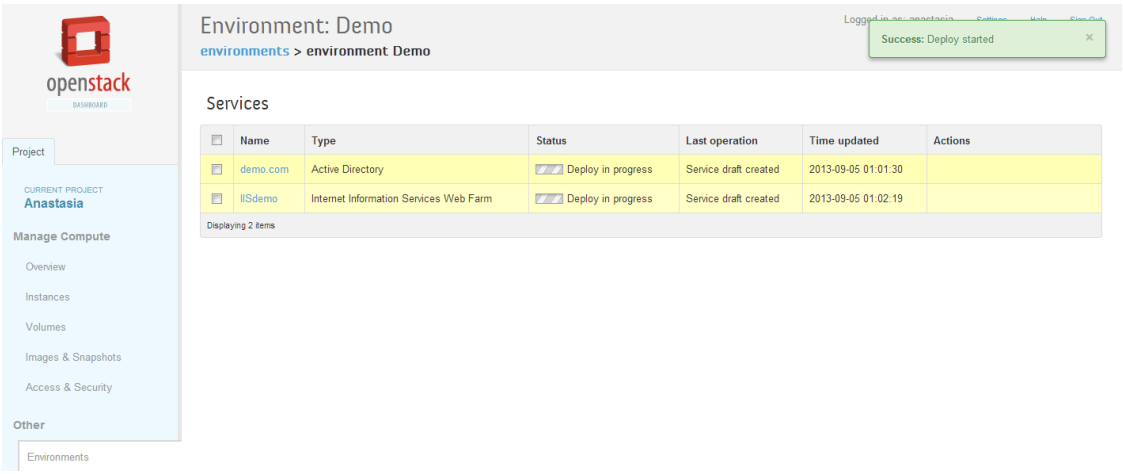


Deploying environment

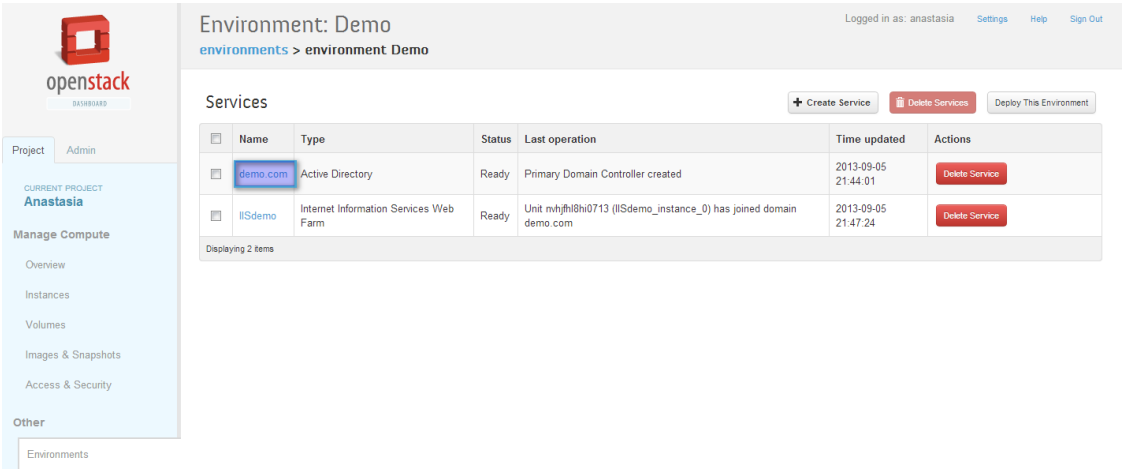
Once all services are prepared you can send environment to deploy. Just press the "Deploy Environment" button.



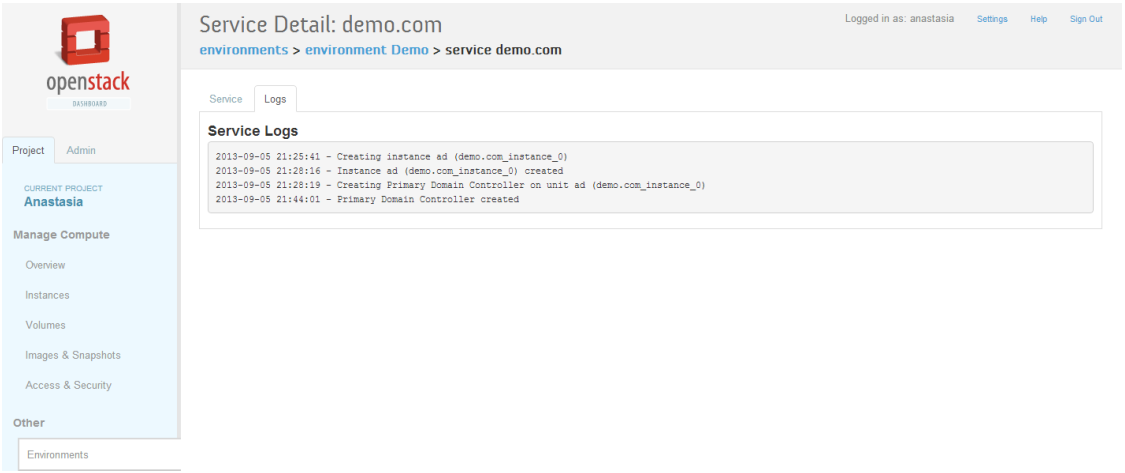
And you'll see a message about successful start of deploying your services in Openstack. Since now all you have to do is just wait for a little bit while Murano installing and configuring your services.



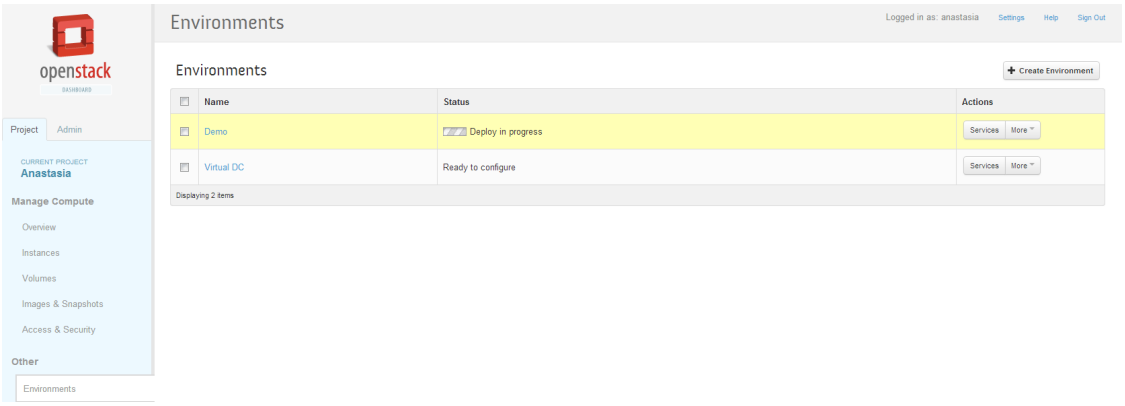
You can monitor deploying process. Just go to the Log tab on service detailed page where you can get by clicking on the service name.



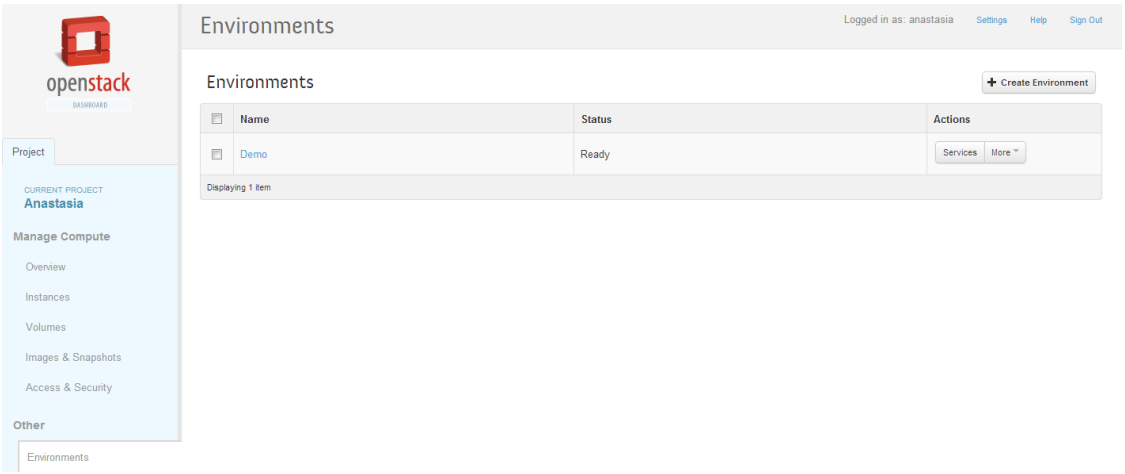
And now you can see installation progress.



As long as installation and configuration are in progress environment is in *Deploying* state. Depending on how many services you are deploying or how many nodes in your cluster, process of spawning instances, installation and post installation settings takes from 10 minutes up to one hour.

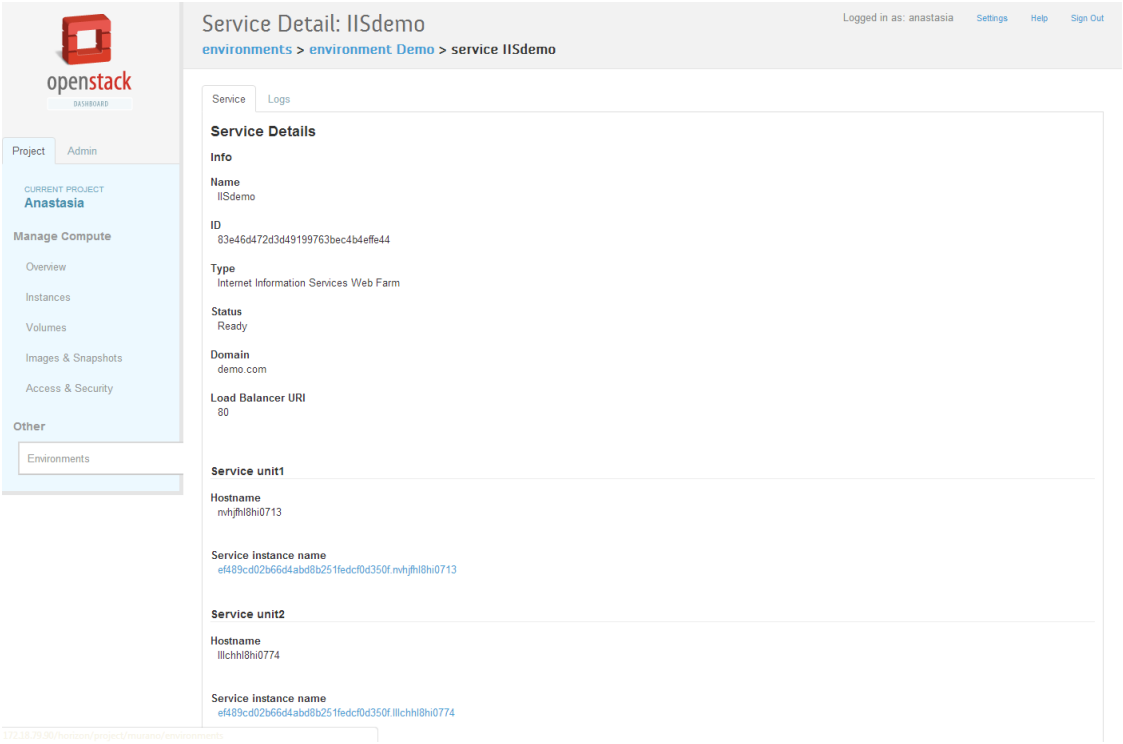


If installation process finished without any errors environment changes its status to *Ready:*



Working with deployed environment

Congratulations! After some time waiting you are able to operate with the services. To get information about installed services navigate to service detailed page. To do that click on the environment name and then on the name of the service you what to know about.



Now you are seeing general information about the service in terms of Murano Environment. To get information about the instance in Openstack terms follow the link on service instance name.

You can login to the virtual machine directly from the horizon (if you Openstack installation allows you) or by RDP protocol.

There are more things you can do with Murano Environment:

- Add new services and deploy it again;
- Delete outdated and unnecessary environments or services;
- Browse deployment history and service installation logs;
- Rename your environment.

Redeploying Murano Environment

Murano gives opportunity to supplement already deployed environment. If you deployed the Active Directory service and want to create any other service just create desired service prototype and click on the "Deploy Environment" button. During service prototype creation you can join this service to the existent Active Directory domain.

Deleting

Services as well as environments can be easily deleted.

- To delete an environment go to the environment index page and click "More" -> "Delete Environment" in Actions column of ready to delete environment.

  Environment deletion means to kill all services with instances on which they are installed. Instances will be scheduled to delete right after you choose the "Delete Environment" action.

- To delete a service go service list page and click the "Delete Service" button in Actions column. **Note:** If you are deleting service that was already deployed you'll need to *Deploy* the environment again by pressing corresponding button. In case you want to delete service prototype - it has *"Service draft created"* in the *Last operation* column (see the screenshot below) - changes applies right away.

Browsing Murano Deployment

Since Murano Environment can be deployed many times you may want to see the history of its deployments. To do that click the "More-> Show deployments" button on environments index page:

From this page it's easy to see how many times and when Murano Environment was deployed:

For each deployment you can get a detailed information by clicking the "Show Details" button. You always can go back to any level using navigation string at the page header. From here you can observe what services were installed during deployment:

Also deployment logs are available at the "Logs" tab:

Renaming Murano Environment

It's possible to change name of your environment: just click the "More-> Edit Environment" button on environment index page:

Environment name is not involved in service creation process so you can use spaces and any other characters you want.

Troubleshooting

How to debug OpenStack Heat?

If you can execute Heat command via console interface - all good. It is the most simple way to check Heat state on the node - jest execute CLI command 'heat list'. See more information about Heat in openstack wiki page [https://wiki.openstack.org/wiki/Heat/TroubleShooting]

If 'heat list' returns 503 error

It is means that OpenStack Heat configuration files contains incorrect credentials. Need to set 'user' = 'heat' and change passwords 'verybadpass' in all configuration files from directory /etc/heat/

If 'heat list' hangs up

Sometimes ypu can see that 'heat list' hangs up. The root of this problem - connection to the rabbitMQ.

How I can connect to LoadBalancer instance in Server Farms?

First of all you should have KeyPair file 'murano-lb-key', you can create this file using commands

```
nova keypair-add murano-lb-key > murano-lb-key.priv
chmod 600 murano-lb-key.priv
```

And after that you should create server farms with this KeyPair. The second step is to 'how to connect to VM with LoadBalancer':

```
ssh -i murano-lb-key.priv root@10.0.0.3
```

Murano dashboard can not connect to Murano API. How I can fix it?

This is problem has two ways to fix: Add string

```
MURANO_API_URL='http://localhost:8082'
```

to file /etc/openstack-dashboard/local_settings (or /etc/openstack-dashboard/local_settings.py - it is depends on OpenStack configuration) and after that need to restart web server. Add keystone endpoints for Murano API

```
keystone service-create --name muranoapi --type murano --description "Murano-Api S
keystone endpoint-create --region RegionOne --service-id
--publicurl http://localhost:8082 --internalurl http://localhost:8082 --adminurl h
```

Murano API Service does not work on CentOS 6.x. WebUI can not connect to this service. How to fix this?

The problem in pip lib routes. Need to upgrade this lib and restart Murano API:

```
python-pip install routes --upgrade
initctl stop murano-api
initctl start murano-api
```

Error 'Unexpected state' during the deployment of Web Farms. What the problem?

Sometimes we can see in logs of the deployments:

```
2013-08-06 09:10:07 - Unable to deploy instance ipkrmhk0vzq4b6 (asp-farm_instance_
2013-08-06 09:10:07 - Unable to create a Server Farm load balancer on unit ipkrmhk
```

The root of this problem in incorrect configuration - Heat can not create Load Balancer instance. Please, remember that you should have admin access for project in OpenStack to deploy LoadBalancer and also, you should have KeyPair with default name 'murano-lb-key'.

Error in Murano API logs 'No module named helpers.token_sanitizer'

This is problem with pip version. Need to install pip 1.4 and after that reinstall murano-client, murano-common and murano-api.