

Getting Started

Development is done on the SDSC Cloud. To access the cloud dashboard, follow [this link](#). You will log in with the username and password given to you by NSG.

Adding an SSH Key

Before launching any instances, you should upload an SSH key so that you can authenticate with them. Navigate to the **Key Pairs** page by going to **Project -> Compute -> Key Pairs** in the navigation menu on the left.

The screenshot shows the OpenStack dashboard interface. The top navigation bar includes the OpenStack logo, a project dropdown set to 'nsg-dev', and a user profile 'tbpetersen@sdsc.edu'. The left-hand navigation menu has several items, with 'Project' and 'Compute' highlighted by red boxes, and 'Key Pairs' highlighted by a blue box. The main content area is titled 'Key Pairs' and includes a search bar with the placeholder text 'Click here for filters or full text search.' To the right of the search bar are three buttons: '+ Create Key Pair', 'Import Public Key', and 'Delete Key Pairs'. Below these buttons, a table displays two key pairs:

Name	Type	Actions
Surface Windows Key	ssh	Delete Key Pair
Trevor Surface id_rsa	ssh	Delete Key Pair

You can either create a key pair using the dashboard or upload an existing public key.

Create a Key Pair

Click **Create Key Pair** on the right side of the screen. Give it any name that you would like and select **SSH Key** as the key type. Finally, click **Create Key Pair**. Your browser will automatically download the private key for you.

Upload a Public Key

Click **Import Public Key** on the right side of the screen. Give it any name that you would like and select **SSH Key** as the key type. Then either select the public key file or paste its contents into the text box. Finally, click **Import Public Key**.

Adding an SSH Security Group

Before you are able to use your SSH key to authenticate with an instance, you will need to set up a security group that will allow SSH connections.

Navigate to the **Security Groups** page. You can do this by going to **Project -> Network -> Security Groups** in the navigation menu on the left.

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+ Create Security Group

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Displaying 2 items

<input type="checkbox"/>	Name	Security Group ID	Description	Actions
<input type="checkbox"/>	SSH	e285019b-19f0-4420-8dea-92ba8584fbdd		Manage Rules
<input type="checkbox"/>	default	0ab162ae-f91c-4566-8fd3-75e67a7b1ddf	Default security group	Manage Rules

Displaying 2 items

Click **Create Security Group** on the right side of the screen. In the popup window, name the security group "SSH" and then click **Create Security Group**. Next, click **Add Rule** on the right side of the screen. In the **Rule** dropdown, select **SSH**. Click **Add** to add the rule.

Launching a Development Instance

Development instances on the SDSC Cloud come prepackaged with software for development.

Navigate to the **Instances** page. You can do this by going to **Project** -> **Compute** -> **Instances** in the navigation menu on the left.

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Instance ID =

Filter

Launch Instance

Instance Name	Image Name	IP Address	Flavor	Key Pair	Status	Availability Zone	Task	Power State	Age	Actions
No items to display.										

Click **Launch Instance** on the right side of the screen.

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Instance ID = Filter **Launch Instance**

Instance Name	Image Name	IP Address	Flavor	Key Pair	Status	Availability Zone	Task	Power State	Age	Actions
No items to display.										

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In the popup window, give your new instance any name you would like.

Launch Instance

Please provide the initial hostname for the instance, the availability zone where it will be deployed, and the instance count. Increase the Count to create multiple instances with the same settings.

Instance Name *

example_instance

Description

Availability Zone

West-Datacenter

Count *

1

Total Instances (10 Max)

10%

0 Current Usage

1 Added

9 Remaining

Details

Source *

Flavor *

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Cancel < Back Next > Launch Instance

Click on **Source** on the left. In the dropdown for **Select Boot Source**, select **Image**. Under the **Available** section, select **dev_env_0.0.1** by clicking on the up arrow at the end of the row.

Launch Instance

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Instance source is the template used to create an instance. You can use an image, a snapshot of an instance (image snapshot), a volume or a volume snapshot (if enabled). You can also choose to use persistent storage by creating a new volume.

Select Boot Source

Image

Create New Volume

Yes

No

Volume Size (GB) *

1

Delete Volume on Instance Delete

Yes

No

Device Name

vda

Allocated

Name	Updated	Size	Type	Visibility
Select an item from Available items below				

Available 10

Select one

Q

Click here for filters or full text search.

x

Name	Updated	Size	Type	Visibility	
> CentOS 7.8 x86_64	4/28/20 9:49 AM	8.00 GB	raw	Public	↑
> CentOS 8.1 x86_64	3/13/20 10:16 AM	10.00 GB	raw	Public	↑
> dev_env_0.0.1	3/31/20 9:37 AM	20.00 GB	raw	Shared	↑

Click on **Flavor** on the left. Select the flavor with the CPU and RAM configuration that meets your needs by clicking on the up arrow at the end of the row. For this example, I will use **m1.medium**.

Launch Instance

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Flavors manage the sizing for the compute, memory and storage capacity of the instance.

Allocated

Name	VCPUS	RAM	Total Disk	Root Disk	Ephemeral Disk	Public
Select an item from Available items below						

Available 16

Select one

Click here for filters or full text search.

Name	VCPUS	RAM	Total Disk	Root Disk	Ephemeral Disk	Public	
> c1.large	2	4 GB	20 GB	20 GB	0 GB	Yes	⬆
> m1.medium	1	4 GB	20 GB	20 GB	0 GB	Yes	⬆
> c1.xlarge	4	8 GB	20 GB	20 GB	0 GB	Yes	⬆
> m1.large	2	8 GB	20 GB	20 GB	0 GB	Yes	⬆
> m1.xlarge	4	16 GB	20 GB	20 GB	0 GB	Yes	⬆
> r1.large	2	16 GB	20 GB	20 GB	0 GB	Yes	⬆
> c1.2xlarge	8	16 GB	20 GB	20 GB	0 GB	Yes	⬆
> m1.2xlarge	8	32 GB	20 GB	20 GB	0 GB	Yes	⬆
> 1xe.medium	1	32 GB	20 GB	20 GB	0 GB	Yes	⬆

Click on **Security Groups** on the left. Select the **SSH** security group that you created earlier by clicking on the up arrow at the end of the row.

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Select the security groups to launch the instance in.

▼ Allocated 1

Name	Description
> default	Default security group

▼ Available 2

Select one or more

Q

Click here for filters or full text search.

×

Name	Description
> test	
> SSH	

✕ Cancel

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Launch Instance

Click on **Key Pair** on the left. Select the SSH Key that you created earlier by clicking on the up arrow at the end of the row.

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A key pair allows you to SSH into your newly created instance. You may select an existing key pair, import a key pair, or generate a new key pair.

+ Create Key Pair

Import Key Pair

Allocated

Displaying 0 items

Name	Type
Select a key pair from the available key pairs below.	

Displaying 0 items

Available 2

Select one

Click here for filters or full text search.

Displaying 2 items

Name	Type
Surface Windows Key	ssh
Trevor Surface id_rsa	ssh

Displaying 2 items

Cancel

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Launch Instance

Click **Launch Instance** on the bottom right of the popup to finish.

Getting a public IP Address

Your newly created instance will not be able to be reached until you give it a public IP address by **Associating a Floating IP** with it. From the instances page, find the instance that you would like to add an IP to. Click the dropdown arrow at the end of the row and click **Associate Floating IP**.

In the **IP Address** field, click the + at the end.

In the popup window, click **Allocate IP**. Then click **Associate** in the bottom right of the popup window.

Your instance should now be accessible at the associated IP address. Note that this is the IP address that starts with **132.*** not **10.***.

Connecting to an Instance

You should be able to connect to your instances using the SSH key that you selected when created the instance.

For help connecting from Mac or Linux, look [here](#). For help connecting from Windows, look [here](#).

Shelving an Instance

Instances should only be kept running when they are being used. When instances are not in use, they should be *shelved*. Shelved instances are essentially paused until they are needed again. Data stays on shelved instances and is not lost.

From the instances page, find the instance that you would like to shelve. Click the dropdown arrow at the end of the row and click **Shelve Instance**.

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Displaying 1 item

	Instance Name	Image Name	IP Address	Flavor	Key Pair	Status	Availability Zone	Task	Power State	Age	Actions
<input type="checkbox"/>	example_instance	dev_env_0.0.1	10.128.21.180, 132.249.238.76	m1.medium	Trevor Surface id_rsa	Active	West-Datacenter	None	Running	7 minutes	<div>Create Snapshot</div> <div>Disassociate Floating IP</div> <div>Attach Interface</div> <div>Detach Interface</div> <div>Edit Instance</div> <div>Attach Volume</div> <div>Detach Volume</div> <div>Update Metadata</div> <div>Retrieve Password</div> <div>Edit Security Groups</div> <div>Edit Port Security Groups</div> <div>Console</div> <div>View Log</div> <div>Rescue Instance</div> <div>Pause Instance</div> <div>Suspend Instance</div> <div>Shelve Instance</div> <div>Resize Instance</div> <div>Lock Instance</div> <div>Soft Reboot Instance</div>

Unshelving an Instance

From the instances page, find the instance that you would like to unshelve. Click the dropdown arrow at the end of the row and click **Unshelve Instance**.

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Displaying 1 item

	Instance Name	Image Name	IP Address	Flavor	Key Pair	Status	Availability Zone	Task	Power State	Age	Actions
<input type="checkbox"/>	example_instance	-	10.128.21.180, 132.249.238.76	m1.medium	Trevor Surface id_rsa	Shelved Offloaded		None	Shut Down	13 minutes	<div>Disassociate Floating IP</div> <div>Edit Instance</div> <div>Update Metadata</div> <div>Edit Port Security Groups</div> <div>Unshelve Instance</div> <div>Lock Instance</div> <div>Delete Instance</div>

More Information and Guides

For more information and guides on how to use the SDSC cloud, see the [SDSC Cloud Wiki](#).