

How to Launch an EBS Optimized EC2 Instance with a Provisioned IOPS Volume

This demonstrates how to launch an EBS-Optimized EC2 Linux Instance using the provisioned IOPS volume.

A standard EC2 EBS (Elastic Block Store) volume will generally provide about 100 IOPS on an average. However, in comparison AWS has offered a new type of volume called Provisioned IOPS, which provides for a performance of up to 2000 IOPS.

An EBS-Optimized instance is provisioned with dedicated throughput to EBS. Use the EBS optimized instance for maximum performance and full utilization of the IOPS provisioned on an EBS volume.

Login to your AWS console.

1. Select the EC2 Service. It launches the EC2 dashboard. Go to the Instances section and click on “Launch Instance” to launch an EC2 instance.



2. The Launch wizard has multiple options, such as “Classic Wizard”, “Quick Launch” and “AWS Marketplace”. Quick Launch contains pre-configured steps, whereby it will skip some steps and launch with the default configurations. AWS Marketplace is used to launch the instance from the AWS online store.

Select “Classic Wizard” and click on “Continue”.

Create a New Instance

Cancel

Select an option below:

Classic Wizard

Launch an On-Demand or Spot instance using the classic wizard with fine-grained control over how it is launched.

Quick Launch Wizard

Launch an On-Demand instance using an editable, default configuration so that you can get started in the cloud as quickly as possible.

AWS Marketplace

AWS Marketplace is an online store where you can find and buy software that runs on AWS. Launch with 1-Click and pay by the hour.

Submit Feedback

Getting Started Guide

Launch with the Classic Wizard

Request Instances Wizard

Choose an Amazon Machine Image (AMI) from one of the tabbed lists below by clicking its Select button.

Quick start

My AMIs

Community AMIs

Basic 32-bit Amazon Linux AMI 2011.02.1 Beta (AMI Id: ami-8c1fccc5)

Amazon Linux AMI Base 2011.02.1, EBS boot, 32-bit architecture with Amazon EC2 AMI Tools.

Root Device Size: 6 GB

Select

Basic 64-bit Amazon Linux AMI 2011.02.1 Beta (AMI Id: ami-0e1fccc7)

Amazon Linux AMI Base 2011.02.1, EBS boot, 64-bit architecture with Amazon EC2 AMI Tools.

Root Device Size: 8 GB

Select

Red Hat Enterprise Linux 6.1 32-bit (AMI Id: ami-0c0b42b5)

Red Hat Enterprise Linux version 6.1, EBS boot, 32-bit architecture.

Root Device Size: 7 GB

Select

Red Hat Enterprise Linux 6.1 64-bit (AMI Id: ami-5e037b37)

Red Hat Enterprise Linux version 6.1, EBS boot, 64-bit architecture.

Root Device Size: 6 GB

Select

SUSE Linux Enterprise Server 11 64-bit (AMI Id: ami-e4a2578d)

SUSE Linux Enterprise Server 11 Service Pack 1 basic install, EBS boot, 64-bit architecture with Amazon EC2 AMI Tools preinstalled, Apache 2.2, MySQL 5.0, PHP 5.3, Ruby 1.8.7, and Rails 2.3.

Root Device Size: 15 GB

Select

Free tier eligible if used with a micro instance. See AWS free tier for complete details and terms.

Continue

3. Select the AMI (Amazon Machine Image). The AWS Launch screen provides multiple options to select AMI. The user can select the AMIs provided by AWS (Standard OS). Select “My AMIs” to launch the instance from the user’s existing AMIs or select community AMIs to launch the instance from various providers (may or may not be authorized by AWS).

Request Instances WizardCancel

CHOOSE AN AMI

INSTANCE DETAILS

CREATE KEY PAIR

CONFIGURE FIREWALL

REVIEW














Choose an Amazon Machine Image (AMI) from one of the tabbed lists below by clicking its **Select** button.


Quick Start

My AMIs

Community AMIs

AWS Marketplace

	Amazon Linux AMI 2012.09 The Amazon Linux AMI 2012.09 is an EBS-backed, PV-GRUB image. It includes Linux 3.2, AWS tools, and repository access to multiple versions of MySQL, PostgreSQL, Python, Ruby, and Tomcat. Root Device Size: 8 GB	<input checked="" type="radio"/> 64 bit <input type="radio"/> 32 bit	 Select 
	Red Hat Enterprise Linux 6.3 Red Hat Enterprise Linux version 6.3, EBS-boot. Root Device Size: 7 GB	<input checked="" type="radio"/> 64 bit <input type="radio"/> 32 bit	Select 
	SUSE Linux Enterprise Server 11 SUSE Linux Enterprise Server 11 Service Pack 2 basic install, EBS boot with Amazon EC2 AMI Tools preinstalled; Apache 2.2, MySQL 5.0, PHP 5.3, and Ruby 1.8.7 Root Device Size: 10 GB	<input checked="" type="radio"/> 64 bit <input type="radio"/> 32 bit	Select 
	Ubuntu Server 12.04.1 LTS Ubuntu Server 12.04.1 LTS, with support available from Canonical (http://www.ubuntu.com/cloud/services). Root Device Size: 8 GB	<input checked="" type="radio"/> 64 bit <input type="radio"/> 32 bit	 Select 
	Ubuntu Server 11.10 Ubuntu Server 11.10 with support available from Canonical		 Select 

 Free tier eligible if used with a micro instance. See [AWS free tier](#) for complete details and terms.

4. Provide the instance details, such as the Instance Type, Availability Zone and Number of Instances. The availability zone depends on the current region. If the user is launching an EBS Optimized Instance, select the checkbox. The checkbox will be enabled only for the selected instance types.

Request Instances Wizard

Cancel

CHOOSE AN AMI

INSTANCE DETAILS

CREATE KEY PAIR

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REVIEW

Provide the details for your instance(s). You may also decide whether you want to launch your instances as "on-demand" or "spot" instances.

Number of Instances: **Instance Type:** T1 Micro (t1.micro, 613 MiB)

Launch as an EBS-Optimized instance (additional charges apply): ☐ Not supported for this instance type

Launch Instances

EC2 Instances let you pay for compute capacity by the hour with no long term commitments. This transforms what are commonly large fixed costs into much smaller variable costs.

Launch into: ☒ EC2 ☐ VPC

Availability Zone: No Preference

Request Spot Instances

< Back

Continue

5. Select the Large instance type and the checkbox will be enabled. Select the checkbox to launch an instance as an EBS Optimized Instance.

Click on "Continue".

Request Instances Wizard Cancel

CHOOSE AN AMI **INSTANCE DETAILS** CREATE KEY PAIR CONFIGURE FIREWALL REVIEW

Provide the details for your instance(s). You may also decide whether you want to launch your instances as "on-demand" or "spot" instances.

Number of Instances: **Instance Type:**

Launch as an EBS-Optimized instance (additional charges apply): ☒

Launch Instances

EC2 Instances let you pay for compute capacity by the hour with no long term commitments. This transforms what are commonly large fixed costs into much smaller variable costs.

Launch into: ☒ EC2 ☐ VPC

Availability Zone:

Request Spot Instances

[< Back](#) [Continue >](#)

6. Provide the Kernel ID and RAM Disk ID.

Request Instances Wizard

Cancel

CHOOSE AN AMI

INSTANCE DETAILS

CREATE KEY PAIR

CONFIGURE FIREWALL

REVIEW

Number of Instances:

1

Availability Zone:

No Preference

Advanced Instance Options

Here you can choose a specific kernel or RAM disk to use with your instances. You can also choose to enable CloudWatch Detailed Monitoring or enter data that will be available from your instances once they launch.

Kernel ID:

Use Default

RAM Disk ID:

Use Default

Monitoring:

☐ Enable CloudWatch detailed monitoring for this instance
(additional charges will apply)

User Data:

as text

as file

(Use shift+enter to insert a newline)

☐ base64 encoded

Termination Protection:

☐ Prevention against accidental termination.

Shutdown Behavior:

Stop

IAM Role:

None

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Continue

7. Provide the storage related information. In order to launch an EBS optimized instance with a Provisioned IOPS EBS volume, click on “Edit” to modify the volume type and size.

Request Instances Wizard

Cancel

CHOOSE AN AMI

INSTANCE DETAILS

CREATE KEY PAIR

CONFIGURE FIREWALL

REVIEW

Number of Instances:

1

Availability Zone:

No Preference

Storage Device Configuration

Your instance will be launched with the following storage device settings. Edit these settings to add EBS volumes, instance store volumes, or edit the settings of the root volume.

Type	Device	Snapshot ID	Size	Volume Type	IOPS	Delete on Termination
Root	/dev/sda1	snap-921bb2b4	8	standard		true

0 EBS Volumes

0 Ephemerals

Edit

Back

Continue

8. Select the volume type as "Provisioned IOPS" and provide the IOPS from 100-2000. The IOPS optimized EBS volume size should be a minimum of 10 GB for a Linux Instance. Provide the Root Volume Size (more than 10 GB). If the user wants the root volume to be deleted on instance termination, select "Delete On termination". Save all the changes made and Click on "Continue".

Request Instances Wizard

Cancel

CHOOSE AN AMI

INSTANCE DETAILS

CREATE KEY PAIR

CONFIGURE FIREWALL

REVIEW

Number of Instances: 1

Availability Zone: No Preference

Storage Device Configuration

Your instance will be launched with the following storage device settings. Edit these settings to add EBS volumes, instance store volumes, or edit the settings of the root volume.

Root Volume

EBS Volumes

Instance Store Volumes

Optionally edit the the root volume of your instance and then click Save.

Volume Size: 10 GiB

Volume Type: Provisioned IOPS (io1)

IOPS: 100

Device: /dev/sda1

Delete on Termination: ☒

✖ Volume size must be at least 10GiB

✔ Save

Type	Device	Snapshot ID	Size	Volume Type	IOPS	Delete on Termination
Root	/dev/sda1	snap-921bb2b4	8	standard		true

0 EBS Volumes

0 Ephemerals

< Back

Continue

9. Provide the tags for the AWS instance. Tagging is very useful when the user wants to track the cost of a particular instance / service. Click on “Continue”.

Request Instances Wizard

Cancel

CHOOSE AN AMI



INSTANCE DETAILS

CREATE KEY PAIR

CONFIGURE FIREWALL

REVIEW

Add tags to your instance to simplify the administration of your EC2 infrastructure. A form of metadata, tags consist of a case-sensitive key/value pair, are stored in the cloud and are private to your account. You can create user-friendly names that help you organize, search, and browse your resources. For example, you could define a tag with key = Name and value = Webserver. You can add up to 10 unique keys to each instance along with an optional value for each key. For more information, go to [Using Tags](#) in the *EC2 User Guide*.

Key (127 characters maximum)	Value (255 characters maximum)	Remove
Name	EBS Optimized Instance	
		

[Add another Tag](#). (Maximum of 10)

Back

Continue

10. For the security of the instance, select the existing key-pair or create a new key-pair. Continue once the key pair has been created / selected.

Request Instances Wizard

Cancel

CHOOSE AN AMI

INSTANCE DETAILS

CREATE KEY PAIR

CONFIGURE FIREWALL

REVIEW

Public/private key pairs allow you to securely connect to your instance after it launches. For Windows Server Instances, a Key Pair is required to set and deliver a secure encrypted password. For Linux Server Instances, a key pair will allow you to SSH into your instance.

To create a key pair, enter a name and click **Create & Download your Key Pair**. You will then be prompted to save the private key to your computer. Note, you only need to generate a key pair once - not each time you want to deploy an Amazon EC2 instance.

Choose from your existing Key Pairs

Your existing Key Pairs*:

/ 2

Create a new Key Pair

Proceed without a Key Pair

Back

Continue

11. Select the security group. The security group provides the virtual firewall for the instance. Click on “Continue”.

The screenshot shows the 'Request Instances Wizard' at the 'CONFIGURE FIREWALL' step. The wizard has five steps: CHOOSE AN AMI, INSTANCE DETAILS, CREATE KEY PAIR, CONFIGURE FIREWALL (current), and REVIEW. A progress bar indicates the current step. Below the steps, a text box explains that security groups determine network port access and offers to help create a new group. Two options are presented: 'Choose one or more of your existing Security Groups' (selected) and 'Create a new Security Group'. The first option includes a list box with 'sg-0c1c933c - default' selected. Below the list box, it says '(Selected groups: sg-0c1c933c)'. At the bottom, there are 'Back' and 'Continue' buttons. The 'Continue' button is highlighted with a red rectangle.

Request Instances Wizard Cancel

CHOOSE AN AMI INSTANCE DETAILS CREATE KEY PAIR **CONFIGURE FIREWALL** REVIEW

Security groups determine whether a network port is open or blocked on your instances. You may use an existing security group, or we can help you create a new security group to allow access to your instances using the suggested ports below. Add additional ports now or update your security group anytime using the Security Groups page.

☒ **Choose one or more of your existing Security Groups**

sg-0c1c933c - default
t1
t2

(Selected groups: sg-0c1c933c)

☐ **Create a new Security Group**

[< Back](#) **Continue**

12. Review all the details and click on “Launch”.

The screenshot shows the 'Request Instances Wizard' at the 'REVIEW' step. The wizard has five steps: CHOOSE AN AMI, INSTANCE DETAILS, CREATE KEY PAIR, CONFIGURE FIREWALL, and REVIEW (current). A progress bar indicates the current step. Below the steps, a text box asks the user to review the information and click 'Launch'. The information is organized into sections: AMI (Amazon Linux AMI ID ami-2a31bf1a), Name (Amazon Linux AMI 2012.09), Description (The Amazon Linux AMI 2012.09 is an EBS-backed, PV-GRUB image...), Number of Instances (1), Availability Zone (No Preference), Instance Type (M1 Large (m1.large)), Instance Class (On Demand), EBS-Optimized (Yes), Monitoring (Disabled), Termination Protection (Disabled), Tenancy (Default), Kernel ID (Use Default), Shutdown Behavior (Stop), RAM Disk ID (Use Default), Network Interfaces, Secondary IP Addresses, User Data, and IAM Role. There are 'Edit AMI', 'Edit Instance Details', and 'Edit Advanced Details' links. At the bottom, there are 'Back' and 'Launch' buttons. The 'Launch' button is highlighted with a red rectangle.

Request Instances Wizard Cancel

CHOOSE AN AMI INSTANCE DETAILS CREATE KEY PAIR CONFIGURE FIREWALL **REVIEW**

Please review the information below, then click **Launch**.

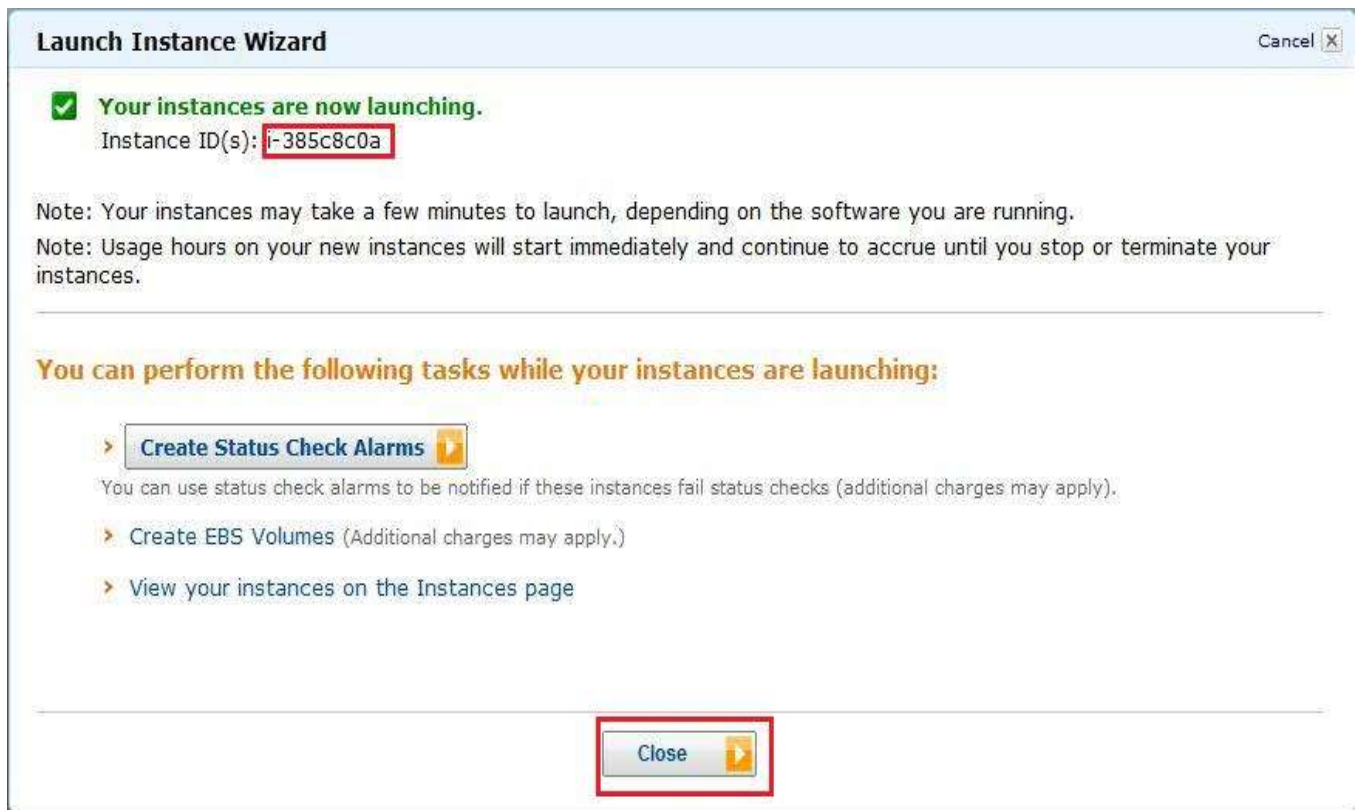
AMI: Amazon Linux AMI ID ami-2a31bf1a (x86_64)
Name: Amazon Linux AMI 2012.09
Description: The Amazon Linux AMI 2012.09 is an EBS-backed, PV-GRUB image. It includes Linux 3.2, AWS tools, and repository access to multiple versions of MySQL, PostgreSQL, Python, Ruby, and Tomcat. [Edit AMI](#)

Number of Instances: 1
Availability Zone: No Preference
Instance Type: M1 Large (m1.large)
Instance Class: On Demand [Edit Instance Details](#)
EBS-Optimized: Yes

Monitoring: Disabled **Termination Protection:** Disabled
Tenancy: Default
Kernel ID: Use Default **Shutdown Behavior:** Stop
RAM Disk ID: Use Default
Network Interfaces:
Secondary IP Addresses:
User Data:
IAM Role: [Edit Advanced Details](#)

[< Back](#) **Launch**

13. AWS will launch the instance and provide the user with the ID of the instance.



14. Go to the AWS EC2 console and it will display the new instance. The instance will be first in a pending state until it boots completely. It is advisable to connect to the instance once the status checks are in “2/2 Checks”.

Viewing: Running Instances All Instance Types Search											
	Name	Instance	AMI ID	Root Device	Type	State	Status Checks	Alarm Status	Monitoring	Security Group	Key Pair Name
<input type="checkbox"/>	empty	 i-385c8c0a	ami-2a31bf1a	ebs	m1.large	 running	 2/2 checks	none	basic	default	/

15. Go to Volumes from the EBS Dashboard. It will list the newly created IOPS Volume.

	Name	Volume ID	Capacity	Volume Type	Snapshot	Created	Zone	State	Alarm Status	Attachment
<input type="checkbox"/>	empty	 vol-711c1013	8 GiB	standard	snap-921bb2b4	2013-01-01T13:44:52	us-west-2a	 in-use	none	i-f818c8ca
<input type="checkbox"/>	empty	 vol-d3862aea	10 GiB	io1 (100)	snap-921bb2b4	2013-01-01T18:22:15	us-west-2a	 in-use	none	i-1e5d8d2c
<input type="checkbox"/>	empty	 vol-1a01c07a	30 GiB	standard	snap-94f7a8b2	2012-12-17T13:14:00	us-west-2c	 in-use	none	i-e29f5bd0