

Amazon Machine Image (AMI)



A template to configure new instances



EC2 - AMI

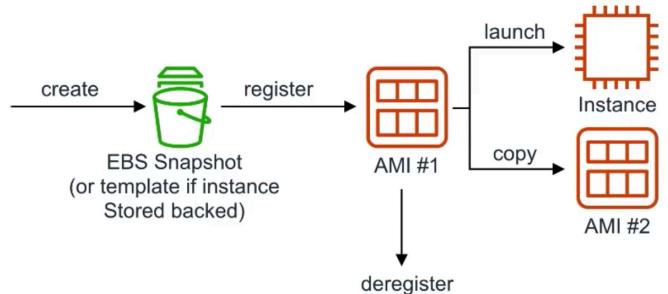
Amazon Machine Image (**AMI**) provides the information required to launch an instance.

You can **turn your EC2 instances into AMIs** so you can **create copies of your servers**

An AMI holds the following information:

- A template for the root volume for the instance (EBS Snapshot or Instance Store template) eg. an operating system, an application server, and applications
- Launch permissions that control which AWS accounts can use the AMI to launch instances.
- A block device mapping that specifies the volumes to attach to the instance when it's launched.

AMIs are **Region Specific!**





AMI - Use Cases

AMIs help you keep incremental changes to your OS, application code and system packages.



web-server-000

Ruby, Node, Postgres Client Installed



web-server-001

Redis for Sidekiq Installed



web-server-002

ImageMagick for Image Processing Installed



web-server-003

CloudWatch Agent Installed



Using **Systems Manager Automation** you can routinely patch your AMIs with security updates and bake those AMIs.



AMIs are used with **LaunchConfigurations**. When you want to roll out updates to multiple instances you make a copy of your LaunchConfiguration with new AMI



AWS Marketplace

The AWS Marketplace lets you **purchase subscriptions** to vendor maintained AMIs.

Microsoft Deep Learning AMI (Windows 2016)

★★★★★ (3) | 2019.08.16 | By Amazon Web Services

\$0.032 to \$36.816/hr incl EC2 charges + other AWS usage fees

Windows, Windows Server 2016 Base 10 | 64-bit (x86) Amazon Machine Image (AMI) | Updated: 8/26/19

The Deep Learning AMI is a base Windows image provided by Amazon Web Services for use on Amazon Elastic Compute Cloud (Amazon EC2). It is configured with Nvidia CUDA 8 and 9, ...

[More info](#)

[Select](#)

Security hardened AMIs are very popular. e.g. Center of Internet Security

CIS Amazon Linux Benchmark - Level 1

★★★★★ (0) | 2.0.0.13 Previous versions | By Center for Internet Security

\$0.02/hr or \$130/yr (26% savings) for software + AWS usage fees

Linux/Unix, Amazon Linux 1 | 64-bit (x86) Amazon Machine Image (AMI) | Updated: 8/28/19

This image of Amazon Linux is preconfigured by CIS to the recommendations in the associated CIS Benchmark. CIS Benchmarks are vendor agnostic, consensus-based security ...

[More info](#)

[Select](#)



AMI - Creating an AMI

You can **create an AMI** from an existing EC2 instance that's either **running** or **stopped**.

A screenshot of the AWS EC2 Instances page. A context menu is open over a row for an instance named 'east-2c'. The 'Actions' menu is expanded, showing options like 'Connect', 'Get Windows Password', 'Create Template From Instance', 'Launch More Like This', 'Instance State', 'Instance Settings', 'Image' (which is selected and has a submenu), 'Networking', and 'CloudWatch Monitoring'. The 'Image' submenu contains two items: 'Create Image' (highlighted with a dark gray background) and 'Bundle Instance (instance store AMI)'. The main table shows other instances with columns for 'Availability Zone', 'Instance State', and 'Status'.



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Choosing an AMI

AWS has hundreds of AMIs you can **search** and select from.

Community AMI are free AMIs maintained by the community
AWS Marketplace free or paid AMIs maintained by vendors

North Virginia

Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-0b69ea66ff7391e80 64-bit x86) / ami-09c61c4850b7465cb (64-bit Arm)

Select

Amazon Linux
Free tier eligible

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras.

64-bit (x86)
 64-bit (Arm)

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

AMIs have an **AMI ID**. AMIs are **region specific**. Will have different AMI ID per region.

Canada Central

Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-085edf38cedbea498

Select

Amazon Linux
Free tier eligible

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras.

64-bit (x86)

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

(4)
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Choosing an AMI

Amazon Machine Images can be selected based on:

- Region
- Operating System
- Architecture (32-bit or 64-bit)
- Launch Permissions
- Root Device Volume
 - Instance Store (Ephemeral Storage)
 - EBS Backed Volumes

▼ Architecture

32-bit (x86)
 64-bit (x86)
 64-bit (Arm)

▼ Root device type

EBS
 Instance store

▼ Region

Current Region (3436)
 All Regions (56795)

▼ Operating system

Amazon Linux
 Cent OS
 Debian
 Fedora
 Gentoo
 openSUSE
 Other Linux
 Red Hat
 SUSE Linux
 Ubuntu
 Windows

AMIs are categorized as either backed by Amazon EBS, or backed by Instance Store

 **Amazon Linux 2 A**

Amazon Linux Amazon Linux 2 comes
Free tier eligible Glibc 2.26, Binutils 2.2

Root device type: ebs

(A)
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EC2 - Copying an AMI

AMIs are region specific. If you want to use an AMI from another region. You need to **Copy the AMI** and then select the destination region.

The screenshot shows the AWS EC2 console interface. In the top left, there's a blue 'Launch' button. Next to it is a 'Actions' button with a dropdown arrow. A dark gray dropdown menu is open, listing several options: 'Launch', 'Spot Request', 'Deregister', 'Register New AMI', 'Copy AMI' (which is highlighted in orange), 'Modify Image Permissions', 'Add/Edit Tags', and 'Modify Boot Volume Setting'. To the right of this menu, there are some search and filter fields.

The screenshot shows the 'Copy AMI' dialog box. At the top, it says 'AMI ami-033a3c7a98d9bcd0c will be copied to a new AMI. Set the new AMI settings below.' Below this, there are three input fields: 'Name', 'Description', and 'Encryption'. The 'Name' field has a placeholder 'ami-033a3c7a98d9bcd0c from ap-northeast-2 [create]' and a small info icon. The 'Description' field has a placeholder '[create]' and a small info icon. The 'Encryption' field has a placeholder 'None' and a small info icon. On the right side of the dialog, there's a dropdown menu titled 'Destination region*' with a checkmark next to it. The dropdown list contains many region names, with 'Canada (Central)' currently selected. At the bottom right of the dialog are 'Cancel' and 'Copy AMI' buttons.



AMI CheatSheet

- **Amazon Machine Image (AMI)** provides the information required to launch an instance.
- AMIs are region specific, if you need to use an AMI in another region you can copy an AMI into the destination region via **Copy AMI**
- You can **create an AMI** from an existing EC2 instance that's either **running** or **stopped**.
- **Community AMI** are free AMIs maintained by the community
- **AWS Marketplace** free or paid subscription AMIs maintained by vendors
- AMIs have an **AMI ID**. The same AMI eg. (Amazon Linux 2) will vary in both AMI ID and options eg. Architecture options in different regions
- **An AMI holds the following information:**
 - A template for the root volume for the instance (EBS Snapshot or Instance Store template) eg. an operating system, an application server, and applications
 - Launch permissions that control which AWS accounts can use the AMI to launch instances.
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