Maintaining High Availability with Auto Scaling

Overview

Auto Scaling allows you to scale your Amazon EC2 capacity up or down automatically according to conditions you define. With Auto Scaling, you can ensure that the number of Amazon EC2 instances you're using increases seamlessly during demand spikes to maintain performance and decreases automatically during demand lulls to minimize costs. Auto Scaling is particularly well suited for applications that experience hourly, daily, or weekly variability in usage.

The following step- by-step instructions help you create a template that defines your EC2 instances and create an Auto Scaling group to maintain the healthy number of instances at all times.

Create a Launch Configuration

A launch configuration specifies the type of EC2 instance that Auto Scaling creates for you. You create the launch configuration by including information such as the Amazon Machine Image (AMI) ID to use for launching the EC2 instance, the instance type, key pairs, security groups, and block device mappings, among other configuration settings.

To create a launch configuration

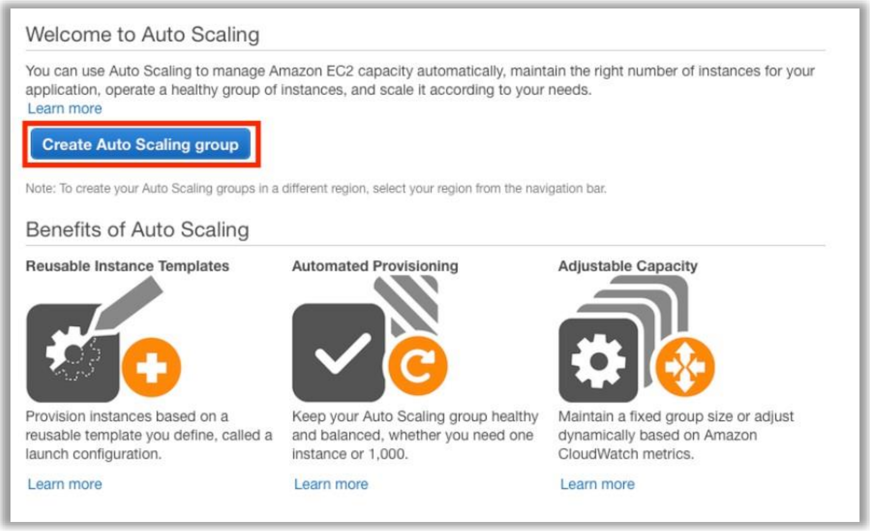
1. Login to AWS Management Console.

2. Select your preferred Region. The Auto Scaling resources that you create are tied to the region you specify and are not replicated across regions.

3. Click EC2 under Compute section. This will take you to EC2 dashboard.

4. On the navigation pane, under Auto Scaling, choose Launch Configurations.

5. On the Welcome to Auto Scaling page, choose Create Auto Scaling group.



Welcome to Auto Scaling

You can use Auto Scaling to manage Amazon EC2 capacity automatically, maintain the right number of instances for your application, operate a healthy group of instances, and scale it according to your needs.
Learn more

Note: To create your Auto Scaling groups in a different region, select your region from the navigation bar.

Benefits of Auto Scaling

Reusable Instance Templates

Provision instances based on a reusable template you define, called a launch configuration.
Learn more

Automated Provisioning

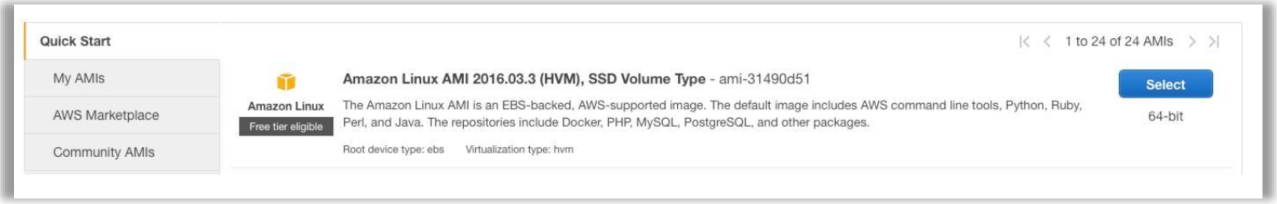
Keep your Auto Scaling group healthy and balanced, whether you need one instance or 1,000.
Learn more

Adjustable Capacity

Maintain a fixed group size or adjust dynamically based on Amazon CloudWatch metrics.
Learn more

6. On the Create Auto Scaling Group page, choose Create launch configuration.

7. On the Choose AMI page, there is a list of basic configurations, called Amazon Machine Images (AMIs), that serve as templates for your instance. Select the 64-bit Amazon Linux AMI.

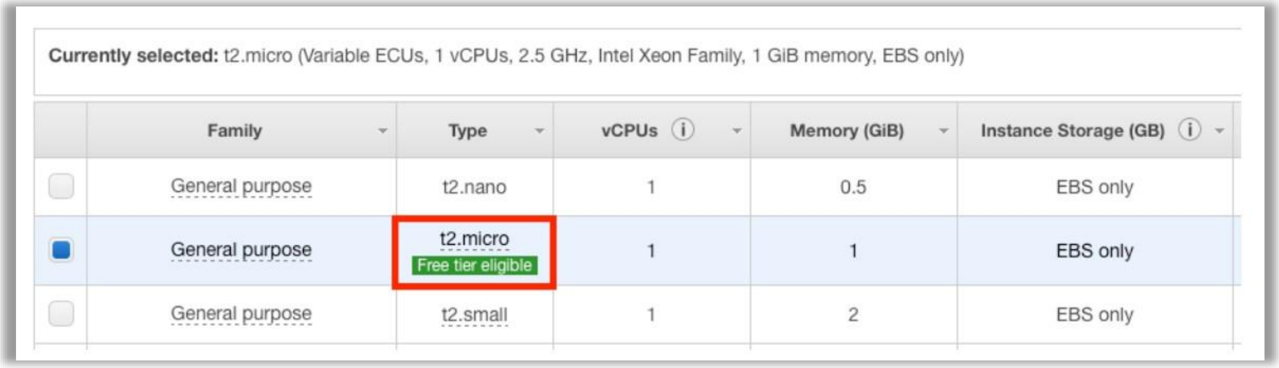


Amazon Linux AMI 2016.03.3 (HVM), SSD Volume Type - ami-31490d51

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.

Root device type: ebs Virtualization type: hvm

8. On the Choose Instance Type page, select a hardware configuration for your instance. We recommend that you keep the default, a t2.micro instance. Choose Next: Configure details.



Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

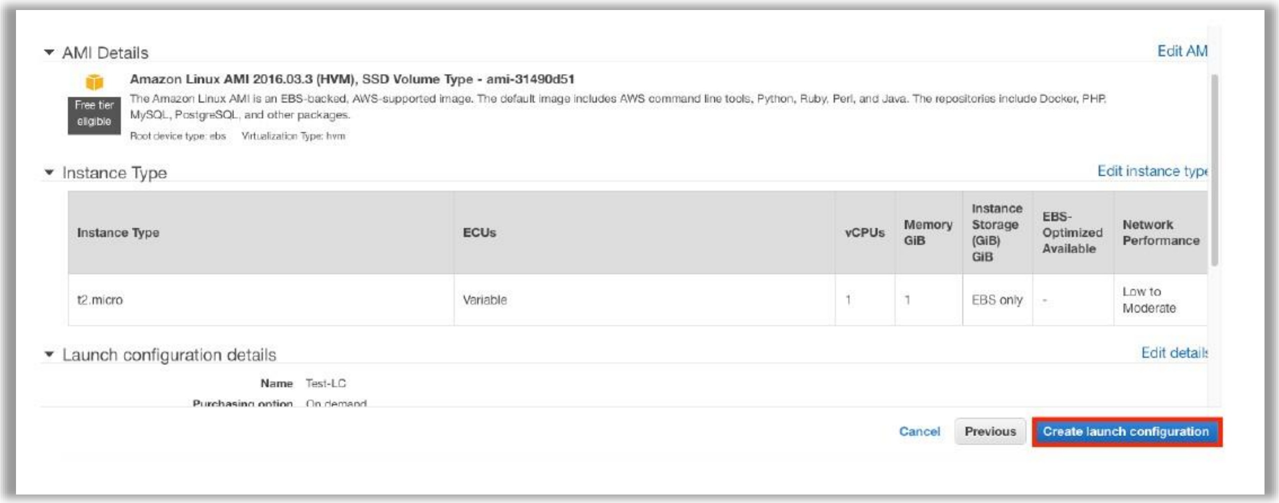
	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)
□	General purpose	t2.nano	1	0.5	EBS only
☑	General purpose	t2.micro Free tier eligible	1	1	EBS only
□	General purpose	t2.small	1	2	EBS only

9. On the Configure Details page, type a name for your launch configuration in the Name section.

10. Keep other settings to default and click Skip to review.

11. On the Review page, choose Edit security groups. Follow the instructions to choose an existing security group, and then choose Review.

12. On the Review page, choose Create launch configuration.



AMI Details

Amazon Linux AMI 2016.03.3 (HVM), SSD Volume Type - ami-31490d51

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Root device type: ebs   Virtualization Type: hvm

Instance Type

Instance Type	ECUs	vCPUs	Memory GiB	Instance Storage (GiB) GiB	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

Launch configuration details

Name Test-LC

Purchasing option On demand

13.On the Select an existing key pair or create a new key pair page, select one of the listed options.

14.Choose Create launch configuration. This initiates the process to create this Launch Configuration.

Initiating launch configuration creation

Please do not close your browser

Creating security group...

Create an Auto Scaling Group

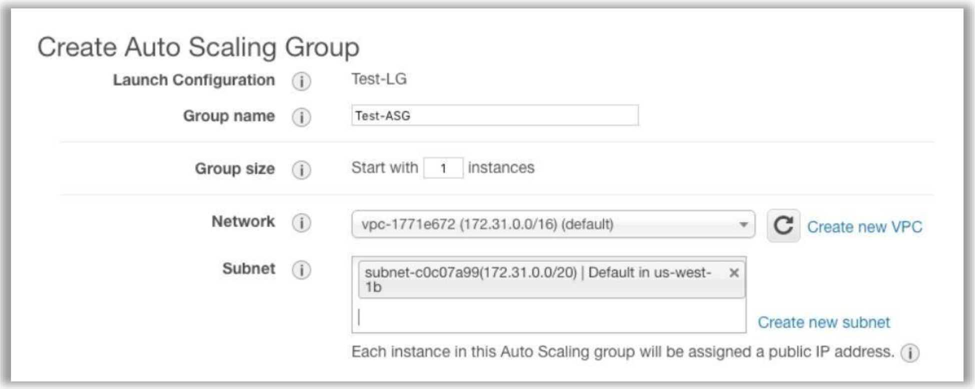
An Auto Scaling group is a collection of EC2 instances, and the core of the Auto Scaling service. You create an Auto Scaling group by specifying the launch configuration you want to use for launching the instances and the number of instances your group must maintain at all times. You also specify the Availability Zone in which you want the instances to be launched.

To create an Auto Scaling group

15. Click Create an Auto Scaling group using this launch configuration.

16. For Group name, type a name for your Auto Scaling group.
17. Keep Group size set to the default value of 1 instance for this tutorial.

18. Choose VPC in Network and its associated subnets in Subnet. In this example, we select our default VPC and one of its subnets.



Create Auto Scaling Group

Launch Configuration: Test-LG

Group name: Test-ASG

Group size: Start with 1 instances

Network: vpc-1771e672 (172.31.0.0/16) (default)

Subnet: subnet-c0c07a99(172.31.0.0/20) | Default in us-west-1b

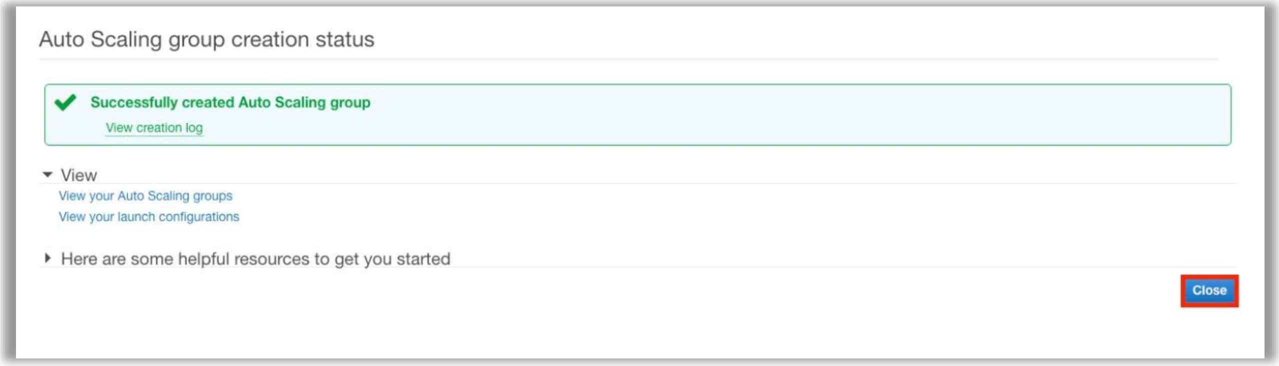
Each instance in this Auto Scaling group will be assigned a public IP address.

19.Choose Next: Configure scaling policies.

20.On the Configure scaling policies page, select Keep this group at its initial size and Choose Review.

21.On the Review page, choose Create Auto Scaling group.

22.On the Auto Scaling group creation status page, choose Close.



Auto Scaling group creation status

✓ Successfully created Auto Scaling group

View creation log

▾ View
View your Auto Scaling groups
View your launch configurations
▸ Here are some helpful resources to get you started
Close

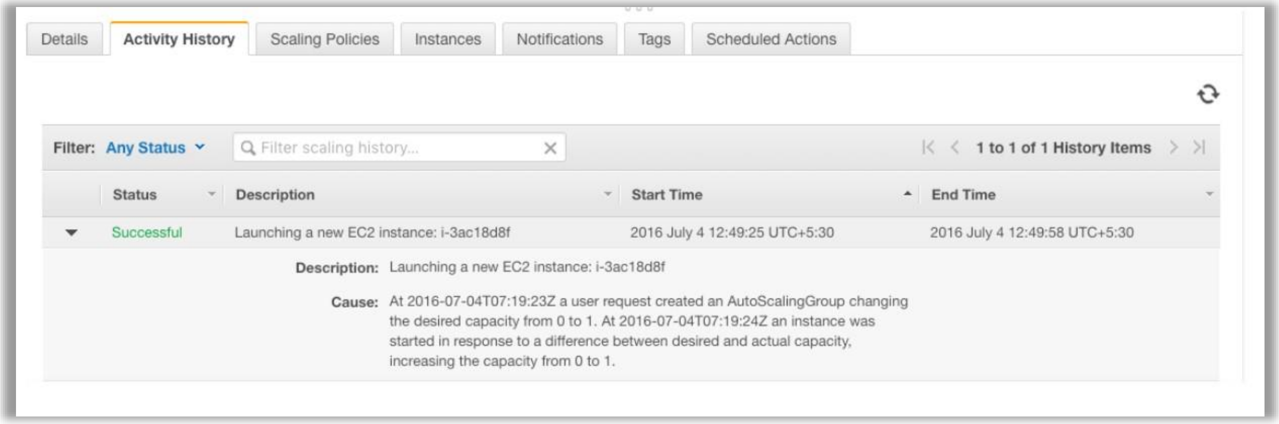
Verify your Auto Scaling Group

Now that you have created your Auto Scaling group, you are ready to verify that the group has launched an EC2 instance.

To verify that your Auto Scaling group has launched an EC2 instance

23. On the Auto Scaling Groups page, select the Auto Scaling group that you just created.
24. The Details tab provides information about the Auto Scaling group.

25. On the Activity History tab, the Status column shows the current status of your instance. While your instance is launching, the status column shows in progress. The status changes too Successful after the instance is launched. You can also use the refresh button to see the current status of your instance.



Status	Description	Start Time	End Time
Successful	Launching a new EC2 instance: i-3ac18d8f	2016 July 4 12:49:25 UTC+5:30	2016 July 4 12:49:58 UTC+5:30

Description: Launching a new EC2 instance: i-3ac18d8f

Cause: At 2016-07-04T07:19:23Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 1. At 2016-07-04T07:19:24Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 1.

26.On the Instances tab, the Lifecycle column shows the state of your instance. You can see that your Auto Scaling group has launched your EC2 instance, and that it is in the InService lifecycle state. The Health Status column shows the result of the EC2 instance health check on your instance.