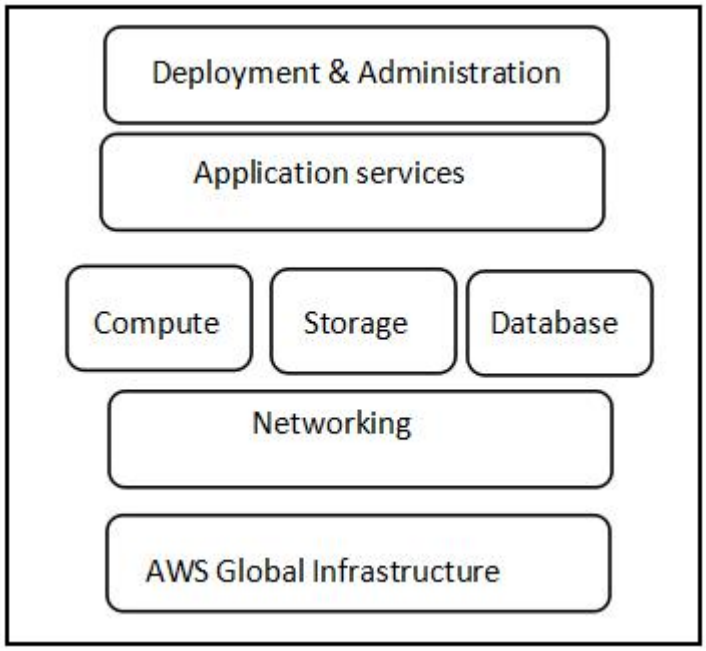
Basic introduction and instructions of AWS

1. Basic architecture of AWS



2. Main functions provided by AWS in parts:

Networking (Network)

Direct Connect: the data center that supports the enterprise itself is directly connected with the data center of AWS and takes full advantage of the existing resources of the enterprise.

VPN Connection: connect AWS through VPN to ensure data security.

Virtual Private Cloud: private cloud, provide a part of resources from AWS cloud resources for users to use, can improve security.

Route 53: provide a highly available, scalable domain name resolution system.

Compute (calculation)

EC2:Elastic Computer service, Amazon's virtual machine, supports multiple versions of Windows and Linux, supports the creation and destruction of API, and has auto scaling functions that can effectively solve application performance problems.

ELB:Elastic Load Balancing, the load balancer offered by Amazon, and can cooperate with EC2. It can automatically check the health status to ensure high availability of applications.

Storage

S3:Simple Storage Service, a simple storage service, is Amazon's object storage service. Unlimited capacity, a single object size of up to 5TB, support for static web sites.

EBS:Elastic Block Storage, block level storage services, support ordinary hard disk and SSD hard disk, easy to load, and the backup is very simple and fast.

Glacier: is mainly for storage of less used archive files and backup files, cheap,high security.

Database

Amazon provides relational databases and no SQL databases, as well as database services such as cache.

DynamoDB: Amazon's self-developed no SQL database, high performance, fault tolerance, support for distributed, and highly integrated with other cloud services such as Cloud, Watch, EMR and so on.

RDS:Relational Database Service. Support MySql, SQL, Server and Oracle database, with automatic backup function, IO throughput can be adjusted as needed.

Amazon ElastiCache: database caching service.

Application Service

Cloud Search: an elastic search engine, can be used for enterprise level search.

Amazon SQS: the queue service stores and distributes messages.

Simple Workflow: a workflow framework.

CloudFront: worldwide content distribution network.

EMR:Elastic Map Reduce, an example of a Hadoop framework that can be used for large data processing.

Deployment & Admin (deployment and management)

Elastic BeanStalk: one click to create various development environments.

CloudFormation: use Jason format template file to create and manage a series of Amazon cloud resources.

OpsWorks: allows users to deploy application deployment modules, enabling automated setup and installation of databases, runtime, server software, and so on.

IAM: Identity & Access Management, authentication and access management services. Amazon provides a three-dimensional security strategy through IAM to ensure that the user's resources on the cloud is absolutely safe. Users can manage access to AWS resources through IAM. Through IAM, users can create group and role to authorize or prohibit access to various cloud resources.

3.Basic usage scenarios for AWS storages:

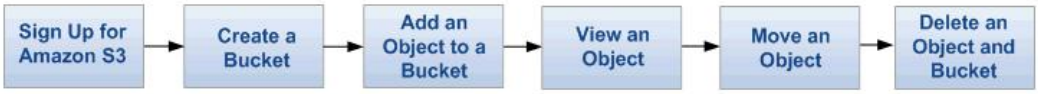
Storage options	***Usage***
Amazon S3	Use for a wide range of scenarios, from backing up your data, to storing your images and videos (to be accessed directly or through a CDN), to hosting static websites.
Amazon EBS	Use for data that changes frequently and must persist. For example, use EBS volumes as the primary storage for a database or file system, or for applications that require access to raw block-level storage.
Instance store volumes	Use instance store volumes for temporary storage of data that changes frequently, such as buffers, caches, or

	scratch data, or data that is replicated across a fleet of instances. If your data must persist beyond the lifetime of the EC2 instance, use Amazon EBS volumes instead.
Amazon CloudFront	Use CloudFront edge locations to improve the speed of your website. This is especially important if your website displays large media files, such as high-resolution images, audio, or video.
AWS Import/Export	Use AWS Import/Export to transfer data to or from AWS (Amazon S3 buckets, Amazon EBS snapshots, or Amazon Glacier vaults), using portable storage devices. This is a good option if it would be too costly or slow (more than a week) to transfer your data to AWS over the Internet.
AWS Storage Gateway	Use AWS Storage Gateway to provide a seamless and secure connection between an on-premises software appliance and Amazon S3. This is useful for corporate file sharing, enabling existing on-premises backup applications to store primary backups in Amazon S3, and data mirroring.
Amazon Glacier	Use Amazon Glacier when cost is paramount, you need the data infrequently, and you can wait several hours for

	the data to be retrieved. If you need fast or frequent access to your data, use Amazon S3 instead.

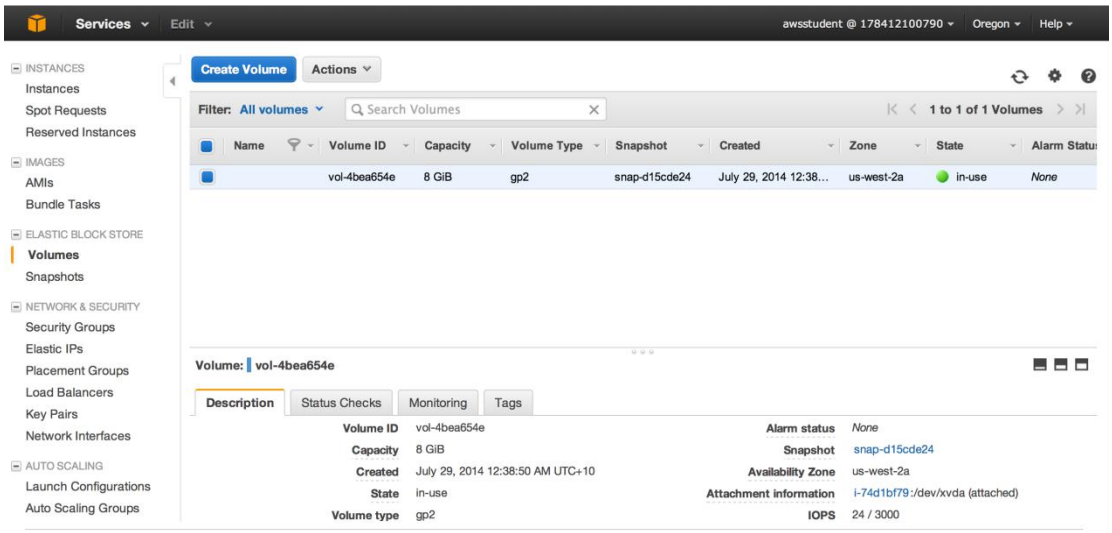
4. Basic steps for using AWS storages(S3, EBS, Glacier)

4.1 Amazon Simple Storage Service (Amazon S3)

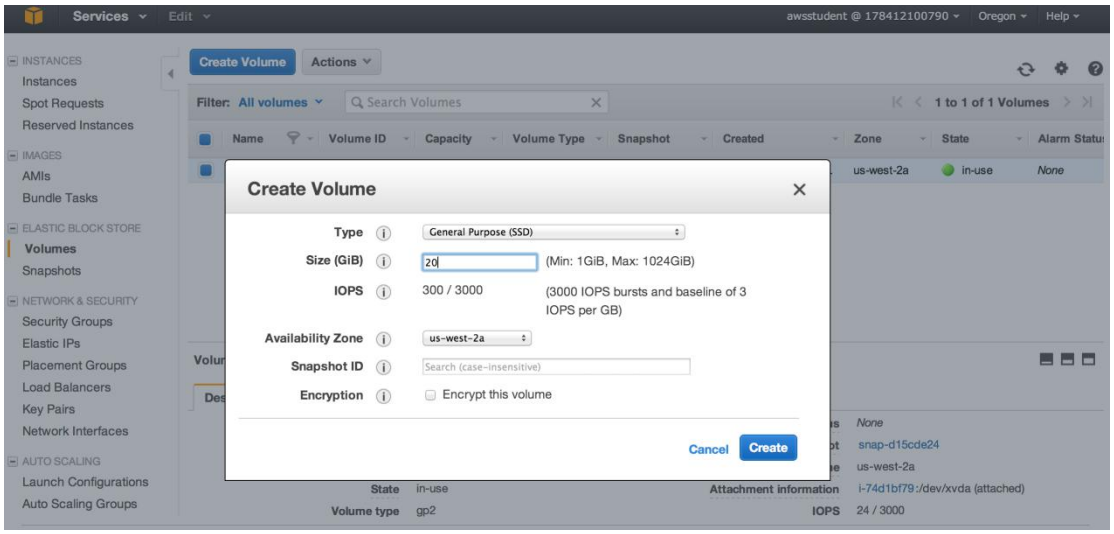


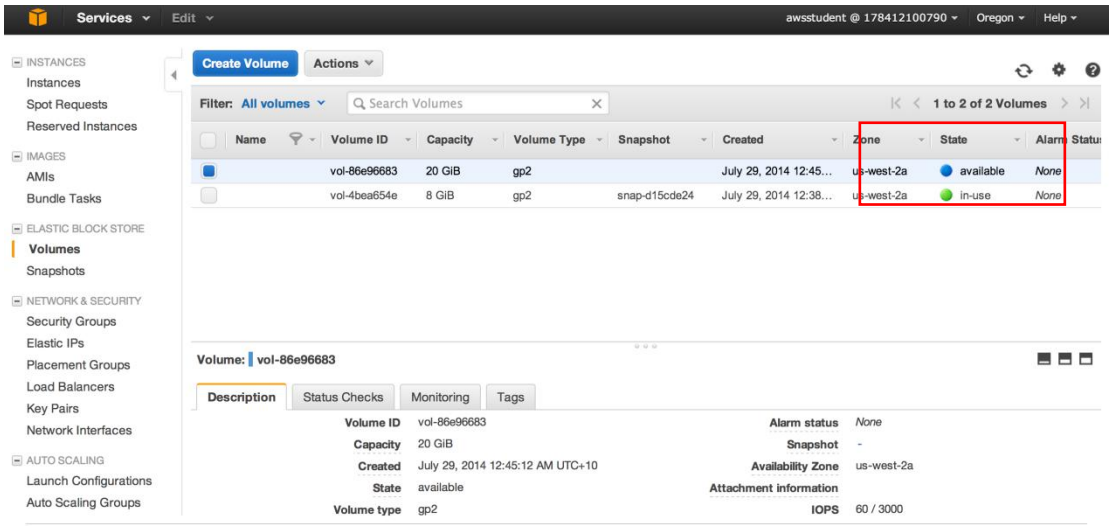
4.2 Amazon EBS

Step 1: create an EC2 instance

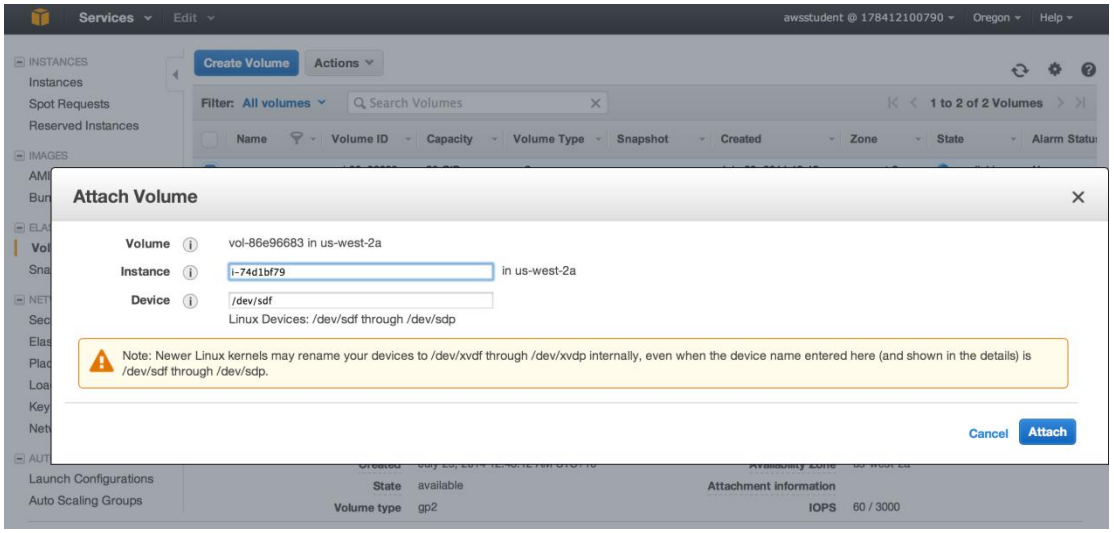


Step 2: Click ‘create volume’ to add a new hard disk

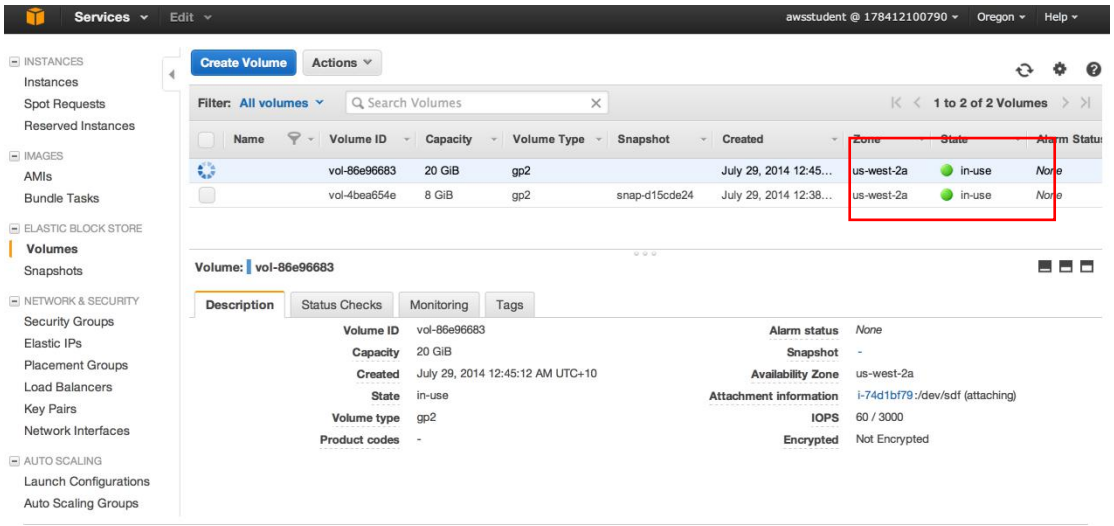




Step 3: Click ‘Action’ and choose’Attach Volume’ to attach the hard disk to the EC2



And we can see that the status of the hard disk will change:



4.3 Amazon Glacier

Step 1:Sign up for AWS account

Downloading the AWS SDK for Java(Eclipse)

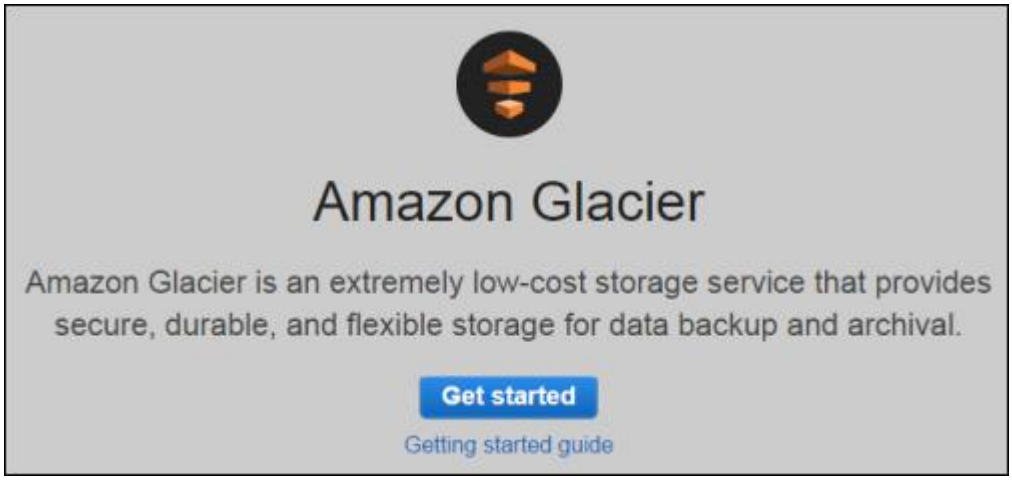
http://aws.amazon.com/eclipse/

Downloading the AWS SDK for .NET

http://aws.amazon.com/sdkfornet

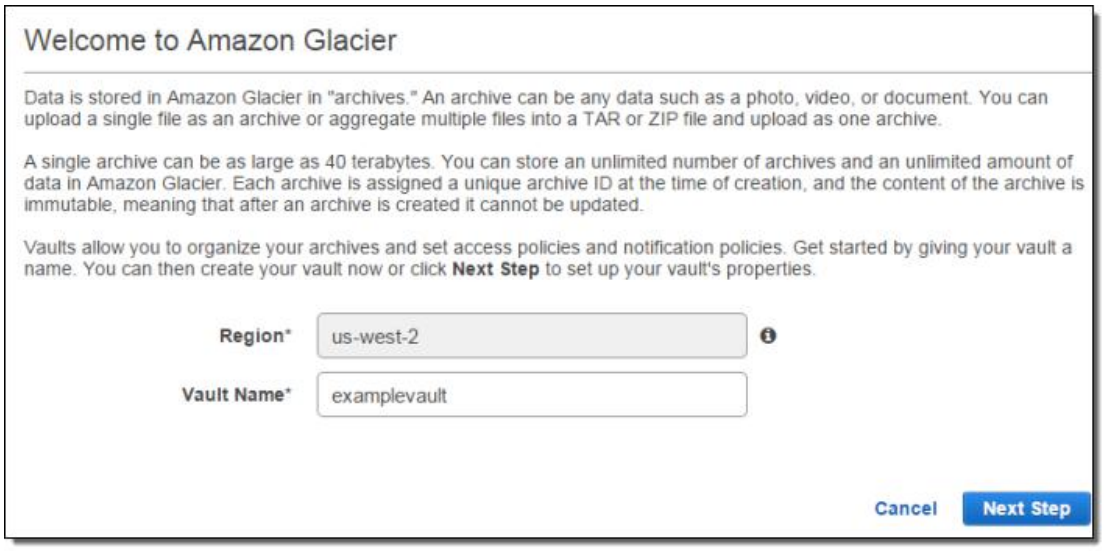
Step 2: Create a Vault in Amazon Glacier

Click ‘get started’

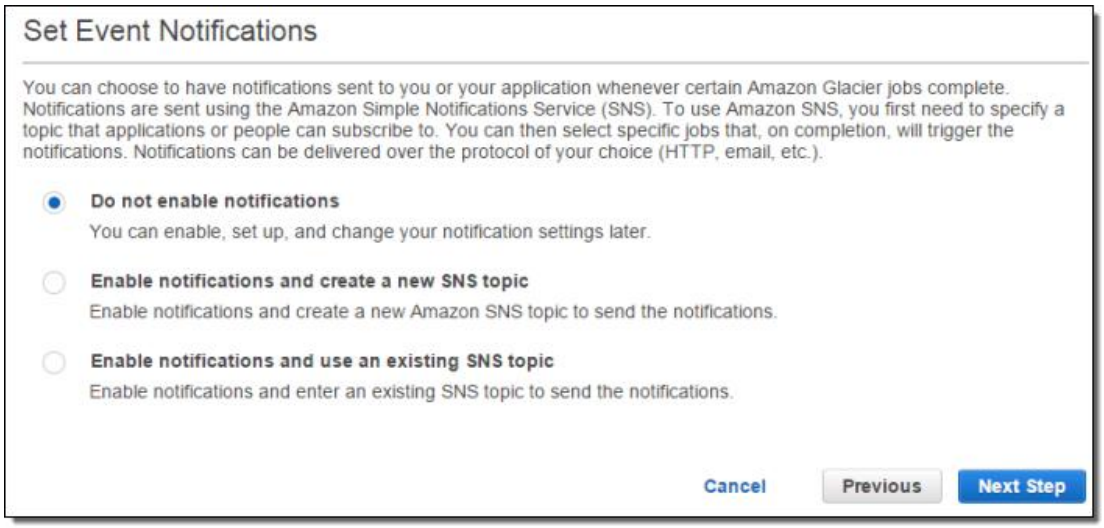


Enter examplevault as the vault name in the Vault Name field and then click Next

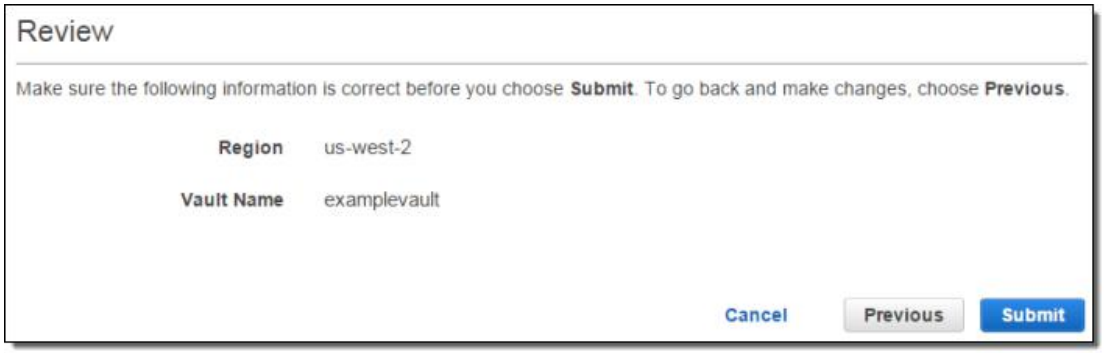
Step.



Select Do not enable notifications. For this getting started exercise, you will not configure notifications for the vault.



If the region and vault name are correct, then click Submit.



Your new vault is listed on the Amazon Glacier Vaults page.

Step 3: Upload an Archive to a Vault in Amazon Glacier

*Upload an Archive to a Vault in Amazon Glacier Using the AWS SDK for Java

http://docs.aws.amazon.com/amazonglacier/latest/dev/getting-started-upload-archive-java.html

*Upload an Archive to a Vault in Amazon Glacier Using the AWS SDK for .NET

http://docs.aws.amazon.com/amazonglacier/latest/dev/getting-started-upload-archive-dotnet.html

Step 4: Download an Archive from a Vault in Amazon Glacier

*Download an Archive from a Vault in Amazon Glacier Using the AWS SDK for Java

http://docs.aws.amazon.com/amazonglacier/latest/dev/getting-started-download-archive-java.html?shortFooter=true

*Download an Archive from a Vault in Amazon Glacier Using the AWS SDK for .NET

http://docs.aws.amazon.com/amazonglacier/latest/dev/getting-started-download-archive-dotnet.html

Step 5: Delete an Archive from a Vault in Amazon Glacier

*Delete an Archive from a Vault in Amazon Glacier Using the AWS SDK for Java

http://docs.aws.amazon.com/amazonglacier/latest/dev/getting-started-delete-archive-java.html

*Delete an Archive from a Vault in Amazon Glacier Using the AWS SDK for .NET

http://docs.aws.amazon.com/amazonglacier/latest/dev/getting-started-delete-archive-dotnet.html

Step 6: Delete a Vault in Amazon Glacier

1.Sign into the AWS Management Console and open the Amazon Glacier console at https://console.aws.amazon.com/glacier.

2.From the region selector, select the AWS region where the vault exists that you want to delete.In this getting started exercise, we use the US West (Oregon) region.

3.Select the vault that you want to delete.In this getting started exercise, we've been using a vault named examplevault.

4.Click Delete Vault