

Component-based Software Development

**Amazon Web Services (AWS)
EC2, S3**

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Amazon Web Services – useful links

- **Introduction to Amazon Web Services (AWS)**

- <https://aws.amazon.com/> - The link to create your AWS account

Other useful links:

<https://www.youtube.com/watch?v=98ya1LiEU00&t=15s>

<http://aws.amazon.com/s3/>
https://aws.amazon.com/training/intro_series/

<http://aws.amazon.com/ec2/>

Amazon Web Services (Amazon AWS)

Amazon AWS

- Amazon Web Services is a **subsidiary of Amazon.com**
- Provides on-demand cloud computing platforms to individuals, companies and governments, on a **paid subscription** basis
- Offers **compute power, database storage, content delivery and other functionality** to help businesses scale and grow

Source: https://en.wikipedia.org/wiki/Amazon_Web_Services


Amazon AWS

- As of 2021, the AWS Cloud spans **84 Availability Zones within 26 geographic regions** around the world, with announced plans for 24 more Availability Zones and 8 more AWS Regions in Australia, Canada, India, Israel, New Zealand, Spain, Switzerland, and United Arab Emirates (UAE).

Amazon AWS

- **2006 – Amazon S3 first deployed in the spring, Amazon EC2 in the fall**
- **2008 – Elastic Block Storage available.**
- **2009 – Relational Database Service**
- **2012 – DynamoDB**
-
.....
-
.....

Amazon AWS – list of services – this is how AWS console looked in the beginning!

 **AWS** ▾


Services ▾


Edit ▾


Vinod Dubey ▾ N. Virginia ▾ Support ▾


Amazon Web Services

Compute


 **EC2**
Virtual Servers in the Cloud


 **EC2 Container Service**
Run and Manage Docker Containers


 **Elastic Beanstalk**
Run and Manage Web Apps


 **Lambda**
Run Code in Response to Events


Storage & Content Delivery


 **S3**
Scalable Storage in the Cloud

 **CloudFront**
Global Content Delivery Network


 **Elastic File System** **PREVIEW**
Fully Managed File System for EC2


 **Glacier**
Archive Storage in the Cloud


 **Import/Export Snowball**
Large Scale Data Transport


 **Storage Gateway**
Hybrid Storage Integration


Database

 **RDS**
Managed Relational Database Service


 **DynamoDB**
Managed NoSQL Database


 **ElastiCache**
In-Memory Cache


 **Redshift**
Fast, Simple, Cost-Effective Data Warehousing

 **DMS** **PREVIEW**
Managed Database Migration Service


Networking


 **VPC**
Isolated Cloud Resources


 **Direct Connect**
Dedicated Network Connection to AWS

 **Route 53**
Scalable DNS and Domain Name Registration


Developer Tools


 **CodeCommit**
Store Code in Private Git Repositories


 **CodeDeploy**
Automate Code Deployments


 **CodePipeline**
Release Software using Continuous Delivery


Management Tools


 **CloudWatch**
Monitor Resources and Applications


 **CloudFormation**
Create and Manage Resources with Templates

 **CloudTrail**
Track User Activity and API Usage


 **Config**
Track Resource Inventory and Changes


 **OpsWorks**
Automate Operations with Chef


 **Service Catalog**
Create and Use Standardized Products


 **Trusted Advisor**
Optimize Performance and Security


Security & Identity

 **Identity & Access Management**
Manage User Access and Encryption Keys


 **Directory Service**
Host and Manage Active Directory


 **Inspector** **PREVIEW**
Analyze Application Security


 **WAF**
Filter Malicious Web Traffic


 **Certificate Manager**
Provision, Manage, and Deploy SSL/TLS Certificates


Analytics

 **EMR**
Managed Hadoop Framework


 **Data Pipeline**
Orchestration for Data-Driven Workflows

 **Elasticsearch Service**
Run and Scale Elasticsearch Clusters


 **Kinesis**
Work with Real-Time Streaming Data


 **Machine Learning**
Build Smart Applications Quickly and Easily


Internet of Things


 **AWS IoT**
Connect Devices to the Cloud


Mobile Services

 **Mobile Hub** **BETA**
Build, Test, and Monitor Mobile Apps


 **Cognito**
User Identity and App Data Synchronization


 **Device Farm**
Test Android, FireOS, and iOS Apps on Real Devices in the Cloud


 **Mobile Analytics**
Collect, View and Export App Analytics


 **SNS**
Push Notification Service


Application Services


 **API Gateway**
Build, Deploy and Manage APIs


 **AppStream**
Low Latency Application Streaming

 **CloudSearch**
Managed Search Service


 **Elastic Transcoder**
Easy-to-Use Scalable Media Transcoding


 **SES**
Email Sending and Receiving Service


 **SQS**
Message Queue Service

 **SWF**
Workflow Service for Coordinating Application Components

Enterprise Applications

 **WorkSpaces**
Desktops in the Cloud

 **WorkDocs**
Secure Enterprise Storage and Sharing Service

 **WorkMail**
Secure Email and Calendaring Service

Resource Groups [Learn more](#)

A resource group is a collection of resources that share one or more tags. Create a group for each project, application, or environment in your account.

Create a Group

Tag Editor

Additional Resources

Getting Started [↗](#)

Read our [documentation](#) or view our [training](#) to learn more about AWS.

AWS Console Mobile App [↗](#)

View your resources on the go with our AWS Console mobile app, available from [Amazon Appstore](#), [Google Play](#), or [iTunes](#).


AWS Marketplace [↗](#)

Find and buy software, launch with 1-Click and pay by the hour.

AWS re:Invent Announcements [↗](#)

Explore the next generation of AWS cloud capabilities. [See what's new](#)

Service Health

 All services operating normally.

Updated: Feb 04 2016 14:47:00 GMT-0500

[Service Health Dashboard](#)

Amazon S3



- **Amazon Simple Storage Service (Amazon S3) provides durable, highly-scalable object storage**
 - Designed for 99.999999999% durability and 99.99% availability
- **You pay only for the storage you actually use.**
 - There is no minimum fee and no setup cost.
- **Easy to use**, with a simple web interface to store and retrieve any amount of data from anywhere on the web.

Accessing Amazon S3



- **Amazon S3 can be accessed in a number of ways:**
 - Amazon S3 provides **standard-based REST API** to programmatically **store, retrieve, and manage** your **data**
 - **Software Development Kit (SDK)**, which wraps the underlying REST API
 - **Command line interface**
 - **AWS Management Console**, which is an easy to use simple Web interface

Amazon S3 Buckets

- Amazon S3 stores data as objects and objects are stored within folders that are called “buckets”
- To store an object in Amazon S3, you upload the file, you want to store, to a bucket
 - You can set permissions on uploaded files so they are private until you want to share them
- A bucket is a container for objects
 - You can have one or more buckets
 - For each bucket you can control access to the bucket, such as who can create, delete, and list objects in that bucket
 - A bucket can hold any number of objects, which are files of up to 5TB.
 - A bucket has a name (using lower case) that must be globally unique.

Click on the “Amazon S3” icon under “Storage” on AWS Management Console

The screenshot displays the AWS Management Console interface. At the top, there is a navigation bar with the AWS logo, 'Services' (with a dropdown arrow), 'Resource Groups' (with a dropdown arrow), and a search icon. On the right side of the navigation bar, there is a notification bell icon, the user name 'Vinod Dubey', and the region 'N. Virginia' (with a dropdown arrow).

On the left side, there is a 'History' panel listing recent actions: 'EC2', 'Billing', 'S3', 'Console Home', 'IAM', and 'EC2 Container Service'. Below this panel is a search bar with the placeholder text 'Find a service by name or feature (for example, EC2, S3 or VM, storage)'. To the right of the search bar is a 'Group' button.

The main content area is divided into several categories, each with an icon and a title. The 'Storage' category is highlighted with a red circle. The categories and their sub-services are as follows:

- Compute**
 - EC2
 - EC2 Container Service
 - Lightsail
 - Elastic Beanstalk
 - Lambda
 - Batch
- Developer Tools**
 - CodeStar
 - CodeCommit
 - CodeBuild
 - CodeDeploy
 - CodePipeline
 - X-Ray
- Analytics**
 - Athena
 - EMR
 - CloudSearch
 - Elasticsearch Service
 - Kinesis
 - Data Pipeline
 - QuickSight
 - AWS Glue
- Application Services**
 - Step Functions
 - SWF
 - API Gateway
 - Elastic Transcoder
- Storage** (highlighted with a red circle)
 - EFS
 - Glacier
 - Storage Gateway
- Database**
 - RDS
 - DynamoDB
 - ElastiCache
 - Amazon Redshift
- Networking & Content Delivery**
 - VPC
 - CloudFront
 - Direct Connect
 - Route 53
- Migration**
 - AWS Migration Hub
 - Application Discovery Service
 - Database Migration Service
 - Server Migration Service
 - Snowball
- Management Tools**
 - CloudWatch
 - CloudFormation
 - CloudTrail
 - Config
 - OpsWorks
 - Service Catalog
 - Trusted Advisor
 - Managed Services
- Artificial Intelligence**
 - Lex
 - Amazon Polly
 - Rekognition
 - Machine Learning
- Business Productivity**
 - WorkDocs
 - WorkMail
 - Amazon Chime
- Internet Of Things**
 - AWS IoT
 - AWS Greengrass
- Security, Identity & Compliance**
 - IAM
 - Inspector
 - Certificate Manager
 - Directory Service
 - WAF & Shield
 - Artifact
 - Amazon Macie
 - CloudHSM
- Contact Center**
 - Amazon Connect
- Game Development**
 - Amazon GameLift
- Mobile Services**
 - Mobile Hub
 - Cognito
 - Device Farm
 - Mobile Analytics
 - Pinpoint
- Messaging**
 - Simple Queue Service
 - Simple Notification Service
 - Simple Email Service
- Desktop & App Streaming**
 - WorkSpaces
 - AppStream 2.0

Click Create Bucket to create a place to upload your objects -- Enter a bucket name

Bucket names are always in lower case and must be globally unique

The screenshot displays the AWS Management Console interface for Amazon S3. A modal window titled "Create bucket" is open, showing the "Name and region" step of a four-step wizard. The bucket name "swe645-vkd2" is entered in the "Bucket name" field, and "US East (N. Virginia)" is selected in the "Region" dropdown. Below these fields, there is a section for "Copy settings from an existing bucket" with a dropdown menu showing "5 Buckets". The "Create" button is visible at the bottom left of the modal, while "Cancel" and "Next" buttons are at the bottom right. The background shows the Amazon S3 console with a list of buckets: "aws-logs-492835594071-us-east-1", "sparkgmudemo", "swe645-vkd1", "swe645-vkd2-fall2016", and "vkd-firehose-delivery-stream".

Services ▾ Resource Groups ▾

Log S3 object-level activity for security & compliance

Amazon S3

Search for buckets

+ Create bucket Delete bucket Empty bucket

Bucket name ↑

- aws-logs-492835594071-us-east-1
- sparkgmudemo
- swe645-vkd1
- swe645-vkd2-fall2016
- vkd-firehose-delivery-stream

Create bucket

1 Name and region 2 Set properties 3 Set permissions 4 Review

Name and region

Bucket name ⓘ swe645-vkd2

Region US East (N. Virginia) ▾

Copy settings from an existing bucket

Select bucket (optional) 5 Buckets ▾

Create Cancel Next

Press Next

The screenshot displays the AWS Management Console interface. In the background, the 'Amazon S3' console is visible, showing a list of buckets: 'aws-logs-492835594071-us-east-1', 'sparkgmudemo', 'swe645-vkd1', 'swe645-vkd2-fall2016', and 'vkd-firehose-delivery-stream'. A modal window titled 'Create bucket' is open in the foreground, currently on step 2, 'Set properties'. The progress bar at the top of the modal shows four steps: 1. Name and region (completed), 2. Set properties (current), 3. Set permissions, and 4. Review. The 'Set properties' section contains three toggleable options: 'Versioning', 'Logging', and 'Tags'. Each option has a description, a 'Learn more' link, and a toggle switch. All three options are currently set to 'Disabled'. At the bottom right of the modal, there are 'Previous' and 'Next' buttons. The 'Next' button is highlighted in blue, indicating the user should proceed to the next step.

Services ▾ Resource Groups ▾

Log S3 object-level activity for security & compliance

Amazon S3

Search for buckets

+ Create bucket Delete bucket Empty bucket

Bucket name ↑

- aws-logs-492835594071-us-east-1
- sparkgmudemo
- swe645-vkd1
- swe645-vkd2-fall2016
- vkd-firehose-delivery-stream

Create bucket

1 Name and region 2 Set properties 3 Set permissions 4 Review

Versioning

Keep multiple versions of an object in the same bucket.

[Learn more](#)

☐ Disabled

Logging

Set up access log records that provide details about access requests.

[Learn more](#)

☐ Disabled

Tags

Use tags to track your cost against projects or other criteria.

[Learn more](#)

☐ 0 Tags

Previous Next

Under Manage Public Permissions, Select “Grant public read access to the bucket”

The screenshot displays the AWS IAM console interface for creating a new bucket. The main panel on the left shows the 'Amazon S3' service with a search bar and a list of existing buckets: 'aws-logs-492835594071-us-east-1', 'sparkgmudemo', 'swe645-vkd1', 'swe645-vkd2-fall2016', and 'vkd-firehose-delivery-stream'. The right panel shows the 'Create bucket' wizard, currently on step 3, 'Set permissions'.

The wizard's progress bar indicates four steps: 1. Name and region, 2. Set properties, 3. Set permissions (current), and 4. Review.

The 'Manage users' section shows a table with columns for User ID, Objects, and Object permissions. The user 'vdubey(Owner)' is listed with read and write permissions for objects.

The 'Manage public permissions' section features a dropdown menu with the option 'Grant public read access to this bucket' selected. Below this, a warning message states: 'This bucket will have public read access. Everyone in the world will have read access to this bucket.'

The 'Manage system permissions' section features a dropdown menu with the option 'Do not grant Amazon S3 Log Delivery group write access to this bucket' selected.

At the bottom of the wizard, there are 'Previous' and 'Next' buttons.

Press “Create Bucket”

The screenshot shows the AWS Management Console interface. On the left, the 'Amazon S3' service is selected, displaying a list of buckets including 'aws-logs-492835594071-us-east-1', 'sparkgmudemo', 'swe645-vkd1', 'swe645-vkd2-fall2016', and 'vkd-firehose-delivery-stream'. A 'Create bucket' button is visible in the top left of the S3 console area.



The main focus is the 'Create bucket' wizard, which is a modal dialog box with a blue header. The wizard has four steps: 'Name and region', 'Set properties', 'Set permissions', and 'Review' (the current step, indicated by a circled '4').

The 'Review' step displays the following configuration:


- Name and region:** Bucket name: swe645-vkd2, Region: US East (N. Virginia). An 'Edit' link is present.
- Properties:** Versioning: Disabled, Logging: Disabled, Tagging: 0 Tags. An 'Edit' link is present.
- Permissions:** Users: 1, Public permissions: Enabled, System permissions: Disabled. An 'Edit' link is present.

At the bottom of the wizard, there are two buttons: 'Previous' and 'Create bucket'.

This shows list of S3 buckets in your account. Click on the newly created bucket

 Services ▾ Resource Groups ▾ 

Log S3 object-level activity for security & compliance with CloudTrail Data Events [Learn More »](#)










 Amazon S3 Discover the new

[+ Create bucket](#)

Delete bucket

Empty bucket

6 Buckets

| Bucket name  | Region  | Date created  |
|---|--|--|
|  aws-logs-492835594071-us-east-1 | US East (N. Virginia) | Mar 10, 2017 6:20:50 PM |
|  sparkgmudemo | US East (N. Virginia) | Mar 10, 2017 5:04:54 PM |
|  swe645-vkd1 | US East (N. Virginia) | Jan 28, 2016 9:03:14 PM |
|  swe645-vkd2 | US East (N. Virginia) | Sep 6, 2017 5:04:55 PM |
|  swe645-vkd2-fall2016 | US East (N. Virginia) | Sep 8, 2016 8:36:48 PM |
|  vkd-firehose-delivery-stream | US East (N. Virginia) | Jun 23, 2017 12:39:21 PM |

There are four tabs under your S3 bucket and link to upload file.

The screenshot shows the Amazon S3 console interface. At the top, there's a navigation bar with 'Services', 'Resource Groups', and a star icon. On the right, there's a user profile 'Vinod Dubey', 'Global' region, and 'Support'. Below the navigation bar, the breadcrumb 'Amazon S3 > swe645-vkd2' is visible. A tab bar contains 'Overview', 'Properties', 'Permissions', and 'Management'. Below the tabs, there are buttons for 'Upload', 'Create folder', and 'More'. The region 'US East (N. Virginia)' is displayed on the right. The main content area has a light blue background with the text 'This bucket is empty. Upload new objects to get started.' Below this, there are three cards: 'Upload an object' with a bucket icon, 'Set object properties' with a person icon and a plus sign, and 'Set object permissions' with a database icon and a plus sign. Each card has a brief description and a 'Learn more' link. At the bottom center, there is a 'Get started' button.

Services ▾ Resource Groups ▾ ☆


Amazon S3 > swe645-vkd2

Overview Properties Permissions Management

Upload Create folder More ▾

US East (N. Virginia) ↻


This bucket is empty. Upload new objects to get started.



Upload an object

Buckets are globally unique containers for everything that you store in Amazon S3.


[Learn more](#)



Set object properties

After you create a bucket, you can upload your objects (for example, your photo or video files).

[Learn more](#)



Set object permissions

By default, the permissions on an object are private, but you can set up access control policies to grant permissions to others.

[Learn more](#)

[Get started](#)

Click on Static website hosting under the Properties tab

The screenshot shows the AWS Management Console interface for an Amazon S3 bucket named `swe645-vkd2`. The breadcrumb navigation shows `Amazon S3 > swe645-vkd2`. The `Properties` tab is selected, displaying a grid of configuration options:

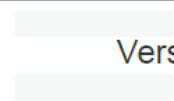
- Versioning**: Keep multiple versions of an object in the same bucket. Status: Disabled.
- Logging**: Set up access log records that provide details about access requests. Status: Disabled.
- Static website hosting**: Host a static website, which does not require server-side technologies. Status: Disabled.

Below these, the **Advanced settings** section is visible, containing:

- Tags**: Use tags to track your cost against projects or other criteria. Status: 0 Tags.
- Transfer acceleration**: Enable fast, easy and secure transfers of files to and from your bucket. Status: Suspended.
- Events**: Receive notifications when specific events occur in your bucket. Status: 0 Active notifications.

Select radio button for “Use this bucket to host a website”

Endpoint is the URL for your website




Versioning

Keep multiple versions of an object in the same bucket.

[Learn more](#)

☐ Disabled




Logging

Set up access log records that provide details about access requests.

[Learn more](#)

☐ Disabled



Static website hosting

×

Endpoint : <http://swe645-vkd2.s3-website-us-east-1.amazonaws.com>


☐ Use this bucket to host a website [Learn more](#)

☐ Redirect requests [Learn more](#)

☒ Disable website hosting

[Cancel](#) [Save](#)

Advanced settings

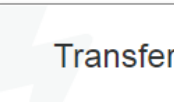


Tags

Use tags to track your cost against projects or other criteria.

[Learn more](#)

☐ 0 Tags




Transfer acceleration

Enable fast, easy and secure transfers of files to and from your bucket.

[Learn more](#)

☐ Suspended



Events

Receive notifications when specific events occur in your bucket.

[Learn more](#)

☐ 0 Active notifications

Enter the name of your html file (e.g., index.html) that serves your homepage

Secure | <https://s3.console.aws.amazon.com/s3/buckets/swe645-vkd2/?region=us-east-1&tab=properties>

Versioning

Keep multiple versions of an object in the same bucket.

[Learn more](#)

☐ Disabled

Logging

Set up access log records that provide details about access requests.

[Learn more](#)

☐ Disabled

Static website hosting

Endpoint : <http://swe645-vkd2.s3-website-us-east-1.amazonaws.com>

☒ Use this bucket to host a website [Learn more](#)

Index document [i](#)

Error document [i](#)

Redirection rules (optional) [i](#)

☐ Redirect requests [Learn more](#)

☐ Disable website hosting

Cancel

Save

URL of your
Page

Using Upload under Overview tab, upload index.html and other related files for your page

The screenshot shows the Amazon S3 console interface. The main view is the 'Overview' tab for a bucket named 'swe645-vkd2'. The 'Upload' button is visible in the top left of the main area. An 'Upload' dialog box is open, showing a progress bar and a list of files being uploaded. The dialog box has a blue header with the title 'Upload' and a close button. Below the header is a progress bar with four steps: 1. Select files, 2. Set permissions, 3. Set properties, and 4. Review. The progress bar shows that the 'Select files' step is complete. Below the progress bar, the dialog box displays the following information: 3 Files, Size: 616.2 KB, Target path: swe645-vkd2. Below this information is a table listing the files being uploaded:

| File Name | Size | Progress |
|--------------|------------|----------|
| index.html | - 328.0 B | Complete |
| Tulips.jpg | - 606.3 KB | Complete |
| VKDubey.jpeg | - 9.5 KB | Complete |

At the bottom of the dialog box, there are two buttons: 'Upload' and 'Next'. The 'Upload' button is highlighted in blue. Below the dialog box, there is a 'Get started' button.

Under “Manage public permissions”, select “Grant public read access to the objects”

The screenshot displays the AWS Management Console interface for an Amazon S3 bucket named 'swe645-vkd2'. The 'Upload' wizard is open, showing the 'Set permissions' step. The wizard has four steps: 1. Select files, 2. Set permissions (current), 3. Set properties, and 4. Review. The 'Manage users' section shows a table with columns for User ID, Objects, and Object permissions. The user 'vdubey(Owner)' is listed with 'Read' and 'Write' permissions. The 'Manage public permissions' section shows a dropdown menu with the option 'Grant public read access to this object(s)'. A warning message states: 'This object(s) has public read access. Everyone in the world will have read access to this object(s)'. The 'Upload' button is visible at the bottom of the wizard.

Services ▾ Resource Groups ▾

Amazon S3 > swe645-vkd2

Overview Properties Permissions

Upload Create folder More ▾

Upload an object

Buckets are globally unique containers for everything that you store in Amazon S3.

Learn more

Upload

Get started

Upload

3 Files Size: 616.2 KB Target path: swe645-vkd2

Manage users

| User ID ⓘ | Objects ⓘ | Object permissions ⓘ |
|---------------|--|--|
| vdubey(Owner) | <input checked="" type="checkbox"/> Read <input checked="" type="checkbox"/> Write | <input checked="" type="checkbox"/> Read <input checked="" type="checkbox"/> Write |

Manage public permissions

Grant public read access to this object(s) ▾

⚠ This object(s) has public read access.
Everyone in the world will have read access to this object(s).

Upload Previous Next

Press Next

Services

Resource Groups

Amazon S3 > swe645-vkd2

Overview


Properties

Permissions

Upload

Create folder

More



Upload an object

Buckets are globally unique containers for everything that you store in Amazon S3.

[Learn more](#)

Upload

Select files

Set permissions

3 Set properties

4 Review

3 Files Size: 616.2 KB Target path: swe645-vkd2

Storage class

Choose one depending on your use case scenario and performance access requirements.

☒ Standard ☐ Standard-IA ☐ Reduced redundancy

Encryption

Protect data at rest by using Amazon S3 master-key or by using AWS KMS master-key.

☒ None ☐ Amazon S3 master-key ☐ AWS KMS master-key

Metadata

Metadata is a set of name-value pairs. You cannot modify object metadata after it is uploaded.

| Header | Value |
|--------|-------|
|--------|-------|

Upload

Previous

Next

Press Upload

The screenshot displays the AWS Management Console interface for an Amazon S3 bucket named 'swe645-vkd2'. The main panel shows the 'Overview' tab with an 'Upload' button and a 'Create folder' button. A large graphic with a paper cup and a paper airplane icon prompts the user to 'Upload an object', with a note stating 'Buckets are globally unique containers for everything that you store in Amazon S3.' and a 'Learn more' link.

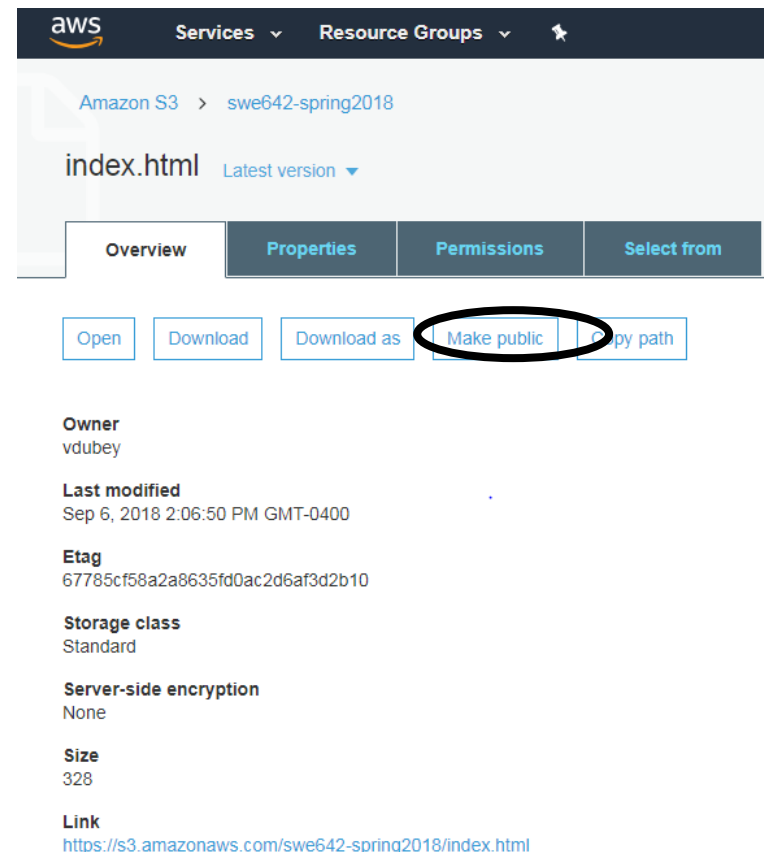
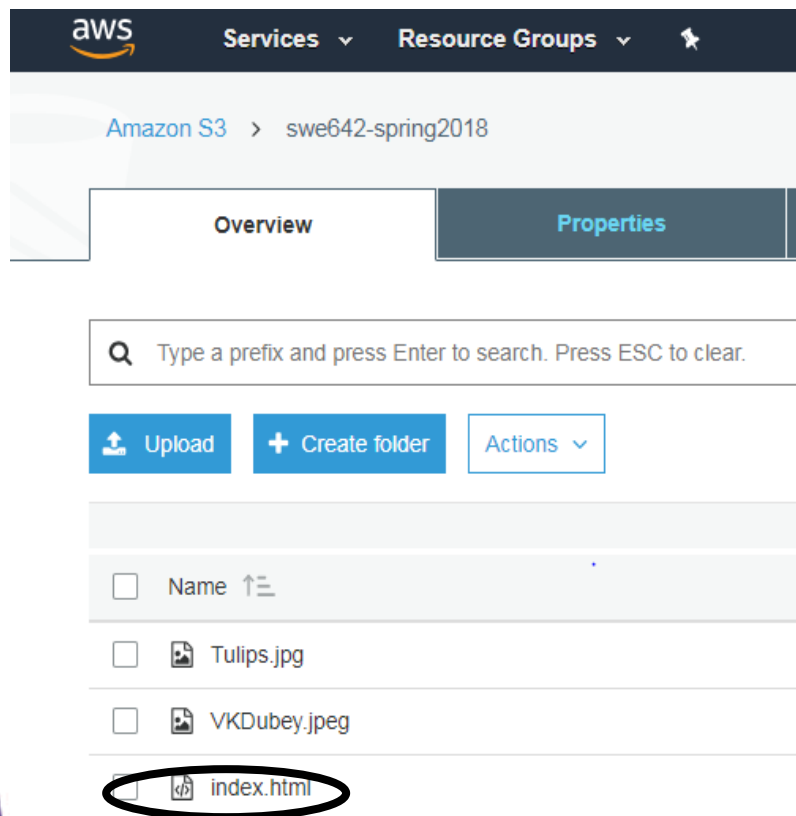
An 'Upload' modal is open on the right, showing a progress bar with four steps: 'Select files' (checked), 'Set permissions' (checked), 'Set properties' (checked), and 'Review' (active, indicated by a circled 4). The modal contains the following sections:

- Files**: Shows '3 Files' and 'Size: 616.2 KB'.
- Permissions**: Shows '2 grantees'.
- Properties**: Shows 'Encryption: No' and 'Storage class: Standard'.
- Metadata**: A section for additional metadata.



At the bottom of the modal are 'Previous' and 'Upload' buttons.


In case of Access errors...

- If there are any Access Denied type error, then
 - Click (not select) on each file/object of your Web page at a time
 - On the resulting page, make sure to press 'Make Public'



Here are my uploaded files for my website

 Services ▾ Resource Groups ▾ 

 Vinod Dubey ▾ Global ▾

Amazon S3 > swe645-vkd2

Overview

Properties

Permissions

Management

 Type a prefix and press Enter to search. Press ESC to clear.

 Upload

 Create folder

More ▾

US East (N. Virginia)

Viewing 1 to 3

| <input type="checkbox"/> | Name  | Last modified  | Size  | Storage class  |
|--------------------------|--|---|--|---|
| <input type="checkbox"/> |  Tulips.jpg | Sep 6, 2017 5:39:05 PM | 606.3 KB | Standard |
| <input type="checkbox"/> |  VKDubey.jpeg | Sep 6, 2017 5:39:05 PM | 9.5 KB | Standard |
| <input type="checkbox"/> |  index.html | Sep 6, 2017 5:39:05 PM | 328.0 B | Standard |

Viewing 1 to 3

Here is my website:

<http://swe645-vkd2.s3-website-us-east-1.amazonaws.com/>

← → ↻ ⓘ swe645-vkd2.s3-website-us-east-1.amazonaws.com

Welcome to SWE645 webpage!



This page is hosted on AWS using Amazon S3

Spectacular Tulips



Amazon Elastic Compute Cloud (Amazon EC2)

Virtual Server Hosting

- Amazon EC2 is a service that **provides resizable compute capacity** in the AWS cloud.
- Using Amazon EC2 eliminates the need to invest in computing hardware up front, which saves money but also allows applications to be developed and deployed faster
- You can use Amazon EC2 to launch a virtual machine
- Think of it as a virtual server or thousands of virtual servers as your own data center
- You can use EC2 to launch a virtual machine and you can configure all of the associated security and networking settings
- Provides **simple** web service **interface to obtain and configure capacity** for your machine.
- **Reduces the time required to obtain and boot new server instances to minutes**
 - allowing you to quickly scale capacity, both up and down, as your computing requirements change.
- **Pay-as-you go pricing model** – you pay only for capacity that you actually use.
- Amazon EC2 provides developers the tools **to build failure scalable, resilient, and elastic applications**

Terminology

- **Instance – One running virtual machine**
- **Instance Type – hardware configuration: cores, memory, disk.**
- **Instance Store Volume – Temporary disk associated with instance.**
- **Image (AMI) – Pre-configured templates for provisioning EC2 instances**
 - Stored bits which can be turned into instances
 - Can include O/S like Linux or Windows and/or pre-installed software packages

Terminology

- **Key Pair – Credentials used to access VM from command line.**
- **Region – Geographic location, price, laws, network locality.**
- **Availability Zone – Subdivision of region the is fault-independent.**

Securing Amazon EC2 Instances: Security Groups

- Similar to traditional firewalls
- There are settings that enable you to specify the protocols, ports, and source IP ranges that can reach your instances using security groups

EC2 Instance Types

***There are a wide range of instance types that have varying combinations of CPU power, memory, storage, and networking capacity**

***Range from small “micro” instances for small jobs to high performance “x-large” instances for things like data warehousing**

| Model | vCPU | CPU Credits / hour | Mem (GiB) | Storage (GB) |
|-----------|------|--------------------|-----------|--------------|
| t2.micro | 1 | 6 | 1 | EBS Only |
| t2.small | 1 | 12 | 2 | EBS Only |
| t2.medium | 2 | 24 | 4 | EBS Only |

| Model | vCPU | Mem (GiB) | SSD Storage (GB) |
|------------|------|-----------|------------------|
| c3.large | 2 | 3.75 | 2 x 16 |
| c3.xlarge | 4 | 7.5 | 2 x 40 |
| c3.2xlarge | 8 | 15 | 2 x 80 |
| c3.4xlarge | 16 | 30 | 2 x 160 |
| c3.8xlarge | 32 | 60 | 2 x 320 |

Use Cases

High performance front-end fleets, web-servers, on-demand batch processing, distributed analytics, high performance science and engineering applications, ad serving, batch processing, MMO gaming, video encoding, and distributed analytics.

| Model | vCPU | Mem (GiB) | SSD Storage (GB) |
|------------|------|-----------|------------------|
| m3.medium | 1 | 3.75 | 1 x 4 |
| m3.large | 2 | 7.5 | 1 x 32 |
| m3.xlarge | 4 | 15 | 2 x 40 |
| m3.2xlarge | 8 | 30 | 2 x 80 |

| Model | vCPU | Mem (GiB) | SSD Storage (GB) |
|------------|------|-----------|------------------|
| r3.large | 2 | 15.25 | 1 x 32 |
| r3.xlarge | 4 | 30.5 | 1 x 80 |
| r3.2xlarge | 8 | 61 | 1 x 160 |
| r3.4xlarge | 16 | 122 | 1 x 320 |
| r3.8xlarge | 32 | 244 | 2 x 320 |

Use Cases

We recommend memory-optimized instances for high performance databases, distributed memory caches, in-memory analytics, genome assembly and analysis, larger deployments of SAP, Microsoft SharePoint, and other enterprise applications.

EC2 Pricing Model

<http://aws.amazon.com/ec2/pricing/>

- **Free Usage Tier**
- **On-Demand Instances**
 - Start and stop instances whenever you like, costs are rounded up to the nearest hour. (Worst price)
- **Reserved Instances**
 - Pay up front for one/three years in advance. (Best price)
 - Unused instances can be sold on a secondary market.
- **Spot Instances**
 - Specify the price you are willing to pay, and instances get started and stopped without any warning as the market changes.

Free Usage Tier

- **750 hours of EC2 running Linux, RHEL, or SLES t2.micro instance usage**
- **750 hours of EC2 running Microsoft Windows Server t2.micro instance usage**
- **750 hours of Elastic Load Balancing plus 15 GB data processing**
- **30 GB of Amazon Elastic Block Storage in any combination of General Purpose (SSD) or Magnetic, plus 2 million I/Os (with Magnetic) and 1 GB of snapshot storage**
- **15 GB of bandwidth out aggregated across all AWS services**
- **1 GB of Regional Data Transfer**

Accessing Amazon EC2

- **A number of ways to use EC2**
 - AWS Management Console – powerful, intuitive and easy to use
 - Command Line Interface
 - API access

**An example to create, find,
deploy, and terminate an EC2
instance**

Login to the AWS Management Console to get started

The screenshot displays the AWS Management Console interface. At the top, a dark navigation bar includes the AWS logo, 'Services' with an upward arrow, 'Resource Groups' with a dropdown arrow, a star icon, a notification bell, and user information 'Vinod Dubey' and 'N. Virginia' with a dropdown arrow.

On the left, a 'History' sidebar lists: EC2, Billing, S3, Console Home, IAM, and EC2 Container Service.

The main area features a search bar with the placeholder text 'Find a service by name or feature (for example, EC2, S3 or VM, storage)'. To the right of the search bar is a 'Group' button.

The services are organized into the following categories:

- Compute**: EC2, EC2 Container Service, Lightsail, Elastic Beanstalk, Lambda, Batch
- Storage**: S3, EFS, Glacier, Storage Gateway
- Database**: RDS, DynamoDB, ElastiCache, Amazon Redshift
- Networking & Content Delivery**: VPC, CloudFront, Direct Connect, Route 53
- Migration**: AWS Migration Hub, Application Discovery Service, Database Migration Service, Server Migration Service, Snowball
- Developer Tools**: CodeStar, CodeCommit, CodeBuild, CodeDeploy, CodePipeline, X-Ray
- Management Tools**: CloudWatch, CloudFormation, CloudTrail, Config, OpsWorks, Service Catalog, Trusted Advisor, Managed Services
- Security, Identity & Compliance**: IAM, Inspector, Certificate Manager, Directory Service, WAF & Shield, Artifact, Amazon Macie, CloudHSM
- Analytics**: Athena, EMR, CloudSearch, Elasticsearch Service, Kinesis, Data Pipeline, QuickSight, AWS Glue
- Artificial Intelligence**: Lex, Amazon Polly, Rekognition, Machine Learning
- Internet Of Things**: AWS IoT, AWS Greengrass
- Contact Center**: Amazon Connect
- Game Development**: Amazon GameLift
- Mobile Services**: Mobile Hub, Cognito, Device Farm, Mobile Analytics, Pinpoint
- Application Services**: Step Functions, SWF, API Gateway, Elastic Transcoder
- Messaging**: Simple Queue Service, Simple Notification Service, Simple Email Service
- Business Productivity**: WorkDocs, WorkMail, Amazon Chime
- Desktop & App Streaming**: WorkSpaces, AppStream 2.0

Click Amazon EC2 icon on the AWS Console homepage under Compute

The screenshot displays the AWS Console homepage. At the top, the navigation bar includes the AWS logo, 'Services' (with a dropdown arrow), 'Resource Groups' (with a dropdown arrow), and a search icon. On the right side of the navigation bar, there are notification and user profile icons, with the name 'Vinod Dubey' and the region 'N. Virginia'.

On the left side, the 'History' panel lists recently viewed services: EC2, Billing, S3, Console Home, IAM, and EC2 Container Service.

The main content area features a search bar with the placeholder text 'Find a service by name or feature (for example, EC2, S3 or VM, storage)'. Below the search bar, services are organized into categories, each with an icon and a title. The 'Compute' category is circled in blue and includes the following services: EC2, EC2 Container Service, Lightsail, Elastic Beanstalk, Lambda, and Batch. Other categories visible include Storage (S3, EFS, Glacier, Storage Gateway), Database (RDS, DynamoDB, ElastiCache, Amazon Redshift), Networking & Content Delivery (VPC, CloudFront, Direct Connect, Route 53), Migration (AWS Migration Hub, Application Discovery Service, Database Migration Service, Server Migration Service, Snowball), Developer Tools (CodeStar, CodeCommit, CodeBuild, CodeDeploy, CodePipeline, X-Ray), Management Tools (CloudWatch, CloudFormation, CloudTrail, Config, OpsWorks, Service Catalog, Trusted Advisor, Managed Services), Security, Identity & Compliance (IAM, Inspector, Certificate Manager, Directory Service, WAF & Shield, Artifact, Amazon Macie, CloudHSM), Analytics (Athena, EMR, CloudSearch, Elasticsearch Service, Kinesis, Data Pipeline, QuickSight, AWS Glue), Artificial Intelligence (Lex, Amazon Polly, Rekognition, Machine Learning), Internet Of Things (AWS IoT, AWS Greengrass), Contact Center (Amazon Connect), Game Development (Amazon GameLift), Mobile Services (Mobile Hub, Cognito, Device Farm, Mobile Analytics, Pinpoint), Application Services (Step Functions, SWF, API Gateway, Elastic Transcoder), Messaging (Simple Queue Service, Simple Notification Service, Simple Email Service), Business Productivity (WorkDocs, WorkMail, Amazon Chime), and Desktop & App Streaming (WorkSpaces, AppStream 2.0).

Click “Launch Instance” to begin the process

The screenshot shows the AWS Management Console interface for the EC2 Dashboard. The left sidebar contains navigation links for EC2 Dashboard, Events, Tags, INSTANCES, IMAGES, ELASTIC BLOCK STORE, and NETWORK & SECURITY. The main content area is divided into three sections: Resources, Create Instance, and Service Status. The Resources section lists current EC2 resources in the US West (Oregon) region. The Create Instance section includes a description and a prominent blue 'Launch Instance' button. The Service Status section shows the availability of the us-west-2 region. A light blue callout box with a play button icon is overlaid on the 'Launch Instance' button, containing the text: 'Click Launch Instance, to begin the process.'

Services | **Edit** | **awsstudent @ 464938405131** | **Oregon** | **Help**

EC2 Dashboard

- Events
- Tags
- INSTANCES**
 - Instances
 - Spot Requests
 - Reserved Instances
- IMAGES**
 - AMIs
 - Bundle Tasks
- ELASTIC BLOCK STORE**
 - Volumes
 - Snapshots
- NETWORK & SECURITY**
 - Security Groups
 - Elastic IPs
 - Placement Groups
 - Load Balancers
 - Key Pairs
 - Network Interfaces

Resources

You are using the following Amazon EC2 resources in the US West (Oregon) region:

| | |
|---------------------|------------------|
| 0 Running Instances | 0 Elastic IPs |
| 0 Volumes | 0 Snapshots |
| 1 Key Pair | 0 Load Balancers |
| 0 Placement Groups | 1 Security Group |

[Optimize your resources' cost, performance and security with **AWS Trusted Advisor**](#) [Hide](#)

Create Instance

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

Launch Instance

Note: Your

Service Status

Service Status

US V This

Availability Zone Status:

| | |
|-------------|---|
| us-west-2a: | Availability zone is operating normally |
| us-west-2b: | Availability zone is operating normally |

Account Attributes

Supported Platforms

VPC

Default VPC

vpc-dab1edb1

Additional Information

- Getting Started Guide
- Documentation
- All EC2 Resources
- Forums
- Pricing
- Contact Us

Popular AMIs on AWS Marketplace

CentOS 6.4 (i386) - Release Media

Provided by CentOS.org
Rating ★★★★★
Free Software, pay only for AWS usage
[View all Operating Systems](#)

Couchbase Server - Community Edition

Provided by Couchbase
Rating ★★★★★
Free Software, pay only for

An example to create, find, deploy, and terminate an EC2 instance

The screenshot shows the AWS Management Console interface for creating an EC2 instance. The top navigation bar includes the AWS logo, 'Services', 'Edit', and the user's account information 'awsstudent @ 464938405131' in the 'Oregon' region. The main navigation pane on the left shows 'Quick Start' with options for 'My AMIs', 'AWS Marketplace', and 'Community AMIs'. A 'Free tier only' filter is also visible.

The main content area is titled 'Step 1: Choose an Amazon Machine Image (AMI)' with a 'Cancel and Exit' link. Below the title, a paragraph explains that an AMI is a template containing the software configuration (operating system, application server, and applications) required to launch an instance. It states that users can select an AMI provided by AWS, the user community, or the AWS Marketplace, or use one of their own AMIs.

The AMI list displays the following entries:

- Amazon Linux AMI 2013.09.1** - ami-be1c848e (64-bit) / ami-4c1c847c (32-bit). It is marked as 'Free tier eligible'. Description: 'The Amazon Linux AMI is an EBS-backed, PV-GRUB image. It includes Linux 3.4, AWS tools, and repository access to multiple versions of MySQL, PostgreSQL, Python, Ruby, and Tomcat.' Root device type: ebs. Virtualization type: paravirtual. Buttons: 'Select', '64-bit' (selected), '32-bit'.
- Red Hat Enterprise Linux 6.4** - ami-h8e63b88 (64-bit) / ami-h8e63b8a (32-bit). It is marked as 'Free tier eligible'. Description: 'Red Hat Enterprise Linux 6.4'. Root device type: ebs. Virtualization type: paravirtual. Buttons: 'Select', '64-bit' (selected), '32-bit'.
- SUSE Linux Enterprise Server 11 SP3** - ami-9eb429ae (64-bit) / ami-9eb429af (32-bit). It is marked as 'Free tier eligible'. Description: 'SUSE Linux Enterprise Server 11 SP3'. Root device type: ebs. Virtualization type: paravirtual. Buttons: 'Select', '64-bit' (selected), '32-bit'.
- Ubuntu Server 12.04.3 LTS** - ami-6aad335a (64-bit) / ami-68ad3358 (32-bit). It is marked as 'Free tier eligible'. Description: 'Ubuntu Server 12.04.3 LTS, with support available from Canonical'. Root device type: ebs. Virtualization type: paravirtual. Buttons: 'Select', '64-bit' (selected), '32-bit'.

A video player overlay is centered over the AMI list, displaying the text: 'You will see here there are many, different operating systems to leverage.'

You need to choose an AMI that already has Tomcat installed – see the next page

Services Edit awsstudent @ 464938405131 Oregon Help

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI)

Cancel and Exit

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Quick Start

- My AMIs
- AWS Marketplace
- Community AMIs

☐ Free tier only ⓘ

Amazon Linux
Free tier eligible

Red Hat
Free tier eligible

SUSE Linux
Free tier eligible

Ubuntu
Free tier eligible

SUSE Linux Enterprise Server 11 - ami-d8b429e8 (64-bit) / ami-9eb429ae (32-bit)

SUSE Linux Enterprise Server 11 Service Pack 3 basic install, EBS boot with Amazon EC2 AMI Tools preinstalled; Apache 2.2, MySQL 5.5, PHP 5.3, and Ruby 1.8.7 available

Root device type: ebs Virtualization type: paravirtual

Select

☒ 64-bit ☐ 32-bit

Ubuntu Server 12.04.3 LTS - ami-6aad335a (64-bit) / ami-68ad3358 (32-bit)

Ubuntu Server 12.04.3 LTS, with support available from Canonical

Select

☒ 64-bit ☐ 32-bit

In Step 1: choose an Amazon Machine Image (AMI), click **Select** next to the AMI instance you want to pick.

Select AWS Marketplace and search for “Tomcat powered by Bitnami” and press select AMI that has Tomcat and MySQL, as shown below

The screenshot shows the AWS Marketplace console interface. At the top, there's a navigation bar with 'Services' and 'Resource Groups' dropdowns. Below this is a progress bar with steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group, and 7. Review. The main heading is 'Step 1: Choose an Amazon Machine Image (AMI)'. Below this is a descriptive paragraph about AMIs. On the left, there's a sidebar with 'Quick Start', 'My AMIs', 'AWS Marketplace' (circled in red), and 'Community AMIs'. Below these are 'Categories' and 'Operating System' filters. The main content area shows search results for 'tomcat powered by bitnami' (search bar circled in red). There are three results listed: 'Tomcat powered by Bitnami (PV)', 'Tomcat powered by Bitnami', and 'JRubv powered by Bitnami (PV)'. The first two results have a 'Free tier eligible' badge. The 'Tomcat powered by Bitnami' result has a 'Select' button circled in red. The 'JRubv powered by Bitnami (PV)' result also has a 'Select' button.

Services ▾ Resource Groups ▾

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Quick Start

My AMIs

AWS Marketplace

Community AMIs

Categories

All Categories

Software Infrastructure (3)

Operating System

Clear Filter

All Linux/Unix

Ubuntu (3)

Software Pricing Plans

Free (3)

Search: tomcat powered by bitnami

1 to 3 of 3 Products

Tomcat powered by Bitnami (PV)

★★★★★ (5) | 8.0.42-0 on Ubuntu 14.04.3 | Previous versions | Sold by Bitnami

\$0.00/hr for software + AWS usage fees

Linux/Unix, Ubuntu 14.04.3 | 64-bit Amazon Machine Image (AMI) | Updated: 3/26/17

This image is for customers that require legacy paravirtualization support (PV). New deployments should use the "Tomcat powered by Bitnami" image at ...

[More info](#)

Tomcat powered by Bitnami

★★★★★ (0) | 8.0.42-0 on Ubuntu 14.04.3 | Previous versions | Sold by Bitnami

\$0.00/hr for software + AWS usage fees

Linux/Unix, Ubuntu 14.04.3 | 64-bit Amazon Machine Image (AMI) | Updated: 3/28/17

Bitnami Tomcat Stack greatly simplifies the development and deployment of applications based on Tomcat. It includes ready-to-run versions of Apache, MySQL, Tomcat, Java and all of ...

[More info](#)

JRubv powered by Bitnami (PV)

[Select](#)

[Select](#)

[Select](#)

An example to create, find, deploy, and terminate an EC2 instance

Services **Edit** **awsstudent @ 464938405131** **Oregon** **Help**

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Currently selected: t1.micro (up to 2 ECUs, 1 vCPUs, 0.613 GiB memory, EBS only)

All instance types

Micro instances
Free tier eligible

General purpose
Memory optimized
Storage optimized
Compute optimized

Micro instances
Micro instances are a low-cost instance option, providing a small amount of CPU resources. They are suited for lower throughput applications, and websites that require additional compute cycles periodically, but are not appropriate for applications that require sustained CPU performance. Popular uses for micro instances include low traffic websites or blogs, small administrative applications, bastion hosts, and free trials to explore EC2 functionality.

| Size | ECUs <small>(i)</small> | vCPUs <small>(i)</small> | Memory <small>(i)</small> | Instance Storage (GiB) <small>(i)</small> | EBS-Optimized Available <small>(i)</small> | Network Performance <small>(i)</small> |
|----------|-------------------------|--------------------------|---------------------------|---|--|--|
| t1.micro | up to 2 | 1 | 0.613 | EBS only | - | Very Low |

Step 2: Choose an Instance Type, Leave the instance type, set to the default, which is t1.micro.

6 months following your AWS sign-up, your free usage tier expires or if you exceed your free usage tier, you pay pay-as-you-go service rates.

Cancel **Previous** **Review and Launch** **Next: Configure Instance Details**

An example to create, find, deploy, and terminate an EC2 instance

Services Edit awsstudent @ 464938405131 Oregon Help

1. Choose AMI **2. Choose Instance Type** 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Currently selected: t1.micro (up to 2 ECUs, 1 vCPUs, 0.613 GiB memory, EBS only)

All instance types

Micro instances

Free tier eligible

General purpose

Memory optimized

Storage optimized

Compute optimized

Micro instances

Micro instances are a low-cost instance option, providing a small amount of CPU resources. They are suited for lower throughput applications, and websites that require additional compute cycles periodically, but are not appropriate for applications that require sustained CPU performance. Popular uses for micro instances include low traffic websites or blogs, small administrative applications, bastion hosts, and free trials to explore EC2 functionality.


| Size | ECUs | vCPUs | Memory | Instance Storage (GiB) | EBS-Optimized Available | Network Performance |
|----------|---------|-------|--------|------------------------|-------------------------|---------------------|
| t1.micro | up to 2 | 1 | 0.613 | EBS only | - | Very Low |

Micro instances are eligible for the AWS free usage tier. For the first 12 months following your AWS sign-up date, you get up to 750 hours of micro instances each month. When your free usage tier expires or if your usage exceeds the free tier restrictions, you pay standard on-demand instance rates. [Learn more](#) about free usage tier eligibility.

To continue, click Next: Configure Instance Details.

Cancel Previous **Review and Launch** Next: Configure Instance Details

An example to create, find, deploy, and terminate an EC2 instance

 Services ▼ Edit ▼ awsstudent @ 464938405131 Oregon Help ▼

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot Instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

| | |
|-------------------------------|--|
| Number of instances | <input type="text" value="1"/> |
| Purchasing option | <input type="checkbox"/> Request Spot Instances |
| Network | vpc-dab1edbl (172.31.0.0/16) (defa |
| Subnet | No preference (default subnet in any |
| Public IP | <input checked="" type="checkbox"/> Automatically assign a public |
| IAM role | None |
| Shutdown behavior | Stop |
| Enable termination protection | <input type="checkbox"/> Protect against accidental ter |
| Monitoring | <input type="checkbox"/> Enable CloudWatch detailed Additional charges apply. |
| Tenancy | Shared tenancy (multi-tenant hardware) Additional charges will apply for dedicated tenancy. |

► Advanced Details

Cancel Previous Review and Launch Next: Add Storage

In Step 3: Configure Instance Details, is where you would set access, network settings, monitoring, and other options.

An example to create, find, deploy, and terminate an EC2 instance

Services Edit awsstudent @ 464938405131 Oregon Help


1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review


Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot Instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances ⓘ 1

Purchasing option ⓘ ☐ Request Spot Instances

Network ⓘ vpc-dab1edb1 (172.31.0.0/16) (default)  Create new VPC

Subnet ⓘ No preference (default subnet in any Availability Zone)  Create new subnet

Public IP ⓘ ☒ Automatically assign a public IP address to your instances

IAM role ⓘ None

Shutdown behavior ⓘ Stop

Enable termination protection ⓘ ☐ Protect against accidental termination

Monitoring ⓘ ☐ Enable CloudWatch detailed monitoring
Additional charges apply.

Tenancy ⓘ Shared tenancy (multi-tenant hardware)
Additional charges will apply for dedicated hardware.

► Advanced Details

Cancel Previous **Review and Launch** Next: Add Storage

We will leave all of the default options and click Next: Add Storage.

An example to create, find, deploy, and terminate an EC2 instance

The screenshot shows the AWS Management Console interface for creating an EC2 instance, specifically Step 4: Add Storage. The top navigation bar includes the AWS logo, 'Services', 'Edit', and user information 'awsstudent @ 464938405131' in the 'Oregon' region. A progress bar at the top lists seven steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage (highlighted), 5. Tag Instance, 6. Configure Security Group, and 7. Review.

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

| Type ⓘ | Device ⓘ | Snapshot ⓘ | Size (GB) ⓘ | Volume Type ⓘ | IOPS ⓘ | Delete on Termination ⓘ |
|--------|-----------|---------------|-------------|---------------|--------|-------------------------------------|
| Root | /dev/sda1 | snap-68c27457 | 8 | Standard | N/A | <input checked="" type="checkbox"/> |


[Add New Volume](#)

Free tier eligible customers can get up to 30 GB of EBS storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

At Step 4: Add Storage, you can easily add more virtual hard drives or change the drive size here.

Navigation buttons at the bottom: [Cancel](#), [Previous](#), [Review and Launch](#) (highlighted), and [Next: Tag Instance](#).

An example to create, find, deploy, and terminate an EC2 instance

 **Services** ▾ **Edit** ▾ awsstudent @ 464938405131 ▾ Oregon ▾ Help ▾


[1. Choose AMI](#) [2. Choose Instance Type](#) [3. Configure Instance](#) **[4. Add Storage](#)** [5. Tag Instance](#) [6. Configure Security Group](#) [7. Review](#)

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

| Type ⓘ | Device ⓘ | Snapshot ⓘ | Size (GB) ⓘ | Volume Type ⓘ | IOPS ⓘ | Delete on Termination ⓘ |
|--------|-----------|---------------|--------------------------------|---------------------------------------|--------|-------------------------------------|
| Root | /dev/sda1 | snap-68c27457 | <input type="text" value="8"/> | <input type="text" value="Standard"/> | N/A | <input checked="" type="checkbox"/> |

[Add New Volume](#)

 Free tier eligible customers can get up to 30 GB of EBS storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

Keep the default virtual hard drive, click **Next: Tag Instance.**

[Cancel](#) [Previous](#) **[Review and Launch](#)** [Next: Tag Instance](#)

An example to create, find, deploy, and terminate an EC2 instance

The screenshot shows the AWS Management Console interface for the 'Step 5: Tag Instance' step. The top navigation bar includes the AWS logo, 'Services', 'Edit', and user information 'awsstudent @ 464938405131' in the 'Oregon' region. The breadcrumb trail shows steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Tag Instance (highlighted), 6. Configure Security Group, and 7. Review.

Step 5: Tag Instance

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. [Learn more](#) about tagging your Amazon EC2 resources.

| Key (127 characters maximum) | Value (255 characters maximum) |
|-----------------------------------|--------------------------------|
| <input type="text" value="Name"/> | <input type="text"/> |

(Up to 10 tags)

In Step 5: Tag Instance, it is a best practice to name your instances by using the tag instance interface.

At the bottom, there are navigation buttons: 'Cancel', 'Previous', 'Review and Launch' (highlighted in blue), and 'Next: Configure Security Group'.

An example to create, find, deploy, and terminate an EC2 instance

Services Edit awsstudent @ 464938405131 Oregon Help

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 5: Tag Instance

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. [Learn more](#) about tagging your Amazon EC2 resources.


| Key (127 characters maximum) | Value (255 characters maximum) |
|-----------------------------------|--------------------------------|
| <input type="text" value="Name"/> | <input type="text"/> |

Create Tag (Up to 10 tags maximum)

After that click, Next: Configure Security Group.

Cancel Previous Review and Launch Next: Configure Security Group

An example to create, find, deploy, and terminate an EC2 instance

 Services ▾ Edit ▾ awsstudent @ 464938405131 ▾ Oregon ▾ Help ▾

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.


Assign a security group: ☒ Create a new security group ☐ Select an existing security group

Security group name:

Description:

| Protocol | Type | Port Range (Code) | Source |
|----------|------|-------------------|--------------------|
| SSH | TCP | 22 | Anywhere 0.0.0.0/0 |


Add Rule

 **Warning**
Rules from [Amazon](#) recommend setting security group rules to allow access

At Step 6: Configure Security Group, accept the default security group, as it allows port 22 (SSH) from anywhere to this Linux instance.

Cancel Previous Review and Launch

An example to create, find, deploy, and terminate an EC2 instance

 Services ▾ Edit ▾ awsstudent @ 464938405131 ▾ Oregon ▾ Help ▾

[1. Choose AMI](#) [2. Choose Instance Type](#) [3. Configure Instance](#) [4. Add Storage](#) [5. Tag Instance](#) [6. Configure Security Group](#) [7. Review](#)









Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.


Assign a security group: ☒ Create a new security group ☐ Select an existing security group

Security group name:

Description:

| Protocol  | Type  | Port Range (Code)  | Source  |
|--|--|---|--|
| SSH  | TCP | 22  | Anywhere  0.0.0.0/0  |

[Add Rule](#)

 **Warning**
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Click Review and Launch.

[Cancel](#) [Previous](#) [Review and Launch](#)

An example to create, find, deploy, and terminate an EC2 instance

Services Edit awsstudent @ 464938405131 Oregon Help

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

Improve your instance's security. Your security group, launch-wizard-1, is open to the world.

Your instance may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

AMI Details

Amazon Linux AMI 2013.09.1 - ami-be1c848e

The Amazon Linux AMI is an EBS-backed, PV-GRUB versions of MySQL, PostgreSQL, Python, Ruby, and 1 Root Device Type: ebs Virtualization type: paravirtual

[Edit AMI](#)

Instance Type

| Instance Type | ECUs | vCPUs | Memory (GiB) | Storage | Performance |
|---------------|---------|-------|--------------|----------|-------------|
| t1.micro | up to 2 | 1 | 0.613 | EBS only | Very Low |

[Instance type](#)

Security Groups


[Edit security groups](#)

| Security group name | Description |
|---------------------|---|
| launch-wizard-1 | launch-wizard-1 created on Thursday, November 21, 2013 9:37:08 AM UTC-8 |

Cancel Previous **Launch**

Next at Step 7: Review Instance Launch, you get an overview of all the settings of the instance you just created.


An example to create, find, deploy, and terminate an EC2 instance


 **Services** ▾ **Edit** ▾ awsstudent @ 464938405131 ▾ Oregon ▾ Help ▾

[1. Choose AMI](#) [2. Choose Instance Type](#) [3. Configure Instance](#) [4. Add Storage](#) [5. Tag Instance](#) [6. Configure Security Group](#) [7. Review](#)

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AMI Details [Edit AMI](#)
 **Amazon Linux AMI 2013.09.1 - ami-be1c848e**
The Amazon Linux AMI is an EBS-backed, PV-GRUB image. It includes Linux 3.4, AWS tools, and repository access to multiple versions of MySQL, PostgreSQL, Python, Ruby, and Tomcat.
Root Device Type: ebs Virtualization type: paravirtual

Instance Type [Edit instance type](#)

| Instance Type | ECUs | vCPUs | Memory (GiB) | Instance Storage (GiB) | EBS-Optimized Available | Network Performance |
|---------------|---------|-------|--------------|------------------------|-------------------------|---------------------|
| t1.micro | up to 2 | 1 | 0.613 | EBS only | | |

Security Groups

| | |
|----------------------------|---|
| Security group name | launch-wizard-1 |
| Description | launch-wizard-1 created on Thursday, November |

Click Launch, to continue.

[Cancel](#) [Previous](#) [Launch](#)

An example to create, find, deploy, and terminate an EC2 instance

The screenshot shows the AWS Management Console interface during the 'Step 7: Review Instance Launch' process. The console displays various configuration details for the EC2 instance, including AMI details, instance type, and security groups. A modal dialog is open, prompting the user to 'Select an existing key pair or create a new key pair'. The dialog explains that a key pair consists of a public key stored by AWS and a private key file stored by the user. It provides options to 'Choose an existing key pair' or 'Create a new key pair'. A blue callout box highlights that users can upload their public key or create their own Key Pair here in the AWS Management Console.

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

Improve your instance's security. Your security group, launch-wizard-1, is open to the world.

Your instance has a known IP address. You can also restrict access from known IP addresses. For more information, see [Restricting access from known IP addresses](#). HTTP (80) for

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Choose an existing key pair

Select a key pair

qwiklab-1130-151808

☐ I acknowledge that I am responsible for the security of my key pair.

You can upload your public key or create your own **Key Pair** here in the AWS Management Console.

Cancel Previous **Launch**

An example to create, find, deploy, and terminate an EC2 instance

The screenshot shows the AWS Management Console interface for creating an EC2 instance. The top navigation bar includes 'Services', 'Edit', and user information. The main header shows the progress of the instance launch process: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Tag Instance, 6. Configure Security Group, and 7. Review. The current step is 'Step 7: Review Instance Launch'.

A warning message states: 'Improve your instance's security. Your security group, launch-wizard-1, is open to the world.' Below this, the 'AMI Details' section shows 'Amazon Linux 2 AMI' as the selected AMI. The 'Instance Type' section shows 't1.micro' as the selected instance type. The 'Security Groups' section shows 'launch-wizard-1' as the selected security group.

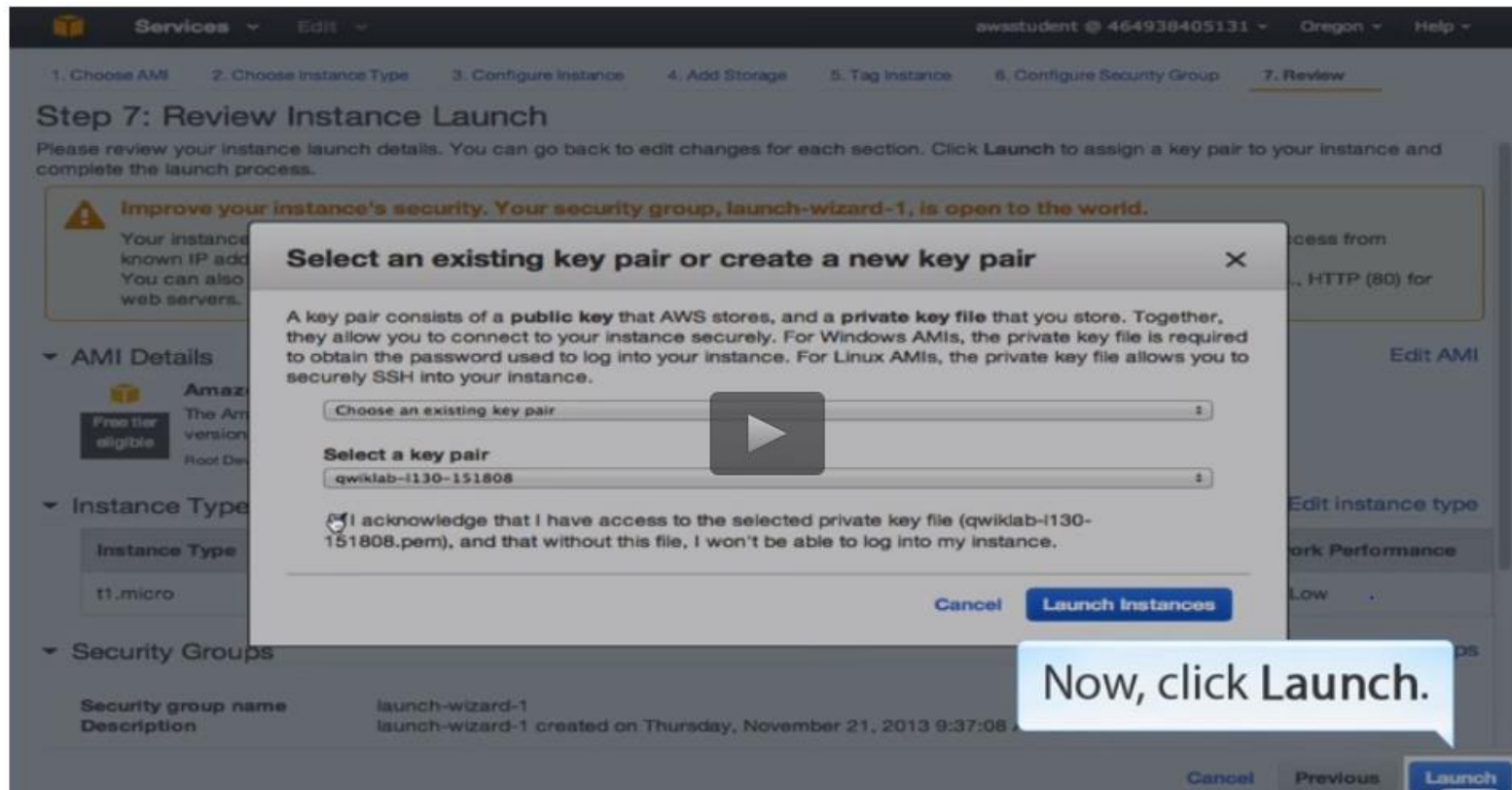
A modal dialog titled 'Select an existing key pair or create a new key pair' is open. It contains the following text: 'A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.'

The dialog has two input fields: 'Choose an existing key pair' and 'Select a key pair'. The 'Select a key pair' field has 'qwiklab-i130-151808' entered. Below these fields is a checkbox with the text: 'I acknowledge that I have access to the selected private key file (qwiklab-i130-151808.pem), and that without this file, I won't be able to log into my instance.'

A blue callout box points to the checkbox with the text: 'Click the acknowledgement checkbox stating that you have access to the private key.'

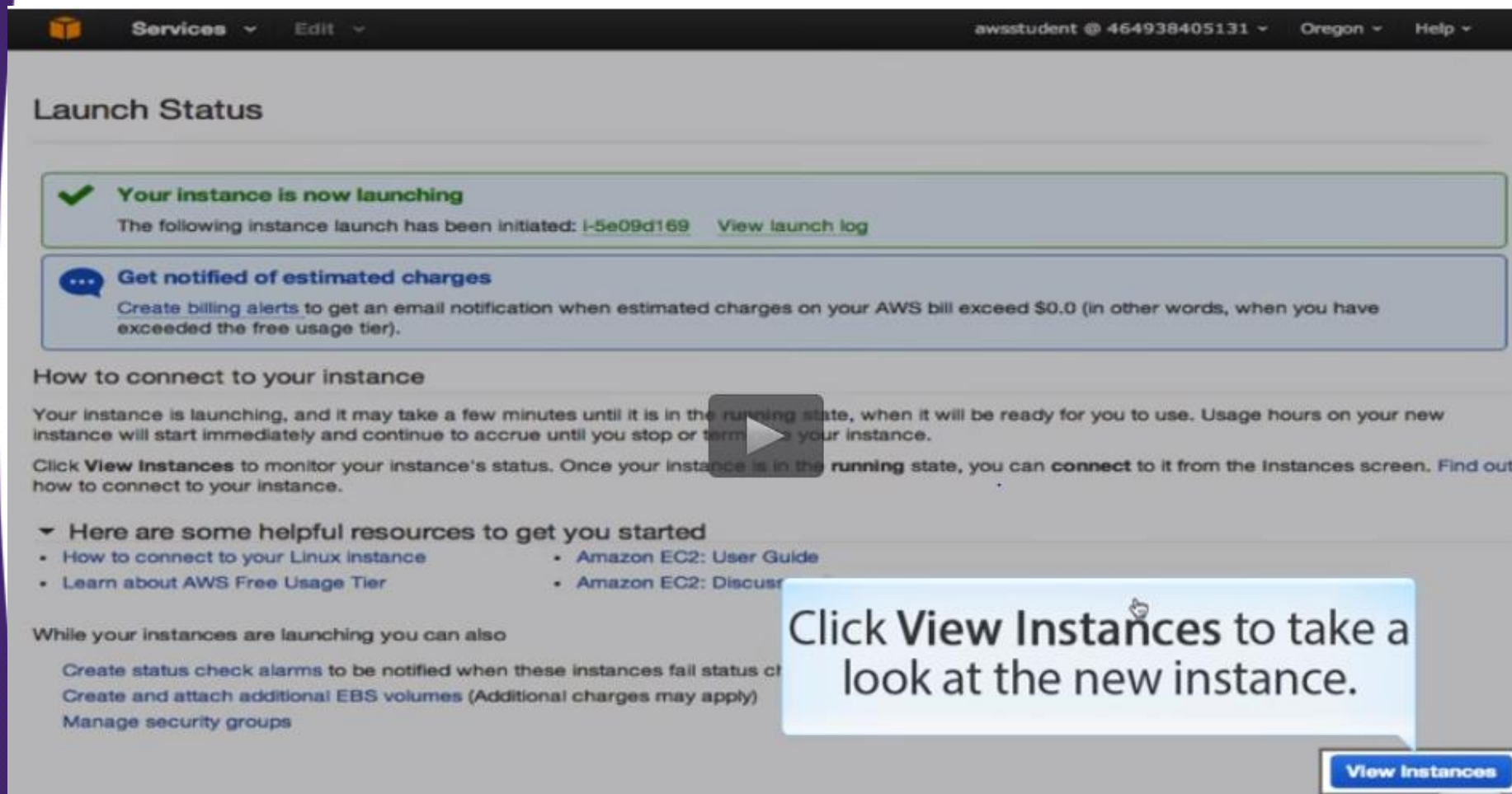
The dialog has a 'Launch' button at the bottom right.

An example to create, find, deploy, and terminate an EC2 instance



- “Key Pairs are security features that control access to your instance after it is created!”
- If you do not have right Key Pair, you will NOT be able to access the instance

An example to create, find, deploy, and terminate an EC2 instance



The screenshot shows the AWS Management Console interface. At the top, the navigation bar includes the AWS logo, 'Services' and 'Edit' dropdowns, the user 'awsstudent @ 464938405131', the region 'Oregon', and a 'Help' link. The main heading is 'Launch Status'. Below this, there are two informational boxes: a green one stating 'Your instance is now launching' with the instance ID 'i-5e09d169' and a 'View launch log' link; and a blue one titled 'Get notified of estimated charges' with a link to 'Create billing alerts'. The section 'How to connect to your instance' explains that the instance is launching and will be ready for use in the 'running' state. It includes a video player icon and text about monitoring the instance's status and connecting to it. Below this, a section titled 'Here are some helpful resources to get you started' lists links for connecting to a Linux instance, learning about the AWS Free Usage Tier, the Amazon EC2 User Guide, and the Amazon EC2 Discussion Forum. At the bottom, it says 'While your instances are launching you can also' and lists actions like creating status check alarms, attaching EBS volumes, and managing security groups. A blue button labeled 'View Instances' is in the bottom right corner. A light blue callout box with a hand icon points to the 'View Instances' link in the text, containing the instruction: 'Click View Instances to take a look at the new instance.'

Services ▾ Edit ▾

awsstudent @ 464938405131 ▾ Oregon ▾ Help ▾

Launch Status

✓ **Your instance is now launching**

The following instance launch has been initiated: [i-5e09d169](#) [View launch log](#)

⋮ **Get notified of estimated charges**

Create [billing alerts](#) to get an email notification when estimated charges on your AWS bill exceed \$0.0 (in other words, when you have exceeded the free usage tier).

How to connect to your instance

Your instance is launching, and it may take a few minutes until it is in the **running** state, when it will be ready for you to use. Usage hours on your new instance will start immediately and continue to accrue until you stop or terminate your instance.

Click **View Instances** to monitor your instance's status. Once your instance is in the **running** state, you can **connect** to it from the instances screen. Find out how to connect to your instance.

▼ Here are some helpful resources to get you started

- [How to connect to your Linux instance](#)
- [Amazon EC2: User Guide](#)
- [Learn about AWS Free Usage Tier](#)
- [Amazon EC2: Discussion Forum](#)

While your instances are launching you can also

- [Create status check alarms](#) to be notified when these instances fail status checks
- [Create and attach additional EBS volumes](#) (Additional charges may apply)
- [Manage security groups](#)

[View Instances](#)

Click **View Instances** to take a look at the new instance.

An example to create, find, deploy, and terminate an EC2 instance

The screenshot displays the AWS Management Console interface for the EC2 service. The top navigation bar shows the user is logged in as 'awsstudent' with account ID '464938405131' in the 'Oregon' region. The left-hand navigation menu lists various services, with 'INSTANCES' expanded to show 'Instances', 'Spot Requests', and 'Reserved Instances'. The main content area shows the 'Launch Instance' button and a table of instances. A single instance is listed with the ID 'i-5e09d169', type 't1.micro', and state 'running'. A blue callout box with a play button icon is overlaid on the instance row, containing the text: 'Once the instance state has changed to running, your instance will be ready to use!'. Below the table, there is a section titled 'Select an instance above'.

Services Edit awsstudent @ 464938405131 Oregon Help

EC2 Dashboard
Events
Tags

INSTANCES
Instances
Spot Requests
Reserved Instances

IMAGES
AMIs
Bundle Tasks

ELASTIC BLOCK STORE
Volumes
Snapshots

NETWORK & SECURITY
Security Groups
Elastic IPs
Placement Groups
Load Balancers
Key Pairs
Network Interfaces

Launch Instance Connect Actions

Filter: All Instances All instance types Search Instances

1 to 1 of 1 instances

| Name | Instance ID | Instance Type | Availability Zone | Instance State | Status Checks | Alarm |
|------|-------------|---------------|-------------------|----------------|---------------|-------|
| | i-5e09d169 | t1.micro | us-west-2b | running | Initializing | None |

Once the instance state has changed to running, your instance will be ready to use!

Select an instance above

An example to create, find, deploy, and terminate an EC2 instance

The screenshot shows the Amazon EC2 console interface. On the left is a navigation menu with categories like INSTANCES, IMAGES, ELASTIC BLOCK STORE, and NETWORK & SECURITY. The main area displays a table of instances. A blue callout box with a play button icon is overlaid on the first instance row, containing the text: "To view your instance in the Amazon EC2 dashboard, click the selection box next to your Instance Name." Below the table, it says "Select an instance above".

Services Edit

awsstudent @ 464938405131 Oregon Help

EC2 Dashboard
Events
Tags

INSTANCES

Instances
Spot Requests
Reserved Instances

IMAGES

AMIs
Bundle Tasks

ELASTIC BLOCK STORE

Volumes
Snapshots

NETWORK & SECURITY

Security Groups
Elastic IPs
Placement Groups
Load Balancers
Key Pairs
Network Interfaces

Launch Instance Connect Actions

Filter: All Instances All Instance types Search Instances

1 to 1 of 1 instances

| <input type="checkbox"/> | Name | Instance ID | Instance Type | Availability Zone | Instance State | Status Checks | Alarm |
|--------------------------|------|-------------|---------------|-------------------|----------------|---------------|-------|
| <input type="checkbox"/> | | i-5e09d169 | t1.micro | us-west-2b | running | Initializing | None |

To view your instance in the Amazon EC2 dashboard, click the selection box next to your Instance Name.

Select an instance above

An example to create, find, deploy, and terminate an EC2 instance

The screenshot shows the AWS Management Console interface for the EC2 service. The left sidebar contains navigation links for EC2 Dashboard, Events, Tags, INSTANCES, IMAGES, ELASTIC BLOCK STORE, and NETWORK & SECURITY. The main content area displays a table of instances. A single instance is shown with the following details:

| Name | Instance ID | Instance Type | Availability Zone | Instance State | Status Checks | Alarm |
|------|-------------|---------------|-------------------|----------------|---------------|-------|
| | i-5e09d169 | t1.micro | us-west-2b | running | Initializing | None |

A callout box with a play button icon contains the text: "Find your Public DNS name and copy that connection string to your clipboard." Below this, a detailed view of the instance shows the following information:

| Instance ID | Instance state | Instance type |
|-------------|----------------|---------------|
| i-5e09d169 | running | t1.micro |

Public DNS: ec2-54-200-230-73.us-west-2.compute.amazonaws.com

Public IP: 54.200.230.73

Elastic IP: -

The DNS can be used to access the system exactly as you would if it were in your own data center.

Elastic Block Store

- **An EBS volume is a virtual disk of a fixed size with a block read/write interface. It can be mounted as a file system on a running EC2 instance where it can be updated incrementally.**
- **Unlike an instance store, an EBS volume is persistent.**
- **Fundamental operations:**
 - CREATE a new volume (1GB-1TB)
 - COPY a volume from an existing EBS volume or S3 object.
 - MOUNT on one instance at a time.
 - SNAPSHOT current state to an S3 object.

Durability

- **Amazon claims about EBS:**
 - Amazon EBS volume data is replicated across multiple servers in an Availability Zone to prevent the loss of data from the failure of any single component.

Deploying a WAR file on EC2 instance from a Window-based PC

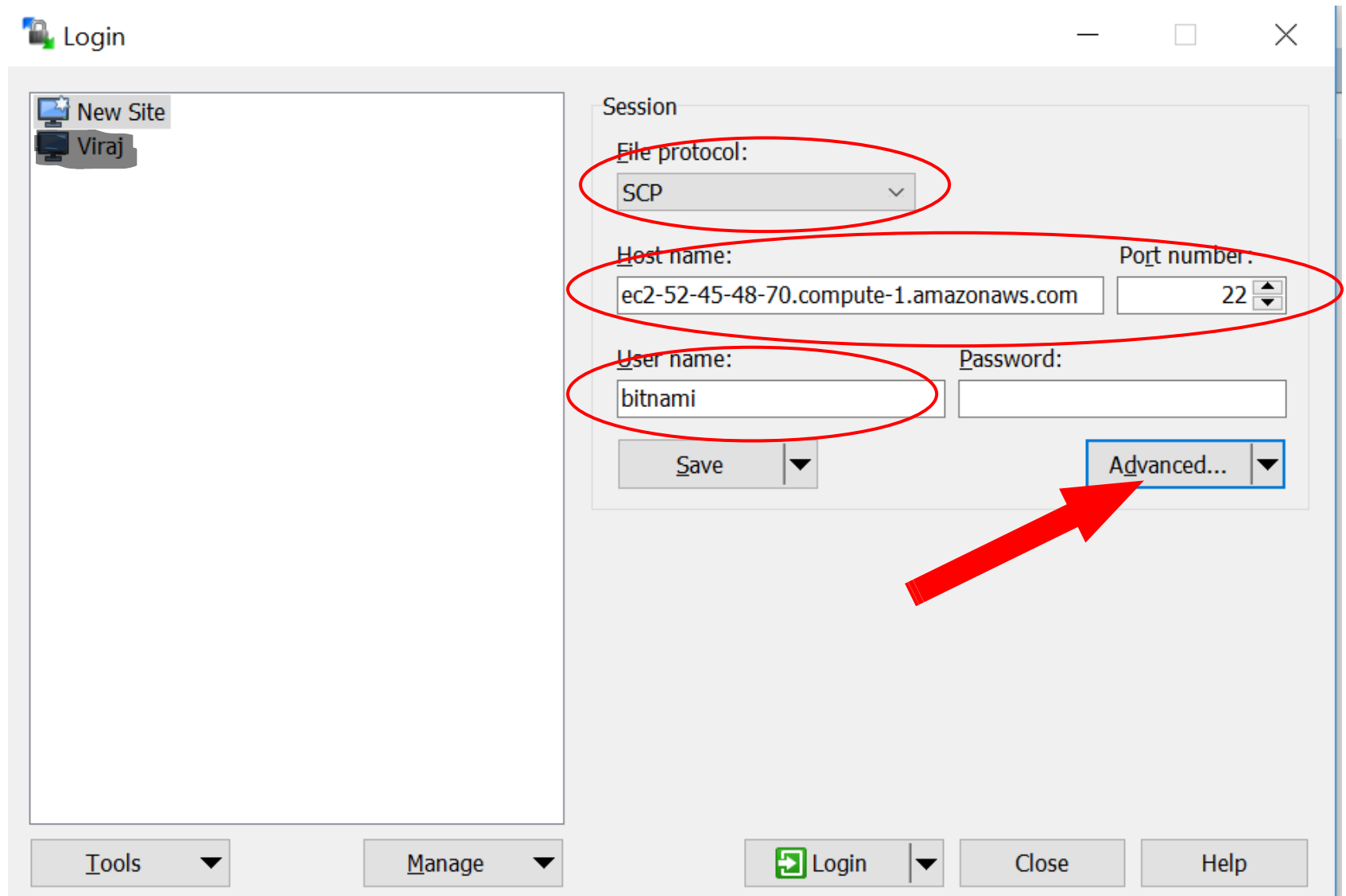
Deploying a WAR file on EC2 instance from a Window-based PC

- **Create an EC2 Instance using an AMI with Tomcat preinstalled**
 - Use an EC2 Amazon Machine Image (AMI) labeled “Tomcat Certified by Bitnami” found under AWS Marketplace to launch your EC2 instance.
 - Provision a free tier eligible Amazon EC2 instance using an Amazon Machine Image (AMI) that may already have Tomcat configured. For example, once you are on EC2 Console, click Launch Instance link. For the AMI, search for key word “Tomcat” in AWS Marketplace and select the Amazon machine image labeled something like “Tomcat Certified by Bitnami” – the one labelled as free tier eligible.
 - Follow the rest of the steps as usual

Deploying a WAR file on EC2 instance from a Window-based PC

- **Download a FTP client**
 - This demonstration will use WinSCP ([download here: https://sourceforge.net/projects/winscp/files/latest/download](https://sourceforge.net/projects/winscp/files/latest/download))
- **Setup a connection to your EC2 instance:**
 - Copy the public DNS of your instance into hostname
 - Select SCP as the file protocol
 - Type in 'bitnami' as the username
 - Then select the advanced settings

Setup WinSCP connection



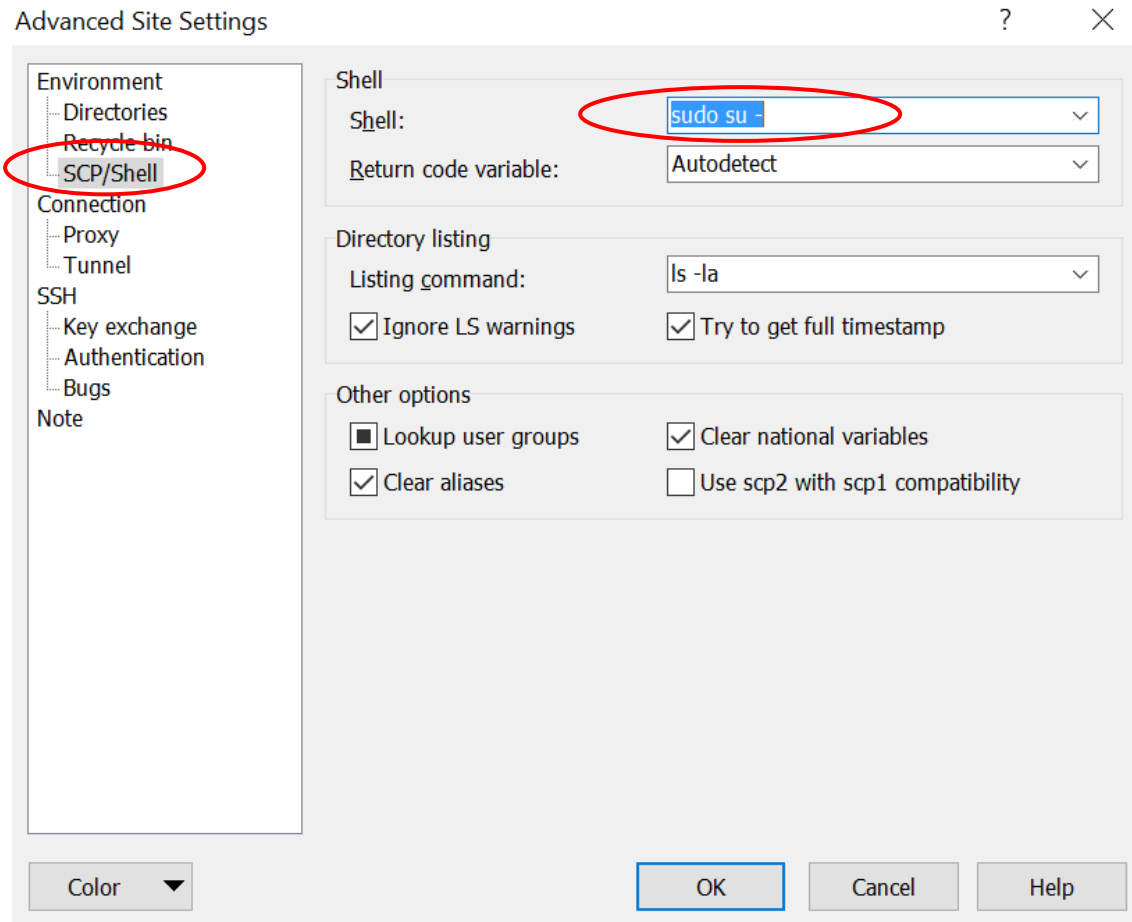
The image shows the WinSCP Login dialog box. On the left, there is a list of sites with 'New Site' and 'Viraj'. The main area is titled 'Session' and contains the following fields:

- File protocol:** A dropdown menu set to 'SCP'.
- Host name:** A text box containing 'ec2-52-45-48-70.compute-1.amazonaws.com'.
- Port number:** A spinner box set to '22'.
- User name:** A text box containing 'bitnami'.
- Password:** An empty text box.

Below these fields are two buttons: 'Save' and 'Advanced...'. A red arrow points to the 'Advanced...' button. At the bottom of the dialog are four buttons: 'Tools', 'Manage', 'Login', and 'Close', followed by a 'Help' button.

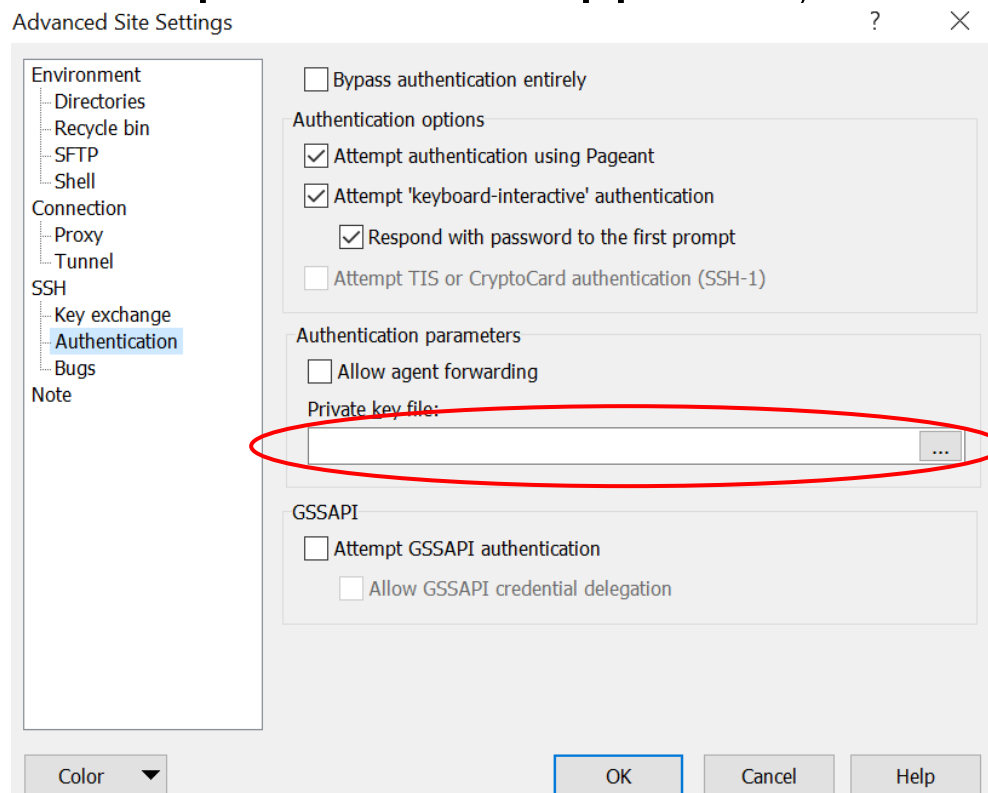
Advanced setting

- **Select sudo su – shell to get super user access on the AMI**



Advanced Settings

- In authentication, browse to the path of the **.pem** file of your instance.
 - On clicking 'OK' WinSCP will ask for permission to convert the .pem file to a .ppk file, select OK.



Connect to your instance

- **Save your settings and connect to your instance**
- **Copy your WAR file to the [/opt/bitnami/tomcat/webapps](#) folder**
- **Access your project through the browser.**

Warmup: Get Started with Amazon

- **Skim through the AWS documentation**
<https://aws.amazon.com/documentation/>
- **Sign up for AWS at** <http://aws.amazon.com>
- **Create a bucket in S3 and upload/download some files.**
- **Create and download a Key-Pair, save it in your home directory** – this can be done while EC2 instance (VM) provisioning.
- **Create an EC2 instance via the AWS Console**
- **Connect to your newly-created EC2 instance like this** (applicable if accessing from Mac or Unix/Linux.
 - `ssh -i my-aws-keypair.pem ec2-user@ip-address-of-vm`
 - When accessing from a Microsoft Window, you will need to use putty and/or WinSCP

Demo Time

<http://aws.amazon.com>

Instructional Videos and Labs

https://aws.amazon.com/training/intro_series/