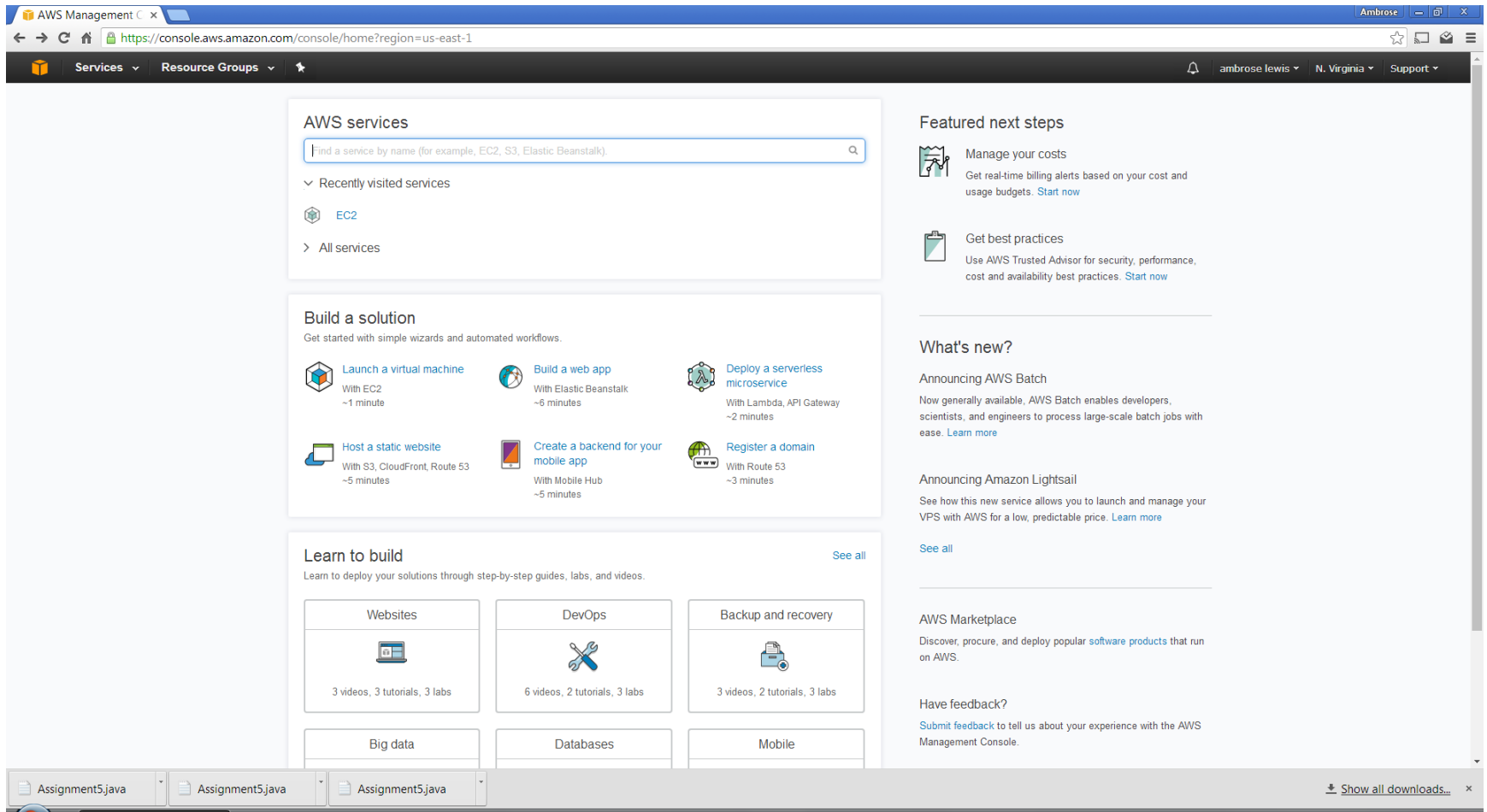


“After The Break” AWS EC2 Walkthrough

Ambrose Lewis
(tjl274@email.vccs.edu)

AWS Account Homepage...

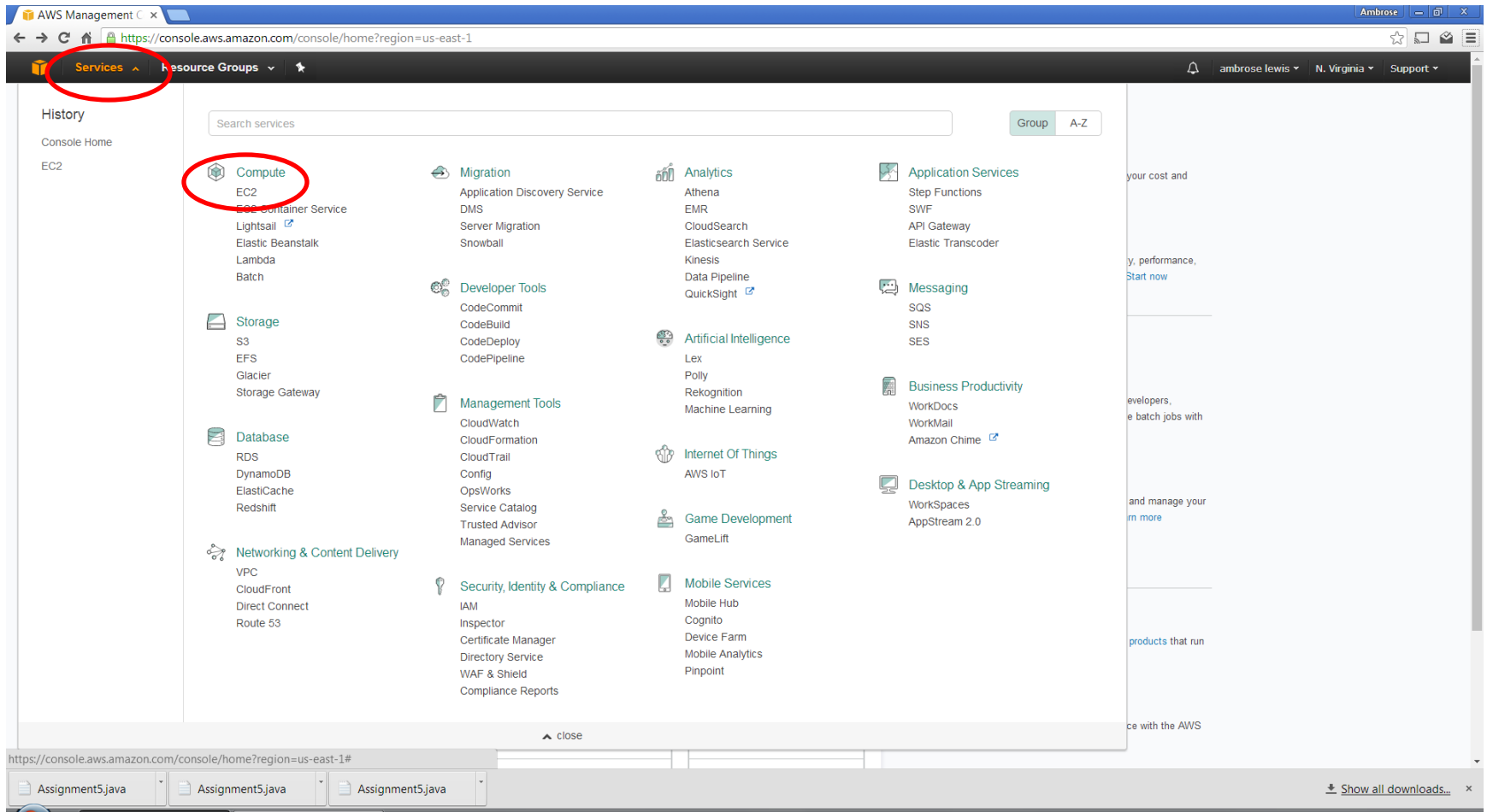


The screenshot displays the AWS Management Console homepage for a user named Ambrose Lewis in the N. Virginia region. The interface is organized into several key sections:

- AWS services:** A search bar at the top allows finding services by name (e.g., EC2, S3, Elastic Beanstalk). Below it, a 'Recently visited services' section lists EC2, and a link to 'All services' is provided.
- Build a solution:** This section, titled 'Get started with simple wizards and automated workflows', offers six quick-start options:
 - Launch a virtual machine:** With EC2, ~1 minute.
 - Build a web app:** With Elastic Beanstalk, ~6 minutes.
 - Deploy a serverless microservice:** With Lambda, API Gateway, ~2 minutes.
 - Host a static website:** With S3, CloudFront, Route 53, ~5 minutes.
 - Create a backend for your mobile app:** With Mobile Hub, ~5 minutes.
 - Register a domain:** With Route 53, ~3 minutes.
- Learn to build:** A section for learning to deploy solutions through guides, labs, and videos, with a 'See all' link. It features six categories:
 - Websites:** 3 videos, 3 tutorials, 3 labs.
 - DevOps:** 6 videos, 2 tutorials, 3 labs.
 - Backup and recovery:** 3 videos, 2 tutorials, 3 labs.
 - Big data:**
 - Databases:**
 - Mobile:**
- Featured next steps:** Two actionable items:
 - Manage your costs:** Get real-time billing alerts based on your cost and usage budgets. [Start now](#)
 - Get best practices:** Use AWS Trusted Advisor for security, performance, cost and availability best practices. [Start now](#)
- What's new?:**
 - Announcing AWS Batch:** Now generally available, AWS Batch enables developers, scientists, and engineers to process large-scale batch jobs with ease. [Learn more](#)
 - Announcing Amazon Lightsail:** See how this new service allows you to launch and manage your VPS with AWS for a low, predictable price. [Learn more](#)
- AWS Marketplace:** Discover, procure, and deploy popular software products that run on AWS.
- Have feedback?:** [Submit feedback](#) to tell us about your experience with the AWS Management Console.

The bottom of the browser window shows a Windows taskbar with three open files named 'Assignment5.java' and a 'Show all downloads...' button.

Click Services then EC2...



Click Launch Instance...

The screenshot displays the AWS Management Console interface for the EC2 service in the US East (N. Virginia) region. The left-hand navigation pane lists various services, with 'INSTANCES' expanded. The main content area is titled 'Resources' and lists available EC2 resources: 0 Running Instances, 0 Dedicated Hosts, 0 Volumes, 6 Key Pairs, 0 Placement Groups, 0 Elastic IPs, 0 Snapshots, 0 Load Balancers, and 9 Security Groups. A blue box with a close icon contains the text: 'Just need a simple virtual private server? Get everything you need to jumpstart your project - compute, storage, and networking - for a low, predictable price. Try Amazon Lightsail for free.' Below this, the 'Create Instance' section is visible, with the 'Launch Instance' button circled in red. The 'Service Health' section shows that the US East (N. Virginia) service is operating normally across all availability zones. The 'Scheduled Events' section shows no events for the US East (N. Virginia) region. The right-hand sidebar displays 'Account Attributes' and 'Additional Information'.

EC2 Management Console

https://console.aws.amazon.com/ec2/v2/home?region=us-east-1

Services Resource Groups

ambrose lewis N. Virginia Support

EC2 Dashboard

- Events
- Tags
- Reports
- Limits
- INSTANCES**
 - Instances
 - Spot Requests
 - Reserved Instances
 - Scheduled Instances
 - Dedicated Hosts
- IMAGES**
 - AMIs
 - Bundle Tasks
- ELASTIC BLOCK STORE**
 - Volumes
 - Snapshots
- NETWORK & SECURITY**
 - Security Groups
 - Elastic IPs
 - Placement Groups
 - Key Pairs
 - Network Interfaces
- LOAD BALANCING**
 - Load Balancers
 - Target Groups
- AUTO SCALING**
 - Launch
 - Configurations
 - Auto Scaling Groups

Resources

You are using the following Amazon EC2 resources in the US East (N. Virginia) region:

- 0 Running Instances
- 0 Dedicated Hosts
- 0 Volumes
- 6 Key Pairs
- 0 Placement Groups
- 0 Elastic IPs
- 0 Snapshots
- 0 Load Balancers
- 9 Security Groups

Just need a simple virtual private server? Get everything you need to jumpstart your project - compute, storage, and networking - for a low, predictable price. Try Amazon Lightsail for free.

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 instances will launch in the US East (N. Virginia) region.

Service Health

Service Status:

- US East (N. Virginia): This service is operating normally

Availability Zone Status:

- us-east-1a: Availability zone is operating normally
- us-east-1b: Availability zone is operating normally
- us-east-1c: Availability zone is operating normally
- us-east-1d: Availability zone is operating normally
- us-east-1e: Availability zone is operating normally

Scheduled Events

US East (N. Virginia):

- No events

Account Attributes

Supported Platforms

- EC2
- VPC

Resource ID length management

Additional Information

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

AWS Marketplace

Find free software trial products in the AWS Marketplace from the EC2 Launch Wizard. Or try these popular AMIs:

- Cisco Cloud Services Router (CSR) 1000V - Direct Connect Multi-Gig**
 - Provided by Cisco Systems, Inc.
 - Rating ★★★★★
 - \$3.36/hr for software + AWS usage fees
 - [View all Network Infrastructure](#)
- VM-Series Next-Generation Firewall Bundle 2**
 - Provided by Palo Alto Networks
 - Rating ★★★★★
 - \$1.28/hr or \$4,500/yr (60% savings) for software + AWS usage fees
 - [View all Security](#)
- ONTAP Cloud for AWS**
 - Provided by NetApp, Inc.
 - Rating ★★★★★

Feedback English

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Assignment5.java Assignment5.java Assignment5.java

Show all downloads...

Check box for “Free Tier Only” ...

The screenshot shows the AWS Management Console interface for the 'Step 1: Choose an Amazon Machine Image (AMI)' wizard. The left sidebar contains a 'Quick Start' section with a 'Free tier only' checkbox that is checked and circled in red. The main content area displays a list of AMIs, including Amazon Linux, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, Ubuntu Server, and Microsoft Windows Server. Each AMI entry includes a 'Select' button and a 'Free tier eligible' badge. The bottom of the screen shows a footer with 'Feedback', 'English', and '© 2008 - 2017, Amazon Web Services, Inc. or its affiliates. All rights reserved.' links.

EC2 Management Console

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.

Cancel and Exit

Quick Start

My AMIs

AWS Marketplace

Community AMIs

☒ Free tier only ⓘ

Amazon Linux AMI 2016.09.1 (HVM), SSD Volume Type - ami-0b33d91d

Amazon Linux Free tier eligible

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

Select

64-bit

Red Hat Enterprise Linux 7.3 (HVM), SSD Volume Type - ami-b63769a1

Red Hat Free tier eligible

Red Hat Enterprise Linux version 7.3 (HVM), EBS General Purpose (SSD) Volume Type

Root device type: ebs Virtualization type: hvm

Select

64-bit

SUSE Linux Enterprise Server 12 SP2 (HVM), SSD Volume Type - ami-fde4e8ea

SUSE Linux Free tier eligible

SUSE Linux Enterprise Server 12 Service Pack 2 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.

Root device type: ebs Virtualization type: hvm

Select

64-bit

Ubuntu Server 16.04 LTS (HVM), SSD Volume Type - ami-f4cc1de2

Free tier eligible

Ubuntu Server 16.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

Root device type: ebs Virtualization type: hvm

Select

64-bit

Microsoft Windows Server 2016 Base - ami-188d6e0e

Windows Free tier eligible

Microsoft Windows 2016 Datacenter edition. [English]

Root device type: ebs Virtualization type: hvm

Select

64-bit

Are you launching a database instance? Try Amazon RDS.

Amazon RDS

Amazon Relational Database Service (RDS) makes it easy to set up, operate, and scale your database on AWS by automating time-consuming database management tasks. With RDS, you can easily deploy **Amazon Aurora**, **MariaDB**, **MySQL**, **Oracle**, **PostgreSQL**, and **SQL Server** databases on AWS. **Aurora** is a MySQL-compatible, enterprise-class database at 1/10th the cost of commercial databases. [Learn more about RDS](#)

Launch a database using RDS

Hide

Feedback English

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Assignment5.java Assignment5.java Assignment5.java

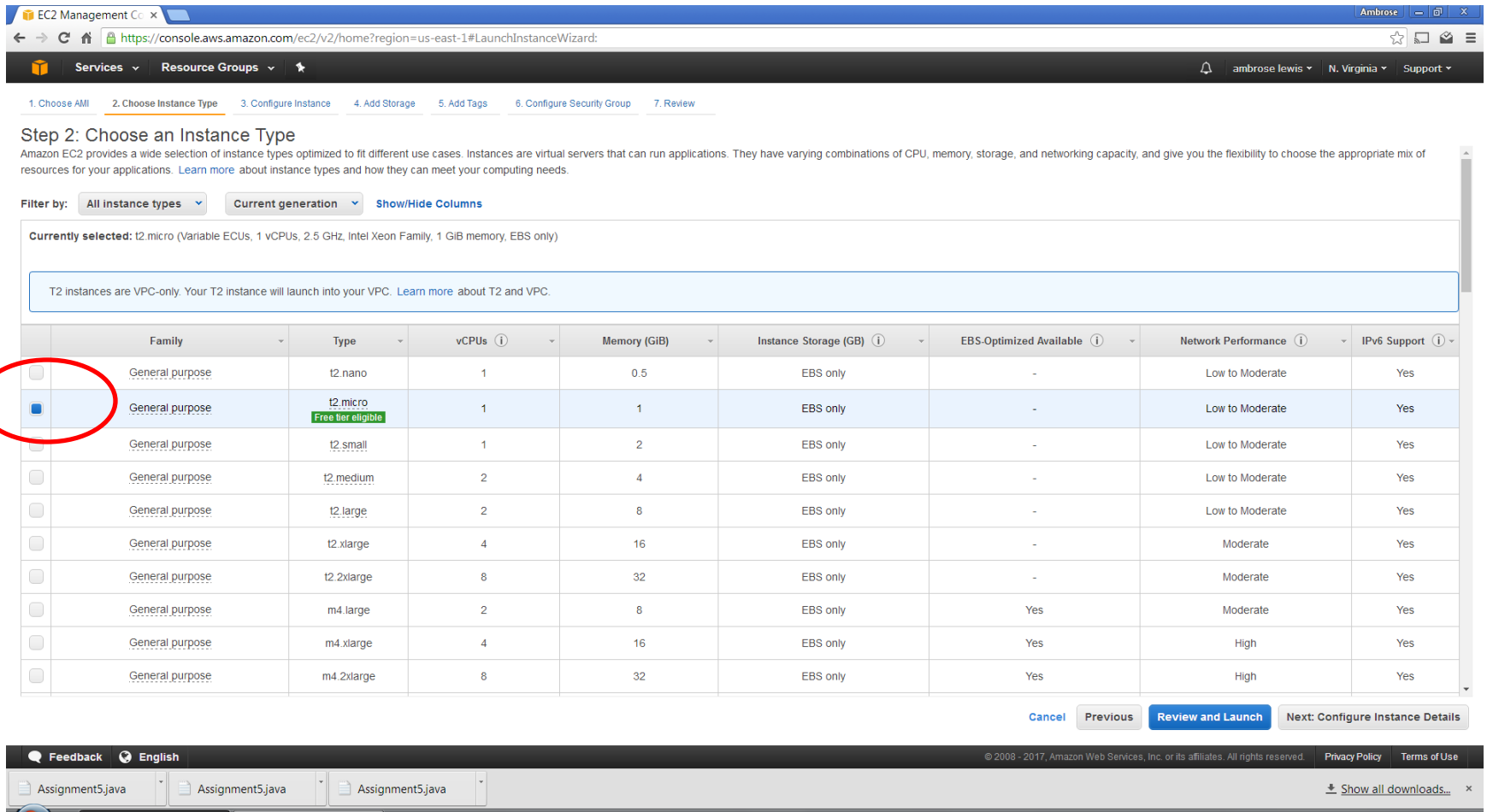
Show all downloads...

Select Amazon Linux...

The screenshot shows the AWS Management Console interface for the 'Launch Instance Wizard'. The browser address bar displays `https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:`. The console header includes 'Services', 'Resource Groups', and user information 'ambrose lewis' in 'N. Virginia' with a 'Support' link. The wizard progress bar shows 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 current step is 'Step 1: Choose an Amazon Machine Image (AMI)'. A sub-header explains: '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.' On the left, a 'Quick Start' sidebar lists 'My AMIs', 'AWS Marketplace', and 'Community AMIs', with a checked 'Free tier only' filter. The main content area lists several AMIs: 'Amazon Linux AMI 2016.09.1 (HVM), SSD Volume Type - ami-0b33d91d', 'Red Hat Enterprise Linux 7.3 (HVM), SSD Volume Type - ami-b63769a1', 'SUSE Linux Enterprise Server 12 SP2 (HVM), SSD Volume Type - ami-fde4e8ea', 'Ubuntu Server 16.04 LTS (HVM), SSD Volume Type - ami-f4cc1de2', and 'Microsoft Windows Server 2016 Base - ami-188d6e0e'. Each entry includes a description, root device type (ebs), and virtualization type (hvm). The 'Select' button for the Amazon Linux AMI is circled in red. At the bottom, there is a promotional banner for 'Amazon RDS' with the text 'Are you launching a database instance? Try Amazon RDS.' and a 'Launch a database using RDS' button. The footer of the console shows 'Feedback', 'English', copyright '© 2008 - 2017, Amazon Web Services, Inc. or its affiliates. All rights reserved.', 'Privacy Policy', 'Terms of Use', and a 'Show all downloads...' link. The taskbar at the very bottom shows three instances of 'Assignment5.java'.

Pick t2.micro

Make sure it says “free tier eligible”



EC2 Management Console

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 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.

Filter by: All instance types Current generation Show/Hide Columns

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

T2 instances are VPC-only. Your T2 instance will launch into your VPC. [Learn more](#) about T2 and VPC.

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	m4.large	2	8	EBS only	Yes	Moderate	Yes
<input type="checkbox"/>	General purpose	m4.xlarge	4	16	EBS only	Yes	High	Yes
<input type="checkbox"/>	General purpose	m4.2xlarge	8	32	EBS only	Yes	High	Yes

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

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Click “review and launch”

EC2 Management Console

https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

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 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.

Filter by: All instance types Current generation Show/Hide Columns

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

T2 instances are VPC-only. Your T2 instance will launch into your VPC. [Learn more](#) about T2 and VPC.

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	m4.large	2	8	EBS only	Yes	Moderate	Yes
<input type="checkbox"/>	General purpose	m4.xlarge	4	16	EBS only	Yes	High	Yes
<input type="checkbox"/>	General purpose	m4.2xlarge	8	32	EBS only	Yes	High	Yes

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

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Review and click “launch”

The screenshot shows the AWS Management Console interface for the 'Review Instance Launch' step. The breadcrumb trail at the top indicates the 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 current step).

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.

Warning: Improve your instances' security. Your security group, launch-wizard-4, is open to the world. Your instances 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 [Edit AMI](#)
Amazon Linux AMI 2016.09.1 (HVM), SSD Volume Type - ami-0b33d91d
Free tier eligible
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

Instance Type [Edit instance type](#)
Table with 7 columns: Instance Type, ECUs, vCPUs, Memory (GiB), Instance Storage (GB), EBS-Optimized Available, Network Performance.
Row 1: t2.micro, Variable, 1, 1, EBS only, -, Low to Moderate

Security Groups [Edit security groups](#)
Security group name: launch-wizard-4
Description: launch-wizard-4 created 2017-02-24T18:46:51.568-05:00
Table with 4 columns: Type, Protocol, Port Range, Source.
Row 1: SSH, TCP, 22, 0.0.0.0/0

Instance Details [Edit instance details](#)
Storage [Edit storage](#)

Buttons: [Cancel](#), [Previous](#), [Launch](#) (circled in red)

Footer: Feedback, English, © 2008 - 2017, Amazon Web Services, Inc. or its affiliates. All rights reserved. [Privacy Policy](#) [Terms of Use](#)
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Select “new key pair” and give it a name...

The screenshot shows the AWS Management Console interface during the 'Step 7: Review Instance Launch' process. A modal dialog is open, prompting the user to 'Select an existing key pair or create a new key pair'. The dialog 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.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [retrieving existing key pairs from a public AMI](#).

The dialog has a dropdown menu set to 'Create a new key pair' and a text input field labeled 'Key pair name' with the value 'testing'. A red circle highlights these elements. Below the input field is a 'Download Key Pair' button. At the bottom of the dialog, there is a warning box that says: 'You have to download the **private key file** (*.pem file) before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.'

The background of the console shows the following details:

- Step 7: Review Instance Launch**
- AMI Details:** Amazon Linux AMI 2016.09.1 (HVM), SSD Volume Type - ami-0b33d91d
- Instance Type:** t2.micro
- Security Groups:** launch-wizard-4
- Instance Details:** t2.micro, Variable ECUs, 1 vCPUs, 1 Memory (GiB)
- Storage:** EBS

At the bottom of the console, there are buttons for 'Cancel', 'Previous', and 'Launch'.

Click “download key pair” and note where the pem file is saved...

The screenshot shows the AWS Management Console at the 'Review Instance Launch' step. A modal titled 'Select an existing key pair or create a new key pair' is open. The modal contains a dropdown menu set to 'Create a new key pair', a text input for 'Key pair name' with the value 'testing', and a 'Download Key Pair' button circled in red. A note in the modal states: 'You have to download the private key file (*.pem file) before you can continue. Store it in a secure and accessible location. You will not be able to download the file again after it's created.' The background shows the instance configuration details, including AMI, Instance Type (t2.micro), and Security Groups.

EC2 Management Console

Services Resource Groups

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 instances' security. Your security group, launch-wizard-4, is open to the world. Your instances 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 2016.09.1 (HVM), SSD Volume Type - ami-0b33d91d

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image is the Amazon Linux AMI.

Free tier eligible

Root Device Type: ebs Virtualization type: hvm

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Inst
t2.micro	Variable	1	1	EBS

Security Groups

Security group name: launch-wizard-4

Description: launch-wizard-4 created 2017-02-24T18:46:51.568-05:00

Type	Protocol
SSH	TCP

Instance Details

Storage

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.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Create a new key pair

Key pair name

testing

Download Key Pair

You have to download the **private key file** (*.pem file) before you can continue. Store it in a **secure and accessible location**. You will not be able to download the file again after it's created.

Cancel Launch Instances

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Show all downloads...

Click launch instance...

The screenshot shows the AWS Management Console at the 'Review Instance Launch' step. A modal dialog titled 'Select an existing key pair or create a new key pair' is open. The dialog contains a dropdown menu for 'Create a new key pair', a text input for 'Key pair name' with the value 'testing', and a 'Download Key Pair' button. A blue information box states: 'You have to download the private key file (*.pem file) before you can continue. Store it in a secure and accessible location. You will not be able to download the file again after it's created.' At the bottom of the dialog, the 'Launch Instances' button is circled in red. The background shows the instance configuration details, including AMI, Instance Type (t2.micro), and Security Groups.

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 instances' security. Your security group, launch-wizard-4, is open to the world.
Your instances 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 2016.09.1 (HVM), SSD Volume Type - ami-0b33d91d
Free tier eligible
The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image is the Amazon Linux AMI. Root Device Type: ebs Virtualization type: hvm

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Inst
t2.micro	Variable	1	1	EBS

Security Groups

Security group name	Description
launch-wizard-4	launch-wizard-4 created 2017-02-24T18:46:51.568-05:00

Instance Details

Type	Protocol
SSH	TCP

Storage

Launch Instances

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IT IS IMPORTANT THAT YOU TERMINATE THIS BEFORE LEAVING AWS...IF YOU LEAVE IT UP, IT MAY COST YOU MONEY!!!!

Note instances are launching

Click on “view instances”

The screenshot shows the AWS Management Console interface for the EC2 service. The browser address bar displays the URL: <https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard>. The console header includes navigation links for Services, Resource Groups, and a user profile for 'ambrose lewis' in the 'N. Virginia' region.

Launch Status

✓ Your instances are now launching
The following instance launches have been initiated: [i-05dbe4a1fa1b49c9](#) [View launch log](#)

ℹ Get notified of estimated charges
[Create billing alerts](#) to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

How to connect to your instances

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

Click **View Instances** to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the Instances screen. [Find out](#) how to connect to your instances.

▼ 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. (Additional charges may apply)
- [Create and attach additional EBS volumes](#) (Additional charges may apply)
- [Manage security groups](#)

View Instances

The 'View Instances' button is highlighted with a red circle.

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testing2.pem testing.pem Assignment5.java Assignment5.java Assignment5.java Show all downloads...

Here is your server...

note the IP address...

The screenshot displays the AWS Management Console interface. The top navigation bar includes the 'Services' dropdown, 'Resource Groups', and user information for 'ambrose lewis' in the 'N. Virginia' region. The left sidebar contains a navigation menu with categories like INSTANCES, IMAGES, ELASTIC BLOCK STORE, NETWORK & SECURITY, LOAD BALANCING, and AUTO SCALING. The main content area shows the 'Instances' page with a table of running instances. One instance is listed with ID 'i-05dbe4a1fb...', type 't2.micro', and public IP '54.83.94.152'. Below the table, a detailed view for the selected instance shows its configuration: Instance ID, state (running), type, availability zone (us-east-1a), security groups, and scheduled events. The network configuration section lists the public IP, private IP, and VPC ID.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name	Monitoring	Launch Time
	i-05dbe4a1fb...	t2.micro	us-east-1a	running	Initializing	None		54.83.94.152	-	testing2	disabled	February 24, 2017

Instance: **i-05dbe4a1fb49c9** Public IP: 54.83.94.152

Description		Status Checks	Monitoring	Tags
Instance ID	i-05dbe4a1fb49c9			
Instance state	running			
Instance type	t2.micro			
Elastic IPs				
Availability zone	us-east-1a			
Security groups	launch-wizard-4 - view inbound rules			
Scheduled events	No scheduled events			

Network Configuration	
Public DNS (IPv4)	-
IPv4 Public IP	54.83.94.152
IPv6 IPs	-
Private DNS	ip-172-30-0-17.ec2.internal
Private IPs	172.30.0.17
Secondary private IPs	
VPC ID	vpc-5879c63c

Click Connect...

The screenshot displays the AWS Management Console interface for EC2 instances. The 'Connect' button is highlighted with a red circle. Below the instance list, the details for instance `i-05dbe4a1fba1b49c9` are shown, including its state (running), type (t2.micro), and public IP (54.83.94.152).

EC2 Management Console

Services ▾ Resource Groups ▾

ambrose lewis ▾ N. Virginia ▾ Support ▾

Launch Instance **Connect** Actions ▾

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name	Monitoring	Launch Time
	i-05dbe4a1fba1b49c9	t2.micro	us-east-1a	running	Initializing	None		54.83.94.152	-	testing2	disabled	February 24, 2017

Instance: **i-05dbe4a1fba1b49c9** Public IP: 54.83.94.152

Description Status Checks Monitoring Tags

Instance ID	i-05dbe4a1fba1b49c9	Public DNS (IPv4)	-
Instance state	running	IPv4 Public IP	54.83.94.152
Instance type	t2.micro	IPv6 IPs	-
Elastic IPs		Private DNS	ip-172.30.0.17.ec2.internal
Availability zone	us-east-1a	Private IPs	172.30.0.17
Security groups	launch-wizard-4 - view inbound rules	Secondary private IPs	
Scheduled events	No scheduled events	VPC ID	vpc-5879c63c

Feedback English

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testing2.pem testing.pem Assignment5.java Assignment5.java Assignment5.java

Show all downloads...

Select standalone SSH client...

The screenshot shows the AWS Management Console interface. A modal dialog titled "Connect To Your Instance" is open, displaying options for connecting to an EC2 instance. The dialog includes instructions on how to access the instance using a standalone SSH client or a Java SSH client. It also provides a list of steps to follow, including opening an SSH client, locating the private key file, and connecting to the instance using its Public IP. An example command is provided: `ssh -i "testing2.pem" ec2-user@54.83.94.152`. The background shows the EC2 Instances page with a table of instances, including one with ID `i-05dbe4a1fb49c9` and Public IP `54.83.94.152`.

Connect To Your Instance

I would like to connect with

- ☒ A standalone SSH client
- ☐ A Java SSH Client directly from my browser (Java required)

To access your instance:

1. Open an SSH client. (find out how to [connect using PuTTY](#))
2. Locate your private key file (testing2.pem). The wizard automatically detects the key you used to launch the instance.
3. Your key must not be publicly viewable for SSH to work. Use this command if needed:
`chmod 400 testing2.pem`
4. Connect to your instance using its Public IP:
`54.83.94.152`

Example:

```
ssh -i "testing2.pem" ec2-user@54.83.94.152
```

Please note that in most cases the username above will be correct, however please ensure that you read your AMI usage instructions to ensure that the AMI owner has not changed the default AMI username.

If you need any assistance connecting to your instance, please see our [connection documentation](#).

Close

Instances Table:

Name	Instance ID	Instance Type	Public IP	IPv6 IPs	Key Name	Monitoring	Launch Time
	i-05dbe4a1fb...	t2.micro	54.83.94.152	-	testing2	disabled	February 24, 2017

Instance Details:

Description	Status Checks	Monitoring	Tags
Instance ID: i-05dbe4a1fb49c9	Instance state: running	Instance type: t2.micro	Elastic IPs
Availability zone: us-east-1a	Security groups: launch-wizard-4	Scheduled events: No scheduled events	

Network & Security:

Private DNS	Private IPs	Secondary private IPs	VPC ID
ip-172-30-0-17.ec2.internal	172.30.0.17		vpc-5079c63c

Follow these steps to get and install Putty...

The screenshot shows the AWS Management Console interface. The browser address bar displays the URL: https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/putty.html?icmpid=docs_ec2_console. The page title is "Connecting to Your Linux Instance from Windows Using PuTTY". The left sidebar shows the "Amazon Elastic Compute Cloud" navigation menu with options like "What Is Amazon EC2?", "Setting Up", "Getting Started", "Best Practices", "Tutorials", "Amazon Machine Images", "Instances", "Instance Types", "Instance Purchasing Options", "Instance Lifecycle", "Launch", "Connect", "Connect Using SSH", "Connect Using PuTTY", "Connect Using MindTerm", "Stop and Start", "Reboot", and "Retire". The main content area has a breadcrumb trail: "AWS Documentation » Amazon EC2 » User Guide for Linux Instances » Amazon EC2 Instances » Instance Lifecycle » Connect to Your Linux Instance » Connecting to Your Linux Instance from Windows Using PuTTY". The page title is "Connecting to Your Linux Instance from Windows Using PuTTY". Below the title, there is a paragraph: "After you launch your instance, you can connect to it and use it the way that you'd use a computer sitting in front of you." A "Note" section follows, stating: "After you launch an instance, it can take a few minutes for the instance to be ready so that you can connect to it. Check that your instance has passed its status checks - you can view this information in the **Status Checks** column on the **Instances** page." The "Prerequisites" section lists three steps: 1. **Install PuTTY**: Download and install PuTTY from the [PuTTY download page](#). If you already have an older version of PuTTY installed, we recommend that you download the latest version. Be sure to install the entire suite. 2. **Get the ID of the instance**: You can get the ID of your instance using the Amazon EC2 console (from the **Instance ID** column). If you prefer, you can use the [describe-instances](#) (AWS CLI) or [Get-EC2Instance](#) (AWS Tools for Windows PowerShell) command. 3. **Get the public DNS name of the instance**: You can get the public DNS for your instance using the Amazon EC2 console (check the **Public DNS (IPv4)** column; if this column is hidden, choose the **Show/Hide** icon and select **Public DNS (IPv4)**). If you prefer, you can use the [describe-instances](#) (AWS CLI) or [Get-EC2Instance](#) (AWS Tools for Windows PowerShell) command. There is also a note for IPv6: **(IPv6 only) Get the IPv6 address of the instance**. If you've assigned an IPv6 address to your instance, you can optionally connect to the instance using its IPv6 address instead of a public IPv4 address or public IPv4 DNS hostname. Your local computer must have an IPv6 address. The right sidebar contains a "On this page:" section with links to "Prerequisites", "Converting Your Private Key Using PuTTYgen", "Starting a PuTTY Session", "Transferring Files to Your Linux Instance Using the PuTTY Secure Copy Client", and "Transferring Files to Your Linux Instance Using WinSCP". The bottom of the page has a footer with "Terms of Use | © 2017, Amazon Web Services, Inc. or its affiliates. All rights reserved." and a "Have a question? Try the Forums." link. The bottom of the browser window shows a taskbar with files like "testing2.pem", "testing.pem", "Assignment5.java", and "Assignment5.java".

EC2 Management Console | Connecting to Your Linux Instance from Windows Using PuTTY

https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/putty.html?icmpid=docs_ec2_console

Menu | Amazon Web Services | English | Sign In to the Console

Connecting to Your Linux Instance from Windows Using PuTTY

After you launch your instance, you can connect to it and use it the way that you'd use a computer sitting in front of you.

Note

After you launch an instance, it can take a few minutes for the instance to be ready so that you can connect to it. Check that your instance has passed its status checks - you can view this information in the **Status Checks** column on the **Instances** page.

The following instructions explain how to connect to your instance using PuTTY, a free SSH client for Windows. If you receive an error while attempting to connect to your instance, see [Troubleshooting Connecting to Your Instance](#).

Prerequisites

Before you connect to your Linux instance using PuTTY, complete the following prerequisites:

- Install PuTTY**
Download and install PuTTY from the [PuTTY download page](#). If you already have an older version of PuTTY installed, we recommend that you download the latest version. Be sure to install the entire suite.
- Get the ID of the instance**
You can get the ID of your instance using the Amazon EC2 console (from the **Instance ID** column). If you prefer, you can use the [describe-instances](#) (AWS CLI) or [Get-EC2Instance](#) (AWS Tools for Windows PowerShell) command.
- Get the public DNS name of the instance**
You can get the public DNS for your instance using the Amazon EC2 console (check the **Public DNS (IPv4)** column; if this column is hidden, choose the **Show/Hide** icon and select **Public DNS (IPv4)**). If you prefer, you can use the [describe-instances](#) (AWS CLI) or [Get-EC2Instance](#) (AWS Tools for Windows PowerShell) command.
- (IPv6 only) Get the IPv6 address of the instance**
If you've assigned an IPv6 address to your instance, you can optionally connect to the instance using its IPv6 address instead of a public IPv4 address or public IPv4 DNS hostname. Your local computer must have an IPv6 address.

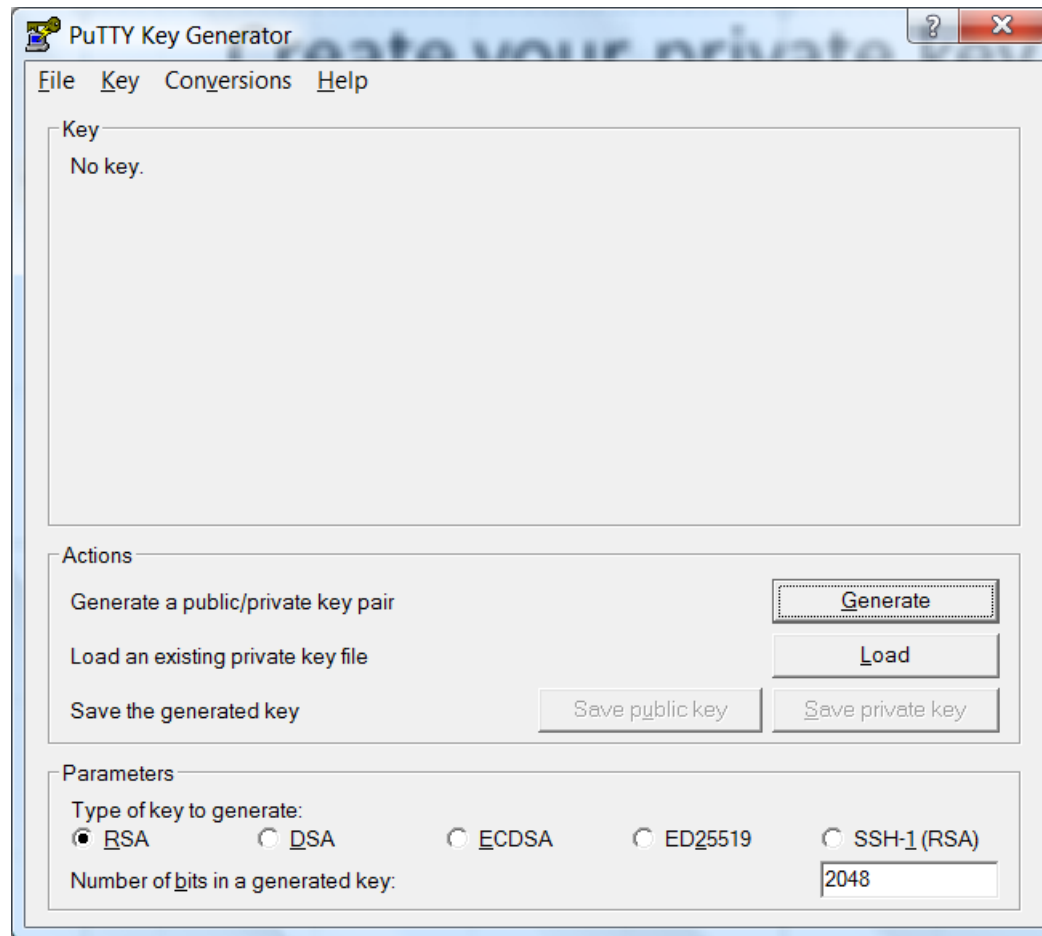
On this page:

- Prerequisites
- Converting Your Private Key Using PuTTYgen
- Starting a PuTTY Session
- Transferring Files to Your Linux Instance Using the PuTTY Secure Copy Client
- Transferring Files to Your Linux Instance Using WinSCP

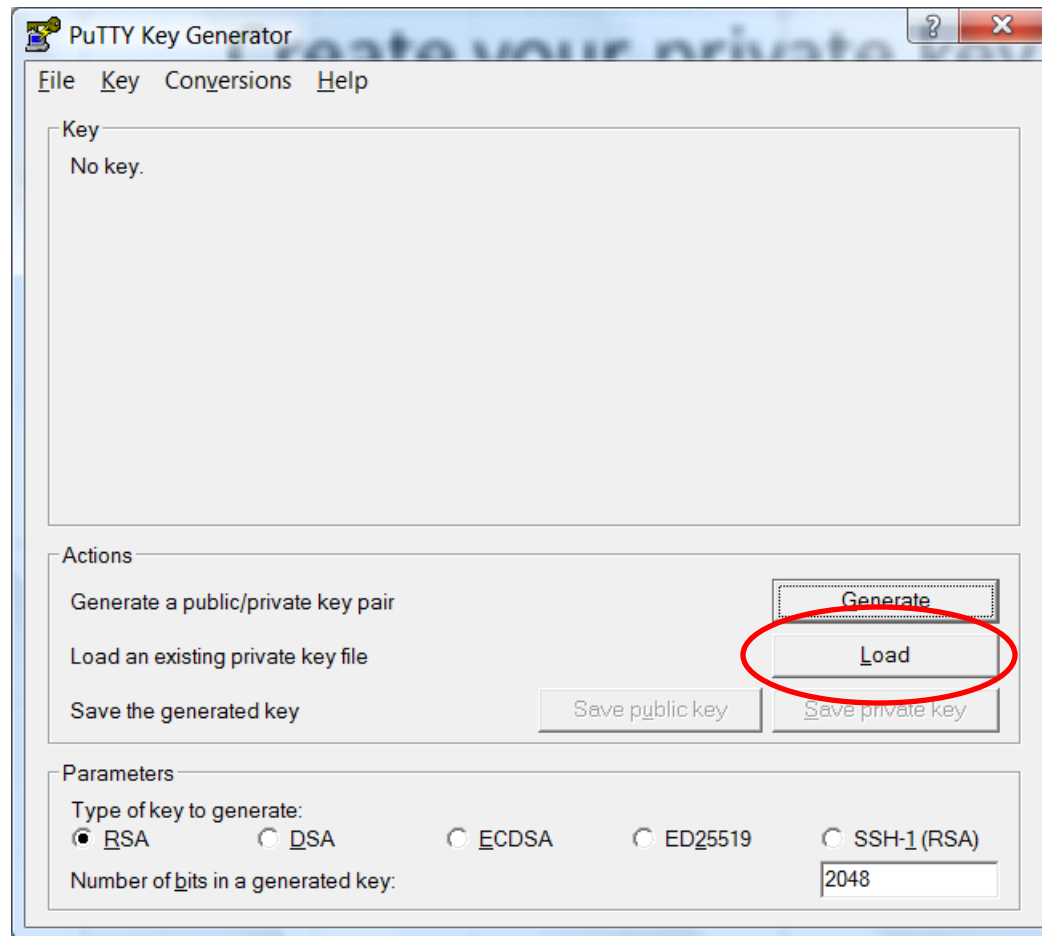
Terms of Use | © 2017, Amazon Web Services, Inc. or its affiliates. All rights reserved. | Have a question? Try the Forums. | Did this page help you? Yes No | Feedback

testing2.pem | testing.pem | Assignment5.java | Assignment5.java | Assignment5.java | Show all downloads...

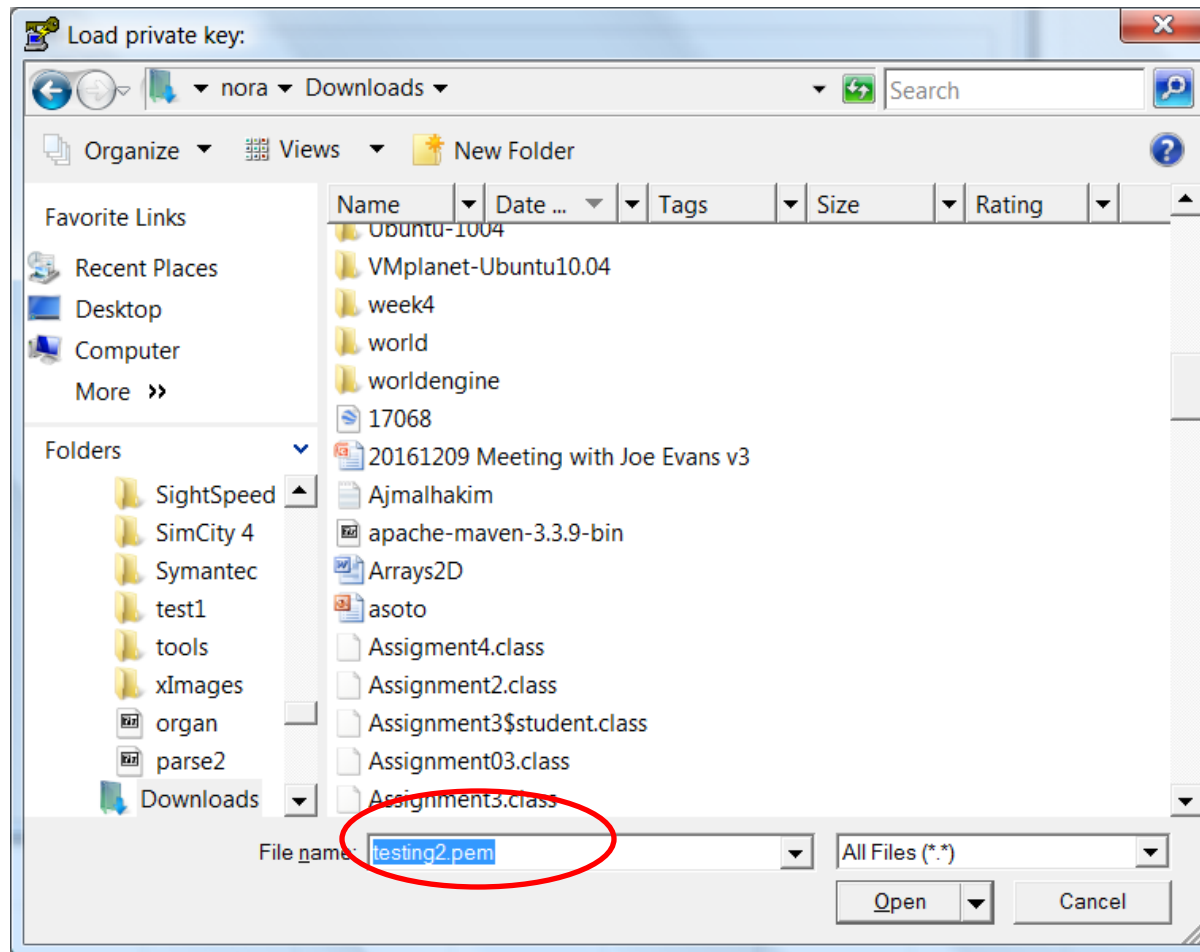
Create your private key by using PuttyGen...



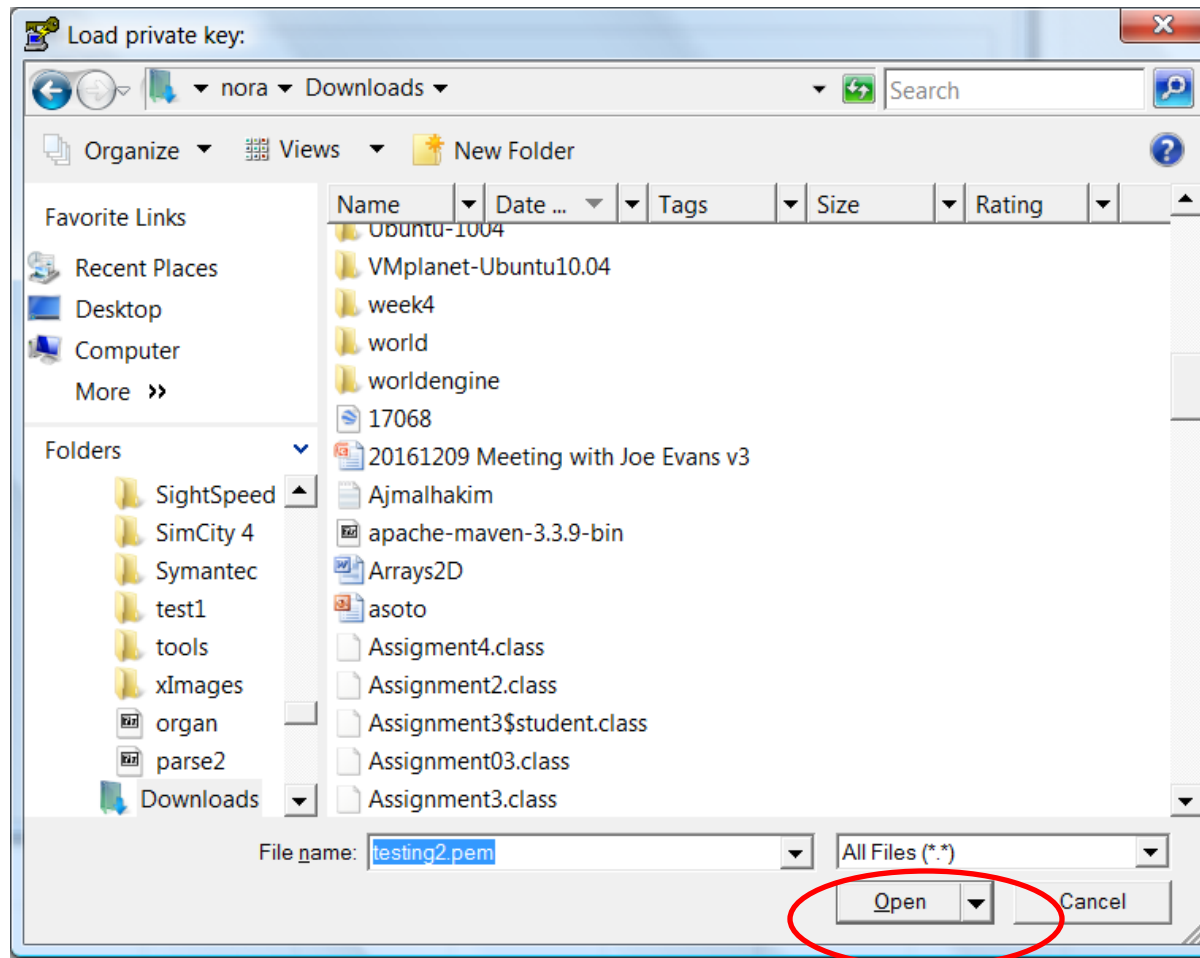
Select Load...



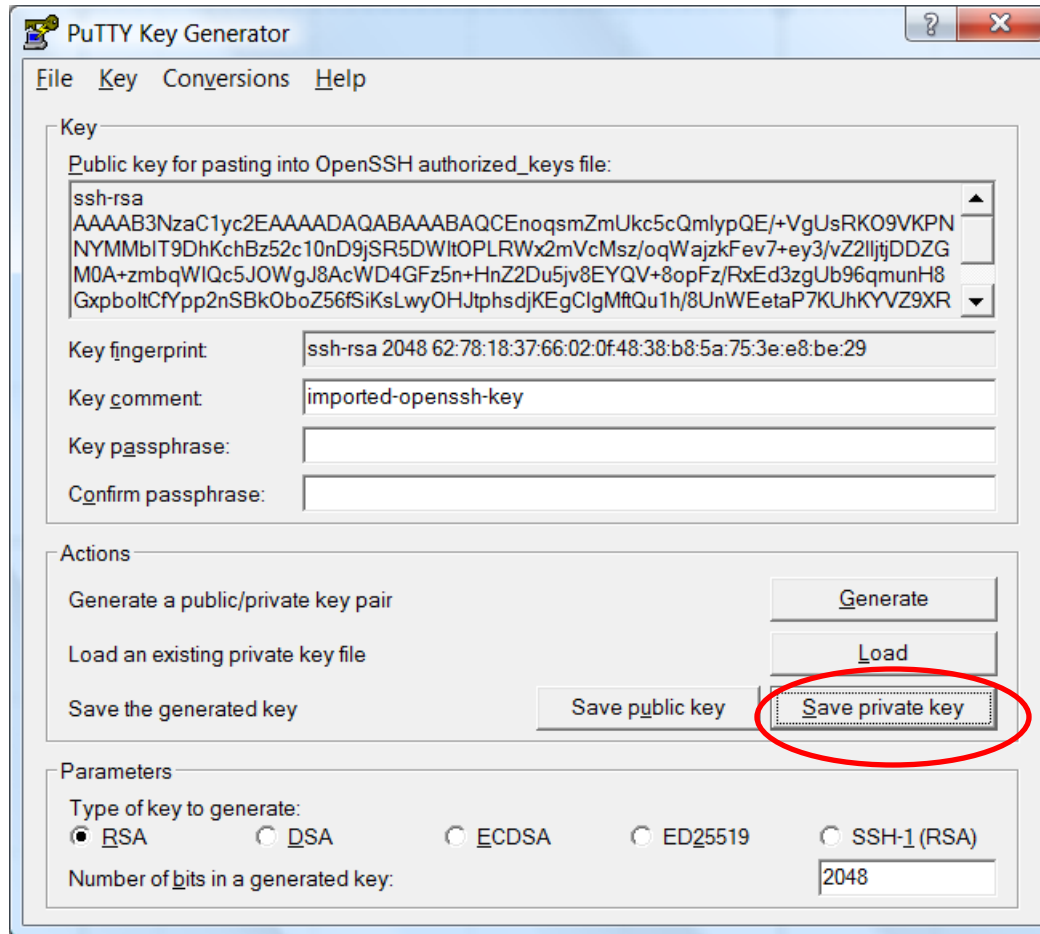
Change to all files and navigate to the pem file from before...



Click Open...



Click Save Private Key... give the file a name...



The screenshot shows the PuTTY Key Generator window. The 'Key' tab is active, displaying a public key for pasting into an OpenSSH authorized_keys file. The key is an ssh-rsa type with a 2048-bit length. The key fingerprint is shown as 'ssh-rsa 2048 62:78:18:37:66:02:0f:48:38:b8:5a:75:3e:e8:be:29'. The key comment is 'imported-openssh-key'. The key passphrase and confirm passphrase fields are empty.

The 'Actions' section contains three buttons: 'Generate', 'Load', and 'Save private key'. The 'Save private key' button is circled in red. The 'Save public key' button is also visible.

The 'Parameters' section shows the 'Type of key to generate' set to 'RSA' (selected) and the 'Number of bits in a generated key' set to '2048'.

Key

Public key for pasting into OpenSSH authorized_keys file:

```
ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAQCEnoqsmZmUkc5cQmlypQE/+VgUsRKO9VKPN
NYMMblT9DhKchBz52c10nD9jSR5DWItOPLRWx2mVcMsz/oqWajzkFev7+ey3/vZ2lltjDDZG
M0A+zmbqWlQc5JOWgJ8AcWD4GFz5n+HnZ2Du5jv8EYQV+8opFz/RxE3zgUb96qmunH8
GxpboltCFYpp2nSBkOboZ56fSiKsLwyOHJtphsdjKEgClgMtQu1h/8UnWEetaP7KUhKYVZ9XR
```

Key fingerprint: ssh-rsa 2048 62:78:18:37:66:02:0f:48:38:b8:5a:75:3e:e8:be:29

Key comment: imported-openssh-key

Key passphrase:

Confirm passphrase:

Actions

Generate a public/private key pair Generate

Load an existing private key file Load

Save the generated key Save public key **Save private key**

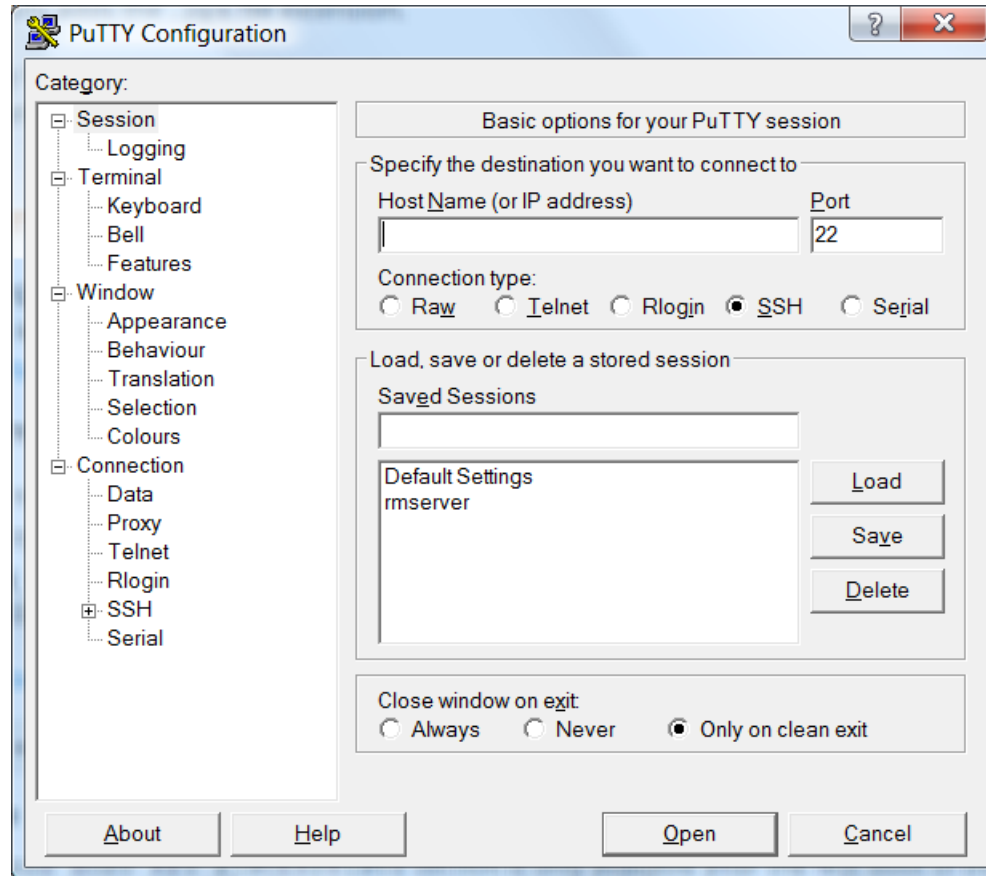
Parameters

Type of key to generate:

☒ RSA ☐ DSA ☐ ECDSA ☐ ED25519 ☐ SSH-1 (RSA)

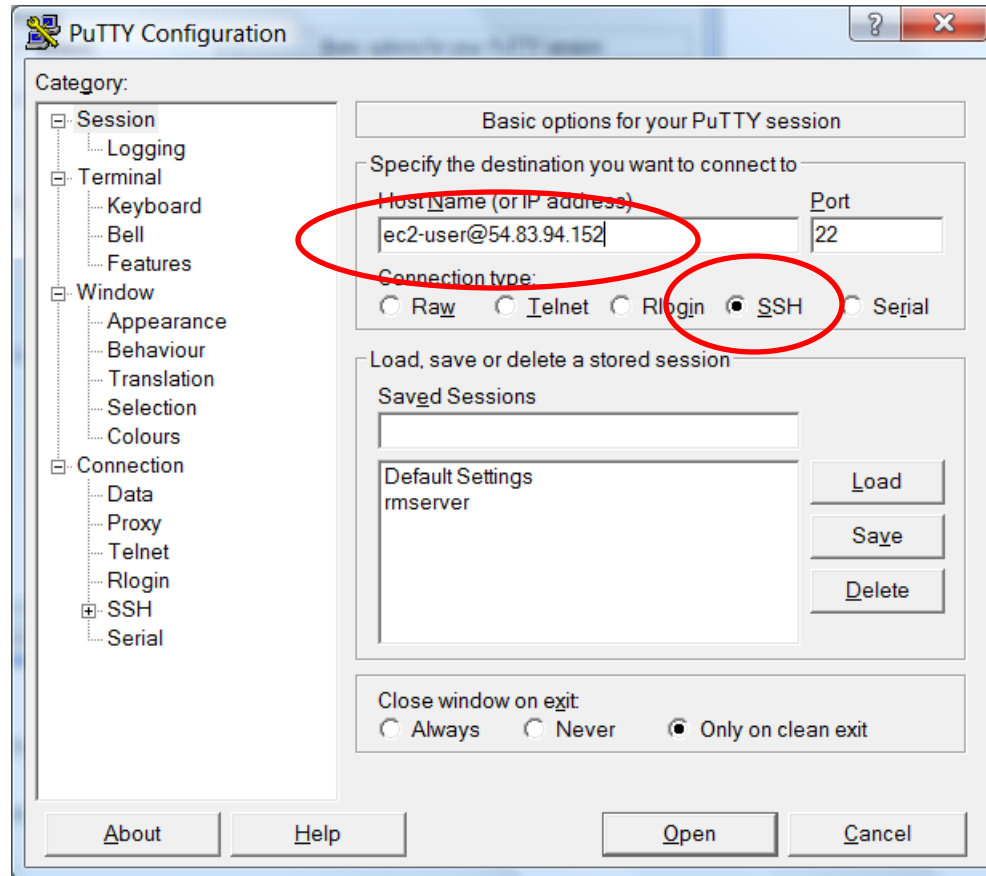
Number of bits in a generated key: 2048

Start Putty...

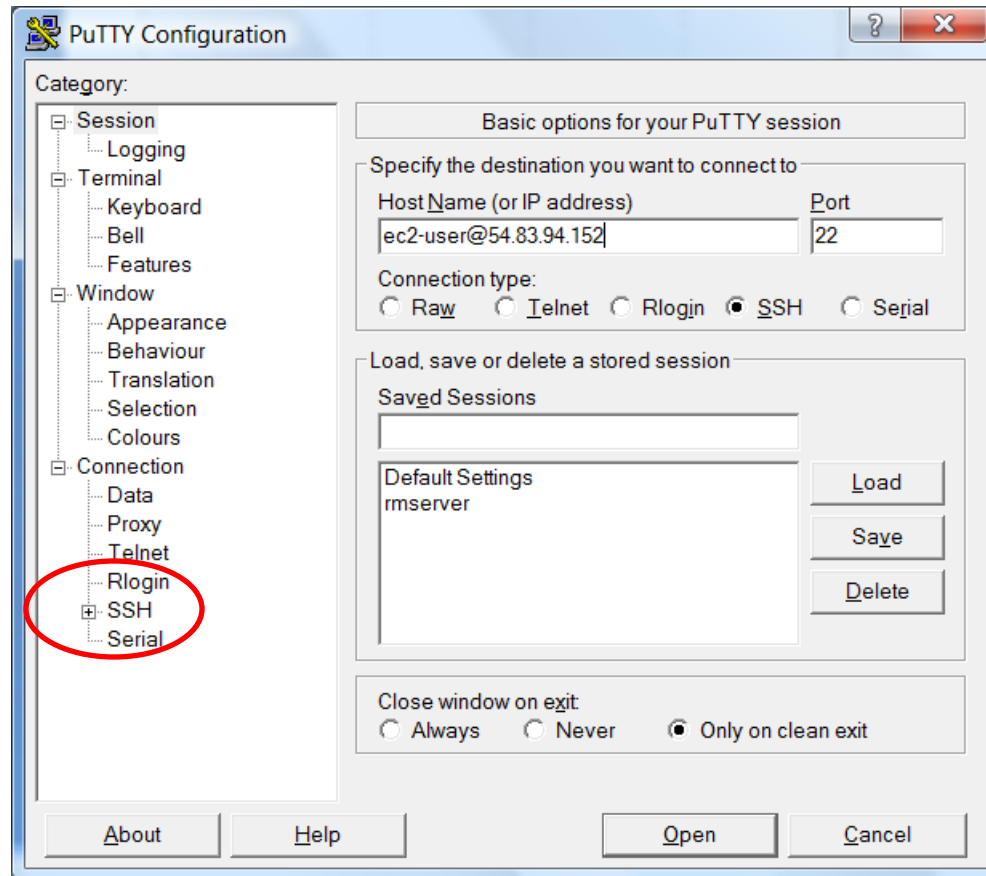


Enter “ec2-user@” and the IP address (this will be on the instances page)

Make sure Connection Type is SSH

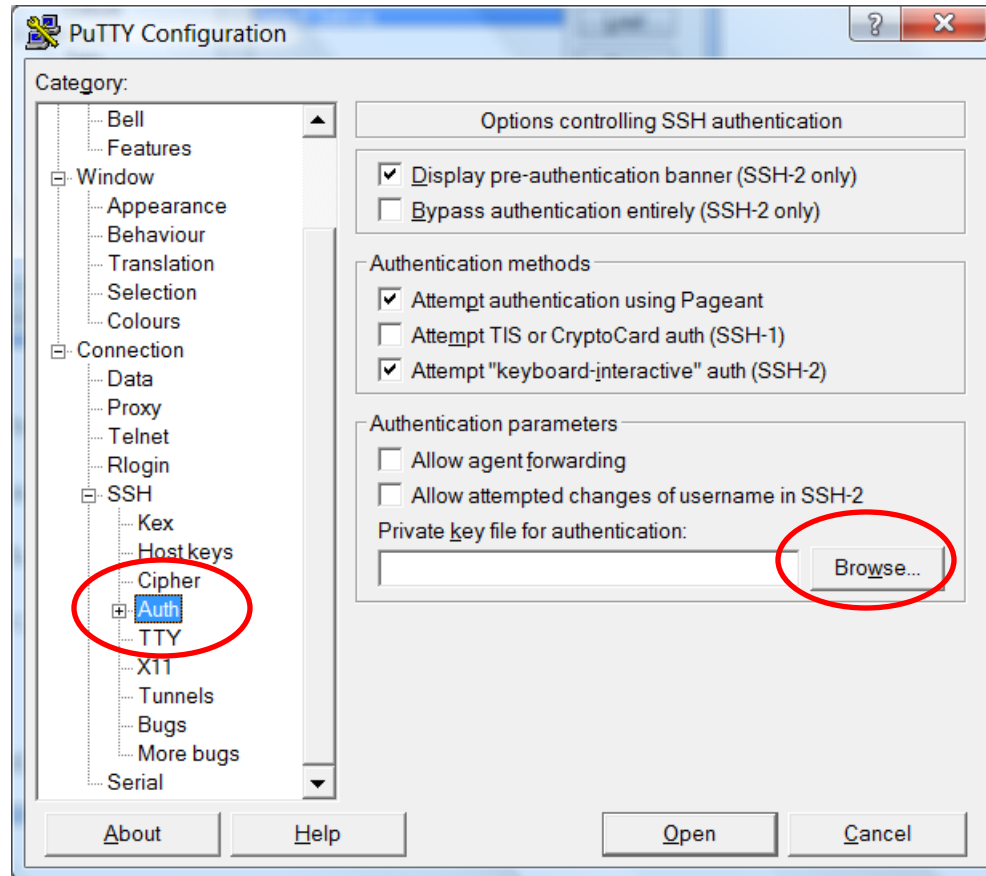


Under Category, pick SSH...

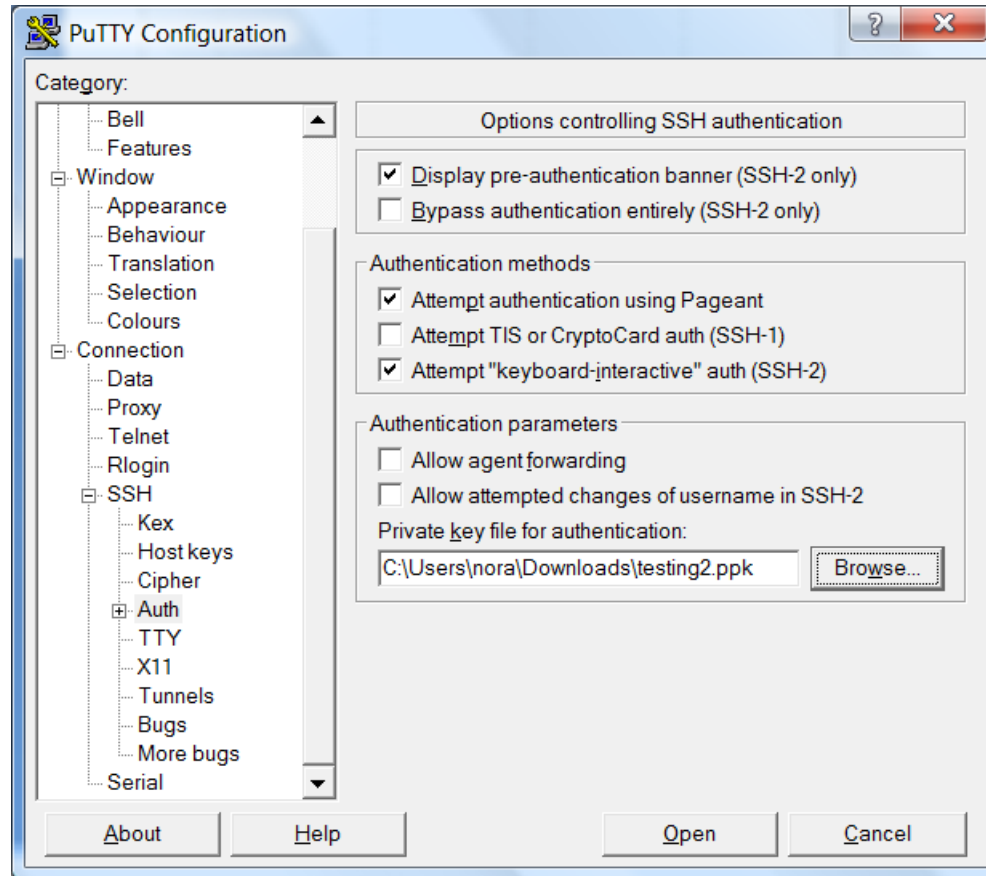


Click Auth

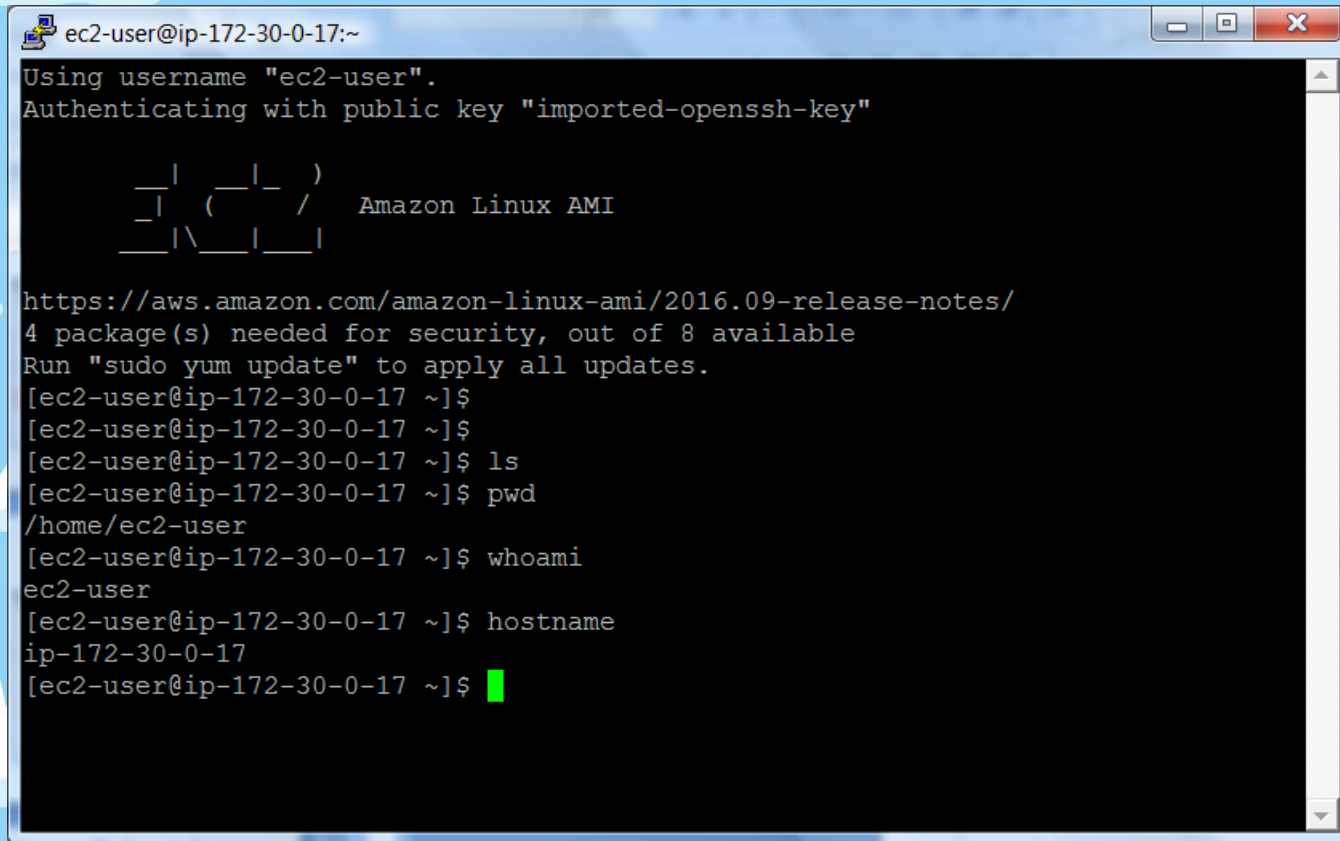
Click Browse



Pick the ppm file from before...
Click “open” ...



You are now logged on to your own “free” Linux box in the cloud...

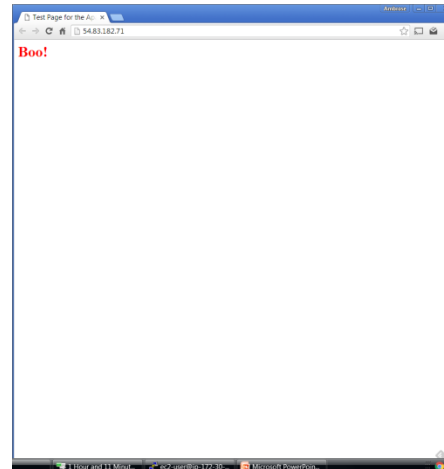
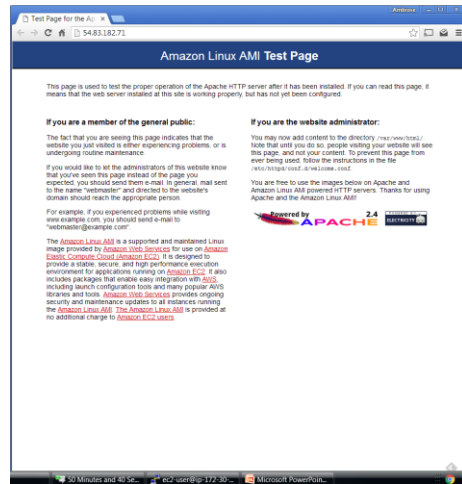


```
ec2-user@ip-172-30-0-17:~
Using username "ec2-user".
Authenticating with public key "imported-openssh-key"

  _ | _ | _ )
  _ | ( _ | /   Amazon Linux AMI
  _ | \ _ | _ |

https://aws.amazon.com/amazon-linux-ami/2016.09-release-notes/
4 package(s) needed for security, out of 8 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-30-0-17 ~]$
[ec2-user@ip-172-30-0-17 ~]$
[ec2-user@ip-172-30-0-17 ~]$ ls
[ec2-user@ip-172-30-0-17 ~]$ pwd
/home/ec2-user
[ec2-user@ip-172-30-0-17 ~]$ whoami
ec2-user
[ec2-user@ip-172-30-0-17 ~]$ hostname
ip-172-30-0-17
[ec2-user@ip-172-30-0-17 ~]$
```

Start web server...



- See <http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/install-LAMP.html>
- `sudo yum update -y`
- `sudo yum install -y httpd24 php70 mysql56-server php70-mysqlnd`
- `sudo service httpd start`
- `sudo chkconfig httpd on`
- `chkconfig --list httpd`
- `cd /var/www/html`
- `sudo vi index.html`
- `i`
- `<HTML>Boo!</HTML>`
- `:wq!`
- Load the ip address in another window...

Now SHUT IT DOWN before leaving!!!!

The screenshot displays the AWS Management Console interface. The top navigation bar shows the user is logged in as 'ambrose lewis' in the 'N. Virginia' region. The left sidebar contains a menu with categories like INSTANCES, IMAGES, ELASTIC BLOCK STORE, NETWORK & SECURITY, LOAD BALANCING, and AUTO SCALING. The main content area shows a list of EC2 instances. One instance, 'i-05dbe4a1fb...', is in a 'running' state. Below the list, the details for this instance are shown, including its ID, state, type, and various IP addresses.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name	Monitoring	Launch Time
	i-05dbe4a1fb...	t2.micro	us-east-1a	running	2/2 checks ...	None		54.83.94.152	-	testing2	disabled	February 24, 2017

Instance: i-05dbe4a1fb49c9 Public IP: 54.83.94.152			
Description	Status Checks	Monitoring	Tags
Instance ID	i-05dbe4a1fb49c9	Public DNS (IPv4)	-
Instance state	running	IPv4 Public IP	54.83.94.152
Instance type	t2.micro	IPv6 IPs	-
Elastic IPs		Private DNS	ip-172.30.0.17.ec2.internal
Availability zone	us-east-1a	Private IPs	172.30.0.17
Security groups	launch-wizard-4 - view inbound rules	Secondary private IPs	
Scheduled events	No scheduled events	VPC ID	vpc-5879c63c

Right click on Instance and select Instance State then Terminate



EC2 Management Console screenshot showing the Instance State menu.

The screenshot displays the AWS Management Console interface for the EC2 service. The left sidebar shows the navigation menu with categories like INSTANCES, IMAGES, ELASTIC BLOCK STORE, NETWORK & SECURITY, LOAD BALANCING, and AUTO SCALING. The main content area shows a list of instances. A right-click context menu is open over an instance, showing options like Connect, Get Windows Password, Launch More Like This, Instance State, Instance Settings, Image, Networking, ClassicLink, and CloudWatch Monitoring. The Instance State sub-menu is expanded, showing Start, Stop, Reboot, and Terminate options.

Below the instance list, the details for instance `i-05dbe4a1fba1b49c9` are shown. The instance is in the `running` state, using the `t2.micro` instance type, and is located in the `us-east-1a` availability zone. The public IP address is `54.83.94.152`.

IT IS IMPORTANT THAT YOU TERMINATE THIS BEFORE LEAVING AWS...IF YOU LEAVE IT UP, IT MAY COST YOU MONEY!!!!