Introducing Amazon Elastic File System (Amazon EFS)

Amazon Elastic File System (Amazon EFS) is a fully managed, scalable, and secure cloud-based file system.

Accessing and Configuring AWS CLI

1

1. Open the Lab Environment

Start your lab session as directed.

2

2. Run the Lab

Initiate the lab session by clicking the "Run Lab" button.

3

3. Access AWS CLI

Navigate to the AWS Details panel and locate the AWS CLI section to reveal the CLI credentials.

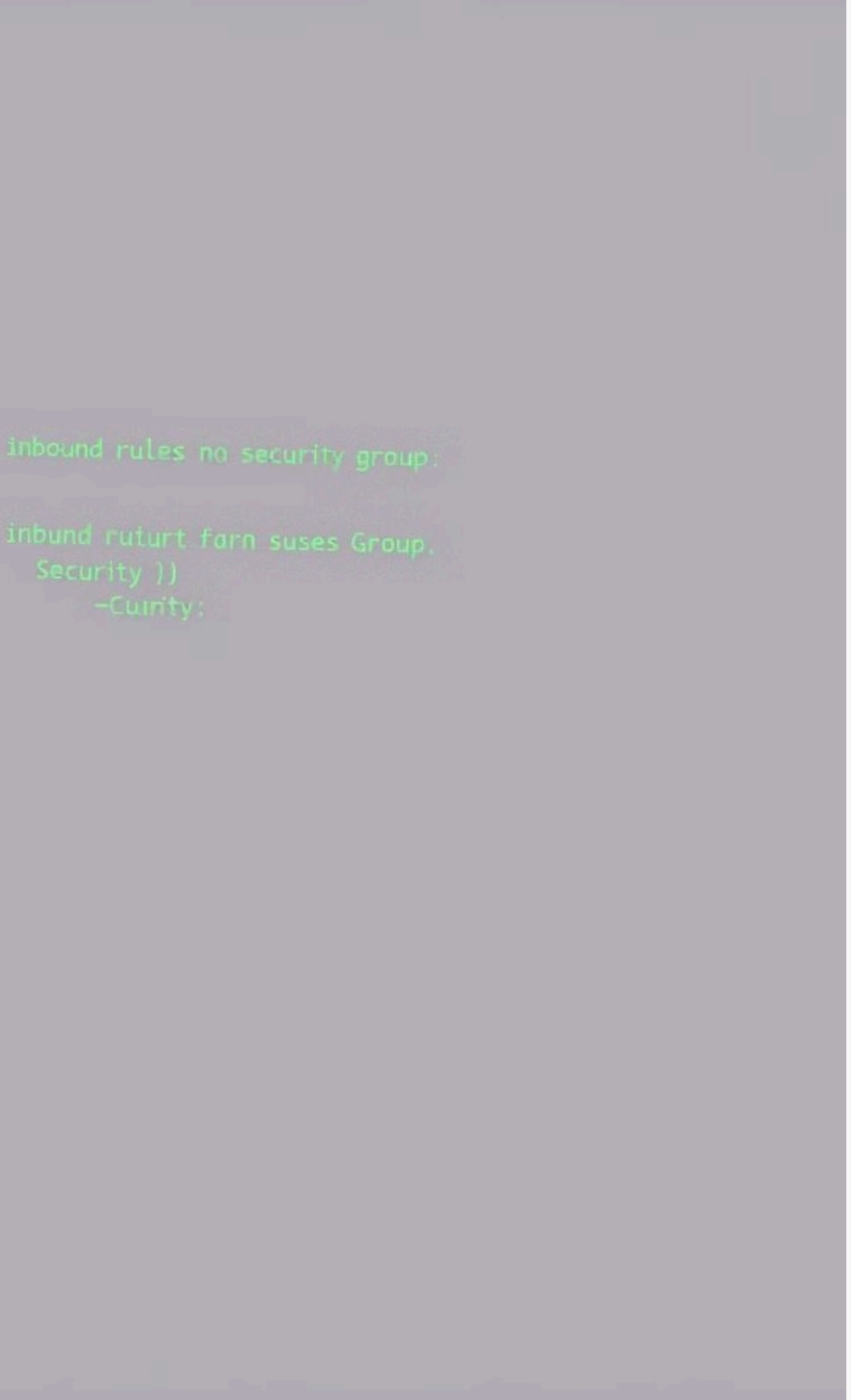
Task 1: Creating a Security Group to Access Your EFS

File System

The security group that you associate with a mount target is used to control the access to the Network File System (NFS) port, which is 2049. This security group needs to be attached to your EFS mount target. In the AWS Management Console, you'll need to navigate to the VPC service and find the EFS mount target section.

Creating a Security Group Using AWS CLI

You can use the AWS command-line interface (CLI) to create a security group for your EFS mount target. The command will look something like this: aws ec2 create-security-group --group-name EFS-Mount-Target --description "Security group for EFS Mount Target" --vpc-id vpc-0c7908cfffd0a3058



Adding Inbound Rules to Allow Access Via NFS

1

1. Access the Security Group

In the AWS Management Console, go to the VPC service and select the security group you created for your EFS mount target.

2

2. Add an Inbound Rule

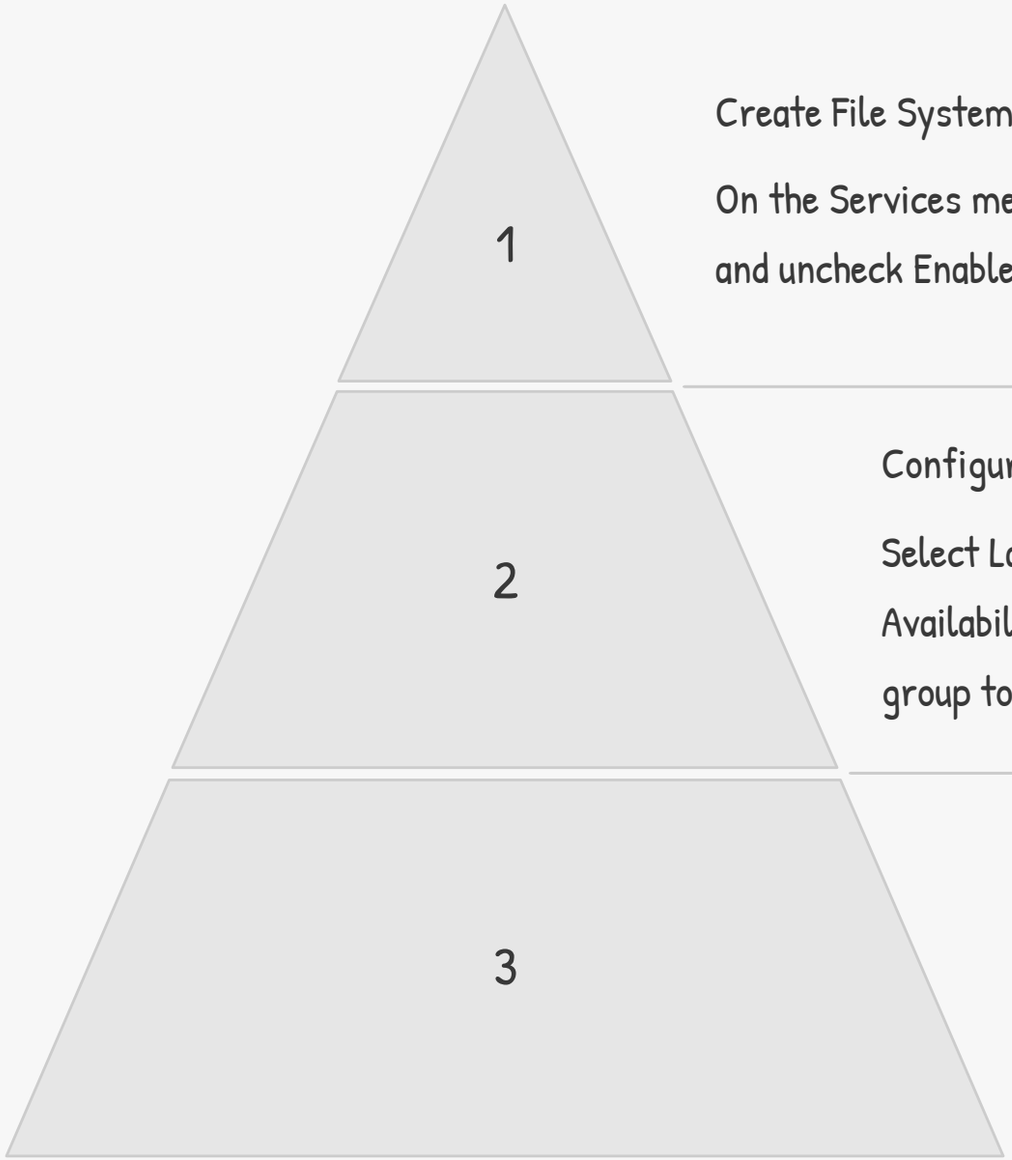
Add an inbound rule to the security group that allows access to the NFS port 2049. You can use the AWS CLI or the web interface for this step.

3

3. Confirm the Rule

Make sure the rule is added successfully, and then verify that the rule is correctly configured.

Task 2: Creating an EFS File System



Create File System

On the Services menu, choose EFS. Select Create file system, choose Custom and uncheck Enable automatic backups.

Configure Mount Targets

Select Lab VPC. Detach the default security group from each Availability Zone mount target. Attach the EFS Mount Target security group to each Availability Zone mount target.

Review and Create

Choose Create to finish the process. Your file system will be available after a few minutes.

Task 3: Connecting to Your EC2 Instance via SSH

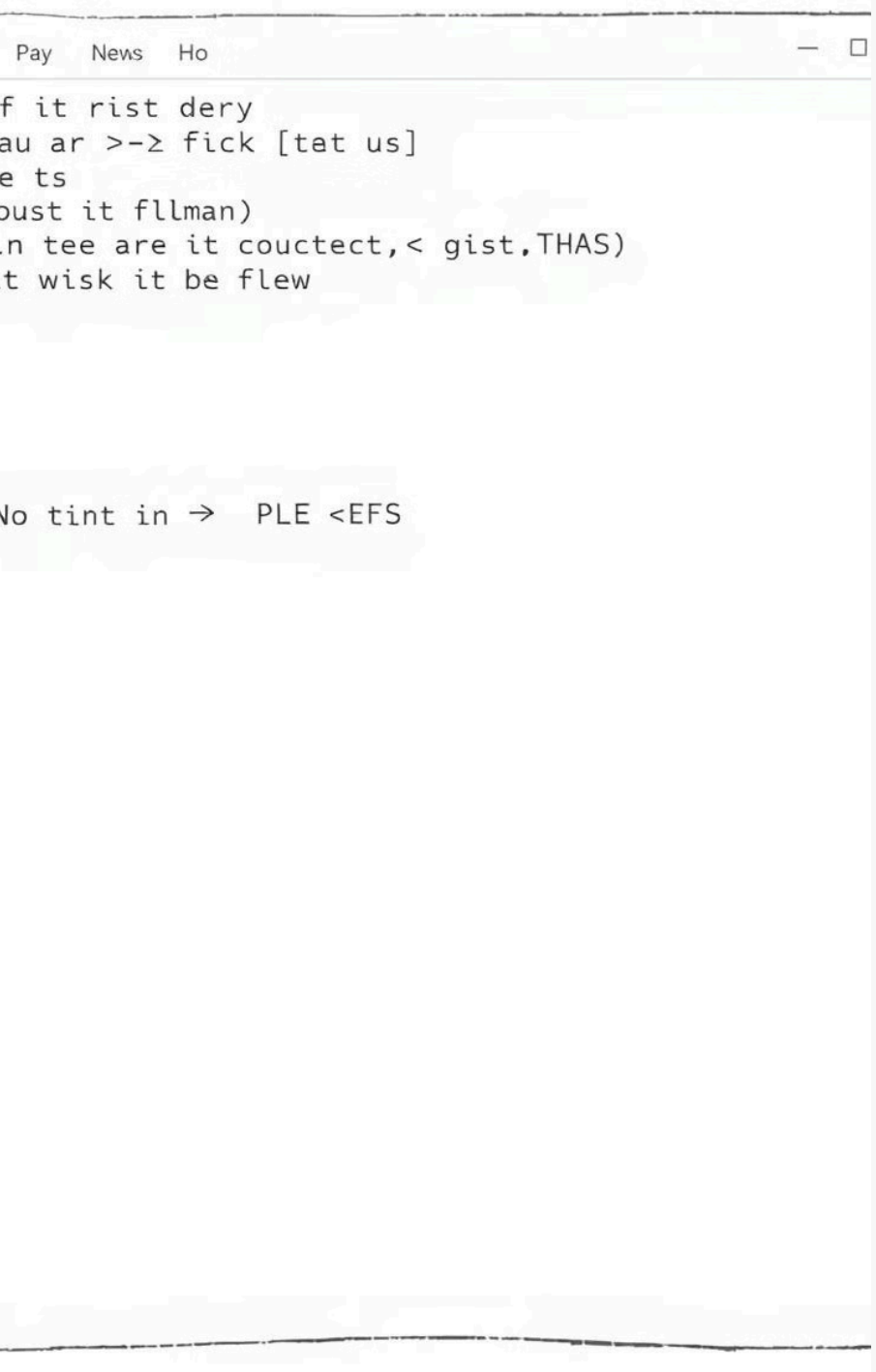
Microsoft Windows Users

To connect to your EC2 instance using SSH, follow these steps:

- Download the labsuser.ppk file from the AWS Details panel.
- Open PuTTY and enter the EC2PublicIP address.
- Select Browse, navigate to labsuser.ppk, and choose Open twice.

Connecting to the EC2 Instance using Session Manager

You can also connect to your EC2 instance using AWS Systems Manager Session Manager. This eliminates the need for installing SSH clients on your local machine. Simply use the following command: aws ssm start-session --target i-0b99660f6117e3c18



Task 4: Creating a New Directory and Mounting the EFS File System

1

1. Create a New Directory

In your SSH session, create a new directory by entering the following command: sudo mkdir /efs

2

2. Obtain Mount Command

In the Amazon EFS Console, copy the entire mount command from the Using the NFS client section.

3

3. Mount the File System

In your Linux SSH session, paste the command and press ENTER to mount your Amazon EFS file system.

Task 5: Examining the Performance of the EFS File System

1

1. Run Flexible IO (fio)

Examine the write performance characteristics of your file system by entering the following command: sudo fio --name=fio-efs -filesize=10G -filename=./efs/fio-efs-test.img -bs=1M -nfiles=1 -direct=1 -rw=write -iodepth=200 -ioengine=libaio

2

2. Monitor Performance using Amazon CloudWatch

In the AWS Management Console, choose CloudWatch, Metrics, and EFS. Then, select File System Metrics and the row with the PermittedThroughput Metric Name.

3

3. Analyze CloudWatch Metrics

On the CloudWatch graph, choose and drag around the data line. If you do not see the line graph, adjust the time range of the graph to display the period during which you ran the fio command.

Congratulations! You've Successfully Created and Configured Your EFS File System

1

1. Verify Success

Check the status of your EFS file system and mount targets in the AWS Management Console. Both should be in an Available state.

2

2. Test and Explore

Experiment with uploading and downloading files to your EFS file system to further understand its performance and functionality.

3

3. Continue Learning

For deeper insights into Amazon EFS and its capabilities, explore the official Amazon Elastic File System documentation.