# Introduction Amazon Web Services (AWS)



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# Topics covered today

- AWS Cloud Practitioner Certification
- Certification Resources
- Certification Tips
- AWS RDS
- Lab #3: AWS RDS

# AWS Cloud Practitioner Certification

- Define **what the AWS Cloud is and the basic global infrastructure**

- Describe basic **AWS Cloud architectural principles**

- Describe the **AWS Cloud value proposition**

- Describe **key services on the AWS platform and their common use cases** (for example, compute and analytics)

- Describe **basic security and compliance aspects of the AWS platform and the <u>shared security model</u>**

- Define the **billing, account management, and pricing models**

- Identify **sources of documentation or technical assistance** (for example, whitepapers or support tickets)

- Describe **basic/core characteristics of deploying and operating in the AWS Cloud**

https://aws.amazon.com/certification/certified-cloud-practitioner/

**Exam Details**

**Format**
Multiple choice, multiple answer

**Type**
Foundational

**Delivery Method**
Testing center or online proctored exam

**Time**
90 minutes to complete the exam

**Cost**
100 USD (Practice Exam: 20 USD)

**Language**
Available in English, Japanese, Korean, and Simplified Chinese

# Certification Resources

Official AWS Resources:

- AWS Cloud Practitioner Essentials (Second Edition)

- Recommended Whitepapers
- AWS Sample Questions
- Official AWS Practice Exam (20 questions)

External Resources:

- Udemy Practice Exams (6 practice exams – 65 questions each)
- Cloud Guru
- Free Labs + AWS Educate Account

# What did I use?

Official AWS Resources:

- AWS Cloud Practitioner Essentials (Second Edition) ✓
- Recommended Whitepapers ✗
- AWS Sample Questions ✓
- Official AWS Practice Exam (20 questions) ✓

External Resources:

- Udemy Practice Exams (6 practice exams – 65 questions each) ✓
- Cloud Guru ✗
- Free Labs + AWS Educate Account ✓

# What I used?

Official AWS Resources:

- AWS Cloud Practitioner Essentials (Second Edition) ✔️ 😃 *Basically, mandatory*
- Recommended Whitepapers ❌
- AWS Sample Questions ✔️ 😎 *Way too easy*
- Official AWS Practice Exam (20 questions) ✔️ 🤬 *Same level as the exam but no way to review it*

External Resources:

- Udemy Practice Exams (6 practice exams – 65 questions each) ✔️😃😃😃 *Excellent*
- Cloud Guru ❌ *Have heard good things about it*
- AWS Newbies ❌ *Have heard good things about it*
- Free Labs + AWS Educate Account ✔️

# Study Tips

- The Udemy Practice Tests are super important
- Use the Udemy Practice Tests as a way to review the AWS training content
- I failed each of the Udemy Practice Tests during the first attempt, but scored 90%+ the second time I took one
- Make flashcards and review the concepts again and again
  - Last year's class created and shared a concepts quizlet
- This certification will make you more knowledge of cloud computing in general

# Tips from last year's class

- "The Udemy course with the 6 practice tests is especially helpful (take the tests until you can pass with over 90%)"
- "For items you need more help with, read from the AWS wiki page and watch YouTube videos for examples of practical use"
  - AWS wiki link: https://aws-certified-cloud-practitioner.fandom.com/wiki/AWS_Certified_Cloud_Practitioner_Wiki(opens in new window)
- Create a class quizlet

# How to sign up for the exam?

- You will take a **pre-quiz** before you can sign up for the exam

- You will take the exam **on your own**

- To book the exam: **starting in December 8th** , go to https://www.aws.training/Certification, create an account, and go to schedule an exam. Complete your information.

- Send Tony an email (tony_mostek@ncsu.edu) to let him know you want to schedule your exam. Meet virtually by Zoom with Tony to schedule your exam. After you are successfully registered, you must email the receipt to Tony as soon as you receive it.

- This exam counts towards one of your four free exams

# Questions about the Certification?

# AWS Platform Services



| Databases | Analytics | Application Services | Management Tools | Developer Tools | Mobile Services | Internet of Things |
|-----------|-----------|---------------------|------------------|-----------------|-----------------|-------------------|
| Amazon DynamoDB | **Amazon Athena** | Amazon API Gateway | Amazon CloudWatch | AWS CodeBuild | AWS Mobile Hub | AWS IoT |
| Amazon ElastiCache | Amazon CloudSearch | Amazon AppStream 2.0 | AWS CloudFormation | AWS CodeCommit | Amazon Cognito | AWS IoT Greengrass |
| **Amazon RDS** | **Amazon EMR** | Amazon Elastic Transcoder | AWS CloudTrail | AWS CodeDeploy | Amazon Mobile Analytics | |
| Amazon Redshift | Amazon Elasticsearch Service | Amazon SWF | AWS Config | AWS CodePipeline | Amazon Pinpoint | |
| | Amazon Kinesis | AWS Step Functions | AWS Managed Services | AWS X-Ray | AWS Device Farm | |
| | Amazon QuickSight | | AWS OpsWorks | AWS CodeStar | | |
| | | | AWS Service Catalog | | | |
| | | | AWS Trusted Advisor | | | |

# Amazon Relational Database Service (RDS)
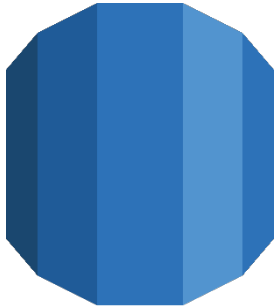
**Amazon RDS**

- RDS: **managed relational database service.**
- Provides six database engines to choose from: **Amazon Aurora, MySQL, MariaDB, Oracle, Microsoft SQL Server, and PostgreSQL.**
- AWS RDS **handles routine database tasks** such as provisioning, patching, backup, recovery, failure detection, and repair.
- Easy to use **replication** (enhance availability and reliability) for production workloads.
- **Automated backups**, and user-initiated **snapshots** (stored in S3)
- **Multi-AZ deployment** option (high availability)
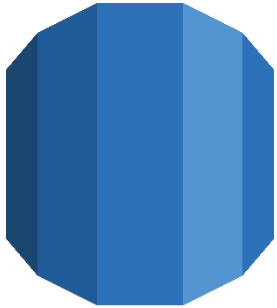
# DB Instances

- DB Instances are the **basic building block** of Amazon RDS.
- They are **isolated database environment in the cloud.**
- A DB Instance **can contain multiple user-created databases.**
- You can query those databases by using the same tools and applications that you use with a standalone database instance.

**Amazon RDS**
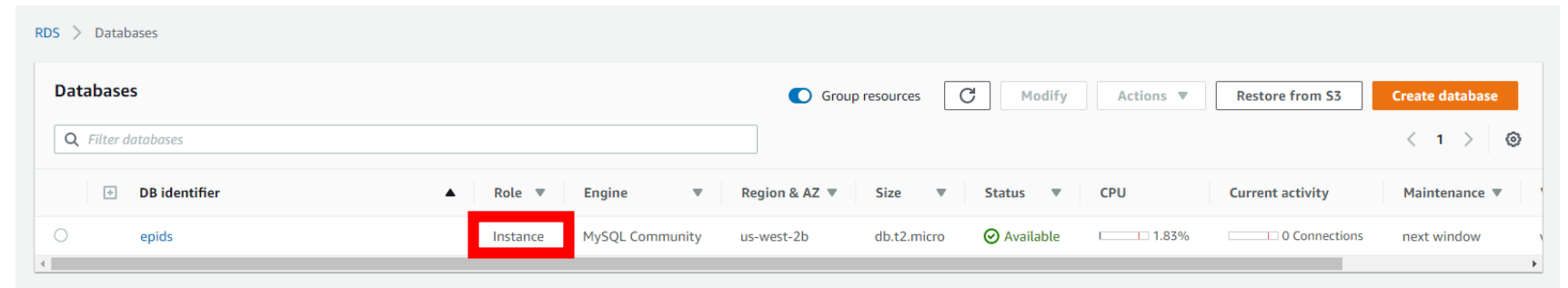
# AWS Global Infrastructure - Review

Availability Zones are designed for physical redundancy and provide resilience, enabling uninterrupted performance, even in the event of power outages, Internet downtime, floods, and other natural disasters.

Regions
Coming Soon

https://aws.amazon.com/about-aws/global-infrastructure/

# Cross-Region Snapshots

- Are a **copy of a database snapshot stored in a different AWS Region.**
- Provide a **backup for disaster recovery.**
- Can be **used as a base for migration to a different region.**

# Multi-AZ RDS Deployment

- With Multi-AZ operation, your database is **synchronously replicated to another Availability Zone in the same AWS Region**.

- **Fail over to the standby** automatically occurs in case of a master database failure.

- Planned maintenance is applied first to standby databases.
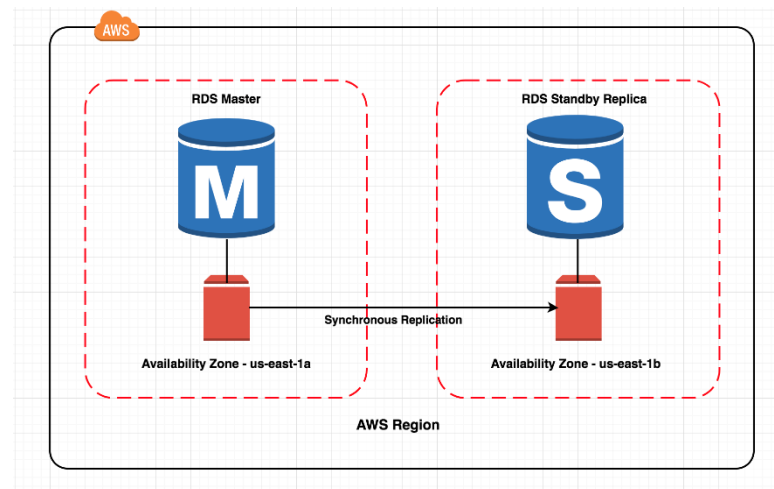
# Demo AWS RDS

**Amazon RDS**     ✕

RDS > Databases

Dashboard
**Databases**
Query Editor

Performance Insights

Snapshots

Automated backups

Reserved instances

Proxies

Subnet groups

Parameter groups

Option groups

Events

Event subscriptions

Recommendations ②

Certificate update ①

## Databases

Group resources  ↻  Modify  Actions ▼  **Restore from S3**  **Create database**

🔍 Filter databases

‹ **1** ›  ⚙

| ⊞ | DB identifier ▲ | Role ▽ | Engine ▽ | Region & AZ ▽ | Size ▽ | Status ▽ | CPU |
|---|---|---|---|---|---|---|---|
| ○ | epids | Instance | MySQL Community | us-west-2b | db.t2.micro | ⊘ Available | ▮▮▯ 1.6 |

aws

RDS > Databases > epids

# epids

Modify    Actions ▼

## Summary

| DB identifier | CPU | Info | Class |
|---|---|---|---|
| epids | ▭▭ 2.03% | ✅ Available | db.t2.micro |
| **Role** | **Current activity** | **Engine** | **Region & AZ** |
| Instance | ▭▭ 0 Connections | MySQL Community | us-west-2b |

**Connectivity & security**    Monitoring    Logs & events    Configuration    Maintenance & backups    Tags

## Connectivity & security

### Endpoint & port

**Endpoint**

epids.cprzbsokwcwb.us-west-2.rds.amazonaws.com

**Port**

3306

### Networking

**Availability zone**

us-west-2b

**VPC**

vpc-871371fe

### Security

**VPC security groups**

rds-launch-wizard (sg-0c88a6db615cca98f)

( active )

**Public accessibility**

- AWS Concepts Quiz (due Friday at midnight)
- Lab #3