

AWS Solutions Architect Certification Training

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AWS-Migration-Assignment-2 by Nagesha. K.S.

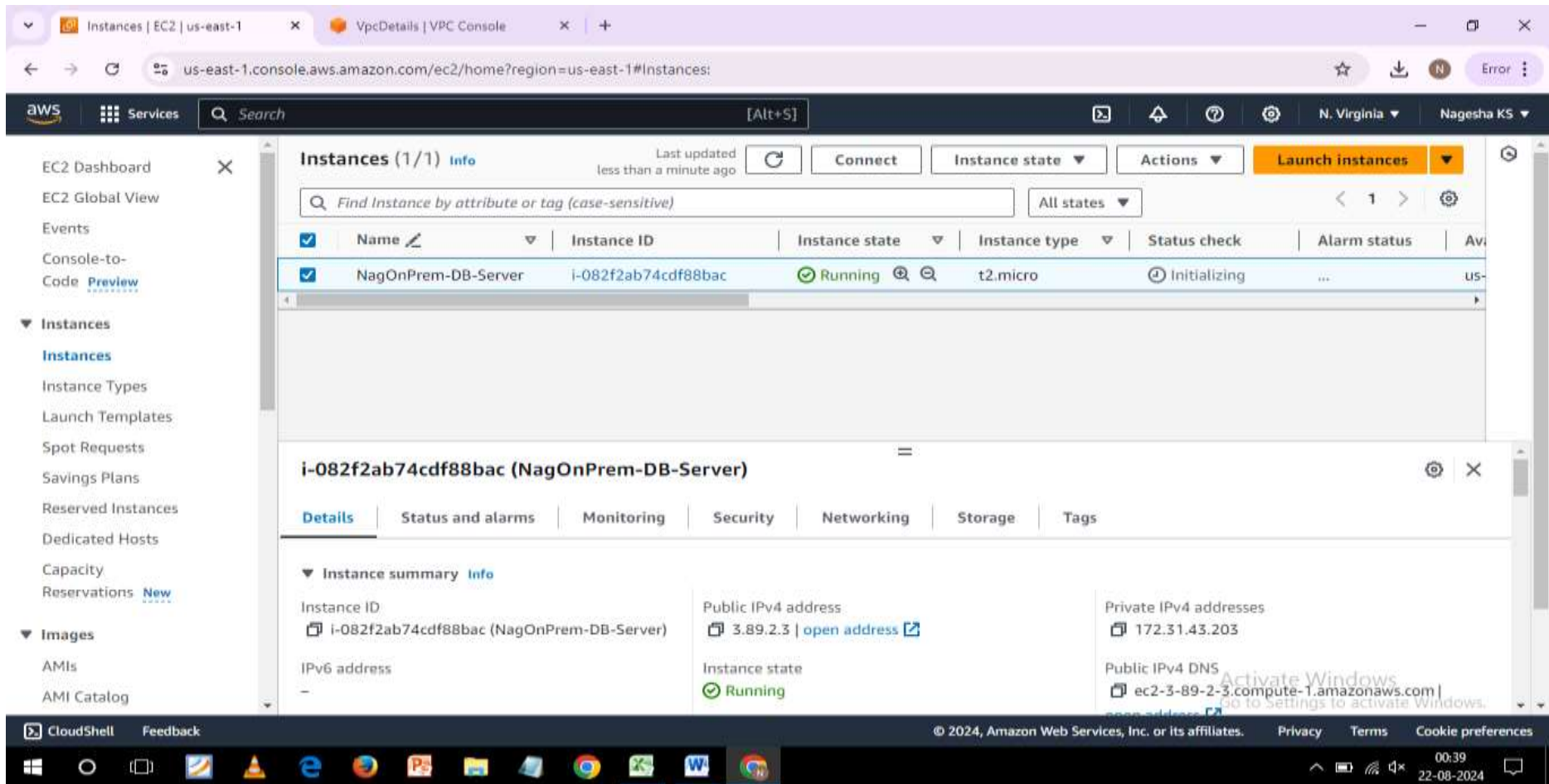
Please check the following screenshots for each question.

Problem Statement:

You are assigned to take care of your companies' migration from on-premises to the AWS cloud.

You are asked to:

1. Launch an EC2 instance, and make it a database server
2. Run the below-given SQL file to add a database with some data (This can be used to check whether the data is successfully migrated)
File link: <https://downloads.mysql.com/docs/world-db.zip>
3. Migrate the database from the EC2 instance to an RDS MySQL instance using Database Migration Service (DMS)
4. After that, migrate the RDS MySQL database into an RDS PostgreSQL using Database Migration Service for proving the cross-schema migration



ec2-user@ip-172-31-54-118:~

```
[ec2-user@ip-172-31-54-118 ~]$ wget https://downloads.mysql.com/docs/world-db.zip
--2024-08-22 04:46:44-- https://downloads.mysql.com/docs/world-db.zip
Resolving downloads.mysql.com (downloads.mysql.com)... 23.49.176.249, 2600:1408:c400:1881::2e31, 2600:1408:c400:188c::2e31
Connecting to downloads.mysql.com (downloads.mysql.com)[23.49.176.249]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 93035 (91K) [application/octet-stream]
Saving to: 'world-db.zip.1'
```

```
world-db.zip.1 100%[=====>] 90.85K --.-KB/s in 0.002s
```

```
2024-08-22 04:46:44 (36.0 MB/s) - 'world-db.zip.1' saved [93035/93035]
```

```
[ec2-user@ip-172-31-54-118 ~]$ unzip world-db.zip
Archive: world-db.zip
replace world-db/world.sql? [y]es, [n]o, [A]ll, [N]one, [r]ename: Y
  inflating: world-db/world.sql
[ec2-user@ip-172-31-54-118 ~]$ ls -l
total 184
drwxr-xr-x. 2 ec2-user ec2-user 23 Aug 22 04:47 world-db
-rw-r--r--. 1 ec2-user ec2-user 93035 Jul 31 22:05 world-db.zip
-rw-r--r--. 1 ec2-user ec2-user 93035 Jul 31 22:05 world-db.zip.1
[ec2-user@ip-172-31-54-118 ~]$
```

Activate Windows
Go to Settings to activate Windows.



10:17
22-08-2024

ec2-user@ip-172-31-54-118:~/world-db

```
INSERT INTO `countrylanguage` VALUES ('YUG','Slovak','F',0.7);
INSERT INTO `countrylanguage` VALUES ('ZAF','Afrikaans','T',14.3);
INSERT INTO `countrylanguage` VALUES ('ZAF','English','T',8.5);
INSERT INTO `countrylanguage` VALUES ('ZAF','Ndebele','F',1.5);
INSERT INTO `countrylanguage` VALUES ('ZAF','Northsotho','F',9.1);
INSERT INTO `countrylanguage` VALUES ('ZAF','Southsotho','F',7.6);
INSERT INTO `countrylanguage` VALUES ('ZAF','Swazi','F',2.5);
INSERT INTO `countrylanguage` VALUES ('ZAF','Tsonga','F',4.3);
INSERT INTO `countrylanguage` VALUES ('ZAF','Tswana','F',8.1);
INSERT INTO `countrylanguage` VALUES ('ZAF','Venda','F',2.2);
INSERT INTO `countrylanguage` VALUES ('ZAF','Xhosa','T',17.7);
INSERT INTO `countrylanguage` VALUES ('ZAF','Zulu','T',22.7);
INSERT INTO `countrylanguage` VALUES ('ZMB','Bemba','F',29.7);
INSERT INTO `countrylanguage` VALUES ('ZMB','Chewa','F',5.7);
INSERT INTO `countrylanguage` VALUES ('ZMB','Lozi','F',6.4);
INSERT INTO `countrylanguage` VALUES ('ZMB','Nsenga','F',4.3);
INSERT INTO `countrylanguage` VALUES ('ZMB','Nyanja','F',7.8);
INSERT INTO `countrylanguage` VALUES ('ZMB','Tonga','F',11.0);
INSERT INTO `countrylanguage` VALUES ('ZWE','English','T',2.2);
INSERT INTO `countrylanguage` VALUES ('ZWE','Ndebele','F',16.2);
INSERT INTO `countrylanguage` VALUES ('ZWE','Nyanja','F',2.2);
INSERT INTO `countrylanguage` VALUES ('ZWE','Shona','F',72.1);
commit;
```

```
--
-- Dumping events for database 'world'
```

```
--
-- Dumping routines for database 'world'
```

```
/*!40103 SET TIME_ZONE=@OLD_TIME_ZONE */;
```

```
/*!40101 SET SQL_MODE=@OLD_SQL_MODE */;
```

```
/*!40014 SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS */;
```

```
/*!40014 SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS */;
```

```
/*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
```

```
/*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;
```

```
/*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
```

```
/*!40111 SET SQL_NOTES=@OLD_SQL_NOTES */;
```

```
SET autoccommit=@old_autocommit;
```

```
-- Dump completed on 2020-01-22 9:56:18
```

```
[ec2-user@ip-172-31-54-118 world-db]$
```

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Launch an instance | EC2 | us-east-1

Instances | EC2 | us-east-1

RDS | us-east-1

us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#database:id=nagmysql-rds-db;is-cluster=false

aws Services endpoint services

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Amazon RDS

Dashboard

Databases

Query Editor

Performance insights

Snapshots

Exports in Amazon S3

Automated backups

Reserved instances

Proxies

Subnet groups

Parameter groups

Option groups

Custom engine versions

Zero-ETL integrations New

RDS > Databases > nagmysql-rds-db

nagmysql-rds-db

Summary

DB identifier nagmysql-rds-db	Status Backing-up	Role Instance	Engine MySQL Community	Recommendations
CPU -	Class db.t3.micro	Current activity	Region & AZ us-east-1f	

Connectivity & security Monitoring Logs & events Configuration Zero-ETL integrations Maintenance & updates

Connectivity & security

Endpoint & port	Networking	Security
Endpoint	Availability Zone	VPC security groups

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Launch an instance | EC2 | us-east-1Instances | EC2 | us-east-1RDS | us-east-1Database Migration Service | Er

us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#database:id=nagpostgres-rds-db&is-cluster=false

awsServicesdatabase migration ServiceN. VirginiaNagesha KS

Amazon RDS

DashboardDatabasesQuery EditorPerformance insightsSnapshotsExports in Amazon S3Automated backupsReserved instancesProxiesSubnet groupsParameter groupsOption groupsCustom engine versionsZero-ETL integrations New

RDS > Databases > nagpostgres-rds-db

nagpostgres-rds-db

Summary

DB identifier nagpostgres-rds-db	Status Available	Role Instance	Engine PostgreSQL	Recommendations
CPU 4.32%	Class db.t3.micro	Current activity 0.00 sessions	Region & AZ us-east-1d	

Connectivity & securityMonitoringLogs & eventsConfigurationMaintenance & backupsTagsR

Connectivity & security

Endpoint & port	Networking	Security
-----------------	------------	----------

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Launch an instance | EC2 | us-east-1

Instances | EC2 | us-east-1

RDS | us-east-1

Database Migration Service | us-east-1

us-east-1.console.aws.amazon.com/dms/v2/home?region=us-east-1#replicationInstances

aws Services Search [Alt+S]

Discover

- Data collectors
- Inventory

Assess

- Recommendations New

Convert and migrate

- Migration projects New
- Instance profiles New
- Data providers New

Migrate data

- Replication instances**
- Endpoints
- Database migration tasks
- Serverless replications

Certificates

Subnet groups

The replication instance **nagmysqlmigrationtopostgresql** is being created.

DMS > Replication instances

Replication instances (1/1)

Find replication instance

1

	Name	Status	VPC	Class	Engine ...	Availab...	Net
<input checked="" type="checkbox"/>	nagmysqlmigrationtopostgresql	Creating	vpc-00db...	dms.t3.m...	3.5.2	us-east-1d	IPv...

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Launch an instance | EC2 | us-east-1

Home | EC2 | us-east-1

RDS | us-east-1

Database Migration Service | Region

us-east-1.console.aws.amazon.com/dms/v2/home?region=us-east-1#replicationInstanceDetails/nagmysqlmigrationtopostgresql

Services

Search

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AWS DMS

Dashboard

Discover

- Data collectors
- Inventory

Assess

- Recommendations New

Convert and migrate

- Migration projects New
- Instance profiles New
- Data providers New

Migrate data

- Replication instances**
- Endpoints
- Database migration tasks
- Serverless replications

The replication instance **nagmysqlmigrationtopostgresql** was created successfully.

[View details](#)

DMS > Replication instances > nagmysqlmigrationtopostgresql

nagmysqlmigrationtopostgresql

DeleteRebootModify

How was your experience using replication instances?

Provide Feedback

Summary

Status	Class	Engine version	Associated migration tasks
Available	dms.t3.medium	3.5.2	-

Overview details

CloudWatch metrics

Migration tasks

Log management

Tags

Details

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Launch an instance | EC2 | us-east-1

Instances | EC2 | us-east-1

RDS | us-east-1

Database Migration Service | us-east-1

us-east-1.console.aws.amazon.com/dms/v2/home?region=us-east-1#createNewEndpoint

aws

Services

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DMS > Endpoints > Create endpoint

Create endpoint Info

Endpoint type Info

☒ Source endpoint
A source endpoint allows AWS DMS to read data from a database (on-premises or in the cloud), or from other data source such as Amazon S3.

☐ Target endpoint
A target endpoint allows AWS DMS to write data to a database, or to other data stores such as Amazon DynamoDB or Kinesis.

☒ Select RDS DB instance
Choose this option if the endpoint is an Amazon RDS DB instance. It provides a list of available RDS instances from the current region.

RDS Instance
Instances available only for current user and region
nagmysql-rds-db

Endpoint configuration

Endpoint configuration - Supported versions
Review the supported database versions for your source [source](#) and target [target](#) endpoints.

Endpoint configuration - AWS Secrets Manager
AWS DMS supports authenticating with databases using AWS Secrets Manager. If your replication instance is in a private subnet make sure to add the additional configuration `secretsManagerEndpointOverride` on your endpoint setting. For more information about AWS Secret Manager, see [guide](#).

Endpoint settings - Additional configuration
The functionality of DMS endpoints can be customized for individual use cases and requirements using DMS extra connection settings. For more information, see [guide](#).

KMS Key
To keep your endpoint data secure during migration, AWS DMS encrypts passwords and other important information using AWS Key Management Service (AWS KMS). Encryption requires an AWS KMS key, AWS DMS creates a default key for you if you don't already have one. For more information, see [guide](#).

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Launch an instance | EC2 | us-east-1

Instances | EC2 | us-east-1

RDS | us-east-1

Database Migration Service | us-east-1

us-east-1.console.aws.amazon.com/dms/v2/home?region=us-east-1#createNewEndpoint

aws

Services

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DMS > Endpoints > Create endpoint

Create endpoint [Info](#)

Endpoint type [Info](#)

☐ Source endpoint
A source endpoint allows AWS DMS to read data from a database (on-premises or in the cloud), or from other data source such as Amazon S3.

☒ Target endpoint
A target endpoint allows AWS DMS to write data to a database, or to other data stores such as Amazon DynamoDB or Kinesis.

☐ Select RDS DB instance
Choose this option if the endpoint is an Amazon RDS DB instance. It provides a list of available RDS instances from the current region.

Endpoint configuration

Endpoint identifier [Info](#)
A label for the endpoint to help you identify it.

NagPostgres-RDS-DB

Review topics below which describe configuration best practices. Note that, changing engine type will update the topics below.

Topics (3)

[Endpoint configuration - Supported versions](#)
Review the supported database versions for your source [source](#) and [target](#) endpoints.

[Endpoint configuration - AWS Secrets Manager](#)
AWS DMS supports authenticating with databases using AWS Secrets Manager. If your replication instance is in a private subnet make sure to add the additional configuration `secretsManagerEndpointOverride` on your endpoint setting. For more information about AWS Secret Manager, see [guide](#).

[KMS Key](#)
To keep your endpoint data secure during migration, AWS DMS encrypts passwords and other important information using AWS Key Management Service (AWS KMS). Encryption requires an AWS KMS key, AWS DMS creates a default key for you if you don't already have one. For more information, see [guide](#).

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