

Ayush Raj

22BRS1117

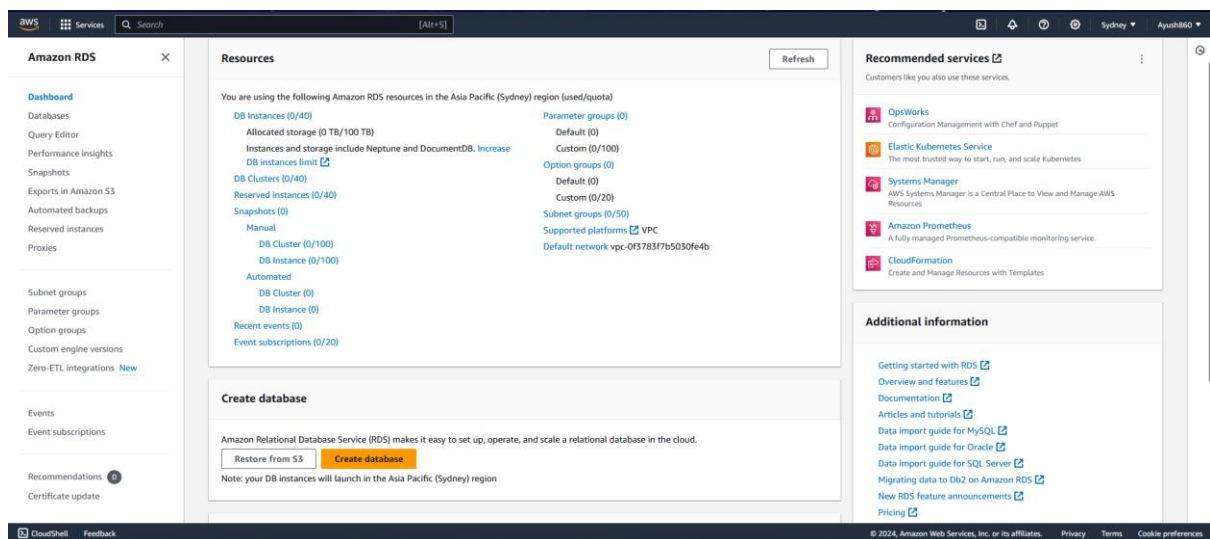
Lab Assignment

Creation and Migration of Database in Aws

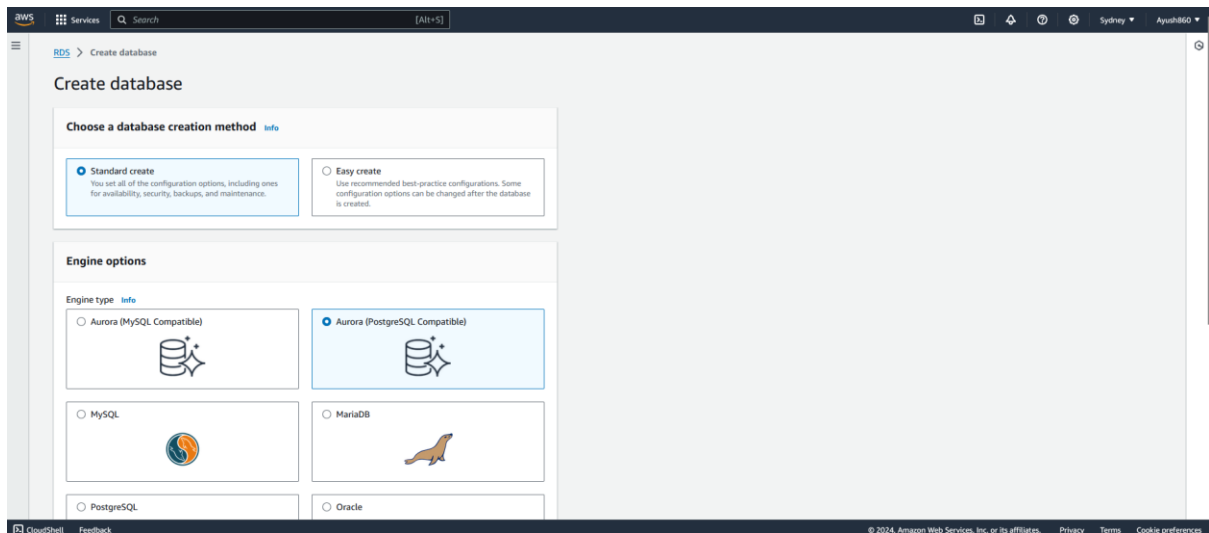
Creating a database

Process are as filliws

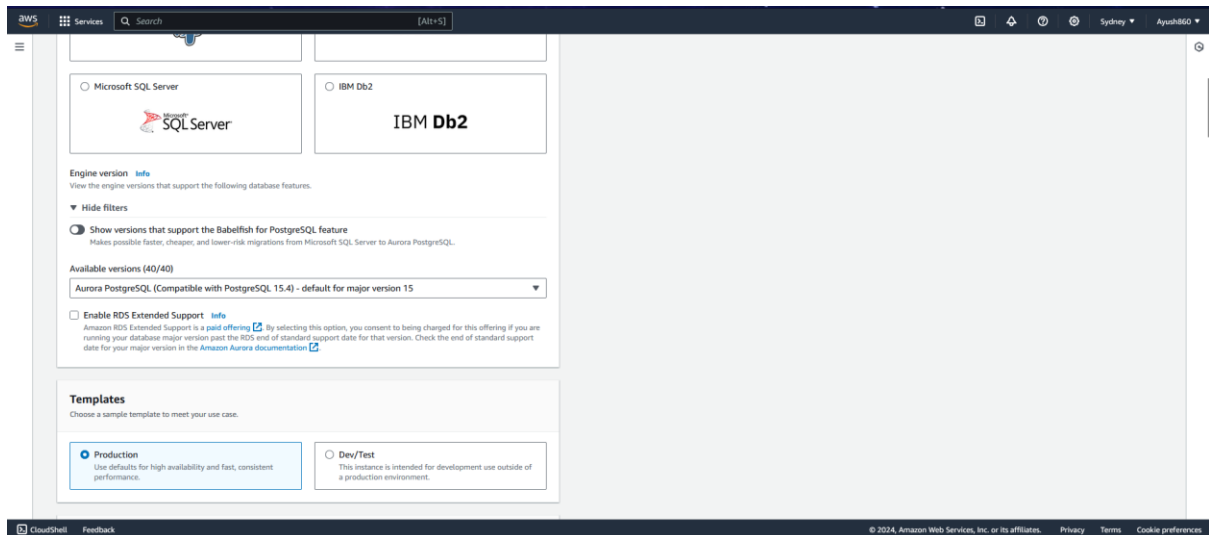
- click on create database



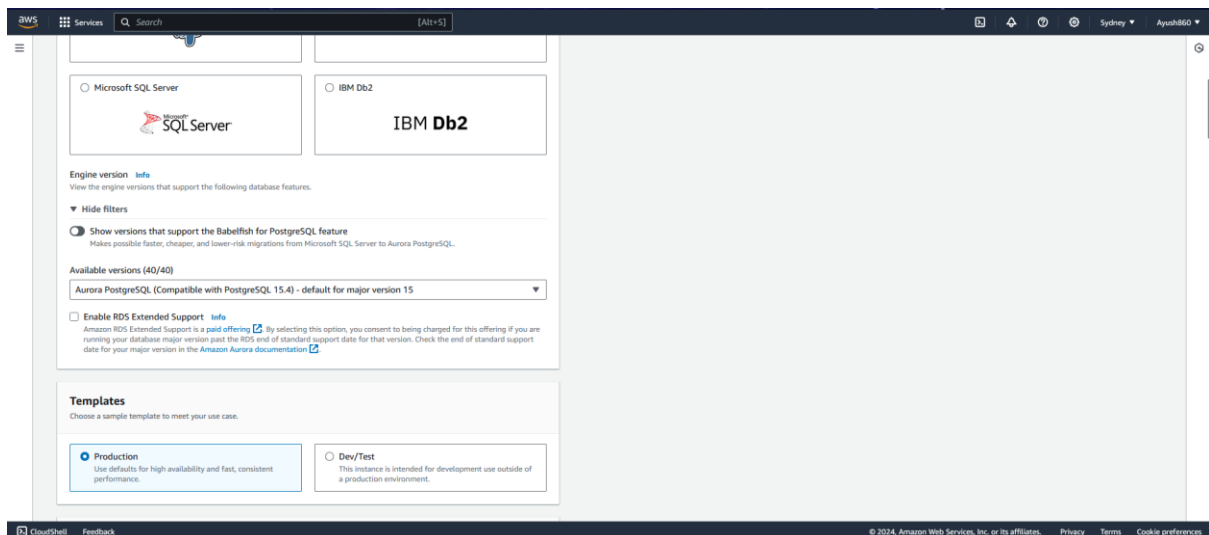
- choose the type of console and type of database



- click on engine version and rds extension support



- template for production choose dev and test



- cluster storage configuration and instance configuration

The screenshot shows the AWS Aurora console interface. At the top, there's a navigation bar with the AWS logo, a search bar, and user information. The main content area is divided into two sections: 'Cluster storage configuration' and 'Instance configuration'.

Cluster storage configuration: This section allows users to choose the storage configuration for the Aurora DB cluster. It includes a 'Select the encryption key' dropdown menu with 'aws/secretsmanager (default)' selected. Below this, there are two configuration options: 'Aurora Standard' (selected) and 'Aurora I/O-Optimized'. The 'Aurora Standard' option is described as cost-effective for many applications with moderate I/O usage. The 'Aurora I/O-Optimized' option is described as predictable pricing for all applications, improved price performance for I/O-intensive applications, and no additional charges for read/write I/O operations.

Instance configuration: This section allows users to choose the DB instance configuration options. It includes a 'DB instance class' dropdown menu with 'Hide filters' and 'Include previous generation classes' options. The 'Serverless v2' and 'Memory optimized classes (includes r classes)' options are also visible.

- availability and durability, connectivity

The screenshot shows the AWS Aurora console interface. At the top, there's a navigation bar with the AWS logo, a search bar, and user information. The main content area is divided into three sections: 'Availability & durability', 'Connectivity', and 'Network type'.

Availability & durability: This section allows users to choose the Multi-AZ deployment. It includes a 'Multi-AZ deployment' dropdown menu with 'Don't create an Aurora Replica' (selected) and 'Create an Aurora Replica or Reader node in a different AZ (recommended for scaled availability)'. The 'Create an Aurora Replica or Reader node in a different AZ' option is described as creating an Aurora Replica for fast failover and high availability.

Connectivity: This section allows users to choose whether to set up a connection to a compute resource for this database. It includes a 'Compute resource' dropdown menu with 'Don't connect to an EC2 compute resource' (selected) and 'Connect to an EC2 compute resource'. The 'Connect to an EC2 compute resource' option is described as setting up a connection to an EC2 compute resource for this database.

Network type: This section allows users to choose the network type. It includes a 'Network type' dropdown menu with 'IPv4' (selected) and 'Dual-stack mode'. The 'Dual-stack mode' option is described as allowing resources to communicate over IPv4, IPv6, or both.

Virtual private cloud (VPC): This section allows users to choose the VPC. It includes a 'Virtual private cloud (VPC)' dropdown menu with 'Default VPC (vpc-0f37837b5030fe4b)' selected. The 'Default VPC' is described as having 3 subnets and 3 availability zones. Only VPCs with a corresponding DB subnet group are listed.

- security group and choose existing security groups

RDS doesn't assign a public IP address to the cluster. Only Amazon EC2 instances and other resources inside the VPC can connect to your cluster. Choose one or more VPC security groups that specify which resources can connect to the cluster.

VPC security group (firewall) [Info](#)
Choose one or more VPC security groups to allow access to your database. Make sure that the security group rules allow the appropriate incoming traffic.

☒ Choose existing
Choose existing VPC security groups

☐ Create new
Create new VPC security group

Existing VPC security groups
Choose one or more options

☐ launch-wizard-1

☐ launch-wizard-2

☒ default

Certificate authority - optional [Info](#)
Using a server certificate provides an extra layer of security by validating that the connection is being made to an Amazon database. It does so by checking the server certificate that is automatically installed on all databases that you provision.

rdc-ca-rs2048-g1 (default)
Expiry: May 25, 2081

If you don't select a certificate authority, RDS chooses one for you.

RDS Data API [Info](#)
☐ Enable the RDS Data API
Enable the SQL HTTP endpoint for the Data API. With this endpoint enabled, you can run SQL queries against this database over HTTP. You can do so by using the CLI, an AWS SDK, or the RDS query editor. For information about pricing, see [Amazon RDS pricing](#).

► Additional configuration

TAGS - optional

- aws key management

Monitoring

☒ Turn on Performance Insights (cluster level)
[Info](#)

Retention period for Performance Insights [Info](#)
7 days (free tier)

Once you enable Performance insights on the cluster, you cannot manage this configuration, including retention periods, on individual instances. To opt-out of cluster level management, uncheck the box and modify each instance to configure Performance Insights. [Learn more](#)

AWS KMS key [Info](#)
(default) aws/rds

Account
025066245446

KMS key ID
alias/aws/rds

You can't change the KMS key after enabling Performance Insights.

☐ Turn on DevOps Guru [Info](#)
DevOps Guru for RDS automatically detects performance anomalies for DB instances and provides recommendations.

► Additional configuration
Enhanced Monitoring

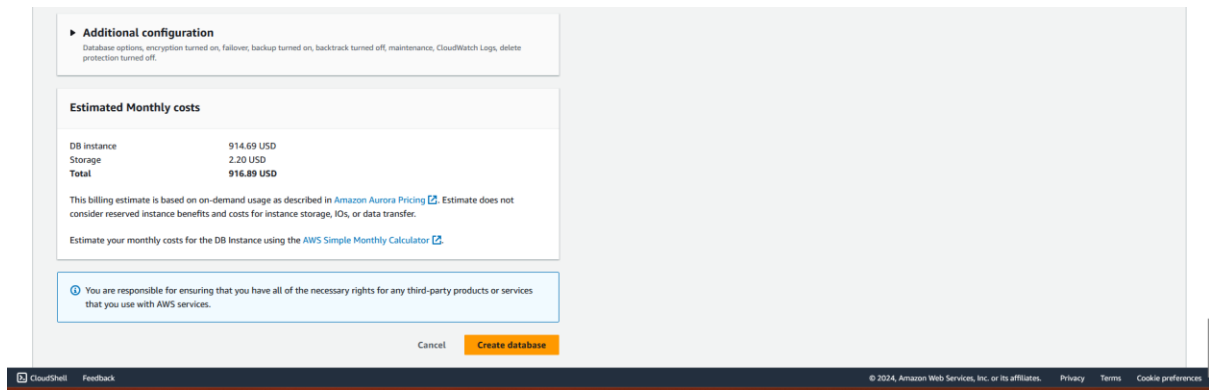
Additional configuration
Enhanced Monitoring

► **Additional configuration**
Database options, encryption turned on, failover, backup turned on, backtrack turned off, maintenance, CloudWatch Logs, delete protection turned off.

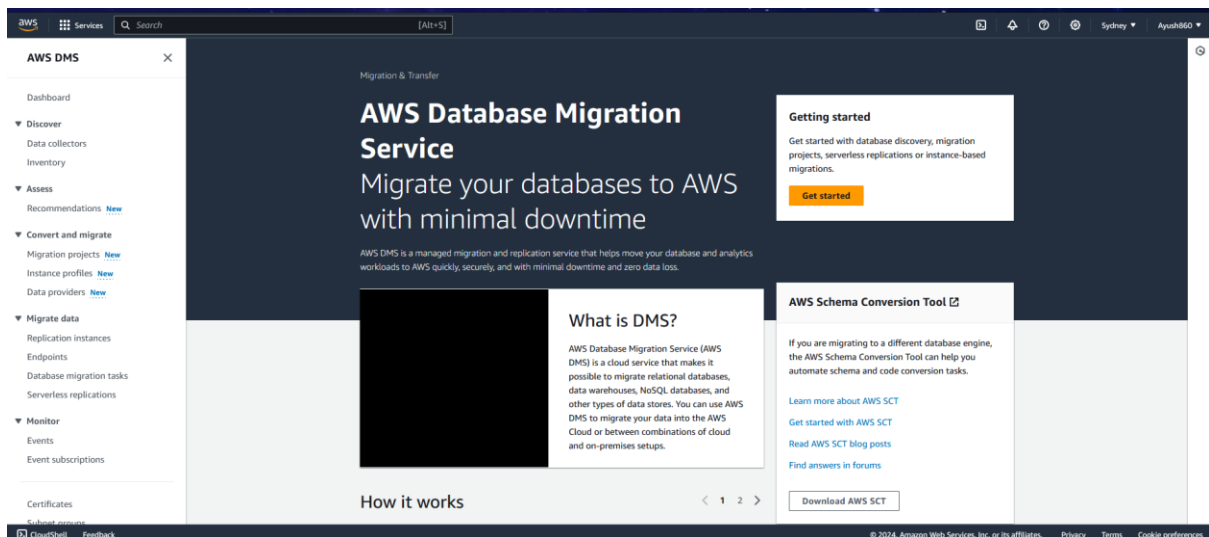
Estimated Monthly costs

DB instance	914.69 USD
Storage	2.20 USD
Total	916.89 USD

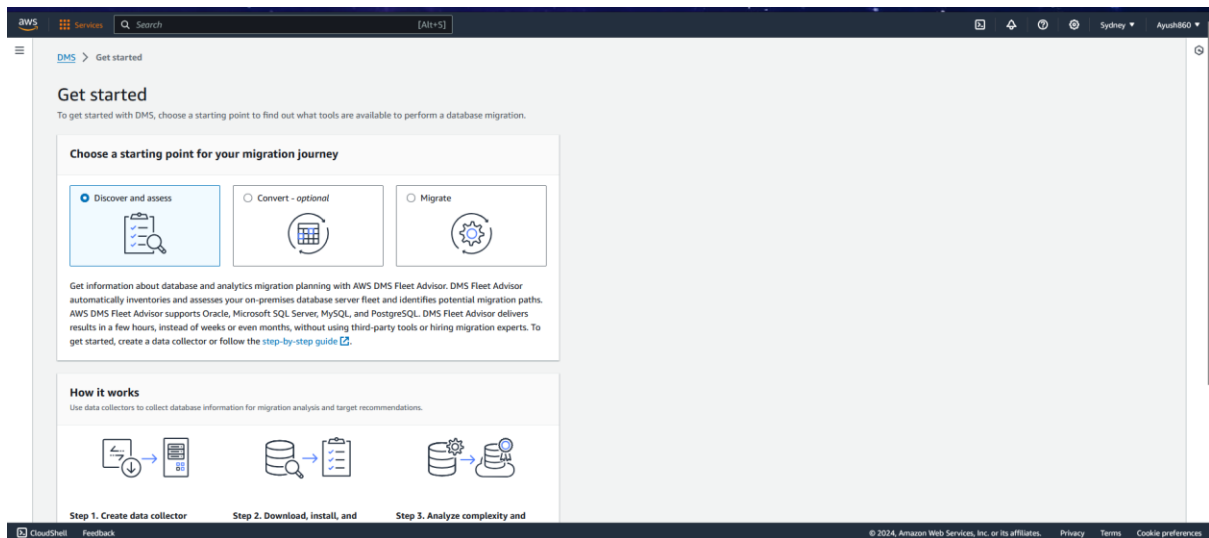
Click on create database



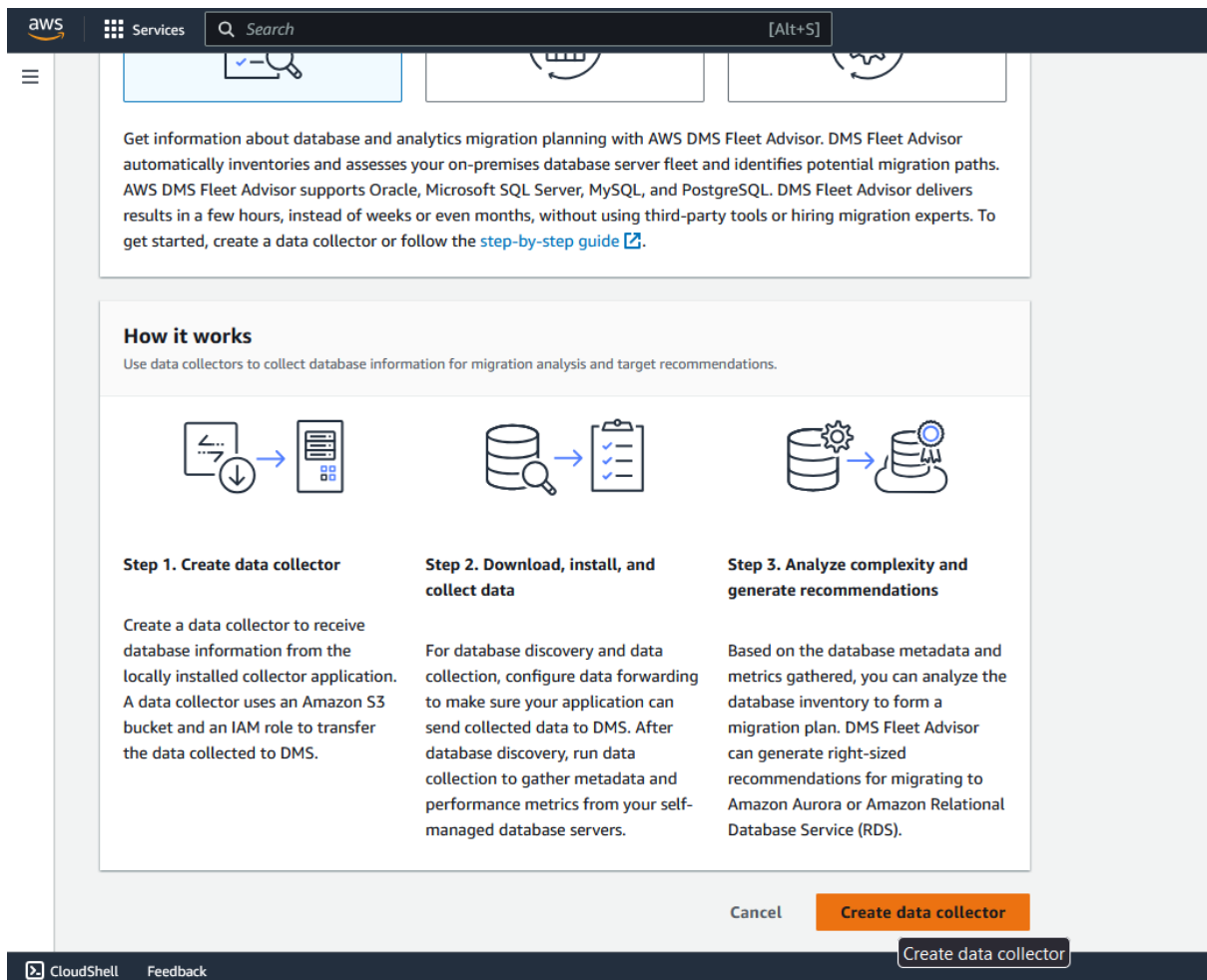
Migration of database using database migration system



Click on get started



Click on create data collector



aws

Services

Q Search

[Alt+5]

Sydney

Ayush860

Can have only Unicode letters, digits, white space, or one of the symbols in parentheses: `_,./+!@#`. Maximum of 60 characters.

Description - optional

Provide a description of the data collector purpose, environment, or network to help you identify it in the future.

Enter text

Can have only Unicode letters, digits, white space, or one of the symbols in parentheses: `_,./+!@#`. Maximum of 255 characters.

Connectivity

info

Amazon S3 bucket

Choose or create an Amazon S3 bucket to store collected metadata. Ensure this bucket is the currently selected region.

S3 URI

Q s3://bucket

View

Browse S3

To create a S3 bucket, navigate to the [Amazon S3 console](#).

IAM role

Choose or create an IAM role that grants AWS DMS permissions to access the specified S3 bucket.

AWSServiceRoleforSupport

To create a S3 bucket, navigate to the [IAM console](#).

i

Create the DMS Fleet Advisor service-linked role

DMS Fleet Advisor uses a service-linked role to publish the collected database performance metrics to CloudWatch on your behalf. Create this service-linked role to use all features of the DMS data collector. For more information, see the [AWS DMS User Guide](#).

Cancel

Create data collector

Click on create data collector

aws

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DMS > Replication instances > Create replication instance

Create replication instance [Info](#)

Settings

Name

The name must be unique among all of your replication instances in the current AWS region.

TestReplica

Replication instance name must not start with a numeric value

Descriptive Amazon Resource Name (ARN) - optional

A friendly name to override the default DMS ARN. You cannot modify it after creation.

Description - optional

The description must only have unicode letters, digits, whitespace, or one of these symbols: _:/=+-@. 1000 maximum character.

Instance configuration [Info](#)

Instance class [Info](#)

dms.t3.medium

2 vCPUs 4 GiB Memory

☒ Include previous-generation instance classes

Engine version

Choose an AWS DMS version to run on your replication instance. For more details, See the [AWS DMS release notes](#).

3.4.7

☒ Include Beta DMS versions

aws

Services

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[Option+S]

The description must only have unicode letters, digits, whitespace, or one of these symbols: _:/+=-@. 1000 maximum character.

Instance configuration

Info

Instance class

Info

dms.t3.micro

2 vCPUs 1 GiB Memory

☐ Include previous-generation instance classes

Engine version

Choose an AWS DMS version to run on your replication instance. For more details, See the [AWS DMS release notes](#).

3.4.7

3.4.7

3.4.6

3.4.5

Upgrades to AWS DMS version 3.4.7 and higher require that you configure AWS DMS to use VPC endpoints or use public routes. This requirement applies to source and target endpoints for Amazon S3, Amazon Kinesis Data Streams, AWS Secrets Manager, Amazon DynamoDB, Amazon Redshift, and Amazon OpenSearch Service. [Learn more](#)

View endpoints

High Availability

Info

The Multi-AZ option deploys a primary replication instance in one Availability Zone (AZ) and a standby in another AZ. The Single-AZ option deploys a single replication instance in one AZ. Billing is based on DMS pricing.

Choose a failover setting

Storage

Info

Allocated storage (GiB)

Choose the amount of storage space you want for your replication instance. AWS DMS uses this storage for log files and cached transactions while replication tasks are in progress.

50

Connectivity and security

Info

CloudShell

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☐ Include Beta DMS versions

Note for version 3.4.7 and higher

Upgrades to AWS DMS version 3.4.7 and higher require that you configure AWS DMS to use VPC endpoints or use public routes. This requirement applies to source and target endpoints for Amazon S3, Amazon Kinesis Data Streams, AWS Secrets Manager, Amazon DynamoDB, Amazon Redshift, and Amazon OpenSearch Service. [Learn more](#)

View endpoints

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High Availability

Info

The Multi-AZ option deploys a primary replication instance in one Availability Zone (AZ) and a standby in another AZ. The Single-AZ option deploys a single replication instance in one AZ. Billing is based on DMS pricing.

Dev or test workload (Single-AZ)

Storage

Info

Allocated storage (GiB)

Choose the amount of storage space you want for your replication instance. AWS DMS uses this storage for log files and cached transactions while replication tasks are in progress.

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Connectivity and security

Info

Network type - new

Info

To use dual-stack mode, make sure that you associate an IPv6 CIDR block with a subnet in the VPC you specify.

☒ IPv4

Replication instance with an IPv4 network type that supports IPv4 addressing.

☐ Dual-stack mode

Replication instance with a dual network type that supports both IPv4 and IPv6 addressing.

Virtual private cloud (VPC) for IPv4

Info

Choose the VPC where you want your replication instances to run. It includes VPCs in IPv4 and dual-stack mode.

Default VPC (vpc-080678c34220e4ffa)

Create a new VPC

aws

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Allocated storage (GiB)

Choose the amount of storage space you want for your replication instance. AWS DMS uses this storage for log files and cached transactions while replication tasks are in progress.

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Connectivity and security

Info

Network type - new

Info

To use dual-stack mode, make sure that you associate an IPv6 CIDR block with a subnet in the VPC you specify.

☒ IPv4

Replication instance with an IPv4 network type that supports IPv4 addressing.

☐ Dual-stack mode

Replication instance with a dual network type that supports both IPv4 and IPv6 addressing.

Virtual private cloud (VPC) for IPv4

Info

Choose the VPC where you want your replication instances to run. It includes VPCs in IPv4 and dual-stack mode.

Default VPC (vpc-080678c34220e4ffa)

Create a new VPC

Replication subnet group

Choose a subnet group for your replication instance. The subnet group defines the IP ranges and subnets that your replication instance can use within the VPC you've chosen.

default-vpc-080678c34220e4ffa

☒ Public accessible

If you choose this option, AWS DMS will assign a public IP address to your replication instance, and you'll be able to connect to databases outside of your VPC.

Advanced settings

Maintenance

Tags - optional

Add tags to organize your DMS resources. You can use tags to manage your IAM roles and policies, and track your DMS costs.

Maintenance

Maintenance window (UTC)

Info

Start day

Saturday

Start time

23:17

UTC

Duration

0.5

hours

Automatic version upgrade

Info

Choose whether you want to enable automatic upgrades of minor AWS DMS engine versions on your replication instance during the maintenance window. See [AWS DMS Release Notes](#)

☒ Yes

☐ No

Tags - optional

Add tags to organize your DMS resources. You can use tags to manage your IAM roles and policies, and track your DMS costs.

AWS DMS

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New feature announcements

The replication instance `testreplica` is being created.

DMS > Replication instances

Note for version 3.4.7 and higher

You have 1 instance that use AWS DMS version 3.4.7 or higher. Make sure you configure AWS DMS to use VPC endpoints or use public routes. This requirement applies to source and target endpoints for Amazon S3, Amazon Kinesis Data Streams, AWS Secrets Manager, Amazon DynamoDB, Amazon Redshift, and Amazon OpenSearch Service. [Learn more](#)

View endpoints

DMS supports both IPv4 and IPv6

You can specify the network when creating your replication instance to support both IPv4 and IPv6 addresses in your virtual private cloud (VPC). With this support, you can work with simpler network stack management and offer the option to use a larger number of IP addresses. Also, you can modify an existing replication instance to support IPv6. [Learn more](#)

Learn more

Replication instances (1)

Find replication instance

< 1 >

	Name	Status	VPC	Class	Engine version	Availability zone	Network type	Public	Public IP address	Private IP address
<input type="checkbox"/>	testreplica	Creating	vpc-0806...	dms.t3.mi...	3.4.7	ap-south-1a	IPv4	Yes		

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New feature announcements

Upgrade to AWS Database Migration Service version 3.4.7 to stay current with the latest features and performance improvements. Make sure you configure AWS DMS to use VPC endpoints or use public routes. This requirement applies to source and target endpoints for Amazon S3, Amazon Kinesis Data Streams, AWS Secrets Manager, Amazon DynamoDB, Amazon Redshift, and Amazon OpenSearch Service. [Learn more](#)

DMS > Dashboard

Dashboard

Service overview

View all database migration tasks

Active tasks [info](#)

Error tasks [info](#)

Failed tasks [info](#)

Load complete tasks [info](#)

0

0

0

0

No active tasks.

No error tasks.

No failed tasks.

No load complete tasks.

Resources [info](#)

Database migration tasks

Replication instances

Endpoints

0

1

0

Max quota: 600

Max quota: 60

Max quota: 1000

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New feature announcements

DMS > Database migration tasks

Database migration tasks (0)

Find database migration tasks

< 1 >

Identifier	Status	Progress	Type	Source	Target	Replication instance	Started	Stopped	Elapsed load time	Tables loaded	Tables to load
Empty replication task table You don't have any replication tasks.											

Create database migration task

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AWS DMS

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New feature announcements

Choose a target database endpoint

Migration type Info

Migrate existing data

Task settings

Editing mode Info

☒ Wizard

You can enter only a subset of the available task settings.

☐ JSON editor

You can enter all available task settings directly in JSON format.

Target table preparation mode Info

☐ Do nothing

☒ Drop tables on target

☐ Truncate

LOB column settings Info

☐ Don't include LOB columns

☐ Full LOB mode

☒ Limited LOB mode

Maximum LOB size (KB)

32

Validation Info

☐ Turn on

Choose this setting if you want AWS DMS to compare the data at the source and the target immediately after it performs a full data load. Validation ensures that your data was migrated accurately, but it requires additional time to complete.

Task logs Info

☐ Turn on CloudWatch logs

DMS task logging uses Amazon CloudWatch to log information during the migration process. You can change the component activities logged and the amount of information logged for each one.

AWS DMS

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New feature announcements

☒ Limited LOB mode

Maximum LOB size (KB)

32

Validation Info

☐ Turn on

Choose this setting if you want AWS DMS to compare the data at the source and the target immediately after it performs a full data load. Validation ensures that your data was migrated accurately, but it requires additional time to complete.

Task logs Info

☐ Turn on CloudWatch logs

DMS task logging uses Amazon CloudWatch to log information during the migration process. You can change the component activities logged and the amount of information logged for each one.

► Advanced task settings

Premigration assessment Info

A premigration assessment warns you of potential migration issues before starting your migration task. Premigration assessments generally have minimal impact on your databases and take minimal time to run.

☐ Turn on premigration assessment

Available only if replication instance, source, and target database are specified.

Migration task startup configuration

Start migration task:

☒ Automatically on create

Available only if the premigration assessment is not enabled.

☐ Manually later

► Tags

Add tags to your DMS resources to organize and track your DMS costs.

AWS DMS

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New feature announcements [↗](#)

test-ok

Source engine

The type of database engine this endpoint is connected to. [Learn more](#) [↗](#)

MariaDB

▼

Access to endpoint database

Info

☒ AWS Secrets Manager

☐ Provide access information manually

Secret ID

Amazon Resource Name (ARN) of the secret used to manage access to your endpoint database. If you need a new secret ARN, create it from AWS Secrets Manager.

arn:aws:secret::123456789012

IAM role

IAM role that grants Amazon DMS permissions to access the specified secret (and any required KMS encryption key). For a new IAM role, create it from IAM.

arn:aws:iam::123456789012

Secure Socket Layer (SSL) mode

Info

The type of Secure Socket Layer enforcement

none

▲

none

▼

verify-full

verify-ca

verify-ca

► KMS key

► Tags

Add tags to your DMS resources to organize and track your DMS costs.

► Test endpoint connection (optional)

Choose the replication instance to test the network and database connectivity for migration.

IAM role

IAM role that grants Amazon DMS permissions to access the specified secret (and any required KMS encryption key). For a new IAM role, create it from IAM.

arn:aws:iam::123456789012

Secure Socket Layer (SSL) mode

Info

The type of Secure Socket Layer enforcement

none

▼

► Endpoint settings