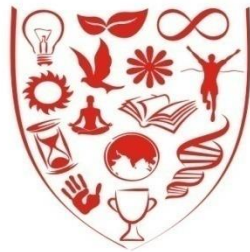


CLOUD COMPUTING



JECRCTM
UNIVERSITY
BUILD YOUR WORLD

1

STEPS

- Launch a windows server
- Go to services->>RDS
- Create a MySQL database
- Install MySQL workbench in server
- Connect database with the Client
- Execute SQL queries

LAUNCH WINDOWS SERVER



4/16/2020

GO TO SERVICES → RDS

The screenshot shows the AWS Management Console interface. The top navigation bar includes the AWS logo, 'Services', 'Resource Groups', and user information (KVD, Ohio, Support). The left sidebar shows a 'History' list with items like EC2, S3, Console Home, RDS, AWS Cost Explorer, Elastic Container Registry, and others. The main content area displays a search bar and a grid of service categories. The 'Database' category is expanded, showing a list of services including RDS, DynamoDB, ElastiCache, Neptune, Amazon Redshift, Amazon QLDB, Amazon DocumentDB, and Managed Cassandra Service. The 'RDS' service is highlighted with a mouse cursor. Other categories visible include AWS Organizations, CloudWatch, AWS Auto Scaling, CloudFormation, CloudTrail, Config, OpsWorks, Service Catalog, Systems Manager, AWS AppConfig, Trusted Advisor, Control Tower, AWS License Manager, AWS Well-Architected Tool, Personal Health Dashboard, AWS Chatbot, Launch Wizard, AWS Compute Optimizer, Security, Identity, & Compliance, IAM, Resource Access Manager, Cognito, Secrets Manager, GuardDuty, Inspector, Amazon Macie, AWS Single Sign-On, Certificate Manager, Key Management Service, CloudHSM, Directory Service, WAF & Shield, AWS Firewall Manager, Artifact, Security Hub, Detective, IoT Device Defender, IoT Device Management, IoT Events, IoT Greengrass, IoT SiteWise, IoT Things Graph, Game Development, Amazon GameLift, Containers, Elastic Container Registry, Elastic Container Service, and Elastic Kubernetes Service. The bottom of the console shows the URL 'https://us-east-2.console.aws.amazon.com/rds/home?region=us-east-2' and copyright information.

4/16/2020

CLICK ON CREATE DATABASE

4/16/2020

The screenshot shows the AWS RDS console interface. At the top, the browser address bar displays the URL `us-east-2.console.aws.amazon.com/rds/home?region=us-east-2#`. The AWS RDS console header includes the 'Services' and 'Resource Groups' dropdowns, along with a 'Support' link. On the left sidebar, the 'Amazon RDS' section is expanded, showing a list of navigation options: Dashboard, Databases, Query Editor, Performance Insights, Snapshots, Automated backups, Reserved instances, Proxies, Subnet groups, Parameter groups, Option groups, Events, Event subscriptions, Recommendations (2), and Certificate update. The main content area features a prominent 'Amazon Aurora' banner with a blue background and a white 'Create database' button. Below the banner, the 'Resources' section lists various RDS resources in the US East (Ohio) region, including DB Instances (1/40), DB Clusters (0/40), Reserved instances (0/40), Snapshots (0), Manual (0/100), Automated (0), Recent events (0), Event subscriptions (0/20), Parameter groups (1), Option groups (1), Subnet groups (1/50), Supported platforms VPC, and Default network vpc-94a968ff. A 'Refresh' button is located next to the 'Resources' section. The 'Recommended for you' section on the right lists several recommendations: RDS Read Replicas, RDS Multi-AZ Deployments, Aurora Global Database, and RDS Performance Insights. The bottom of the console shows a 'Feedback' link, the language 'English (US)', and a copyright notice for 2008-2020 Amazon Internet Services Private Ltd. or its affiliates. The footer also includes links for 'Privacy Policy' and 'Terms of Use'.

Amazon RDS

- 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

Amazon Aurora

Amazon Aurora is a MySQL- and PostgreSQL-compatible enterprise-class database, starting at <\$1/day. Aurora supports up to 64TB of auto-scaling storage capacity, 6-way replication across three availability zones, and 15 low-latency read replicas. [Learn more](#)

Create database

Or, [Restore Aurora DB cluster from S3](#)

Resources [Refresh](#)

You are using the following Amazon RDS resources in the US East (Ohio) region (used/quota)

DB Instances (1/40)	Parameter groups (1)
Allocated storage (0.02 TB/100 TB)	Default (1)
Click here to increase DB instances limit	Custom (0/100)
DB Clusters (0/40)	Option groups (1)
Reserved instances (0/40)	Default (1)
Snapshots (0)	Custom (0/20)
Manual (0/100)	Subnet groups (1/50)
Automated (0)	Supported platforms VPC
Recent events (0)	Default network vpc-94a968ff
Event subscriptions (0/20)	

Recommended for you

RDS Read Replicas

Elastically scale out beyond the capacity constraints of a single DB instance for read-heavy database workloads. [Learn more](#)

RDS Multi-AZ Deployments

Enable Multi-AZ configurations to build a more resilient DR strategy. [Learn more](#)

Aurora Global Database

Create an Aurora database that spans multiple AWS regions for low-latency reads and global DR. [Learn more](#)

RDS Performance Insights

Quickly assess load on your DB and take faster

Create database

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SELECT MYSQL DATABASE ENGINE

4/16/2020

The screenshot displays the AWS RDS console interface. The browser address bar shows the URL: `us-east-2.console.aws.amazon.com/rds/home?region=us-east-2#launch-dbinstance:gdb=false;s3-import=false`. The console header includes the AWS logo, 'Services', 'Resource Groups', and user information (KVD, Ohio, Support). The main content area is titled 'Engine options' and contains the following sections:

- Engine type** (Info link):
 - ☐ Amazon Aurora (Icon: Database with star)
 - ☒ MySQL (Icon: MySQL logo)
 - ☐ MariaDB (Icon: MariaDB seal)
 - ☐ PostgreSQL (Icon: PostgreSQL logo)
 - ☐ Oracle (Icon: ORACLE logo)
 - ☐ Microsoft SQL Server (Icon: Microsoft SQL Server logo)
- Edition**:
 - ☒ MySQL Community
- Version** (Info link):
 - MySQL 5.7.22 (Dropdown menu)
- Known Issues/Limitations** (Info icon):
 - Review the [Known Issues/Limitations](#) to learn about potential compatibility issues with specific database versions.

The footer of the console includes a 'Feedback' button, 'English (US)' language selection, and copyright information: '© 2008 - 2020, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. Privacy Policy Terms of Use'.

SELECT FREE TIER

4/16/2020

The screenshot shows the AWS RDS console interface. At the top, the browser address bar displays the URL: `us-east-2.console.aws.amazon.com/rds/home?region=us-east-2#launch-database:engine=mysql&instance-class=db.t2.micro&db-instance-class=db.t2.micro&db-instance-engine=mysql&db-instance-engine-version=5.7.22`. The console header includes the AWS logo, 'Services', 'Resource Groups', and user information (KVD, Ohio, Support). The main content area is titled 'Version Info' and shows 'MySQL 5.7.22'. Below this, a 'Known Issues/Limitations' section provides a link to review compatibility issues. The 'Templates' section, titled 'Choose a sample template to meet your use case.', features three options: 'Production' (high availability), 'Dev/Test' (development use), and 'Free tier' (selected). The 'Free tier' option is highlighted with a blue border and includes a description: 'Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS.' Below the templates, the 'Settings' section shows the 'DB instance identifier' field with the value 'database-2'. The footer contains a 'Feedback' link, 'English (US)' language selector, and copyright information: '© 2008 - 2020, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. Privacy Policy Terms of Use'.

Version [Info](#)

MySQL 5.7.22

Known Issues/Limitations
Review the [Known Issues/Limitations](#) to learn about potential compatibility issues with specific database versions.

Templates
Choose a sample template to meet your use case.

☐ **Production**
Use defaults for high availability and fast, consistent performance.

☐ **Dev/Test**
This instance is intended for development use outside of a production environment.

☒ **Free tier**
Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS. [Info](#)

Settings

DB instance identifier [Info](#)
Type a name for your DB instance. The name must be unique across all DB instances owned by your AWS account in the current AWS Region.

database-2

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 alphanumeric

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SPECIFY NAME OF DATABASE, MASTER PASSWORD

This password is needed at the time of connection with client

RDS - AWS Console

13.59.216.137

us-east-2.console.aws.amazon.com/rds/home?region=us-east-2#launch-dbinstance:gdb=false;s3-import=false

Apps Bookmarks Plex

aws Services Resource Groups

KVD Ohio Support

Settings

DB instance identifier [Info](#)
Type a name for your DB instance. The name must be unique across all DB instances owned by your AWS account in the current AWS Region.

database-2

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in 'mydbinstance'). Constraints: 1 to 60 alphanumeric characters or hyphens (1 to 15 for SQL Server). First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

▼ Credentials Settings

Master username [Info](#)
Type a login ID for the master user of your DB instance.

admin

1 to 16 alphanumeric characters. First character must be a letter

☐ **Auto generate a password**
Amazon RDS can generate a password for you, or you can specify your own password

Master password [Info](#)

Constraints: At least 8 printable ASCII characters. Can't contain any of the following: / (slash), " (double quote) and @ (at sign).

Confirm password [Info](#)

Feedback English (US)

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4/16/2020

SPECIFY STORAGE(NOT MORE THAN 20) AND DISABLE AUTO SCALING FEATURE

4/16/2020

The screenshot shows the AWS RDS console interface. The browser address bar displays the URL: `us-east-2.console.aws.amazon.com/rds/home?region=us-east-2#launch-dbinstance:gdb=false;s3-import=false`. The console header includes the AWS logo, navigation tabs for 'Services' and 'Resource Groups', and user information 'KVD', 'Ohio', and 'Support'. The main content area is titled 'Storage' and contains the following configuration options:

- Storage type**: A dropdown menu set to 'General Purpose (SSD)'.
- Allocated storage**: A text input field containing '20' with the unit 'GiB' to its right. Below the field, a note states: '(Minimum: 20 GiB, Maximum: 16384 GiB) Higher allocated storage may improve IOPS performance.'
- Storage autoscaling**: A section with an 'Info' link. It includes a checkbox labeled 'Enable storage autoscaling' which is currently checked. Below the checkbox, a note states: 'Enabling this feature will allow the storage to increase once the specified threshold is exceeded.'
- Maximum storage threshold**: A section with an 'Info' link. It includes a text input field containing '1000' with the unit 'GiB' to its right. Below the field, a note states: 'Charges will apply when your database autoscales to the specified threshold. Minimum: 21 GiB, Maximum: 16384 GiB.'

Below the 'Storage' section, the 'Availability & durability' section is partially visible. The footer of the console includes a 'Feedback' link, the language 'English (US)', and copyright information: '© 2008 - 2020, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved.' along with links to 'Privacy Policy' and 'Terms of Use'.

FINALLY CLICK ON CREATE DATABASE

4/16/2020

The screenshot shows the AWS RDS console in a web browser. The browser's address bar displays the URL: `us-east-2.console.aws.amazon.com/rds/home?region=us-east-2#launch-dbinstance:gdb=false;s3-import=false`. The console interface includes a top navigation bar with the AWS logo, 'Services', and 'Resource Groups' menus. On the right of the top bar are notification and user profile icons. A left-hand navigation pane is partially visible. The main content area is titled 'Database authentication options' and contains two radio button options: 'Password authentication' (selected) and 'Password and IAM database authentication'. Below this is an 'Additional configuration' section with a list of database options. The 'Estimated monthly costs' section explains the Amazon RDS Free Tier and lists its benefits: 750 hrs of Amazon RDS in a Single-AZ db.t2.micro Instance, 20 GB of General Purpose Storage (SSD), and 20 GB for automated backup storage and any user-initiated DB Snapshots. At the bottom of the console, there are 'Cancel' and 'Create database' buttons. The footer of the console shows 'Feedback', 'English (US)', and copyright information.

Database authentication options [Info](#)

- ☒ Password authentication
Authenticates using database passwords.
- ☐ Password and IAM database authentication
Authenticates using the database password and user credentials through AWS IAM users and roles.

► Additional configuration
Database options, backup enabled, backtrack disabled, Enhanced Monitoring disabled, maintenance, CloudWatch Logs, delete protection disabled

Estimated monthly costs

The Amazon RDS Free Tier is available to you for 12 months. Each calendar month, the free tier will allow you to use the Amazon RDS resources listed below for free:

- 750 hrs of Amazon RDS in a Single-AZ db.t2.micro Instance.
- 20 GB of General Purpose Storage (SSD).
- 20 GB for automated backup storage and any user-initiated DB Snapshots.

[Learn more about AWS Free Tier.](#)

When you free usage expires or if your application use exceeds the free usage tiers, you simply pay standard, pay-as-you-go service rates as described in the [Amazon RDS Pricing page](#).

Cancel Create database

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GO TO SECURITY GROUP RULES

4/16/2020

The screenshot shows the AWS Management Console for Amazon RDS. The left sidebar contains navigation links for Amazon RDS, including Dashboard, Databases, Query Editor, Performance Insights, Snapshots, Automated backups, Reserved instances, Proxies, Subnet groups, Parameter groups, Option groups, Events, Event subscriptions, Recommendations (2), and Certificate update. The main content area is titled 'Security group rules (3)' and includes a search bar 'Filter security group rules'. Below the search bar is a table with three columns: Security group, Type, and Rule. The table lists three rules for the 'default (sg-f5d0c191)' security group. Below the table is a 'Replication (1)' section with a search bar 'Filter replication'. Below the search bar is a table with six columns: DB instance, Role, Zone, Replication source, Replication state, and Lag. The table lists one replication instance for 'database-1'.

Security group	Type	Rule
default (sg-f5d0c191)	EC2 Security Group - Inbound	sg-f5d0c191
default (sg-f5d0c191)	CIDR/IP - Inbound	0.0.0.0/0
default (sg-f5d0c191)	CIDR/IP - Outbound	0.0.0.0/0

DB instance	Role	Zone	Replication source	Replication state	Lag
database-1	Instance	us-east-2a	-	-	-

GO TO ACTIONS AND EDIT INBOUND RULES

4/16/2020

The screenshot displays the AWS Management Console interface for the 'Security Groups' section. The breadcrumb navigation shows 'EC2 > Security Groups'. The main content area is titled 'Security Groups (1/1)' and includes a search bar with the filter 'search: sg-f5d0c191'. Below the search bar is a table listing the security groups. The table has columns for 'Security group ID', 'Security group name', 'VPC ID', 'Description', and 'Inbound'. The first row shows the security group 'sg-f5d0c191' with the name 'default' and VPC ID 'vpc-94a968ff'. The 'Actions' menu is open, showing options like 'View details', 'Edit inbound rules', 'Edit outbound rules', 'Manage tags', and 'Manage stale rules'. The 'Edit inbound rules' option is highlighted. The left sidebar contains navigation links for 'EC2 Dashboard', 'Events', 'Tags', 'Reports', 'Limits', 'INSTANCES', 'IMAGES', and 'ELASTIC BLOCK STORE'. The bottom footer includes 'Feedback', 'English (US)', and copyright information.

Security group ID	Security group name	VPC ID	Description	Inbound
sg-f5d0c191	default	vpc-94a968ff	default VPC security gr...	358467079899 3 Permis

SELECT SOURCE AS CUSTOM AND IP ADDRESS 0.0.0.0/0 (THIS IS NOW PUBLIC)

4/16/2020

EC2 > Security Groups > sg-f5d0c191 - default > Edit inbound rules

Edit inbound rules [Info](#)

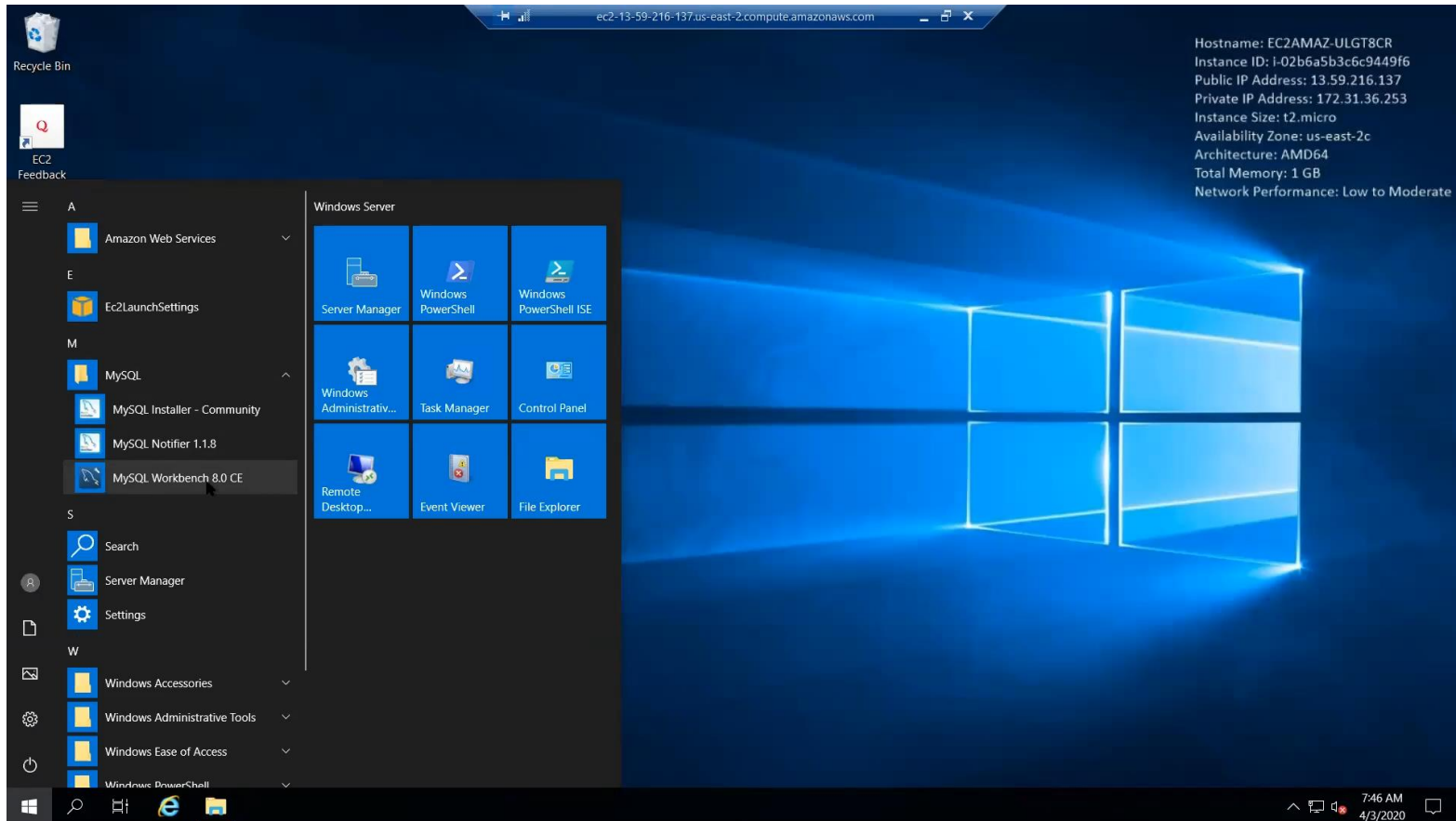
Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules [Info](#)

Type Info	Protocol Info	Port range Info	Source Info	Description - optional Info
All traffic	All	All	Custom <input type="text" value="sg-f5d0c191"/>	<input type="text" value=""/>
MySQL/Aurora	TCP	3306	Custom <input type="text" value="0.0.0.0/0"/>	<input type="text" value=""/>
MySQL/Aurora	TCP	3306	Custom <input type="text" value="::/0"/>	<input type="text" value=""/>

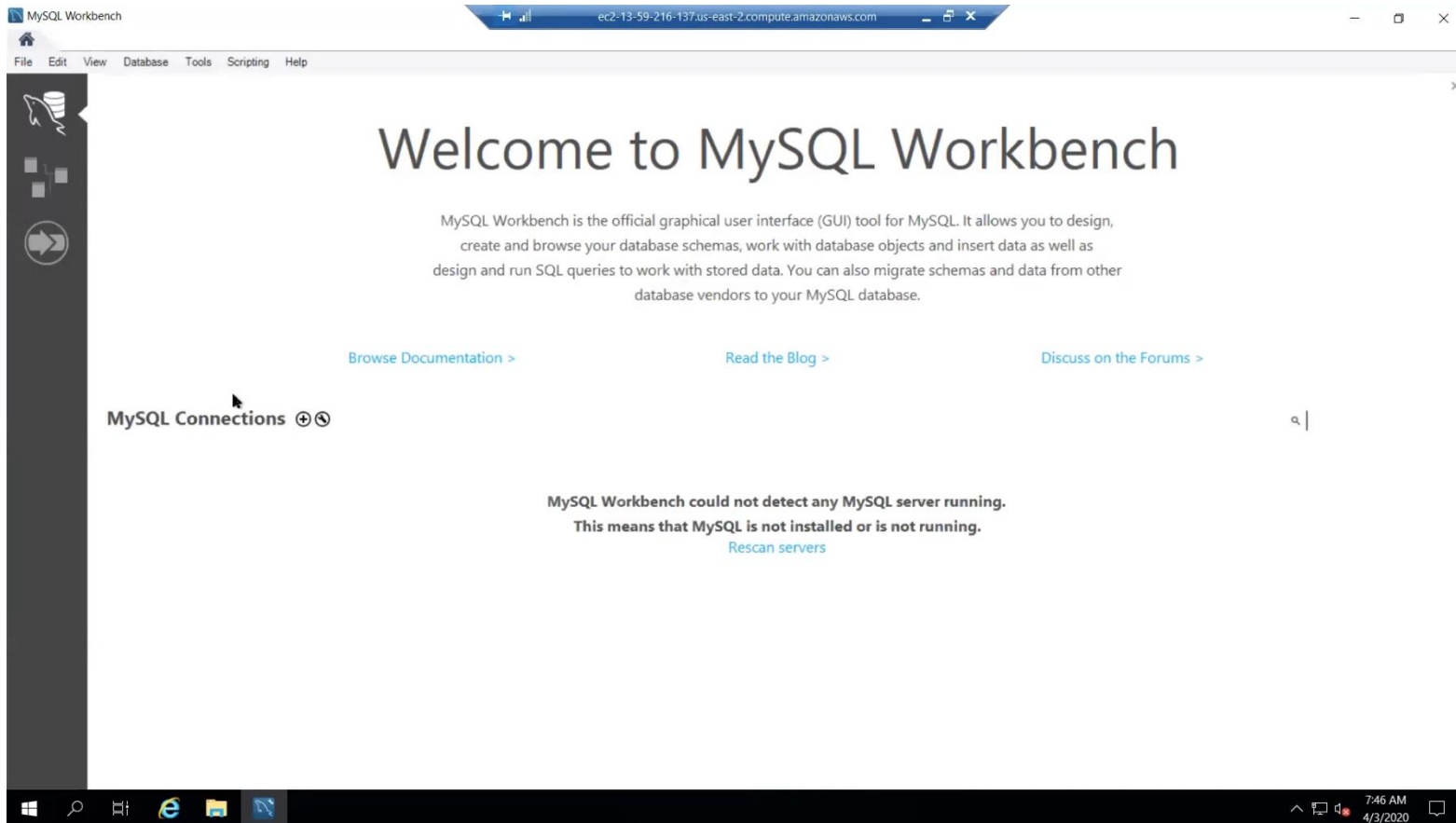
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DOWNLOAD AND INSTALL MYSQL WORKBENCH IN SERVER



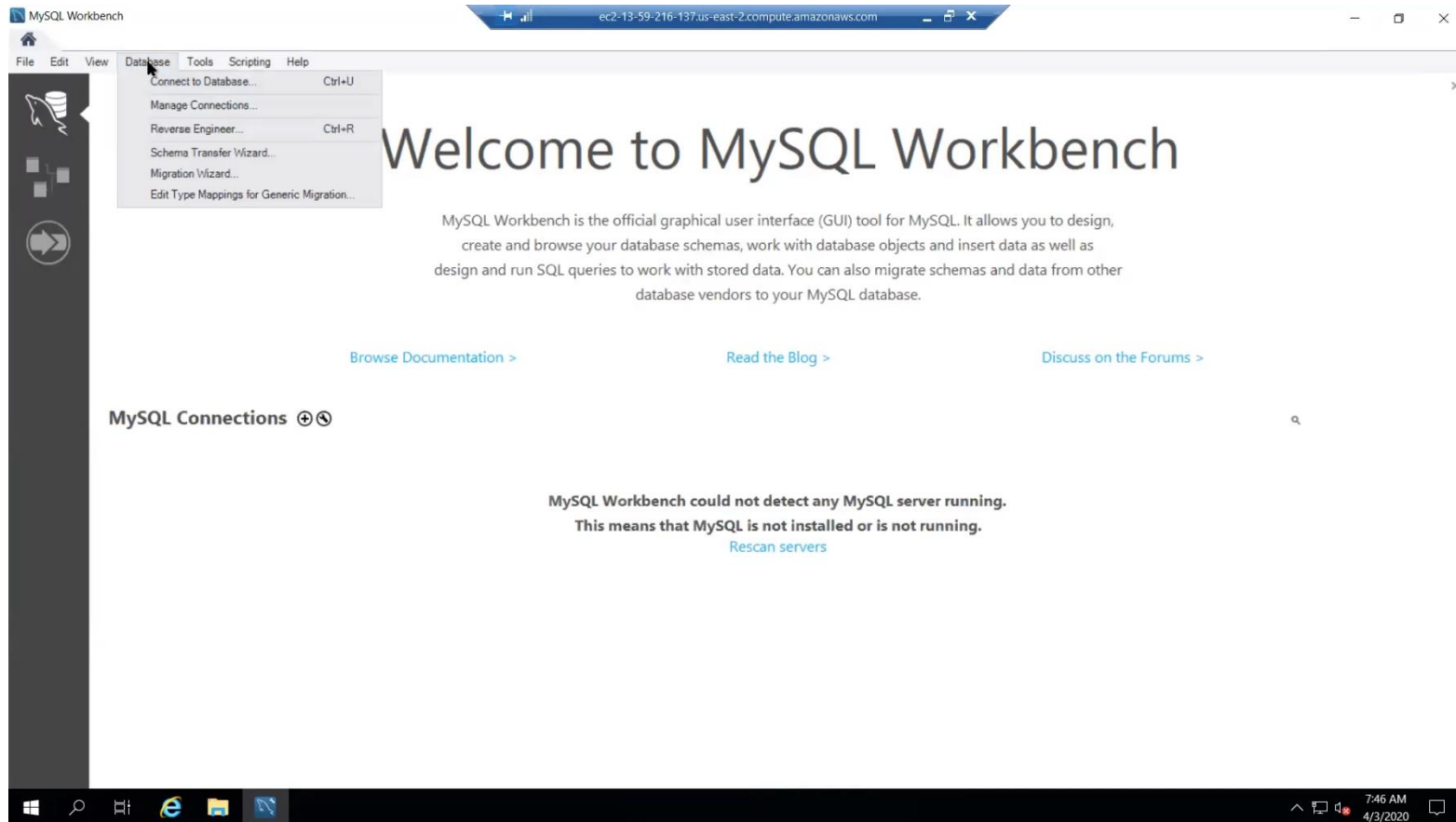
4/16/2020

OPEN MYSQL WORKBENCH



4/16/2020

CONNECT TO DATABASE



4/16/2020

COPY ENDPOINT ADDRESS AND ENTER AS HOSTNAME

4/16/2020

The screenshot shows the AWS Management Console interface for an Amazon RDS database instance. The browser address bar indicates the URL: `us-east-2.console.aws.amazon.com/rds/home?region=us-east-2#database:id=database-1;is-cluster=false`. The console header shows the AWS logo, navigation links for Services, Resource Groups, and a user profile (KVD) in the Ohio region. The left sidebar lists various RDS-related options, with 'Databases' selected. The main content area displays the details for 'database-1'.

database-1 [Modify] [Actions]

Summary

DB identifier	CPU	Info	Class
database-1	3.17%	Available	db.t2.micro
Role	Current activity	Engine	Region & AZ
Instance	0 Connections	MySQL Community	us-east-2a

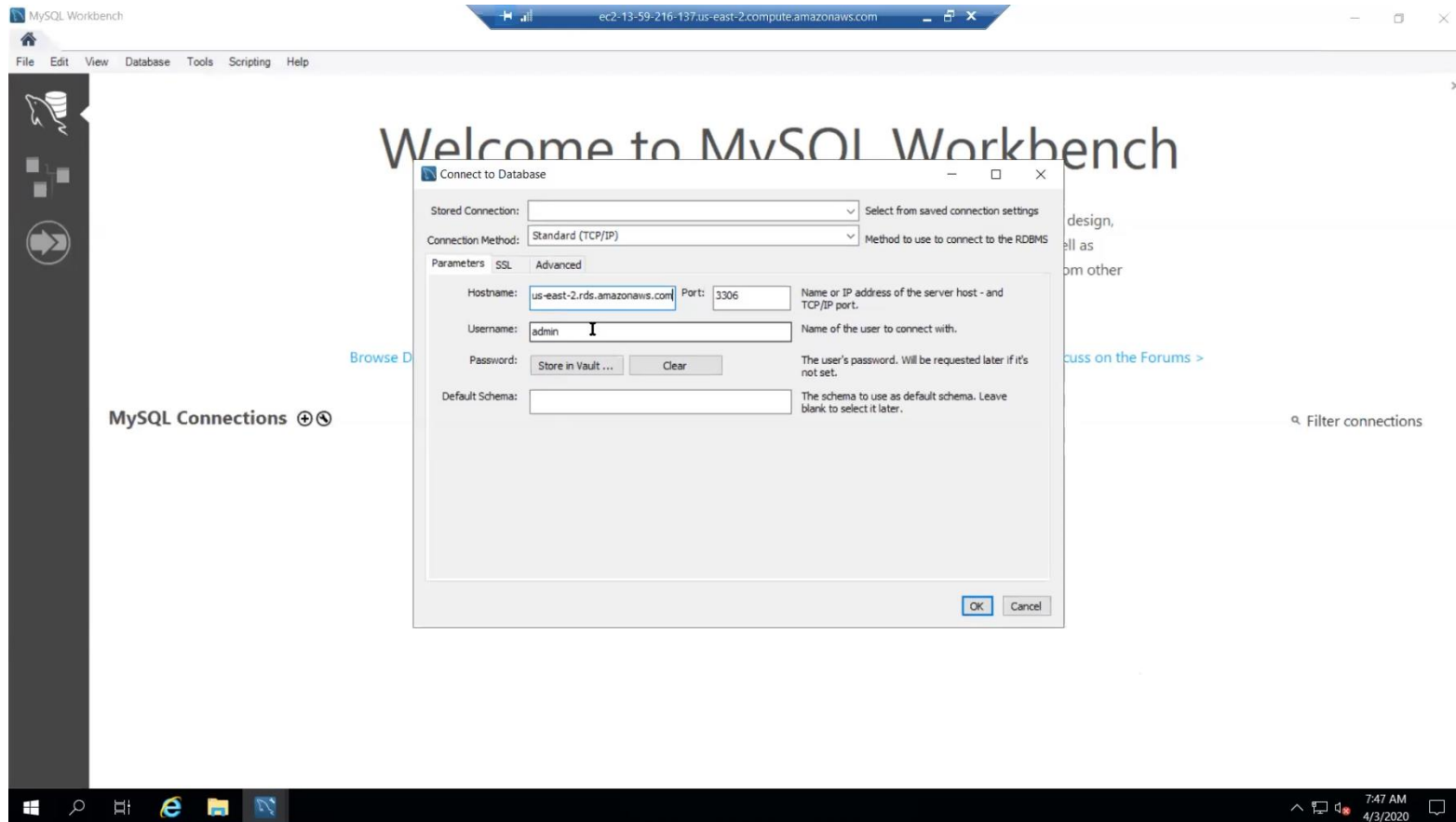
Connectivity & security | Monitoring | Logs & events | Configuration | Maintenance & backups | Tags

Connectivity & security

Endpoint & port	Networking	Security
Endpoint database-1.cesjtbiugbe.us-east-2.rds.amazonaws.com	Availability zone us-east-2a	VPC security groups default (sg-f5d0c191) (active)
Port 3306	VPC vpc-94a968ff	Public accessibility Yes

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ENTER ADMIN AS USERNAME



4/16/2020

EXECUTE SQL QUERIES IN MYSQL WORKBENCH

4/16/2020

