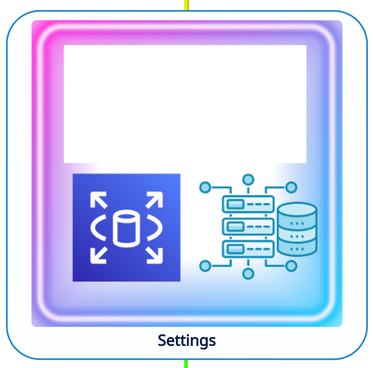

- 1 DB instance identifier/DB cluster identifier
  - 1 In AWS RDS, DB Instance Identifier and DB Cluster Identifier refer to different aspects of your database infrastructure
  - 2 DB Instance Identifier
    - 1 The DB Instance Identifier is a unique name that refers to a specific database instance
    - 2 A database instance is a single, isolated database environment within AWS RDS.
  - 3 DB Cluster Identifier
    - 1 The DB Cluster Identifier refers to the entire database cluster in Amazon RDS, typically in Aurora or RDS Multi-AZ DB Cluster
    - 2 A DB cluster is a collection of multiple database instances that work together, often for high availability, fault tolerance, or read scaling
- 2 Master Username
  - 1 The Master Username is the initial user created when you set up an RDS instance or cluster
  - 2 This user has administrative privileges and is used to configure and manage the database
  - 3 Restrictions for Naming the Master Username
    - 1 Length — Must be between 1 to 16 characters in length
    - 2 Allowed Characters — The master username can contain only alphanumeric characters: A-Z, a-z, 0-9
    - 3 Restrictions on Special Characters
      - 1 Underscore (_) is allowed
      - 2 No other special characters are permitted. This means characters like !, @, #, ?, & are not allowed.
    - 4 Reserved Words
      - 1 Certain names are reserved by AWS and cannot be used as the master username.
      - 2 These include system-related and database-specific reserved words that conflict with database systems or administrative operations.
      - 3 For example — in RDS, you should not use Usernames like
        - 1 admin
        - 2 root
        - 3 administrator
        - 4 postgres
        - 5 rdsadmin
        - 6 azure_superuser
- 3 Credential Management
  - 1 Credentials management refers to how you handle the database's master username and password, which are used to access
  - 2 You have two options for managing these credentials
    - 1 Self Managed
    - 2 Automated management using AWS Secrets Manager
  - 3 Self Managed
    - 1 Introduction
      - 1 You manually create and manage the master username and password for the RDS database when setting it up
      - 2 You will need to remember and securely store this information yourself.
      - 3 Manual Rotation: If the password needs to be updated, you will have to manually change it through the AWS RDS console or using CLI commands.
    - 2 Pros
      - 1 You have full control over the credentials
      - 2 Simpler setup if you're comfortable managing passwords
    - 3 Cons
      - 1 You must securely store and rotate the credentials yourself
      - 2 Any changes to the password have to be manually updated in all applications or services that rely on the database connection
      - 3 Higher risk if you forget to rotate or update credentials
  - 4 Managed in AWS Secrets Manager
    - 1 Introduction
      - 1 You allow AWS Secrets Manager to handle the management of the master credentials (username and password) automatically.
      - 2 AWS securely stores the credentials, and you can choose to have them automatically rotated on a schedule
      - 3 Automatic Rotation: Secrets Manager can automatically rotate the credentials on a schedule that you define (e.g., every 30 days).
      - 4 When the credentials are rotated, Secrets Manager automatically updates the password in RDS
    - 2 Pros
      - 1 Automatic Rotation: No need to manually update the credentials, improving security and reducing human error.
      - 2 Secure storage of credentials, with encryption and strict access control policies using AWS IAM
      - 3 Easy retrieval of credentials through AWS SDK or APIs
      - 4 No need to update applications manually when credentials change, as they can dynamically retrieve the latest credentials from Secrets Manager.
      - 5 By using AWS Secrets Manager, you ensure better security for your RDS instance by automating credential storage, retrieval, and rotation.
    - 3 Cons
      - 1 Slightly more complex setup compared to manual management, as it involves integrating Secrets Manager.
      - 2 Secrets Manager has a cost associated with storing and rotating secrets, though the cost is usually low.