


How to setup Amazon's Relational Data Store (RDS)

W4111 Fall 2015




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This is in the main AWS console page






 **AWS** ▾ **Services** ▾ **Edit** ▾

Amazon Web Services



Compute



-  **EC2**
Virtual Servers in the Cloud
-  **Lambda**
Run Code in Response to Events
-  **EC2 Container Service**
Run and Manage Docker Containers

Storage & Content Delivery




-  **S3**
Scalable Storage in the Cloud
-  **Elastic File System** **PREVIEW**
Fully Managed File System for EC2
-  **Storage Gateway**
Integrates On-Premises IT Environments with Cloud Storage
-  **Glacier**
Archive Storage in the Cloud
-  **CloudFront**
Global Content Delivery Network

Database








-  **RDS**
MySQL, Postgres, Oracle, SQL Server, and Amazon Aurora
-  **DynamoDB**

-  **ElastiCache**
In-Memory Cache
-  **Redshift**
Managed Petabyte-Scale Data Warehouse Service







Networking

-  **VPC** **Isolated Cloud Resources**
-  **Direct Connect**
Dedicated Network Connection to AWS
-  **Route 53**
Scalable DNS and Domain Name Registration





Administration & Security

-  **Directory Service**
Managed Directories in the Cloud
-  **Identity & Access Management**
Access Control and Key Management
-  **Trusted Advisor**
AWS Cloud Optimization Expert
-  **CloudTrail**
User Activity and Change Tracking
-  **Config**
Resource Configurations and Inventory
-  **CloudWatch**
Resource and Application Monitoring
-  **Service Catalog**
Personalized Catalog of AWS Resources








Deployment & Management

-  **Elastic Beanstalk**
AWS Application Container
-  **OpsWorks**
DevOps Application Management Service
-  **CloudFormation**
Templated AWS Resource Creation
-  **CodeDeploy**
Automated Deployments
-  **CodeCommit**
Managed Git Repositories
-  **CodePipeline**
Continuous Delivery





Analytics

-  **EMR**
Managed Hadoop Framework
-  **Kinesis**
Real-time Processing of Streaming Big Data
-  **Data Pipeline**
Orchestration for Data-Driven Workflows
-  **Machine Learning**
Build Smart Applications Quickly and Easily




Application Services

-  **SQS**
Message Queue Service
-  **SWF**
Workflow Service for Coordinating Application Components
-  **AppStream**
Low Latency Application Streaming
-  **Elastic Transcoder**
Easy-to-use Scalable Media Transcoding
-  **SES**
Email Sending Service
-  **CloudSearch**
Managed Search Service
-  **API Gateway**
Build, Deploy and Manage APIs

Mobile Services

-  **Cognito**
User Identity and App Data Synchronization
-  **Device Farm**
Test Android, Fire OS, and iOS apps on real devices in the Cloud
-  **Mobile Analytics**
Collect, View and Export App Analytics
-  **SNS**
Push Notification Service

Enterprise Applications

-  **WorkSpaces**
Desktops in the Cloud
-  **WorkDocs**
Secure Enterprise Storage and Sharing Service
-  **WorkMail** **PREVIEW**
Secure Email and Calendaring Service



RDS Dashboard

- Instances
- Reserved Purchases
- Snapshots
- Security Groups
- Parameter Groups
- Option Groups
- Subnet Groups
- Events
- Event Subscriptions
- Notifications

**Amazon RDS for Aurora**

Amazon RDS for Aurora is available in the following regions: Resources:

- **US East (N. Virginia)**
- **US West (Oregon)**
- **EU (Ireland)**
- **Getting Started Guide**
- **Documentation**
- **Aurora Forum**

Launch an Aurora DB Instance

Resources



You are using the following Amazon RDS resources in the US West (Oregon) region (used/quota):

DB Instances (1/40)

Allocated Storage (10.00 GB/100.00 TB)

[Click here to increase DB instances limit](#)

Reserved DB Purchases (0/40)**Snapshots (1)**

Manual (0/50)

Automated (1)

Recent Events (3)**Event Subscriptions (0/20)****Parameter Groups (1)**

Default (1)

Custom (0/100)

Option Groups (1)

Default (1)

Custom (0/20)

Subnet Groups (1/20)**Supported Platforms VPC****Default Network vpc-81ebcbe9**

Create Instance

Amazon Relational Database Service (RDS) makes it easy to set up, operate, and scale a relational database in the cloud.

Launch a DB Instance

Note: Your DB Instances will launch in the US West (Oregon) region:

Service Health

Current Status**Details**

Additional Information

[Getting Started with RDS](#)[Overview and Features](#)[Documentation](#)[Articles and Tutorials](#)[Data import guide for MySQL](#)[Data import guide for Oracle](#)[Data import guide for SQL Server](#)[Pricing](#)[Forums](#)

Related Services

Amazon ElastiCache

Add a managed Redis or Memcached-compatible in-memory cache to speed up your database access.

[Click here to learn more and launch your Cache Cluster](#)

Service Messages

[New RDS Feature Announcements](#)

Select Engine

To get started, choose a DB Engine below and click Select.

Amazon
Aurora



PostgreSQL

ORACLE



PostgreSQL
PostgreSQL

Select

Do you plan to use this database for production purposes?



For databases used in production or pre-production we recommend:

- **Multi-AZ Deployment** for high availability (99.95% monthly up time **SLA**)
- **Provisioned IOPS Storage** for fast, consistent performance

Billing is based upon the **RDS pricing** table.

An instance which uses these features is not eligible for the **RDS Free Usage Tier**.

☐ **Yes**, use **Multi-AZ Deployment** and **Provisioned IOPS Storage** as defaults while creating this instance

☒ **No**, this instance is intended for use outside of production or under the **RDS Free Usage Tier**

[Cancel](#)


[Previous](#)

[Next Step](#)

Specify DB Details

Instance Specifications

| | |
|---------------------|--|
| DB Engine | postgres |
| License Model | postgresql-license |
| DB Engine Version | 9.4.1 |
| DB Instance Class | <div><div>✓ - Select One -</div><div>db.t2.micro — 1 vCPU, 1 GiB RAM</div><div>db.t2.small — 1 vCPU, 2 GiB RAM</div><div>db.t2.medium — 2 vCPU, 4 GiB RAM</div><div>db.m3.medium — 1 vCPU, 3.75 GiB RAM</div><div>db.m3.large — 2 vCPU, 7.5 GiB RAM</div><div>db.m3.xlarge — 4 vCPU, 15 GiB RAM</div><div>db.m3.2xlarge — 8 vCPU, 30 GiB RAM</div><div>db.r3.large — 2 vCPU, 15 GiB RAM</div><div>db.r3.xlarge — 4 vCPU, 30.5 GiB RAM</div><div>db.r3.2xlarge — 8 vCPU, 61 GiB RAM</div><div>db.r3.4xlarge — 16 vCPU, 122 GiB RAM</div><div>db.r3.8xlarge — 32 vCPU, 244 GiB RAM</div><div>db.m2.xlarge — 2 vCPU, 17.1 GiB RAM</div><div>db.m2.2xlarge — 4 vCPU, 34 GiB RAM</div><div>db.m2.4xlarge — 8 vCPU, 68 GiB RAM</div><div>db.cr1.8xlarge — 32 vCPU, 244 GiB RAM</div><div>db.m1.small — 1 vCPU, 1.7 GiB RAM</div><div>db.m1.medium — 1 vCPU, 3.75 GiB RAM</div><div>db.m1.large — 2 vCPU, 7.5 GiB RAM</div><div>db.m1.xlarge — 4 vCPU, 15 GiB RAM</div><div>db.t1.micro — 1 vCPU, 0.613 GiB RAM</div></div> |
| Multi-AZ Deployment | |
| Storage Type | |
| Allocated Storage* | |

 Provisioning less than 100 GB may result in high throughput workloads and exhaustion of the initial Gen2 capacity.
[Click here](#) for more details

Settings

| | |
|-------------------------|--|
| DB Instance Identifier* | |
| Master Username* | |
| Master Password* | |
| Confirm Password* | |

Select the instance class that allocates the appropriate amount of computational resources and memory capacity based on your planned workload.

db.t2.micro — 1 vCPU

Make sure to set options like the picture →

DB Instance: db.t2.micro
Multi-AZ Deployment: NO
Storage Type: General Purpose
Allocated Storage: 5GB

PLEASE BE CAREFUL: any other option can be
VERY expensive (>\$200/month)!!

Instance Specifications

| | |
|---------------------|--|
| DB Engine | postgres |
| License Model | postgresql-license |
| DB Engine Version | 9.4.1 |
| DB Instance Class | db.t2.micro — 1 vCPU, 1 GiB RAM |
| Multi-AZ Deployment | <div>✓ - Select One - No Yes</div> |
| Storage Type | General Purpose (SSD) |
| Allocated Storage* | 5 GB |

Make sure to set:

Publically accessible: yes

Availability Zone: No preference

Pick a database name and remember it

The defaults are fine for everything else

| | |
|------------------------------|--|
| VPC* | Default VPC (vpc-81ebcbe9) ▾ |
| Subnet Group | default ▾ |
| Publicly Accessible | Yes ▾ |
| Availability Zone | No Preference ▾ |
| VPC Security Group(s) | Create new Security Group default (VPC) quick-start-1 (VPC) rds-launch-wizard (VPC) |

Database Options

| | |
|-----------------------------------|--------------------------|
| Database Name | <input type="text"/> |
| Database Port | 5432 |
| DB Parameter Group | default.postgres9.4 ▾ |
| DB Cluster Parameter Group | <input type="text"/> ▾ |
| Option Group | default:postgres-9-4 ▾ |
| Copy Tags To Snapshots | <input type="checkbox"/> |
| Enable Encryption | No ▾ |



The selected Engine or DB Instance Class does not support storage encryption.

Backup

| | |
|--------------------------------|-----------------|
| Backup Retention Period | 7 ▾ days |
| Backup Window | No Preference ▾ |

Maintenance

| | |
|-----------------------------------|-----------------|
| Auto Minor Version Upgrade | Yes ▾ |
| Maintenance Window | No Preference ▾ |

This is where you can find your database host name and port
For example, the staff's database has the following information:

Host: w4111.cbegsm1stx70.us-west-2.rds.amazonaws.com

Port: 5432

The screenshot shows the AWS Management Console interface for a PostgreSQL database instance. The instance is named 'w4111' and is in the 'available' status. The endpoint is highlighted with a red box and shows the host name 'w4111.cbegsm1stx70.us-west-2.rds.amazonaws.com' and port '5432'. The instance is authorized. The console also displays a table of 'Alarms and Recent Events' and a 'Monitoring' section with various metrics like CPU, Memory, Storage, Read IOPS, Write IOPS, and Swap Usage.

Launch DB Instance Show Monitoring Instance Actions

Filter: All Instances Search DB Instances...

| Engine | DB Instance | Status | CPU | Current Activity | Maintenance | Class | VPC |
|------------|-------------|-----------|-------|------------------|-------------|-------------|--------------|
| PostgreSQL | w4111 | available | 0.68% | 2 Connections | None | db.t2.micro | vpc-81ebcbe9 |

Endpoint: w4111.cbegsm1stx70.us-west-2.rds.amazonaws.com:5432 (authorized)

Alarms and Recent Events

| TIME (UTC-4) | EVENT |
|---------------|-----------------------------|
| Aug 7 8:13 PM | Finished DB Instance backup |
| Aug 7 8:12 PM | Backing up DB instance |
| Aug 7 8:11 PM | DB instance created |

Monitoring


| | CURRENT VALUE | THRESHOLD | LAST HOUR |
|---------|---------------|-----------|-----------|
| CPU | 0.68% | | |
| Memory | 553 MB | | |
| Storage | 9,670 MB | | |

| | CURRENT VALUE | LAST HOUR |
|------------|---------------|-----------|
| Read IOPS | 0.55/sec | |
| Write IOPS | 0.883/sec | |
| Swap Usage | 0 MB | |

Instance Actions Tags Logs

In the details section, it will also tell you the database name and your user name

Filter: All Instances ▾ Search DB Instances... X

| | Engine | DB Instance | Status | CPU | Current Activity | Maintenance | Class |
|---|------------|-------------|-----------|-------|------------------|-------------|-------------|
|  | PostgreSQL | w4111 | available | 0.68% | 2 Connections | None | db.t2.micro |

Endpoint: w4111.cbsgsm1ntx70.us-west-2.rds.amazonaws.com:5432 (authorized) ⓘ

Configuration Details

Engine PostgreSQL 9.4.1

License Model Postgresql License

Created Time August 7, 2015 at 8:11:08 PM UTC-

DB Name w4111

Username ewu

Option Group default.postgres-9-4 (in-sync)

Parameter Group default.postgres9.4 (in-sync)

Copy Tags To Snapshots No

Security and Network

Availability Zone us-west-2c

VPC vpc-81ebcbe9

Subnet Group default (Complete)

Subnets subnet-84ebcbec
subnet-83ebcbeb
subnet-82ebcbea

Security Groups rds-launch-wizard (sg-59f32d3d)
(active)

Publicly Accessible Yes

Endpoint w4111.cbsgsm1ntx70.us-west-2.rds.amazonaws.com

Port 5432

Certificate Authority rds-ca-0915 (Mar 5, 2015)

Instance and IOPS

Instance Class db.t2.micro ⓘ

Storage Type General Purpose (SSD)

IOPS disabled

Storage 10 GB

Instance Actions ▾ Tags Logs

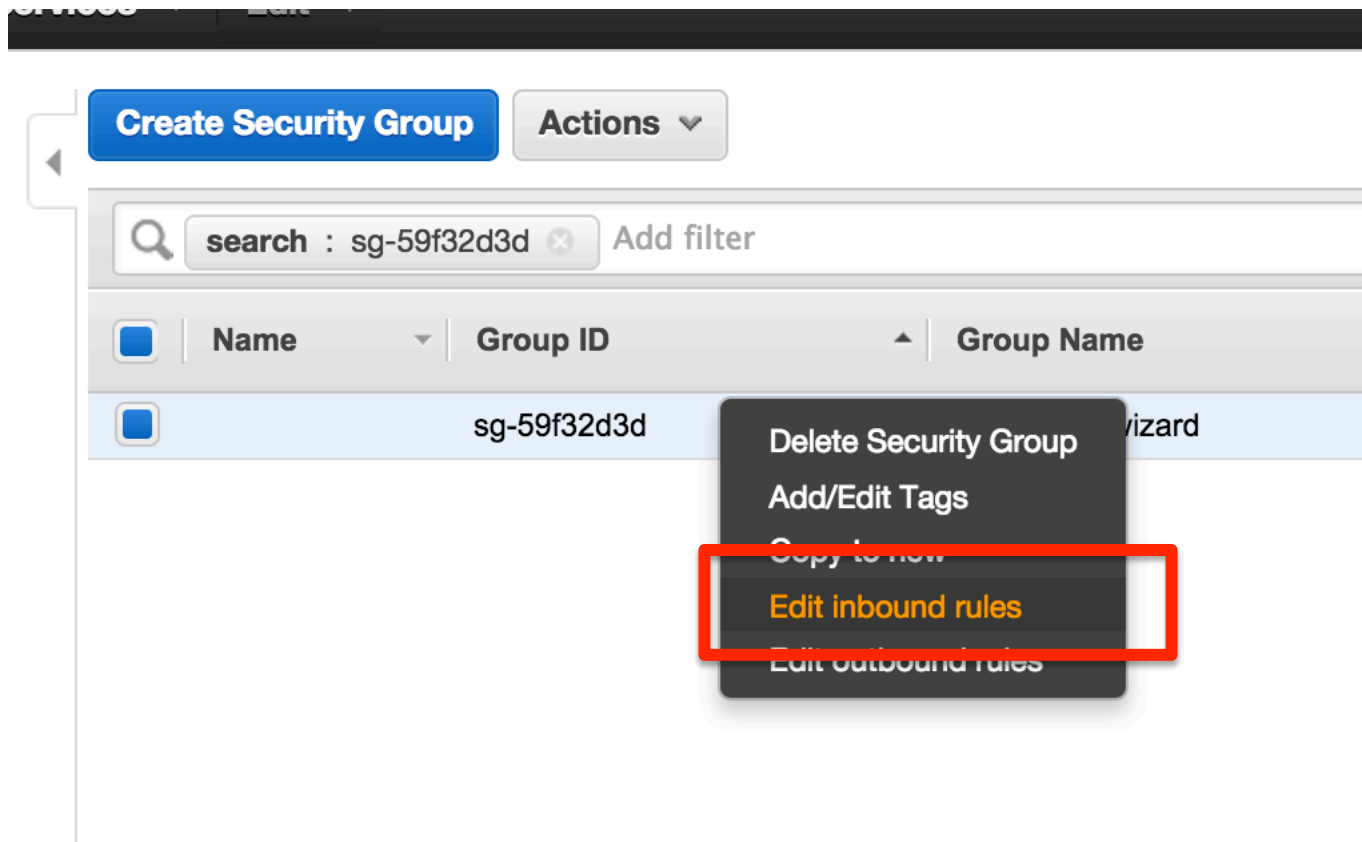
Amazon is strict about security, so the firewall will not let you access the database yet.

Click on **Security Groups** to let database connections through the firewall.

The screenshot shows the AWS Management Console interface. In the left-hand navigation pane, the 'Security Groups' link under the 'NETWORK & SECURITY' section is highlighted with a red rectangle. The main content area displays a table of security groups. The table has columns for Name, Group ID, Group Name, VPC ID, and Description. One security group is listed: sg-59f32d3d, named 'rds-launch-wizard', associated with VPC 'vpc-81ebcbe9', and described as 'Created from the RDS Management Console'. Above the table, there is a search bar with the text 'search : sg-59f32d3d' and an 'Add filter' button. At the top of the console, there are tabs for 'Create Security Group' and 'Actions'.

| Name | Group ID | Group Name | VPC ID | Description |
|------|-------------|-------------------|--------------|---|
| | sg-59f32d3d | rds-launch-wizard | vpc-81ebcbe9 | Created from the RDS Management Console |

Right click on the security group and click **Edit inbound rules**



Set the Source to **Anywhere** so you can access the database from.. anywhere

Edit inbound rules

| Type ⓘ | Protocol ⓘ | Port Range ⓘ | Source ⓘ |
|--------------|------------|--------------|---|
| PostgreSQL ▾ | TCP | 5432 | <div>✓ Anywhere</div> <div>My IP</div> <div>Custom IP</div> |

Add Rule

Cancel

Save

Now you can access your RDS database!

On your Amazon EC2 machine, you can use the **psql** command to connect to databases:

```
psql -h <database host> -U <your username> -W <your database (not RDS) name>
```

For example, to access the staff RDS instance

```
psql -h w4lll.cbgsmlntx70.us-west-2.rds.amazonaws.com -U ewu -W w4lll
```