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TECHNOLOGICAL
UNIVERSITY
SINGAPORE

NTU Academy for Professional
and Continuing Education

(SCTP) Advanced Professional Certificate

Data Science and AI



Introduction

- Redis is an in-memory data structure store used as a database, cache, and message broker. It supports various data structures including strings, hashes, lists, sets, sorted sets, bitmaps, hyperloglogs, and geospatial indexes.
- We will connect to a Redis database hosted on Redis Labs, a cloud database service.
- To begin, create an account on the Redis website (<https://redis.io/>) and set up a (free tier) cluster



1: Create a Database

The screenshot shows the Redis dashboard interface. On the left, there's a sidebar with the Redis logo at the top. Below it are several menu items: 'Databases' (which is highlighted with a black bar), 'Subscriptions', 'Data Access Control', 'Access Management', and 'Logs'. A horizontal line separates this from the main content area. In the main area, there's a large, stylized illustration of a multi-layered cake with purple frosting and yellow layers, sitting on a light blue circular base. To the right of the cake, the text 'No databases yet, let's create one!' is displayed. At the bottom right, there's a prominent red-bordered button with the text 'New database' in white.

Redis

<

Databases +

Subscriptions

Data Access Control

Access Management

Logs

Account Settings

Usage Report

Billing & Payments

No databases yet, let's create one!

New database

2: Choose **free** cluster (default settings)

The screenshot shows the Redis 'Create database' interface. On the left is a sidebar with navigation links: Databases (selected), Subscriptions, Data Access Control, Access Management, Logs, Account Settings, Usage Report, Billing & Payments, Redis Copilot, Download Center, Support, and Documentation. At the top right, it shows 'Price \$0/month', the user 'Yibin Ng Yibin', and a profile icon.

Create database

Let's start building your database

What type of subscription do you need?

[Get better prices with an annual plan](#)

Plan	Description	Price	Uptime	Support
Free	Perfect for learning and exploring Redis. Ideal for smaller workloads.	\$0	99.99% uptime, basic support only	Shared cloud deployment, 30 MB single DB, SAML SSO, RBAC, encryption in transit, encryption at rest, Best effort SLA, community support
Flex	Ideal for larger, cost-efficient workloads.	\$0.007/hour	99.99% uptime, basic support only	Shared cloud deployment, 1-100 GB (RAM+SSD), single DB, SAML SSO, RBAC, encryption in transit, encryption at rest, 99.99% uptime, basic support only
Essentials	Scale up as your application grows.	\$0.007/hour	99.99% uptime, basic support only	Shared cloud deployment, 250 MB-12 GB RAM, single DB, SAML SSO, RBAC, encryption in transit, encryption at rest, 99.99% uptime, basic support only
Pro	For teams building mission-critical systems in the cloud.	\$0.274/hour	99.9999% uptime, 24/7 SLA-free support hotline	Dedicated cloud deployment, 6 GB RAM and up, multiple DBs, Include Essentials, plus: Active-active (multi-region), auto-tiering, private connectivity, First \$200 free

3. Click “connect”

The screenshot shows the Redis Cloud interface for a database named "database-MB02ZPTJ". The left sidebar includes options like Databases, Subscriptions, Data Access Control, Access Management, Logs, Account Settings, Usage Report, and Billing & Payments. The main area displays three cards: Import dataset, Connect to database, and View and manage data with Redis Insight. Below these is a General section with fields for Database name (set to "database-MB02ZPTJ"), Subscription (set to "database-MB02ZPTJ"), and Public endpoint (set to "redis-19161.c10.us-east-1-2.ec2.redns.redis-cloud.com:19161"). At the bottom, there are two buttons: "Connect using Redis CLI, Client, or Insight" (with a red box around the "Connect" button) and "Connect to your new database."

Redis

Databases Subscriptions Data Access Control Access Management Logs

All Databases

database-MB02ZPTJ Database #13223537

Configuration Metrics Slowlog

Import dataset Select existing Redis server or an RDB file. Import

Connect to database Connect with Redis CLI, Client, and Insight. Connect

View and manage data with Redis Insight Interactive tutorials on use cases and features Launch

General

Database name: database-MB02ZPTJ

Subscription: database-MB02ZPTJ

Public endpoint: redis-19161.c10.us-east-1-2.ec2.redns.redis-cloud.com:19161

Connect using Redis CLI, Client, or Insight **Connect** Connect to your new database.

4: Connect to Database Client

Choose “Redis Client” → “Python”

The screenshot shows the Redis Insight interface with the title "Connect to database-MB02ZPTJ". The "Redis Client" section is highlighted with a red box. A dropdown menu titled ".NET" is open, showing options: ".NET", "Python" (which is highlighted with a red box), "Node.js", "Jedis", and "Lettuce". Below the dropdown, a code snippet for Python is displayed:

```
{  
    var muxer = ConnectionMultiplexer.  
r.Connect(  
        new ConfigurationOptions{  
            EndPoints= { {"redis-1916  
1.c10.us-east-1-2.ec2.redns.redis-cloud.c  
om", 19161} },  
            User="default",  
            Password="*****"  
        }  
    }  
}
```

5: Test Connection

- Create a new Jupyter notebook file
- Activate Conda **bde** environment
- Click the `Copy` button
- Paste the code into a new cell
- Run the code, you should see **bar** as output

Note: Use the `Copy` button to copy the code, including the auto-generated password

Connect to database-MB02ZPTJ X

Copy the following code snippet to your application

```
"""Basic connection example.  
"""  
  
import redis  
  
r = redis.Redis(  
    host='redis-19161.c10.us-east-1-2.ec  
2.redns.redis-cloud.com',  
    port=19161,  
    decode_responses=True,  
    username="default",  
    password="*****",  
)  
  
success = r.set('foo', 'bar')  
# True  
  
result = r.get('foo')  
print(result)  
# >>> bar
```

Copy and paste the above into a cell in your Jupyter Notebook
* Note the password field will be populated

 Copy