



NTU Academy for Professional  
and Continuing Education

(SCTP) Advanced  
Professional Certificate

**Data Science and AI**

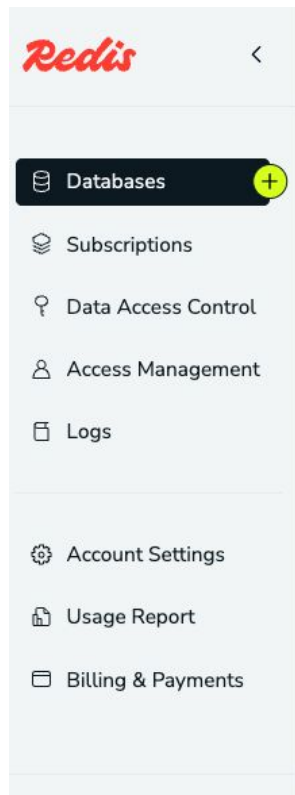


# Introduction

- 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



No databases yet, let's create one!

**New database**

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

The screenshot shows the Redis Cloud 'Create database' interface. On the left is a sidebar with navigation links: Databases (active), Subscriptions, Data Access Control, Access Management, Logs, Account Settings, Usage Report, Billing & Payments, Redis Copilot, Download Center, Support, and Documentation. The main header includes the Redis logo, a user profile for 'Yibin Ng' with a dropdown arrow, and a price indicator 'Price \$0/month'. The main content area is titled 'Create database' and 'Let's start building your database'. It features a section 'What type of subscription do you need?' with a link 'Get better prices with an annual plan'. Four subscription plans are displayed: 'Free', 'Flex', 'Essentials', and 'Pro'. The 'Free' plan is highlighted with a red border. It is described as 'Perfect for learning and exploring Redis', 'Always' available, and costs '\$0' with 'Up to 30 MB' storage. Its features include shared cloud deployment, 30 MB single DB, SAML SSO, RBAC, encryption in transit and at rest, and a best effort SLA. The 'Flex' plan is 'Ideal for larger, cost-efficient workloads', 'From \$0.007/hour' (Total \$5/month), and includes shared cloud deployment, 1-100 GB (RAM+SSD), single DB, SAML SSO, RBAC, encryption in transit and at rest, and 99.99% uptime. The 'Essentials' plan 'Scale up as your application grows', 'From \$0.007/hour' (Total \$5/month), and includes shared cloud deployment, 250 MB-12 GB RAM, single DB, SAML SSO, RBAC, encryption in transit and at rest, and 99.99% uptime. The 'Pro' plan is 'For teams building mission-critical systems in the cloud', 'From \$0.274/hour' (Total \$200/month), and includes dedicated cloud deployment, 6 GB RAM and up, multiple DBs, Essentials plus Active-active (multi-region), auto-tiering, private connectivity, 99.999% uptime, 24/7 SLA-free support hotline, and a first \$200 free.

Redis

Create database

Price \$0/month

Let's start building your database

What type of subscription do you need? [Get better prices with an annual plan](#)

| Free   | Flex  | Essentials  | Pro   |
|--|---|---|---|
| Perfect for learning and exploring Redis   | Ideal for larger, cost-efficient workloads  | Scale up as your application grows  | For teams building mission-critical systems in the cloud  |
| Always   | From  | From  | From  |
| \$0  | \$0.007/hour  | \$0.007/hour  | \$0.274/hour  |
| Up to 30 MB  | Total \$5 /month  | Total \$5 /month  | Total \$200 /month  |
| Select plan  | Select plan   | Select plan   | Select plan   |
| <ul style="list-style-type: none"><li>Shared cloud deployment</li><li>30 MB single DB</li><li>SAML SSO, RBAC, encryption in transit, encryption at rest</li><li>Best effort SLA, community support</li></ul> | <ul style="list-style-type: none"><li>Shared cloud deployment</li><li>1-100 GB (RAM+SSD), single DB</li><li>SAML SSO, RBAC, encryption in transit, encryption at rest</li><li>99.99% uptime, basic support only</li></ul> | <ul style="list-style-type: none"><li>Shared cloud deployment</li><li>250 MB-12 GB RAM, single DB</li><li>SAML SSO, RBAC, encryption in transit, encryption at rest</li><li>99.99% uptime, basic support only</li></ul> | <ul style="list-style-type: none"><li>Dedicated cloud deployment</li><li>6 GB RAM and up, multiple DBs</li><li>Include Essentials, plus: Active-active (multi-region), auto-tiering, private connectivity.</li><li>99.999% uptime, 24/7 SLA-free support hotline</li><li>First \$200 free</li></ul> |

### 3. Click “connect”

The screenshot displays the Redis Cloud console interface. On the left is a sidebar with navigation links: Databases, Subscriptions, Data Access Control, Access Management, Logs, Account Settings, Usage Report, Billing & Payments, Redis Copilot, Download Center, Support, and Documentation. The main content area shows the 'All Databases' view with a list of databases. The selected database is 'database-MB02ZPTJ' (Database #13223537). Below the database name are tabs for 'Configuration', 'Metrics', and 'Slowlog'. The 'Configuration' tab is active, showing three options: 'Import dataset', 'Connect to database', and 'View and manage data with Redis Insight'. The 'Connect to database' option is selected, and a 'Connect' button is highlighted with a red box. Below this, the 'General' tab shows the database name, subscription, and public endpoint. A 'Connect' button is also present in the 'General' tab, which is highlighted with a red box. The 'Connect' button is labeled 'Connect' and is part of a button group that includes 'Connect using Redis CLI, Client, or Insight' and 'Connect to your new database.'

Redis

← All Databases

✓ database-MB02ZPTJ

Database #13223537

Configuration Metrics Slowlog

Expand all

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

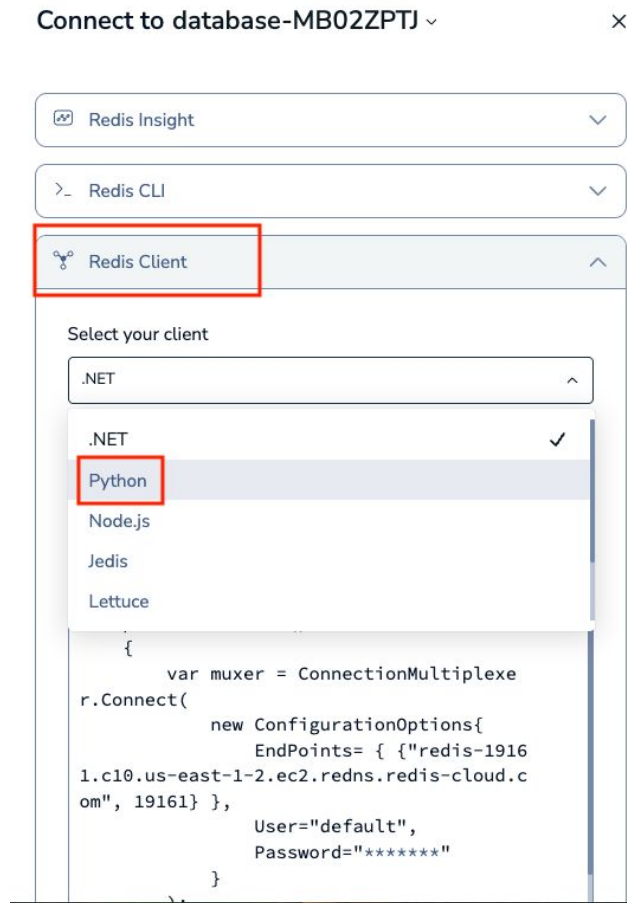
Subscription  
database-MB02ZPTJ

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”



## 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 

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