TaurusDB for PostgreSQL

Getting Started

Issue 01

Date 2025-11-14

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1 Buying a TaurusDB for PostgreSQL Instance and Connecting to It Using a PostgreSQL Client

You can connect to your TaurusDB for PostgreSQL instance using a Linux ECS installed with a PostgreSQL client over a private network.

Operation Process

Process	Description
Preparations	Sign up for a HUAWEI ID, enable Huawei Cloud services, make sure you have a valid payment method configured, create IAM users, and grant them specific TaurusDB for PostgreSQL permissions.
Step 1: Buy a TaurusDB for PostgreSQL Instance	Select required basic settings and additional options and buy a TaurusDB for PostgreSQL instance.
Step 2: Buy an ECS	If you want to use the PostgreSQL client to connect to a DB instance, you need to prepare a server, install the PostgreSQL client on the server, and run the connection command. Purchase a Linux ECS that is in the same region and VPC as your TaurusDB for PostgreSQL instance.
Step 3: Test Connectivity and Install the PostgreSQL Client	Test the network connectivity between the ECS and the private IP address and port of the TaurusDB for PostgreSQL instance, and install the PostgreSQL client on the ECS.
Step 4: Connect to the DB Instance Using a CLI (Non-SSL Connection)	Use a command-line interface (CLI) to connect to the TaurusDB for PostgreSQL instance using the private IP address and port.

Preparations

1. **Sign up for a HUAWEI ID and enable Huawei Cloud services**.
2. Before buying instances, ensure that your account balance is sufficient. **Top up your account** if required.
3. For fine-grained permissions management on Huawei Cloud resources, use Identity and Access Management (IAM) to create a user or user group and grant it specific operation permissions.

Step 1: Buy a TaurusDB for PostgreSQL Instance

Go to the **Buy DB Instance** page to buy a TaurusDB for PostgreSQL instance.

Step 2: Buy an ECS

1. Go to the **Elastic Cloud Server console**.
2. Check whether there is a Linux ECS that meets the requirements.

   NOTICE

   TaurusDB for PostgreSQL supports the following client installation methods:

   - Download the PostgreSQL client installation package. This method is recommended for PostgreSQL 15 and earlier versions. **It has requirements on ECS images. For details, see the official PostgreSQL documentation.**
   - Download the source code. This method has no requirements on PostgreSQL versions or ECS images.

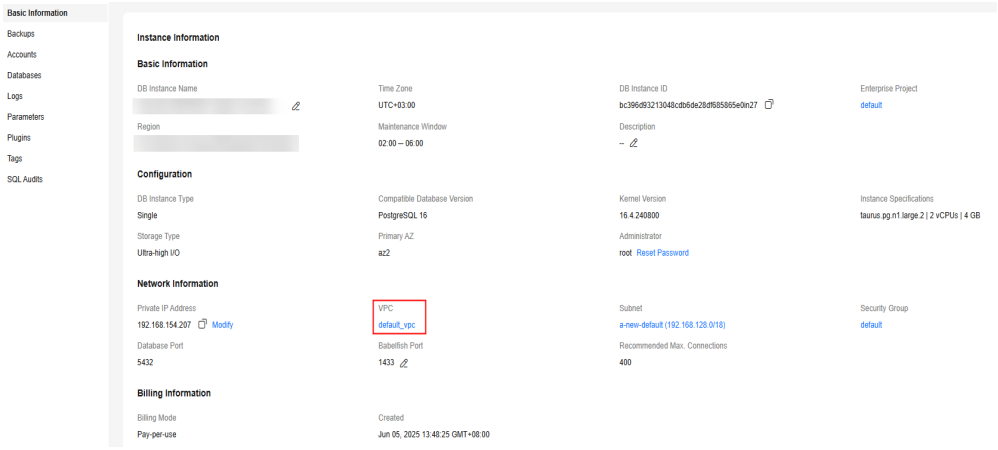
   - If yes, go to **3**.
   - If no, purchase an ECS and select Linux (for example, CentOS 7) as its OS.

     To download a PostgreSQL client to the ECS, bind an EIP to the ECS. The ECS must be in the same region, VPC, and security group as the TaurusDB for PostgreSQL instance for mutual communications.

     For details about how to purchase a Linux ECS, see **Purchasing a Custom ECS** in *Elastic Cloud Server User Guide*.
3. Check whether the ECS and the TaurusDB for PostgreSQL instance are in the same region and VPC.

Figure 1-1 ECS information

Figure 1-2 TaurusDB for PostgreSQL instance information



- If they are not in the same region, purchase another ECS. The ECS and DB instance in different regions cannot communicate with each other. To reduce network latency, deploy your DB instance in the region nearest to your workloads.
- If the ECS and DB instance are in different VPCs, change the VPC of the ECS to that of the DB instance. For details, see **Changing a VPC**.

Step 3: Test Connectivity and Install the PostgreSQL Client

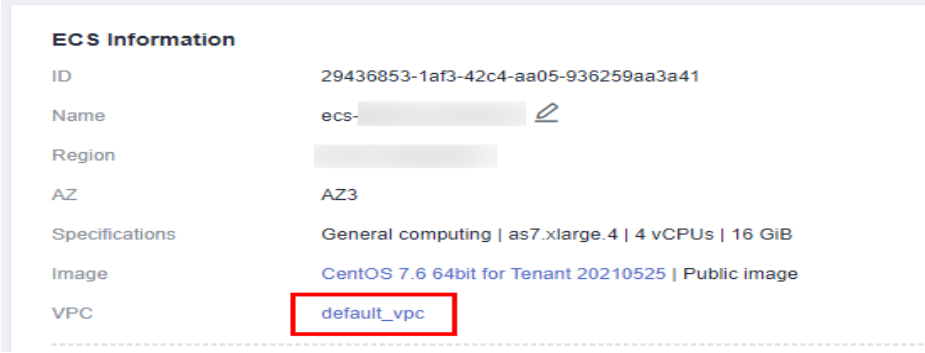
1. Log in to the ECS. For details, see **Logging In to a Linux ECS Using VNC** in *Elastic Cloud Server User Guide*.
2. On the **Instances** page of the TaurusDB console, click the instance name to go to the **Basic Information** page.
3. In the **Network Information** area, obtain the private IP address and database port.

4. On the ECS, check whether the private IP address and database port of the DB instance can be connected.
   ```
   curl -kv 192.168.0.7:5432
   ```
   - If yes, network connectivity is normal.
   - If no, check the security group rules.
     - If in the security group of the ECS, there is no outbound rule with **Destination** set to **0.0.0.0/0** and **Protocol & Port** set to **All**, add an outbound rule for the private IP address and port of the DB instance.
     - If in the security group of the DB instance, there is no inbound rule allowing the access from the private IP address and port of the ECS, add an inbound rule for the private IP address and port of the ECS.
5. Install the PostgreSQL client.

   Installation from source code: This installation method has no restrictions on TaurusDB for PostgreSQL instance versions and ECS OS types.

   The following uses an ECS using the Huawei Cloud EulerOS 2.0 image as an example to describe how to install a PostgreSQL 16.4 client.

   Figure 1-3 Checking the ECS image

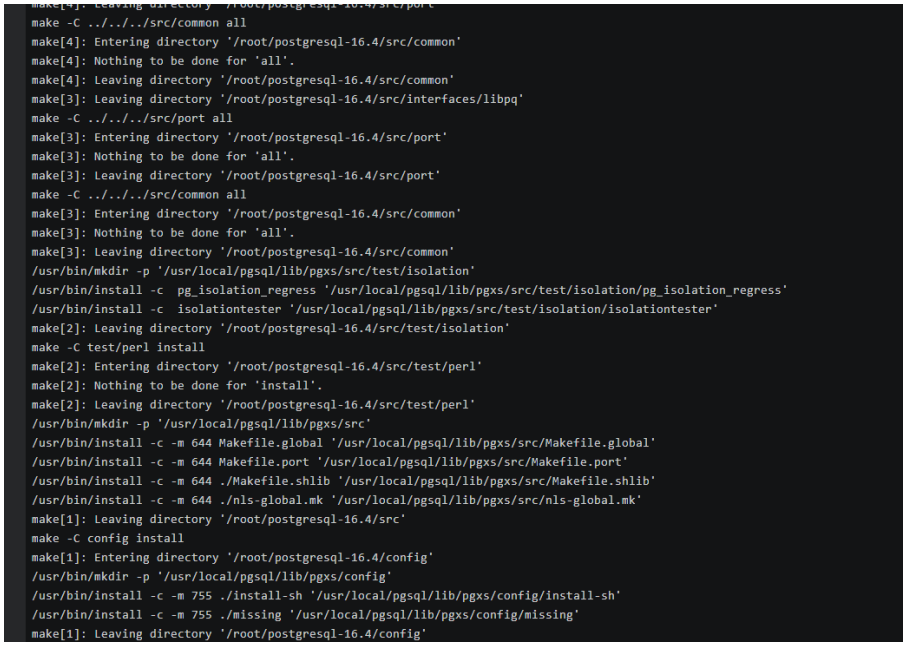
   

   a. To use SSL, download OpenSSL to the ECS in advance.
      ```
      sudo yum install -y openssl-devel
      ```
   b. Obtain the **code download link**, run **wget** to download the installation package to the ECS, or **download the installation package** to the local PC and then upload it to the ECS.
      ```
      wget https://ftp.postgresql.org/pub/source/v16.4/postgresql-16.4.tar.gz
      ```
   c. Decompress the installation package.
      ```
      tar xf postgresql-16.4.tar.gz
      ```
   d. Compile the source code and then install the client.
      ```
      cd postgresql-16.4
      ./configure --without-icu --without-readline --without-zlib --with-openssl
      make -j 8 && make install
      ```

      NOTE

      If **--prefix** is not specified, the default path is **/usr/local/pgsql**. The client can be installed in the simplest way.

Figure 1-4 Compilation and installation



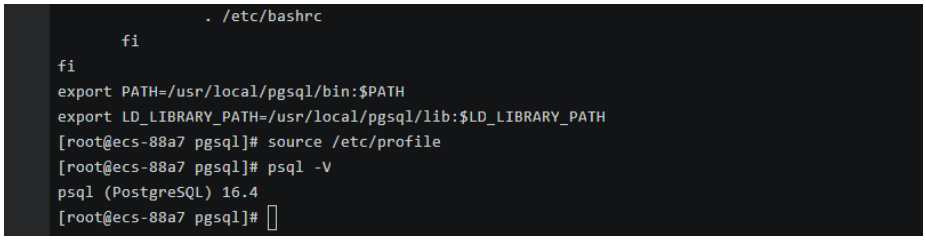
e. Add the following code to the **/etc/profile** file to configure environment variables:

```
export PATH=/usr/local/pgsql/bin:$PATH
export LD_LIBRARY_PATH=/usr/local/pgsql/lib:$LD_LIBRARY_PATH
source /etc/profile
```

f. Test whether the psql is available.

```
psql -V
```

Figure 1-5 Testing psql



Step 4: Connect to the DB Instance Using a CLI (Non-SSL Connection)

1. On the **Instances** page of the TaurusDB console, click the instance name to go to the **Basic Information** page.
2. In the **Network Information** area, obtain the private IP address and database port of the DB instance.
3. Run the following command on the ECS to connect to the DB instance:

   ```
   psql --no-readline -h <host> -p <port> "dbname=<database> user=<user> "
   ```

   Example:

   ```
   psql --no-readline -h 192.168.0.7 -p 5432 "dbname=postgres user=root"
   ```


Table 1-1 Parameter description

Parameter	Example Value	Description
<host>	192.168.0.7	Private IP address obtained in **Step 3: Test Connectivity and Install the PostgreSQL Client**.
<port>	5432	Database port obtained in **Step 3: Test Connectivity and Install the PostgreSQL Client**. The default value is **5432**.
<database>	postgres	Name of the database to be connected. The default database name is **postgres**.
<user>	root	Administrator account **root**.

4. Enter the password of the database account as prompted.

```
Password:
```

If the following information is displayed, the connection is successful.

```
SSL connection (protocol: TLSv1.3, cipher: TLS_AES_256_GCM_SHA384, bits: 256, compression: off)
```

