Getting Started with Oracle Autonomous Database in the Cloud

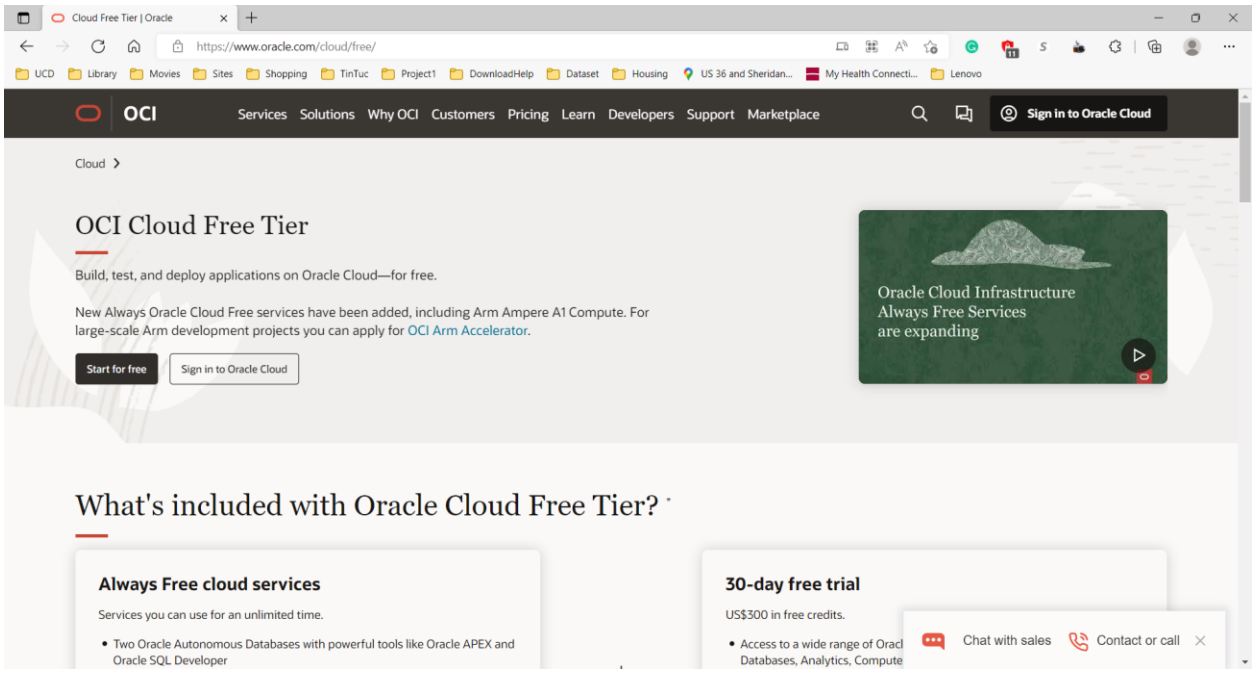
Introduction

This tutorial provides instructions to set up a free Oracle Cloud account and create a free Autonomous Database instance. While the Oracle Cloud account and most of the basic services are free to use, a credit card (or similar payment method) is required to verify your identity. You will also need a cell phone capable of receiving text messages.

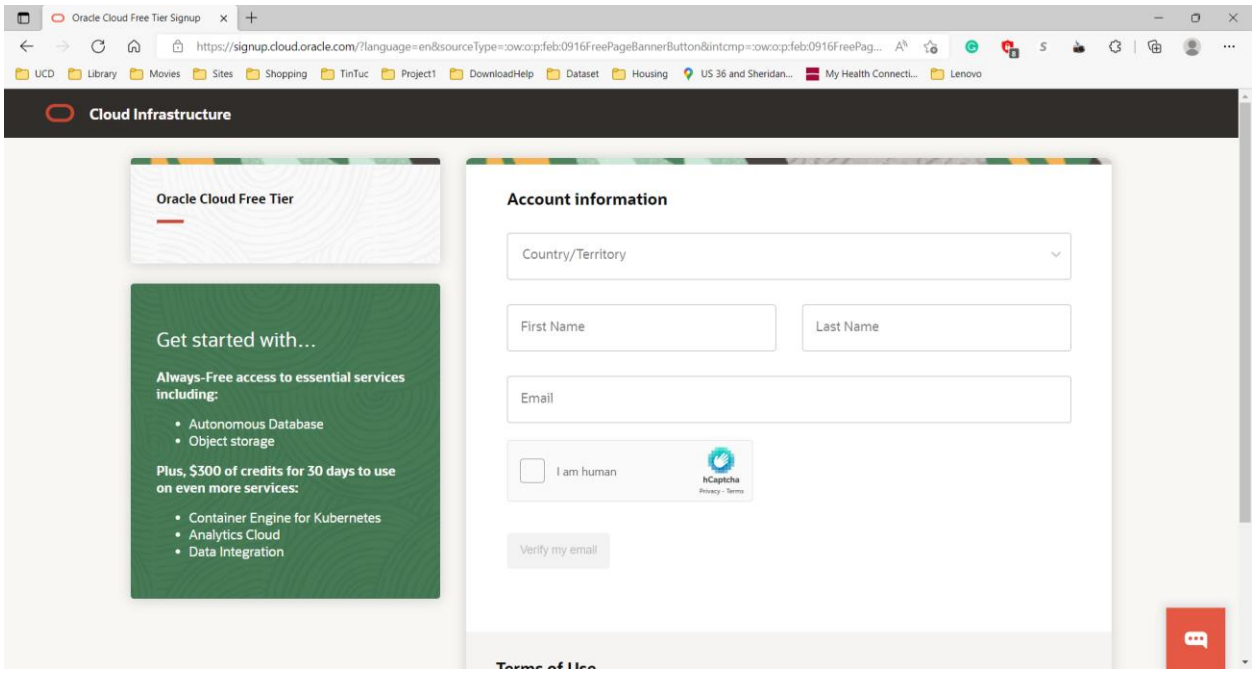
Once the Autonomous Database is created, you can use several different tools to work with your data including Oracle SQL Developer, Oracle APEX and other tools. You may wish to download and install Oracle SQL Developer on your own computer. The Oracle SQL Developer has versions for Windows, Mac OS, and Linux.

Sign up Oracle Cloud

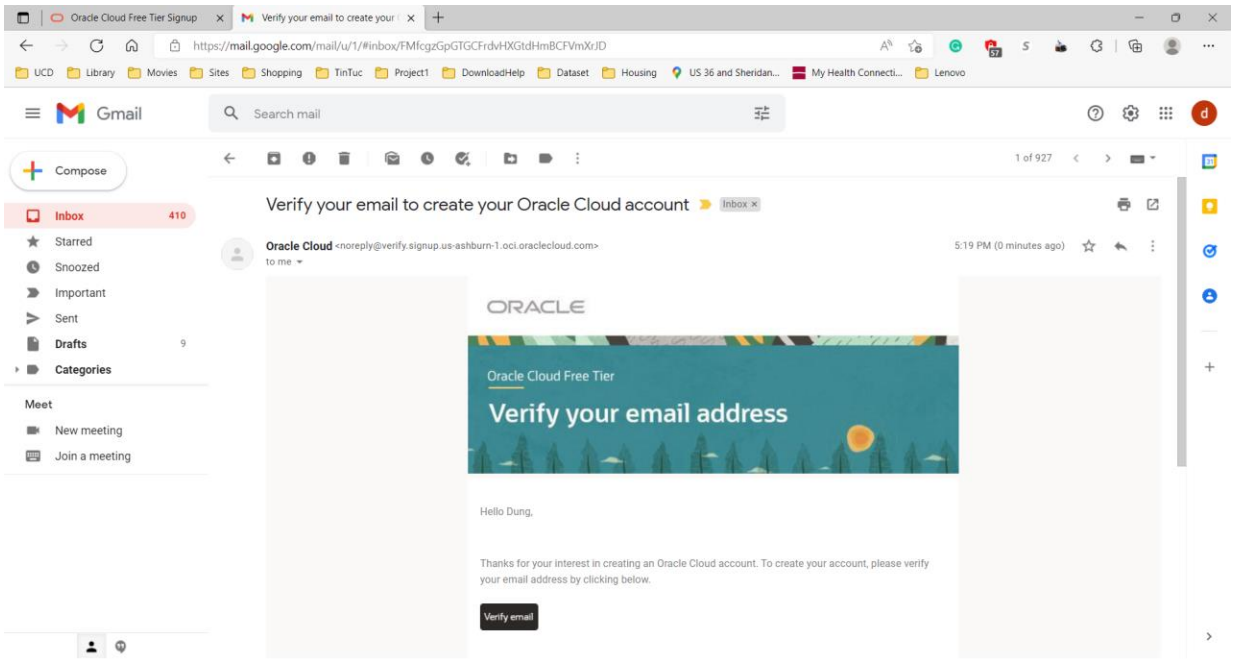
The first step involves creation of a new Oracle Cloud account. To get started, visit the Oracle web site with the URL: https://www.oracle.com/cloud/free/



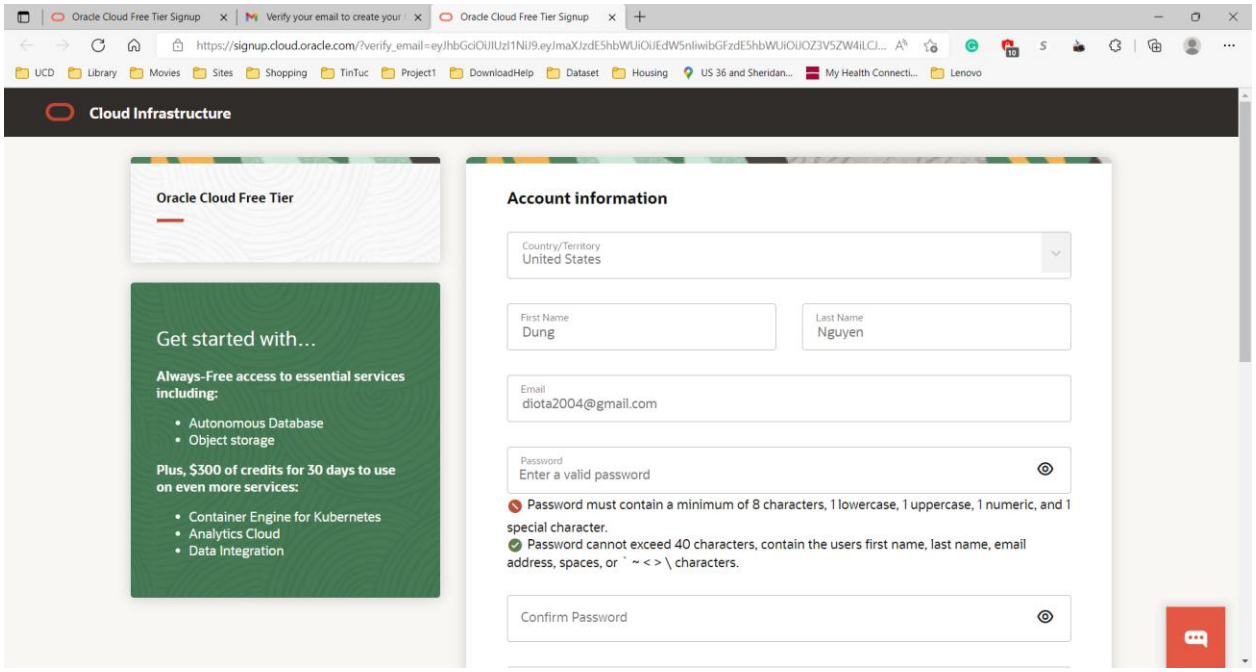
Click on the **Start for Free** button.

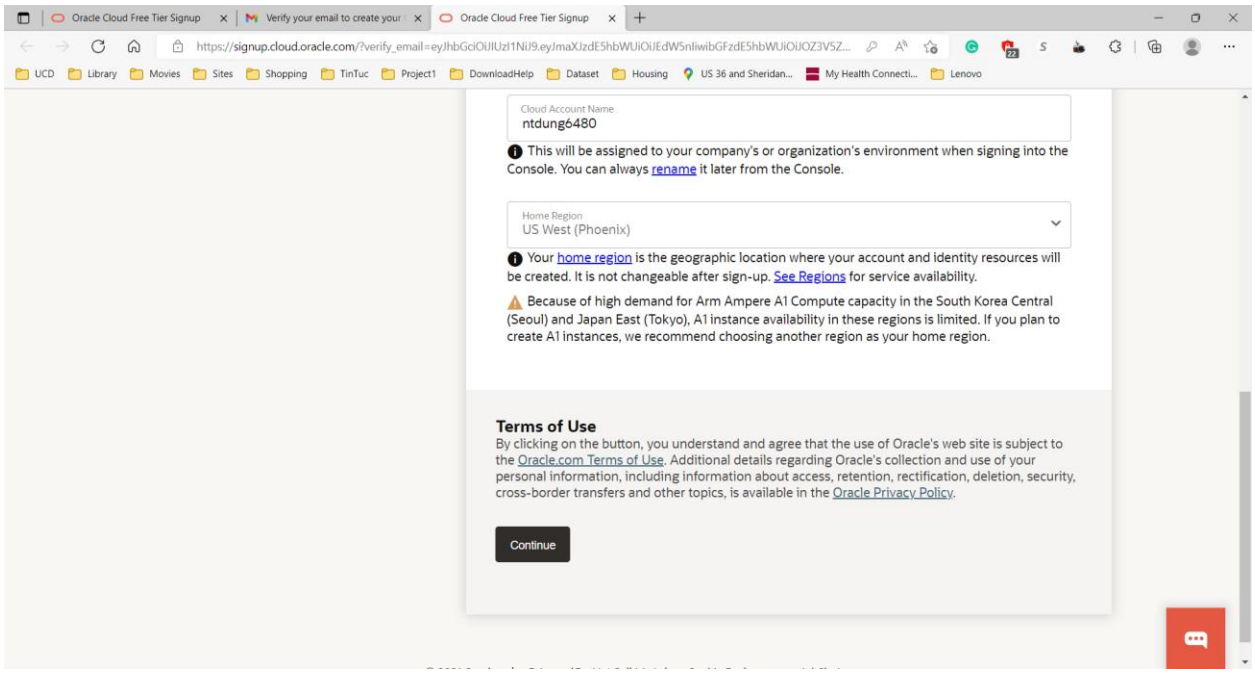


Fill in first name, last name, and e-mail address. Read the Oracle Terms of Use and other policies and then click the **Verify my email** button when you are ready. Oracle will send an email to verify your email.

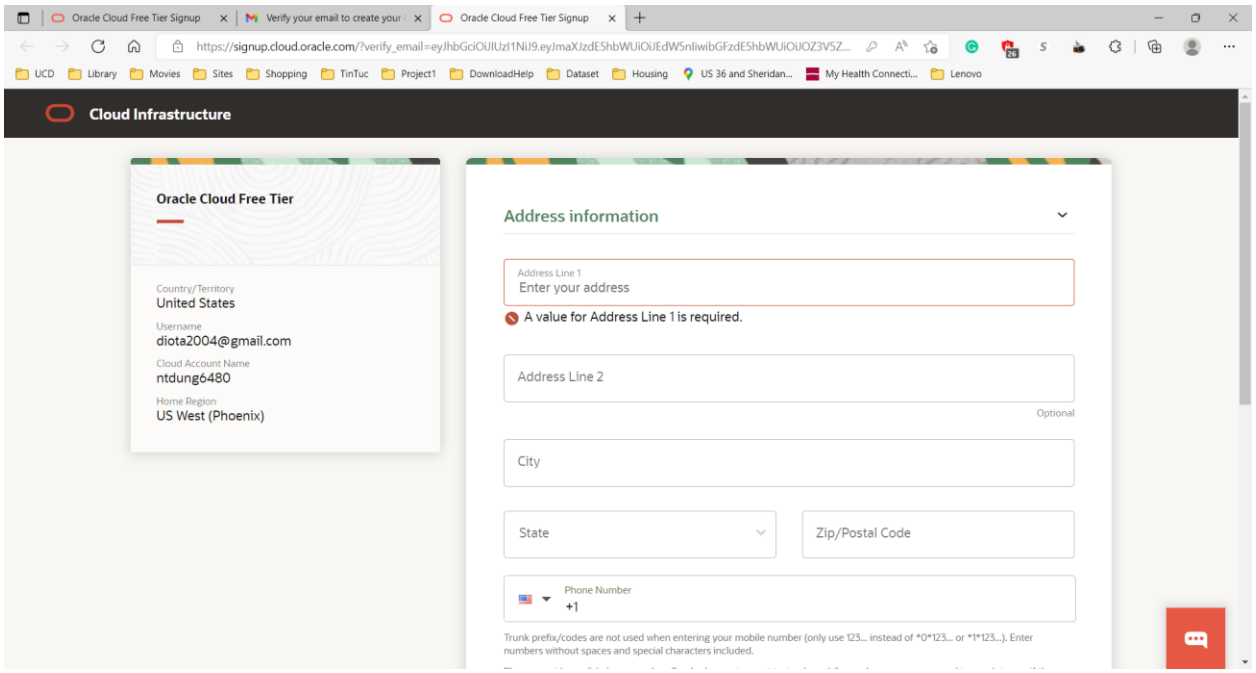


Open your email and click Verify email.

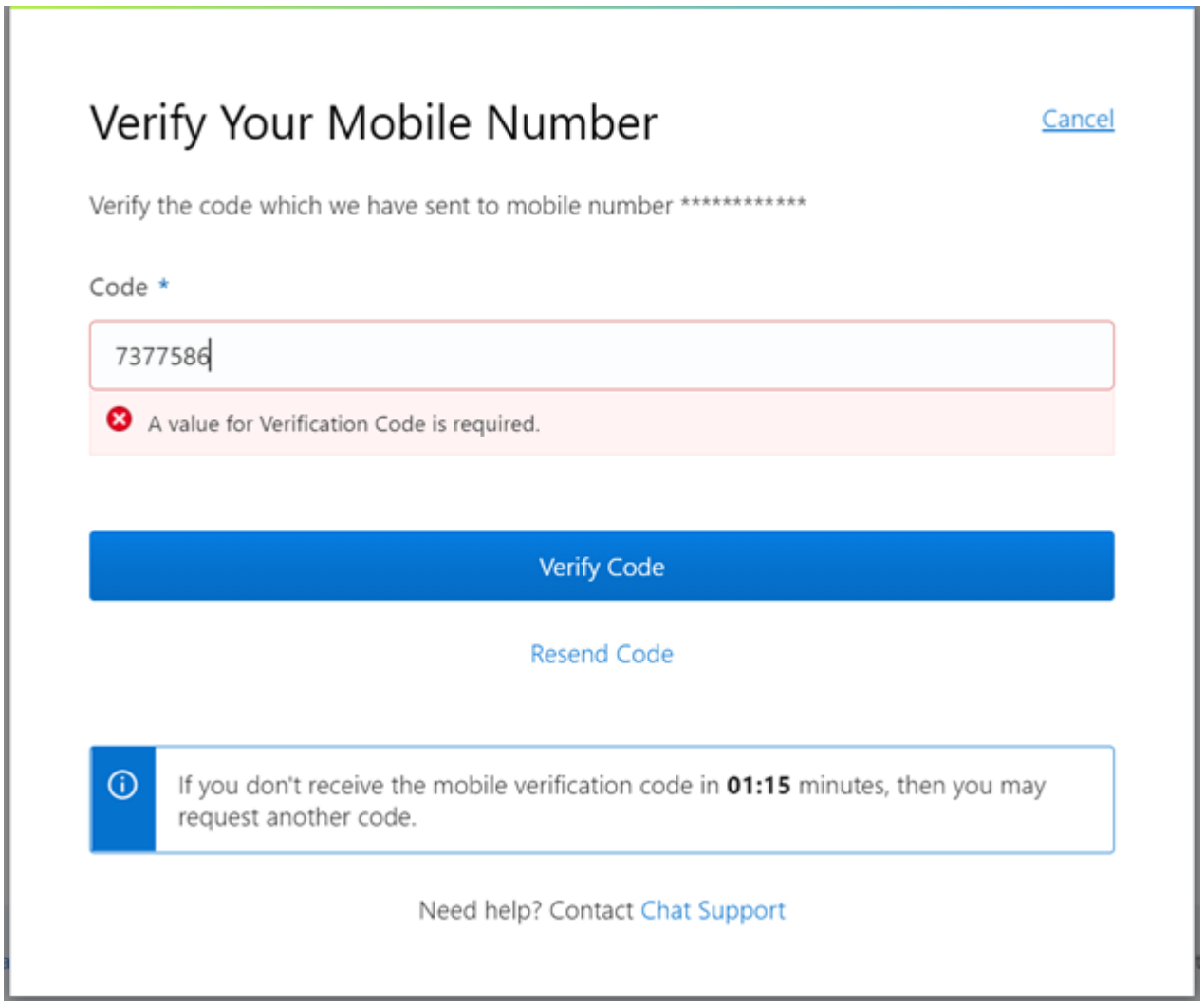




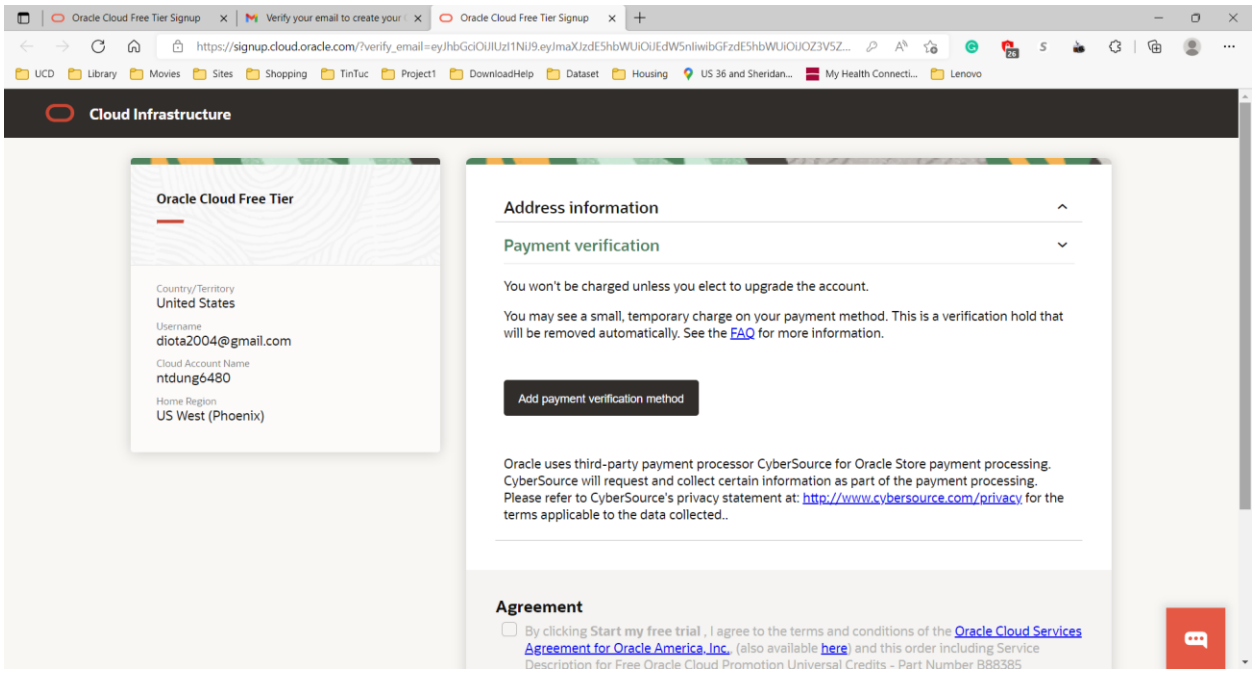
Create a new password for your Oracle Cloud account following the password rules provided and fill in cloud account name. Cloud Account Name should contain letters only with no spaces or other punctuation. Keep in mind this will be your Oracle Cloud account (not the database account – that will be created later). Then, choose your region. After providing these details, click the **Continue** button.



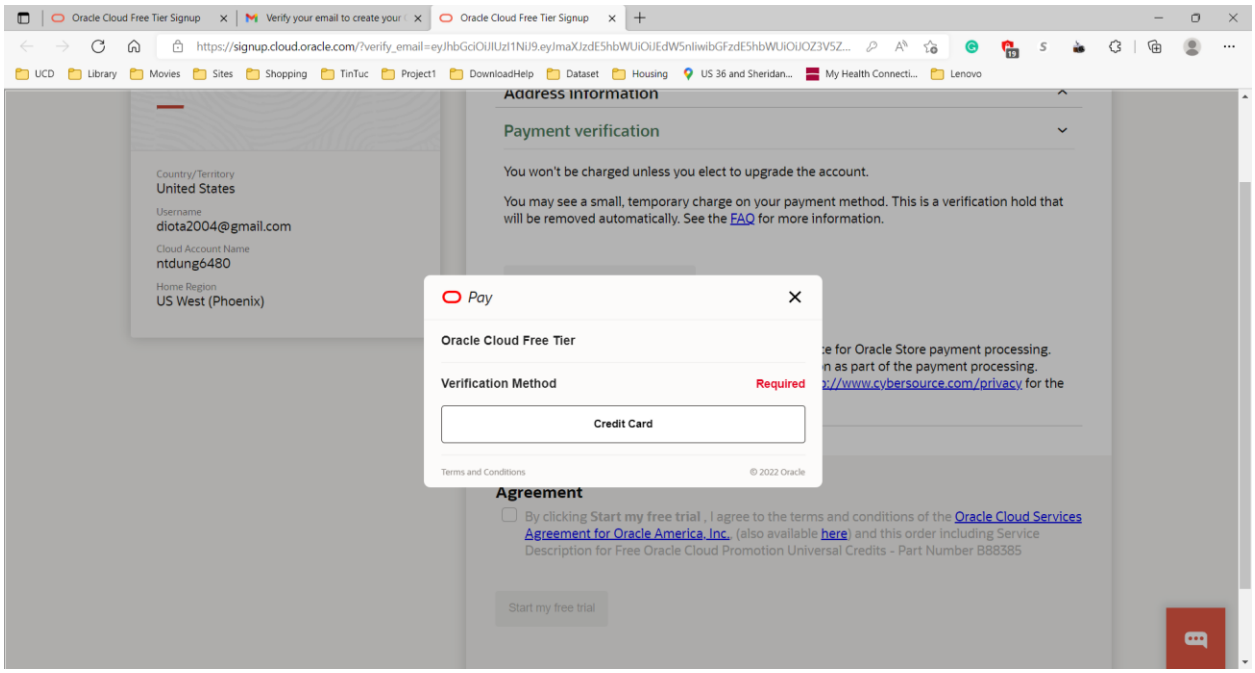
Fill in your address (streel, city, state, zip code) and cell phone number. Check your cell phone for a text message from Oracle to see the code number.



Type in the code number on the Oracle website when prompted and click the **Verify** button.

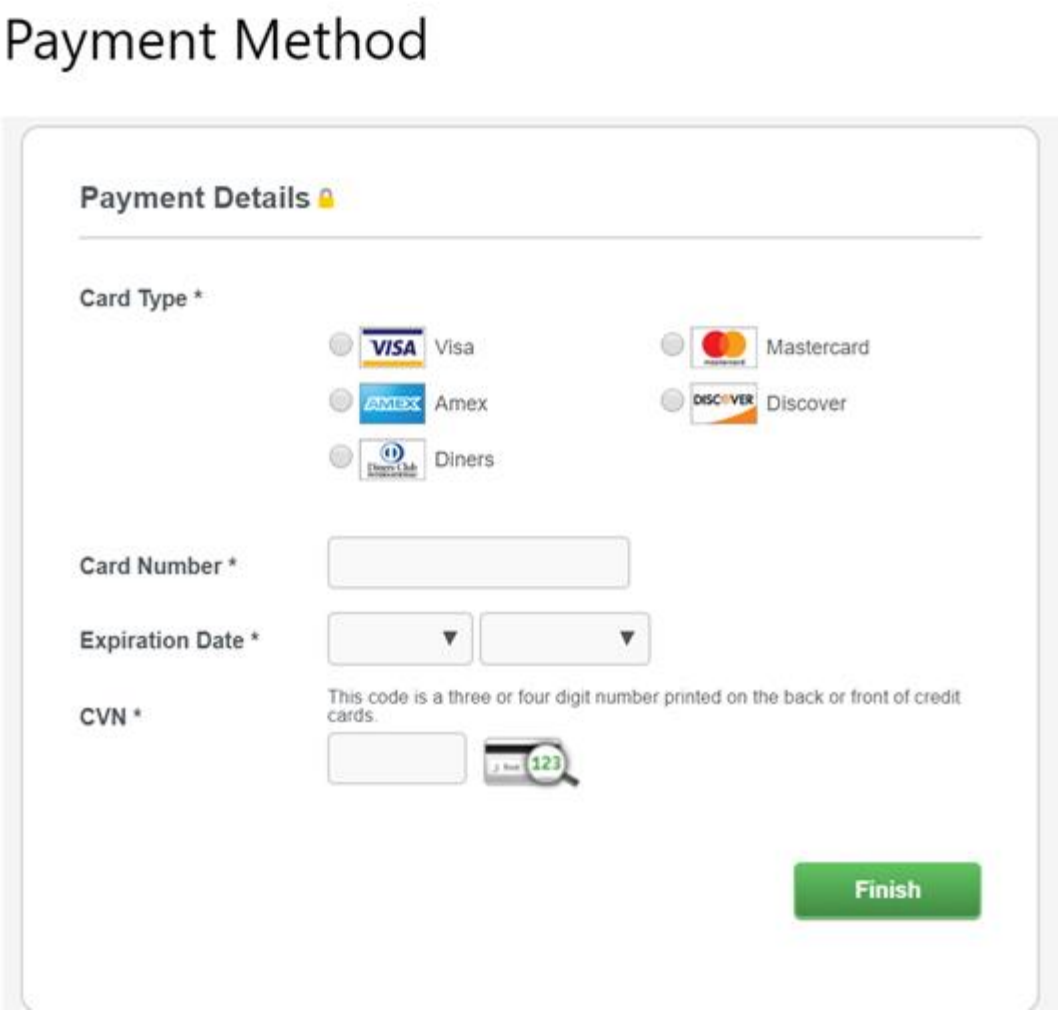


On the next screen, you need to verify your payment. Read over the notice from Oracle regarding payment information. Click the **Add payment verification method,** then click **Credit Card.**

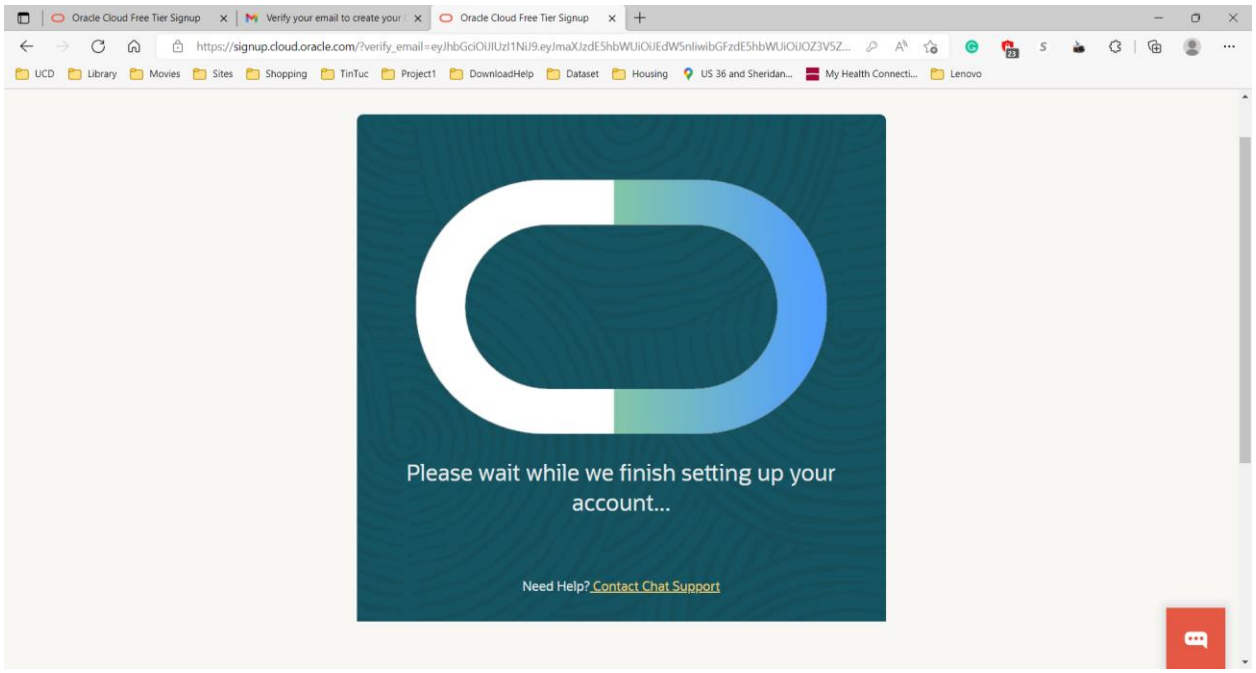


On the next screen, fill in your credit card information. Click the **Finish** button when done.

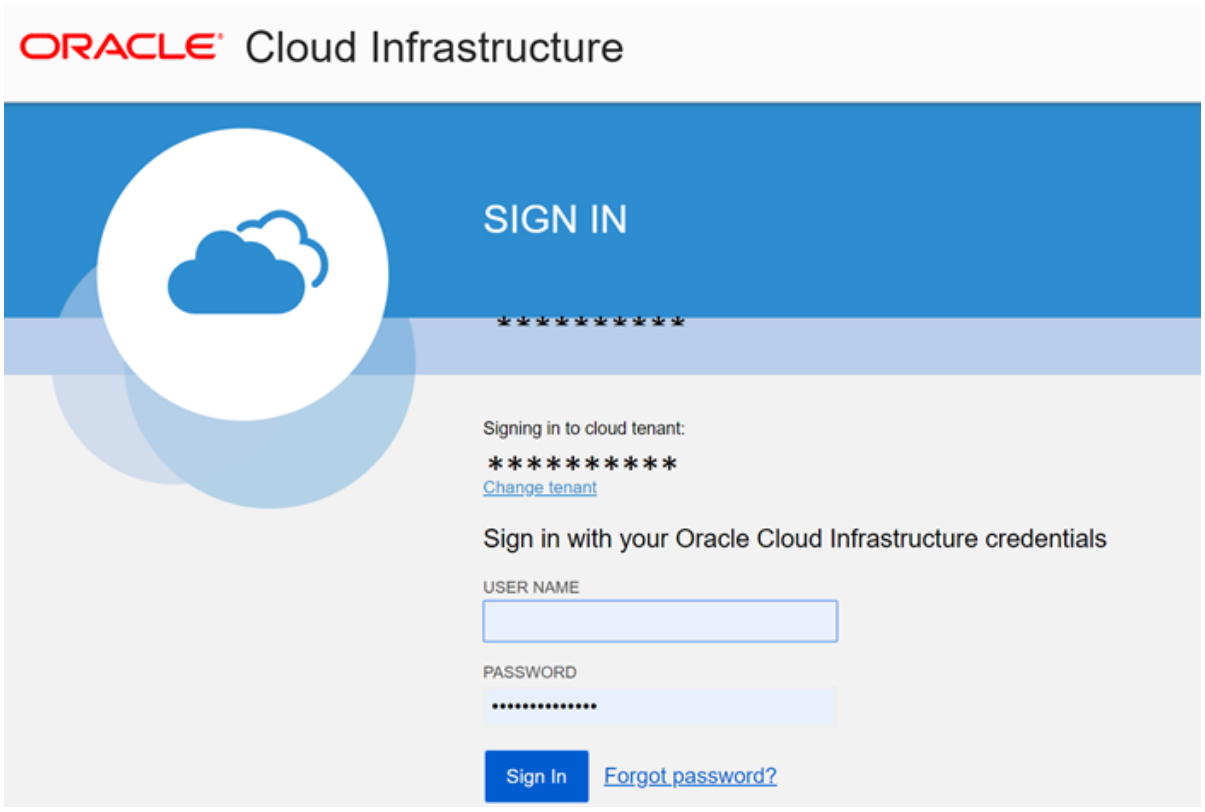
Remember that if you use the “Always Free” services your payment method will not be charged.



At this point the new Oracle Cloud account is created. This may take up to 5 minutes to complete. In some rare cases, if there is any issue verifying your payment information, you may be contact via e-mail to provide additional information.

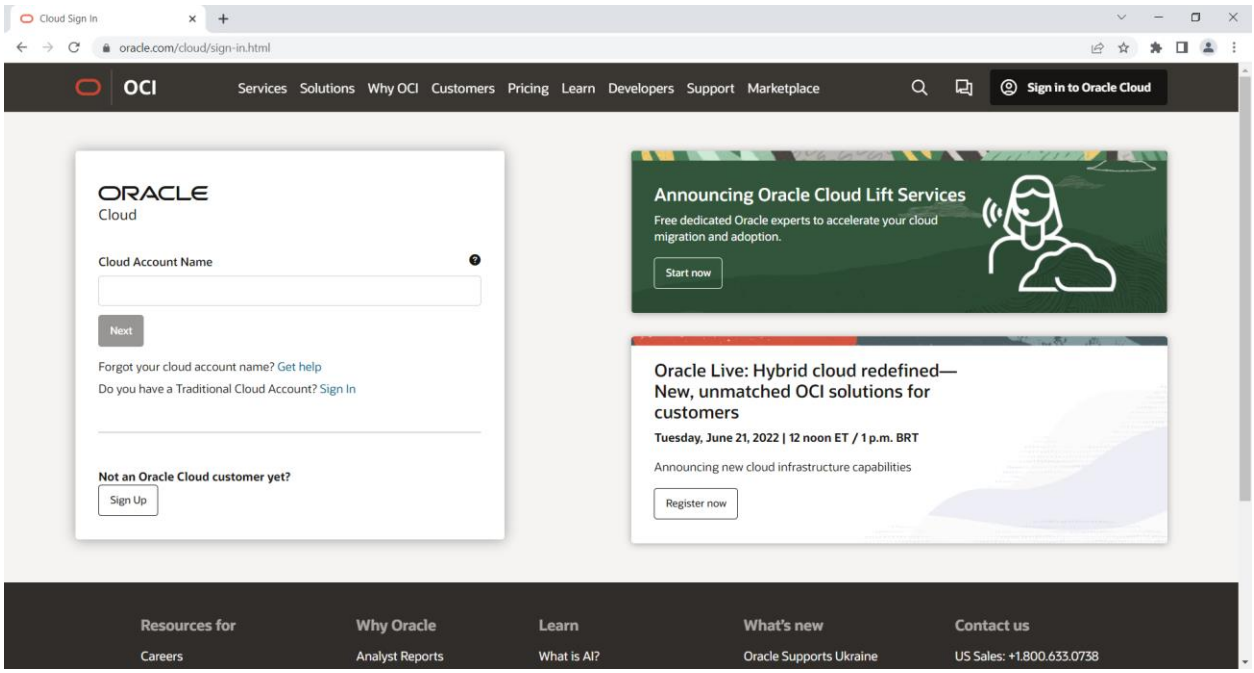


Once the account has been created the web browser should re-direct to the login page. Fill in your Oracle Cloud Account username and password as provided in the prior steps and click on the **Sign-In** button.

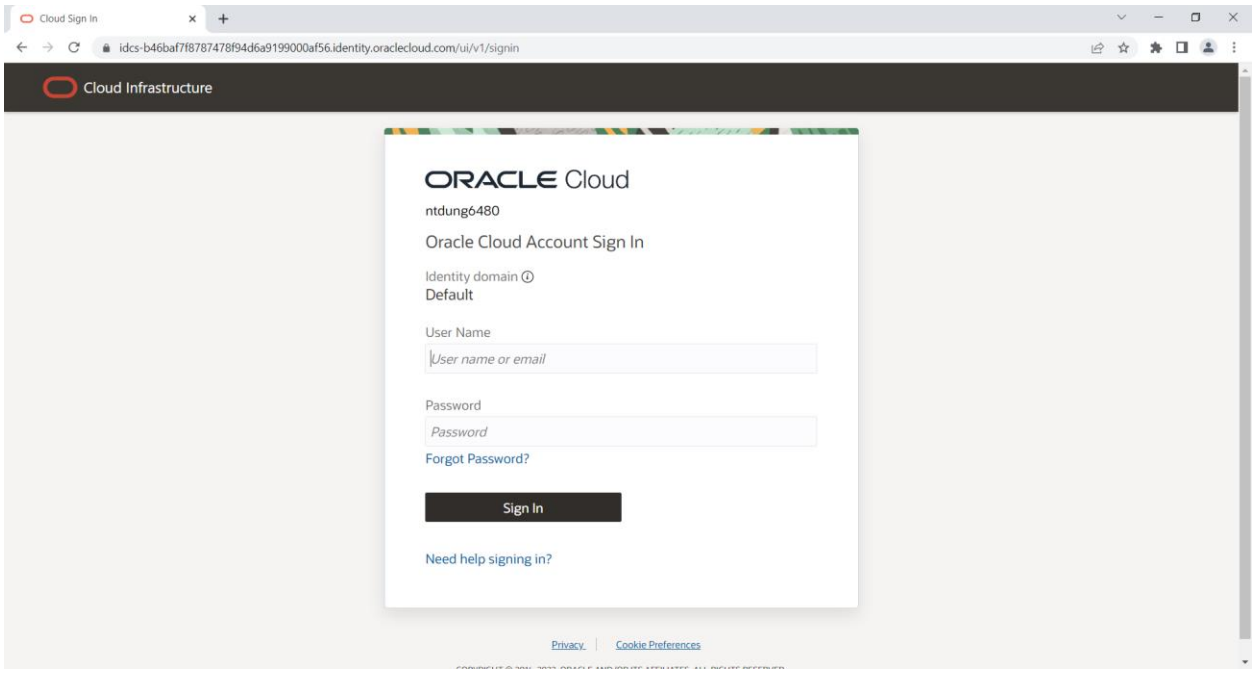


Create Autonomous Database Instance

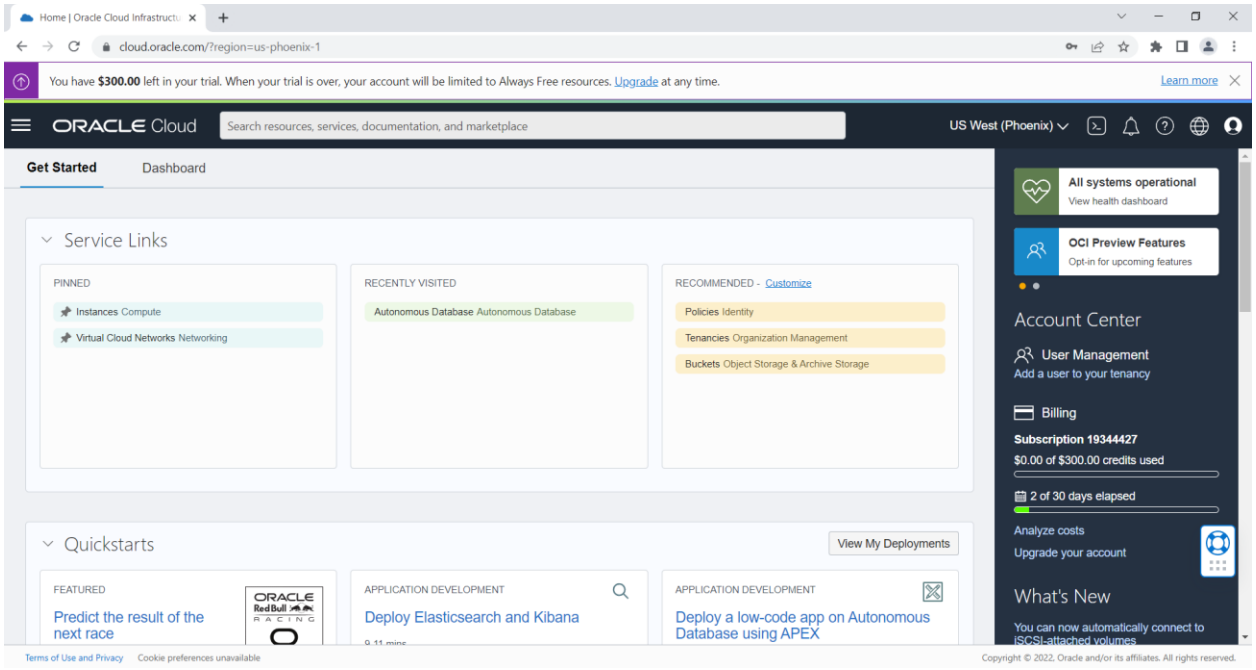
To login your Oracle cloud, visit: https://www.oracle.com/cloud/sign-in.html



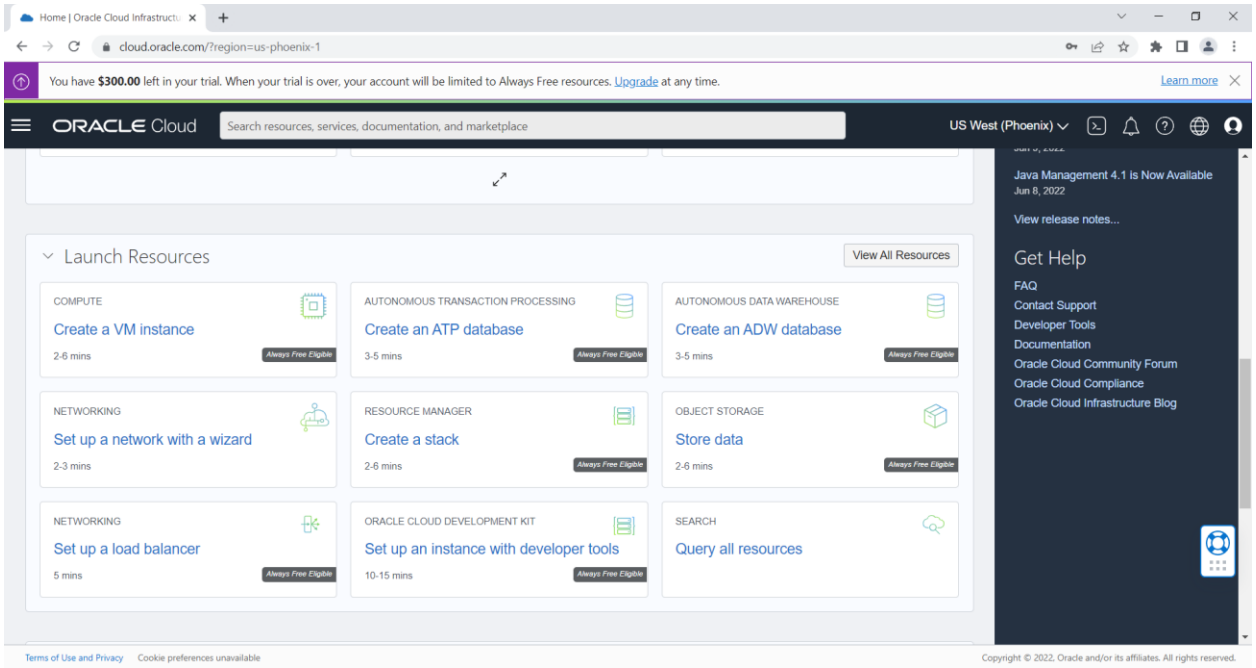
Enter your cloud account name and click Next.



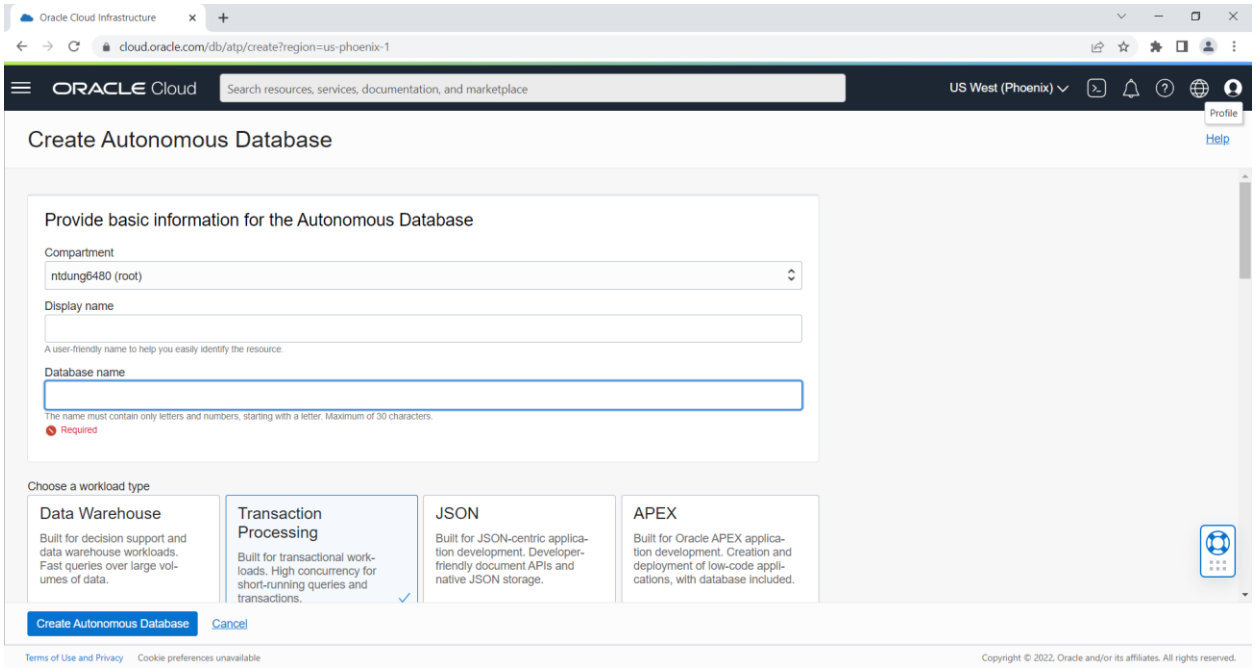
Enter your username and password, and click Sign In. Once logged in, the Oracle Cloud home page appears.



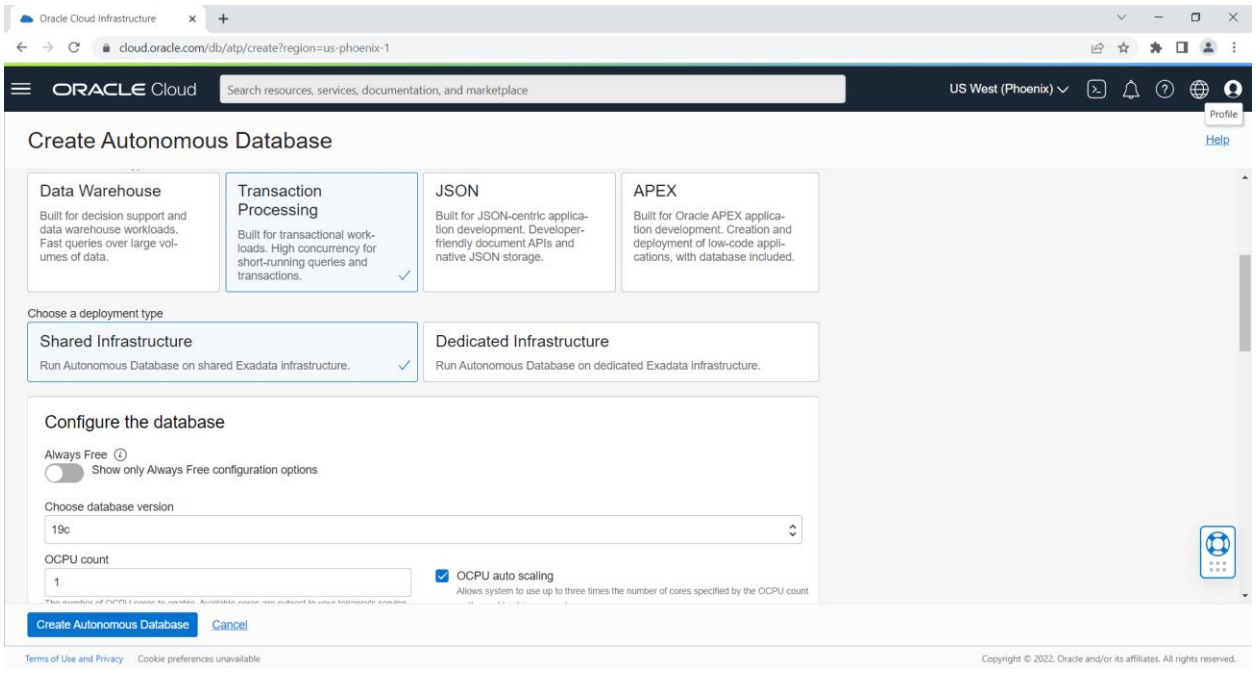
Scroll down to **Lauch Resource**



Make note of the different services and the ones that are marked with **Always Free Eligible**. The "Always Free" services can be used without accruing charges. Click **Create an ATP database**.

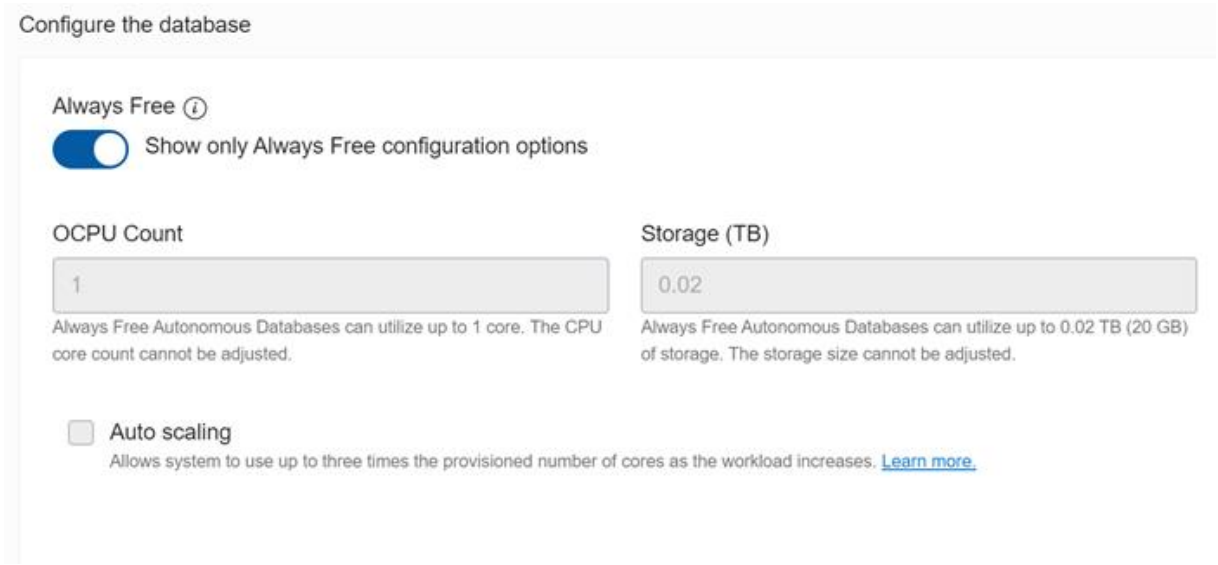


Choose a Compartment (typically the cloud account name you entered when setting up the account), then provide the Display name and Database name. Note that the Database name cannot contain punctuation or spaces. Scroll down.



Select the Transaction Processing workload type and choose the Shared Infrastructure as shown above.

Under the **Configure the Database** heading, select the **Always Free** option. By selecting this option, a basic database with 20 GB of disk space and one virtual CPU will be created. No charges will accrue in your account for this database.

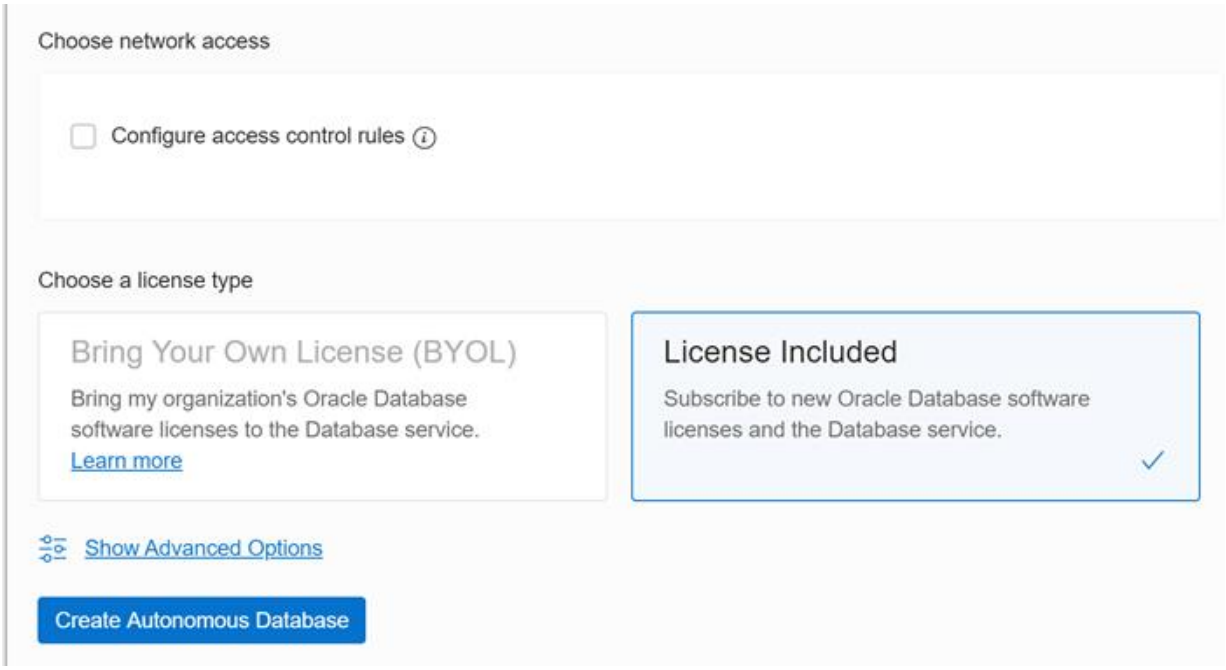


Supply a new password for the database administrator. The default database administrator username will be **ADMIN**. Keep in mind that this will be the username and password for the ATP Database you are creating. This is different from your Oracle Cloud account.

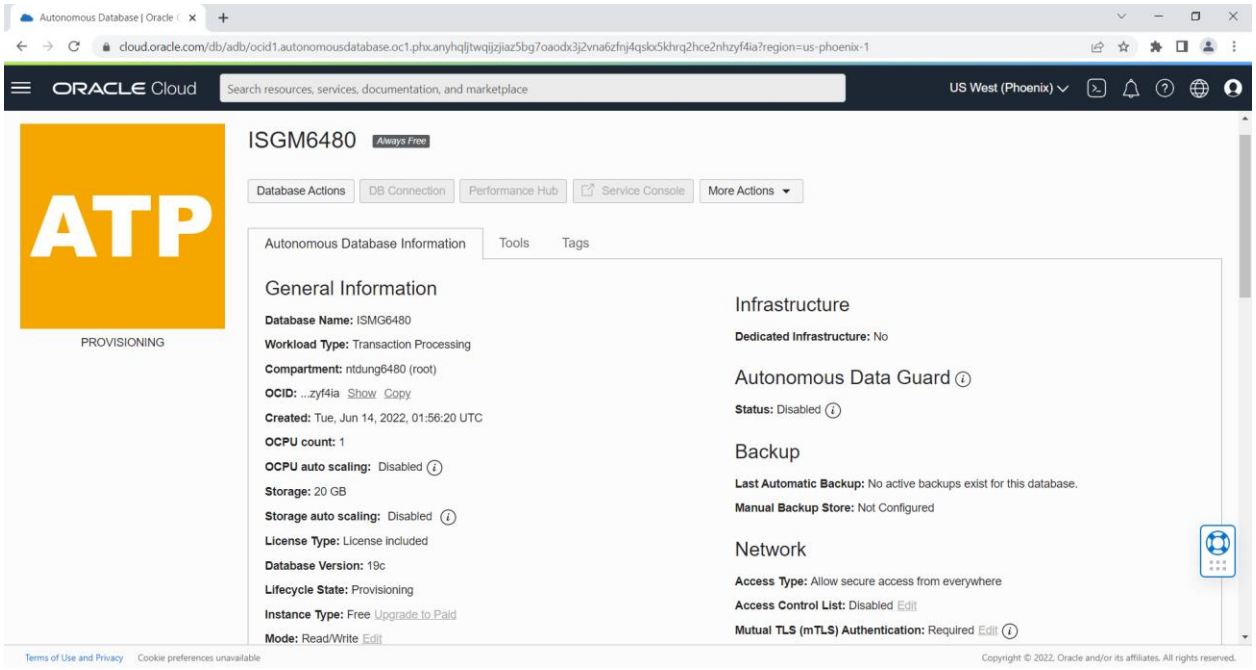
The next step is to choose network access. By default, the new database will be accessible from anywhere on the internet. If you would like to restrict access to this database to hosts or clients on a more limited range of addresses, check the **Configure Access Control Rules** box and then follow the prompts to add allowable IP addresses or CIDR blocks.

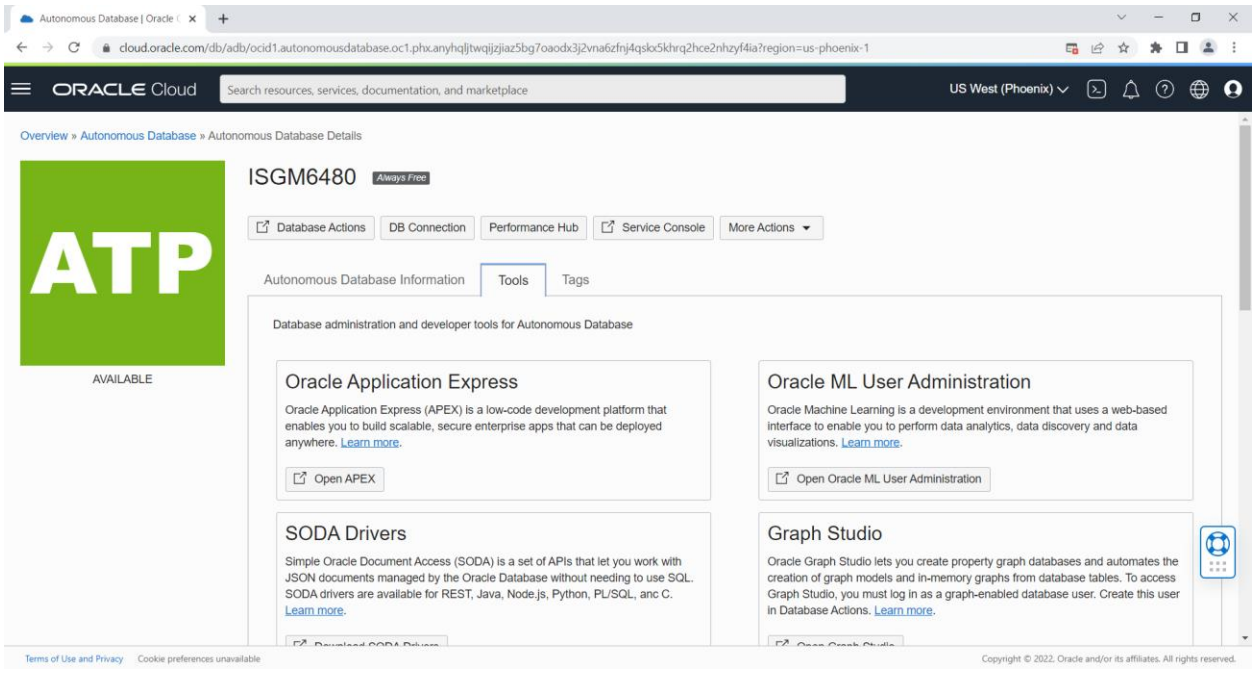
For this example, we will leave the access open.

Finally, select the **License Included** option and then click the **Create Autonomous Database** button.



Note that it may take up to 5 minutes for the new database to be *provisioned*.



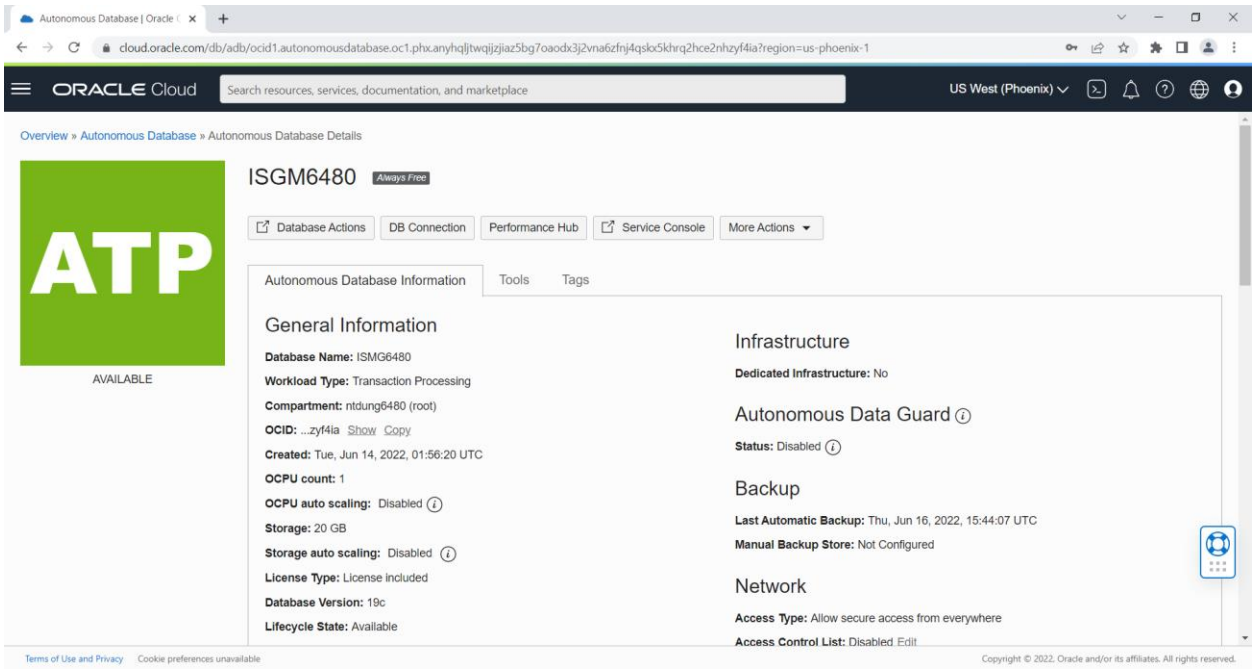


Once the new database has been provisioned it should become *available*. Click on the **Tools** tab to view different tools to be used for accessing the database.

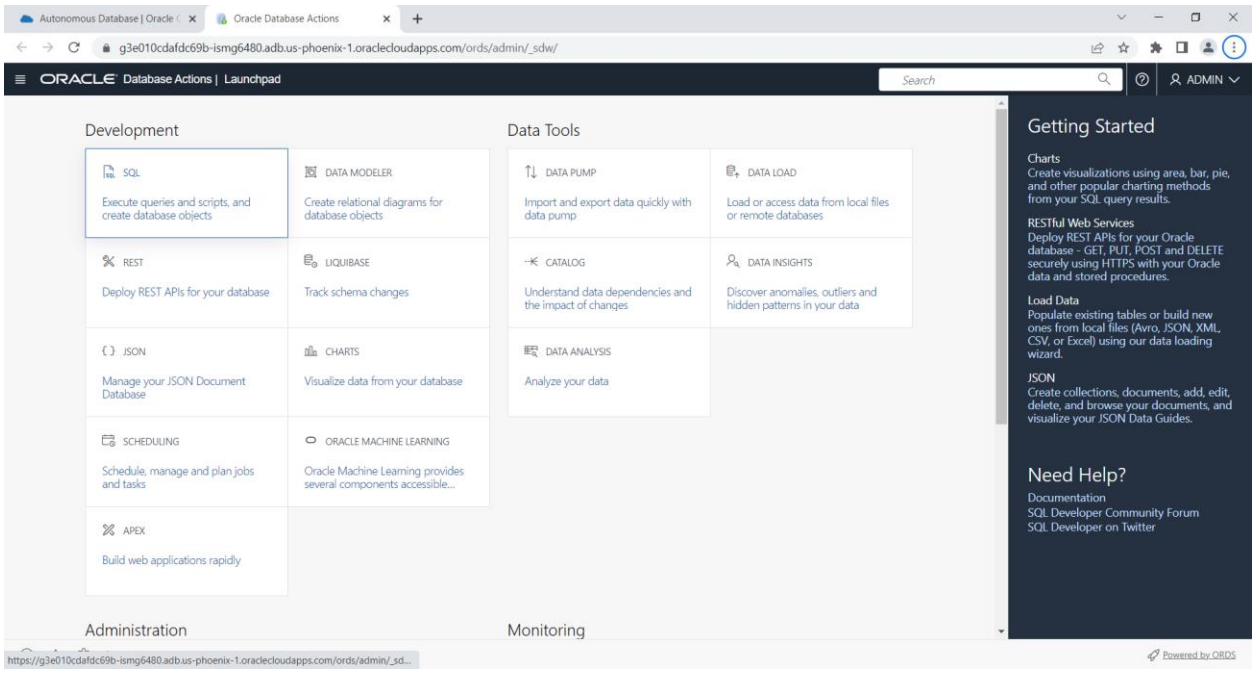
Note that this management page will be used should you ever need to re-start your ATP database. Check under the **More Actions…** button for these features. Inactive Always Free Autonomous Databases are automatically stopped after 7 days. When your database is turned off, you must access the management page and turn on your database under **More Actions**.

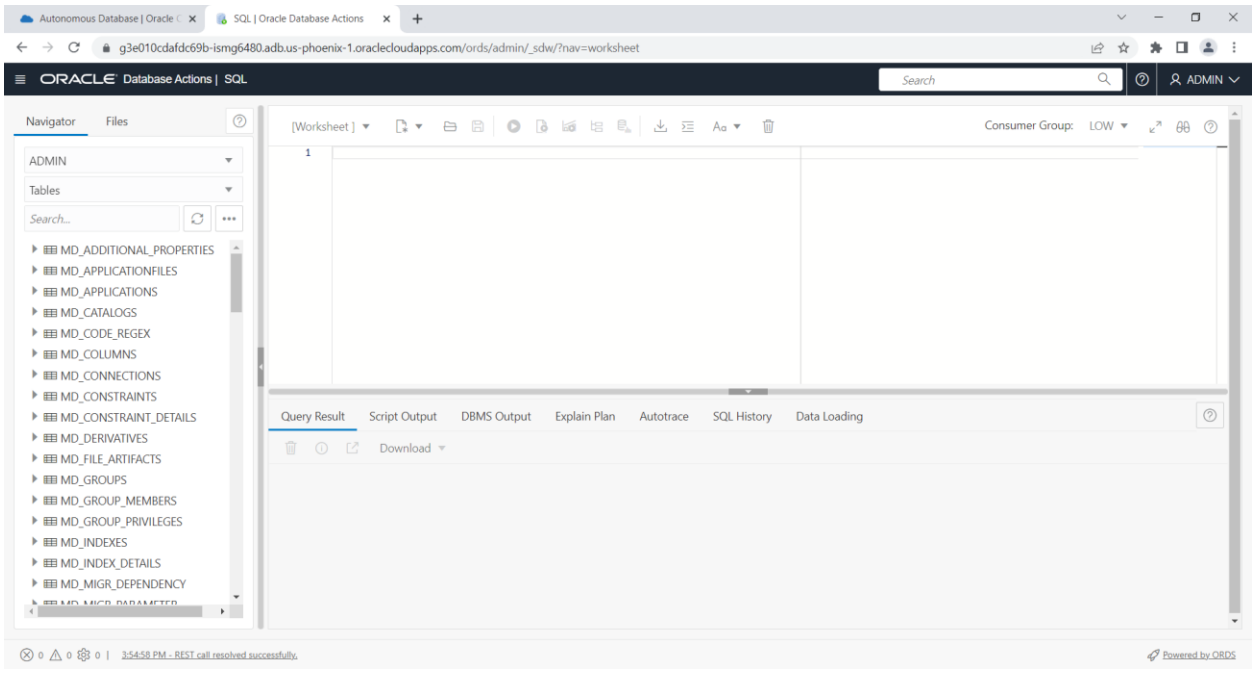
Access Database Instance

The quickest way to access the new database is by using the Oracle SQL Developer Web interface. Click on the **Database Action** button.



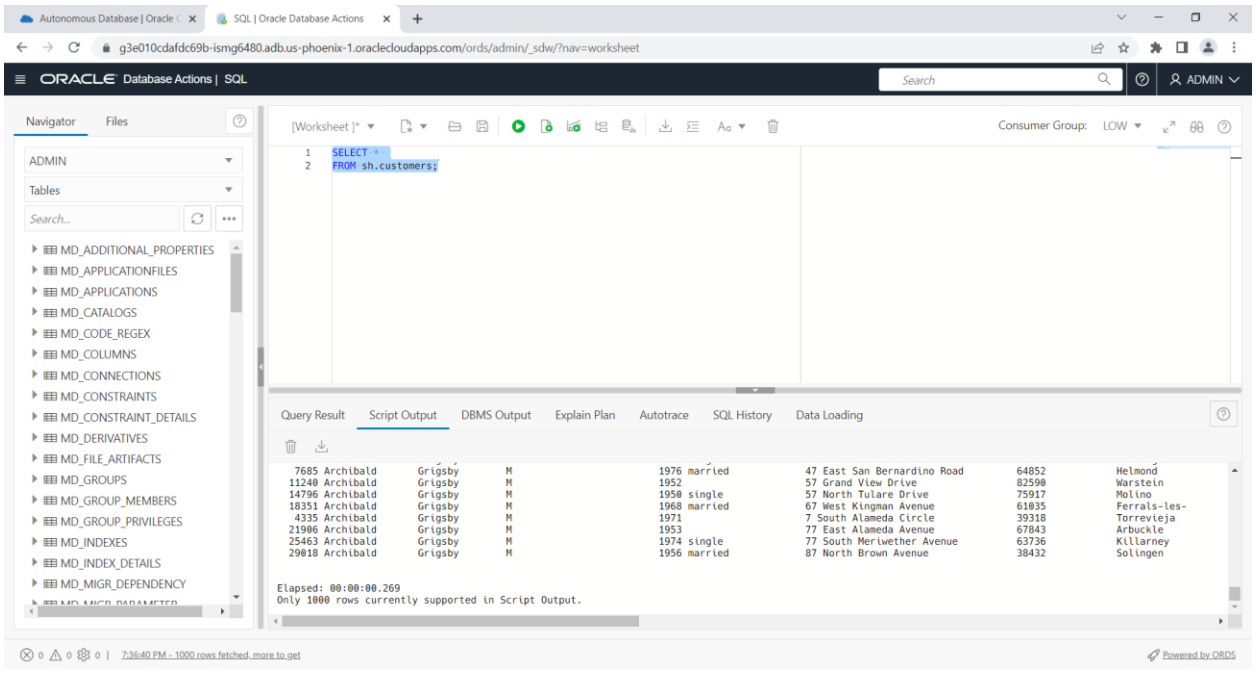
Click on the SQL button.





Once logged in, the SQL Developer Web worksheet will appear. There are three main sections. Schemas (users) and their objects (tables, views etc.) are displayed in the left-hand window under **Navigator**. SQL Statements can be typed in using the Worksheet section. Query results and other feedback are provided in the window to the lower right.

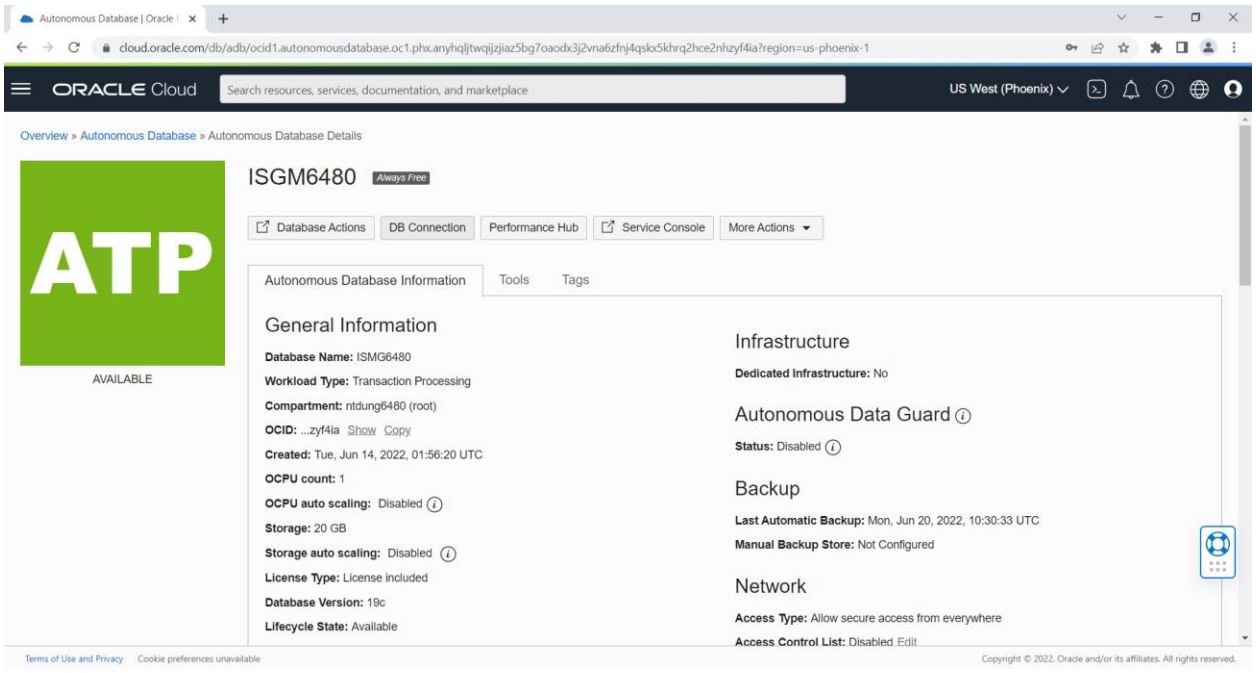
The Oracle Sales History (SH) sample schema is available in the database so it can be used to easily test queries as shown below.



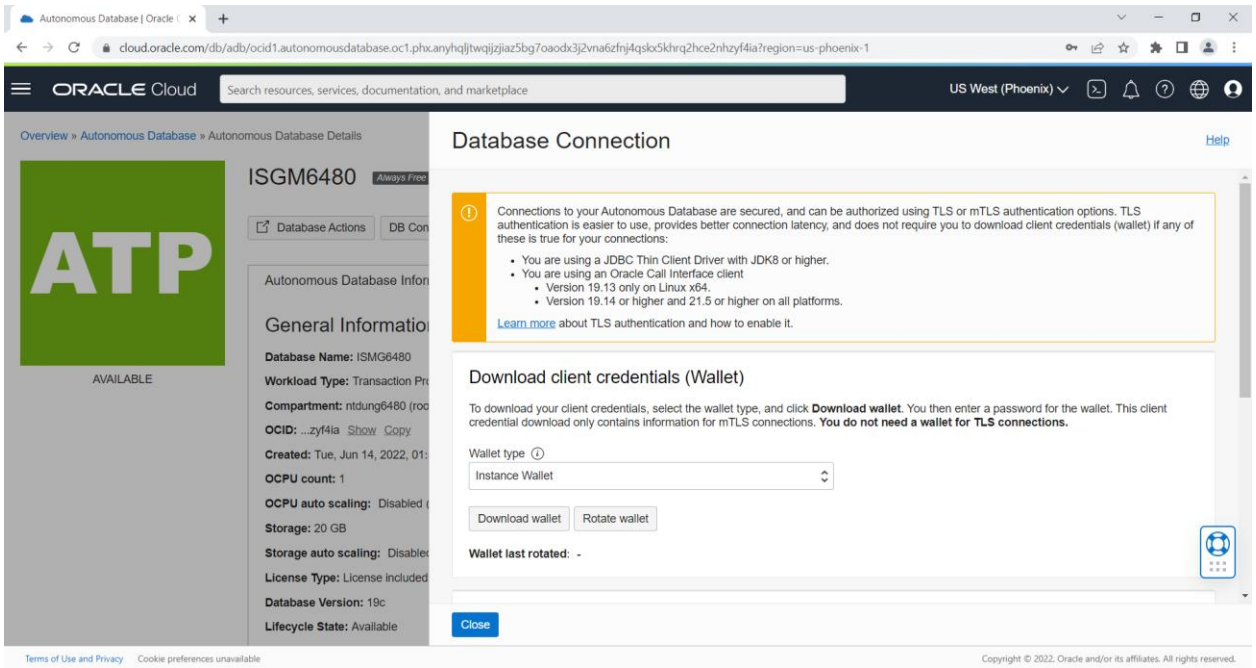
Connecting to the Oracle Cloud Database using SQL Developer

The client Oracle SQL Developer has more features than the Web version. The Oracle SQL Developer has versions for Windows, Mac OS, and Linux. For download of the Oracle SQL Developer, search using “SQL Developer download”. If you do not have the Java Development Kit installed, choose the version with the current JDK included.

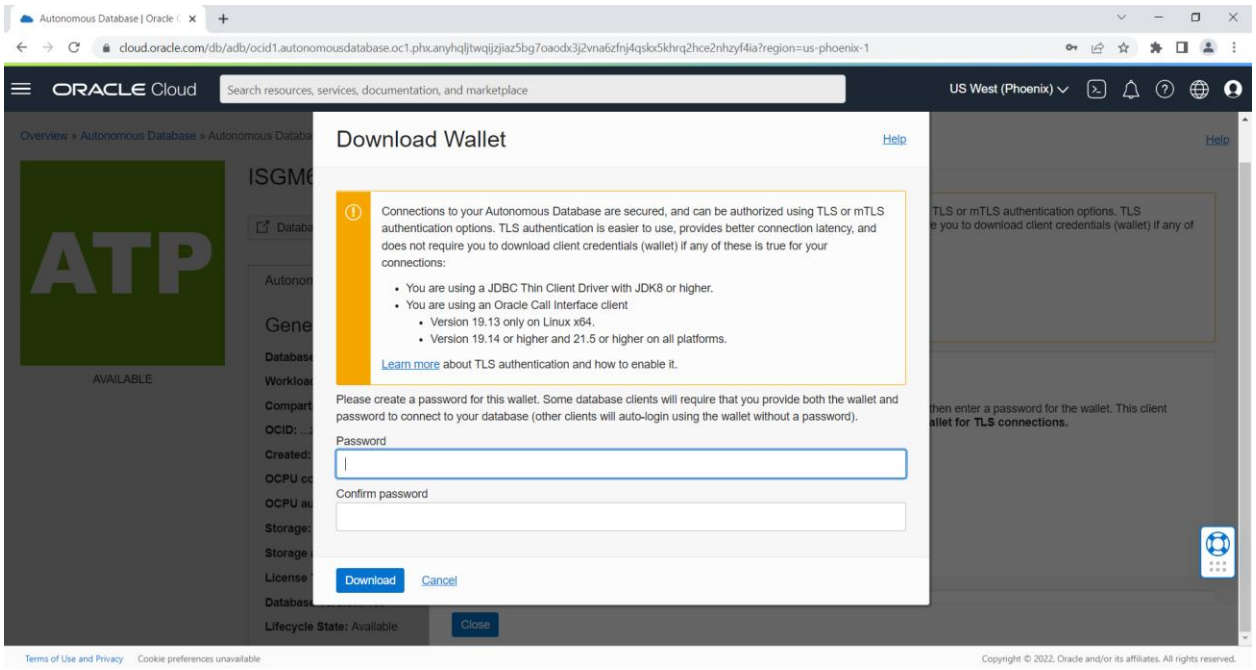
After installing the SQL Developer, you can download the Oracle Cloud Wallet credentials from the Oracle Cloud database instance and use those to connect to your Cloud database. From the Autonomous Database home screen, click on the **DB Connection** button.



Connecting to a cloud database requires both a Wallet and a connection string. Click on the button to download the wallet.



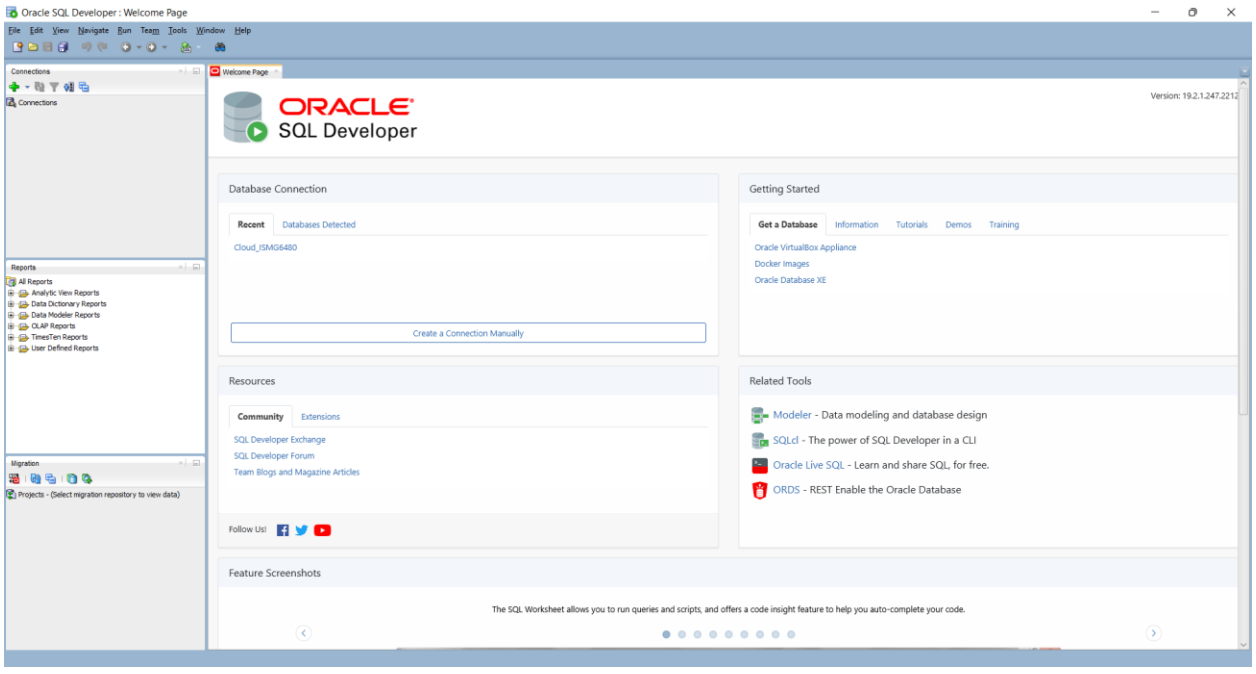
Provide a new password for the wallet and then click on the **Download** button.



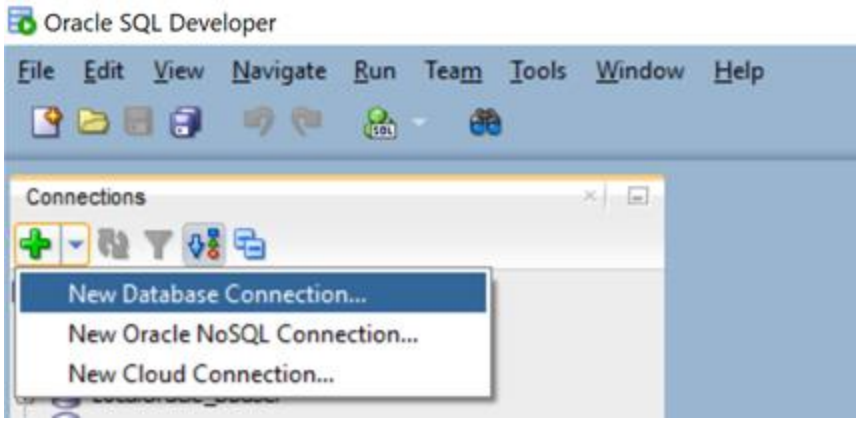
Be sure to store the wallet file in a secure location.

Creating a new Database Connection from SQL Developer

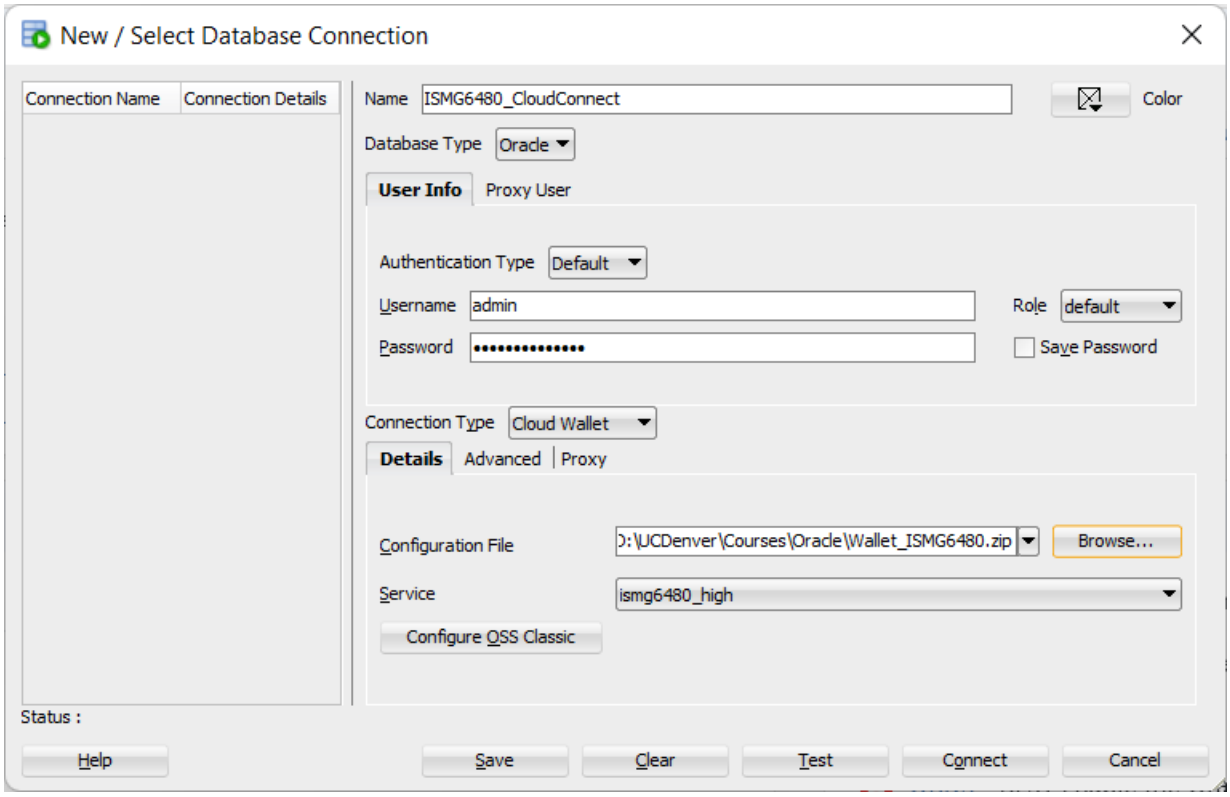
After starting the SQL Developer, the following window appears.



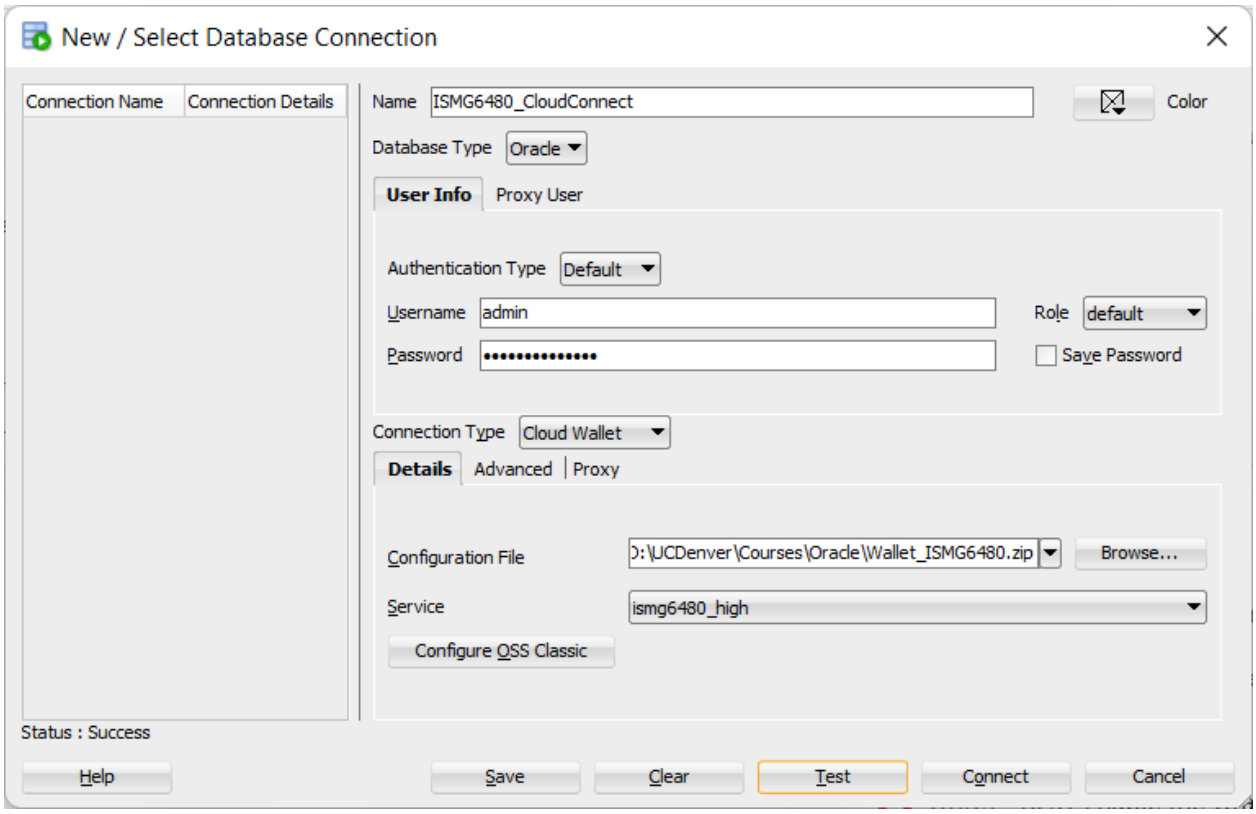
In Oracle SQL Developer, click the green plus sign to create a New Database Connection.



Give the new database connection a name and supply the ADMIN username and associated password. Change the **Connection Type** to **Cloud Wallet**. Click the **Browse…**button, navigate to the folder with your cloud wallet and select that file.

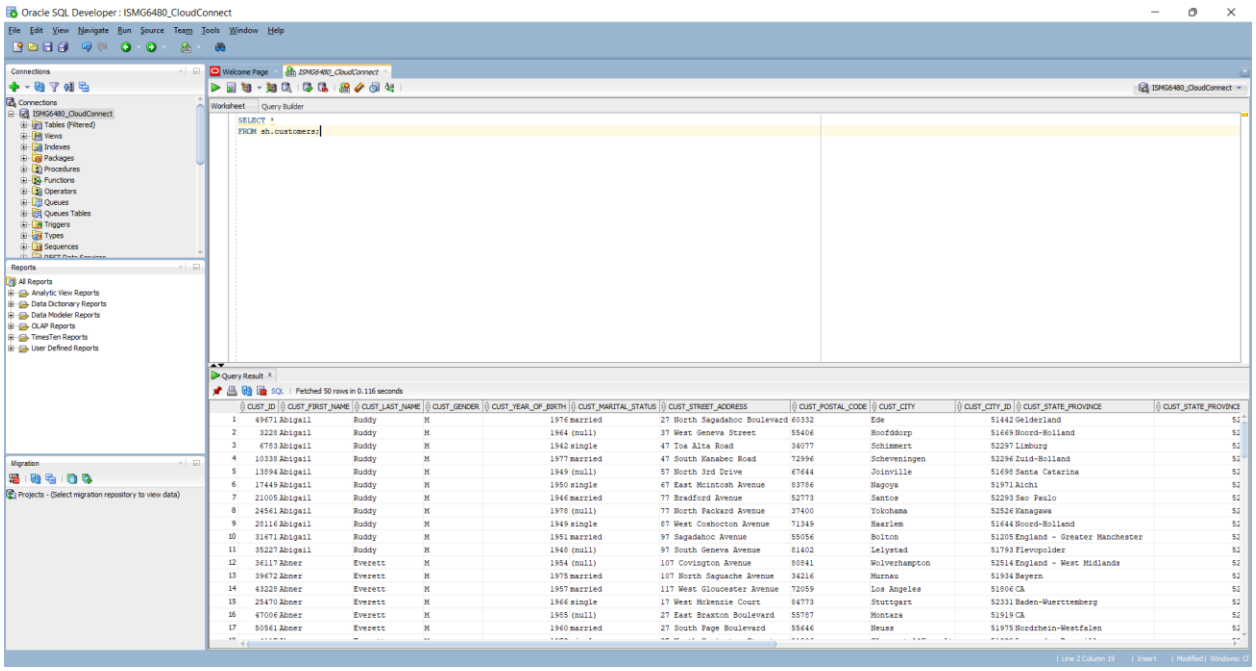


Click the **Test** button to make sure the connection is working. If the connection succeeds, "Success" appears beside Status.



Finally click the **Save** button to save this connection and then click the **Connect** button to connect to the cloud database.

Once connected, a new worksheet will open where SQL Statements can be entered.



Note that this connection was done with the ADMIN user. Any new database development work should be done with a separate database user account. The next section shows steps to create a new Oracle database user to use for your work in the course.

Creating a New Oracle Database User

The ADMIN user of the Cloud Database has the necessary permissions to create additional database users and grant them the necessary privileges. SQL Developer can be used to create a new database user. The following statement shows the most basic SQL syntax to create a new user in Oracle.

CREATE USER username IDENTIFIED BY password;

There are many more optional parts to the CREATE USER statement but by leaving them off the defaults will be used. Note: Please pick a different password than this example. The Oracle user password should contain a mix of upper- and lower-case letters and numbers. For this example, we will create a new user named “StoreSalesDBA”.

Some permissions need to be granted to connect to the database and create objects such as tables and views. Use this list of GRANT statements to provide necessary permissions.

GRANT CONNECT, RESOURCE TO StoreSalesDBA;

GRANT CREATE TABLE TO StoreSalesDBA;

GRANT CREATE SEQUENCE TO StoreSalesDBA;

GRANT CREATE VIEW TO StoreSalesDBA;

GRANT CREATE SESSION TO StoreSalesDBA;

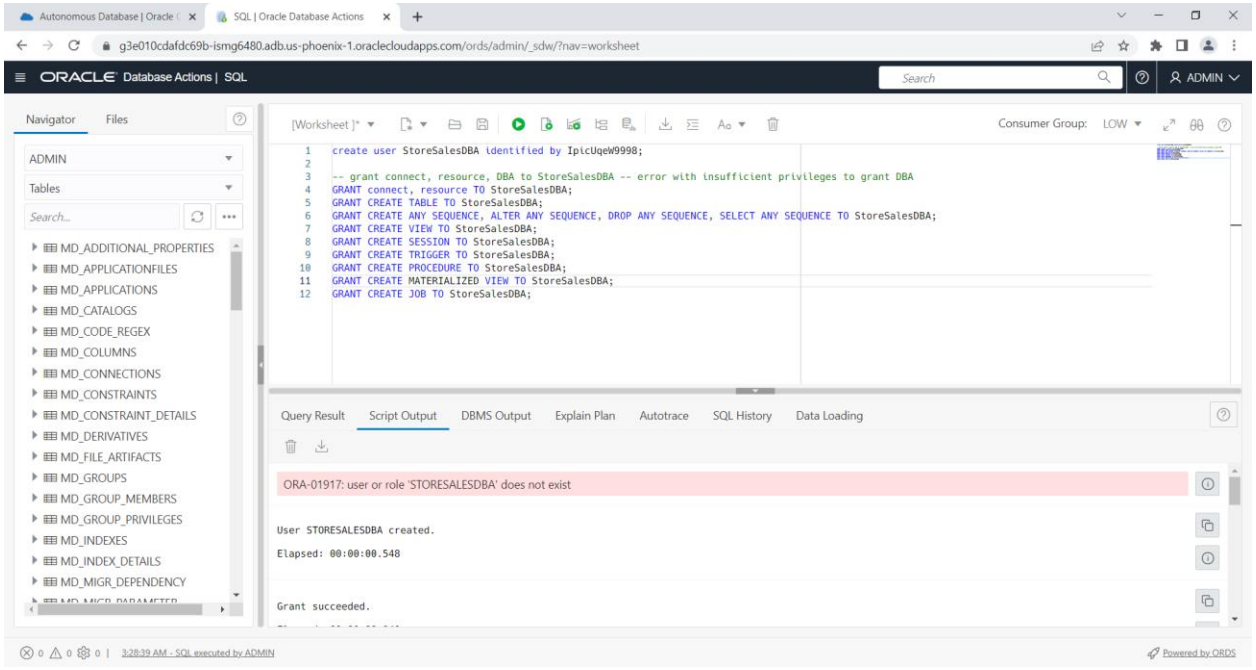
GRANT CREATE PROCEDURE TO StoreSalesDBA;

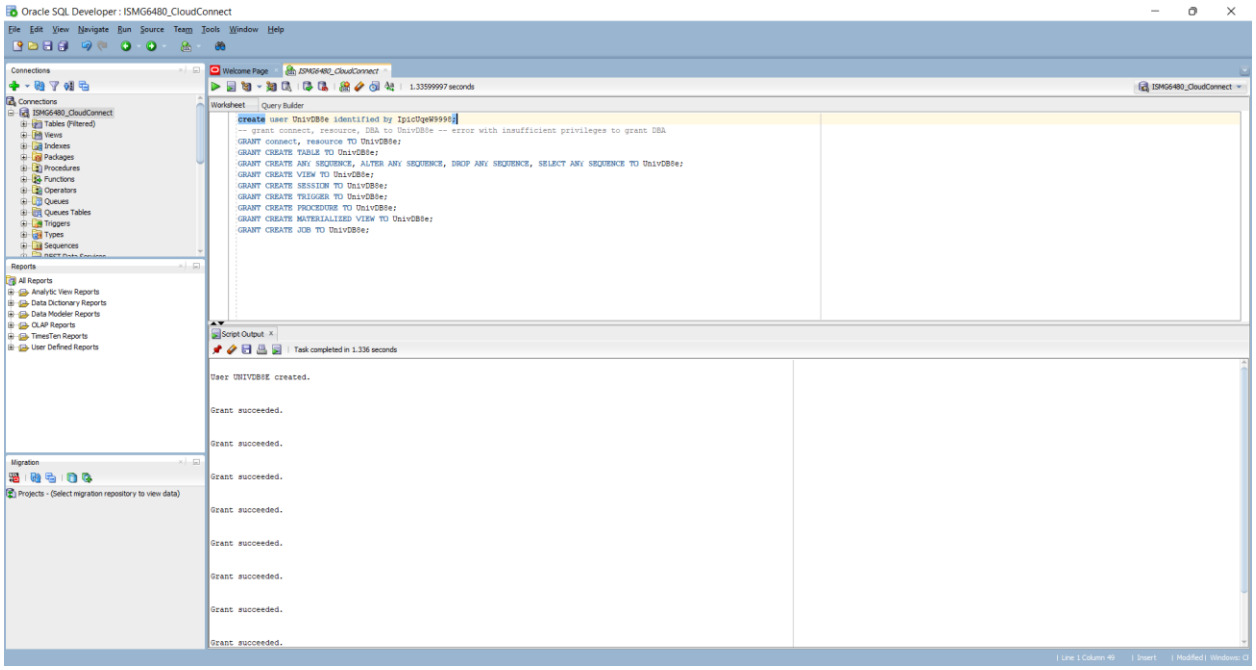
GRANT CREATE MATERIALIZED VIEW TO StoreSalesDBA;

GRANT UNLIMITED TABLESPACE to StoreSalesDBA;

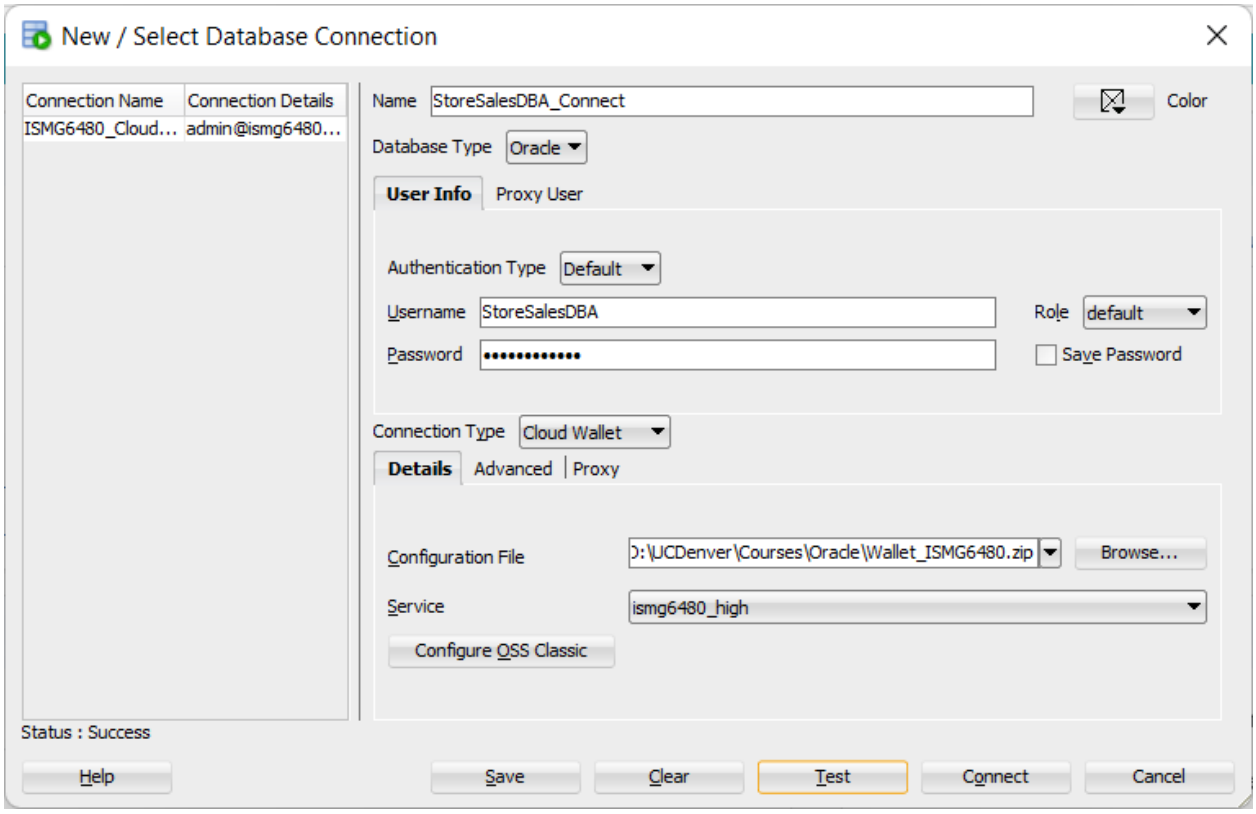
Now that the new user created and assigned the appropriate permissions, we can create a new connection to the database with this user's credentials. Then same wallet will be used.

You can execute SQL statements using the StoreSalesDBA connection. Alternatively, you can use the SQL Developer Web.



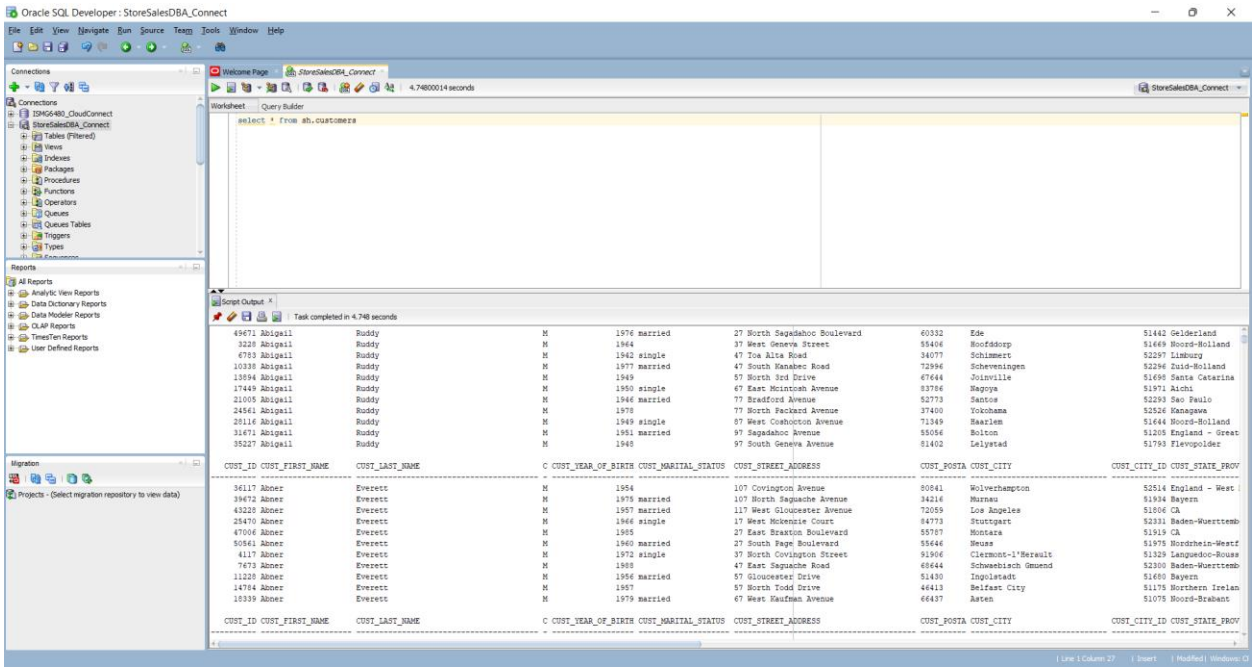


After a new user is created, you can create a connection from that user. To create a connect to ISMG6480 database, please refer to steps in previous part "**Connecting to the Oracle Cloud Database using SQL Developer software".**



Click the Test button to make sure the connection is working. Then save the connection and finally click the Connect button to connect to the database using this new username.

Once the connection is established, SQL statements can be entered and executed.



For more details about using the SQL Developer, search using “SQL Developer tutorials”. You can find Web tutorials and video instructions. Oracle provides excellent resources. Holowczak.com also provides an excellent tutorial using an older version of SQL Developer although most details easy transfer to the current version.

https://www.oracle.com/database/sqldeveloper/

http://holowczak.com/getting-started-with-oracle-sql-developer/