

Mastering Oracle Database Cloud

Sudipta Ganguly

Table of Contents

Introduction	3
Getting Started.....	3
Dashboard – Oracle Database Cloud Service	4
Customize Dashboard	5
Creating First Oracle Database Cloud Instance	6
Create Database Service	6
Network Configuration	13
Steps to connect from Windows.....	14
Steps to Connect from Linux	15
Oracle Cloud Service (DBaaS) – Management Tools.....	16
Access Management tool from Desktop – Configure SSH Tunnels.....	16
Oracle Database Cloud Service Consoles	18
Database As A Service Monitor.....	18
Application Express Console	20
Enterprise Manager Express.....	21
Accessing Management and Monitoring tool from Database Cloud Control	22
Enable Network Rule.....	23
SQL Client Configuration to access Cloud Database	25
Create Cloud Database in Silent Mode.....	26
Scale Up/Down.....	28

Introduction

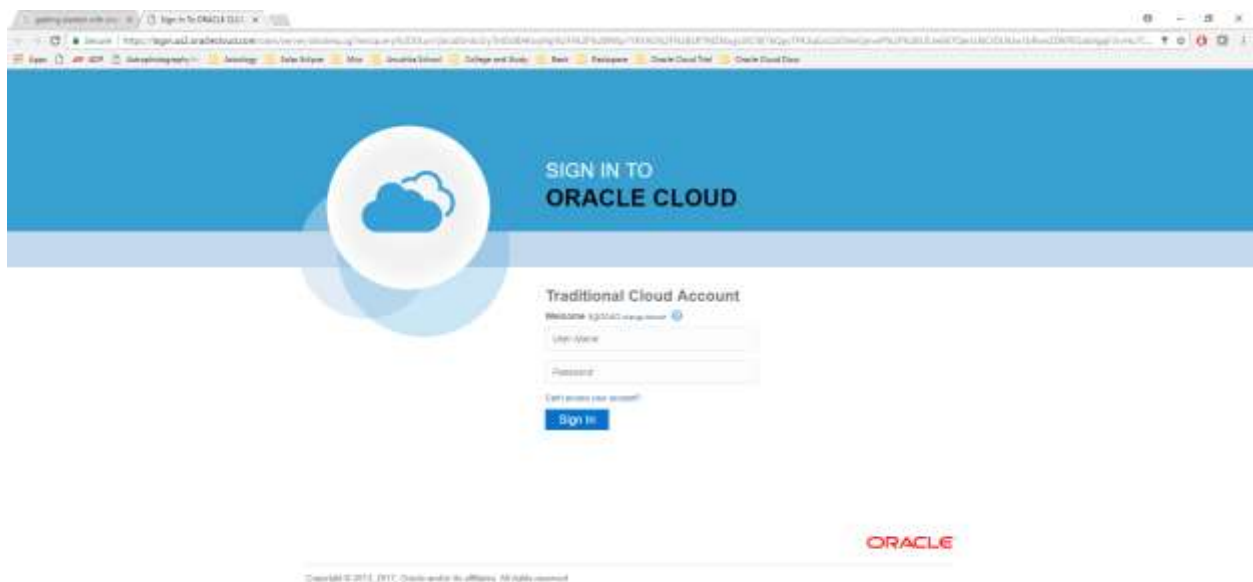
Oracle Cloud is the industry's broadest and most integrated cloud provider, with deployment options ranging from the public cloud to your data center. Oracle Cloud offers best-in-class services across Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS).

In this document we will mostly discuss about various scenarios to deploy Oracle Database on Cloud (DBaaS) which is a part of Platform as a Service (PaaS)

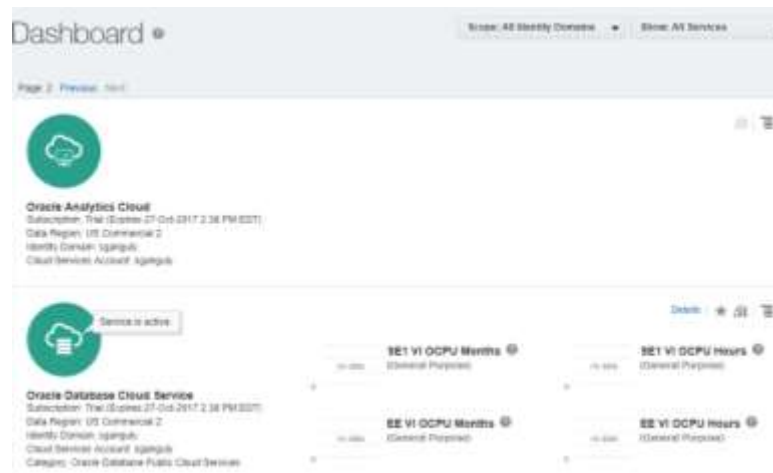
Getting Started

Before using Oracle Cloud, you have to setup your account.

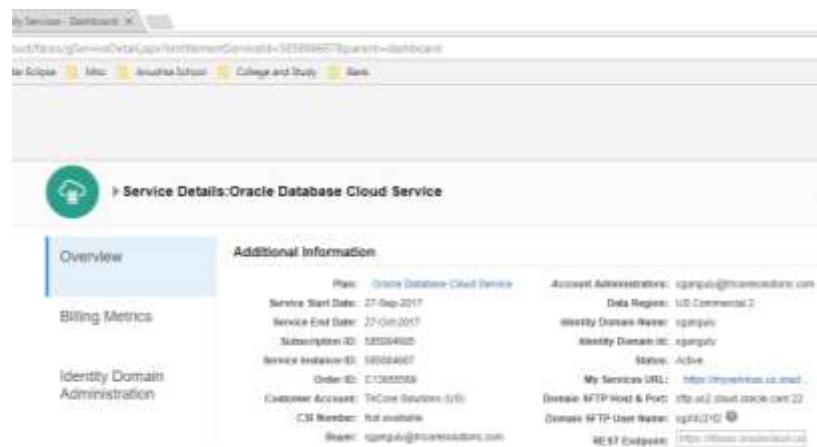
Click on “My Account Services” link that you have received in your Welcome Cloud email from Oracle and enter your Oracle account credentials to log in.



After sign in you will be taken to dashboard as shown below



Click on Oracle Database Cloud Service. This will show all your details



Dashboard – Oracle Database Cloud Service

Dashboard – It is a collection of all the services available to you. Also, it has the option to make selections on what needs to be shown on the dashboard and what not.

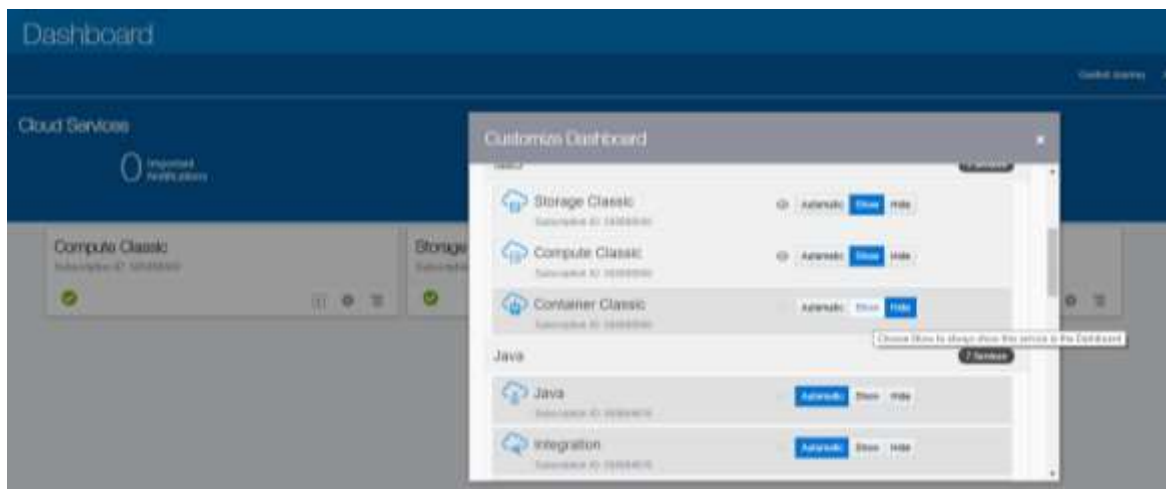
Click on “My Service URL” from the overview page. This will take you to your Oracle Database Cloud Service Dashboard. Enter your credentials here along with Domain. This will launch your Dashboard

Click on My Services Administration and enter the credentials you received in mail to login. This will launch your dashboard



Customize Dashboard

In case you need to customize your dash board, click on Customize dashboard button, which will pop up Customize Dashboard window. Here you can select, what all you want to display on your dashboard



Once the selection is done, close the window

Now your dashboard will have all the services that you have selected




Now let's create a database instance in Oracle cloud.

Creating First Oracle Database Cloud Instance

Here we will list step by step instruction on how to create an Oracle Database on Oracle Cloud, how to setup Network components, SSH, creating tunnels and how to connect to the database from outside Cloud (On-Premise).

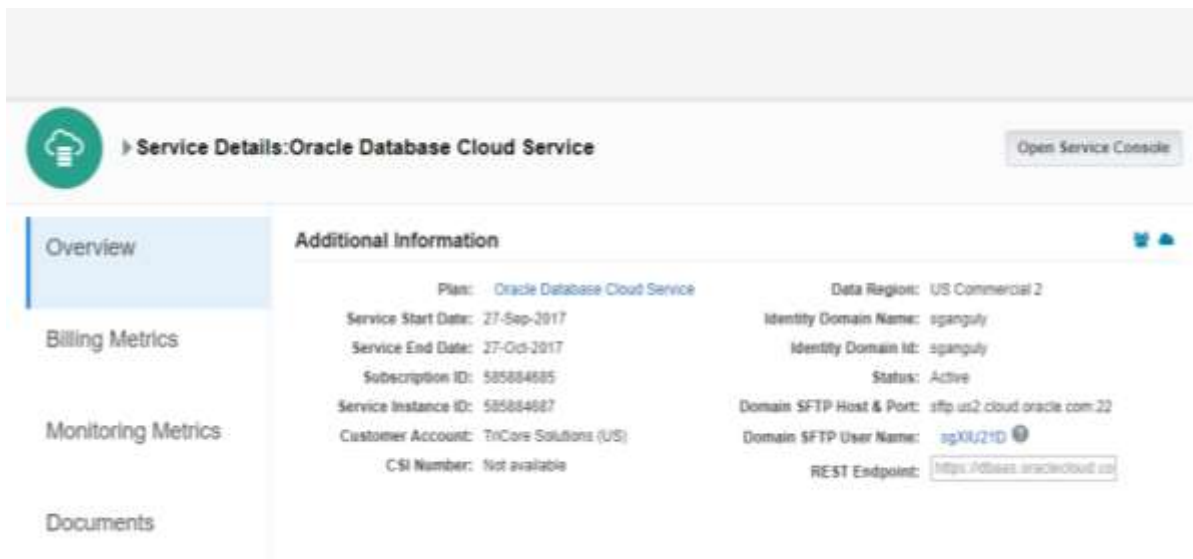
Create Database Service

Click on the Dashed Line  under Database. This will pop-up the list of services under database.

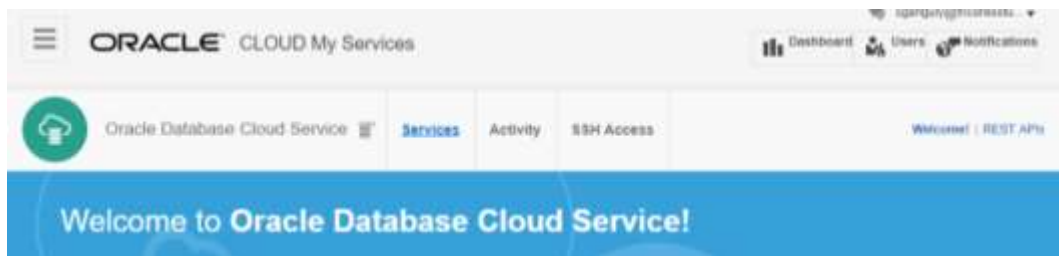


At this moment we do not have any database instances.

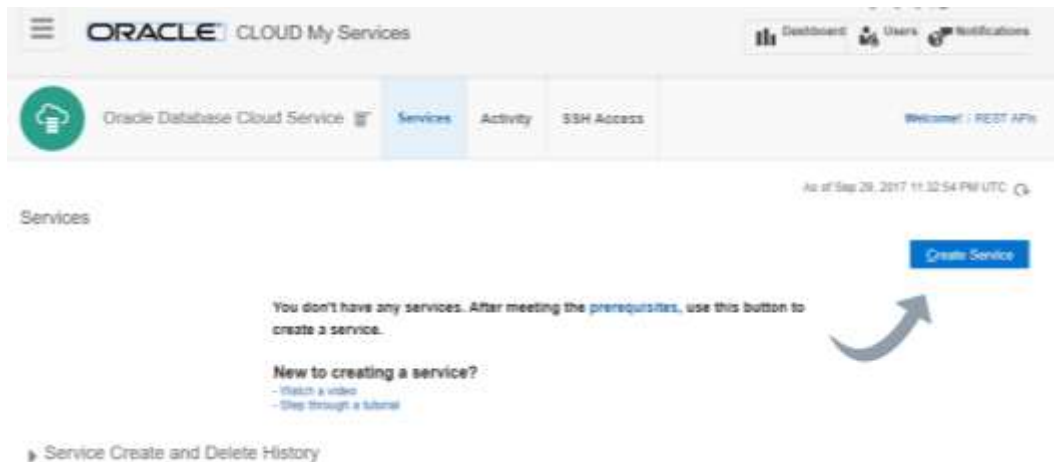
To create a Database either click view details → select Service Console or directly click on Open Service Console as shown in the above image



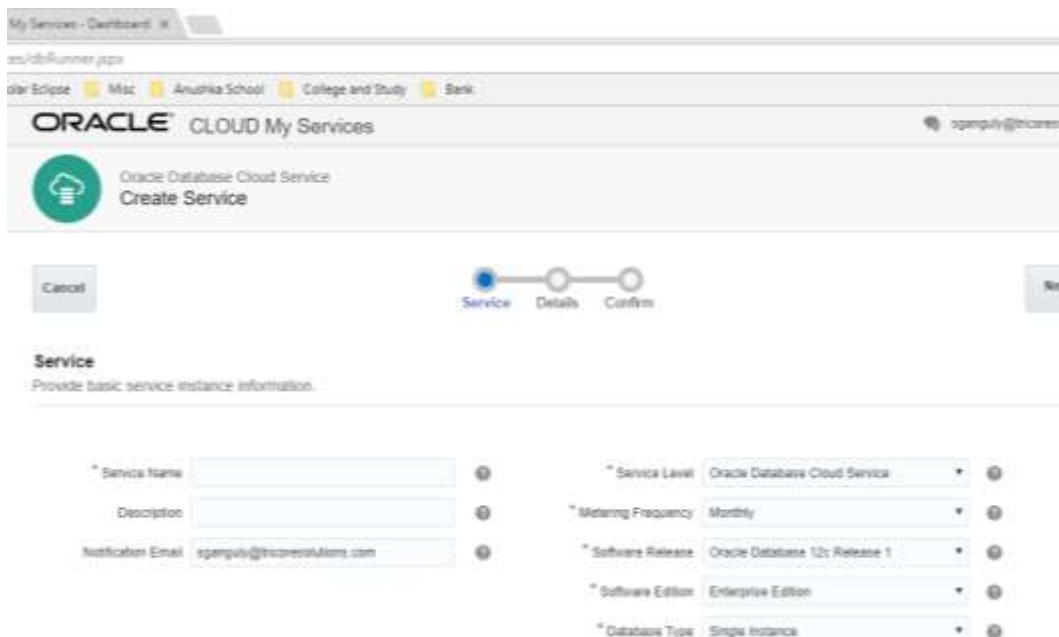
Click on Open Service Console to launch Oracle Database Cloud Services page.



Once on Services Page



Click on Create Service to create a database instance. This will launch Service Detail screen



Enter the following information

Service Instance Information and click next

Service Name	
Description	
Region	
Service Level	
Software Release	
Software Edition	
Database Type	

There are two options for Service Level. Here is the comparison of the Service Levels

	Oracle Database Cloud Service	Oracle Database Cloud Service – Virtual Image
Database	Multitenant	Go as you like
Database Release	11g Rel 2, 12c Rel 1 & 2, 18c Rel. 1	11g Rel 2, 12c Rel 1 & 2
Edition	Standard, Enterprise, Enterprise – High and Extreme	Standard, Enterprise, Enterprise – High and Extreme
Database Type	Single Instance, RAC, RAC with DG	Single Instance, RAC, RAC with DG

Note: At the moment Virtual Image is only providing Single Instance Databases.

This will bring us to Database Details page. Enter Database Information here. This is the starting instance so please select Backup Destination as None. We will see how to use Backups in subsequent sections. For the time being let's start with Backup Destination as None.

Database Details and Click Next

Database Configuration	DB Name (SID)	
	PDB Name	
	Administrator Password	
	Confirm Password	
	Usable Database Storage	
	Compute Shape	
	SSH Public Key	
Backup and Recovery Config	Backup Destination	
Initialize Data from Backup	Create Instance from Backup	

Select Database Storage, Total Datafile Storage and Compute Shape as required. For now, take default value.

SSH Public Key

Click on the Edit button beside SSH Public Key to upload public key.

Following option can be selected

Key File Name: Select this if Public and Private Keys are already generated

SSH Public Key for VM Access

Provide a value for VM Public Key, or the file containing the VM Public Key. Alternatively, select the option to generate private/public key pair - if selecting that option, you must save your private key.

☒ Key File Name: IaaS-WS-8360.pub Update... ?

☐ Key Value: ?

☐ Create a New Key ?

Enter Cancel

Key Value: Alternate option, wherein instead of uploading Public key, value of the Public Key can be pasted directly

SSH Public Key for VM Access

Provide a value for VM Public Key, or the file containing the VM Public Key. Alternatively, select the option to generate private/public key pair - if selecting that option, you must save your private key.

☐ Key File Name: IaaS-WS-8360.pub Update... ?

☒ Key Value: ?

☐ Create a New Key ?

Enter Cancel

The value of an existing SSH

```
ssh-rsa
AAAAB3NzaC1vc2EAAAABJQAAAQEArovi
bdkOB+wWC+FLF3UItHwLP5SBUU+DO8G
4mW3YcGO5nVgSgx7yhyshUfpwn1FH+MFf
PUzdaIA+kCCZ9TdKHS7fBnEmILOM1E44V
dXfqltclpk+cQlnQcPCM+ELI9ljat4aF9wB56U
7tmQinfBb1FOuupzdG981hK20UkpeeX8pcu
Xn/siRGz03bT1dbXd9JNLP5QPxlwbwyEuFz
kXrZIf4e3Xo942itS894/Y184u13w5BV+mHP
nH2ledOwSC5k3PZ9WT4nwmqk2dq0SuCp
8wuf8e3dGUBwUFLvG733f4GPmN3XN1z
```

Create a New Key: Select this option in case we like system to generate Public and Private Key for you.

Once an option is selected click enter.

Click Next to move to the confirmation screen

You can hover around Selection Summary Link to see what all configuration has been selected

The screenshot shows the 'Create Service' wizard for Oracle Database Cloud Service. The 'Service Details' section is active, showing configuration options for the database instance. A 'Selection Summary' link is visible on the right. The configuration includes:

- Service Level:** Oracle Database Cloud Service
- Software Release:** Oracle Database 12c Release 2 (Oracle Database Version 12.2.0.1)
- Software Edition:** Enterprise Edition (Installed on Oracle Linux 6.5)
- Database Configuration:**
 - DB Name: ORCL
 - PDB Name: PDB1
 - Administration Password: [Redacted]
 - Confirm Password: [Redacted]
 - Usable Database Storage (GB): 25
 - Total Data File Storage (GB): 88.5
 - Compute Shape: OC3 - 1.0 OCPU, 7.5 GB RAM
 - SSH Public Key: sas-RS-8360.pub
- Backup and Recovery Configuration:**
 - Backup Destination: None
 - Initialize Data From Backup: No

Buttons for 'Previous', 'Cancel', and 'Next' are present. An 'Advanced Settings' link is at the bottom.

Confirmation

This is the third and final section before Oracle Service Instance gets created. Check all the details and if everything is ok, click Create to create the service

The screenshot shows the 'Confirmation' section of the 'Create Service' wizard. It displays a summary of the selected configuration for the service and database. The 'Create' button is highlighted in blue.

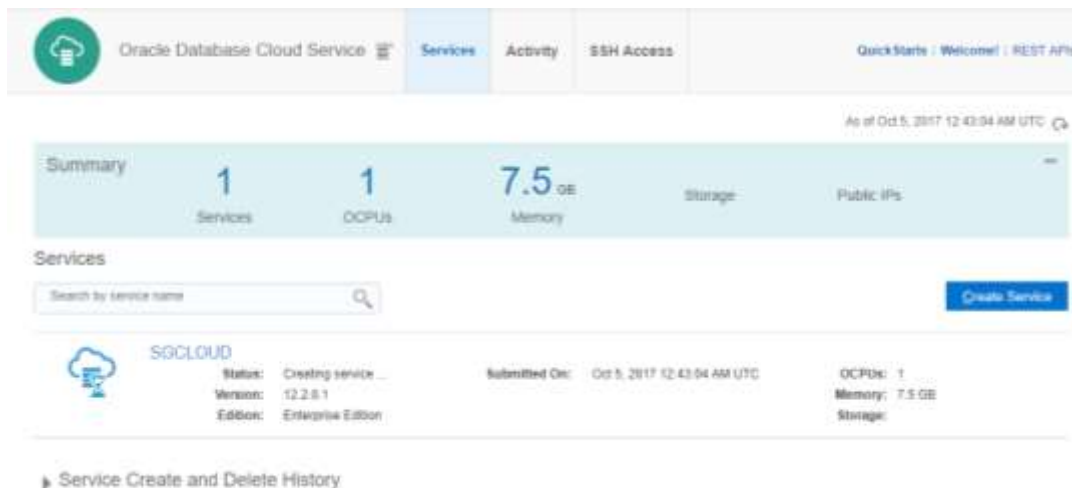
Confirmation
Confirm your responses and create service instance.

Service	
Service Name:	CLOUDB
Description:	12c Cloud Database
Bring Your Own License:	No
Service Level:	Oracle Database Cloud Service
Monitoring Frequency:	Monthly
Software Release:	Oracle Database 12c Release 2
Software Edition:	Enterprise Edition
Compute Shape:	OC3 - 1.0 OCPU, 7.5 GB RAM
SSH Public Key:	pub.pub
Use High Performance Storage:	No

Database Configuration	
DB Name:	CLOUDB
PDB Name:	PDB1
Usable Database Storage (GB):	25
Total Data File Storage (GB):	88.5
License Port:	1521
Timezone:	(UTC) Coordinated Universal Time
Character Set:	AL32UTF8 - Unicode Universal Character Set
National Character Set:	AL16UTF16 - Unicode UTF-16
Include "Demo" PDB:	No
Include GoldenGate:	No

Backup and Recovery Configuration	
Backup Destination:	None

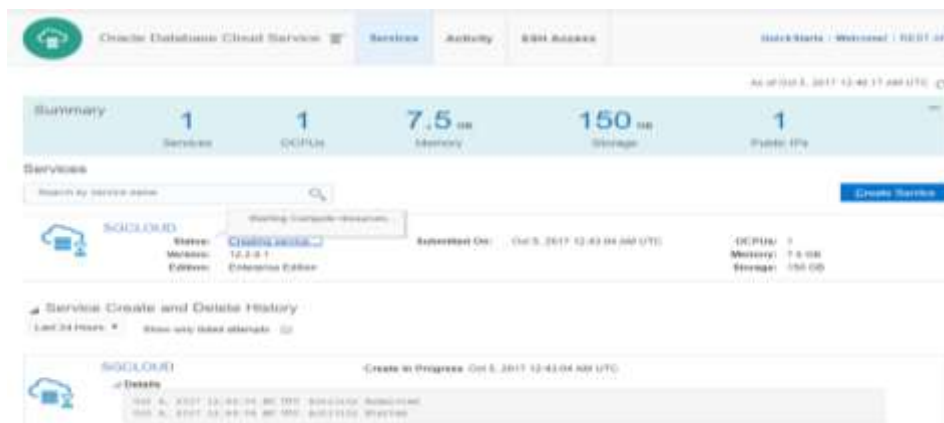
Standby Database Configuration	
Standby Database with Data Guard:	No



Wait for 30-40 minutes for complete database to be up and ready. Instance creation progress can be by clicking “CREATING SERVICE” link.

It will show Status as “CREATING SERVICE” until the instance is created. In background it does the following

1. Compute Resources
2. Database Server configuration and Database Creation
3. Network Allocation



Check the image below to see SSH configuration succeeded and now “Database Server” configuration has started.

Activity link can also be click to see progress on Database creation

Check the screen below, status has changed to “Configured” means Database Services are completely configured and Database is up and running on Oracle Cloud for operations.

Oracle Database Cloud Service | **Services** | Activity | SSH Access | [QuickStarts](#) | [Welcome!](#) | [REST API](#)

As of Oct 5, 2017 1:18:04 AM UTC

Summary

1	1	7.5 GB	150 GB	1
Services	OCPUs	Memory	Storage	Public IPs

Services

Search by service name [Create Service](#)

SGCLOUD

Status:	Configured	Submitted On:	Oct 5, 2017 12:43:04 AM UTC	OCPUs:	1
Version:	12.2.0.1			Memory:	7.5 GB
Edition:	Enterprise Edition			Storage:	150 GB

Service Create and Delete History

Last 24 Hours | Show only failed attempts

SGCLOUD Create Succeeded On: Oct 5, 2017 12:43:04 AM UTC

Details

Oct 5, 2017 12:43:04 AM UTC	Service Submitted
Oct 5, 2017 12:43:04 AM UTC	Service Started
Oct 5, 2017 12:43:04 AM UTC	SSH Access to DB (DB_1/DB-1) succeeded...
Oct 5, 2017 1:18:04 AM UTC	Oracle Database Server Configuration completed...
Oct 5, 2017 1:18:04 AM UTC	Service Readability Check (SRC) of Oracle Database Server (SGCLOUD) completed...
Oct 5, 2017 1:17:02 AM UTC	Successfully provisioned Oracle Database Server...
Oct 5, 2017 1:17:04 AM UTC	Service Ended
Oct 5, 2017 1:17:04 AM UTC	Service Ended

Network Configuration

In this section, we will describe steps on how to configure the network to access Cloud Database Instance from outside Cloud Network (On-Premise).

Once again, click on Database link to open the service

Oracle Database Cloud Service | **SGCLOUD** | [Overview](#) | [Activity](#) | [SSH Access](#)

As of Oct 5, 2017 2:38:17 AM UTC

Service Overview

1	1	7.5 GB	139 GB
Nodes	OCPUs	Memory	Storage

Status: Ready **Version:** 12.2.0.1 **Edition:** Enterprise Edition

Connect String: SGCLOUD:1521/PDB1:1582254... **Backup Destination:** None

PDB Name: PDB1 **Container Name:** CLOUDDB

Resources

Host Name:	SGCLOUD	OCPUs:	1
Public IP:	172.16.0.10	Memory:	7.5 GB
SID:	CLOUDDB	Storage:	139 GB

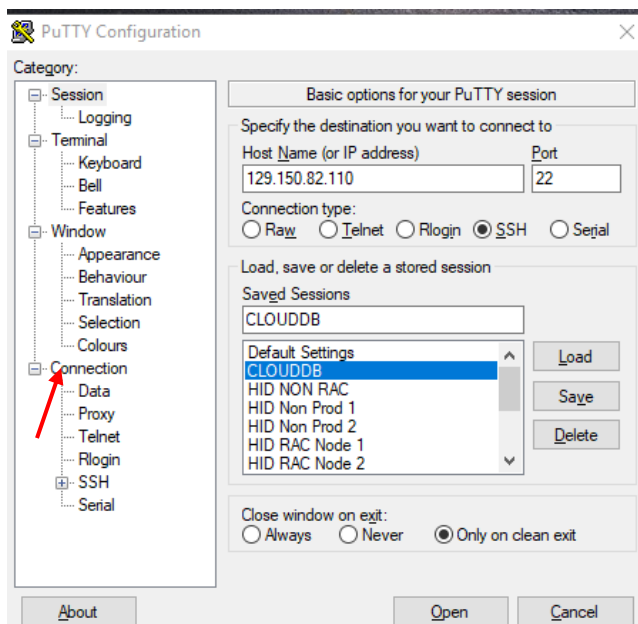
Make a note of the following details which are required to configure the network

- Host Name
- Public IP
- SID

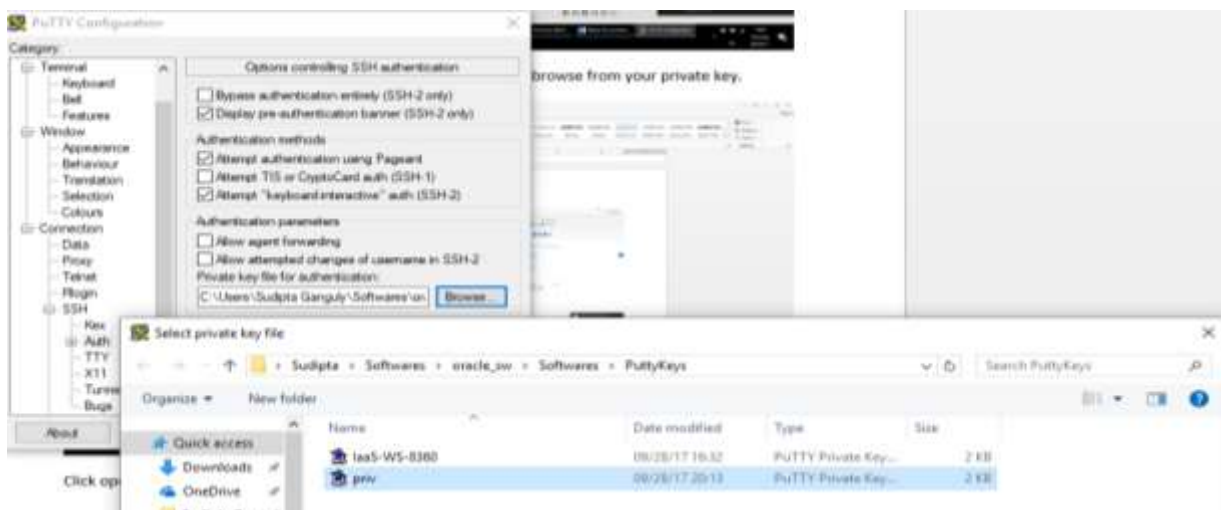
To connect to the Cloud Instance from Outside, only SSH port 22 is open, rest are disabled.

Steps to connect from Windows

Invoke Putty and enter IP address noted above and set Port to 22



Go to Connection → select SSH → select Auth → browse – Select Private key.



Click on Open, type username as “oracle” and click enter. That’s it, you are accessing Cloud Database from Outside. See screenshot below.

```
oracle@SGCLOUD:~  
login as: oracle  
Authenticating with public key "rsa-key-20171004"  
[oracle@SGCLOUD ~]$ df -h  
Filesystem      Size  Used Avail Use% Mounted on  
/dev/mapper/vg_main-lv_root  
19G  12G  6.0G  66% /  
tmpfs           3.7G   0  3.7G   0% /dev/shm  
/dev/xvdb1      477M  69M  379M  16% /boot  
/dev/xvdel      59G  18G   39G  31% /u01  
/dev/mapper/dataVolGroup-lvol0  
15G  3.7G  11G  27% /u02  
/dev/mapper/fraVolGroup-lvol0  
6.8G  2.1G  4.4G  33% /u03  
/dev/mapper/redoVolGroup-lvol0  
25G  3.3G  21G  14% /u04  
[oracle@SGCLOUD ~]$ hostname  
SGCLOUD  
[oracle@SGCLOUD ~]$ uname -a  
Linux SGCLOUD 4.1.12-61.1.14.el6uek.x86_64 #2 SMP Wed Oct 12 17:21:51 PDT 2016 x  
86_64 x86_64 x86_64 GNU/Linux  
[oracle@SGCLOUD ~]$ . oraenv  
ORACLE_SID = [CLOUDDB] ? CLOUDDB  
The Oracle base remains unchanged with value /u01/app/oracle  
[oracle@SGCLOUD ~]$ sqlplus / as sysdba  
  
SQL*Plus: Release 12.2.0.1.0 Production on Thu Oct 5 03:22:31 2017  
  
Copyright (c) 1982, 2016, Oracle. All rights reserved.  
  
Connected to:  
Oracle Database 12c Enterprise Edition Release 12.2.0.1.0 - 64bit Production  
  
SQL> select name from v$databases;  
  
NAME  
-----  
CLOUDDB  
  
SQL> █
```

Steps to Connect from Linux

Open Linux Terminal Window → Enter `ssh -o ServerAliveInterval=60 -i <private key> oracle@<IP Address>` to connect to DBCS cloud instance

```
ssh -o ServerAliveInterval=60 -i cloud-private-lin.ppk oracle@129.150.82.110
```

* In case Private Key is created in Windows, convert it to OpenSSH format before using it in Linux else Private Keys created in windows will not work on Linux Terminal. Also, you can create Private Keys directly on Linux machines

```

[oracle@lab PuttyKeys]$ ssh -o ServerAliveInterval=60 -i cloud-private-lin.ppk oracle@129.150.82.110
[oracle@SGCLOUD ~]$ . oraenv
ORACLE_SID = [CLOUDDB] ? CLOUDDB
The Oracle base remains unchanged with value /u01/app/oracle
[oracle@SGCLOUD ~]$ sqlplus / as sysdba

SQL*Plus: Release 12.2.0.1.0 Production on Thu Oct 5 04:01:54 2017

Copyright (c) 1982, 2016, Oracle. All rights reserved.

Connected to:
Oracle Database 12c Enterprise Edition Release 12.2.0.1.0 - 64bit Production

SQL> select name from v$datafile;

NAME
-----
/u02/app/oracle/oradata/CLOUDDB/system01.dbf
/u02/app/oracle/oradata/CLOUDDB/sysaux01.dbf
/u02/app/oracle/oradata/CLOUDDB/undotbs01.dbf
/u02/app/oracle/oradata/CLOUDDB/pdbseed/system01.dbf
/u02/app/oracle/oradata/CLOUDDB/pdbseed/sysaux01.dbf
/u02/app/oracle/oradata/CLOUDDB/users01.dbf
/u02/app/oracle/oradata/CLOUDDB/pdbseed/undotbs01.dbf
/u02/app/oracle/oradata/CLOUDDB/PDB1/system01.dbf
/u02/app/oracle/oradata/CLOUDDB/PDB1/sysaux01.dbf
/u02/app/oracle/oradata/CLOUDDB/PDB1/undotbs01.dbf
/u02/app/oracle/oradata/CLOUDDB/PDB1/PDB1_users01.dbf

11 rows selected.

SQL> select name from v$controlfile;

NAME
-----
/u02/app/oracle/oradata/CLOUDDB/control01.ctl
/u03/app/oracle/fast_recovery_area/CLOUDDB/control02.ctl

SQL> █

```

At this moment database is accessible outside cloud

Exit to close the connection

Oracle Cloud Service (DBaaS) – Management Tools

There are two ways to access Cloud Service Management and Monitoring tools.

- Access from local Desktop – We have to enable SSH tunnel
- Access from Oracle Database Cloud Service – Enable Network Security Rules from Oracle Compute Service Console

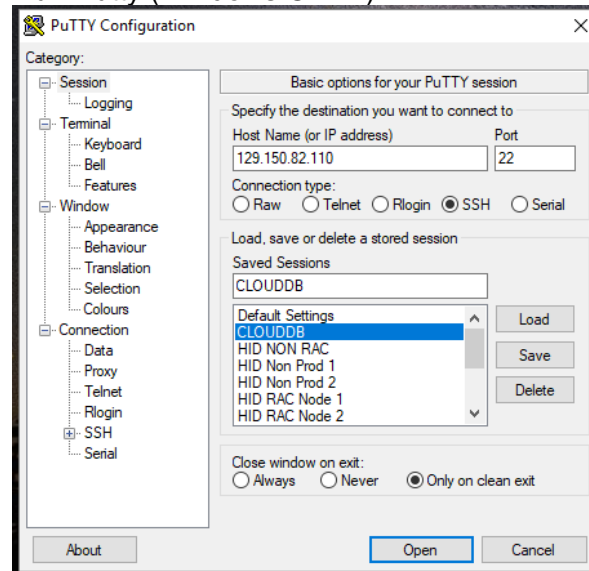
Access Management tool from Desktop – Configure SSH Tunnels

To access Cloud Service Management and Monitoring tools from On-Premise, it needs SSH tunnel configuration. This section lists steps involved in configuring SSH tunnel

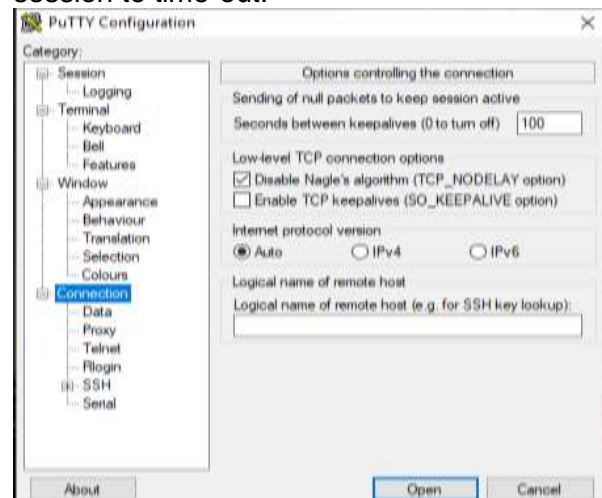
Step 1: Record IP address of CLOUDDB



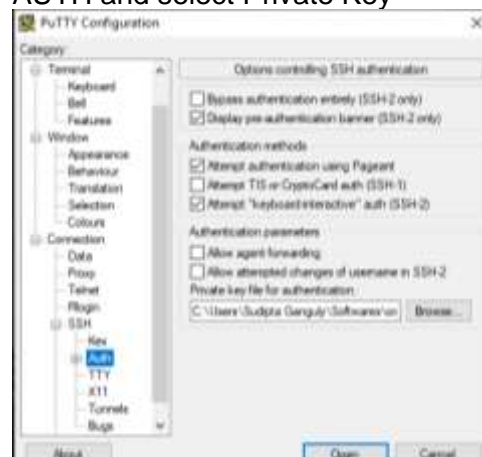
Run Putty (Windows ONLY)



Click on Connection, on Seconds between keep alives, type 100, this will prevent session to time-out.



From Connection, expand SSH and select AUTH and select Private Key



Next Select Tunnel and add the following forwarded ports

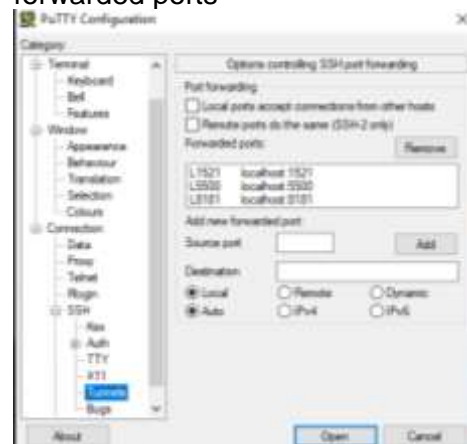


Table showing SSH Tunnel Port forwarding for various tools

Port	Tool	URL	User
L8181	DBaaS Monitor	https://localhost:8181/dbaas_monitor	dbaas_monitor
	Application Express Console	https://localhost:8181/apex/pdb1/	ADMIN
L5500	Enterprise Manager Express	https://localhost:5500/em	SYS
L1521	SQL PLUS	NA	ALL

SSH Tunnel with Local Port Forwarding is now created to access the Oracle Database Cloud (DBaaS) Management and Monitoring tools

Now click open to open the connection to CLOUDDB. When prompted, login as oracle.

Keep your session open to keep the Tunnel session alive

Oracle Database Cloud Service Consoles

There are three Cloud Service Management and Monitoring tools available.

- Database As a Service Monitor
- Application Express Console
- Enterprise Manager Express

This section will show how to access each of the Management and Monitoring tools.

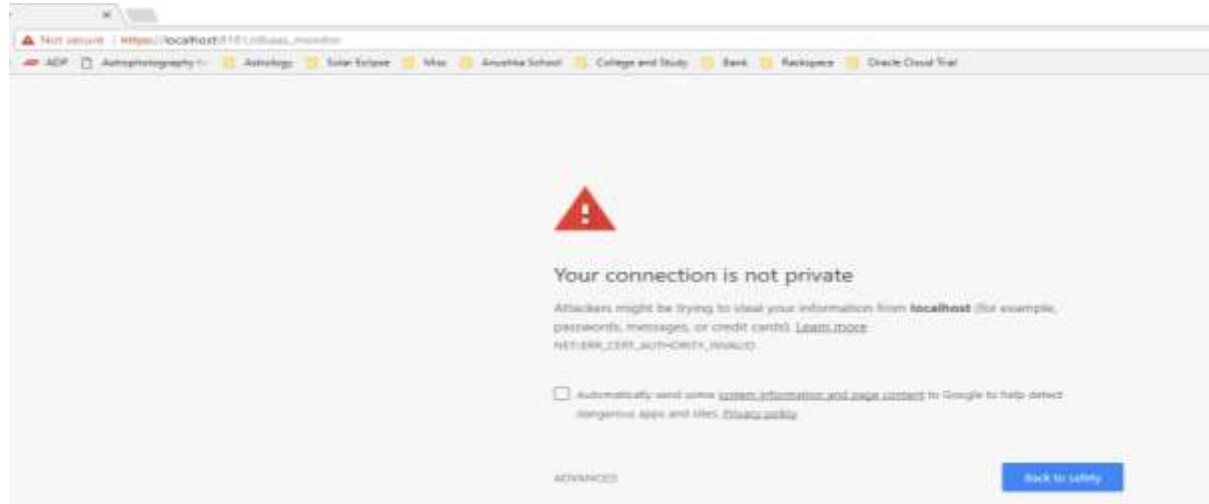
Database As A Service Monitor

This section will show how to access DBaaS Monitor Page

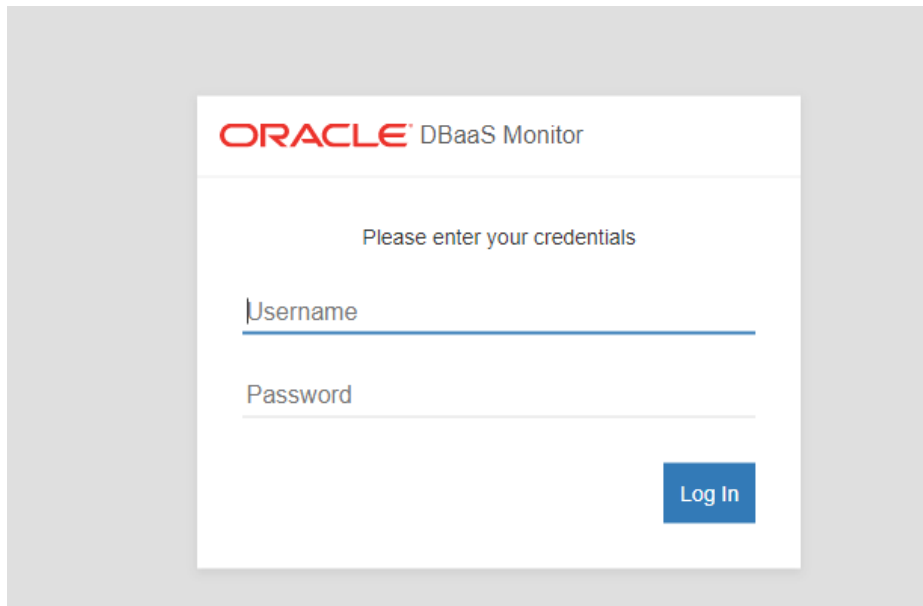
URL - https://localhost:8181/dbaas_monitor

Username – dbaas_monitor

Password – XXXXXX



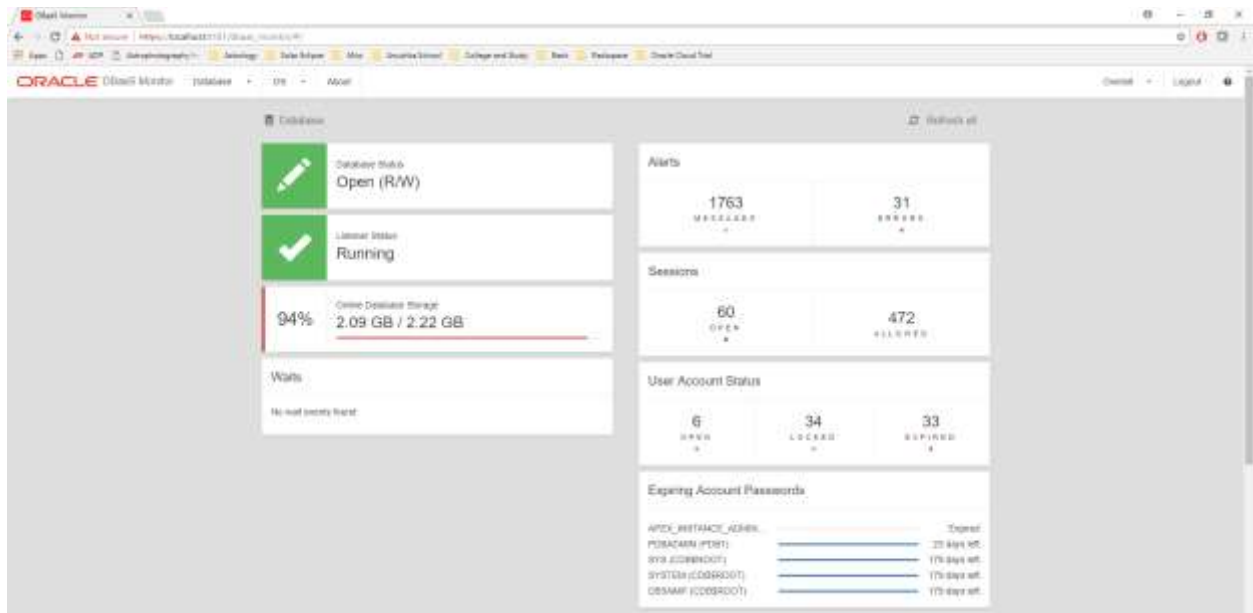
Warning can be received that connection is untrusted. Click on Advanced and click Proceed to localhost (unsafe)



The image shows the Oracle DBaaS Monitor login interface. It features the Oracle logo and the text "DBaaS Monitor" at the top. Below this, a message says "Please enter your credentials". There are two input fields: "Username" and "Password". A blue "Log In" button is located at the bottom right of the form.

Enter dbaas_monitor username and password and click login

Once connected to DbaaS Monitor console, feel free to explore



Application Express Console

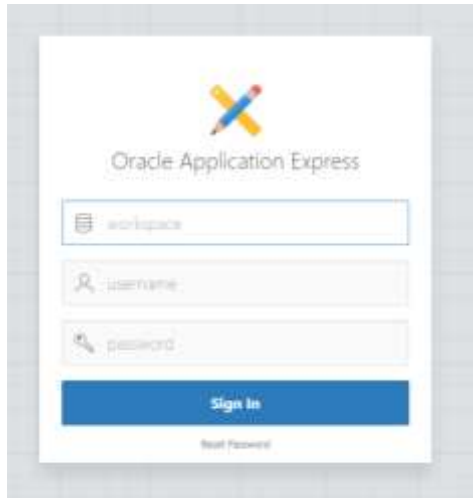
This section will show how to access Application Express Console

URL - <https://localhost:8181/apex/pdb1/>

Workspace - internal

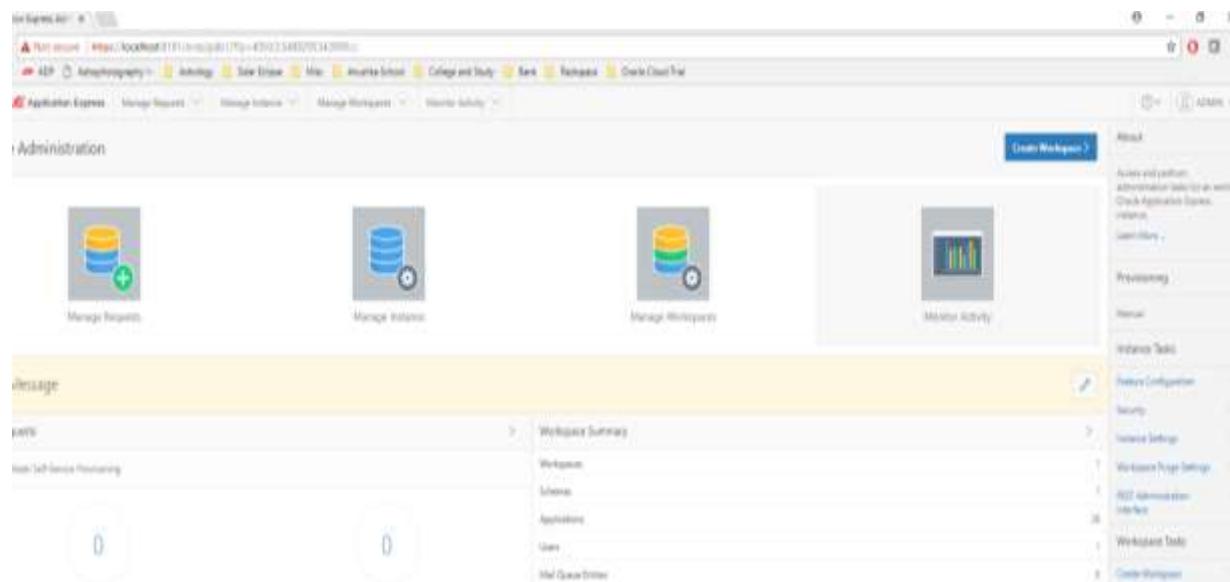
Username – ADMIN

Password – XXXXX



Enter the credentials mentioned above and click sign in

Once connected to Application Express console, feel free to explore



Enterprise Manager Express

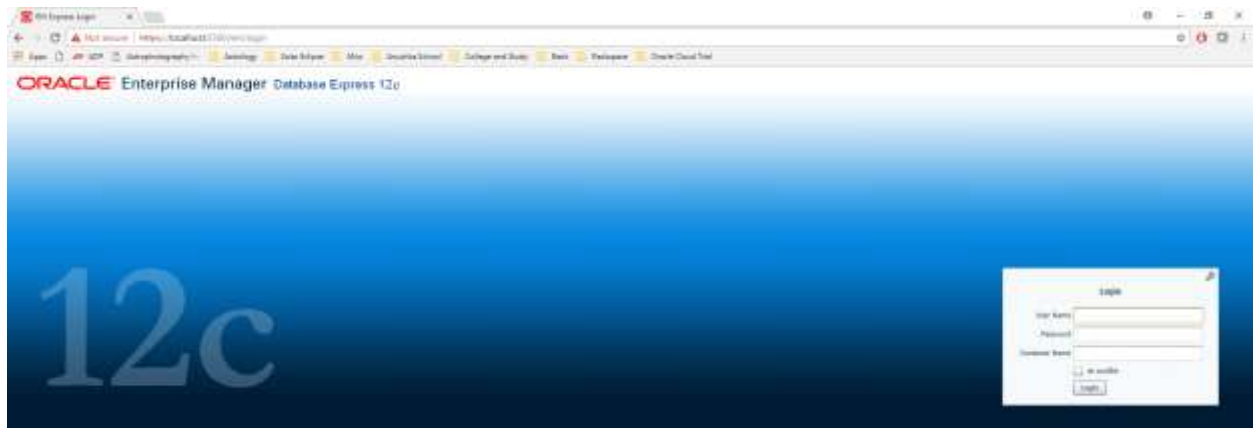
This section will show how to access Enterprise Manager Express

URL - <https://localhost:5500/em>

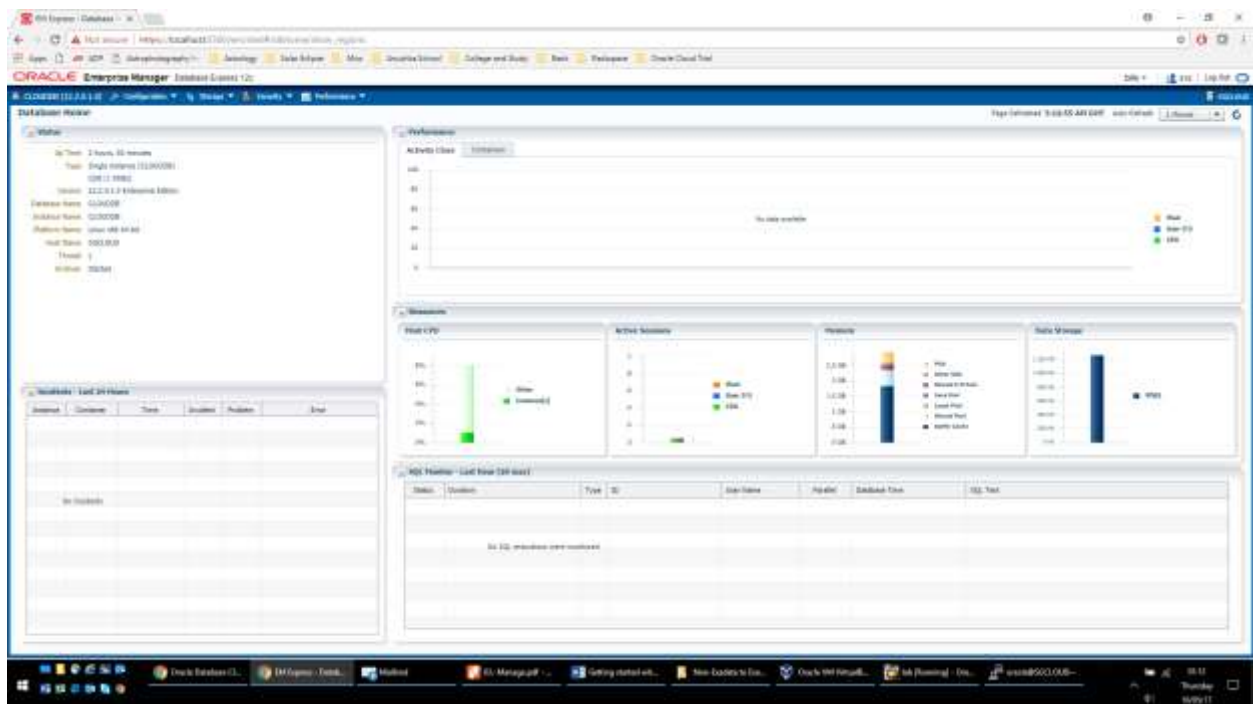
Username – SYS

Password – XXXXX

Select “as dba” checkbox



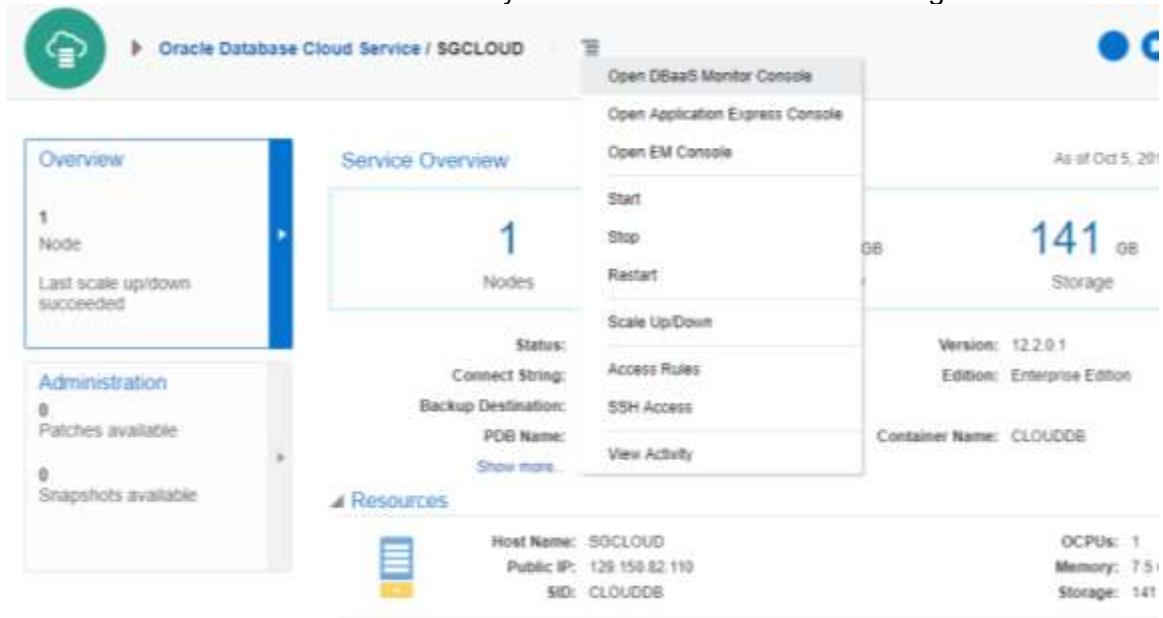
Feel free to explore



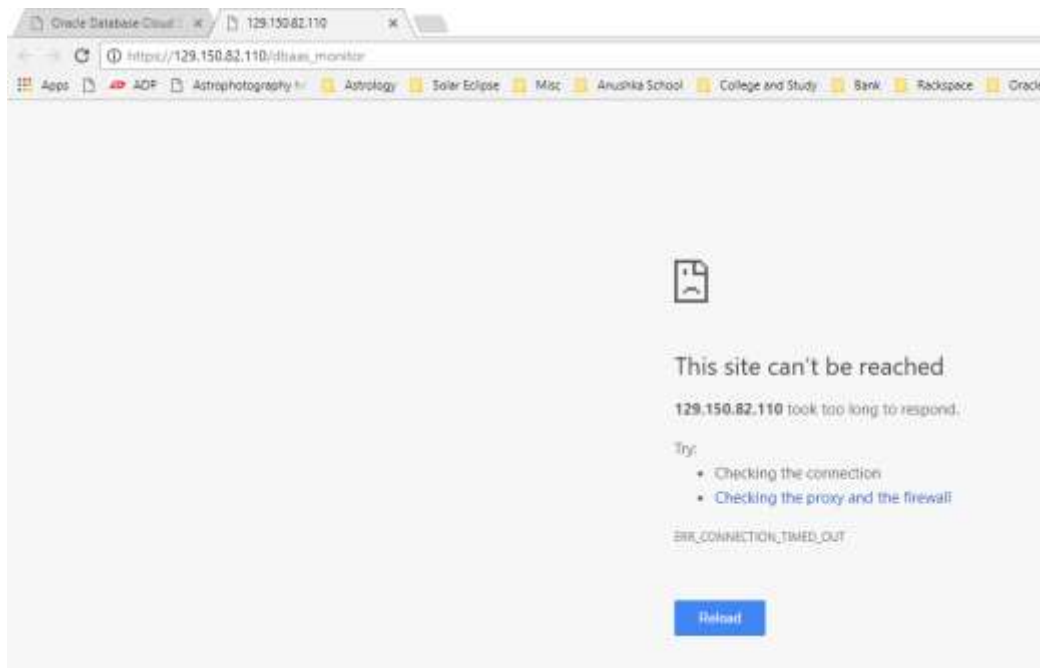
Accessing Management and Monitoring tool from Database Cloud Control

To access Management and monitoring tools from within database cloud control we need to enable Network Security rules else we cannot access.


Click on DBaaS Monitor console from your Database Cloud Service Page

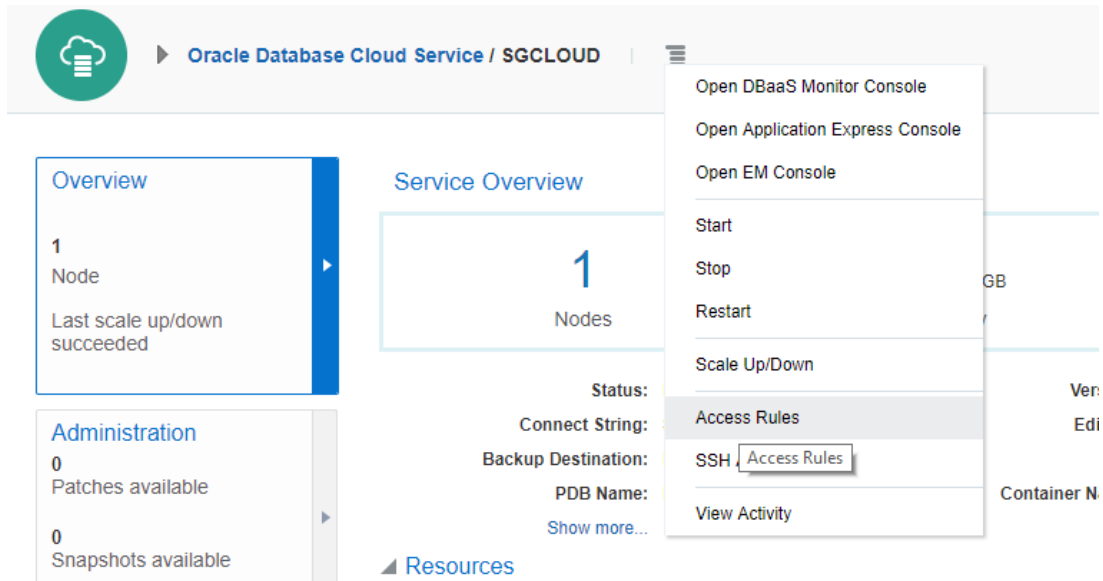


It does not open the page and display connection time out because the port is not open.

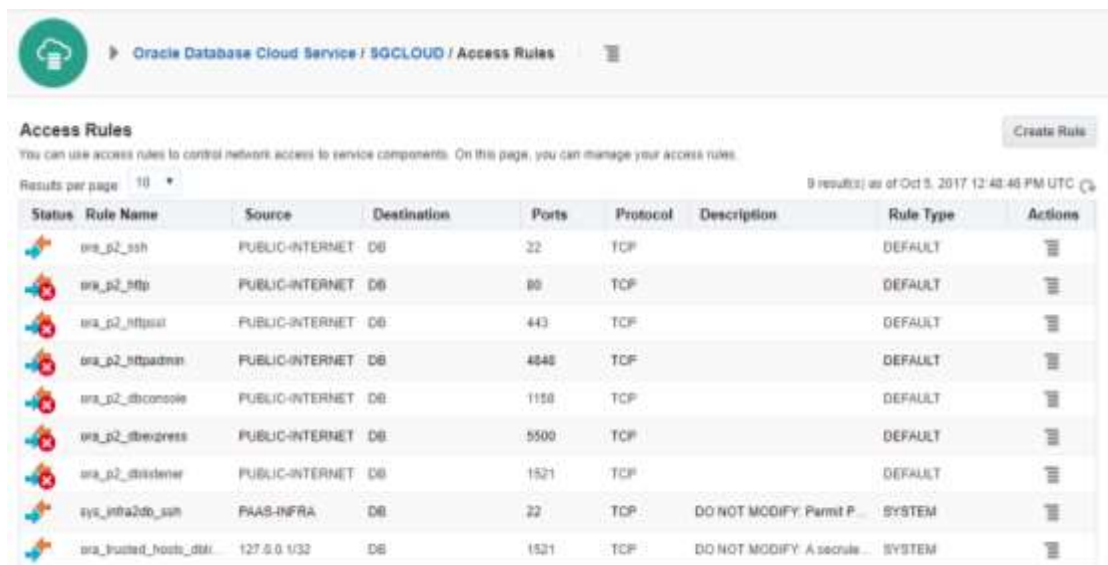


Enable Network Rule

To Enable Network Rule, click on , then select Access rules from the menu. It displays all the access rules currently available for this service




The screenshot shows the Oracle Database Cloud Service / SG-CLOUD interface. The left sidebar contains 'Overview' (1 Node, Last scale up/down succeeded) and 'Administration' (0 Patches available, 0 Snapshots available). The main area shows 'Service Overview' (1 Nodes) and 'Status: Connect String: Backup Destination: PDB Name: Show more...'. A dropdown menu is open, showing options like 'Open DBaaS Monitor Console', 'Open Application Express Console', 'Open EM Console', 'Start', 'Stop', 'Restart', 'Scale Up/Down', 'Access Rules' (highlighted), and 'View Activity'.

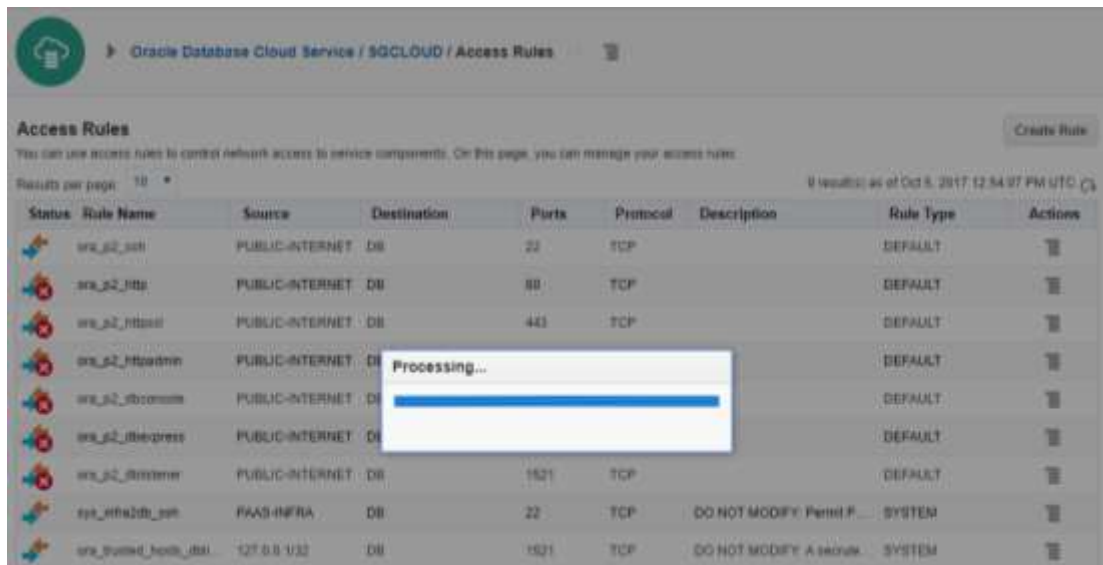


The screenshot shows the 'Access Rules' page. It includes a 'Create Rule' button and a table of access rules. The table has columns: Status, Rule Name, Source, Destination, Ports, Protocol, Description, Rule Type, and Actions. The first rule, 'ora_p2_ssh', is enabled (green star icon) and allows access from 'PUBLIC-INTERNET' to 'DB' on port 22 via TCP. Other rules are disabled (red star icon).

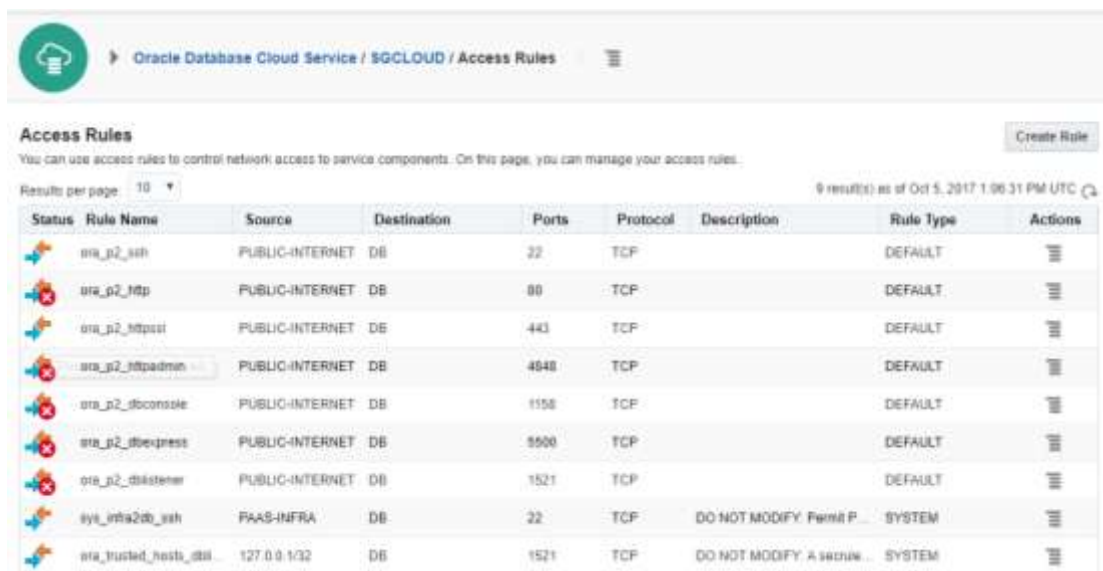
Status	Rule Name	Source	Destination	Ports	Protocol	Description	Rule Type	Actions
Enabled	ora_p2_ssh	PUBLIC-INTERNET	DB	22	TCP		DEFAULT	
Disabled	ora_p2_http	PUBLIC-INTERNET	DB	80	TCP		DEFAULT	
Disabled	ora_p2_https	PUBLIC-INTERNET	DB	443	TCP		DEFAULT	
Disabled	ora_p2_httpadmin	PUBLIC-INTERNET	DB	4040	TCP		DEFAULT	
Disabled	ora_p2_dbconsole	PUBLIC-INTERNET	DB	1156	TCP		DEFAULT	
Disabled	ora_p2_dbexpress	PUBLIC-INTERNET	DB	5500	TCP		DEFAULT	
Disabled	ora_p2_listener	PUBLIC-INTERNET	DB	1521	TCP		DEFAULT	
Disabled	sys_infra2db_ssh	FAAS-INFRA	DB	22	TCP	DO NOT MODIFY: Permit P...	SYSTEM	
Disabled	ora_trusted_hosts_dbcon	127.0.0.1/32	DB	1521	TCP	DO NOT MODIFY: A secure...	SYSTEM	


From the above image it can be seen that ora_p2_ssh rule is enabled because this is required port that is needed to connect Cloud Service from Outside Cloud Network. However, rest of the ports are disabled.

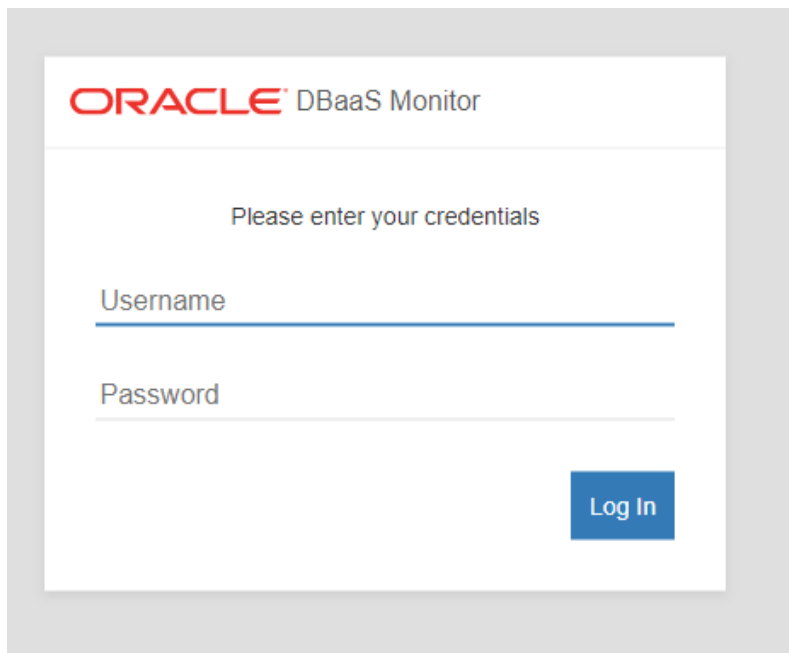
Now let's enable ora_p2_https rule. Select  next to the rule and click enable and press "Enable/Disable" button again to finally enable or disable the rule.




Notice that the status has been changed to enable for ora_P2_https rule to enable



Navigate back to dashboard and select Oracle Database Cloud Service. Click on the  button next to cloud service and select Open DBaaS Monitor Console



Yes now, DBaaS monitor console is accessible from Database Cloud Service itself. This way we can access these tools without opening SSH tunnel. Similarly try to access Application Express Console and Enterprise Manager console by clicking  next to Oracle Cloud Database Service Name

SQL Client Configuration to access Cloud Database

This section will list out steps that can be configured to access Oracle Cloud Database (DBaaS) instance from On-Premise SQL PLUS clients.

To access Cloud databases from SQL*PLUS we need to add TNS entry on the client machine. Open tnsnames.ora on oracle client and the following entry

```
CLOUDDB =  
(DESCRIPTION =  
(ADDRESS = (PROTOCOL = TCP) (HOST = 129.150.82.110) (PORT = 1521))  
(CONNECT_DATA =  
(SID = CLOUDDB)  
)
```

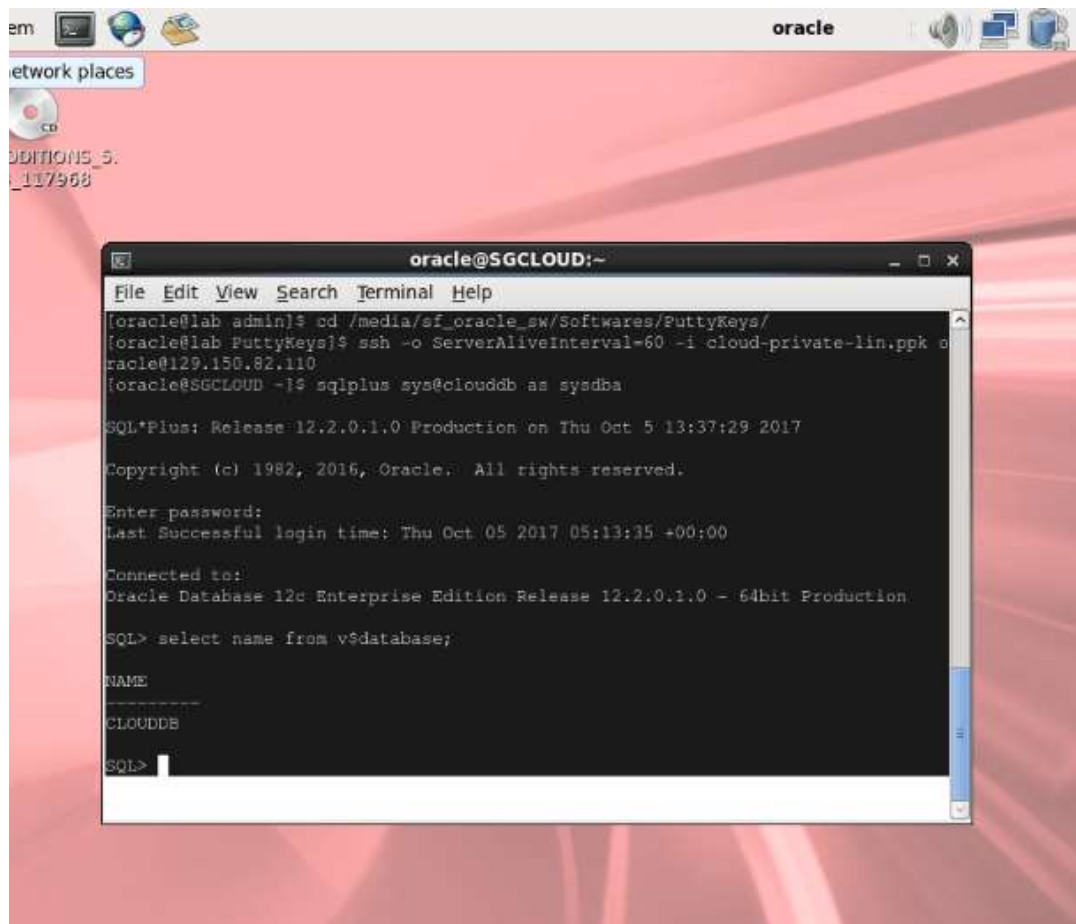
After making TNS Entry try to connect to Cloud Database Instance. Session will hang or timed out because to receive outside connection port 1521 needs to be enable on Oracle Database Cloud Service Access rules.

```
[oracle@lab admin]$ sqlplus sys@clouddb as sysdba  
  
SQL*Plus: Release 12.1.0.2.0 Production on Thu Oct 5 09:24:24 2017  
  
Copyright (c) 1982, 2014, Oracle. All rights reserved.
```

```
Enter password:
ERROR:
ORA-12154: TNS:could not resolve the connect identifier specified
```

```
Enter user-name:
```

In order for SQL PLUS clients from On-Premise to connect to Cloud Database we need to enable **ora_p2_dblistener** over port 1521. Enable **ora_p2_dblistener** access rule the same way **ora_p2_https** access rule is enabled (Refer Section Enable Network Rule). Once **ora_p2_dblistener** is enabled try to connect again from SQL PLUS



Create Cloud Database in Silent Mode

Step 1: Initiate a connection to Cloud Database Service using SSH

```
[oracle@lab PuttyKeys]$ ssh -o ServerAliveInterval=60 -i cloud-private-lin.ppk oracle@129.150.82.110
```

```
[oracle@SGCLOUD ~]$ cd /u01/app/oracle/product/12.2.0/dbhome_1/
```

Step 2: DBCA command to create Database in Silent Mode

```
[oracle@SGCLOUD dbhome_1]$ dbca -silent -createDatabase -templateName
/u01/app/oracle/product/12.2.0/dbhome_1/assistants/dbca/templates/General_Purpose.dbc
-gdbname cldb -sid cldb -responseFile NO_VALUE -syspassword oracle -systempassword
oracle -emConfiguration none -datafileDestination /u02/app/oracle/oradata/cldb -
memoryPercentage 40
```

```
[WARNING] [DBT-11209] Current available physical memory is less than the required
physical memory (2,990MB) for creating the database.
```

```
Copying database files
1% complete
33% complete
Creating and starting Oracle instance
35% complete
55% complete
Completing Database Creation
56% complete
66% complete
Executing Post Configuration Actions
100% complete
Look at the log file "/u01/app/oracle/cfgtoollogs/dbca/cldb/cldb.log" for further
details.
[oracle@SGCLOUD dbhome_1]$
```

Step 3: Check if Database is up and running

```
[oracle@SGCLOUD dbhome_1]$ ps -ef|grep pmon
oracle      2632      1  0 06:10 ?          00:00:00 ora_pmon_cldb
oracle      3351  30763  0 06:13 pts/1    00:00:00 grep pmon
oracle      8777      1  0 02:22 ?          00:00:00 ora_pmon_CLOUDDB
```

```
oracle@SGCLOUD templates]$ . oraenv
ORACLE_SID = [CLOUDDB] ? cldb
```

```
The Oracle base remains unchanged with value /u01/app/oracle
[oracle@SGCLOUD templates]$ sqlplus / as sysdba
```

```
SQL*Plus: Release 12.2.0.1.0 Production on Thu Oct 5 06:16:49 2017
```

```
Copyright (c) 1982, 2016, Oracle. All rights reserved.
```

```
Connected to:
Oracle Database 12c Enterprise Edition Release 12.2.0.1.0 - 64bit Production
```

```
SQL> select name from v$database;
```

```
NAME
-----
CLDB
```

Scale Up/Down

Run free command to check amount of free space available on the machine

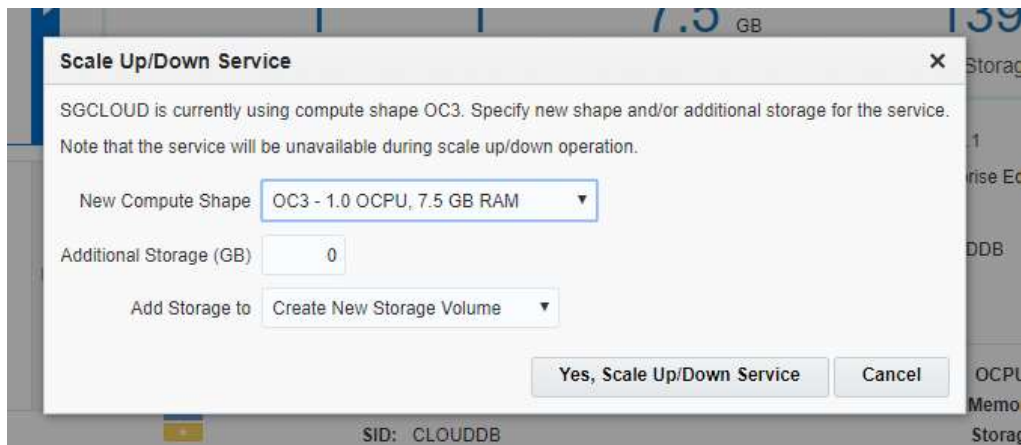
```
[oracle@SGCLOUD dbhome_1]$ free
              total        used        free      shared    buffers     cached
Mem:          7657264      7422212      235052      2039796      17724      2656596
-/+ buffers/cache:    4747892      2909372
Swap:         4194300       251336      3942964
```

As 2 databases are running with limited resources, let us add some space to the machine.

Step 1: Click on the dashed line  and select Scale up/down from the menu



Scale up/down service window will pop up



Increase Memory or Storage as per the requirement. Let us add 2 GB of Storage to expand Existing Storage. If Storage needs to added to a new volume, select "Create New Volume"

Scale Up/Down Service

SGCLOUD is currently using compute shape OC3. Specify new shape and/or additional storage for the service.
Note that the service will be unavailable during scale up/down operation.

New Compute Shape:

Additional Storage (GB):

Add Storage to:

Once done, click on “Yes Scale up/down services” to increase the storage. Just keep in mind Cloud Service will not be available during Scale up/down. The moment Scale up/down starts Service status changes to Service Maintenance. and 2 GB is being added to existing storage volume

Oracle Database Cloud Service / SGCLOUD

Overview

1 Node: Scaling up/down...

Administration

0 Patches available

0 Snapshots available

Service Overview

As of Oct 5, 2017 12:10:53 PM UTC

1	1	7.5 GB	141 GB
Nodes	OCPU's	Memory	Storage

Status: Service Maintenance

Version: 12.2.0.1

Connect String: SGCLOUD_1521/PDB1.5852254

Edition: Enterprise Edition

Backup Destination: None

PDB Name: PDB1

Container Name: CLOUDDB

Character Set: AL32UTF8 - Unicode Univer...

National Character Set: AL16UTF16 - Unicode UTF-1...

SQL *Net Port: 1521

Timezone: Coordinated Universal Time

Show less...

Resources

Host Name: SGCLOUD	OCPU's: 1
Public IP: 129.150.02.110	Memory: 7.5 GB
SID: CLOUDDB	Storage: 141 GB