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Database Cloud Service Lifecycle Management from the Command Line

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Program Agenda with Highlight

- 1 What is PSM (Oracle PAAS Service Manager)
- 2 How to Download and Configure PSM
- 3 Managing life-cycle of Oracle Database Cloud Service
- 4 Demo
- 5 Benefits

What is PSM – Oracle PAAS Service Manager

- Oracle PaaS Service Manager provides a command line interface (CLI) with which you can manage the lifecycle of various platform services in Oracle Cloud.
- The CLI is a thin wrapper over PaaS REST APIs that invokes these APIs to support common PaaS features.
- PSM CLI provides large suite of commands to automate the tasks of creating and managing cloud service instances.

PSM – Oracle PAAS Service Manager

PSM CLI can be used for create, monitor and manage services for various Cloud Services like:

- Oracle Database Cloud Service
- Oracle Analytics Cloud Service
- Oracle Java Cloud Service
- Oracle MySQL Cloud Service
- Oracle SOA Cloud Service
- Oracle Big Data Cloud Service

.....

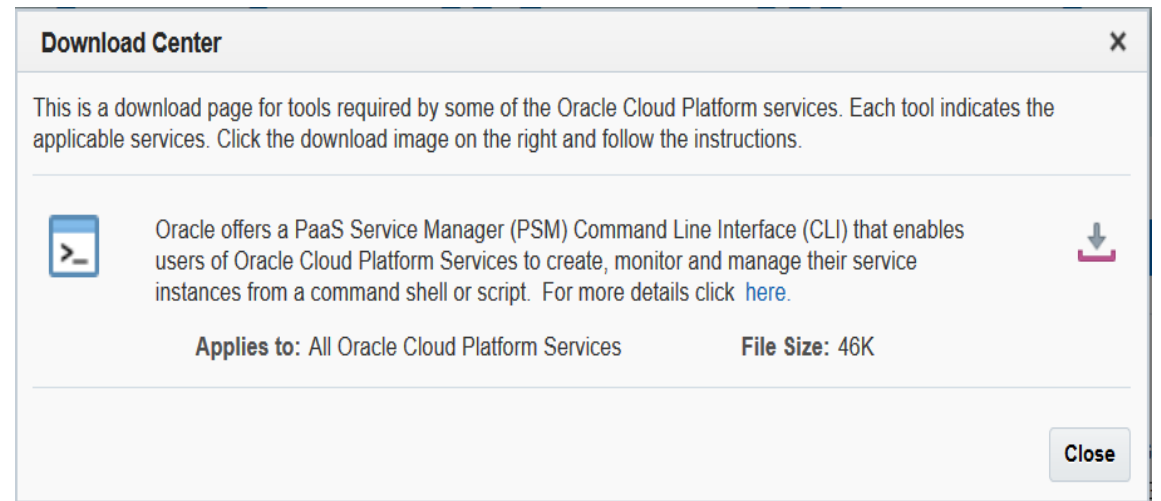
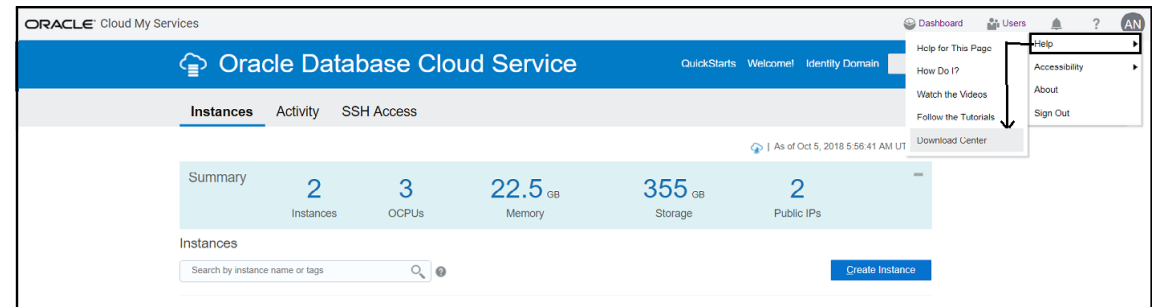
PSM CLI – Download and Configure

- The PSM CLI software needs to be downloaded and installed either on a client machine or a server.
- Before performing the installation, following prerequisites has to be met on the machine where PSM CLI will be installed:
 - CURL command-line tool
 - Python 3.3 or later
- PSM CLI can be downloaded using one of the following options:
 - From Cloud portal
 - Using command line

PSM CLI – Download and Configure

PSM CLI download using Cloud Portal:

- On the Cloud My Home page, select your service. For example, select Oracle Database Cloud Service.
- On Oracle Database Cloud Service Page, Click the user icon in the top right corner to open the context menu.
- Select Help and then select Download Center.
- The Download Center dialog appears. The CLI option is indicated by the CLI icon (CLI icon).
- Click the download control adjacent to the CLI description text (Download control).
- The psmcli.zip file downloads to your machine and is ready for installation.



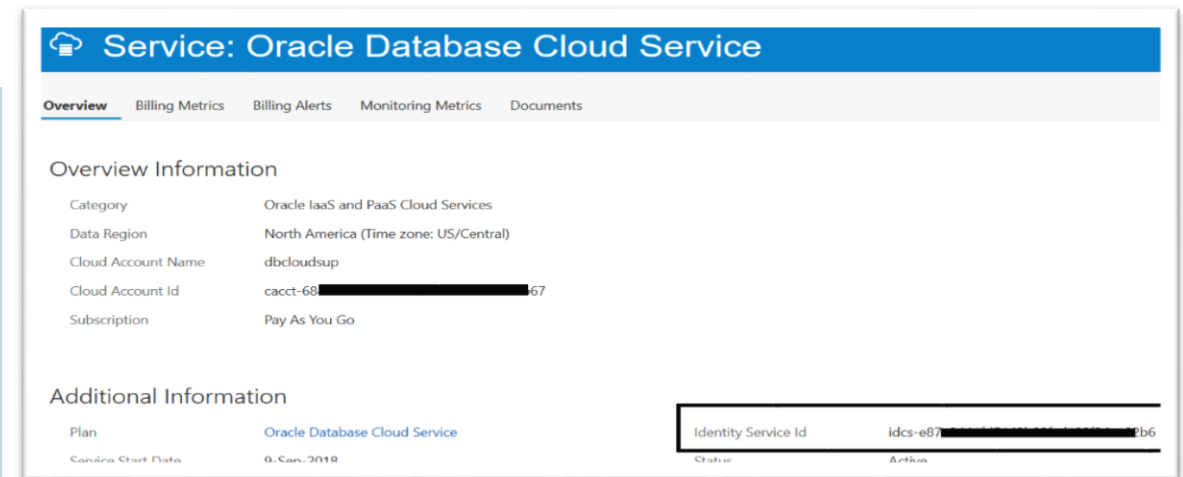
PSM CLI – Download and Configure

PSM CLI download using Curl command:

```
$ curl -X GET -u <username>:<password> -H X-ID-TENANT-NAME:<domain name> https://<rest api server name>/paas/api/v1.1/cli/<identity domain>/client -o psmcli.zip
```

Parameter	Value
Username	Cloud Account username
Password	Cloud username password
Identity Domain Id	Service ID as shown in Cloud Portal
Rest API server name	US Region- psm.us.oraclecloud.com aucom region -psm.aucom.oraclecloud.com Others - psm.europe.oraclecloud.com

Example: `curl -X GET -u anandu:Axxx -H X-ID-TENANT-NAME:idcs-e87xxxb6 https://psm.us.oraclecloud.com/paas/api/v1.1/cli/idcs-e87xxxb6/client -o psmcli.zip`



```
opc@AnanduDBCS01:~/anandu
[opc@AnanduDBCS01 anandu]$ pwd
/home/opc/anandu
[opc@AnanduDBCS01 anandu]$ ls -ltr
total 0
[opc@AnanduDBCS01 anandu]$ curl -X GET -u anandu:An[redacted] -H X-ID-TENANT-NAME:
idcs-e87[redacted] https://psm.us.oraclecloud.com/paas/api/v1
.1/cli/idcs-e87[redacted]
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 88306 0 88306 0 0 37938 0 --:--:-- 0:00:02 --:--:-- 58364
[opc@AnanduDBCS01 anandu]$ ls -ltr
total 88
-rw-rw-r-- 1 opc opc 88306 Oct 5 13:26 psmcli.zip
[opc@AnanduDBCS01 anandu]$
```



PSM CLI – Download and Configure

PSM CLI Installation can be done on Client or Server machine. To perform the PSM CLI installation, run the following:

```
$ pip3 install -U psmcli.zip
```

```
root@AnanduDBCS01:~/sw
[root@AnanduDBCS01 sw]# ls
psmcli.zip
[root@AnanduDBCS01 sw]# pip3 install -U psmcli.zip
Processing ./psmcli.zip
Requirement already up-to-date: requests<=2.18.4,>=2.8.1 in /root/anandu/lib/python3.6/site-packages (from psmcli==1.1.24)
Requirement already up-to-date: keyring<=5.6,>=5.4 in /root/anandu/lib/python3.6/site-packages (from psmcli==1.1.24)
Requirement already up-to-date: colorama==0.3.3 in /root/anandu/lib/python3.6/site-packages (from psmcli==1.1.24)
Requirement already up-to-date: PyYAML==3.11 in /root/anandu/lib/python3.6/site-packages (from psmcli==1.1.24)
Requirement already up-to-date: urllib3<1.23,>=1.21.1 in /root/anandu/lib/python3.6/site-packages (from requests<=2.18.4,>=2.8.1->psmcli==1.1.24)
Requirement already up-to-date: idna<2.7,>=2.5 in /root/anandu/lib/python3.6/site-packages (from requests<=2.18.4,>=2.8.1->psmcli==1.1.24)
Requirement already up-to-date: chardet<3.1.0,>=3.0.2 in /root/anandu/lib/python3.6/site-packages (from requests<=2.18.4,>=2.8.1->psmcli==1.1.24)
Requirement already up-to-date: certifi>=2017.4.17 in /root/anandu/lib/python3.6/site-packages (from requests<=2.18.4,>=2.8.1->psmcli==1.1.24)
Installing collected packages: psmcli
  Found existing installation: psmcli 1.1.24
  Uninstalling psmcli-1.1.24:
    Successfully uninstalled psmcli-1.1.24
  Running setup.py install for psmcli ... done
Successfully installed psmcli-1.1.24
You are using pip version 9.0.1, however version 18.0 is available.
You should consider upgrading via the 'pip install --upgrade pip' command.
[root@AnanduDBCS01 sw]#
```

PSM CLI – Download and Configure

To setup PSM CLI, run the following:

```
$ psm setup
```

Parameter	Value
Username	Cloud Account username
Password	Cloud username password
Identity Domain Id	Service ID as shown in Cloud Portal
Region	By default – us. REST API is emea , enter emea. REST API server is aucom , enter aucom.
Output format	Short – By default, displays only few properties Json - output appears in a standard JSON format HTML – output produces in html format
OAuth	If you want to communicate with the PSM REST API over Oauth, enter Y.

```
root@AnanduDBCS01:~/sw
```

```
[root@AnanduDBCS01 sw]# psm setup
Username: anandu
Password:
Retype Password:
Identity domain: idcs-e87e9441fd5142b08fed199f24ce22b5
Region [us]:
Output format [short]: json
Use OAuth? [n]: n

-----
'psm setup' was successful. Available services are:

o accs : Oracle Application Container Cloud Service
o dbcs : Oracle Database Cloud Service
o DevServiceApp : Oracle Developer Cloud Service
o jcs : Oracle Java Cloud Service

-----
[root@AnanduDBCS01 sw]#
```

Managing life-cycle of Oracle Database Cloud Service

PSM CLI can be used to perform various life-cycle and administrative operations on Oracle Database Cloud Service instances like:

- **Service Instance:** Create, Delete, Start, Stop, Restart, Adding SSH public Key..
- **Access Control:** Access Rules - List, Create, Delete, Enable, Disable
- **Backup and Recovery:** List Backups, Backup, Restore
- **Patching and Rollback:** Perform patch prereq, Apply patch, Roll back
- **Scaling:** Scale-Up, Scale-Down
- **Snapshots:** Create, Delete, List snapshots..
- **Job Status:** Status information of the job

Database Lifecycle Management – Service Creation

- To create the database service:

```
# psm dbcs create-service --config-payload test_create.json
```

```
# cat /u01/psm/scripts/create_OpenWorld.json
{
  "serviceName": "OOW18",
  "version": "12.2.0.1",
  "level": "PAAS",
  "edition": "EE",
  "shape": "oc3",
  "vmPublicKeyText": "ssh-rsa AAAAB3NzaC1yc2E.....qvS6gBuuzwZ",
  "parameters": [
    {
      "type": "db",
      "usableStorage": "25",
      "adminPassword": "Pa55_word",
      "sid": "OOW",
      "backupDestination": "Both",
      "createStorageContainerIfMissing": "true",
      "cloudStorageContainer": "https://dbcloudsup.us.storage.oraclecloud.com/v1/Storage-dbcloudsup/Ameet",
      "cloudStorageUser": "ameet",
      "cloudStoragePwd": "Welcome_123#"
    }
  ]
}
```

Database Lifecycle Management – List Services

- To List all the database services in the identity domain:
psm dbcs services

Example: # psm dbcs services

- To List the details of a specific database cloud service:
psm dbcs service --service-name <service name>

Example: # psm dbcs service --service-name OOW2018

Database Lifecycle Management – Access Rules

- **List Access Rules:**

```
# psm dbcs access-rules -s <service name>
```

Example: # psm dbcs access-rules -s OOW2018

- **Enable Access Rule:**

```
# psm dbcs enable-access-rule --service-name <service name> --rule-name <rule name>
```

Example: # psm dbcs enable-access-rule --service-name OOW2018 --rule-name ora_p2_dbexpress

- **Disable Access Rule:**

```
# psm dbcs disable-access-rule --service-name <service name> --rule-name <rule name>
```

Example: # psm dbcs enable-access-rule --service-name OOW2018 --rule-name ora_p2_dbexpress

Database Lifecycle Management – Backup and Recover

- **View list of Backups available:**

```
# psm dbcs view-backups --service-name <service name>
```

- **To take on-demand backup of a database cloud service:**

```
# psm dbcs backup --service-name <service name>
```

- **To recover the database:**

```
# psm dbcs recover --service-name <service name> --config-payload json-file <json file name>
```

Content of json file:

```
=====
```

```
{  
  "tag" : "TAG20160719T230330"  
}
```


Database Lifecycle Management – Database Patching

- **View list of patches available:**

```
# psm dbcs available-patches --service-name <service name>
```

```
Example: psm dbcs available-patches --service-name OOW2018
```

- **To perform a patch prereq check:**

```
# psm dbcs precheck-patch --service-name <service name> --patch-id <patch id>
```

```
Example: psm dbcs precheck-patch --service-name OOW2018 --patch-id 28163133-EE
```

- **To apply a patch:**

```
# psm dbcs patch --service-name <service name> --patch-id <patch id>
```

```
Example: psm dbcs patch --service-name OOW2018 --patch-id 28163133-EE
```

Database Lifecycle Management – Database Patching

- **To list applied patches:**

```
# psm dbcs applied-patches --service-name <service name>
```

```
Example: psm dbcs applied-patches --service-name OOW2018
```

- **To rollback a patch:**

```
# psm dbcs rollback --service-name <service name> --rollback-id <patch id>
```

NOTE: To get the rollback ID of a patch applied to a service instance, use the psm dbcs applied-patches command.

```
Example: psm dbcs rollback --service-name OOW2018 --rollback-id 131003
```

Database Lifecycle Management – Scale up/Scale Down

- **To Scale-up the shape of database instance:**

```
# psm dbcs scale-up --service-name <service name> --shape <required shape>
```

```
Example: psm dbcs scale-up --service-name OOW2018 --shape oc4
```

Note: Available shapes can be verified from the [Documentation](#)

- **To scale-down the shape of database instance:**

```
# psm dbcs scale-down --service-name <service name> --shape <required shape>
```

```
Example: psm dbcs scale-down --service-name OOW2018 --shape oc3
```

Database Lifecycle Management – Service Restart/ Delete

- **To Restart the database instance:**

```
# psm dbcs restart --service-name <service name>
```

```
Example: psm dbcs restart --service-name OOW2018
```

- **To delete the database instance:**

```
# psm dbcs delete --service-name <service name>
```

```
Example: psm dbcs delete-service --service-name OOW2018
```

Database Lifecycle Management – Benefits

- Automate the database management tasks by sending the command outputs in json or html format to be picked in the existing monitoring applications
- Use the PSMCLI commands in Windows batch files or Linux scripting to automate the database activities like stop, start database services
- Scale up or Scale down can be done automatically depending on the usage of the database instance.



THANK YOU