Diamante

AGGRANDIZE

COMMVAULT

TD SYNNEX

Platina

GOLDENGATEBR
Consultoria & Treinamentos

DISCOVER

Ouro

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VERTICA
by opentext

Prata

TRACES

CAFÉ COM CLOUD

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We take care of your data

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DIGITAL

INTERFACE TEXTO PARA O DBA MODERNO

24 de Junho de 2023

DBA BRASIL Data & Cloud 2023

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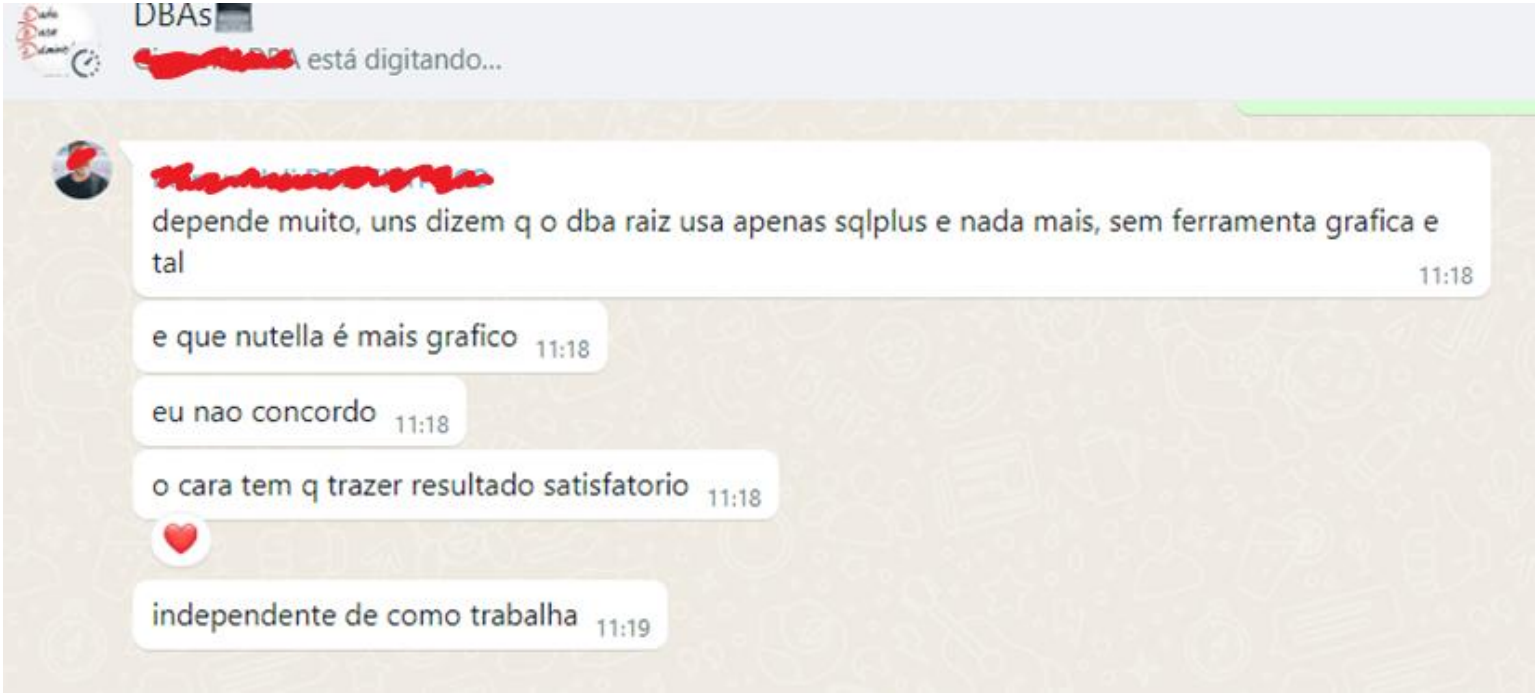
Kadu Racing
DT-A
2266
www.dragsterbrasil.com

www.brasil2orterra.com
LAND ROVER

DBA NUTELLA X RAIZ



DBA 2.0

BARRA ESTABILIZADORA COM DESCONEXÃO ELETRÔNICA

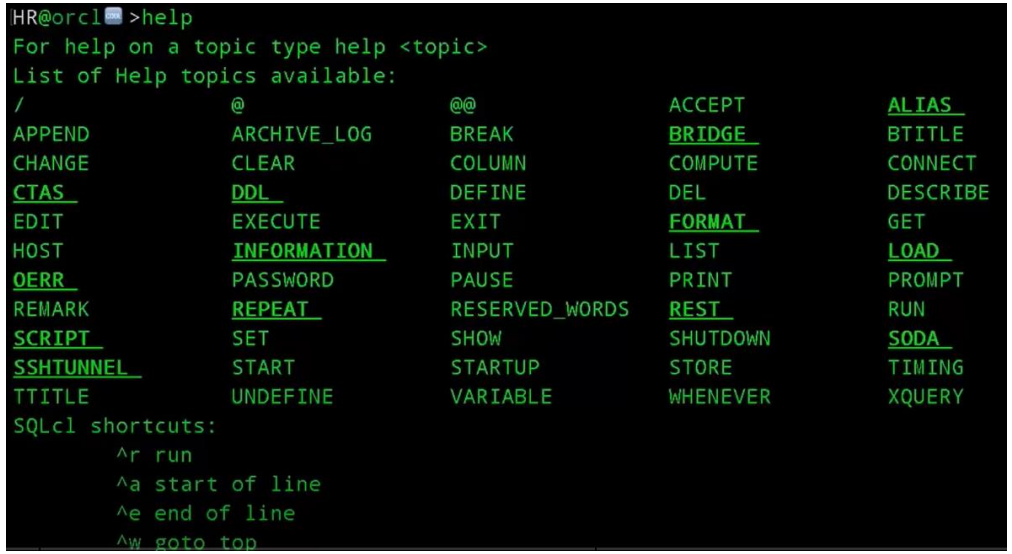
Off road mais eficiente

Menos rotações por eixo a cada giro do motor, garantindo mais **TORQUE**

CLI: VANTAGENS

Além disso,
o DBA deve ter conhecimentos básicos de linha de comando para dar MANUTENÇÃO em ambientes pré existentes.

- Direct control and efficiency.
- Faster performance, lower resource use, and high flexibility
- Providing a robust environment for automation and complex operations.

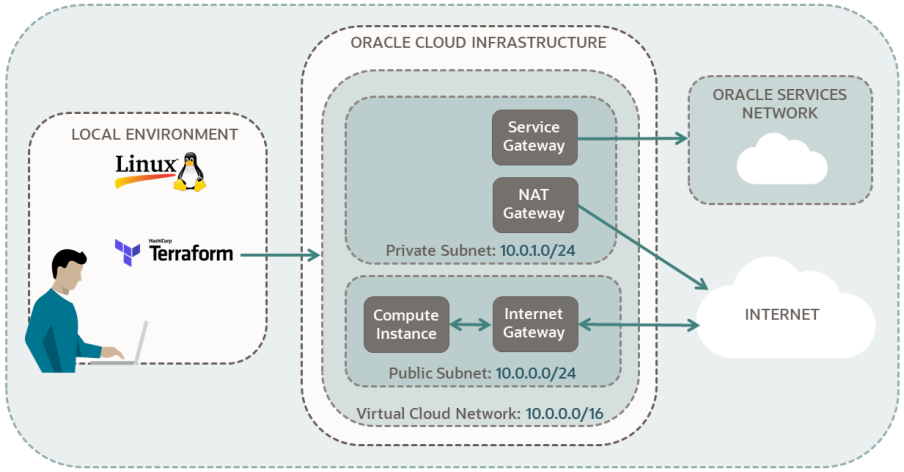


CLI: DESVANTAGENS

- Steep learning curve and command memorization can be daunting for beginners.
- Accuracy is of the utmost importance. If there is a spelling error, a command will fail. Also, if an instruction is mistyped, you'll often need to start from scratch.

IAC: INFRASTRUCTURE AS CODE

- Infrastructure As Code (IaC) is a methodology in which scripts automate infrastructure and configuration management.
- It solves many problems. For example, simplifying configuration management to ensure that your infrastructure will be provisioned the same way every time.
- Benefict: Save money on hosting costs because they require fewer server resources than manual configuration.



RESUMINHO: UTILITIES

RESUMO: UTILITIES

DATABASE

- **SQL*Plus**: Administration tool that is installed with every Oracle
- **Recovery Manager (RMAN):** Oracle Database client that performs backup and recovery tasks .
- Trace Analyzer **TRCANLZR** : It helps for performance about expensive SQL)
- **SQLcl:** A command-line interface for Oracle Database that combines the power of SQL*Plus and SQL Developer.
- **DBSAT**: Database Security Assessment Tool

RESUMO: UTILITIES

GERAIS

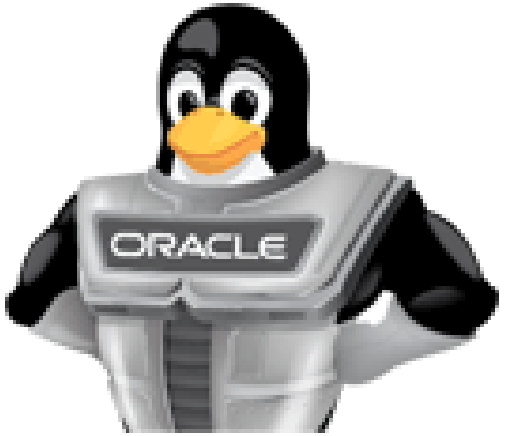
- **ASMCMD**: to manage Oracle ASM instances and resources.
- **DGMGRL**: The Data Guard command-line interface (Aplicativo de controle do broker)
- **TRCA**: Trace Analyzer TRCANLZR (it helps for performance about expensive SQL)
- **ADRCI**: Automatic Diagnostic Repository Command Interpreter
- **TRCA**: Trace Analyzer TRCANLZR (it helps for performance about expensive SQL)
- **TKPROF:** Transient Kernel PROFile (used to format a trace file into readable form)

RESUMO: UTILITIES

ASM

- **KFOD**: Kernel Files OSM Disk (useful in troubleshooting ASM issues without connecting to an ASM instance)
- **KFED**: Kernel Files metadata Editor (allows to analyze ASM disk header information when ASM diskgroups can not be mounted.)
- **AMDU** - ASM Metadata Dump Utility (extract all the available metadata from one or more ASM disks and/or generate formatted printouts of individual blocks.)

LINUX



LINUX

VARIÁVEIS DE AMBIENTE

- ORACLE_PDB_SID
- SQLPATH
- NLS_DATE_FORMAT
- TNS_ADMIN
- ORAENV_ASK

ALIASES

```
# User specific environment and startup
programs

PATH=$PATH:$HOME/.local/bin:$HOME/bin

export PATH
umask 022

alias sqlplus='sqlplus / as sysdba'
alias sql='sql "/ as sysdba" '
alias cdb='export ORACLE_PDB_SID=/''/'''
alias pdb='export ORACLE_PDB_SID=ORCLPDB'
export NLS_DATE_FORMAT='DD/MM/YYYY HH24:MI'
export SQLPATH=~/scripts
export TNS_ADMIN=$ORACLE_HOME/network/admin
export ORAENV_ASK=NO
```

LINUX

COMANDOS INTERESSANTES

- **top:** lists the most CPU-intensive processes on the system
- **ps** - Shows process-level details on resource consumption
- **watch** - lets you repeatedly run a command or utility in regular time intervals.
- **sysstat**: (system statistics) is a collection of performance monitoring tools for Linux
- **iostat / iotop:** monitors the loading of block I/O devices
- **mpstat** - Reports processor-related statistics.
- **nestat / ip -s link** - Displays network statistics
- **sar** collects, reports and saves system activity information (CPU, memory, disks, interrupts, network interfaces, TTY, kernel tables, NFS, sockets etc.)

LINUX

adaptivemm: To manage memory usage

This daemon is a user space service that monitors free memory on an Oracle Linux system and predicts memory fragmentation and usage.

It can also automatically reclaim memory if the system if memory becomes too fragmented or is at risk of being filled to capacity.

```
sudo adaptivemmd –h
```

LINUX

TCPDUMP

It's a network utility that listens to and records traffic on a network segment. This can be highly useful in troubleshooting and monitoring network activity.

```
tcpdump -nnvvS src 10.5.2.3 and dst port 1521
```

LINUX

- **Script for Oracle to detect a almost-full filesystem:**

```
#!/bin/ksh

for i in `df -k|grep /u0|awk '{ print $4 }'`
do
   filesize=`expr i`
   if [ $filesize -lt 100 ]
   then
      mailx -s "Oracle filesystem $i has less than 100k free."\
      lilian_barroso@oracle.com\
      lawrence_ellison@oracle.com
   fi
done
```

LINUX

“DATAPOBRE”

```
rsync -arv --exclude-from='/home/oracle/scripts/exclude_me.txt' --
delete -e 'ssh -C -c arcfour,blowfish-cbc' -auv --progress
oracle@192.168.110.197:/ARCHIVE/ /ARCHIVE/

sqlplus /nolog <<EOF

conn /as sysdba

set autorecovery on;

recover standby database;

EOF

exit
```

LINUX

EXECUTAR MESMA QUERY EM VÁRIAS INSTÂNCIAS

.rhosts + rlogin + rsh

FOR cada servidor definido no .rhosts

FOR cada banco de dados definido no /etc/oratab

conectar no SQL*Plus e executar o comando.

END

END

```
# Loop through each host name . . .
for host in `cat ~oracle/.rhosts|cut -d"." -
f1|awk '{print $1}'|sort -u`
do
  echo "$host"
  # Loop through each database name on the
host /etc/oratab . . .
  for db in `rsh $host "cat /etc/oratab|egrep
':N|:Y'|grep -v \*|\
  cut -f1 -':'"`
          ....
  do
    # Get the ORACLE_HOME for each
database
    home=`rsh $host "cat /etc/oratab|egrep
':N|:Y'|grep -v \*|\
    grep {db}|cut -f2 -d':'"`
    echo "database is $db"
    sqlplus system/Welome01@$db <<!
    select * from v\$database;
    exit;
!
  done
done
```

SQLPLUS

SQLPLUS

SQL*Plus is an interactive and batch query tool that is installed with every Oracle Database installation. It has a command-line user interface..

```
SQL> SELECT SYS_CONTEXT ('USERENV', 'CON_NAME') FROM DUAL;

SYS_CONTEXT('USERENV','CON_NAME')
--------------------------------------------------------------------------------
CDB$ROOT

SQL> SELECT sys_context('USERENV', 'CON_ID') FROM dual;

SYS_CONTEXT('USERENV','CON_ID')
--------------------------------------------------------------------------------
1

SQL> show con_name

CON_NAME
------------------------------
CDB$ROOT
SQL>
SQL> show con_id

CON_ID
------------------------------
1
```

SQLPLUS

- GLOGIN

É um script chamado "Site Profile”

%ORACLE_HOME%\sqlplus\admin\glogin.sql -

```
set sqlprompt  "_USER'@'_CONNECT_IDENTIFIER> "
set feed off
alter SESSION set nls_date_format='DD-MM-YY HH24:MI';
alter session set nls_timestamp_format='DD-MM-RR
HH24:MI:SS:FF';
 alter session set nls_numeric_characters = ',.'; set
serveroutput on
define_editor='vi‘
set lines 300 pages 999 feed on
set long 9999
```

SQLPLUS

Executando comandos a partir do shell:

```
echo select count\(*\) from v\$database\; | sqlplus -S "/as sysdba"
sqlplus -S "/as sysdba" @script.sql
watch 'sqlplus -S "/as sysdba" @script.sql'
```

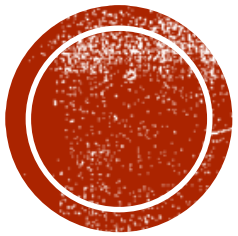
```
sqlplus -S hr/Welcome1@orcl @script.sql parametro
```

(lembrando que dentro do script a variável deverá ser reprensentada por &n, onde n é a posição do parâmetro.)

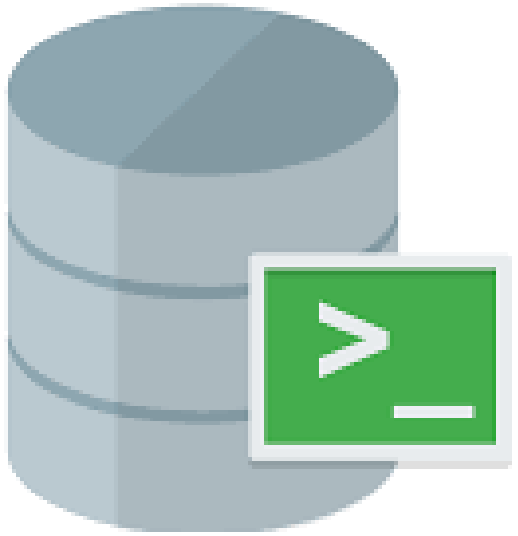
SQLPLUS

Pegando valor do sqlplus e transformando em variável do linux:

```
#!/bin/bash
c_ename=`sqlplus -s lilian/welcome1@//YourIP:1521/orcl <<END
select ename from emp
where empno = 3110;
exit;
END`
echo "O nome do funcionario eh $c_ename para o registro 3110."
```



SQLCL



SQLCL

Oracle SQL Developer Command Line

localização

`/u01/app/oracle/database/product/bin/sql`

“glogin” do sqlcl

`$ORACLE_HOME/sqldeveloper/sqldeveloper/login.sql`

```
sql / as sysdba
```

SQLCL

TAB: após 3 caracteres, completa o comando ou o nome do objeto.

/: mesmo que o "desc"

DDL: exibe o ddl de determinado objeto.

SET SQLFORMAT: Define o formato de saída dos resultados.

SET SQLFORMAT **CSV**: retorna o resultado em formato csv.

SET SQLFORMAT **HTML**: retorna como código HTML

SET SQLFORMAT **ANSICONSOLE**: formato "bonitinho" dos resultados.

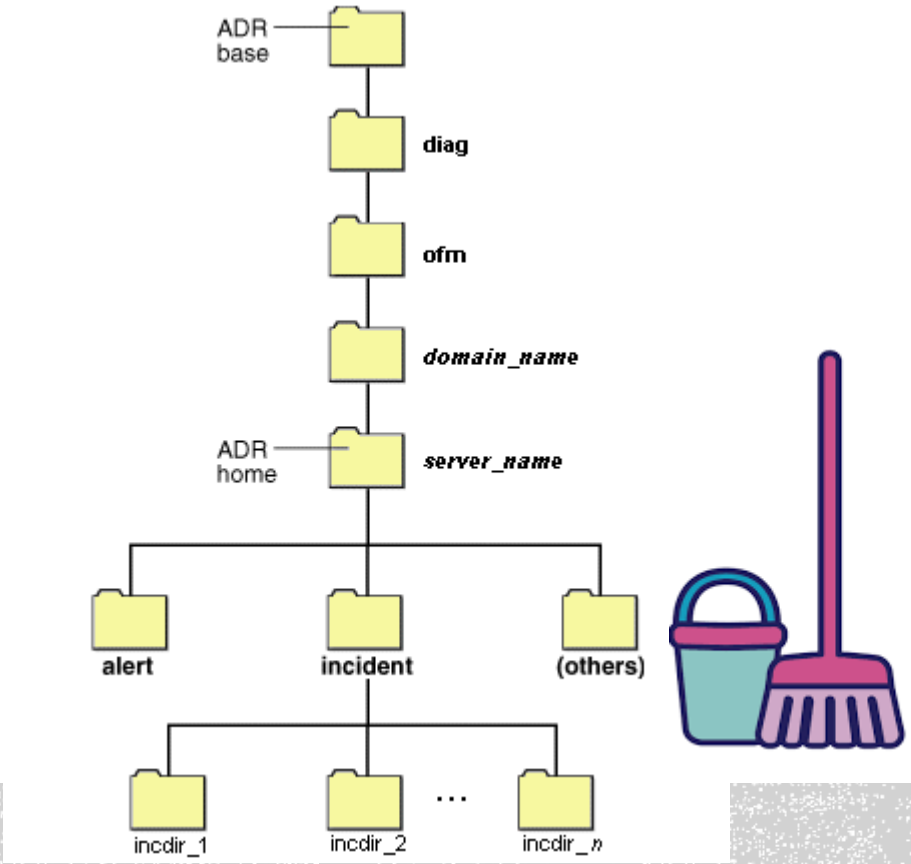
HISTORY: Exibe o histórico de comandos

history 62: re-executa o histório n. 62

ALIAS: Cria aliases de queries

REPEAT: Executa diversas vezes o comando anterior.

ADRCI


ADR
base
diag
ofm
domain_name
ADR
home
server_name
alert
incident
(others)
incdir_1
incdir_2
...
incdir_n

V$DIAG_INFO

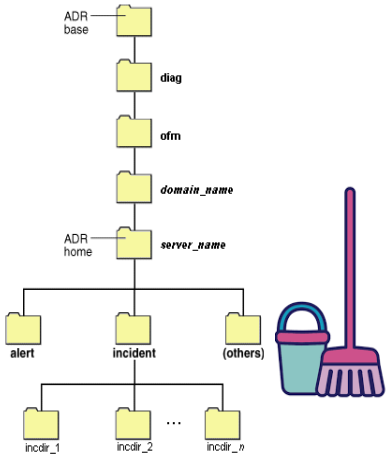
ADRCI

Automatic Diagnostic Repository Command Interpreter

- Ferramenta de linha de comando criada para gerenciar os dados de diagnóstico armazenados no ADR (*Automatic Diagnostic Repository*).
- O ADR é um repositório baseado em arquivos para dados de diagnóstico de banco de dados, tais como *traces, dumps e o alert log.*

```
show home
set home
diag/rdbms/lby19std_stc_iad/LBY19STD

show alert -tail -f
show problem
show incident
```

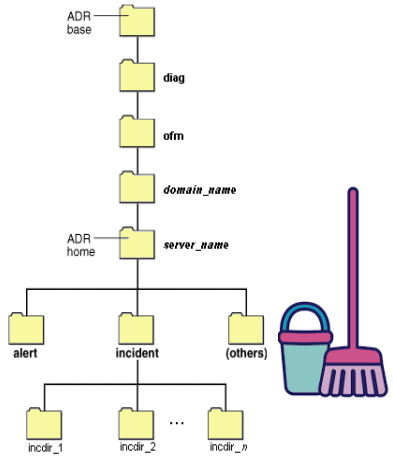
ADRCI



show home

```
set home diag/rdbms/lby19std_stc_iad/LBY19STD
show alert -tail -f
show problem
show incident
```

ADRCI



IPS (*Incident Packaging Service*)

Para gerar um pacote a ser enviado para o MOS sobre determinado problema

```
ips create package problem 1 correlate all
ips generate package 1 in "/tmp/oracle“
ips show files package  1
```

ADRCI

Visualizar tempo que os arquivos serão mantidos no ADR:

```
show control
```

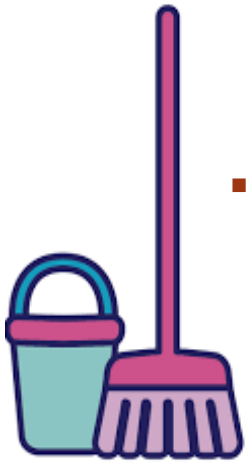
- Retenção *default:*
  - LONGP_POLICY (long term): os arquivos de trace serão mantidos no ADR por 30 dias (720 h)
  - SHORTP_POLICY (short term): os arquivos de incidente por um ano (8760 horas).
- Mudando a retenção:
  - `set control (SHORTP_POLICY = 360)`
  - `set control (LONGP_POLICY = 720)`
- Limpeza (para limpar os xml e traces de acordo com a política ajustada acima):
  - `purge`

Purge manual: apagando tudo que tiver mais de 1440 minutos (1 dia)

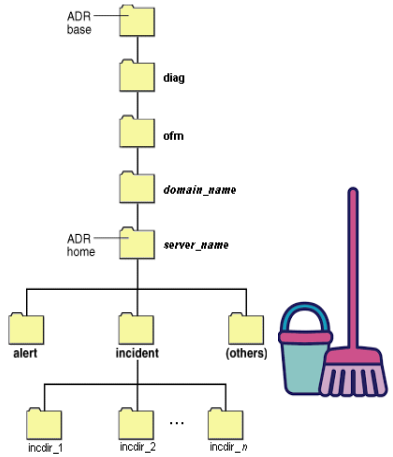
```
purge -age 1440 -type incident
purge -age 1440 -type ALERT
purge -age 1440 -type TRACE
purge -age 1440 -type CDUMP
purge -age 1440 -type HM
```

VALORES (minutos)

1140 -> 1 dia
10080 -> 1 semana
40320 -> 1 mês



ADRCI



Using ADRCI in Batch Mode

EXEC: Enables you to submit one or more ADRCI commands on the operating system command line that starts ADRCI. Commands are separated by semicolons (;).

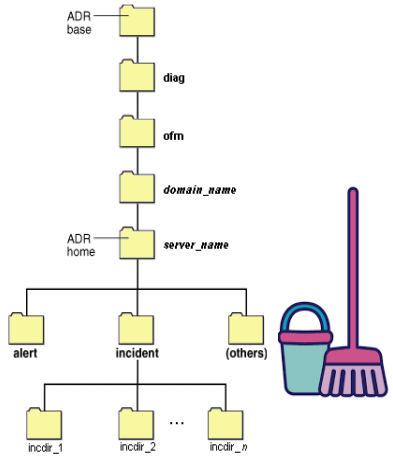
```
$adrci exec="show homes"
```

```
$adrci exec="set home diag/rdbms/lby19std_stc_iad/LBY19STD/; show alert -tail -f"
```

SCRIPT: Enables you to run a script containing ADRCI commands.

```
$adrci script=alert.txt
```

ADRCI



Para monitorar o log do listener com tail durante os procedimentos,

colocar em script:

```
SET HOME diag/tnslsnr/lby19cstd/listener; SHOW ALERT  -P "MESSAGE_TEXT LIKE
'%LBY19STD%'" -tail 300 -f
```

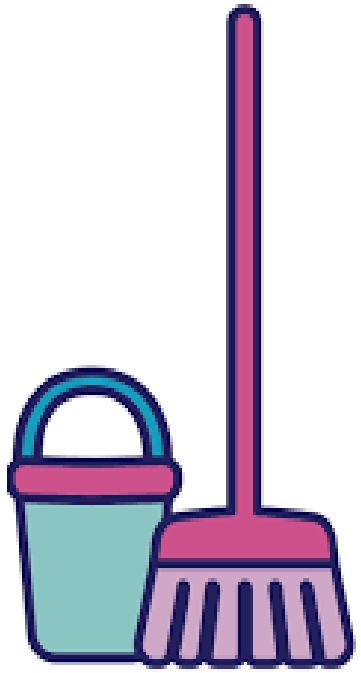
```
SET HOME diag/tnslsnr/lby19cstd/listener; SHOW ALERT  -P "HOST_ID LIKE
'%lby19cstd%'" -tail 300 -f
```

Para monitorar erros importantes no banco

```
SHOW ALERT -P “MESSAGE_TEXT LIKE'%ORA-00600%'”
```

ADRCI

Exemplo de script para **purge** do log do listener:



```
export ORACLE_SID=+ASM1
export ORAENV_ASK=NO
. oraenv
cd /u01/app/11.2.0.4/grid/log/diag/tnslsnr/server/listener_scan1/trace/adrci exec="purge"
cd /u01/app/11.2.0.4/grid/log/diag/tnslsnr/server1/listener_scan2/trace/adrci exec="purge"
cd /u01/app/11.2.0.4/grid/log/diag/tnslsnr/server/listener_scan3/trace/adrci exec="purge"
```

OCI

OCI

OCI-CLI

Oracle Cloud Infrastructure command line interface

OCI-CLI - **oci db**

DBCLI: Database Command Line Interface (Oracle Base Database)

DBASCLI : Ferramenta de linha de comando para administração do Exadata (ExaCS e ExaCC)

BKUP_API: Backup Application Interface (Exadata)

mv2bucket: ccc

OCI

OCI DB:

The CLI for the Database Service. Use this CLI to manage resources such as databases and DB Systems

```
oci db node stop [OPTIONS]
```

exemplo:

```
export db_node_ocid=<substitute-value-of-db_node_ocid>
oci db node stop --db-node-id $db_node_ocid
```

OCI

DBCLI - Database CLI

Command line interface available for Base Database Service.

Local: /opt/oracle/dcs/bin/ (logs em /opt/oracle/dcs/log/)

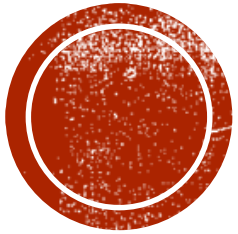
```
dbcli clone-database
dbcli create-database
dbcli delete-database
dbcli describe-database
dbcli list-databases
dbcli modify-database
dbcli recover-database
dbcli register-database
dbcli update-database
```

```
[opc@lby19cstd ~]$ sudo dbcli describe-component
System Version
--------------
23.2.1.0.0

Component                                Installed Version    Available Version
---------------------------------------- -------------------- --------------------
GI                                        19.19.0.0.0          up-to-date
DB                                        19.19.0.0.0          up-to-date
[opc@lby19cstd ~]$
```

OCI

DBCLI

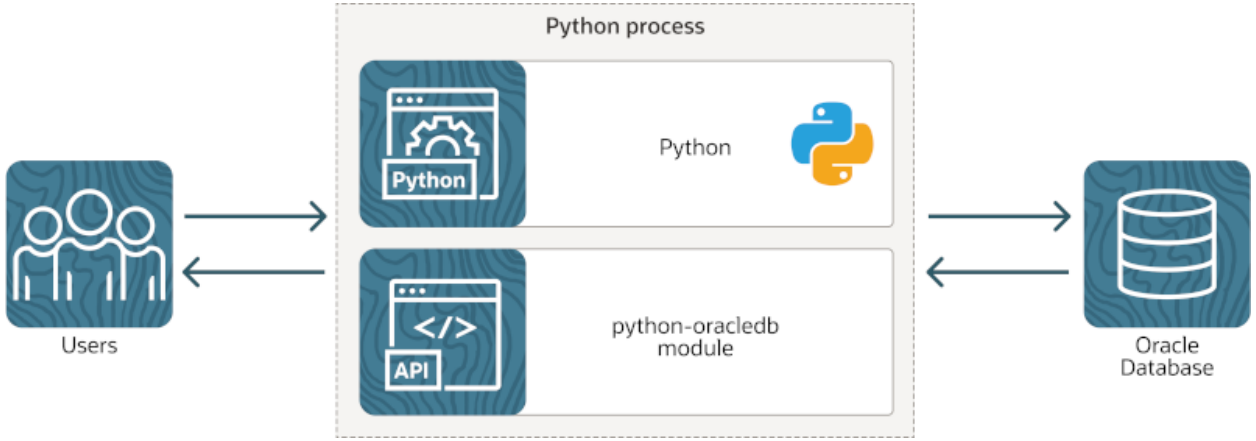
```
export PATH=$PATH:/opt/oracle/dcs/bin
sudo dbcli describe-system -d
sudo dbcli list-databases
sudo dbcli list-dbhomes
sudo dbcli list-dbstorages
sudo dbcli describe-dbstorage
sudo dbcli create-backup -i 90c0916d-25a8-4f6a-81b0-22ae9bf5f6f9 -bt Regular-L0
sudo dbcli list-jobs | tail
sudo dbcli describe-job -i f1cf9220-8007-426c-8bec-c504de4119c9
```



PYTHON

PYTHON

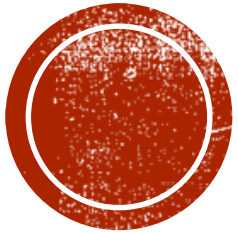
- The python-oracledb 1.3 driver for Oracle Database
- The **python-oracledb driver** is a Python programming language extension module allowing Python programs to connect to Oracle Database. Python-oracledb is the new name for Oracle's popular **cx_Oracle driver**.



PYTHON

```
import getpass
import oracledb

pw = getpass.get

connection = ora
    user="demopy
    password=pw,
    dsn="localho

print("Successfu

cursor = connection.cursor()
```

```
# Create a table

cursor.execute("""
    begin
        execute immediate 'drop table todoitem';
        exception when others then if sqlcode <> -942 then raise; end if;
    end;""")

cursor.execute("""
    create table todoitem (
        id number generated always as identity,
        description varchar2(4000),
        creation_ts timestamp with time zone default current_timestamp,
        done number(1,0),
        primary key (id))""")
```



TERRAFORM

TERRAFORM

É uma ferramenta para construir, alterar e controlar a infraestrutura de forma segura e eficiente. Ela foi criada pela HashiCorp e faz parte do que chamamos de Infrastructure as Code.

oci_database_db_system

PARA SABER +

PARA SABER +

Free Certification for OCI:

https://education.oracle.com/oracle-oci-certification#oracle-cloud-infrastructure

- **Treinamentos Gratuitos:** https://education.oracle.com/learning-explorer
- **Vídeos**: https://videohub.oracle.com/channel/CSMLive
- **Oracle Help Center Learn**: https://docs.oracle.com/learn/
- **Oracle Architecture Center**: https://docs.oracle.com/solutions/
- **live labs** : https://apexapps.oracle.com/pls/apex/dbpm/r/livelabs/livelabs-workshop-cards?clear=100&session=104462532335544

:\q