OEL 7 – Oracle Database 19c Enterprise Edition

Version:	1.0.0
Created by:	cloudimg

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1.) Overview

This document is provided as a user guide for the OEL 7 – Oracle Database 19c Enterprise Edition product offering on the AWS Marketplace. Please reach out to <u>support@cloudimg.co.uk</u> if any issues are encountered following this user guide for the chosen product offering.



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2.) Access & Security

Please update the security group of the target instance to allow the below ports and protocols for access and connectivity.

Protocol	Туре	Port	Description
SSH	ТСР	22	SSH connectivity
ТСР	TCP	1521	Oracle Database Listener Port

3.) System Requirements

The minimum system requirements for the chosen product offering can be found below

Minimum CPU	Minimum RAM	Required Disk Space
1	1 GB	20 GB

4.) Connecting to the Instance

Once launched in the Amazon EC2 Service, please connect to the instance via an SSH client using the **ec2-user** with the key pair associated at launch. Once connected as the **ec2-user** user, you will be able to sudo to the **root** user by issuing the below command.

Switch to the root user.

sudo su -

NOTE: Please allow the EC2 Instance to reach 2/2 successful status checks to ensure you will be able to connect successfully with the ec2-key pair assigned at launch. Upon attempting to SSH to early you may receive errors such as below, this is expected with an early SSH connection. Allow the EC2 instance to reach 2/2 status checks and you will be able successfully connect with the ec2-key pair assigned at launch as the ec2-user.

Name 🟒		Instance state ∇	Instance type 🛛 🗢	Status check
cloudimg-example-instance	i-039990b0d91026962	⊘ Running @ Q	t3a.xlarge	⊘ 2/2 checks passed

Example errors you may receive with an early SSH connection.





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5.) On Startup

An OS package update script has been configured to run on boot to ensure the image is fully up to date at first use. You can disable this feature by removing the script from /stage/scripts/ and deleting the entry in crontab for the root user.

Disable the OS update script from running on reboot

```
rm -f /stage/scripts/initial_boot_update.sh
crontab -e
#DELETE THE BELOW LINE. SAVE AND EXIT THE FILE.
Greboot /stage/scripts/initial_boot_update.sh
```

6.) Filesystem Configuration

Please see below for a screenshot of the server disk configuration and specific mount point mappings for software locations.

Filesystem	Size	Used	Avail	Use%	Mounted on
devtmpfs	1.9G	0	1.9G	0%	/dev
tmpfs	1.9G	0	1.9G	0%	/dev/shm
tmpfs	1.9G	8.5M	1.9G	1%	/run
tmpfs	1.9G	0	1.9G	0%	/sys/fs/cgroup
/dev/nvme0n1p2	38G	3.5G	32G	10%	/
/dev/nvme1n1	20G	6.5G	13G	35%	/u01
/dev/nvme0n1p1	2.0G	143M	1.7G	8%	/boot
tmpfs	389M	0	389M	0%	/run/user/1002
tmpfs	389M	0	389M	0%	/run/user/0

Mount Point	Description		
/boot	Operating System Kernel files		
/u01	Oracle software installation directory		



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7.) Server Components

Please see below for a list of installed server components and their respective installation paths. The below versions are subject to change on initial boot based on the initial_boot_update.sh script finding new versions of the software in the systems package repositories.

Component	Version	Software Home		
AWS CLI	2.7.7	/usr/local/aws-cli		
AWS CloudWatch Agent	1.247352.0b251908	/opt/aws/amazon-cloudwatch-		
		agent		
AWS Systems Manager Agent	3.0.1390.0	/usr/bin/amazon-ssm-agent		
Cloud-Init	19.4	/etc/cloud		
Oracle 19c Enterprise	19.3.0.0.0	/u01		

8.) Scripts and Log Files

The below table provides a breakdown of any scripts & log files created to enhance the useability of the chosen offering.

Script/Log	Path	Description
Initial_boot_update.sh	/stage/scripts	Update the Operating System with
		the latest updates available.
Initial_boot_update.log	/stage/scripts	Provides output for
		initial_boot_update.sh
/stage/scripts/oracle-database-	/stage/scripts	Oracle Database user credentials
credentials.log		

9.) Using System Components

Instructions can be found below for using each component of the server build mentioned in section 7 of this user guide document.

AWS CLI

Using AWS CLI – as any OS user.

aws --help



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AWS CloudWatch Agent

On first use run the below command as the **root** user to configure the AWS CloudWatch Agent for your needs.

/opt/aws/amazon-cloudwatch-agent/bin/amazon-cloudwatch-agent-config-wizard

Once configured, you will be able to start the AWS CloudWatch Agent via the below command as the **root** user

```
/opt/aws/amazon-cloudwatch-agent/bin/amazon-cloudwatch-agent-ctl -a fetch-config -m ec2 -s -c file:/opt/aws/amazon-cloudwatch-agent/bin/config.json
```

Check status of the AWS CloudWatch Agent

/opt/aws/amazon-cloudwatch-agent/bin/amazon-cloudwatch-agent-ctl -m ec2 -a status

EXAMPLE EXPECTED OUTPUT (This may differ based on your configured setup)

```
{
   "status": "running",
   "starttime": "2022-06-05T12:10:13+0000",
   "configstatus": "configured",
   "cwoc_status": "stopped",
   "cwoc_starttime": "",
   "cwoc_configstatus": "not configured",
   "version": "1.247350.0b251814"
}
```

AWS Systems Manager

Check the status of the AWS Systems Manager Agent as the root user.



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Cloud-Init

Edit the /etc/cloud/cloud.cfg file to reflect your desired configuration. A link to the cloud-init official documentation can be found below for referencing best practise for your use case.

https://cloudinit.readthedocs.io/en/latest/topics/datasources/ec2.html

vi /etc/cloud/cloud.cfg

Oracle Database

A sample Oracle Database has been preinstalled on the system. You can start and or stop this example Database via the below commands as the **oracle** OS user.

Run – Once logged into the server as the ec2-user, switch to the oracle user. (Please type this command instead of copy paste)

sudo su - oracle

Run – Three scripts have been created under the \$HOME directory of the Oracle user.

- setEnv.sh This script will set the Oracle environment variables allowing the use of utilities such as sqlplus.
- start_all.sh This script will start the example Oracle Database Listener and ORCL sample database.
- stop_all.sh This script will stop the example Oracle Database Listener and ORCL sample database.

Run - The below commands will start the sample Oracle Database & Listener.

```
#Start the sample Oracle Database and associated Listener cd $HOME
```



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EXPECTED OUTPUT

```
LSNRCTL for Linux: Version 19.0.0.0.0 - Production on 05-APR-2023 07:51:52
Copyright (c) 1991, 2019, Oracle. All rights reserved.
Starting /u01/app/oracle/product/bin/tnslsnr: please wait...
TNSLSNR for Linux: Version 19.0.0.0.0 - Production
System parameter file is /u01/app/oracle/product/network/admin/listener.ora
Log messages written to /u01/app/oracle/diag/tnslsnr/ip-172-31-84-17/listener/alert/log.xml
Listening on: (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=ip-172-31-84-17.ec2.internal)
(PORT=1521)))
Connecting to (ADDRESS=(PROTOCOL=tcp) (HOST=) (PORT=1521))
STATUS of the LISTENER
  _____
Alias
                         LISTENER
Version
                        TNSLSNR for Linux: Version 19.0.0.0.0 - Production
Start Date
                        05-APR-2023 07:51:53
                         0 days 0 hr. 0 min. 2 sec
Uptime
Trace Level
                         off
Security
                         ON: Local OS Authentication
SNMP
                         OFF
Listener Parameter File /u01/app/oracle/product/network/admin/listener.ora
                         /u01/app/oracle/diag/tnslsnr/ip-172-31-84-17/listener/alert/log.xml
Listener Log File
Listening Endpoints Summary...
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=ip-172-31-84-17.ec2.internal)(PORT=1521)))
The listener supports no services
The command completed successfully
SQL*Plus: Release 19.0.0.0.0 - Production on Wed Apr 5 07:51:58 2023
Version 19.3.0.0.0
Copyright (c) 1982, 2019, Oracle. All rights reserved.
Connected to an idle instance.
```



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```
SQL> ORACLE instance started.

Total System Global Area 1627386464 bytes

Fixed Size 8897120 bytes

Variable Size 939524096 bytes

Database Buffers 671088640 bytes

Redo Buffers 7876608 bytes

Database mounted.

Database opened.

SQL> Disconnected from Oracle Database 19c Enterprise Edition Release 19.0.0.00 - Production

Version 19.3.0.00
```

Run - Set the Oracle environment variables and access SQLPLUS

```
#Set the Oracle environment variables and access SQLPLUS
cd $HOME
. ./setEnv.sh
sqlplus / as sysdba
```

EXPECTED OUTPUT

```
SQL*Plus: Release 19.0.0.0.0 - Production on Wed Apr 5 07:56:47 2023
Version 19.3.0.0.0
Copyright (c) 1982, 2019, Oracle. All rights reserved.
Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.3.0.0.0
```

NOTE: if you would like to access the database using the SYSTEM user, please refer to the randomly generated credentials located in file: /stage/scripts/oracle-database-credentials.log.

If you would also like to connect to the database via an external programme such as SQL Developer, please reference the below screenshot for the correct settings such as Port & Service Name. The IP address will differ based on the IP of your instance.



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• •	New	/ Select Database Co	nnection		
Connection Name Connection Det	Name 44.211.2 Database Type User Info Pr Authentication Username SY	204.203 Oracle ▼ oxy User n Type Default ▼		R	Color
	Password •• Connection Typ	pe Basic ▼ anced] Sa <u>v</u> e Password
	Hostn <u>a</u> me Po <u>r</u> t	44.211.204.203 1521			
	 S<u>e</u>rvice nat 	me orcl.us.oracle.com			
Status : Success					
<u>H</u> elp	<u>S</u> ave	<u>C</u> lear	<u>T</u> est	C <u>o</u> nnect	Cancel

Run – Issue the below commands to stop the Oracle Listener and Oracle Database as required.

#Stop the Oracle Database and associated listener cd \$HOME . ./stop_all.sh

EXPECTED OUTPUT

```
LSNRCTL for Linux: Version 19.0.0.0.0 - Production on 05-APR-2023 07:57:08
Copyright (c) 1991, 2019, Oracle. All rights reserved.
Connecting to (ADDRESS=(PROTOCOL=tcp)(HOST=)(PORT=1521))
The command completed successfully
SQL*Plus: Release 19.0.0.0.0 - Production on Wed Apr 5 07:57:08 2023
Version 19.3.0.0.0
```



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Copyright (c) 1982, 2019, Oracle. All rights reserved. Connected to: Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production Version 19.3.0.0.0 SQL> Database closed. Database dismounted. ORACLE instance shut down. SQL> Disconnected from Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production



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