Technical Database Architecture

Nokia Networks

OEM12c Platform – OMS Services

Author: Mohd Burhan

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# Document Control

## Change Record

3

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## Reviewers

| Name | Position |
| --- | --- |
|  | Project Manager, Nokia |
|  | Network architect, Nokia |
|  | Technical Architect, HP |
|  | Service Manager, Atos |

## Related Documents

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# Introduction

## Purpose

The purpose of the **Database Technical Architecture** document is to describe the existing OEM 12c database server instances needed to support the business and database host monitoring the system will perform. It includes:

* definition of the technical architecture that will be used
* standards used for describing the physical architecture
* strategy for designing the physical database including major operational factors, use of striping and disk arrays (RAID), efficient utilization of disk space ,and facilitation of database administration tasks
* specification of fundamental database parameters

## Scope

The OEM12c Setup project Database Server Architecture provides services to support the following key business functions:

| Business Organization | Geography | Business Functions |
| --- | --- | --- |
| Nokia Networks | Global | Database Monitoring for Business to Function |
|  |  |  |

## Glossary

| English | Description |
| --- | --- |
| Basic Installation | Installation of hardware, operating system and firmware to OEM12c plus one Oracle database Repository. Basic installations is provided by Oracle System Support. |
| Hardware (HW) | Hardware, including processors and disk systems |
| Network | Networks, both internal between HW subsystems and external between application servers and database servers the e.g. i.e. VLAN, WAN |
| Operating system (OS) | Part of system software |
| Firmware | Program code to control HW. “Between” HW and OS. |
| System Software | Software which is used to run business application |
| Infrastructure | Includes hardware (HW), Operating system (OS) and middleware software |
|  |  |
|  |  |

## Audience

This document is targeted to the architects, designers and developers working with Nokia Solutions and Networks OEM12c.The instructions for the database administrators monitoring and administering the databases.

## Related documents

# Overall Technical Architecture

The overall architecture diagram of the databases hosted in HP DCs is in the figure 1 below:

***Minimum CPU, RAM, Heap Size, and Hard Disk Space Requirements Per OMS***

|  | **Targets Monitored** | **Advanced Installation (MEDIUM)** |  | |
| --- | --- | --- | --- | --- |
| Deployment Size | 1711 | Medium |  | |
| Configuration |  | 1 OMS, >=1000 but <10,000 Targets, >=100 but <1000 Agents,>=10 but <25 Concurrent User Sessions |  |  |
| CPU Cores/Host |  | 8 |  |  |
| RAM[Foot 1](https://docs.oracle.com/cd/E63000_01/EMBSC/preinstall_req_hw.htm#sthref28) |  | 16G |  |  |
| Hard Disk Space |  | 484 GB |  |  |
| Temporary Directory Hard Disk Space |  | 4.0G |  |  |
|  |  |  |  |  |

# Database Server Architecture Summary

## Production OEM12c Environment

The characteristics of the architecture are

* The databases in the scope of this document are hosted in Physical Servers, which is Single machines.
* The primary production machine is OEM13c located in EMEA-FR-IDA-B1B-Chambord..

### Nodes and Disk and Storage Layout

### Disk Layout

The following filesystem layout will be provisioned. Swap is sized to follow the requirement for the allocated memory.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SCSI ID | Mount Point | Size | Format | Owner |
| 0:0 | / | 5.0G | EXT4 | Root |
| /dev | 7.9G | EXT4 | Root |
| /dev/shm | 12G | EXT4 | Root |
| /boot | 251M | EXT4 | Root |
| /home | 496M | EXT4 | Root |
| /tmp | 4.0G | EXT4 | Root |
| /var | 5.0G | EXT4 | Root |
| /u01/app/oracle | 99G | EXT4 | Root |
| /PRD1/oradata | 247G | EXT4 | Root |
|  | /PRD1/archive | 50G |  |  |
|  | /PRD1/origlog | 9.9G |  |  |
|  | /PRD1/mirrorlog | 9.9G |  |  |
|  | /PRD1/diag | 30G |  |  |
|  | /opt/autosys | 2.0G |  |  |
|  |  |  |  |  |

**Production Primary Database Server Information**

**Hostname :- psun3cmo.pdc.alcatel-lucent.com**

**Database :- POEMREP2**

**Repository DB Version :- Database 11g Enterprise Edition Release 11.2.0.4.0 - 64bit Production**

**OMS**

### Ports and Urls in Prod

Note that the Default ports and Urls in Prod, only the ports listed in the column Ports in Use.

following URL to access:

1. Enterprise Manager Cloud Control URL: https://fr712uora005.zeu.alcatel-lucent.com:7803/em

2. Admin Server URL: <https://fr712uora005.zeu.alcatel-lucent.com:7103/console>

The following details need to be provided during the additional OMS install:

1. Admin Server Hostname: fr712uora005.zeu.alcatel-lucent.com

2. Admin Server Port: 7103

### Software versions in Prod

Both nodes of server fih3 and fih5 have the same Oracle software operating system and database versions, see the table below:

| Platform Server Class | Hardware Standard | Vendor | Operating System | Platform Resources | Comments |
| --- | --- | --- | --- | --- | --- |
| Database Server  fr712uora005 |  | Oracle | Linux | Databases and database home, grid infra | Database 11g Release 2 (11.2.0.4) |
| OMS Grid and agent server details |  | Grid |  |  | 12c |

## 

# Data Centers and Hosting

## Environment Hosting

OEM12c machine is located is EMEA-FR-IDA-B1B-Chambord.

Databases hosted exists on fr712uora005 servers.

**Hostname :- psun3cmo.pdc.alcatel-lucent.com**

**Database :- POEMREP2**

**Repository DB Version :- Database 11g Enterprise Edition Release 11.2.0.4.0 - 64bit Production**

Backup and Recovery

The Backup and Recovery Strategy will be conducted according to the standard procedures applied in the Data Centers hosted by HP –

## Accessing the OEM12c OMS Environments.

The connection to the OEM13c nodes is provided by MGate and Juniper client running in Nokia laptops.

The connection between Application servers and Exadata servers hosting the databases is provided via Nokia network – please see the related document /5/ for more details.

1. Enterprise Manager Cloud Control URL: https://fr712uora005.zeu.alcatel-lucent.com:7803/em

2. Admin Server URL: <https://fr712uora005.zeu.alcatel-lucent.com:7103/console>

## Database Tier

Oracle Management Service (OMS)

The database server contains OMS repository and schema data associated with the Nokia Solutions and Networks Business Intelligence applications.

The following Oracle database server instances will be serving the as the OMS repository Production primary databases

| Oracle Database Instance | Platform / DNS | Platform  O/S | Server Release | Function |
| --- | --- | --- | --- | --- |
| POEMREP2 | fr712uora005.zeu.alcatel-lucent.com | OL 6.7 | 11.2.0.4 | Production Database |
|  |  |  |  |  |

**WLS Domain Information**

Domain Name : GCDomain

Admin Server Host : fr712uora005.zeu.alcatel-lucent.com

Admin Server HTTPS Port: 7103

Admin Server is RUNNING

**Managed Server Information**

Managed Server Instance Name: EMGC\_OMS1

Managed Server Instance Host: fr712uora005.zeu.alcatel-lucent.com

Naming Standards

This section describes the naming standards that will be used for objects and files relevant to the database architecture:

| Object | Naming Standard |
| --- | --- |
| File System Mount Points | During migration ACFS is used, and the mount point name is /migration. |
| Database Files | ASM OMF naming used. |
| Tablespaces, Partitions | Naming from source system (to be migrated) |
| Tables, Views, Materialized views, Indexes | Naming from source system (to be migrated) |
| Linux UserNames | For migration work the username format is <org>\_<userID>. Note: these users will be removed when the migration is over |
| Database UserNames | Naming from source system (to be migrated) |
| Directories | During migration the following directory names will be used:  migration/DBNAME/ or migration/SERVERNAME e.g. migration/SERVCSTG or migration/XA01. The subdirectories can be named according to the usage |

Agent Information for OMS Server

Agent Running on fr712uora005.zeu.alcatel-lucent.com and urls

OMS\_HOST=fr712uora005.zeu.alcatel-lucent.com

EM\_UPLOAD\_PORT=4902

AGENT\_REGISTRATION\_PASSWORD=Infra\_12345

AGENT\_INSTANCE\_HOME=: /u01/app/oracle/product/oms12c/agent/agent\_inst

AGENT\_PORT=3872

Copyright (c) 1996, 2013 Oracle Corporation. All rights reserved.

---------------------------------------------------------------

Agent Version : 12.1.0.3.0

OMS Version : 12.1.0.3.0

Protocol Version : 12.1.0.1.0

Agent Home : /u01/app/oracle/product/oms12c/agent/agent\_inst

Agent Binaries : /u01/app/oracle/product/oms12c/agent/core/12.1.0.3.0

Agent Process ID : 17286

Parent Process ID : 17017

Agent URL : https://fr712uora005.zeu.alcatel-lucent.com:3872/emd/main/

Repository URL : https://fr712uora005.zeu.alcatel-lucent.com:4902/empbs/upload

Started at : 2019-08-01 09:50:27

Started by user : oracle

Last Reload : (none)

Last successful upload : 2019-08-01 14:00:29

Last attempted upload : 2019-08-01 14:00:29

Total Megabytes of XML files uploaded so far : 0.38

Number of XML files pending upload : 0

Size of XML files pending upload(MB) : 0

Available disk space on upload filesystem : 18.50%

Collection Status : Collections enabled

Heartbeat Status : Ok

Last attempted heartbeat to OMS : 2019-08-01 14:00:52

Last successful heartbeat to OMS : 2019-08-01 14:00:52

Next scheduled heartbeat to OMS : 2019-08-01 14:01:52

Agent Installation on New Host.

Partitioning is used in all the databases in the scope of this document.

Step 1 :-

Login as Oracle User :-

$ /usr1/apl/oracle/agent12c

AgentPull.sh LOGIN\_USER=SYSMAN LOGIN\_PASSWORD=Nokia\_12345 PLATFORM="Oracle Solaris on x86-64 (64-bit)" VERSION=12.1.0.3.0 AGENT\_BASE\_DIR=/usr1/apl/oracle/agent12c -ignorePrereqs

$ unzip agent.zip

-🡪 Update agent.rsp with

OMS\_HOST=fr712uora005.zeu.alcatel-lucent.com

EM\_UPLOAD\_PORT=4902

AGENT\_REGISTRATION\_PASSWORD=Infra\_12345

#AGENT\_INSTANCE\_HOME=/usr1/apl/oracle/agent12c

AGENT\_PORT=3872

b\_startAgent=true

ORACLE\_HOSTNAME=fihecdpp079.emea.nsn-net.net

Where ORACLE\_HOSTNAME is the new Oracle Server where Agent is to be installed.

agentDeploy.sh AGENT\_BASE\_DIR=/usr1/apl/oracle/agent12c RESPONSE\_FILE=/usr1/apl/oracle/agent12c/agent.rsp -ignorePrereqs

AgentPull.sh



OMS Stop and Start

**OMS STOP**

Login to oracle Server : fr712uora005.zeu.alcatel-lucent.com

oracle@fr712uora005 $ cd /u01/app/oracle/product/oms12c/r3/oms/bin

oracle@fr712uora005 $ . /emctl status oms

oracle@fr712uora005 $ . /emctl status oms -details

oracle@fr712uora005 $ . /emctl stop oms -all

**OMS START**

oracle@fr712uora005 $ cd /u01/app/oracle/product/oms12c/r3/oms/bin

oracle@fr712uora005 $ . /emctl status oms

oracle@fr712uora005 $ . /emctl start oms

oracle@fr712uora005 $ . / emctl status oms

oracle@fr712uora005 $ ./emctl secure agent

Login to OEM12c

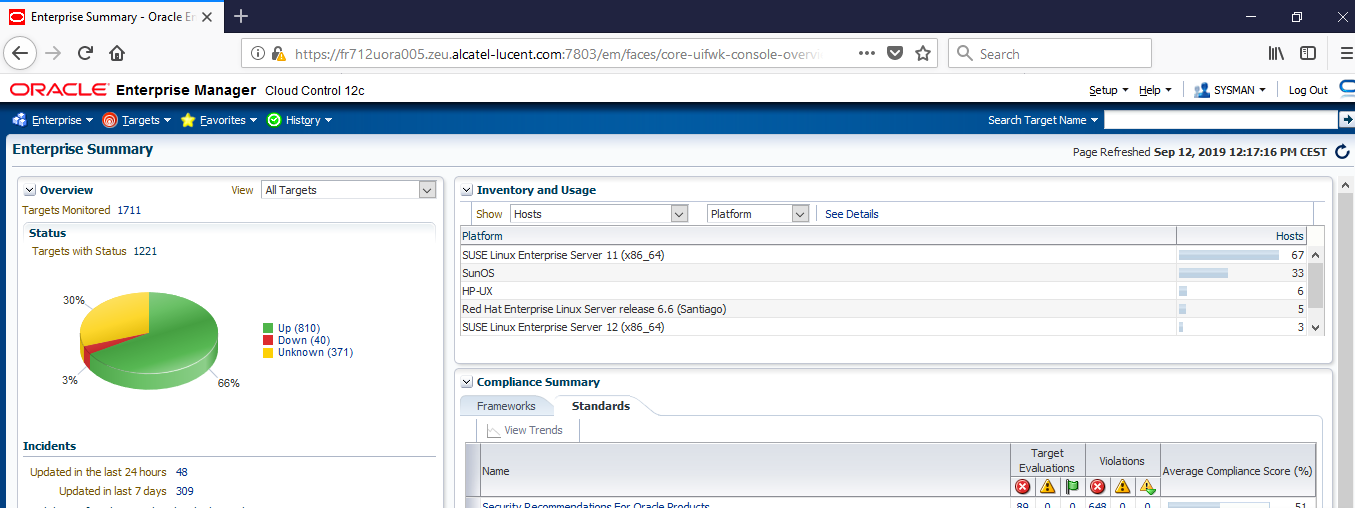
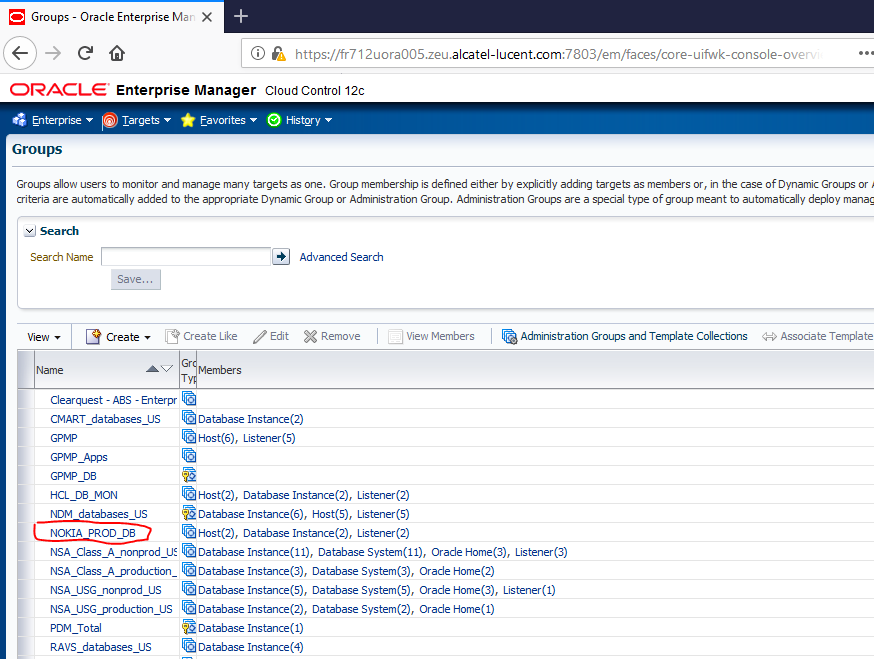
User

<https://fr712uora005.zeu.alcatel-lucent.com:7803/em>

Credentials :-

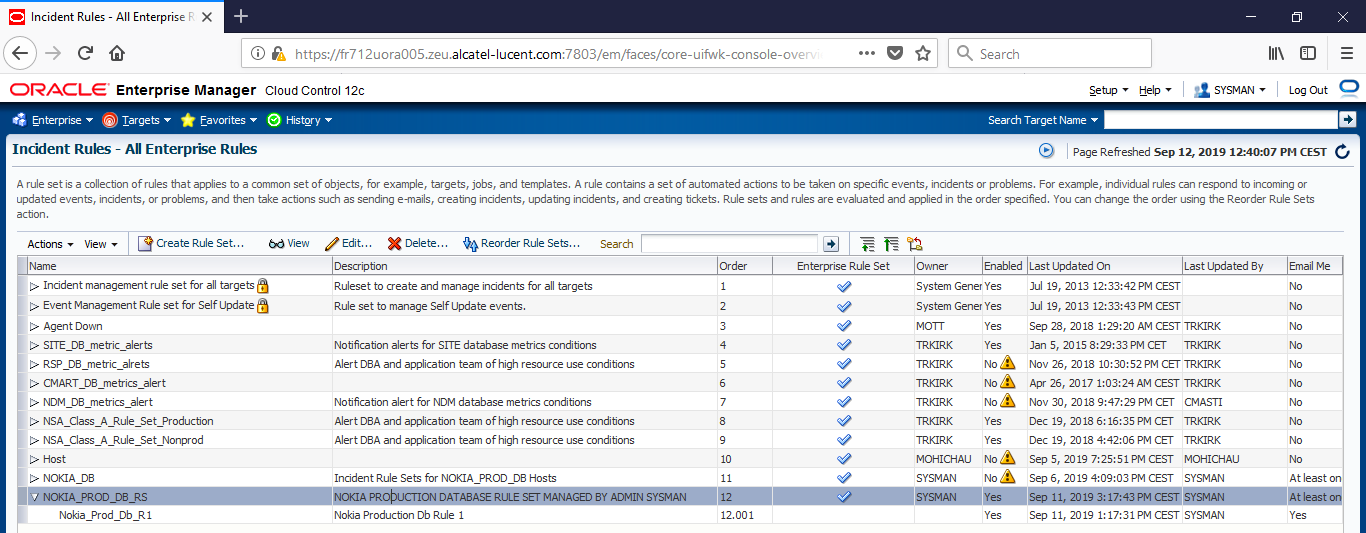
Username:- SYSMAN

Password :- Nokia\_12345

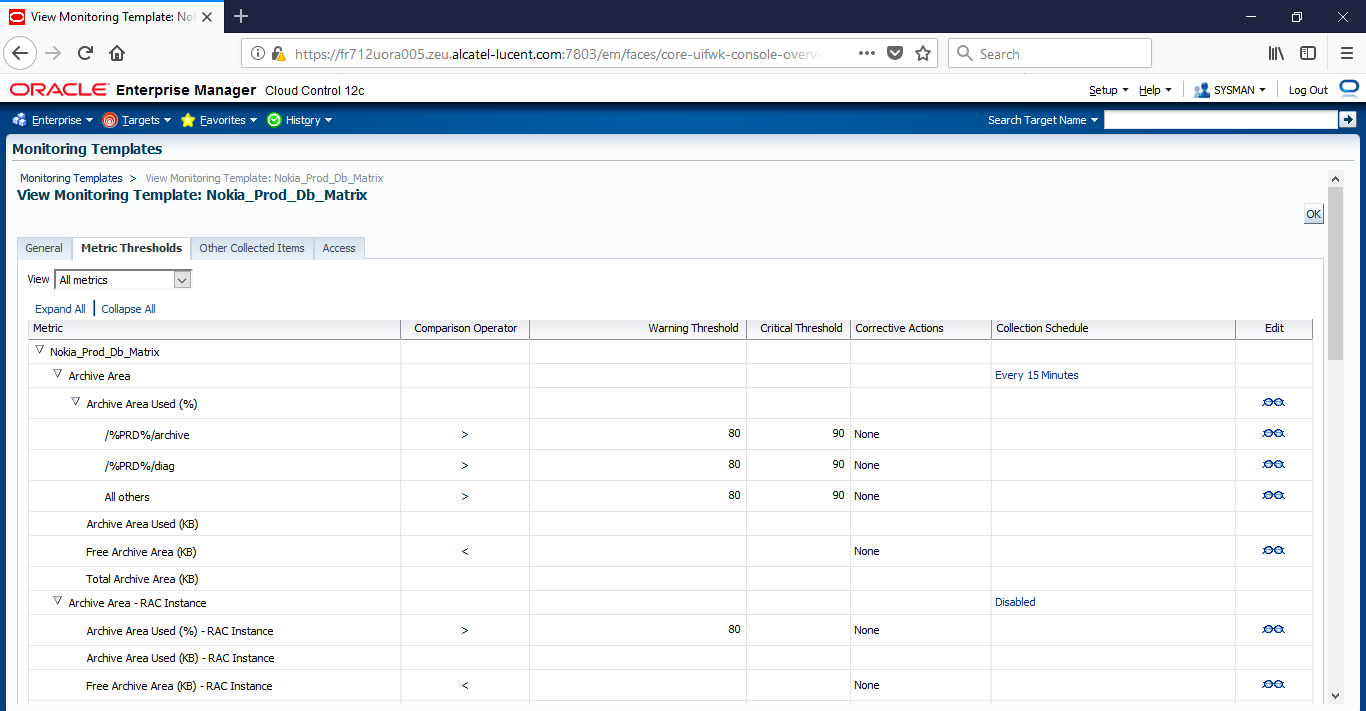
 

Any New taget to be added in NOKIA\_PROD\_DB group to be monitored.

**Incident Rule :-**



**Monitoring Templates**



# Open and Closed Issues

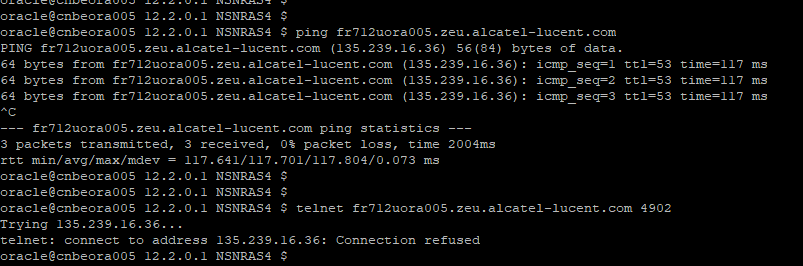
## Open Issues

| ID | Issue | Resolution | Responsibility | Target Date | Impact Date |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

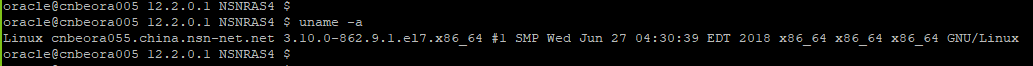
## Closed Issues

| ID | Issue | Resolution | Responsibility | Target Date | Impact Date |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

Check Ping and Telnet to OMS server



Check O/S verision



Put version in below command at OMS server (**fr712uora005.zeu.alcatel-lucent.com) &** execute below command on this path.

**Login to OMS server(fr712uora005.zeu.alcatel-lucent.com)**

oracle@fr712uora005 $ cd /u01/app/oracle/product/oms12c/r3/oms/bin

oracle@fr712uora005 $ emcli get\_supported\_platforms

-----------------------------------------------

Version = 12.1.0.3.0

Platform = Linux x86

-----------------------------------------------

Version = 12.1.0.3.0

Platform = Linux x86-64

-----------------------------------------------

Version = 12.1.0.2.0

Platform = HP-UX PA-RISC (64-bit)

-----------------------------------------------

Version = 12.1.0.3.0

Platform = Oracle Solaris on SPARC (64-bit)

-----------------------------------------------

Version = 12.1.0.3.0

Platform = HP-UX PA-RISC (64-bit)

-----------------------------------------------

Version = 12.1.0.3.0

Platform = HP-UX Itanium

-----------------------------------------------

Version = 12.1.0.2.0

Platform = Microsoft Windows x64 (64-bit)

-----------------------------------------------

Version = 12.1.0.3.0

Platform = Oracle Solaris on x86-64 (64-bit)

-----------------------------------------------

Version = 12.1.0.3.0

Platform = Microsoft Windows (32-bit)

-----------------------------------------------

Version = 12.1.0.2.0

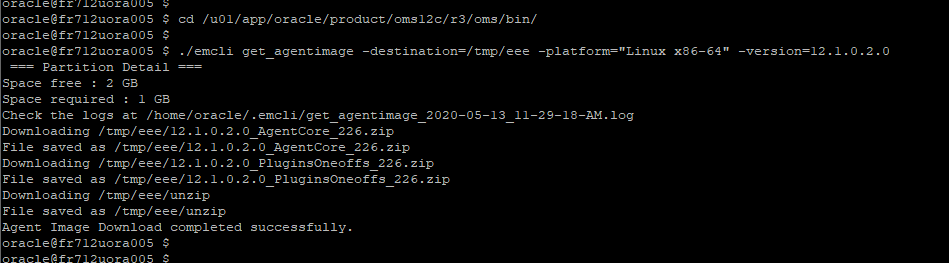
Platform = Linux x86-64

-----------------------------------------------

Platforms list displayed successful

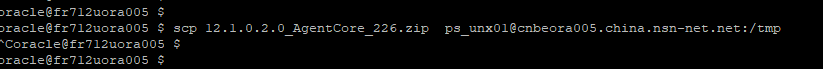
After that execute below command to download only agent software.

./emcli get\_agentimage -destination=/tmp/eee -platform="Linux x86-64" -version=12.1.0.2.0



Then Copy this software to Target server

Via scp or winscp



Prepare Agent.rsp file

$ unzip agent.zip

-🡪 Update agent.rsp with

OMS\_HOST=fr712uora005.zeu.alcatel-lucent.com

EM\_UPLOAD\_PORT=4902

AGENT\_REGISTRATION\_PASSWORD=Infra\_12345

AGENT\_PORT=3872

b\_startAgent=true

ORACLE\_HOSTNAME=cnbeora005.china.nsn-net.net

Where ORACLE\_HOSTNAME is the new Oracle Server where Agent is to be installed.

agentDeploy.sh AGENT\_BASE\_DIR=/usr1/apl/oracle/agent12c RESPONSE\_FILE=/usr1/apl/oracle/agent12c/agent.rsp -ignorePrereqs

[root@st-db109 ~]# /dbprog/oracle/Middleware/agent12c/core/12.1.0.5.0/root.sh

Finished product-specific root actions.

/dbprog/oracle/Middleware/agent12c/agent\_inst/bin/emctl stop agent

/dbprog/oracle/Middleware/agent12c/agent\_inst/bin/emctl secure agent

/dbprog/oracle/Middleware/agent12c/agent\_inst/bin/emctl start agent

/dbprog/oracle/Middleware/agent12c/agent\_inst/bin/emctl status agent

/dbprog/oracle/Middleware/agent12c/agent\_inst/bin/emctl upload agent