Oracle Database 12cR2 (12.2.0.1) on SUSE Linux Enterprise Server 12 SP3

(how-to install)

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Introduction

This document is not a replacement for official Oracle install document, but to help you understand minor difference you may encounter while installing Oracle Database on SUSE Linux Enterprise Server 12 SP3. This document covers x86_64 version but installation steps are same for other platforms. We will use latest certified versions of Oracle Database Enterprise version 12cR2 (12.2.0.1).

Oracle Software

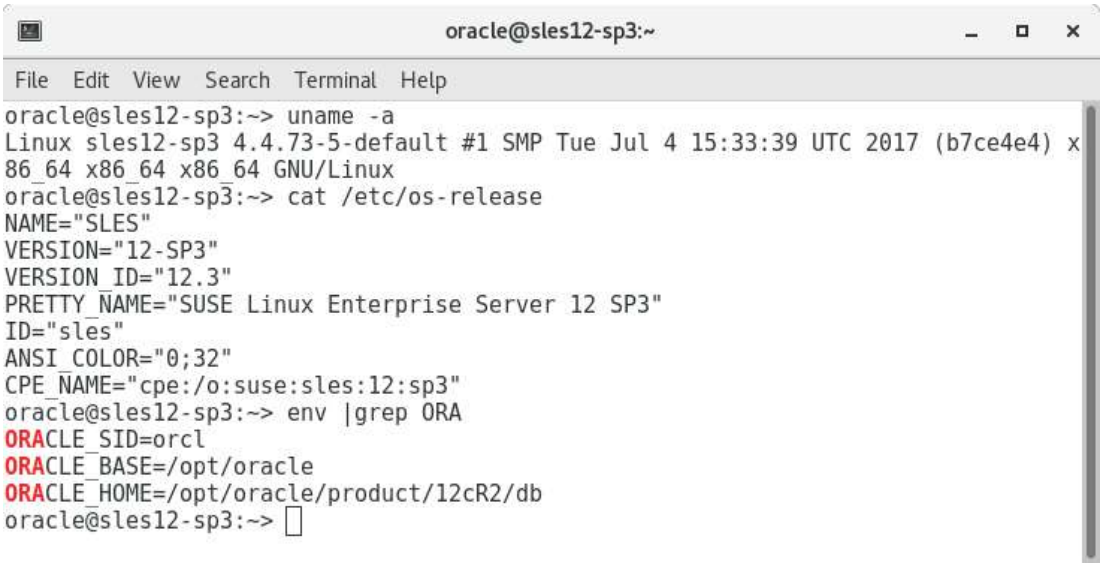
Oracle Database Enterprise Edition 12.2.0.1 is available for public download at:
http://www.oracle.com/technetwork/database/enterprise-edition/downloads/oracle12c-linux-12201-3608234.html

SUSE Software

SUSE Linux Enterprise Server 12 SP3: https://www.suse.com/products/server/download/

Installation

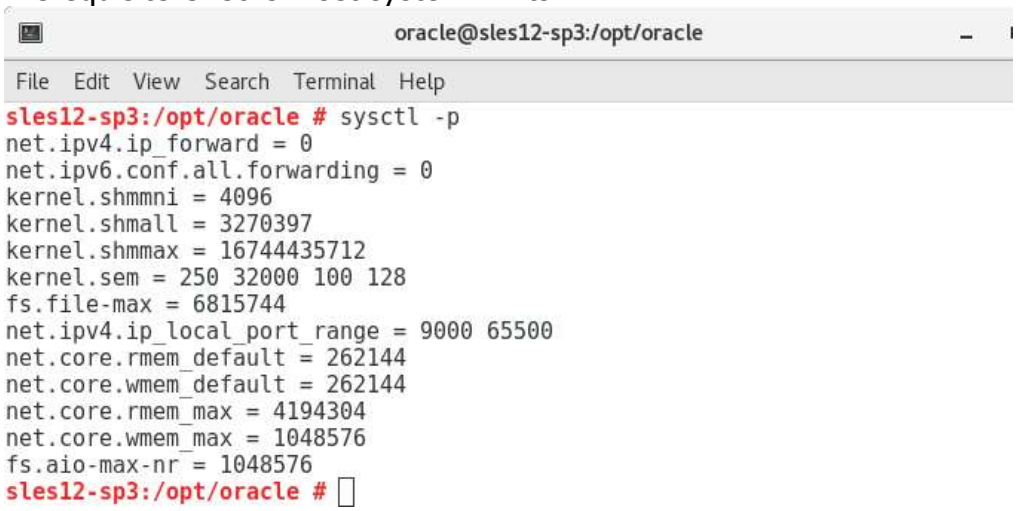
Install SUSE Linux Enterprise Server 12 SP3 with "**Oracle Server Base**" pattern. You can follow official Oracle Installation manual for selective required rpms.



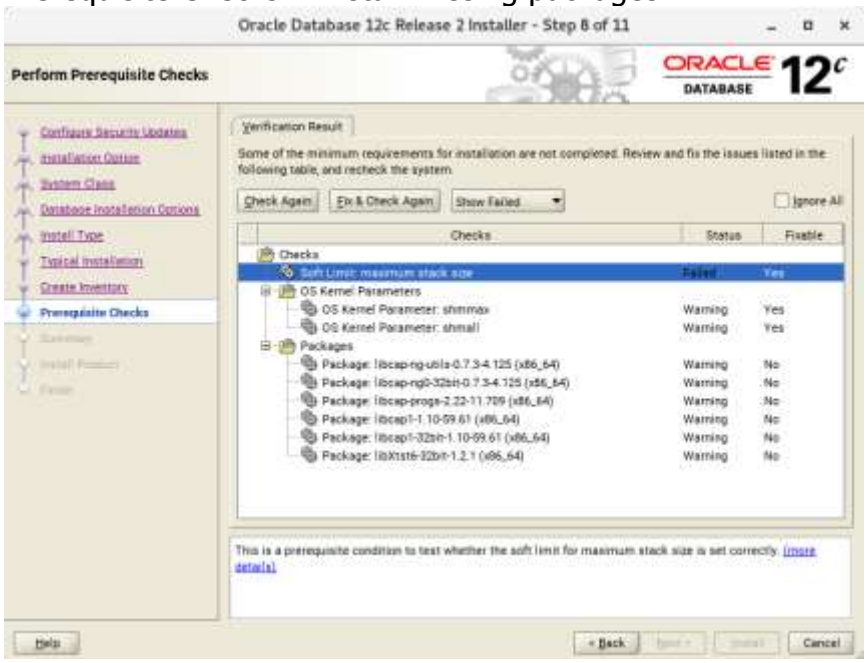
Installing Oracle Database 12.2.0.1

Installing Oracle Database12c on SLES12 SP3 is easy, please follow:

1. Download 12.2.0.1 SW (linuxx64_12201_database.zip) & unzip locally.
2. Watch for following minor error/warning messages (**Fix before starting Installer**):
    1. Make sure Server is assigned static IP address.
    2. Prerequisite Checks – "Soft Limit: maximum stack size"
       Check & set using "ulimit –s 10240"
    3. Prerequisite Checks – set system limits



    4. Prerequisite Checks – Install missing packages



5. **DBCA Error:** ORA-27104: system-defined limits for shared memory was misconfigured

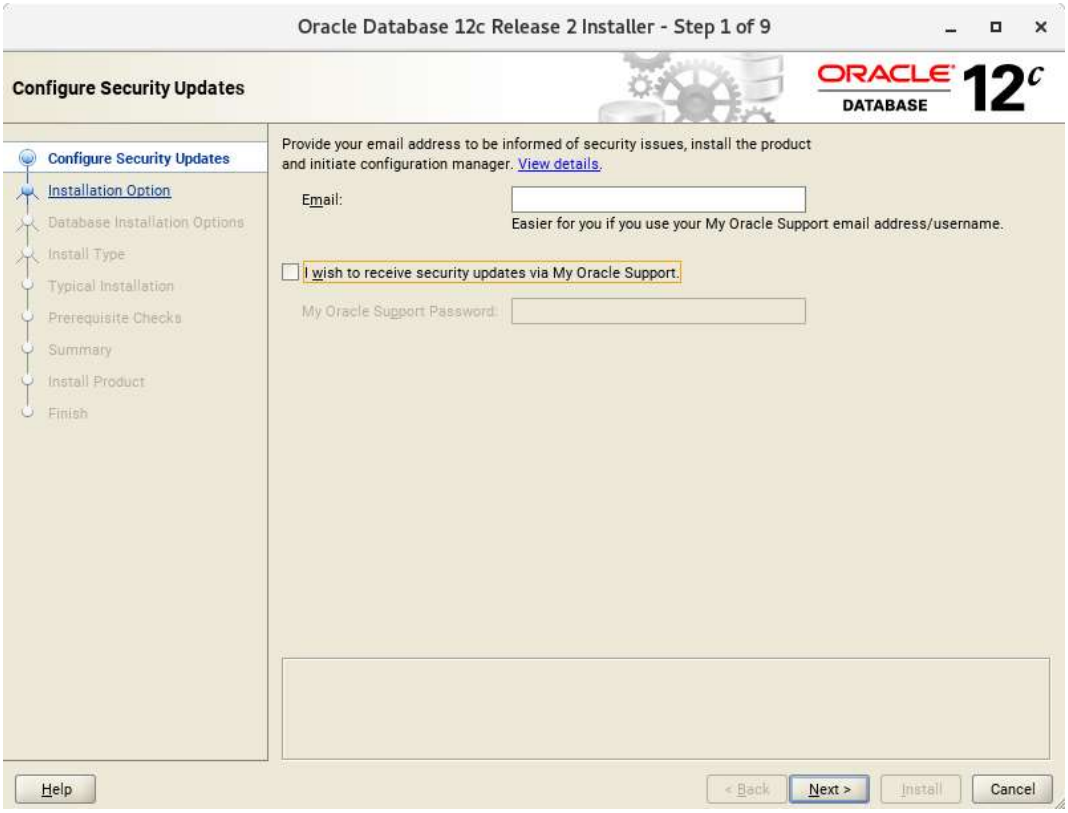
   Fix: Increase kernel.shmmax & kernel.shmall based on your Server RAM. Please refer Oracle Metalink Note [ID 567506.1] - Maximum SHMMAX values for Linux x86 and x86-64

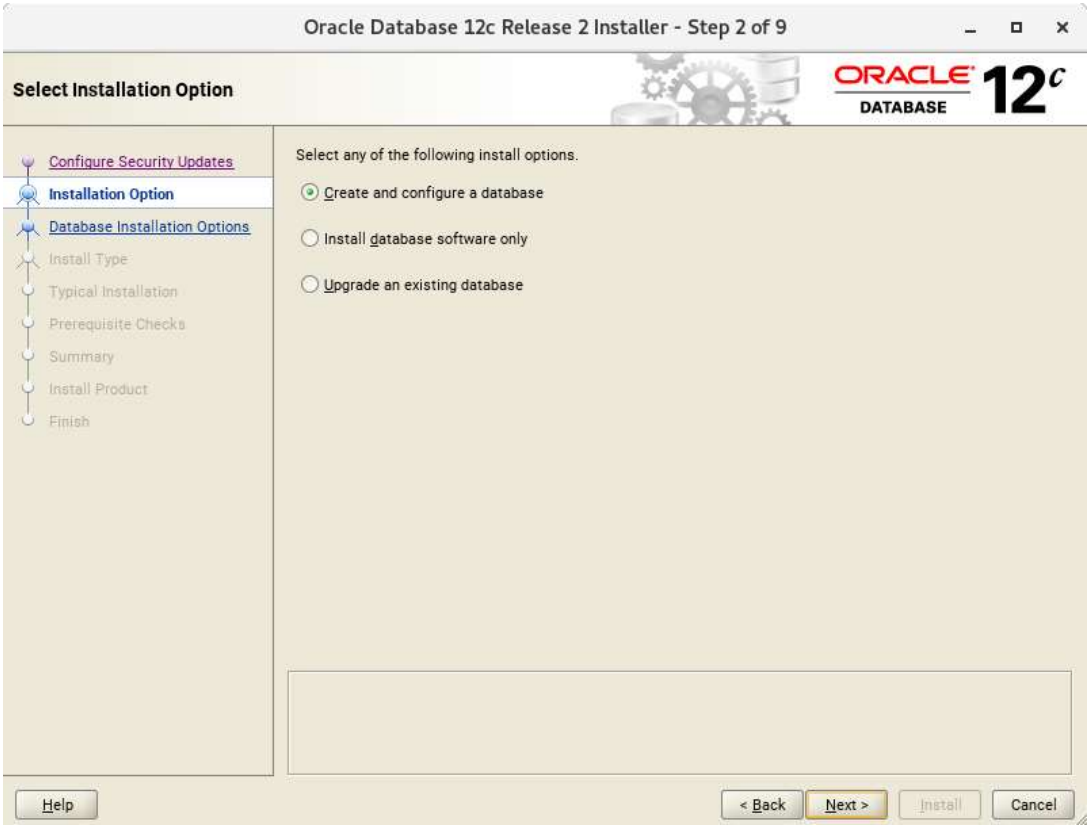
   Example for x86_64 Server with 32GB RAM:

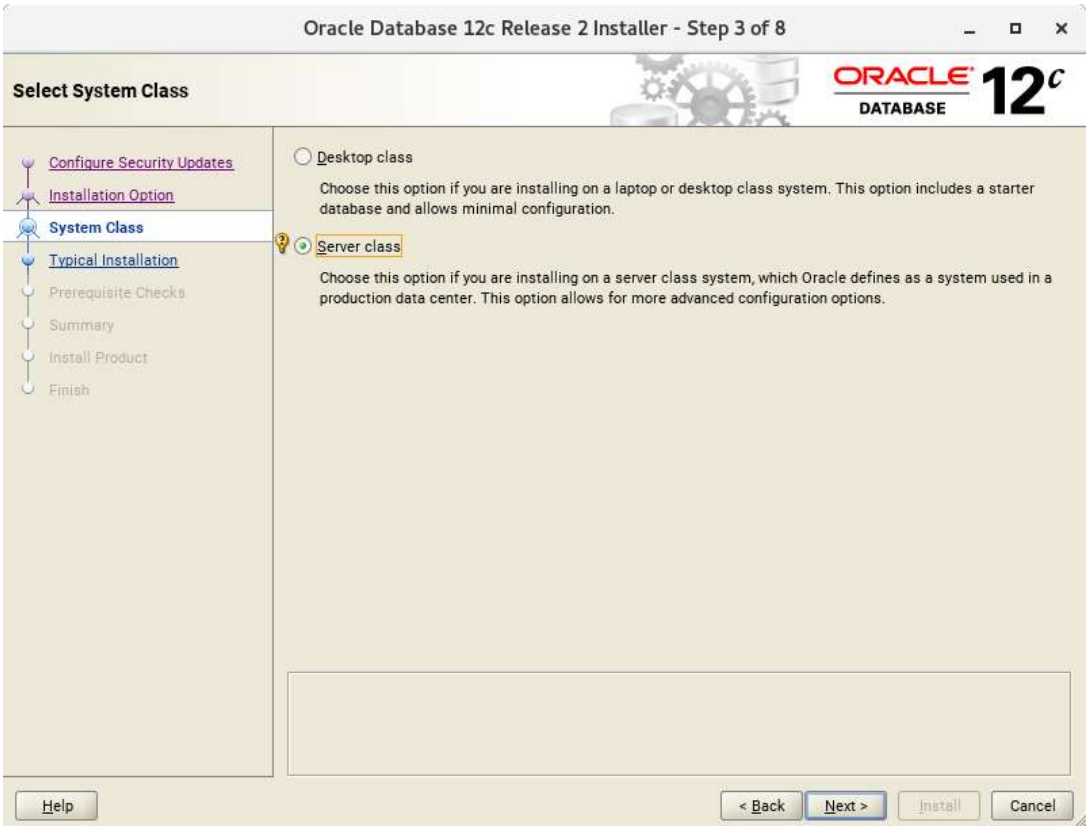
   shmmax=34359738368 (=32*1024*1024*1024),

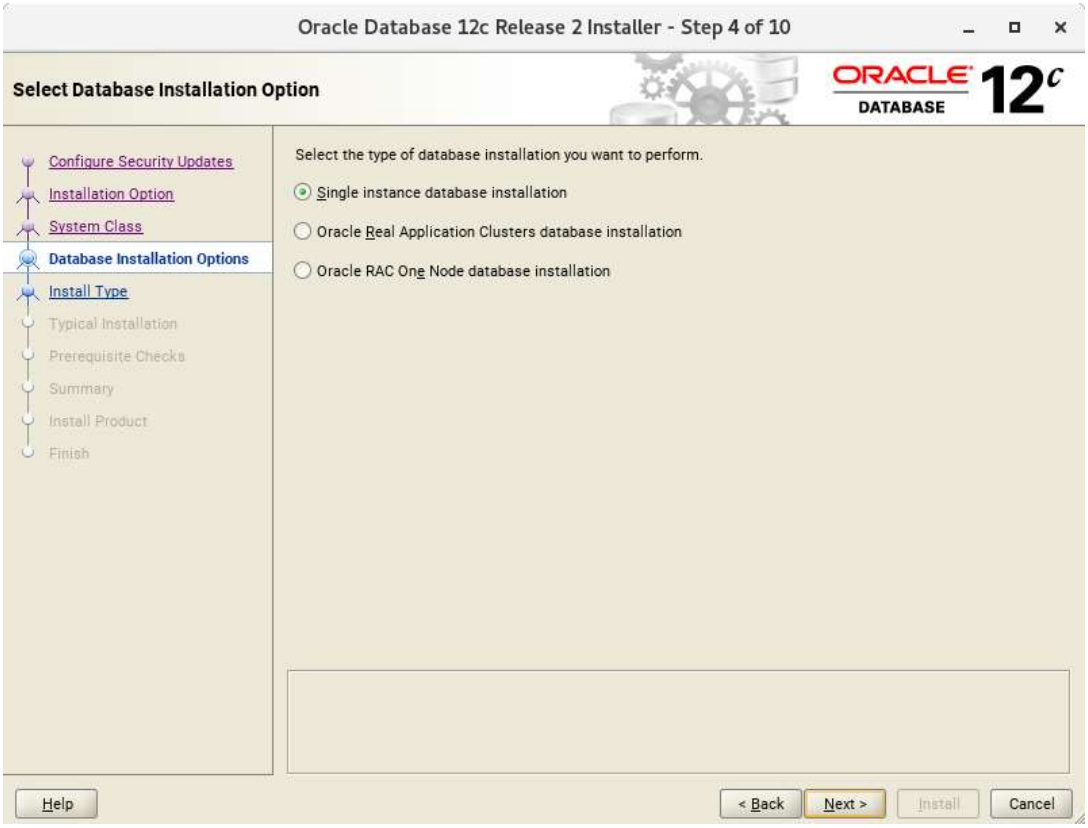
   shmall=8388608 (=32*1024*1024*1024 / 4096) - 4096 is page size

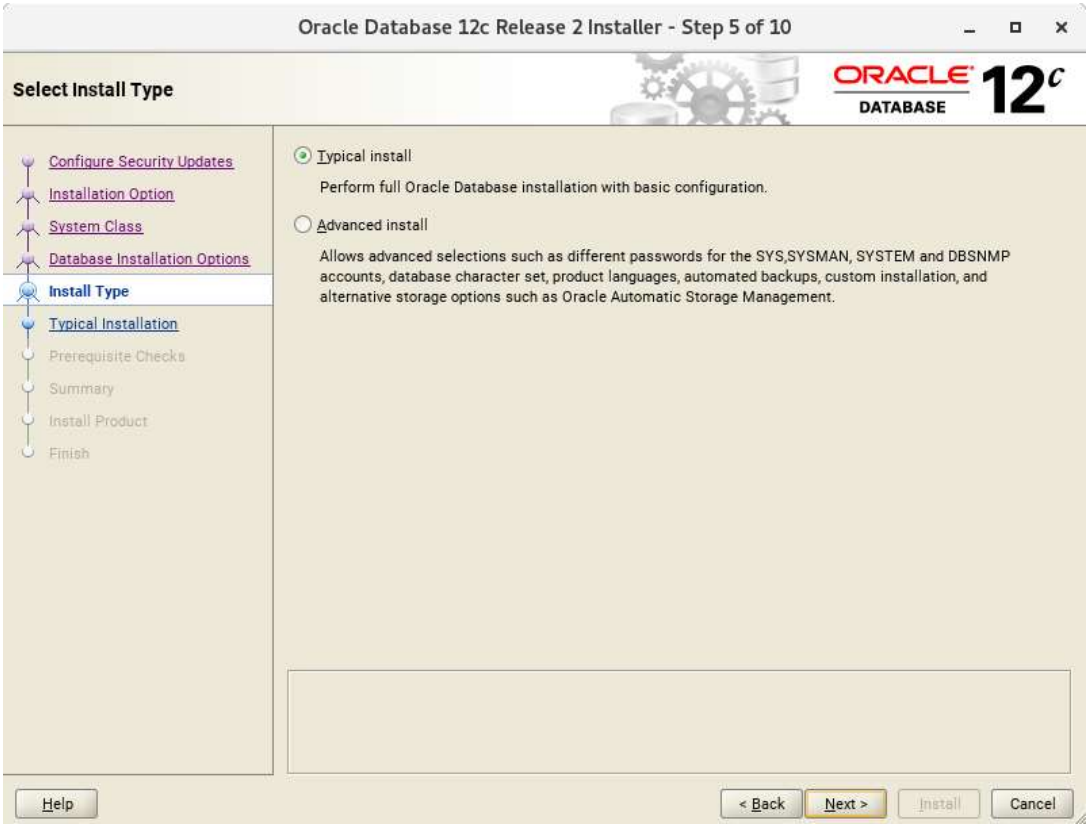
3. Start Oracle Universal Installer (OUI): database/runInstaller

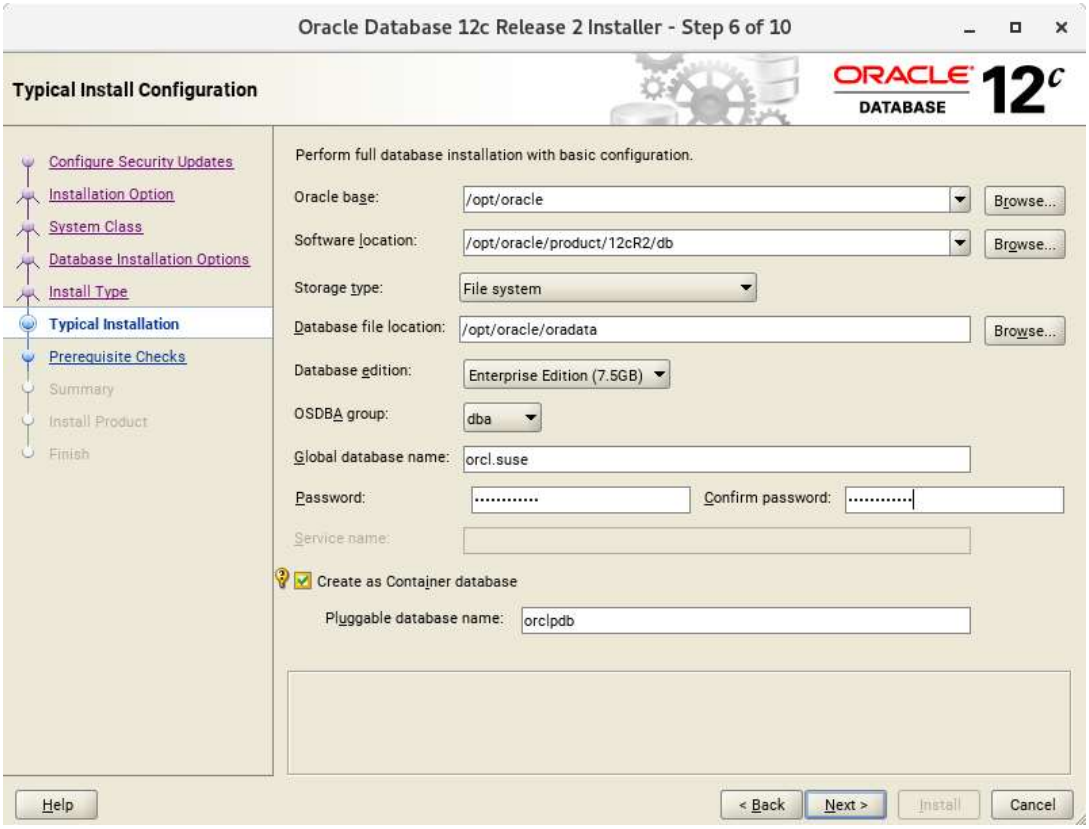


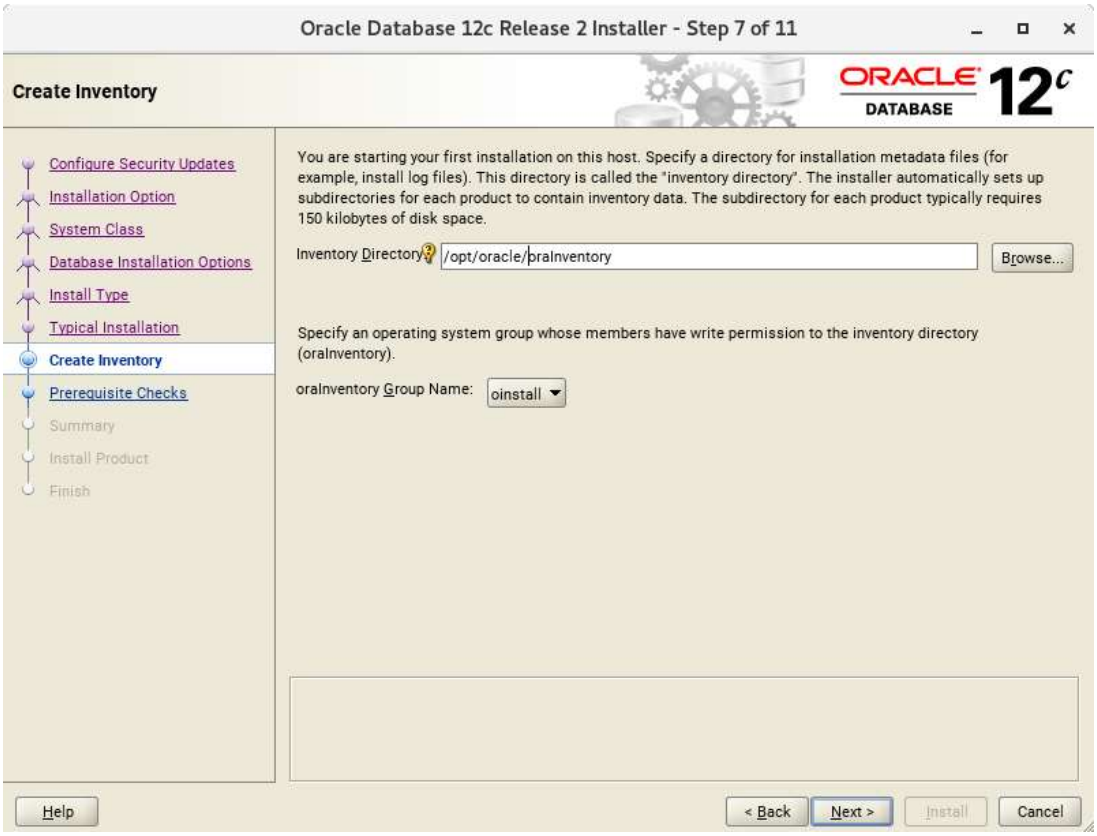

Oracle Database 12c Release 2 Installer - Step 2 of 9
Select Installation Option
ORACLE DATABASE 12c
Configure Security Updates
Installation Option
Database Installation Options
Install Type
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Select any of the following install options.
Create and configure a database
Install database software only
Upgrade an existing database
Help
< Back
Next >
Install
Cancel

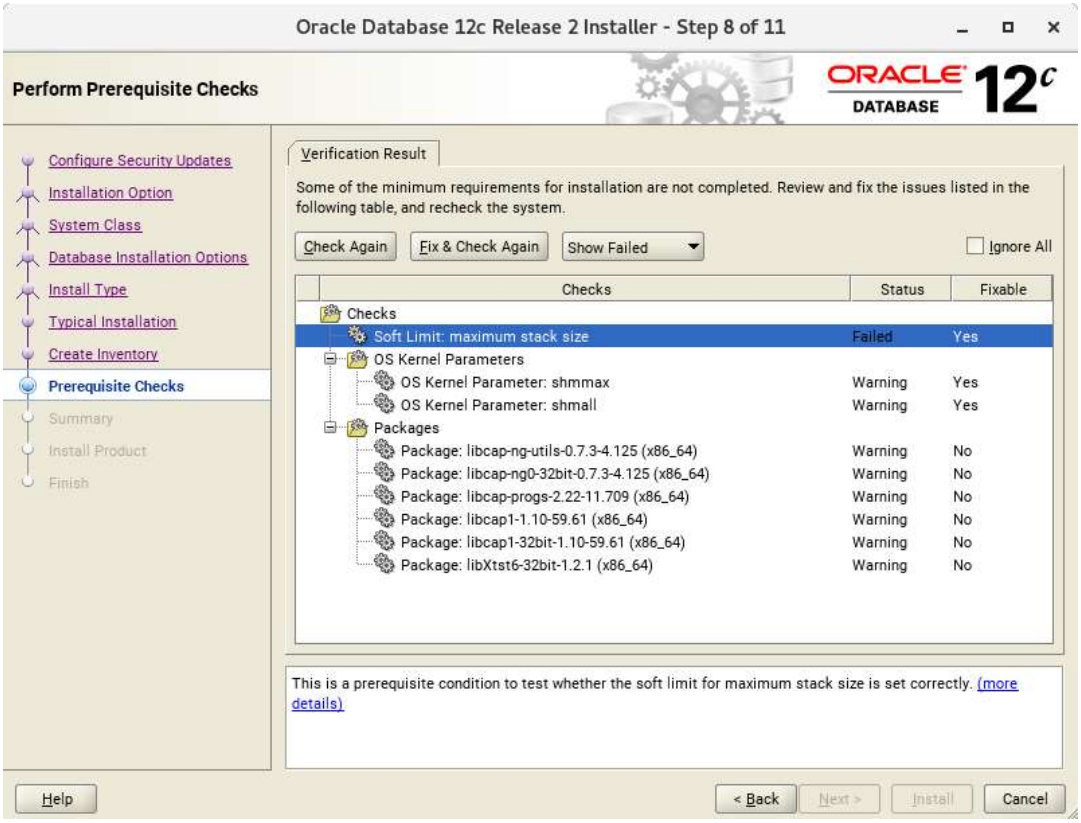

Oracle Database 12c Release 2 Installer - Step 3 of 8
Select System Class
ORACLE DATABASE 12c
Configure Security Updates
Installation Option
System Class
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Desktop class
Choose this option if you are installing on a laptop or desktop class system. This option includes a starter database and allows minimal configuration.
Server class
Choose this option if you are installing on a server class system, which Oracle defines as a system used in a production data center. This option allows for more advanced configuration options.
Help
< Back
Next >
Install
Cancel

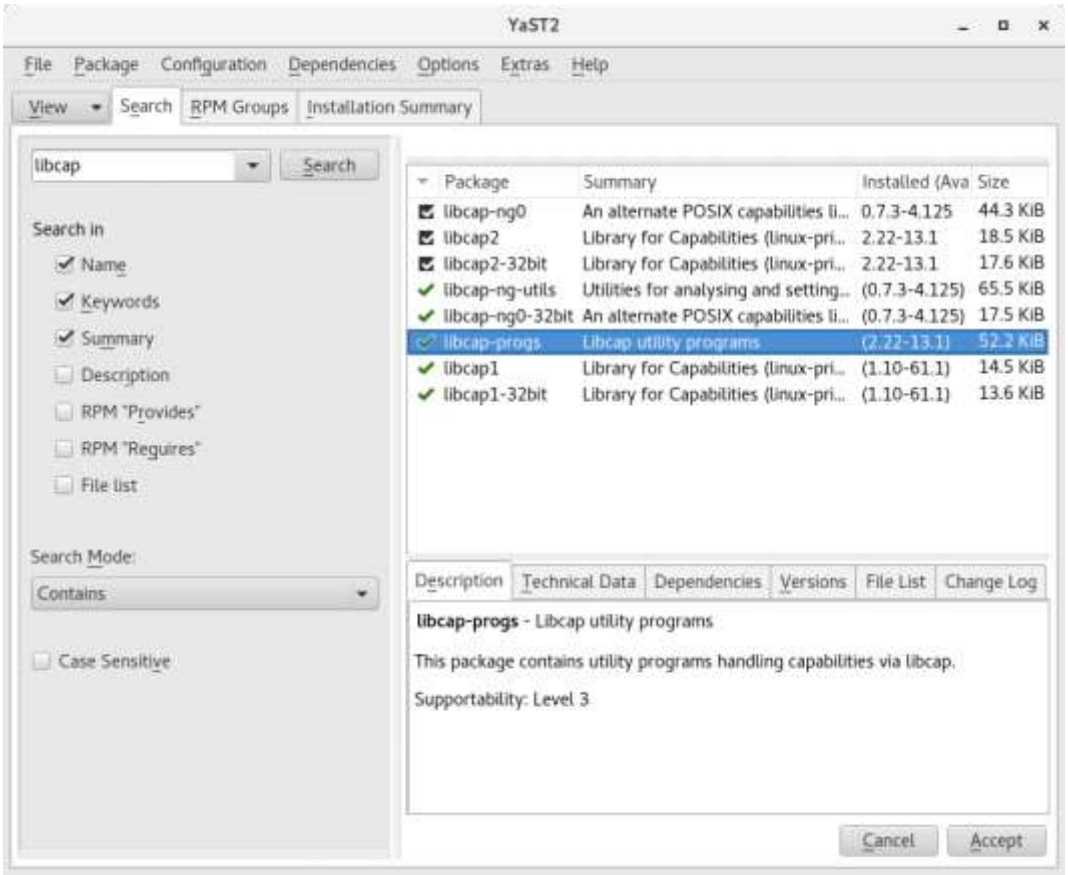

Oracle Database 12c Release 2 Installer - Step 4 of 10
Select Database Installation Option
ORACLE DATABASE 12c
Configure Security Updates
Installation Option
System Class
Database Installation Options
Install Type
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Select the type of database installation you want to perform.
Single instance database installation
Oracle Real Application Clusters database installation
Oracle RAC One Node database installation
Help
< Back
Next >
Install
Cancel

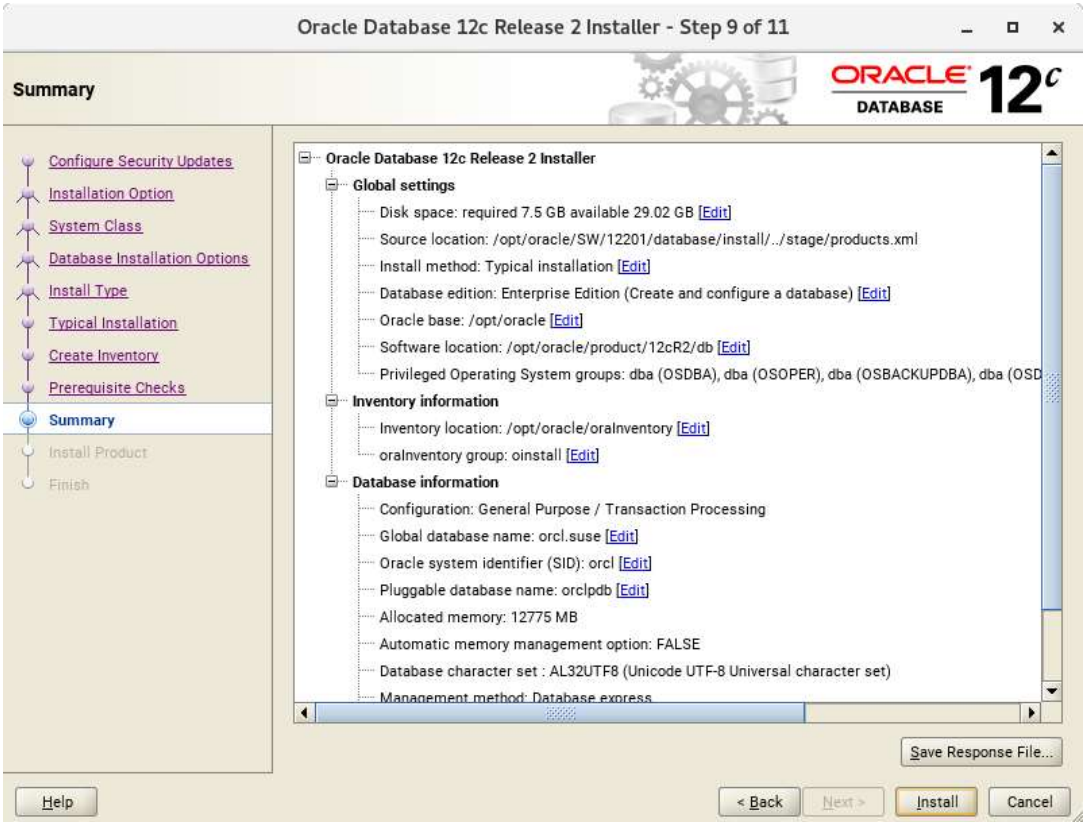

Oracle Database 12c Release 2 Installer - Step 5 of 10
Select Install Type
ORACLE DATABASE 12c
Configure Security Updates
Installation Option
System Class
Database Installation Options
Install Type
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Typical install
Perform full Oracle Database installation with basic configuration.
Advanced install
Allows advanced selections such as different passwords for the SYS,SYSMAN, SYSTEM and DBSNMP accounts, database character set, product languages, automated backups, custom installation, and alternative storage options such as Oracle Automatic Storage Management.
Help
< Back
Next >
Install
Cancel

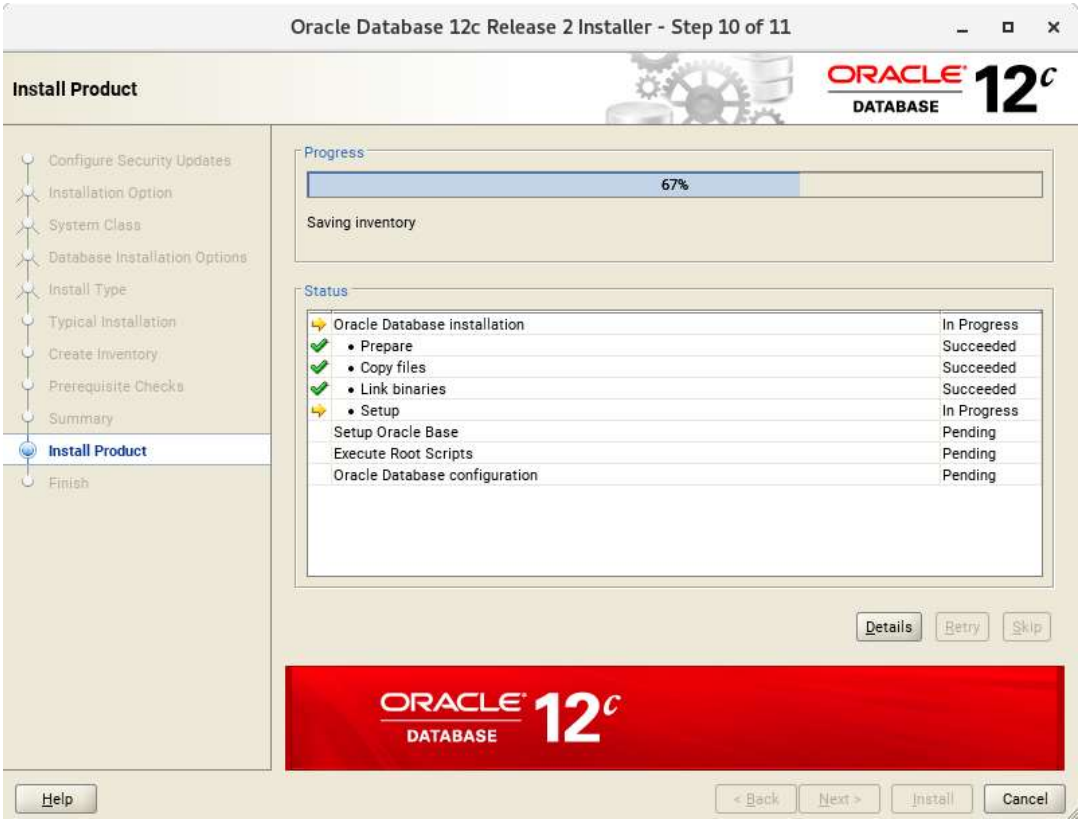

Oracle Database 12c Release 2 Installer - Step 6 of 10
Typical Install Configuration
ORACLE DATABASE 12c
Configure Security Updates
Installation Option
System Class
Database Installation Options
Install Type
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Perform full database installation with basic configuration.
Oracle base: /opt/oracle
Browse...
Software location: /opt/oracle/product/12cR2/db
Browse...
Storage type: File system
Database file location: /opt/oracle/oradata
Browse...
Database edition: Enterprise Edition (7.5GB)
OSDBA group: dba
Global database name: orcl.suse
Password:
Confirm password:
Service name:
Create as Container database
Pluggable database name: orclpdb
Help
< Back
Next >
Install
Cancel

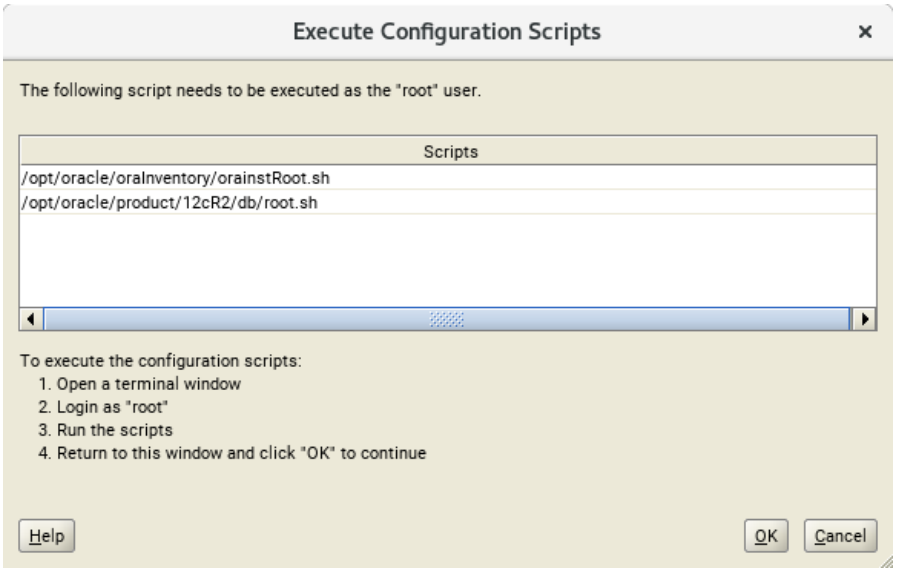

Oracle Database 12c Release 2 Installer - Step 7 of 11
Create Inventory
ORACLE DATABASE 12c
Configure Security Updates
Installation Option
System Class
Database Installation Options
Install Type
Typical Installation
Create Inventory
Prerequisite Checks
Summary
Install Product
Finish
You are starting your first installation on this host. Specify a directory for installation metadata files (for example, install log files). This directory is called the "inventory directory". The installer automatically sets up subdirectories for each product to contain inventory data. The subdirectory for each product typically requires 150 kilobytes of disk space.
Inventory Directory: /opt/oracle/oraInventory
Browse...
Specify an operating system group whose members have write permission to the inventory directory (oraInventory).
oraInventory Group Name: oinstall
Help
< Back
Next >
Install
Cancel

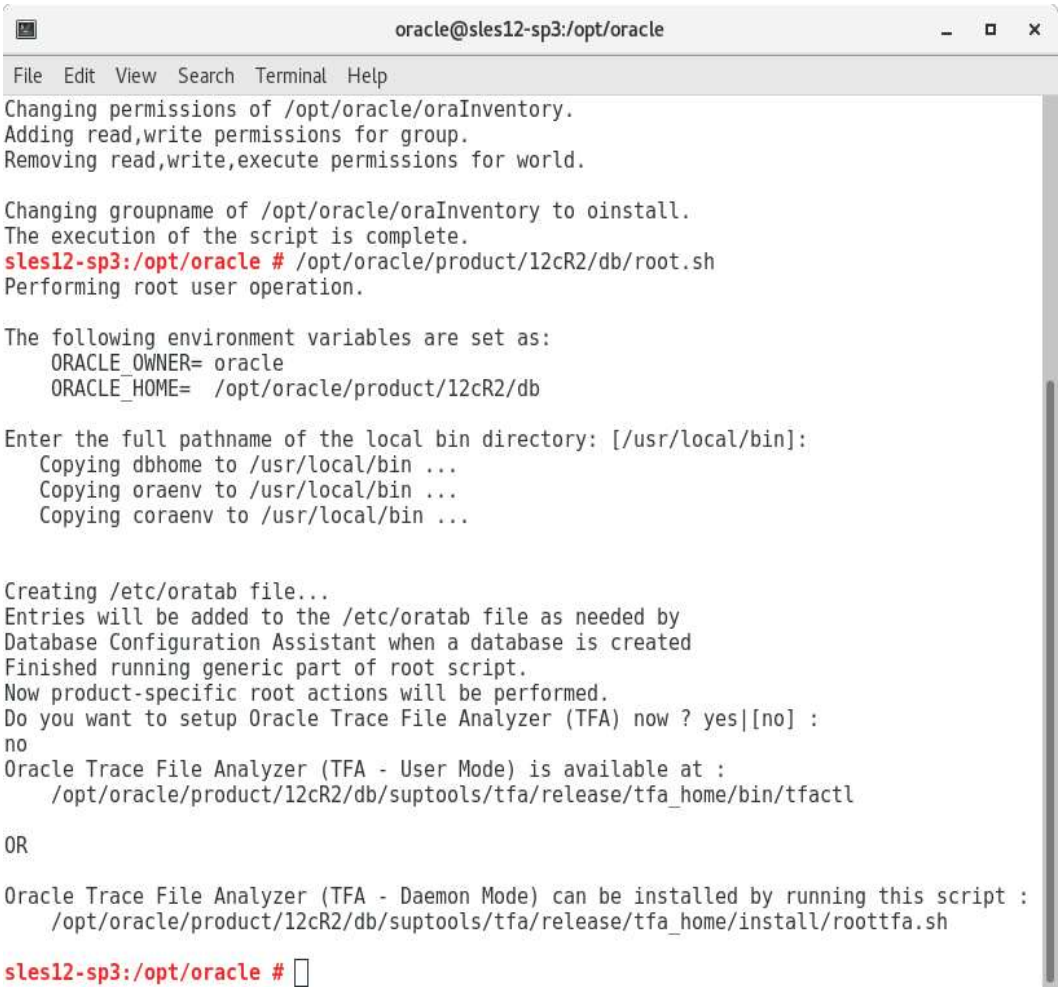

Oracle Database 12c Release 2 Installer - Step 8 of 11
Perform Prerequisite Checks
ORACLE DATABASE 12c
Configure Security Updates
Installation Option
System Class
Database Installation Options
Install Type
Typical Installation
Create Inventory
Prerequisite Checks
Summary
Install Product
Finish
Verification Result
Some of the minimum requirements for installation are not completed. Review and fix the issues listed in the following table, and recheck the system.
Check Again
Fix & Check Again
Show Failed
Ignore All
Checks
Status
Fixable
Checks
Soft Limit: maximum stack size
Failed
Yes
OS Kernel Parameters
OS Kernel Parameter: shmmax
Warning
Yes
OS Kernel Parameter: shmall
Warning
Yes
Packages
Package: libcap-ng-utils-0.7.3-4.125 (x86_64)
Warning
No
Package: libcap-ng0-32bit-0.7.3-4.125 (x86_64)
Warning
No
Package: libcap-progs-2.22-11.709 (x86_64)
Warning
No
Package: libcap1-1.10-59.61 (x86_64)
Warning
No
Package: libcap1-32bit-1.10-59.61 (x86_64)
Warning
No
Package: libXtst6-32bit-1.2.1 (x86_64)
Warning
No
This is a prerequisite condition to test whether the soft limit for maximum stack size is set correctly. (more details)
Help
< Back
Next >
Install
Cancel

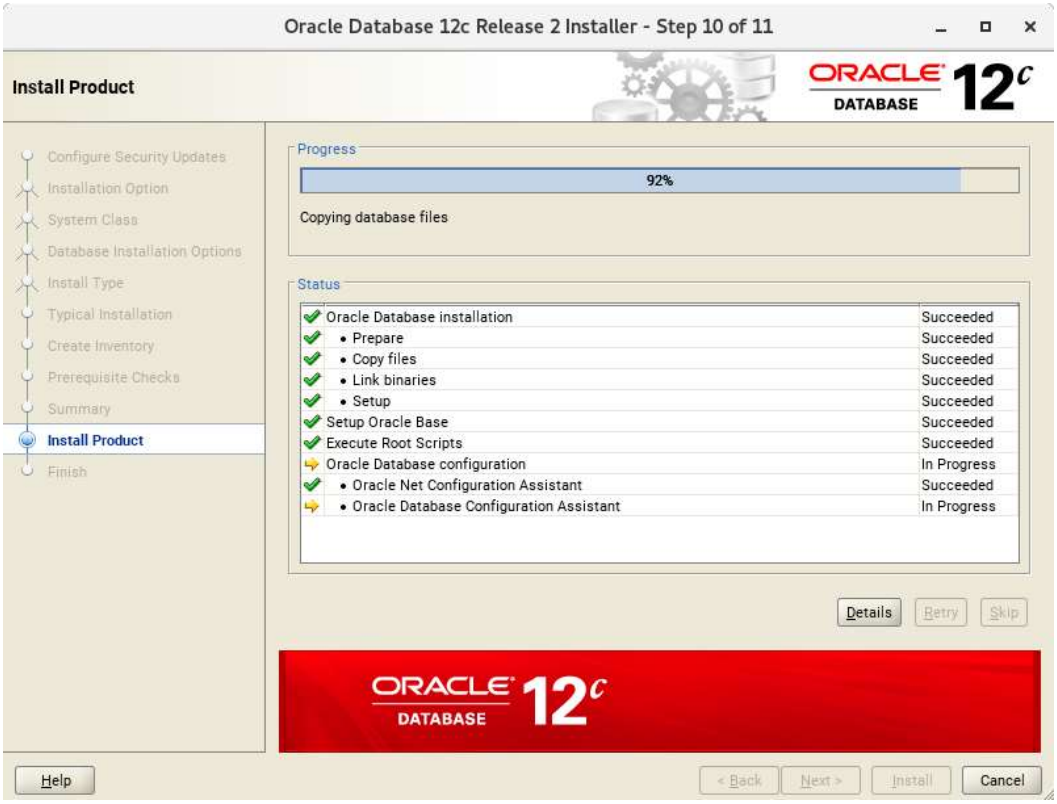

YaST2
File
Package
Configuration
Dependencies
Options
Extras
Help
View
Search
RPM Groups
Installation Summary
libcap
Search
Search in
Name
Keywords
Summary
Description
RPM "Provides"
RPM "Requires"
File list
Search Mode:
Contains
Case Sensitive
Package
Summary
Installed (Ava
Size
libcap-ng0
An alternate POSIX capabilities li...
0.7.3-4.125
44.3 KiB
libcap2
Library for Capabilities (linux-pri...
2.22-13.1
18.5 KiB
libcap2-32bit
Library for Capabilities (linux-pri...
2.22-13.1
17.6 KiB
libcap-ng-utils
Utilities for analysing and setting...
(0.7.3-4.125)
65.5 KiB
libcap-ng0-32bit
An alternate POSIX capabilities li...
(0.7.3-4.125)
17.5 KiB
libcap-progs
Libcap utility programs
(2.22-13.1)
52.2 KiB
libcap1
Library for Capabilities (linux-pri...
(1.10-61.1)
14.5 KiB
libcap1-32bit
Library for Capabilities (linux-pri...
(1.10-61.1)
13.6 KiB
Description
Technical Data
Dependencies
Versions
File List
Change Log
libcap-progs - Libcap utility programs
This package contains utility programs handling capabilities via libcap.
Supportability: Level 3
Cancel
Accept

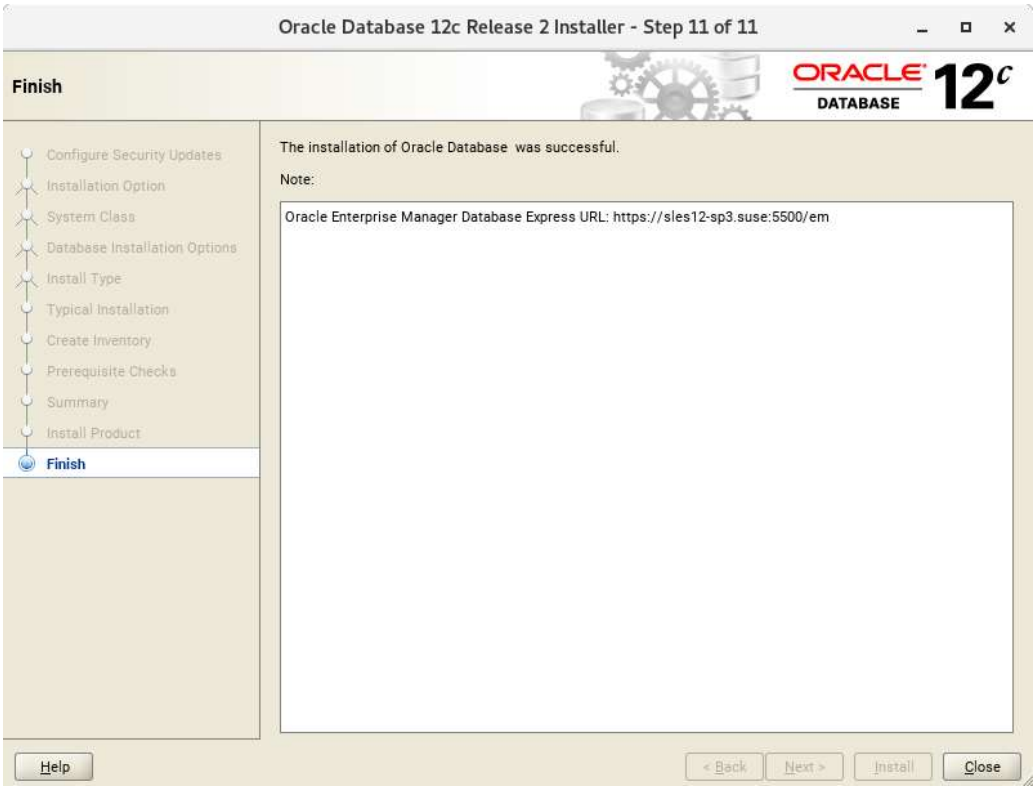

Oracle Database 12c Release 2 Installer - Step 9 of 11
Summary
ORACLE DATABASE 12c
Configure Security Updates
Installation Option
System Class
Database Installation Options
Install Type
Typical Installation
Create Inventory
Prerequisite Checks
Summary
Install Product
Finish
Oracle Database 12c Release 2 Installer
Global settings
Disk space: required 7.5 GB available 29.02 GB [Edit]
Source location: /opt/oracle/SW/12201/database/install/../stage/products.xml
Install method: Typical installation [Edit]
Database edition: Enterprise Edition (Create and configure a database) [Edit]
Oracle base: /opt/oracle [Edit]
Software location: /opt/oracle/product/12cR2/db [Edit]
Privileged Operating System groups: dba (OSDBA), dba (OSOPER), dba (OSBACKUPDBA), dba (OSD
Inventory information
Inventory location: /opt/oracle/oraInventory [Edit]
oraInventory group: oinstall [Edit]
Database information
Configuration: General Purpose / Transaction Processing
Global database name: orcl.suse [Edit]
Oracle system identifier (SID): orcl [Edit]
Pluggable database name: orclpdb [Edit]
Allocated memory: 12775 MB
Automatic memory management option: FALSE
Database character set : AL32UTF8 (Unicode UTF-8 Universal character set)
Management method: Database express
Save Response File...
Help
< Back
Next >
Install
Cancel


Oracle Database 12c Release 2 Installer - Step 10 of 11
Install Product
ORACLE DATABASE 12c
Configure Security Updates
Installation Option
System Class
Database Installation Options
Install Type
Typical Installation
Create Inventory
Prerequisite Checks
Summary
Install Product
Finish
Progress
67%
Saving inventory
Status
Oracle Database installation In Progress
• Prepare Succeeded
• Copy files Succeeded
• Link binaries Succeeded
• Setup In Progress
Setup Oracle Base Pending
Execute Root Scripts Pending
Oracle Database configuration Pending
Details
Retry
Skip
ORACLE DATABASE 12c
Help
< Back
Next >
Install
Cancel


Execute Configuration Scripts
The following script needs to be executed as the "root" user.
Scripts
/opt/oracle/oraInventory/orainstRoot.sh
/opt/oracle/product/12cR2/db/root.sh
To execute the configuration scripts:
1. Open a terminal window
2. Login as "root"
3. Run the scripts
4. Return to this window and click "OK" to continue
Help
OK
Cancel


oracle@sles12-sp3:/opt/oracle
File Edit View Search Terminal Help
Changing permissions of /opt/oracle/oraInventory.
Adding read,write permissions for group.
Removing read,write,execute permissions for world.
Changing groupname of /opt/oracle/oraInventory to oinstall.
The execution of the script is complete.
sles12-sp3:/opt/oracle # /opt/oracle/product/12cR2/db/root.sh
Performing root user operation.
The following environment variables are set as:
ORACLE_OWNER= oracle
ORACLE_HOME= /opt/oracle/product/12cR2/db
Enter the full pathname of the local bin directory: [/usr/local/bin]:
Copying dbhome to /usr/local/bin ...
Copying oraenv to /usr/local/bin ...
Copying coraenv to /usr/local/bin ...
Creating /etc/oratab file...
Entries will be added to the /etc/oratab file as needed by
Database Configuration Assistant when a database is created
Finished running generic part of root script.
Now product-specific root actions will be performed.
Do you want to setup Oracle Trace File Analyzer (TFA) now ? yes|[no] :
no
Oracle Trace File Analyzer (TFA - User Mode) is available at :
/opt/oracle/product/12cR2/db/suptools/tfa/release/tfa_home/bin/tfactl
OR
Oracle Trace File Analyzer (TFA - Daemon Mode) can be installed by running this script :
/opt/oracle/product/12cR2/db/suptools/tfa/release/tfa_home/install/roottfa.sh
sles12-sp3:/opt/oracle #


Oracle Database 12c Release 2 Installer - Step 10 of 11
Install Product
ORACLE DATABASE 12c
Configure Security Updates
Installation Option
System Class
Database Installation Options
Install Type
Typical Installation
Create Inventory
Prerequisite Checks
Summary
Install Product
Finish
Progress
92%
Copying database files
Status
Oracle Database installation Succeeded
• Prepare Succeeded
• Copy files Succeeded
• Link binaries Succeeded
• Setup Succeeded
Setup Oracle Base Succeeded
Execute Root Scripts Succeeded
Oracle Database configuration In Progress
• Oracle Net Configuration Assistant Succeeded
• Oracle Database Configuration Assistant In Progress
Details
Retry
Skip
ORACLE DATABASE 12c
Help
< Back
Next >
Install
Cancel


Oracle Database 12c Release 2 Installer - Step 11 of 11
Finish
ORACLE DATABASE 12c
Configure Security Updates
Installation Option
System Class
Database Installation Options
Install Type
Typical Installation
Create Inventory
Prerequisite Checks
Summary
Install Product
Finish
The installation of Oracle Database was successful.
Note:
Oracle Enterprise Manager Database Express URL: https://sles12-sp3.suse:5500/em
Help
< Back
Next >
Install
Close

Verify successful Database Installation using sqlplus:

```
oracle@sles12-sp3:~
File  Edit  View  Search  Terminal  Help

oracle@sles12-sp3:~> sqlplus / as sysdba

SQL*Plus: Release 12.2.0.1.0 Production on Tue Jul 25 13:06:35 2017

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

SQL> show sga

Total System Global Area 1.0066E+10 bytes
Fixed Size                  12342064 bytes
Variable Size             1644170448 bytes
Database Buffers          8388608000 bytes
Redo Buffers                21209088 bytes
SQL> exit
Disconnected from Oracle Database 12c Enterprise Edition Release 12.2.0.1.0 - 64bit Production
oracle@sles12-sp3:~>
```
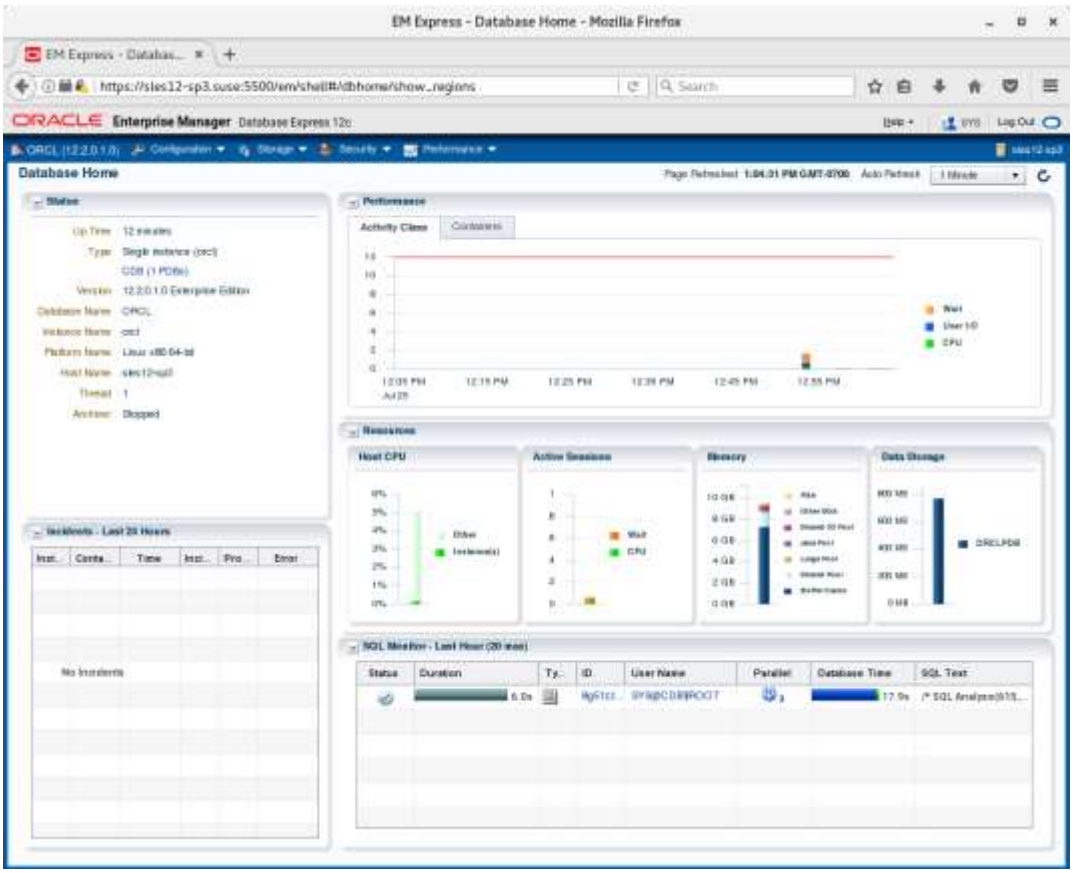

Oracle Enterprise Manager Screen:



Thanks for selecting **SUSE Linux Enterprise Server** as your Linux platform of choice!