White Paper

# Oracle Database 19c on SUSE

## Linux Enterprise Server 15 SP6

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June 30th, 2024

SUSE

# 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 19c on SUSE Linux Enterprise Server 15 SP6. This document covers x86_64 version but installation steps are same for other platforms. We will use latest versions of Oracle Database Enterprise version 19c.

# Oracle Database Software

Oracle Database Enterprise Edition 19c is available for public download at:
https://www.oracle.com/technetwork/database/enterprise-edition/downloads/index.html

# SUSE Linux Software

Download SUSE Linux Enterprise Server 15 SP6 here, you can use 60 Day's free trial:
https://www.suse.com/products/server/download/

# SUSE Linux Installation

Install SUSE Linux Enterprise Server 15 SP6 with "**Enhanced Base System, Software Management, X Window System, Oracle Server Base**" pattern. Please note that SLES15 SP6 comes with SLE-15-SP6-Online-x86_64-GM-Media1.iso and SLE-15-SP6-Full-x86_64-GM-Media1.iso. Use Online version if you are connected to internet & ready to register your server with SUSE Customer Center (scc.suse.com).

You can follow the official Oracle Installation manual for selective SLES OS required rpms, however **Oracle Server Base** pattern from SUSE will fulfil minimum setup required for Oracle Database Installation.

```
oracle@c1c1:~> uname -a
Linux c1c1 6.4.0-150600.23.17-default #1 SMP PREEMPT_DYNAMIC Tue Jul 30 06:37:32 UTC 2024 (9
c450d7) x86_64 x86_64 x86_64 GNU/Linux
oracle@c1c1:~> env |grep ora
LD_LIBRARY_PATH=/home/oracle/19c/lib:/home/oracle/19c/ctx/lib
ORA_NLS10=/home/oracle/19c/nls/data
ORACLE_BASE=/home/oracle
ORACLE_HOME=/home/oracle/19c
USERNAME=oracle
CLASSPATH=/home/oracle/19c/JRE:/home/oracle/19c/jlib:/home/oracle/19c/rdbms/jlib:/home/oracl
e/19c/network/jlib
USER=oracle
PWD=/home/oracle
HOME=/home/oracle
SDK_HOME=/usr/lib/jvm/jdk-1.8-oracle-x64
XDG_DATA_DIRS=/home/oracle/.local/share/flatpak/exports/share:/var/lib/flatpak/exports/share
:/usr/local/share:/usr/share
JDK_HOME=/usr/lib/jvm/jdk-1.8-oracle-x64
MAIL=/var/spool/mail/oracle
TNS_ADMIN=/home/oracle/19c/network/admin
LOGNAME=oracle
JRE_HOME=/usr/lib/jvm/jdk-1.8-oracle-x64
PATH=/usr/local/bin:/usr/bin:/bin:/home/oracle/19c/bin
AGENT_HOME=/home/oracle/product/10.2/agent
oracle@c1c1:~>
```


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# Installing Oracle Database 19c (19.3)

Installing Oracle Database19c on SLES15 SP6 is straightforward, please follow:

1. Download Oracle SW (LINUX.X64_193000_db_home.zip)
   a. unzip in $**ORACLE_HOME** directory.
   b. cd $ORACLE_HOME
   c. ./runInstaller

   Note: There is a change in Oracle Database 19c Installation process. Now runInstaller is a script, please check Oracle Official document for explanation.

2. Watch for following minor error/warning messages (**Fix before starting Installer**):

   1. Make sure server is assigned static IP address.
   2. Make sure you have enabled oracle user & logged-in as user "**oracle**".
   3. Install (or verify) any missing packages i.e.
      **zypper** in libcap1 libcap1-32bit libcap-ng-utils libcap-ng0-32bit libXtst6-32bit nfs-kernel-server

      **Note:** libcap1 & libcap1-32bit are part of **SLES 15 Legacy Module.** Refer https://documentation.suse.com/sles/15-SP2/html/SLES-all/cha-register-sle.html on how to enable Legacy Module.

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

   **Fix:** Increase kernel.shmmax & kernel.shmall based on your Server RAM in **/etc/sysconfig/oracle** & run "**systemctl restart oracle-setup**".

   Please refer Oracle Metalink Note [ID 567506.1] - Maximum SHMMAX values for Linux x86 and x86-64

   Example values for x86_64 Server with 32GB RAM:

   shmmax=16833714176, shmall=3287834

3. Login as user oracle and Start Oracle Universal Installer (OUI):
   **$ORACLE_HOME/runInstaller**


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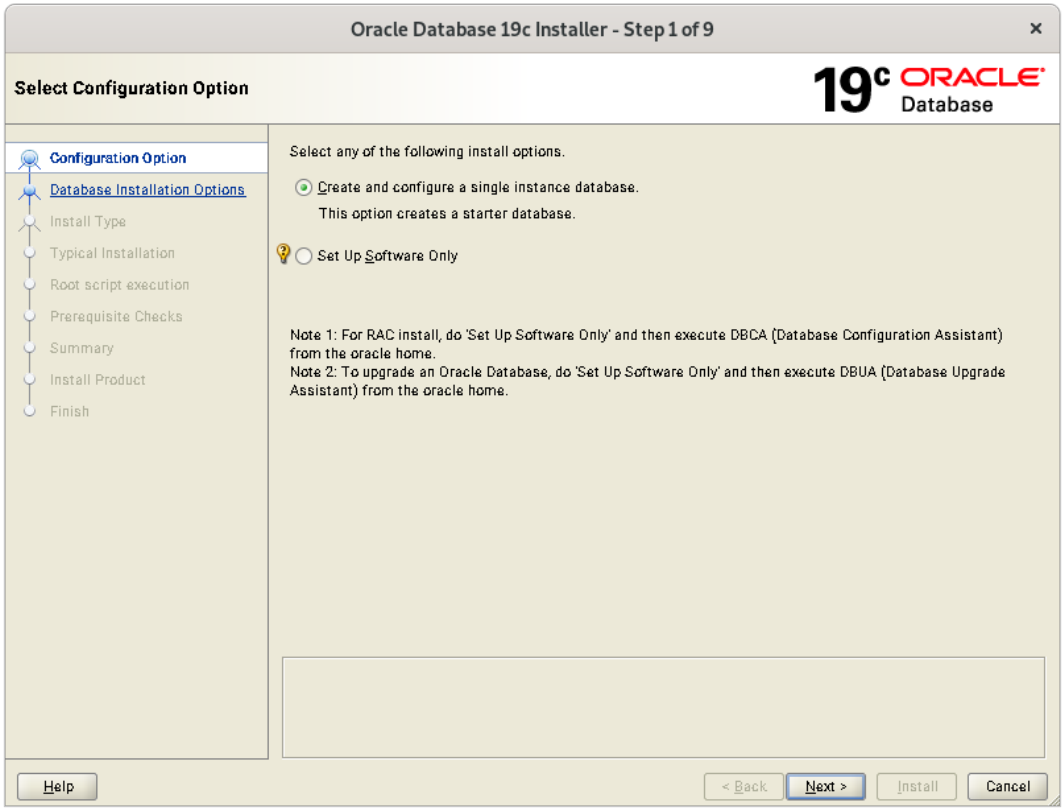


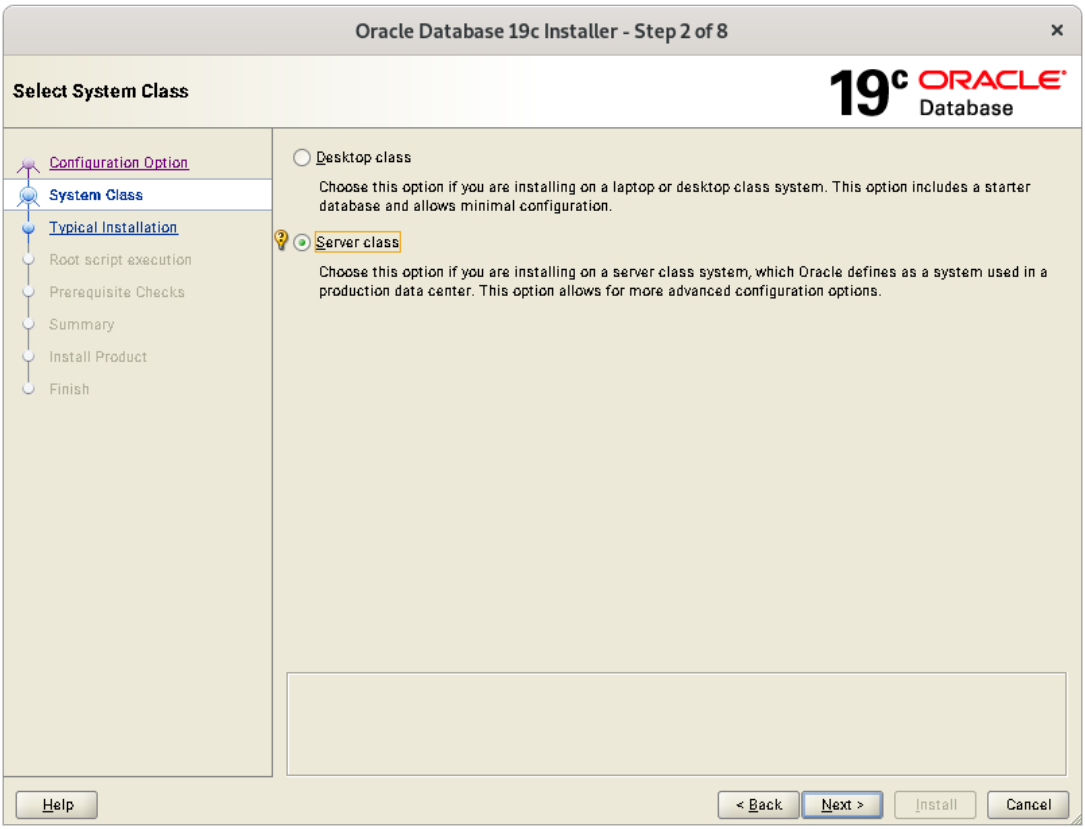



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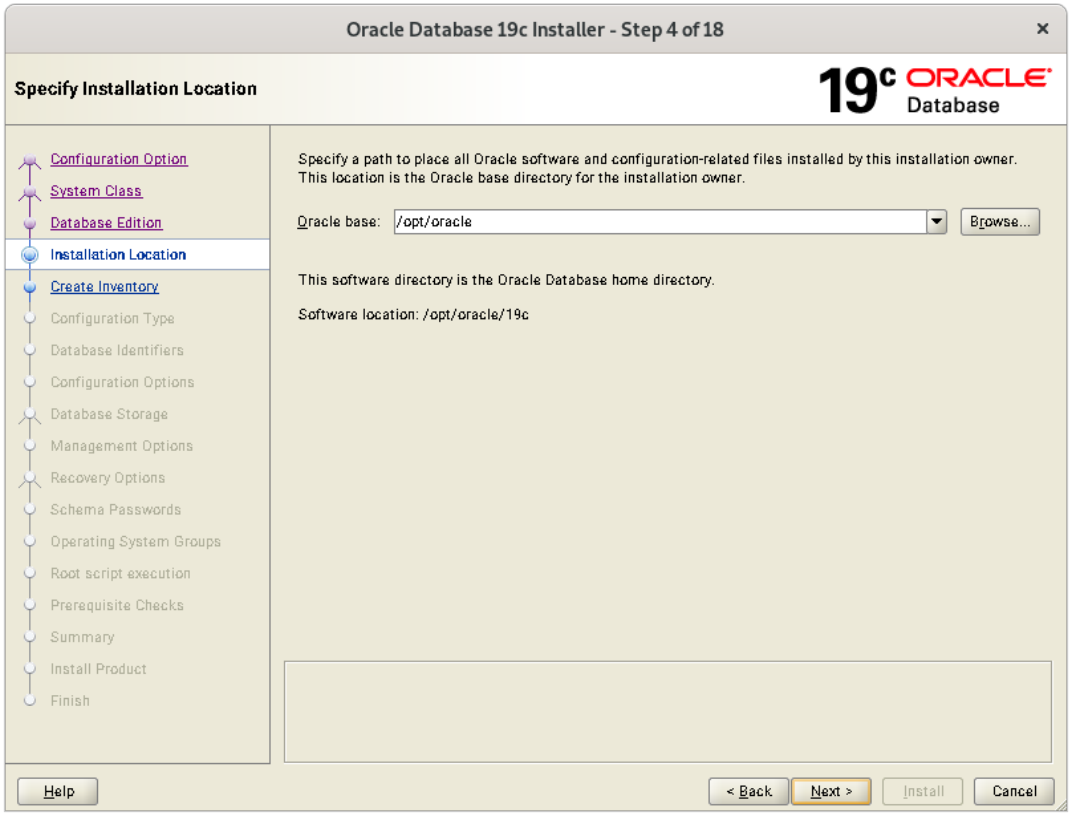


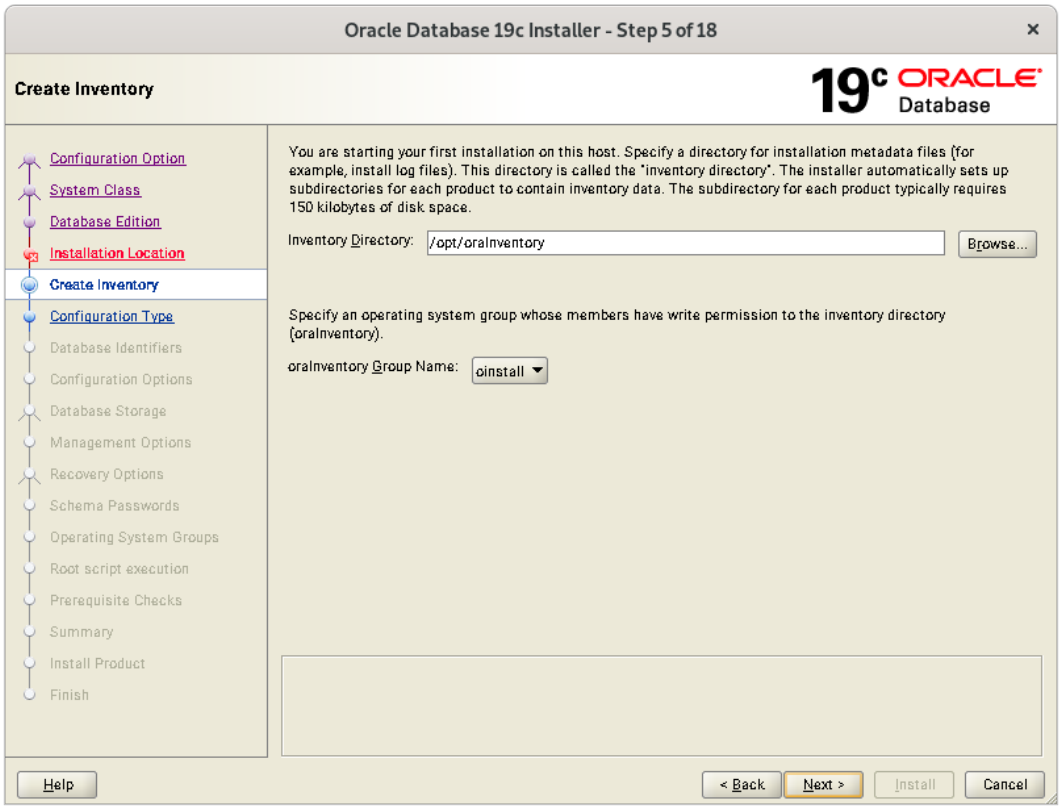



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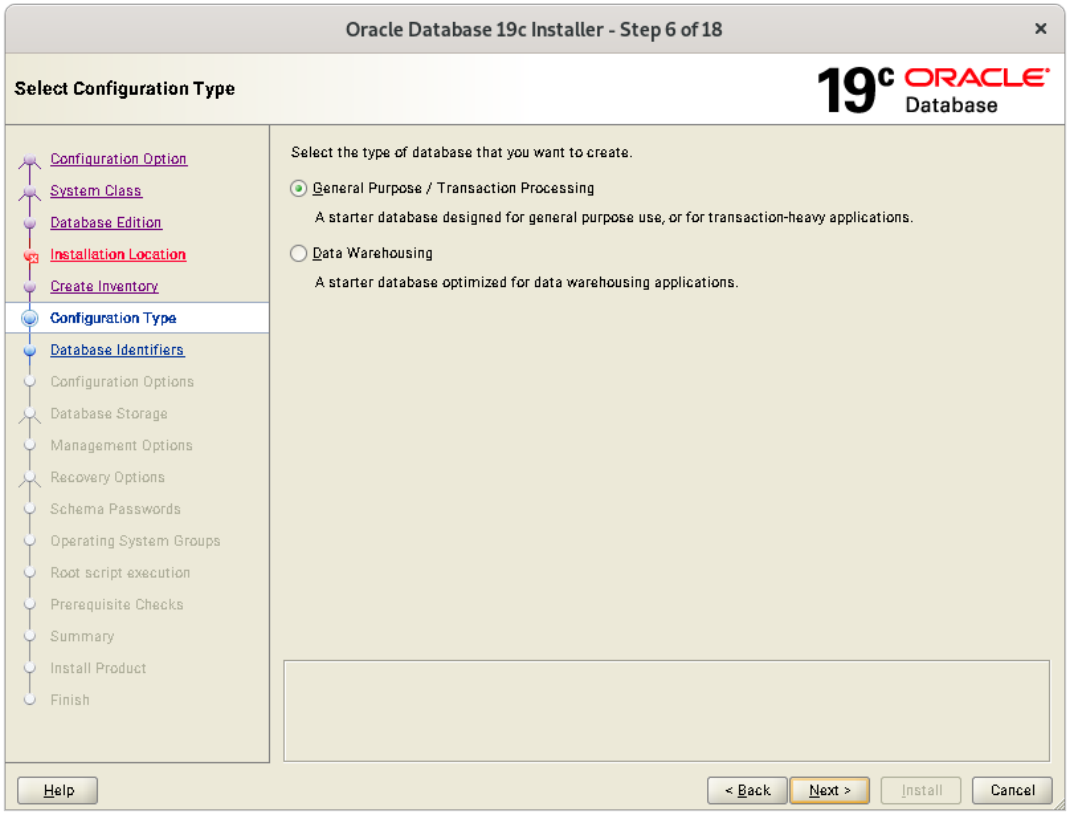


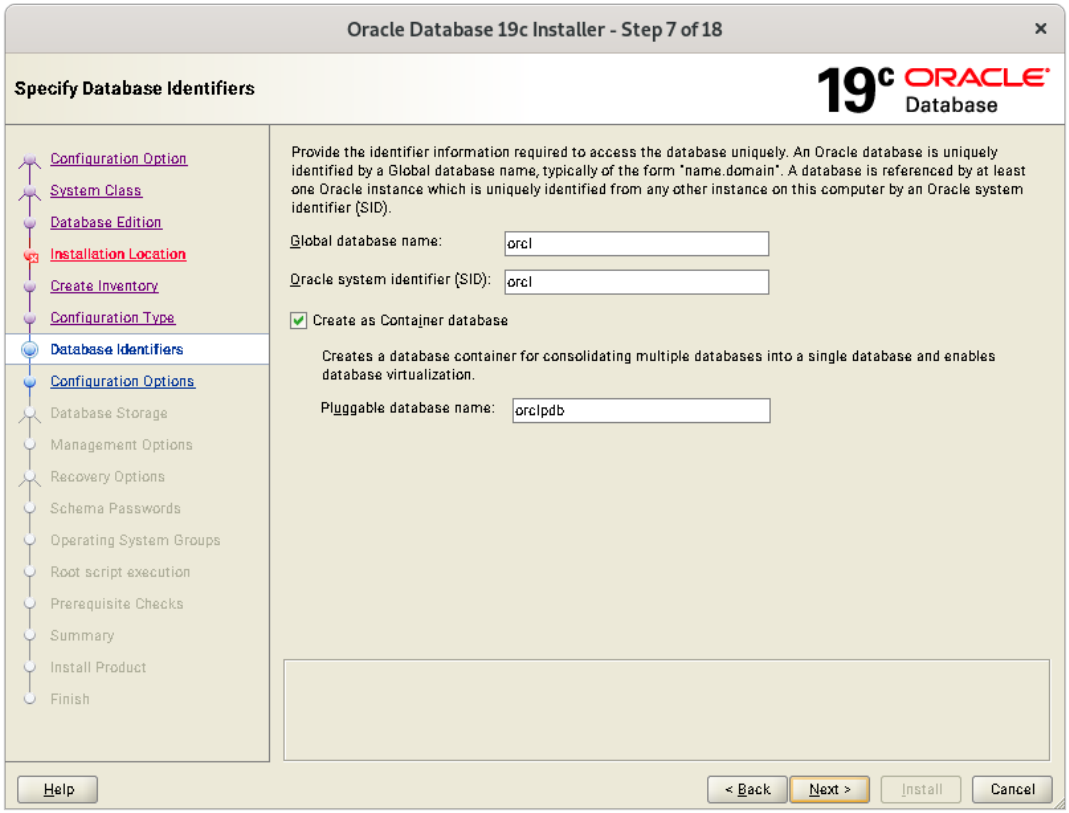



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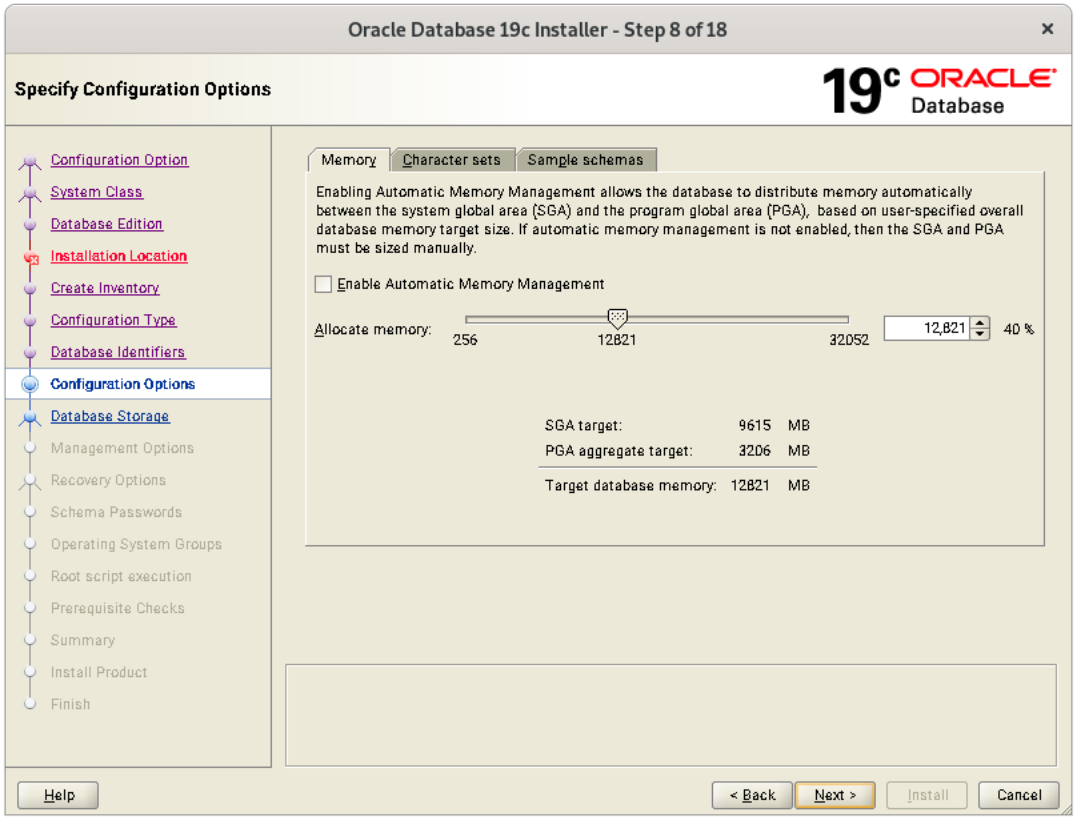


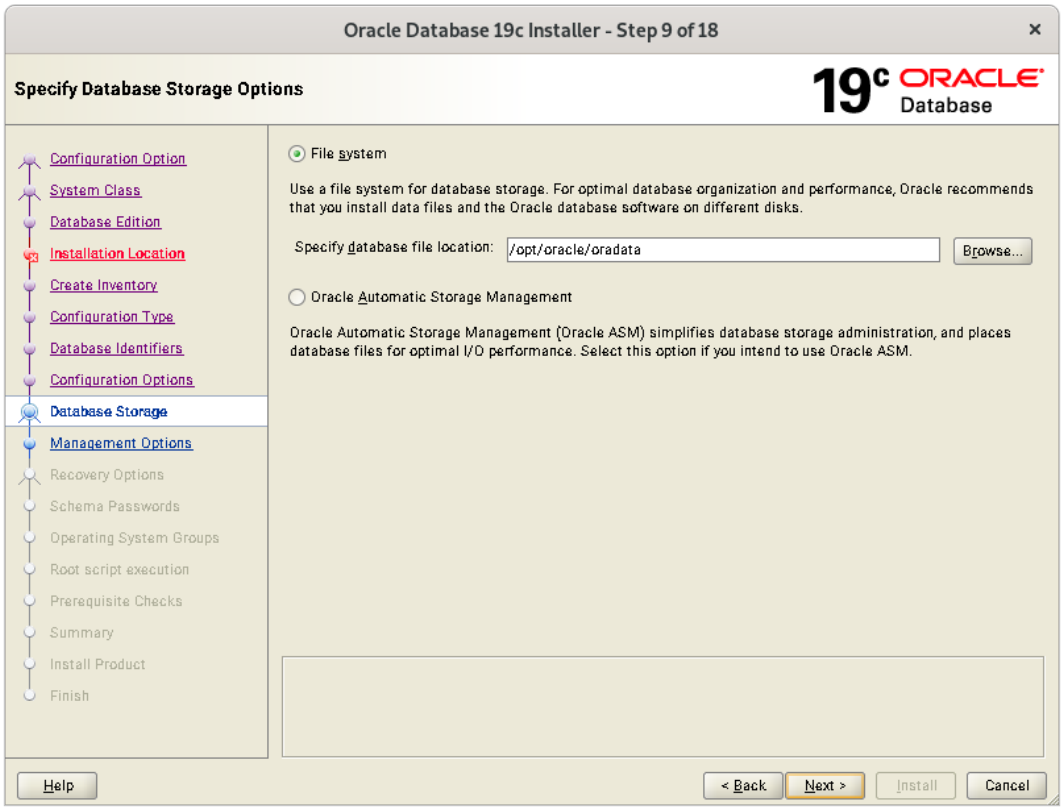



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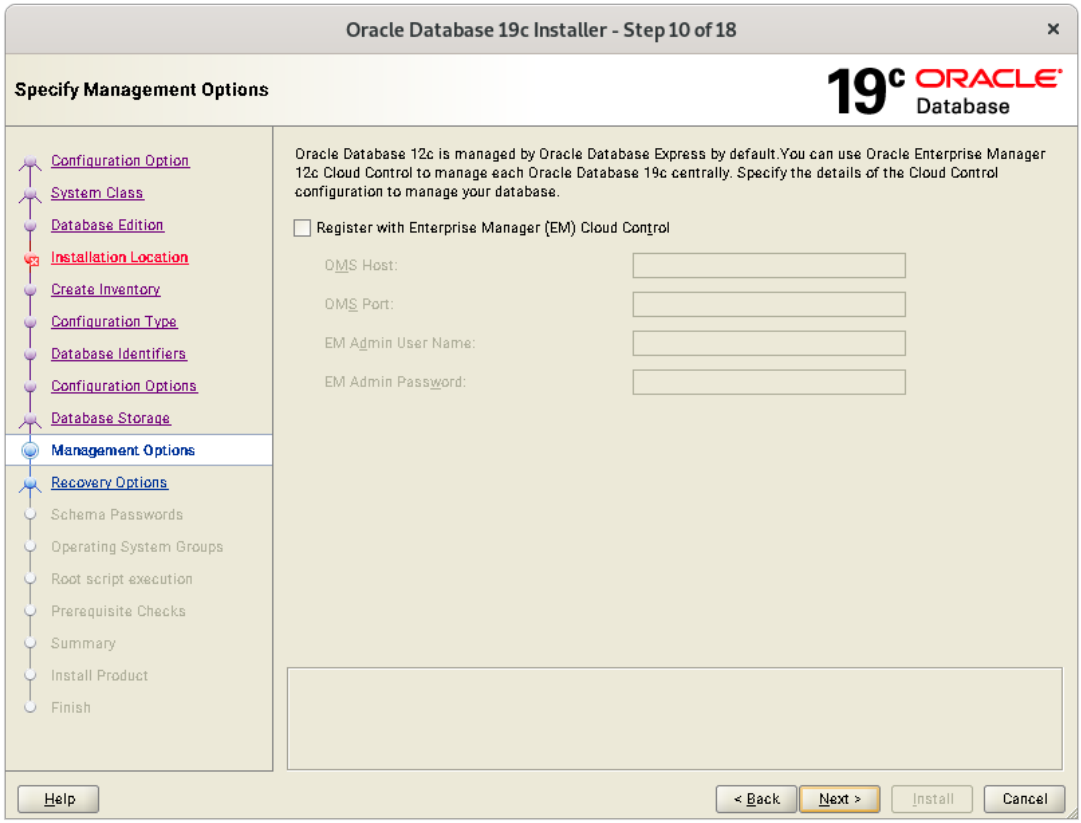


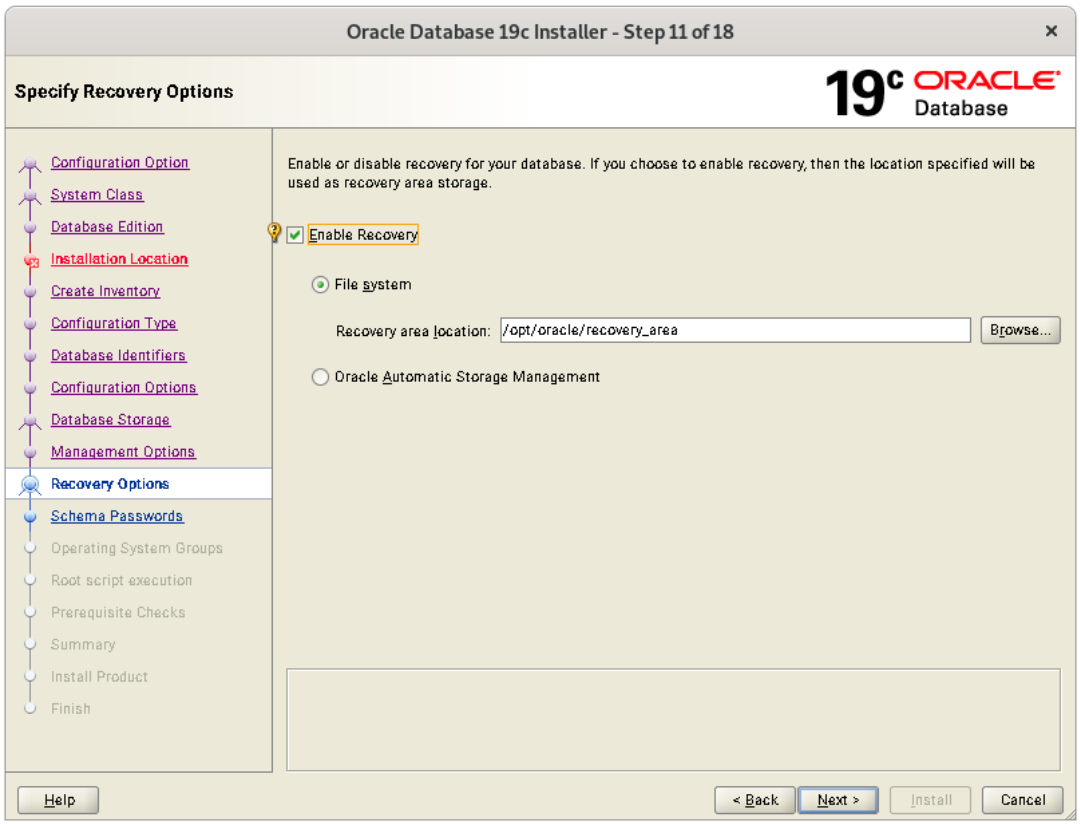



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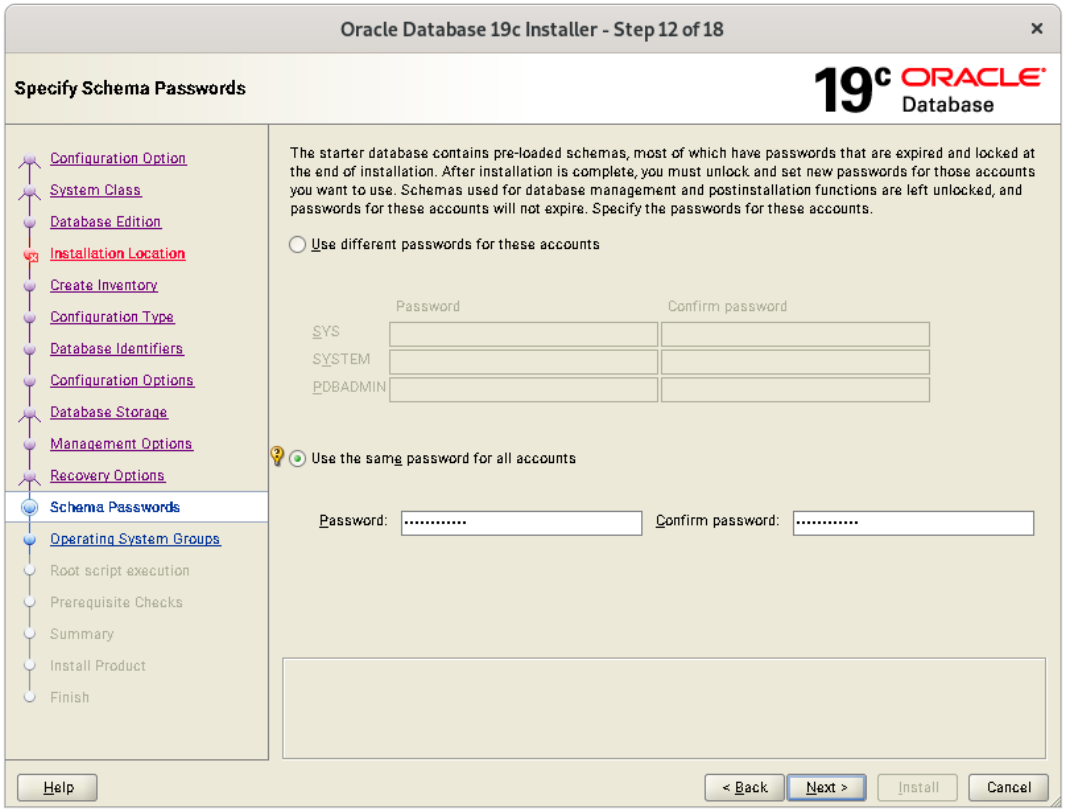


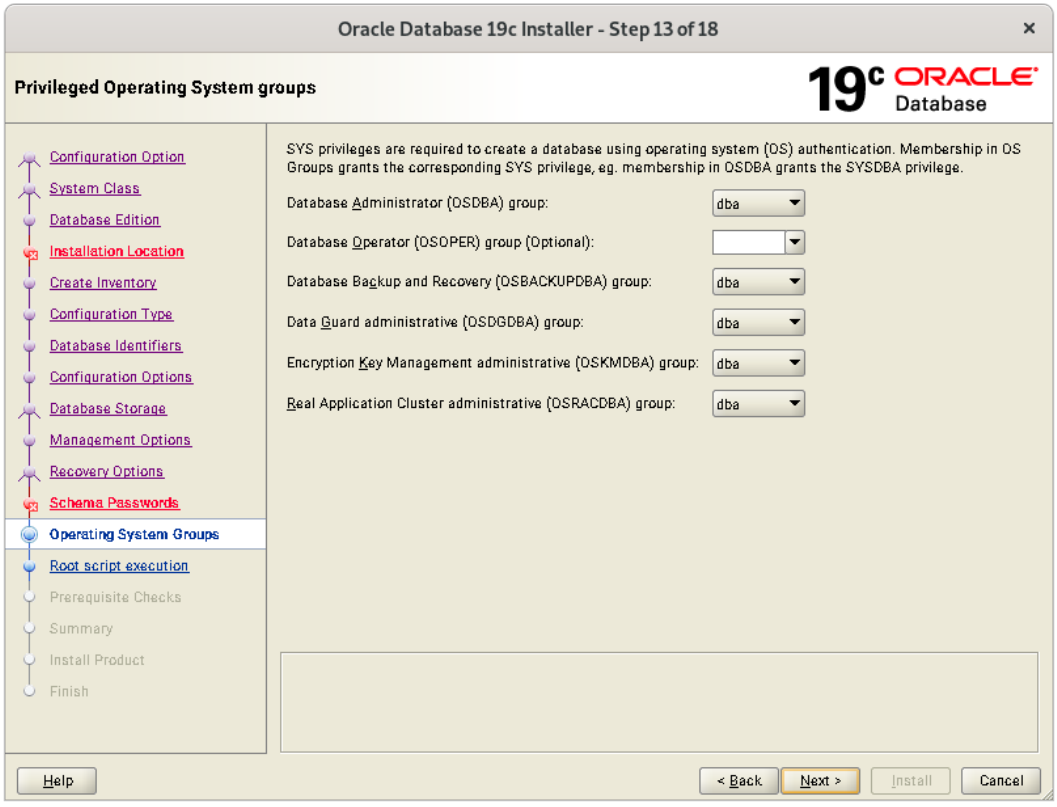



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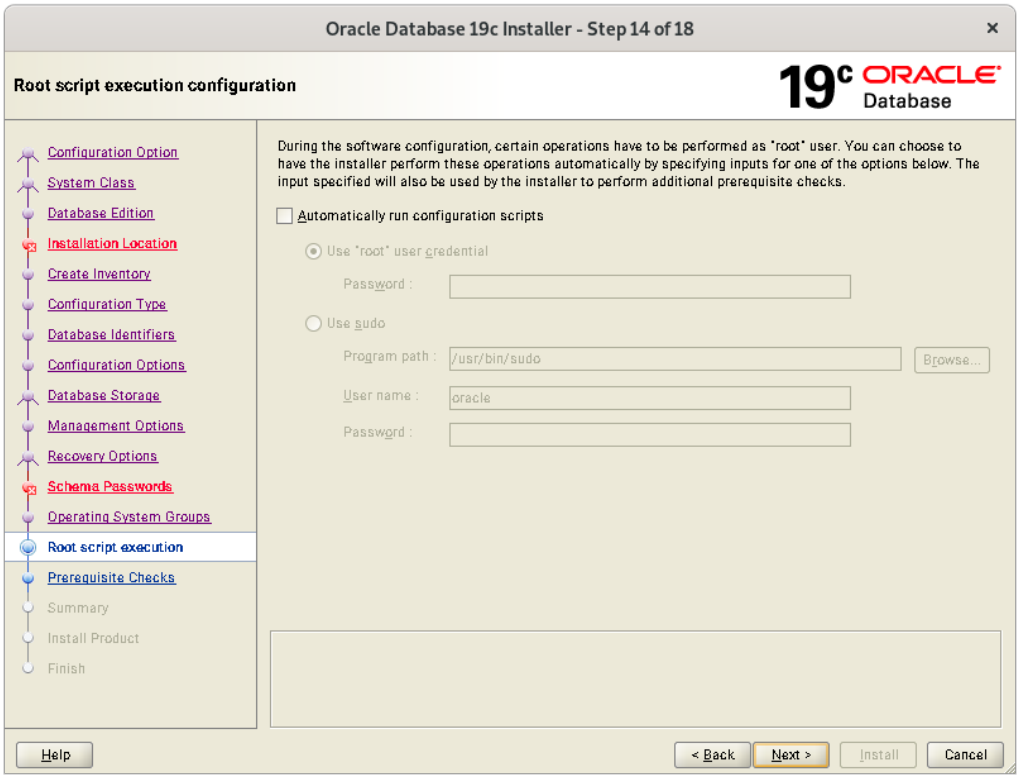


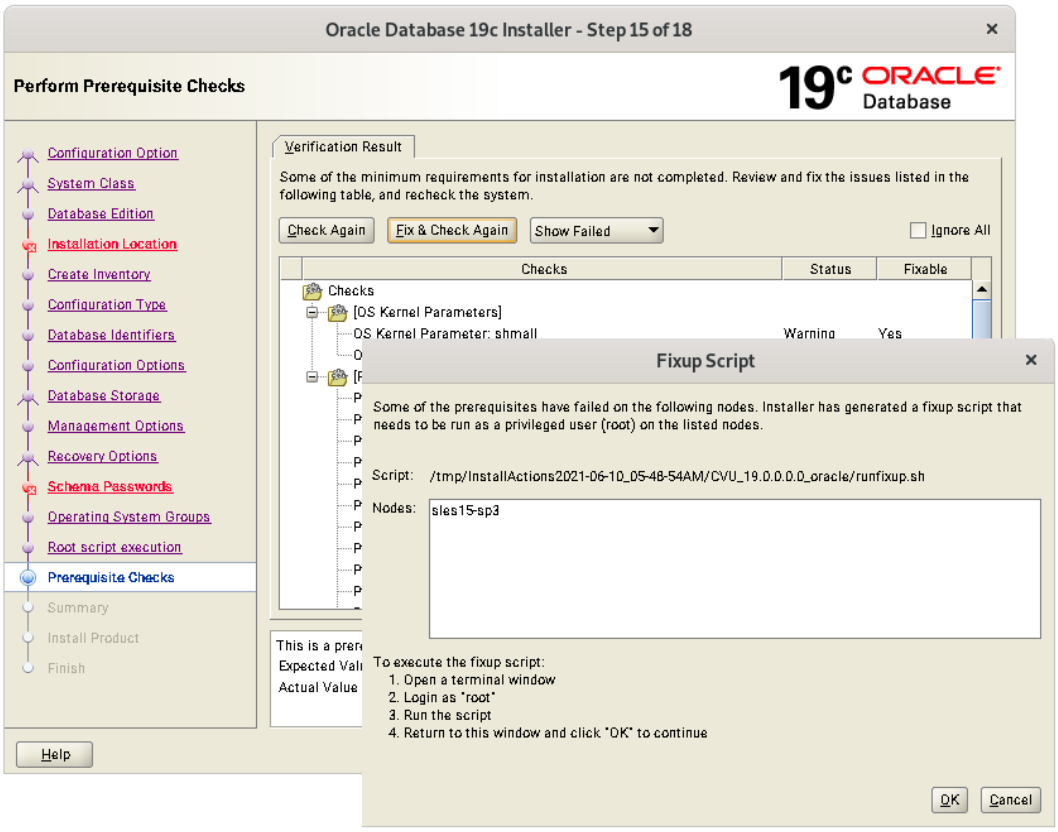



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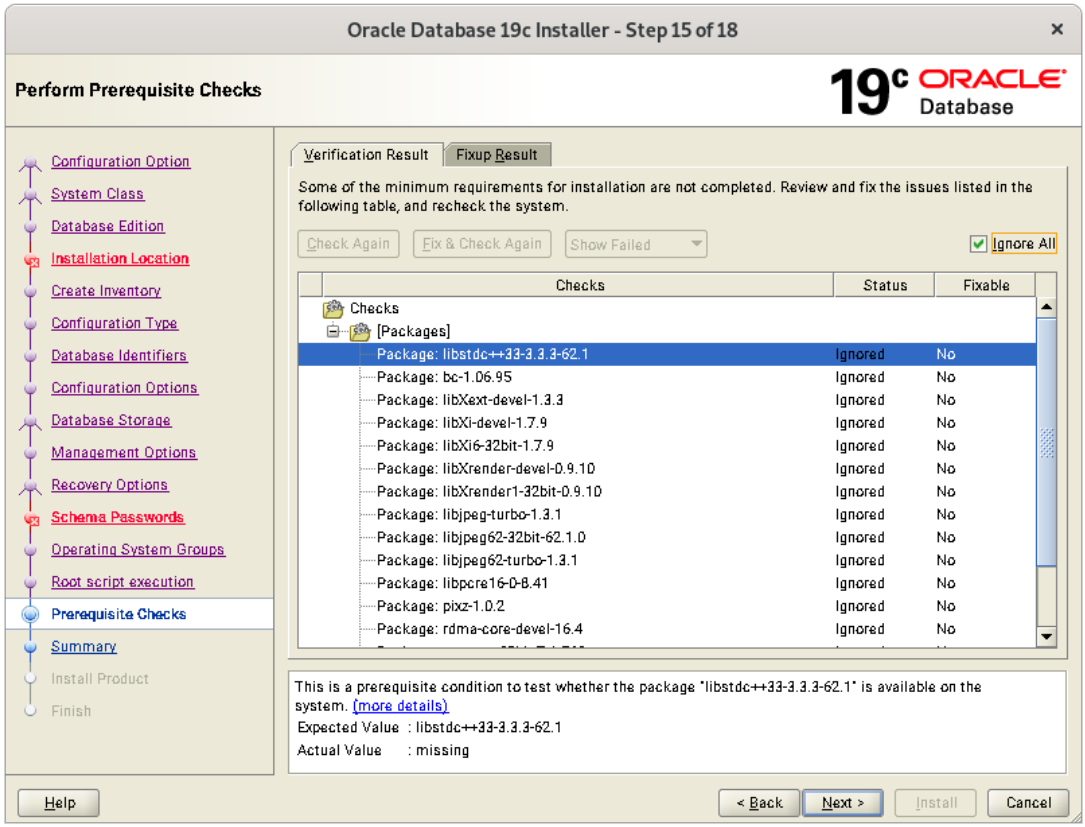
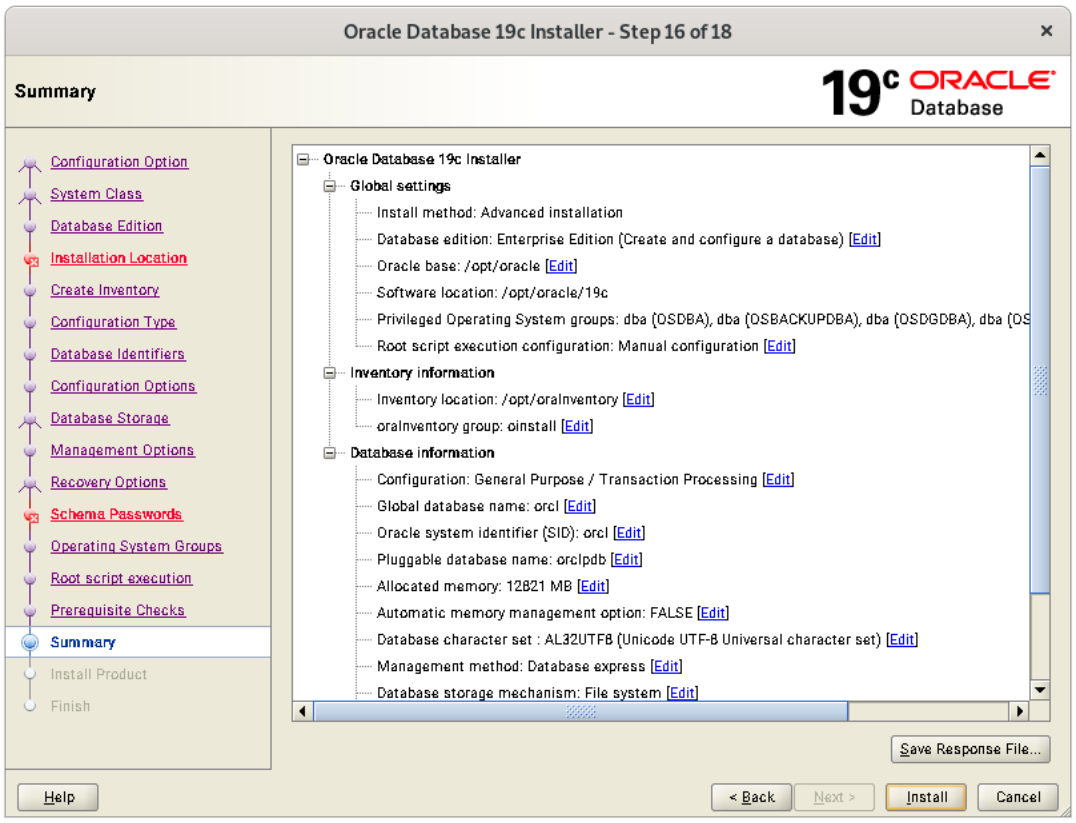



- Verify these packages are installed, then select “Ignore All”





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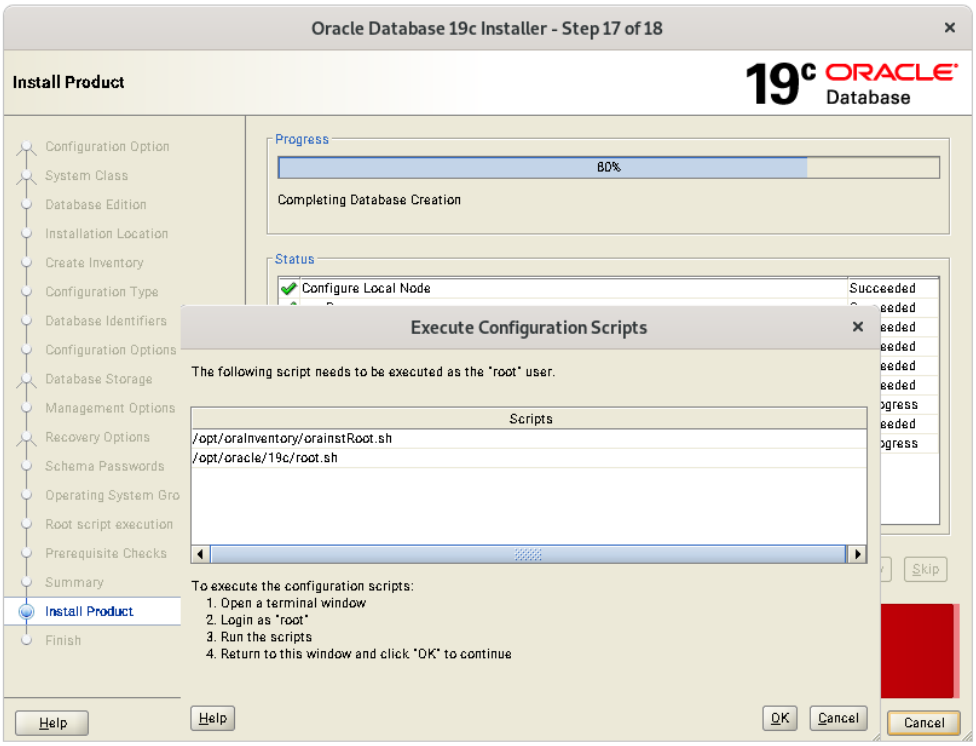


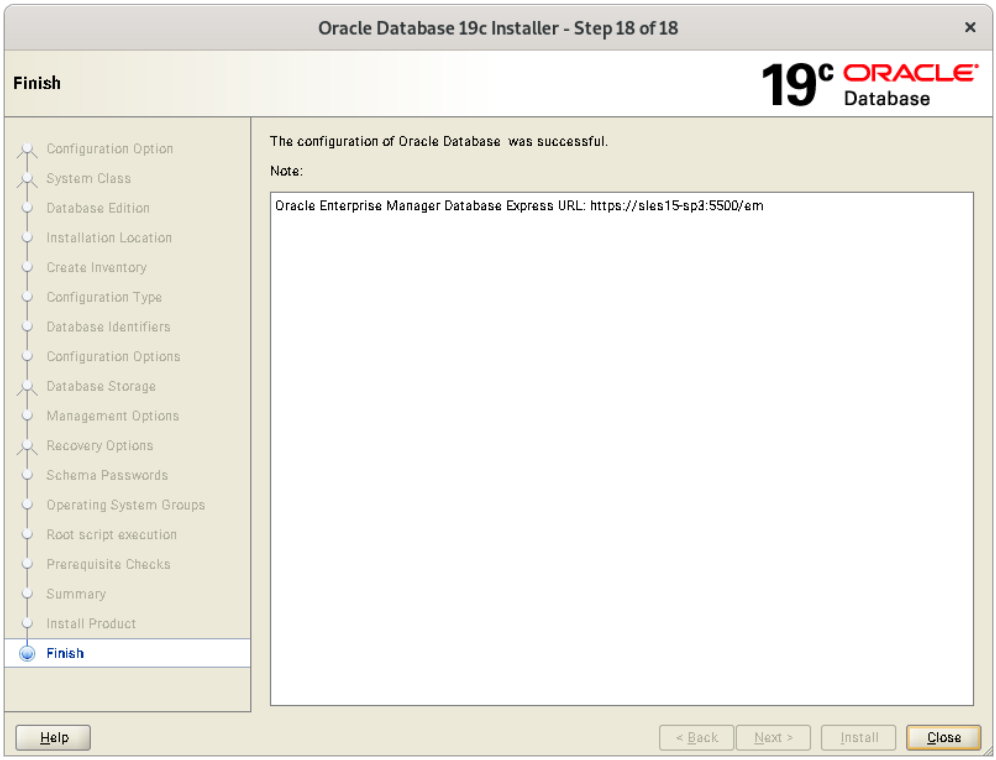



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# SUSE SLES 15 SP6 setup (After successful Oracle DB Install)

Please do following changes for successful Oracle Database start after reboot:

1. Edit “orcl:/opt/oracle/19c:Y” in /etc/oractab
2. Set START_ORACLE_DB & START_ORACLE_DB_LISTENER to “yes” in /etc/sysconfig/oracle setup file.
3. Check status using **systemctl** commands:

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# Update Oracle Database to latest version

SLES 15 SP6 is certified with Oracle Database 19.4.x (or above). Above instructions covers 19.3 (available for public download). Download and install latest Oracle update i.e. Oracle DB Release Update 19.22.0.0 (April, 2024) - p35943157_190000_Linux-x86-64.zip.

```
oracle@c1c1:~> sqlplus / as sysdba

SQL*Plus: Release 19.0.0.0.0 - Production on Mon Aug 12 12:02:14 2024
Version 19.22.0.0.0

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Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.22.0.0.0

SQL> show sga

Total System Global Area 2.0133E+10 bytes
Fixed Size                 23393032 bytes
Variable Size            2617245696 bytes
Database Buffers         1.7448E+10 bytes
Redo Buffers               43712512 bytes
SQL> exit
Disconnected from Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.22.0.0.0
oracle@c1c1:~>
```

In production environment, please apply latest SUSE and Oracle Patches.

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


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