White Paper

Oracle Database 19c on

SUSE Linux Enterprise Server 15 SP5

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June 30th, 2023

SUSE

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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 19c on SUSE Linux Enterprise Server 15 SP5. 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 SP5 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 SP5 with "**Enhanced Base System, Software Management, X Window System, Oracle Server Base**" pattern. Please note that SLES15 SP5 comes with SLE-15-SP5-Online-x86_64-GM-Media1.iso and SLE-15-SP5-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@sles15sp5:~> uname -a
Linux sles15sp5 5.14.21-150500.53-default #1 SMP PREEMPT_DYNAMIC Wed May 10 07:5
6:26 UTC 2023 (b630043) x86_64 x86_64 x86_64 GNU/Linux
oracle@sles15sp5:~> cat /etc/os-release
NAME="SLES"
VERSION="15-SP5"
VERSION_ID="15.5"
PRETTY_NAME="SUSE Linux Enterprise Server 15 SP5"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15:sp5"
DOCUMENTATION_URL="https://documentation.suse.com/"
oracle@sles15sp5:~> env |grep ORA
ORA_NLS10=/opt/oracle/19c_db/nls/data
ORACLE_SID=orcl
ORACLE_BASE=/opt/oracle
ORACLE_HOME=/opt/oracle/19c_db
oracle@sles15sp5:~>
```


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Installing Oracle Database 19c (19.3)

Installing Oracle Database19c on SLES15 SP5 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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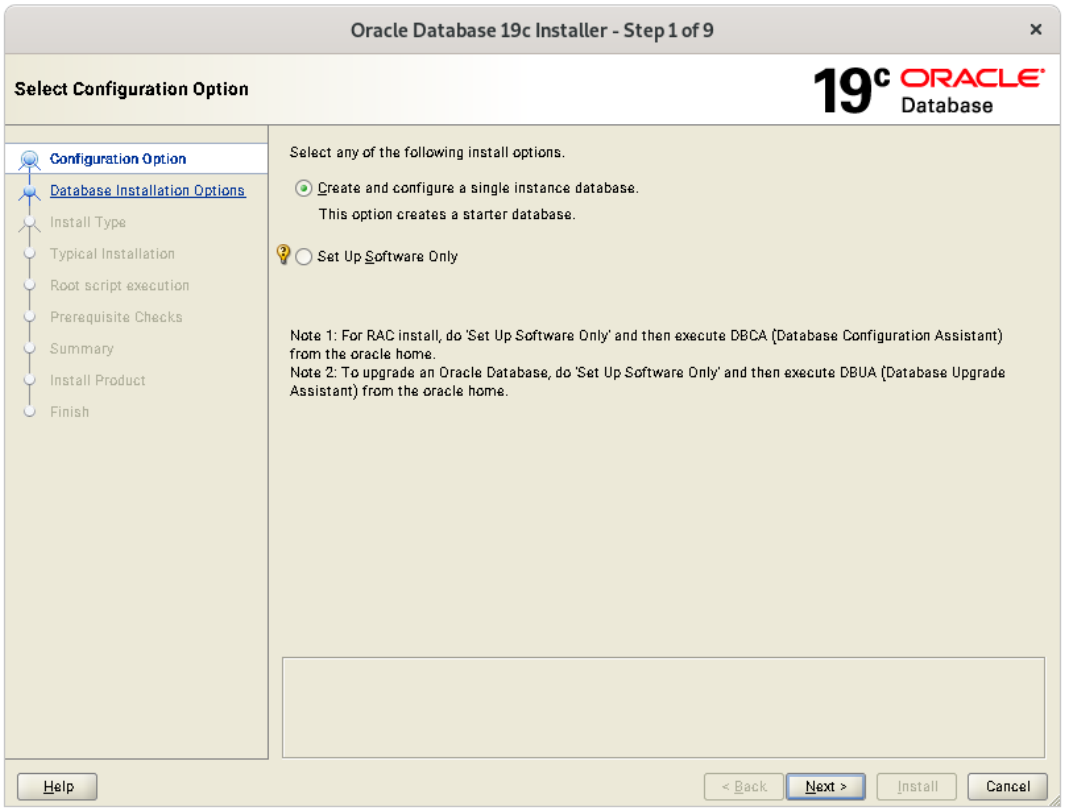

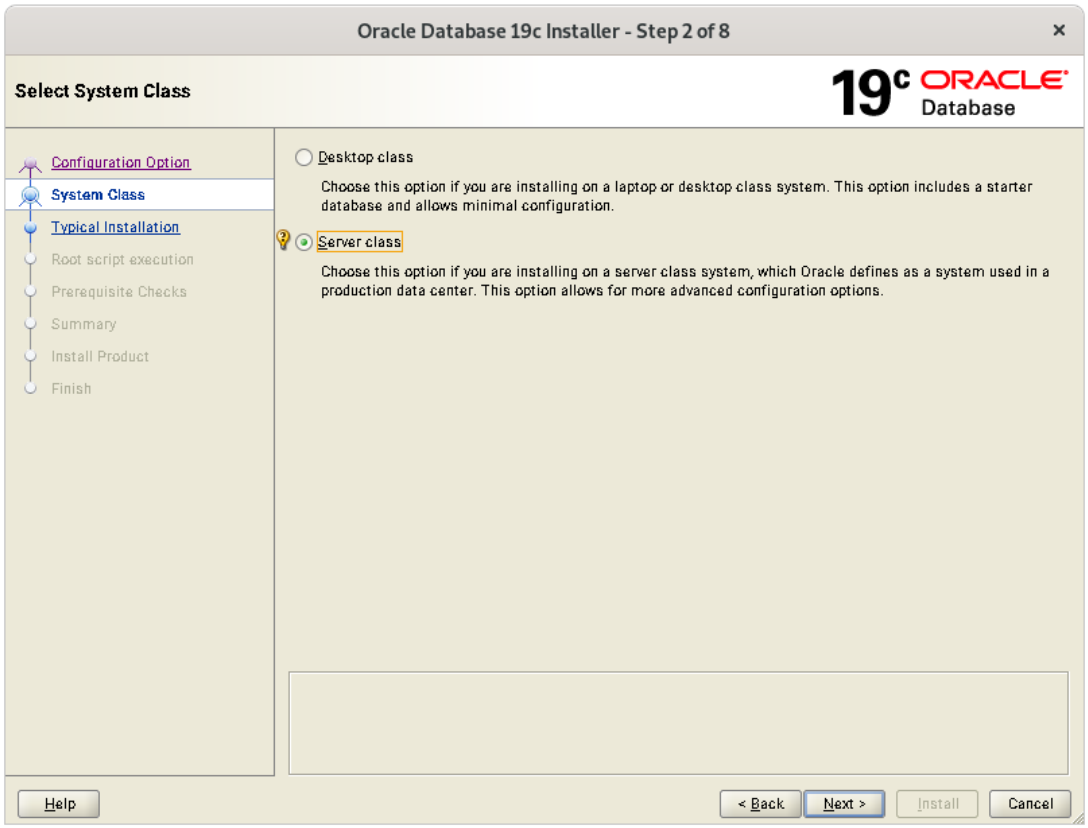

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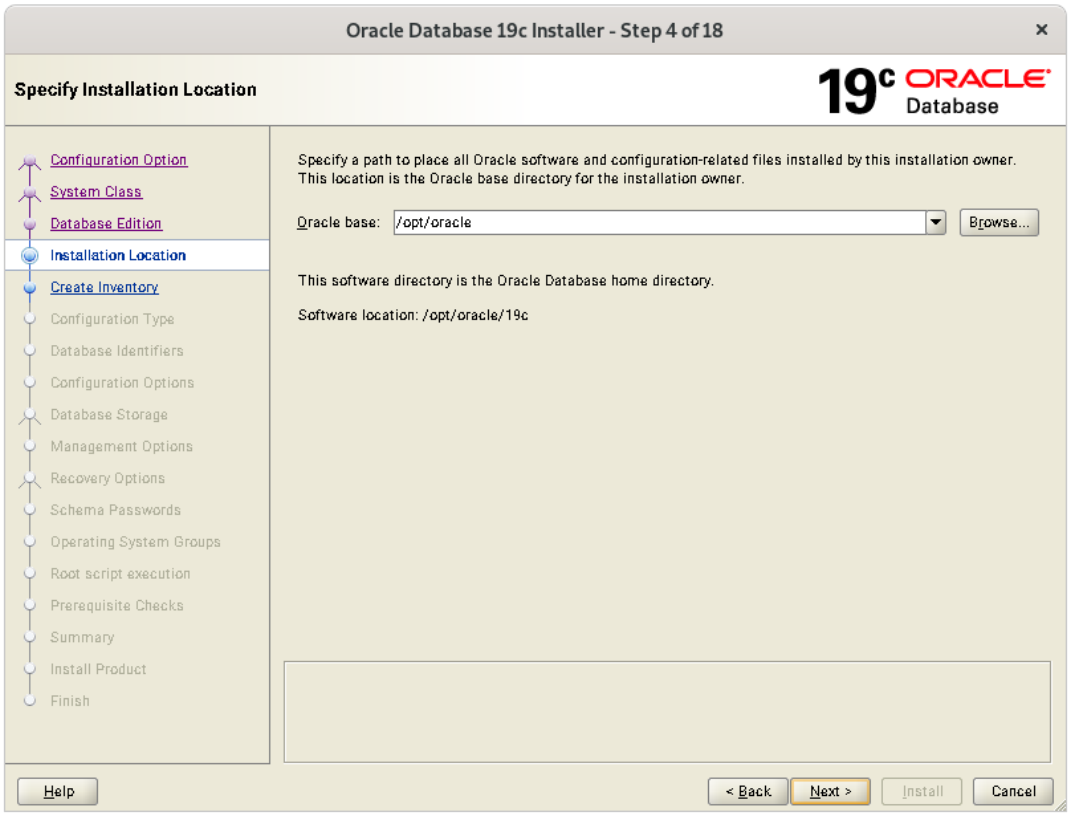

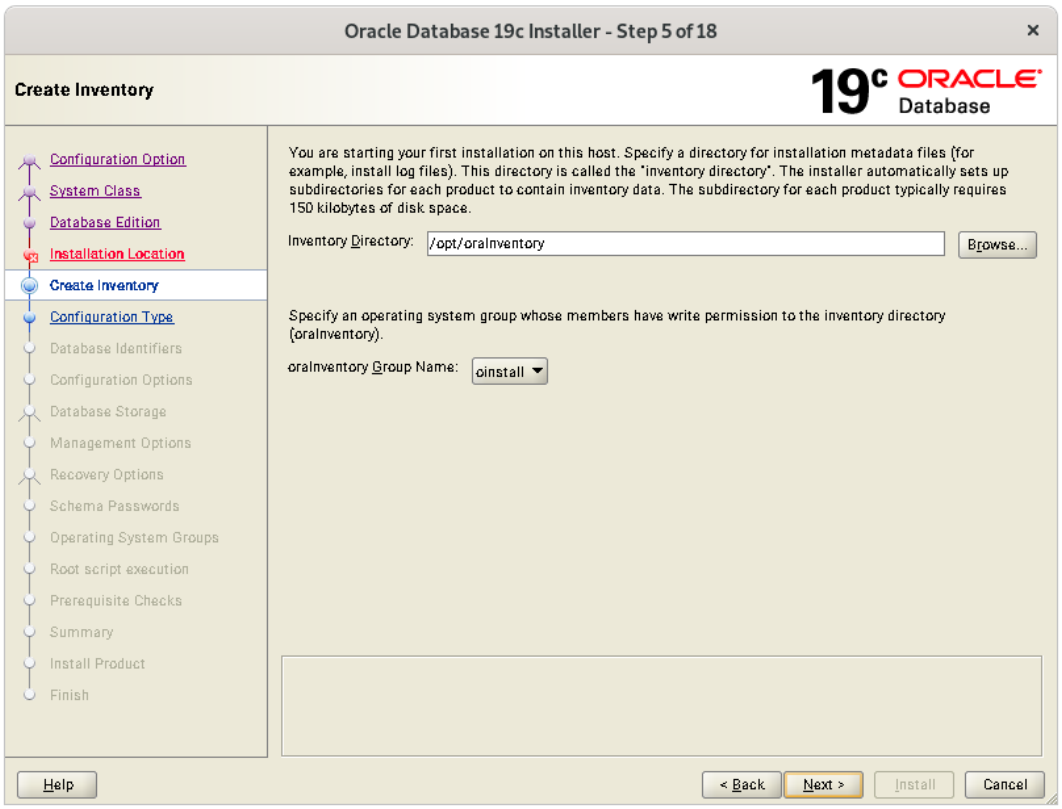

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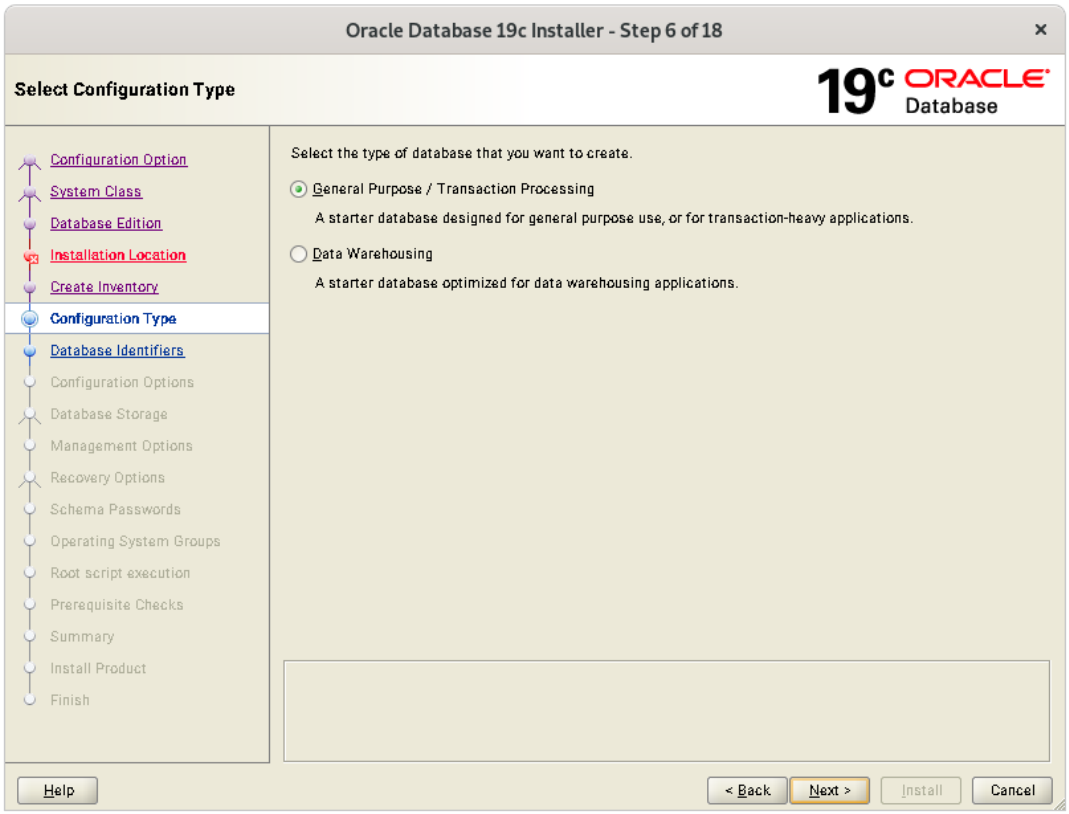

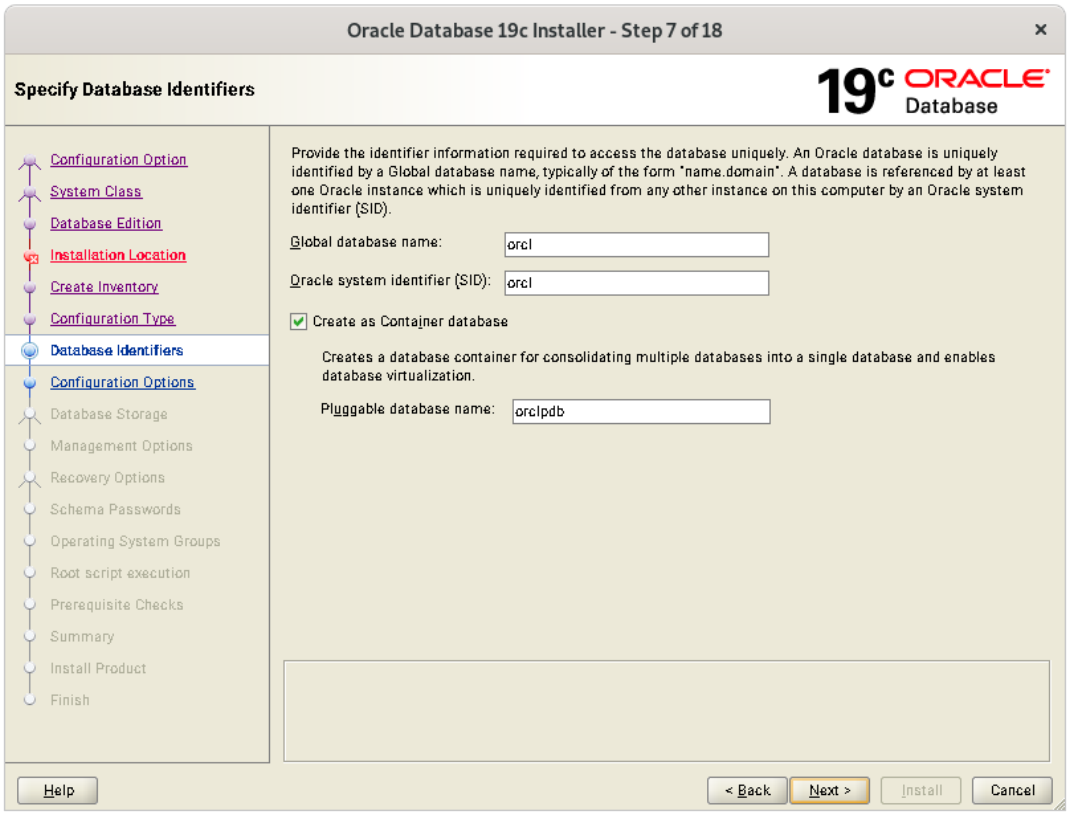

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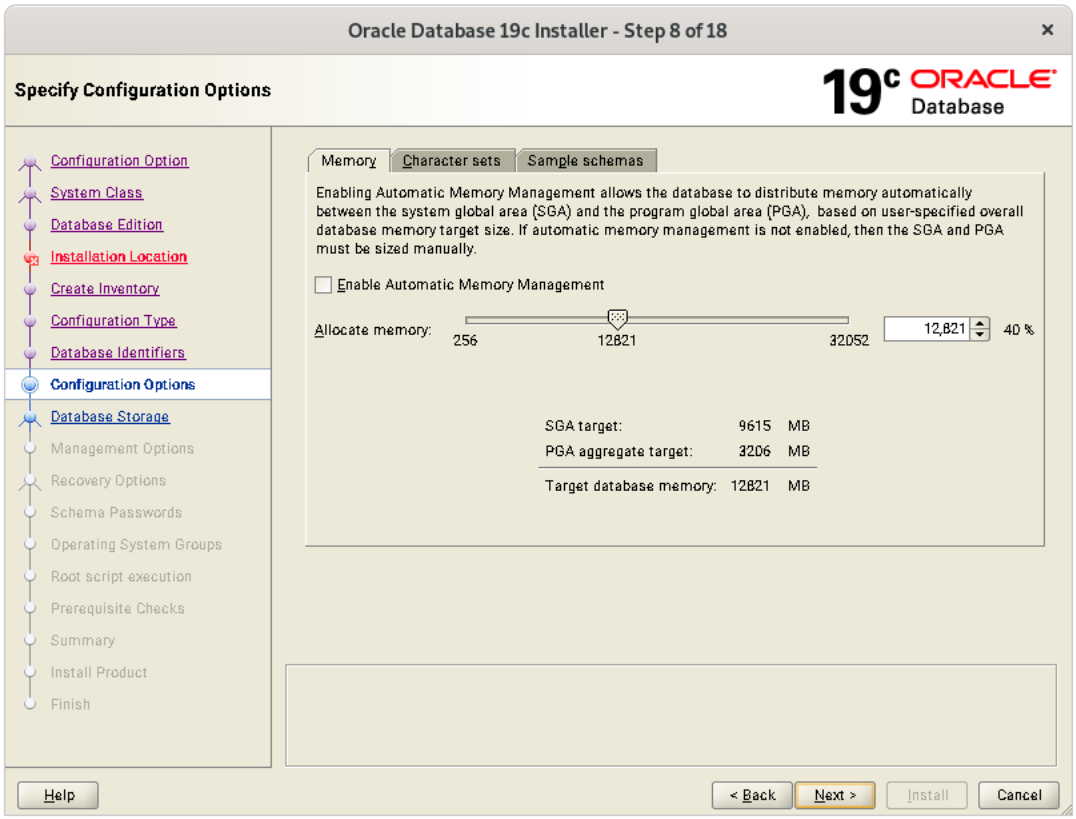

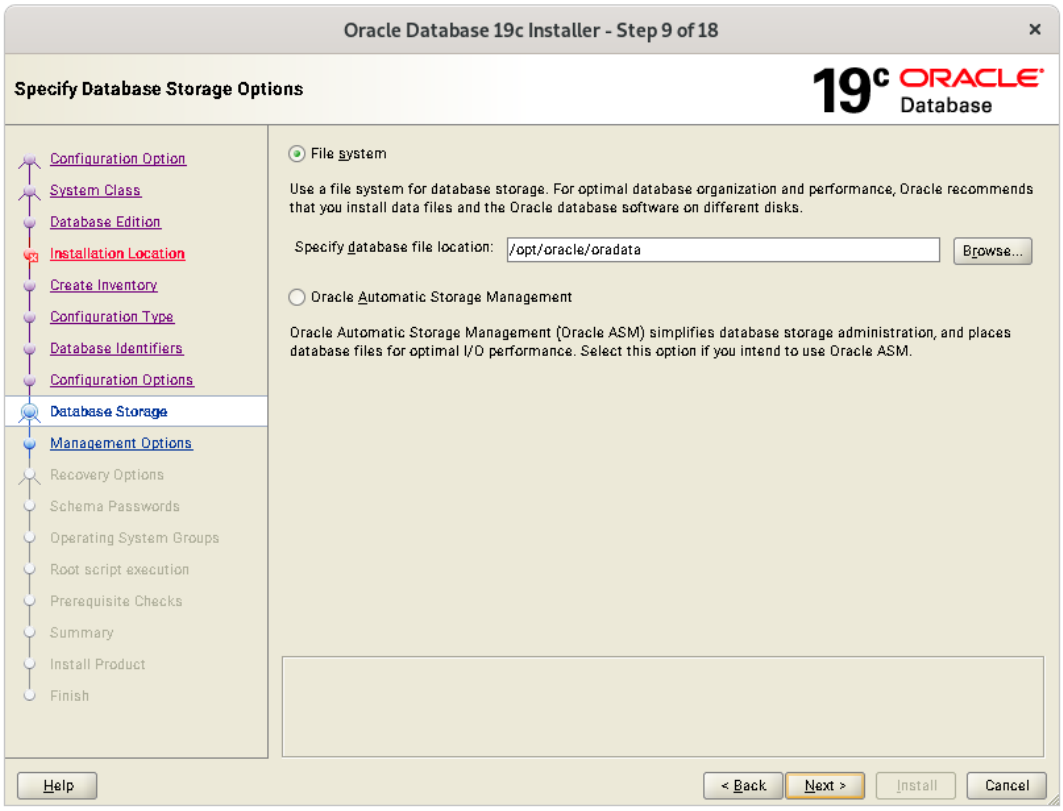

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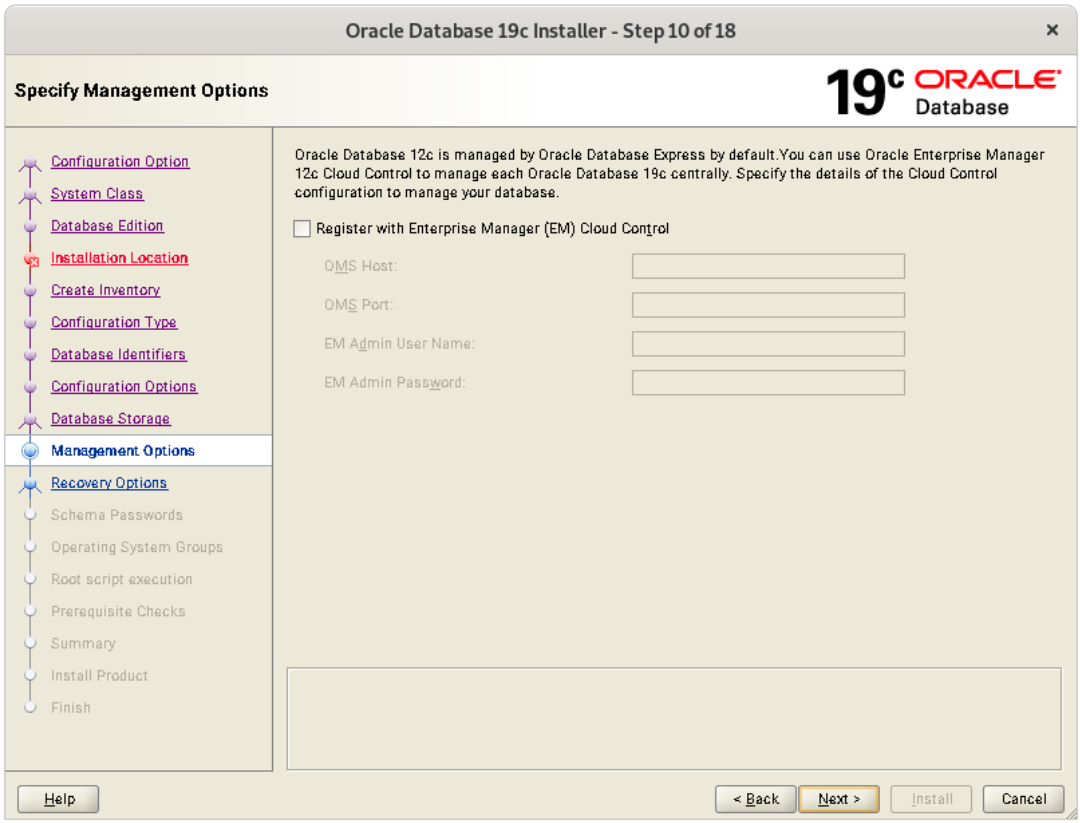

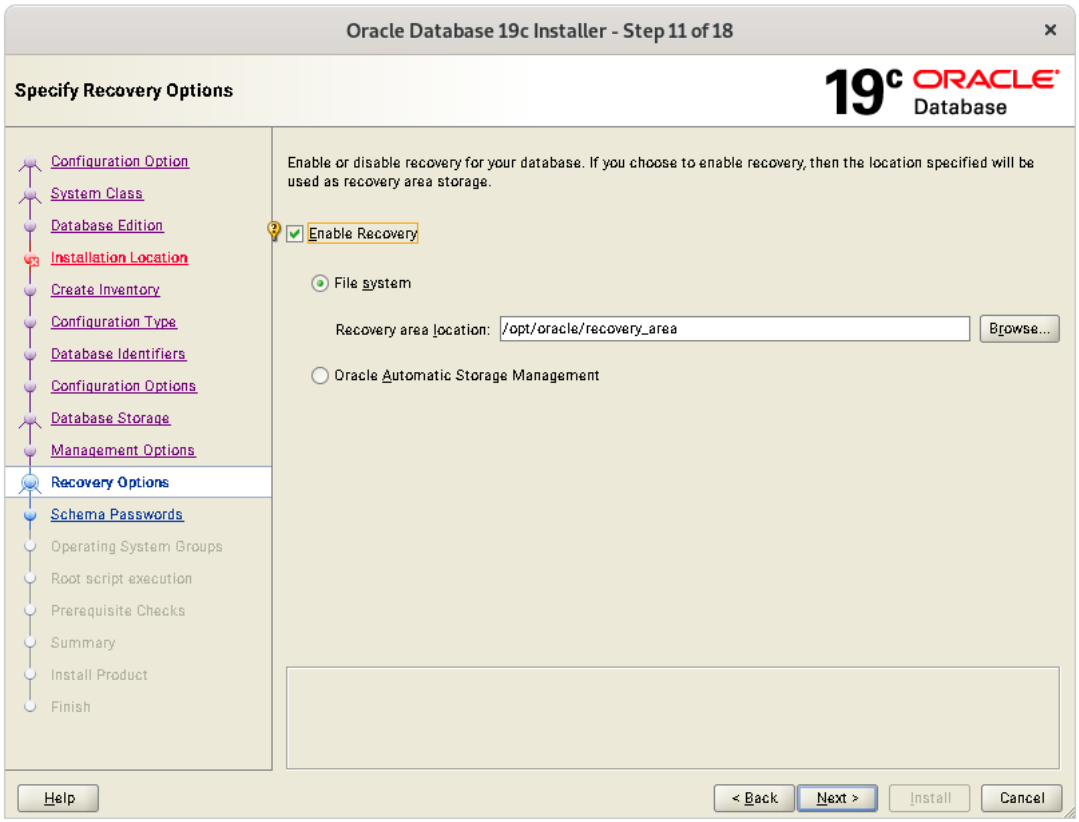

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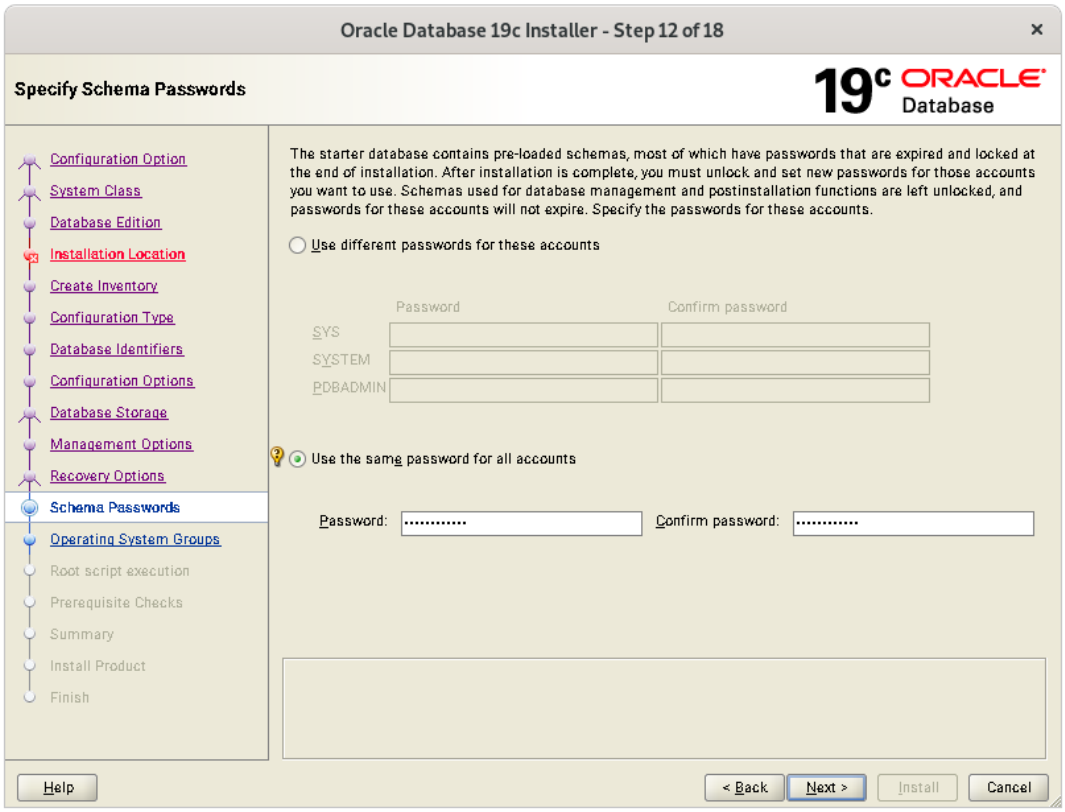

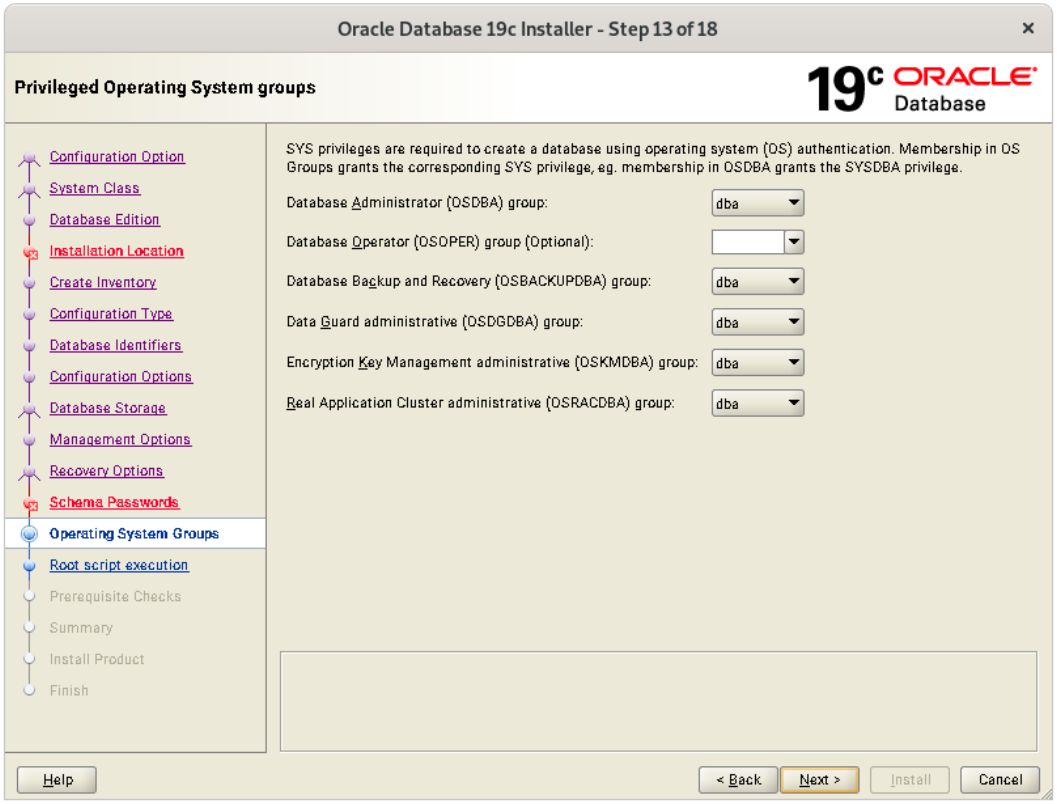

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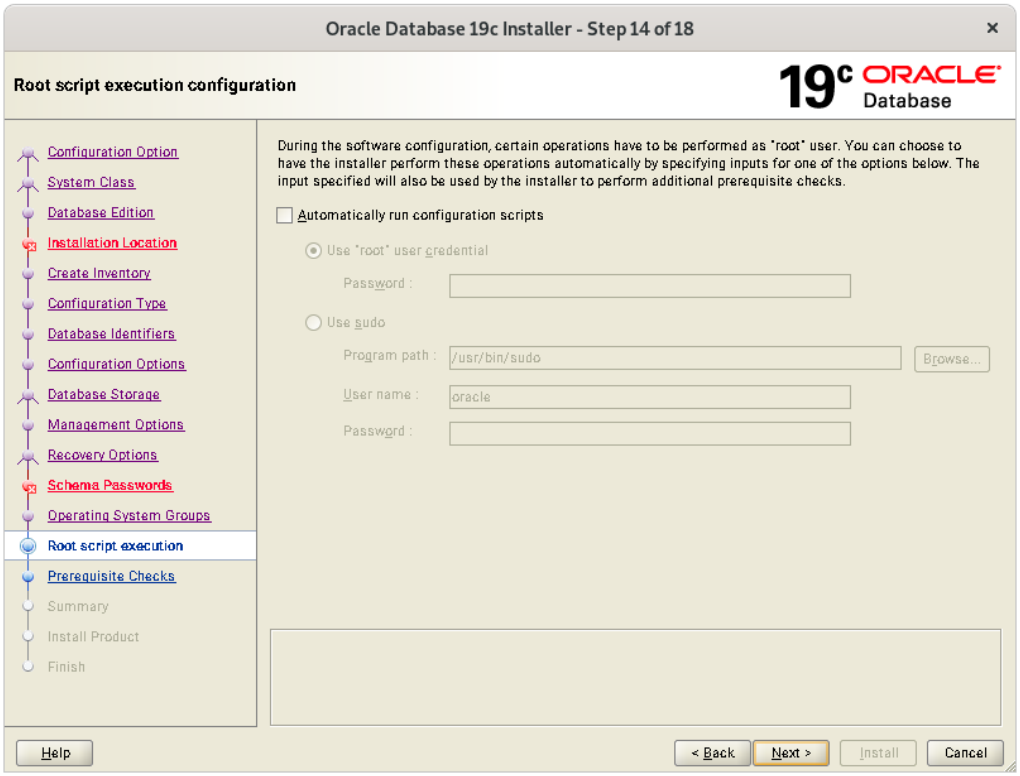

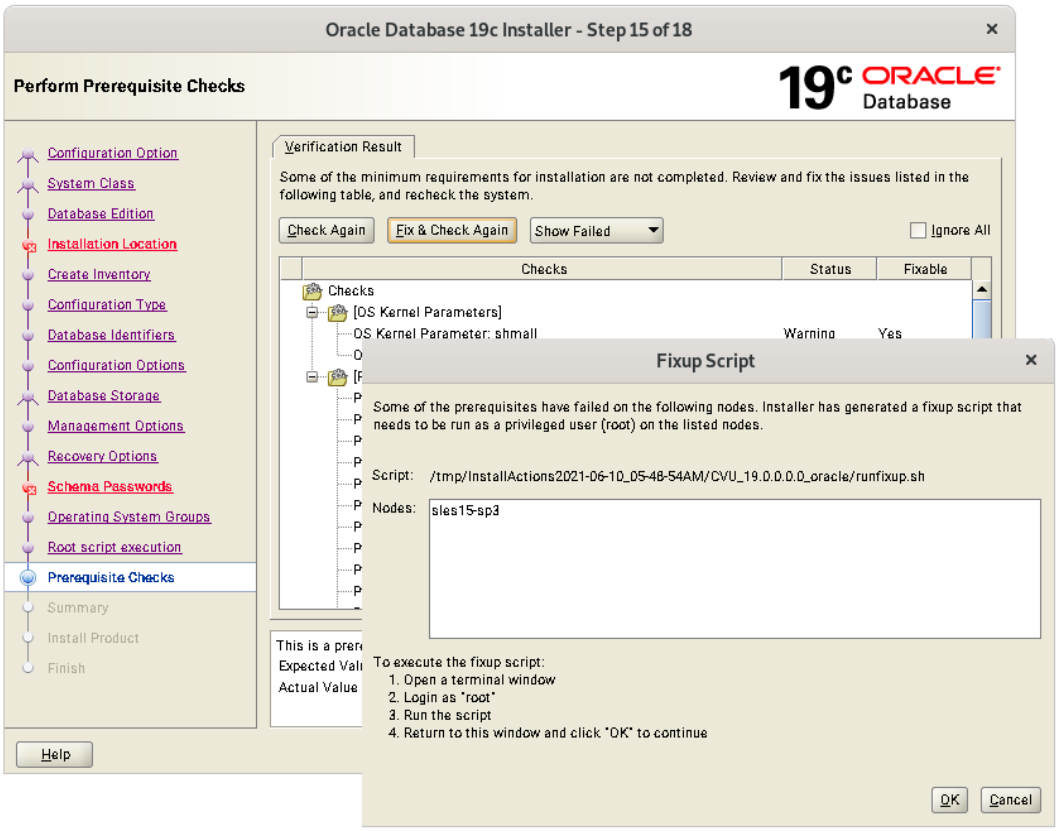

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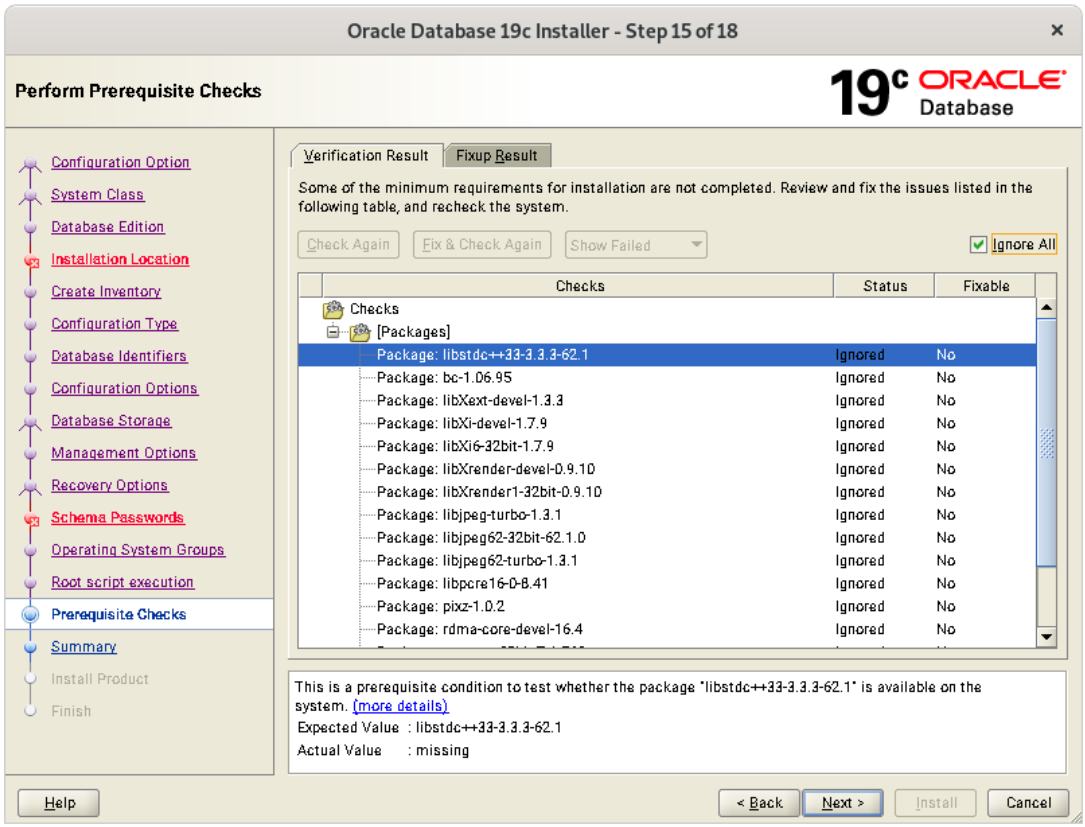
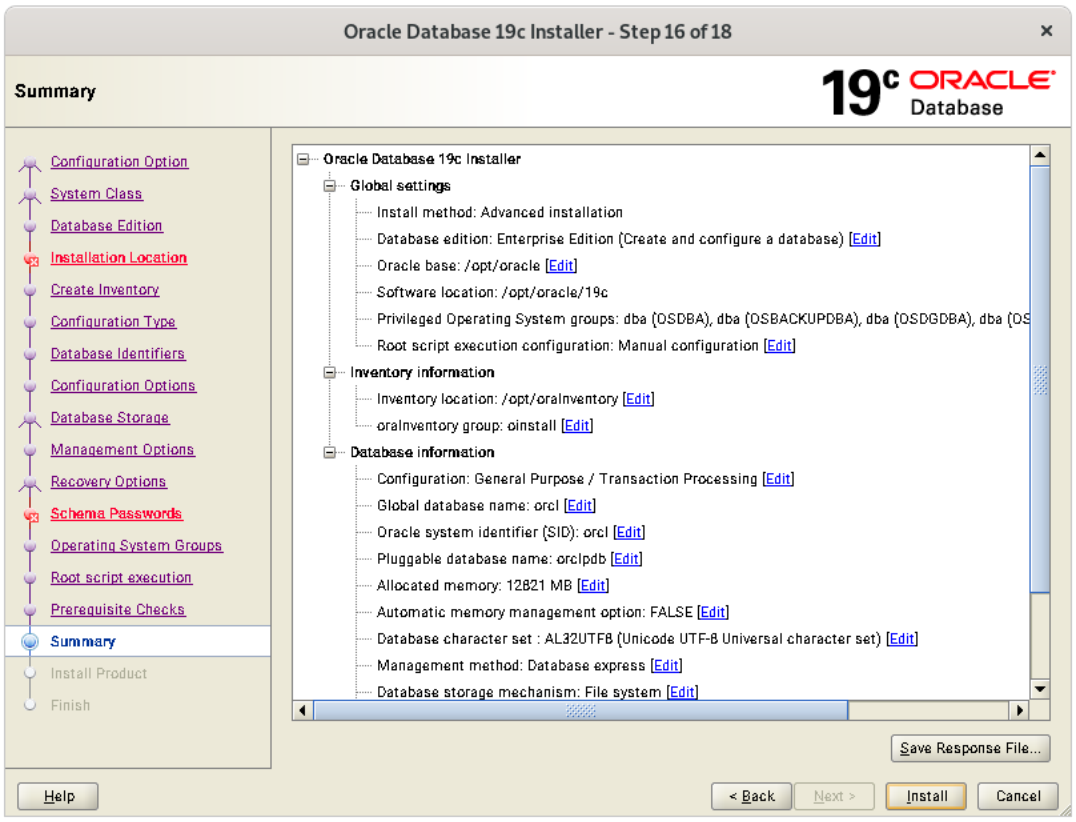


- Verify these packages are installed, then select “Ignore All”



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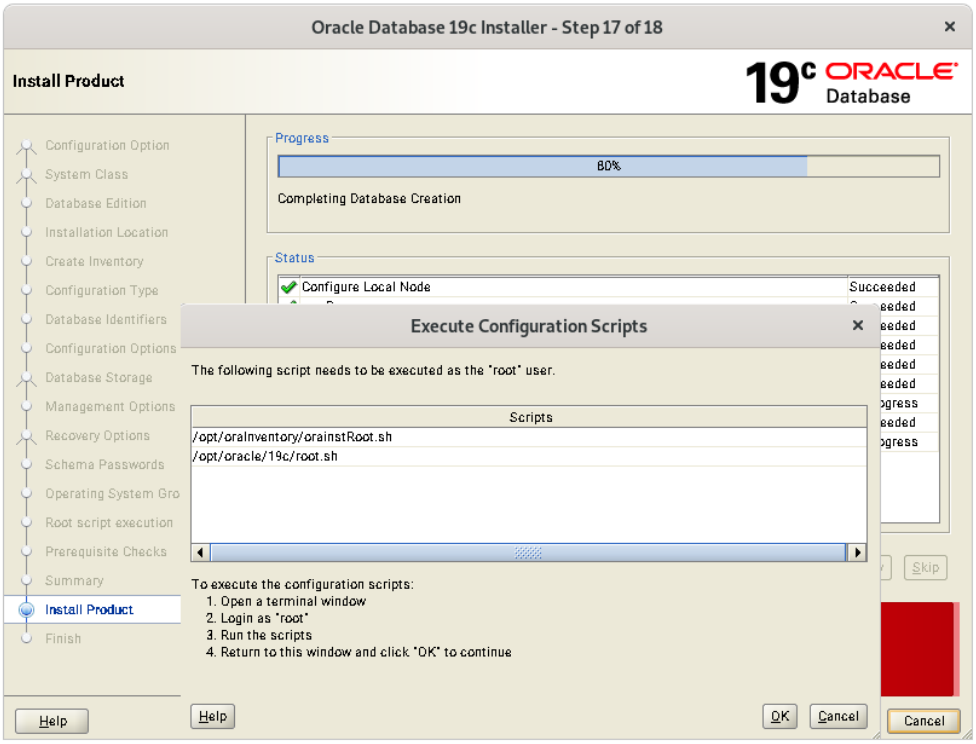

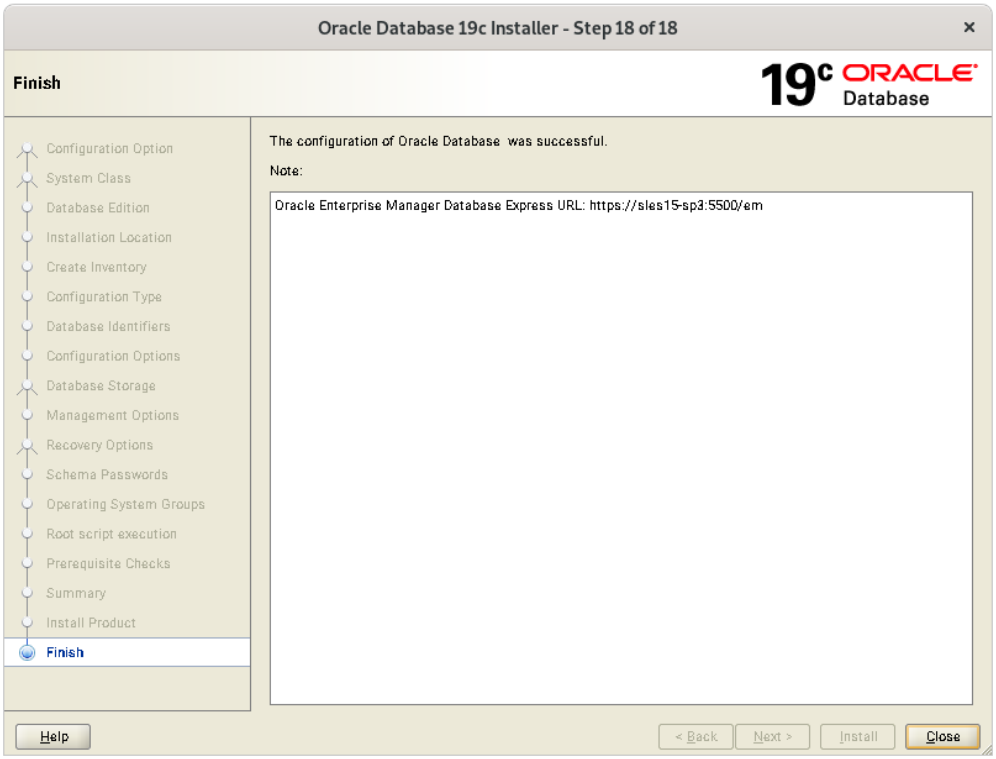

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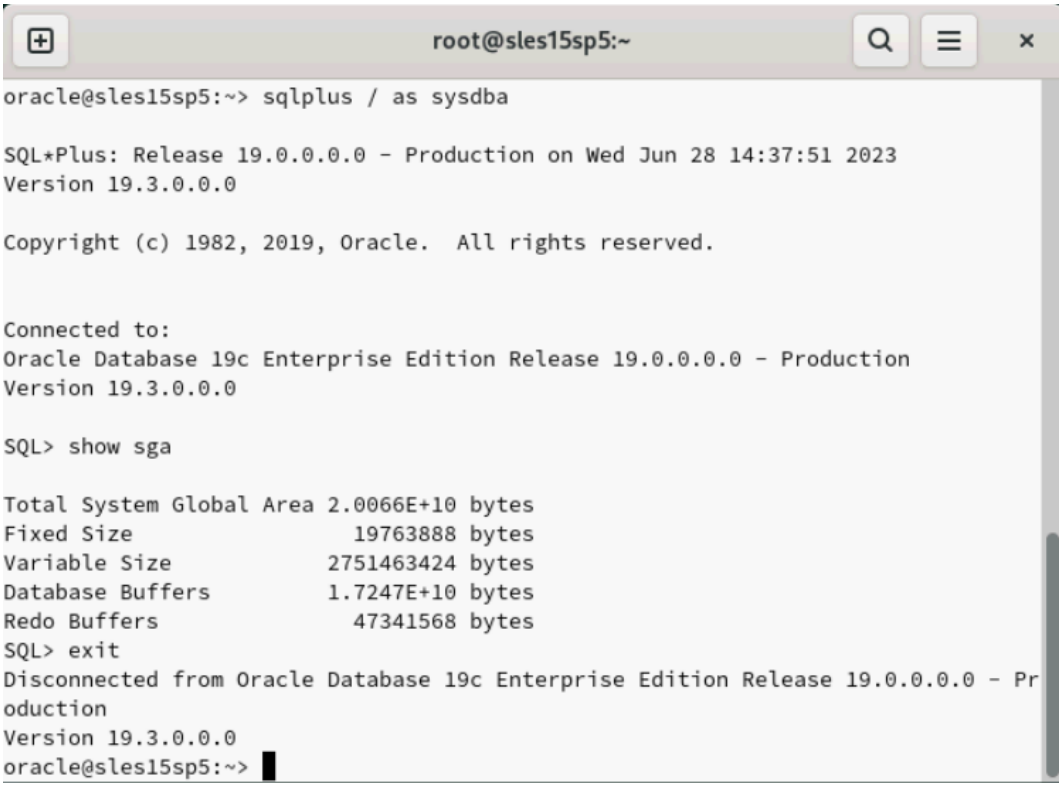
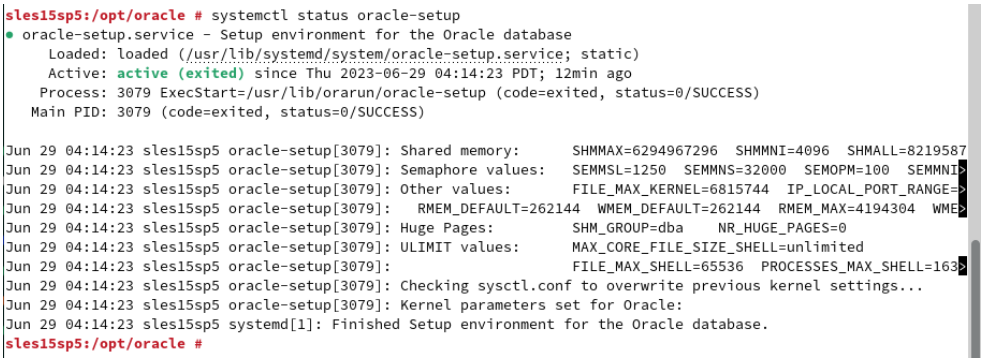
Verify successful Database Installation using sqlplus:



SUSE SLES 15 SP5 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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```
● oracle.service - Oracle Database
     Loaded: loaded (/usr/lib/systemd/system/oracle.service; enabled; vendor preset: enabled)
     Active: active (running) since Thu 2023-06-29 04:15:19 PDT; 20min ago
    Process: 3687 ExecStart=/usr/lib/orarun/oracle start (code=exited, status=0/SUCCESS)
      Tasks: 109
     CGroup: /system.slice/oracle.service
             ├─   300 ora_m000_orcl
             ├─   893 ora_w005_orcl
             ├─  1215 ora_w006_orcl
             ├─  1538 ora_w007_orcl
             ├─  1830 ora_w008_orcl
             ├─  2123 ora_w009_orcl
             ├─  2437 ora_w00a_orcl
             ├─  2731 ora_w00b_orcl
             ├─  3023 ora_w00c_orcl
             ├─  3336 ora_w00d_orcl
             ├─  3669 ora_w00e_orcl
             ├─  3985 ora_w00f_orcl
             ├─  4278 ora_w00g_orcl
             ├─  4330 ora_p000_orcl
             ├─  4332 ora_p001_orcl
             ├─  4334 ora_p002_orcl
             ├─  4336 ora_p003_orcl
             ├─ 25108 ora_lg00_orcl
             ├─ 25110 ora_smon_orcl
             ├─ 25112 ora_lg01_orcl
             ├─ 25114 ora_smco_orcl
             ├─ 25116 ora_reco_orcl
             ├─ 25118 ora_w000_orcl
             ├─ 25120 ora_lreg_orcl
             ├─ 25135 ora_w001_orcl
             ├─ 25181 ora_pxmn_orcl
             ├─ 25216 ora_mmon_orcl
             ├─ 25240 ora_mmnl_orcl
             ├─ 25262 ora_d000_orcl
             ├─ 25288 ora_s000_orcl
             └─ 25314 ora_tmon_orcl

Jun 29 04:15:19 sles15sp5 oracle[3687]:   - Starting Application Server Console.....unused
Jun 29 04:15:19 sles15sp5 oracle[3687]:   - Starting Agent.....unused
Jun 29 04:15:19 sles15sp5 oracle[3687]:   - Starting Enterprise Manager.....unused
Jun 29 04:15:19 sles15sp5 oracle[3687]:   - Starting iSQLPLUS Manager.....unused
Jun 29 04:15:19 sles15sp5 oracle[3687]:   - Starting Oracle Internet Filesystem.....unused
Jun 29 04:15:19 sles15sp5 oracle[3687]:   - Starting Oracle Internet Directory.....unused
Jun 29 04:15:19 sles15sp5 oracle[3687]: ##################################################################
Jun 29 04:15:19 sles15sp5 oracle[3687]: #                      End of   O R A C L E   section            #
Jun 29 04:15:19 sles15sp5 oracle[3687]: ##################################################################
Jun 29 04:15:19 sles15sp5 systemd[1]: Started Oracle Database.
sles15sp5:/opt/oracle #
```

Update Oracle Database to latest version

SLES 15 SP5 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 19.19.0.0 (April, 2023) - p35042068_190000_Linux-x86-64.zip.

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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