

# Oracle Database 21c

on SUSE Linux Enterprise Server 15 SP5

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June 30<sup>st</sup>, 2023



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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 21c on SUSE Linux Enterprise Server 15 SP5. This document covers x86\_64 version but installation steps are same for other platforms.

## Oracle Database Software

Oracle Database Enterprise Edition 21c is available for public download at:

<https://www.oracle.com/technetwork/database/enterprise-edition/downloads/index.html>

## SUSE Linux Software

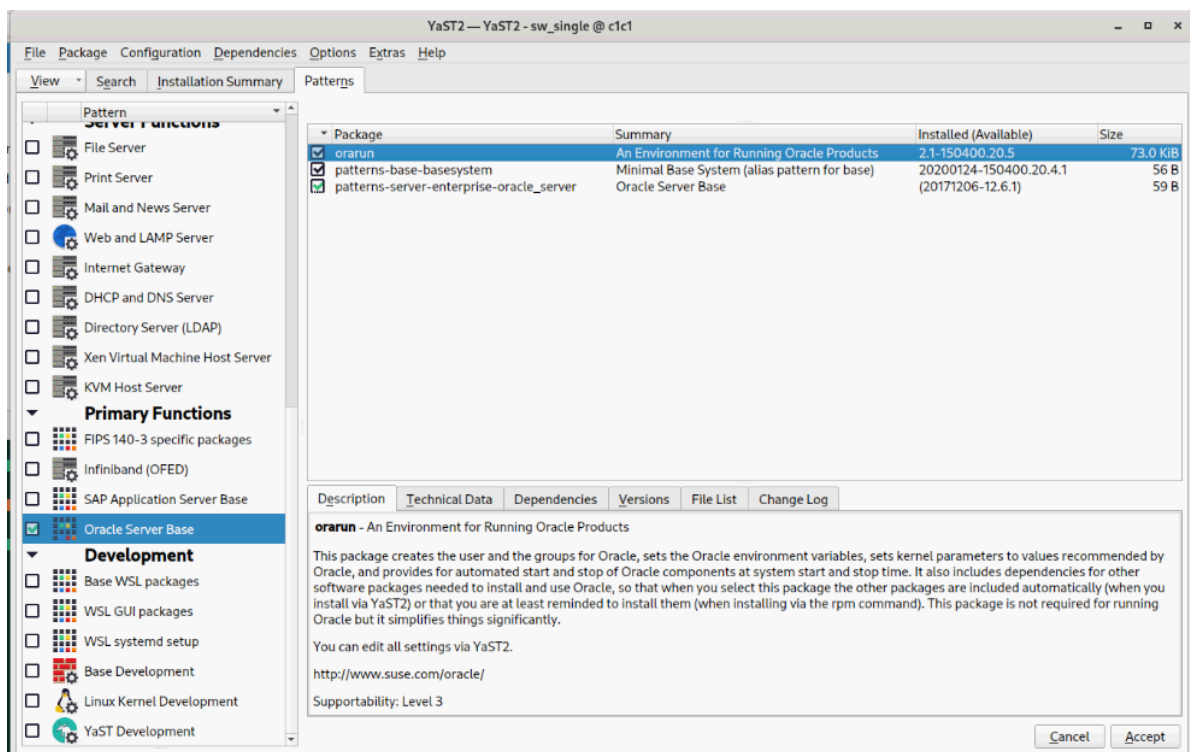
Download SUSE Linux Enterprise Server 15 SP5 here, you can use 60 Day's free trial:

<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. It is useful to select “**32-Bit Runtime Environment**” to ensure some of the old Oracle applications works.

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



```

oracle@c1c1:~> uname -a
Linux c1c1 5.14.21-150500.53-default #1 SMP PREEMPT_DYNAMIC Wed May 10 07:56:26 UTC 2023 (b63004
3) x86_64 x86_64 x86_64 GNU/Linux
oracle@c1c1:~> 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@c1c1:~> env |grep ORA
ORA_NLS10=/opt/oracle/21c/nls/data
ORACLE_SID=orcl
ORACLE_BASE=/opt/oracle
ORACLE_HOME=/opt/oracle/21c
oracle@c1c1:~>

```

## Installing Oracle Database 21c (21.3)

Installing Oracle Database 21c on SLES15 SP5 is straightforward, please follow:

1. Download Oracle Database SW (LINUX.X64\_213000\_db\_home.zip) and unzip in \$ORACLE\_HOME directory.

**Note:** There is a change in Oracle Database 21c Installation process. Now runInstaller is a script, please check Oracle Official document for explanation.

2. Following adjustment will help to avoid error/warning messages during install process (**Fix before starting Oracle 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 any missing packages (or manually verify newer versions is installed).

**i.e.** zypper in libcap1 libcap1-32bit libcap-ng-utils libcap-ng0-32bit libXtst6-32bit nfs-kernel-server

Package	Summary	Installed (Available)	Size
<input checked="" type="checkbox"/> libcap-ng-utils	Utilities for analysing and setting file capabilities	0.7.9-4.37	69.6 KiB
<input checked="" type="checkbox"/> libcap-ng0	An alternate Linux/POSIX capabilities library	0.7.9-4.37	48.3 KiB
<input checked="" type="checkbox"/> libcap-ng0-32bit	An alternate Linux/POSIX capabilities library	0.7.9-4.37	21.6 KiB
<input checked="" type="checkbox"/> libcap-progs	Libcap utility programs	2.63-150400.1.7	88.1 KiB
<input checked="" type="checkbox"/> libcap1	Library for Capabilities (linux-privs) Support	1.97-1.15	14.4 KiB
<input checked="" type="checkbox"/> libcap1-32bit	Library for Capabilities (linux-privs) Support	1.97-1.15	13.6 KiB
<input checked="" type="checkbox"/> libcap2	Library for Capabilities (linux-privs) Support	2.63-150400.1.7	58.5 KiB
<input checked="" type="checkbox"/> libcap2-32bit	Library for Capabilities (linux-privs) Support	2.63-150400.1.7	37.8 KiB
<input type="checkbox"/> libcap-devel	Development files for libcap	(2.63-150400.1.7)	94.4 KiB
<input type="checkbox"/> libcap-ng-devel	Header files for the libcap-ng library	(0.7.9-4.37)	14.3 KiB
<input type="checkbox"/> libcapnp-0_9	The Cap'n Proto data serialization library	(0.9.1-150400.3.4.1)	5.3 MiB
<input type="checkbox"/> libcapstone-devel	Development files to build upon libcapstone	(4.0.2-150500.1.2)	230.4 KiB
<input type="checkbox"/> libcapstone4	A multi-platform, multi-architecture disassembly framework	(4.0.2-150500.1.2)	6.4 MiB
<input type="checkbox"/> python3-capng	Python bindings for libcap-ng library	(0.7.9-4.22)	58.2 KiB

**Note:** libcap1 & libcap1-32bit are part of SLES 15 Legacy Module. Refer <https://documentation.suse.com/sles/15-SP5/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".

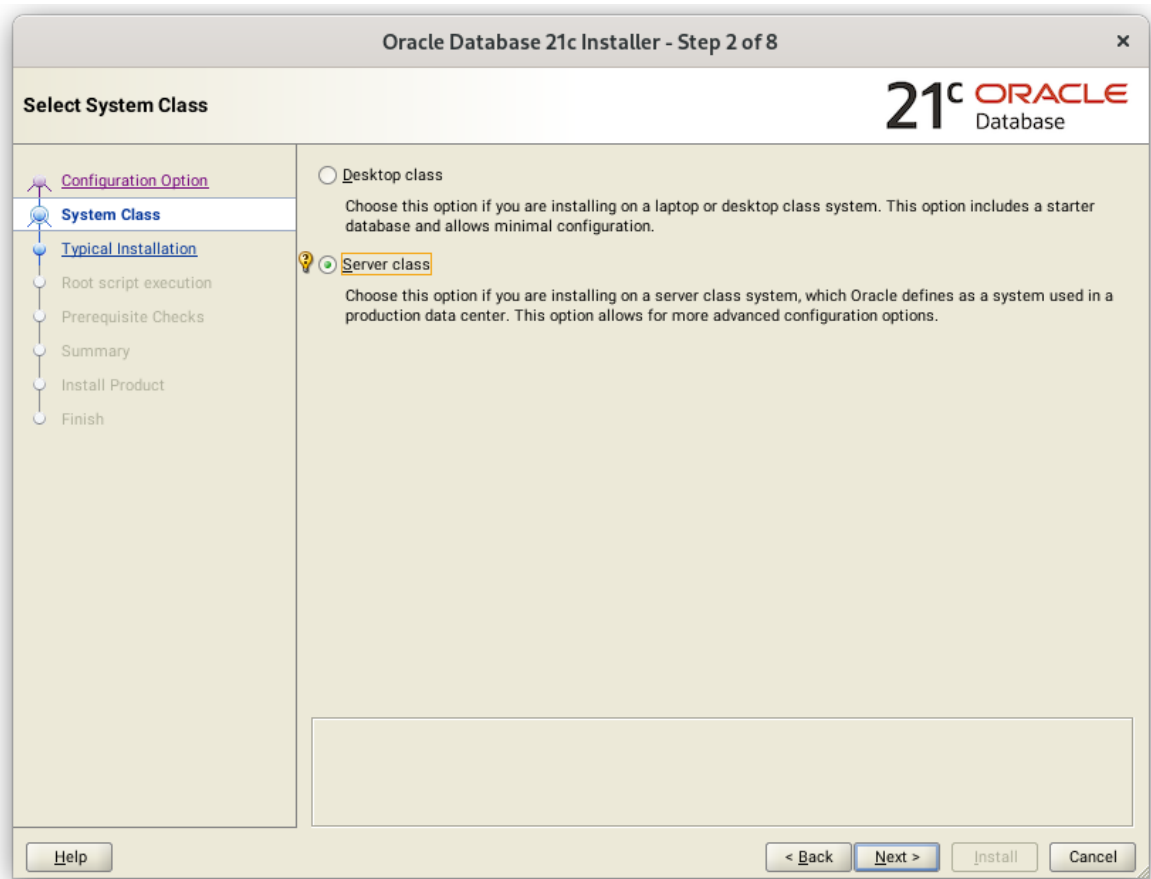
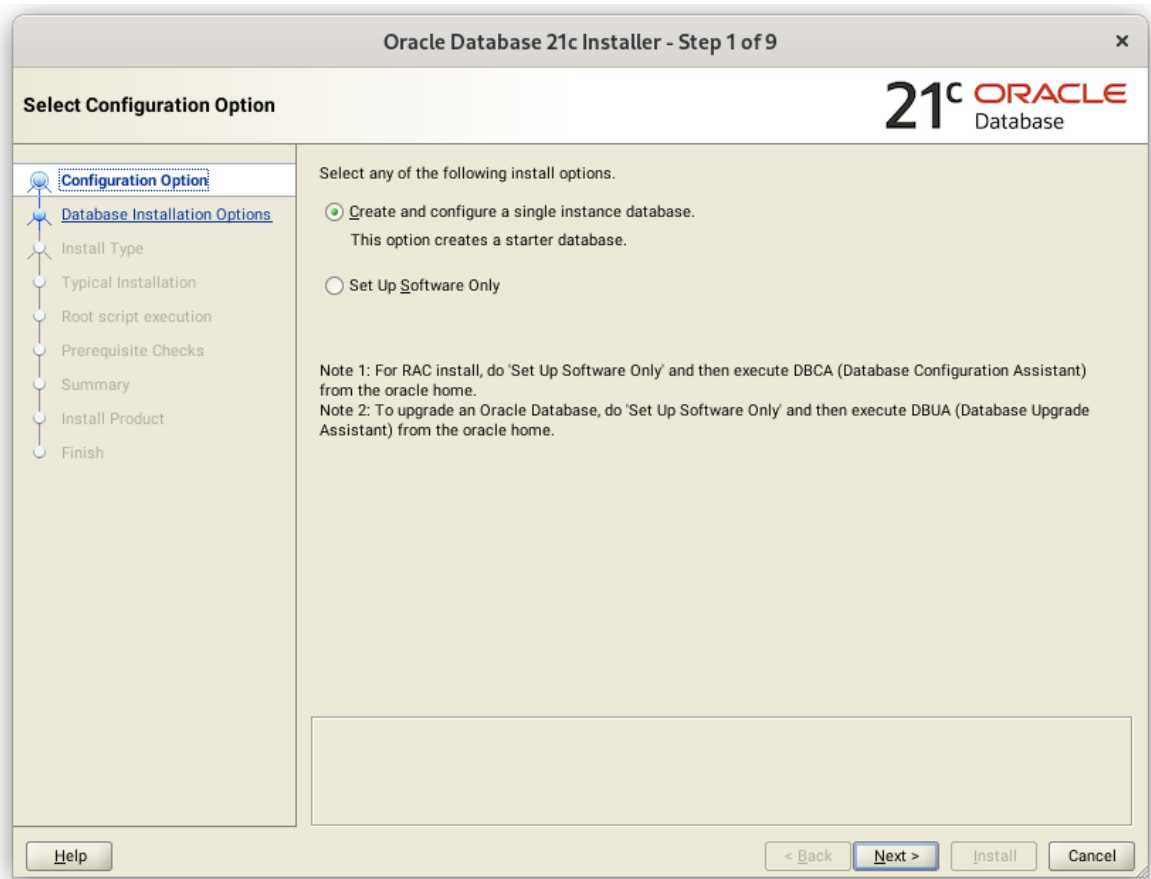
Please refer Oracle Metalink Note [ID 567506.1] - Maximum SHMMAX values for Linux x86 and x86-64.

Following is an example 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



Oracle Database 21c Installer - Step 3 of 18

### Select Database Edition

21c ORACLE Database

- Configuration Option
- System Class
- Database Edition**
- Installation Location
- Create Inventory
- Configuration Type
- Database Identifiers
- Configuration Options
- Database Storage
- Management Options
- Recovery Options
- Schema Passwords
- Operating System Groups
- Root script execution
- Prerequisite Checks
- Summary
- Install Product
- Finish

Which database edition do you want to install?

Enterprise Edition  
Oracle Database 21c Enterprise Edition is a self-managing database that has the scalability, performance, high availability, and security features required to run the most demanding, mission-critical applications.

Standard Edition 2  
Oracle Database 21c Standard Edition 2 is a full-featured data management solution ideally suited to the needs of medium-sized businesses.

Help < Back Next > Install Cancel

Oracle Database 21c Installer - Step 4 of 18

### Specify Installation Location

21c ORACLE Database

- Configuration Option
- System Class
- Database Edition
- Installation Location**
- Create Inventory
- Configuration Type
- Database Identifiers
- Configuration Options
- Database Storage
- Management Options
- Recovery Options
- Schema Passwords
- Operating System Groups
- Root script execution
- Prerequisite Checks
- Summary
- Install Product
- Finish

Specify a path to place all Oracle software and configuration-related files installed by this installation owner. This location is the Oracle base directory for the installation owner.

Oracle base: /opt/oracle Browse...

This software directory is the Oracle Database home directory.

Software location: /opt/oracle/product/21c

Help < Back Next > Install Cancel

### Oracle Database 21c Installer - Step 5 of 18

**21<sup>c</sup> ORACLE**  
Database

#### Create Inventory

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:

Specify an operating system group whose members have write permission to the inventory directory (orainventory).

oraInventory Group Name:

### Oracle Database 21c Installer - Step 6 of 18

**21<sup>c</sup> ORACLE**  
Database


#### Select Configuration Type

Select the type of database that you want to create.

**General Purpose / Transaction Processing**  
A starter database designed for general purpose use, or for transaction-heavy applications.

**Data Warehousing**  
A starter database optimized for data warehousing applications.

### Oracle Database 21c Installer - Step 7 of 18

**Specify Database Identifiers**


- [Configuration Option](#)
- [System Class](#)
- [Database Edition](#)
- [Installation Location](#)
- [Create Inventory](#)
- [Configuration Type](#)
- [Database Identifiers](#)
- [Configuration Options](#)
- [Database Storage](#)
- [Management Options](#)
- [Recovery Options](#)
- [Schema Passwords](#)
- [Operating System Groups](#)
- [Root script execution](#)
- [Prerequisite Checks](#)
- [Summary](#)
- [Install Product](#)
- [Finish](#)

Provide the identifier information required to access the database uniquely. An Oracle database is uniquely identified by a Global database name, typically of the form "name.domain". A database is referenced by at least one Oracle instance which is uniquely identified from any other instance on this computer by an Oracle system identifier (SID).

Global database name:


Oracle system identifier (SID):

Pluggable database name:

[Help](#)

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[Install](#)
[Cancel](#)

### Oracle Database 21c Installer - Step 8 of 18

**Specify Configuration Options**


- [Configuration Option](#)
- [System Class](#)
- [Database Edition](#)
- [Installation Location](#)
- [Create Inventory](#)
- [Configuration Type](#)
- [Database Identifiers](#)
- [Configuration Options](#)
- [Database Storage](#)
- [Management Options](#)
- [Recovery Options](#)
- [Schema Passwords](#)
- [Operating System Groups](#)
- [Root script execution](#)
- [Prerequisite Checks](#)
- [Summary](#)
- [Install Product](#)
- [Finish](#)

Memory
Character sets

Enabling Automatic Memory Management allows the database to distribute memory automatically between the system global area (SGA) and the program global area (PGA), based on user-specified overall database memory target size. If automatic memory management is not enabled, then the SGA and PGA must be sized manually.

Enable Automatic Memory Management

Allocate memory: 
256
25495
63736
25,495
40 %

SGA target:	19121	MB
PGA aggregate target:	6374	MB
Target database memory:	25495	MB

[Help](#)

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[Next >](#)
[Install](#)
[Cancel](#)



**Oracle Database 21c Installer - Step 9 of 18**

### Specify Database Storage Options

- [Configuration Option](#)
- [System Class](#)
- [Database Edition](#)
- [Installation Location](#)
- [Create Inventory](#)
- [Configuration Type](#)
- [Database Identifiers](#)
- [Configuration Options](#)
- Database Storage**
- [Management Options](#)
- [Recovery Options](#)
- [Schema Passwords](#)
- [Operating System Groups](#)
- [Root script execution](#)
- [Prerequisite Checks](#)
- [Summary](#)
- [Install Product](#)
- [Finish](#)

**File system**

Use a file system for database storage. For optimal database organization and performance, Oracle recommends that you install data files and the Oracle database software on different disks.

Specify database file location:

**Oracle Automatic Storage Management**

Oracle Automatic Storage Management (Oracle ASM) simplifies database storage administration, and places database files for optimal I/O performance. Select this option if you intend to use Oracle ASM.

**Oracle Database 21c Installer - Step 10 of 18**

### Specify Management Options

- [Configuration Option](#)
- [System Class](#)
- [Database Edition](#)
- [Installation Location](#)
- [Create Inventory](#)
- [Configuration Type](#)
- [Database Identifiers](#)
- [Configuration Options](#)
- [Database Storage](#)
- Management Options**
- Recovery Options**
- [Schema Passwords](#)
- [Operating System Groups](#)
- [Root script execution](#)
- [Prerequisite Checks](#)
- [Summary](#)
- [Install Product](#)
- [Finish](#)

Oracle Database 21c is managed by Oracle Database Express by default. You can use Oracle Enterprise Manager 12c Cloud Control to manage each Oracle Database 21c centrally. Specify the details of the Cloud Control configuration to manage your database.

**Register with Enterprise Manager (EM) Cloud Control**

OMS Host:

OMS Port:

EM Admin User Name:

EM Admin Password:

### Oracle Database 21c Installer - Step 11 of 18

#### Specify Recovery Options

- [Configuration Option](#)
- [System Class](#)
- [Database Edition](#)
- [Installation Location](#)
- [Create Inventory](#)
- [Configuration Type](#)
- [Database Identifiers](#)
- [Configuration Options](#)
- [Database Storage](#)
- [Management Options](#)
- [Recovery Options](#)
- [Schema Passwords](#)
- [Operating System Groups](#)
- [Root script execution](#)
- [Prerequisite Checks](#)
- [Summary](#)
- [Install Product](#)
- [Finish](#)

21c ORACLE Database

Enable or disable recovery for your database. If you choose to enable recovery, then the location specified will be used as recovery area storage.

**Enable Recovery**

File system

Recovery area location:

Oracle Automatic Storage Management

### Oracle Database 21c Installer - Step 12 of 18

#### Specify Schema Passwords

- [Configuration Option](#)
- [System Class](#)
- [Database Edition](#)
- [Installation Location](#)
- [Create Inventory](#)
- [Configuration Type](#)
- [Database Identifiers](#)
- [Configuration Options](#)
- [Database Storage](#)
- [Management Options](#)
- [Recovery Options](#)
- [Schema Passwords](#)
- [Operating System Groups](#)
- [Root script execution](#)
- [Prerequisite Checks](#)
- [Summary](#)
- [Install Product](#)
- [Finish](#)

21c ORACLE Database

The starter database contains pre-loaded schemas, most of which have passwords that are expired and locked at the end of installation. After installation is complete, you must unlock and set new passwords for those accounts you want to use. Schemas used for database management and postinstallation functions are left unlocked, and passwords for these accounts will not expire. Specify the passwords for these accounts.

Use different passwords for these accounts

	Password	Confirm password
SYS	<input type="text"/>	<input type="text"/>
SYSTEM	<input type="text"/>	<input type="text"/>
PDBADMIN	<input type="text"/>	<input type="text"/>

Use the same password for all accounts

Password:  Confirm password:

### Oracle Database 21c Installer - Step 13 of 18

#### Privileged Operating System groups

- [Configuration Option](#)
- [System Class](#)
- [Database Edition](#)
- [Installation Location](#)
- [Create Inventory](#)
- [Configuration Type](#)
- [Database Identifiers](#)
- [Configuration Options](#)
- [Database Storage](#)
- [Management Options](#)
- [Recovery Options](#)
- [Schema Passwords](#)
- [Operating System Groups](#)
- [Root script execution](#)
- [Prerequisite Checks](#)
- [Summary](#)
- [Install Product](#)
- [Finish](#)

SYS privileges are required to create a database using operating system (OS) authentication. Membership in OS Groups grants the corresponding SYS privilege, eg. membership in OSDBA grants the SYSDBA privilege.

Database Administrator (OSDBA) group:

Database Operator (OSOPER) group (Optional):

Database Backup and Recovery (OSBACKUPDBA) group:

Data Guard administrative (OSDGDBA) group:

Encryption Key Management administrative (OSKMDBA) group:

Real Application Cluster administrative (OSRACDBA) group:

Help
< Back
Next >
Install
Cancel

### Oracle Database 21c Installer - Step 14 of 18

#### Root script execution configuration

- [Configuration Option](#)
- [System Class](#)
- [Database Edition](#)
- [Installation Location](#)
- [Create Inventory](#)
- [Configuration Type](#)
- [Database Identifiers](#)
- [Configuration Options](#)
- [Database Storage](#)
- [Management Options](#)
- [Recovery Options](#)
- [Schema Passwords](#)
- [Operating System Groups](#)
- [Root script execution](#)
- [Prerequisite Checks](#)
- [Summary](#)
- [Install Product](#)
- [Finish](#)

During the software configuration, certain operations have to be performed as "root" user. You can choose to have the installer perform these operations automatically by specifying inputs for one of the options below. The input specified will also be used by the installer to perform additional prerequisite checks.

Automatically run configuration scripts

Use "root" user credential

Password:

Use sudo

Program path:  Browse...

User name:

Passwrd:

Help
< Back
Next >
Install
Cancel

Oracle Database 21c Installer - Step 15 of 18

Perform Prerequisite Checks 21c ORACLE Database

- Configuration Option
- System Class
- Database Edition
- Installation Location
- Create Inventory
- Configuration Type
- Database Identifiers
- Configuration Options
- Database Storage
- Management Options
- Recovery Options
- Schema Passwords
- Operating System Groups
- Root script execution
- 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.

Ignore All

Checks	Status	Fixable
[OS Kernel Parameters]		
OS Kernel Parameter: shmall	Warning	Yes
[Packages]		
Package: libaio1-32bit-0.3.109 (x86_64)	Warning	No
Package: bc-1.07.1 (x86_64)	Warning	No
Package: libXext-devel-1.3.3 (x86_64)	Warning	No
Package: libXi-devel-1.7.9 (x86_64)	Warning	No
Package: libXi6-32bit-1.7.9 (x86_64)	Warning	No
Package: libXrender-devel-0.9.10 (x86_64)	Warning	No
Package: libXrender-32bit-0.9.10 (x86_64)	Warning	No
Package: libpcap1-1.8.1 (x86_64)	Warning	No

This is a prerequisite condition to test whether the OS kernel parameter "shmall" is properly set. [\(more details\)](#)  
 Expected Value : 8219587  
 Actual Value : Current=6575668; Configured=undefined

Oracle Database 21c Installer - Step 15 of 18

Perform Prerequisite Checks 21c ORACLE Database

- Configuration Option
- System Class
- Database Edition
- Installation Location
- Create Inventory
- Configuration Type
- Database Identifiers
- Configuration Options
- Database Storage
- Management Options
- Recovery Options
- Schema Passwords
- Operating System Groups
- Root script execution
- Prerequisite Checks
- Summary
- Install Product
- Finish

**Verification Result** **Fixup Result**

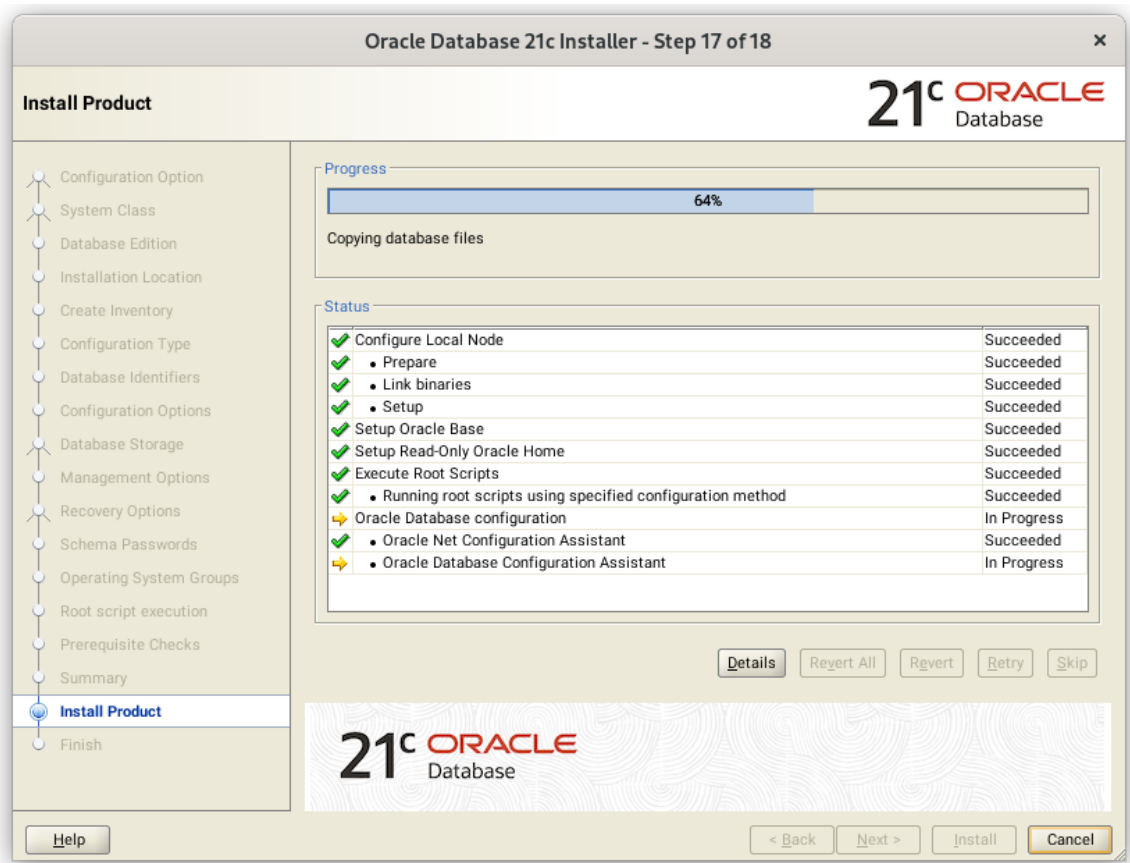
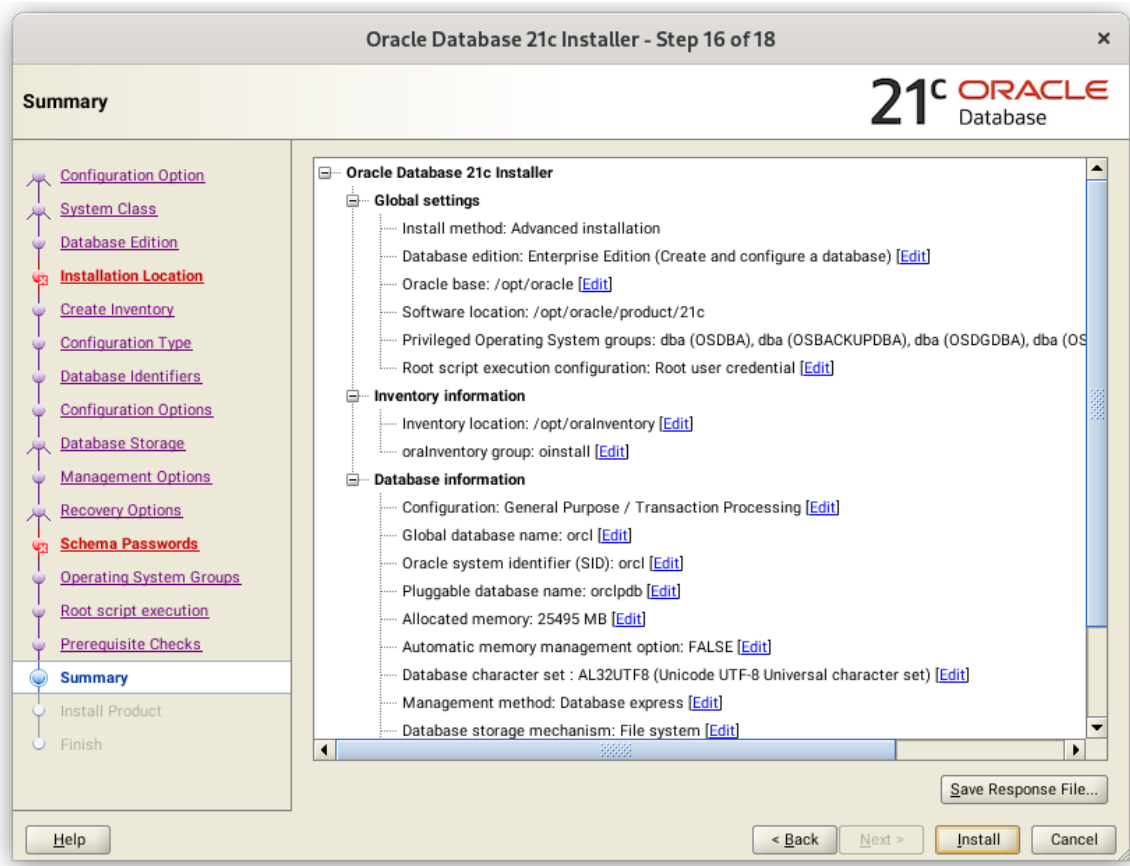
Some of the minimum requirements for installation are not completed. Review and fix the issues listed in the following table, and recheck the system.

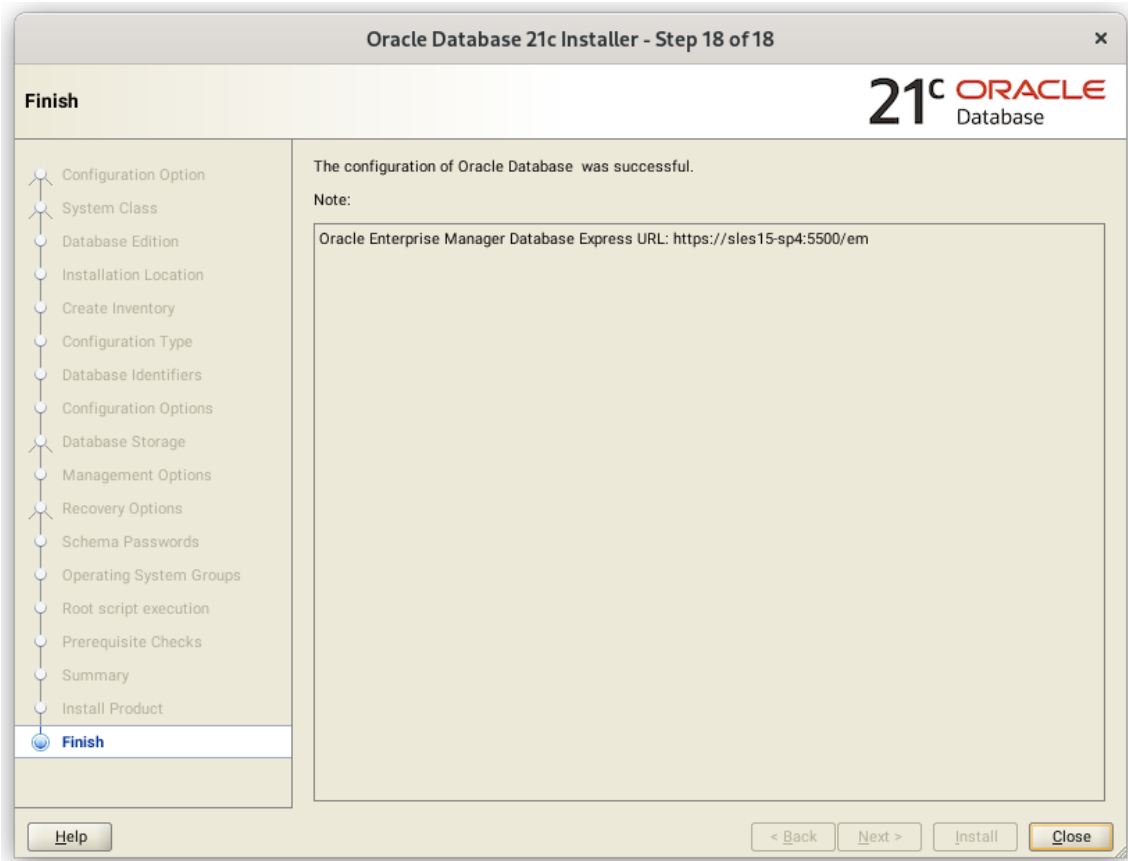
Ignore All

Checks	Status	Fixable
[Packages]		
Package: libpcap1-1.8.1 (x86_64)	Ignored	No

This is a prerequisite condition to test whether the package "libpcap1-1.8.1 (x86\_64)" is available on the system. [\(more details\)](#)  
 Expected Value : libpcap1(x86\_64)-1.8.1  
 Actual Value : missing

**Note:** Please ignore Oracle Installer warning as libcap1-1.97-1.15.x86\_64 is installed.





## 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/21c:Y” in /etc/oractab
2. Set START\_ORACLE\_DB & START\_ORACLE\_DB\_LISTENER to “yes” in /etc/sysconfig/oracle setup file.
3. Restart Oracle database (or reboot) so correct status is reported via systemctl i.e. systemctl restart oracle
4. Check status using **systemctl** commands:

```

root@c1c1:~
c1c1:~ # systemctl status oracle-setup
● oracle-setup.service - Setup environment for the Oracle database
   Loaded: loaded (/usr/lib/systemd/system/oracle-setup.service; static)
   Active: active (exited) since Fri 2023-06-02 13:09:27 MDT; 3 weeks 5 days ago
   Process: 2032 ExecStart=/usr/lib/orarun/oracle-setup (code=exited, status=0/SUCCESS)
   Main PID: 2032 (code=exited, status=0/SUCCESS)

Jun 02 13:09:27 c1c1 oracle-setup[2032]: Semaphore values:  SEMMSL=1250 SEMMNS=32000 SEMOPM=>
Jun 02 13:09:27 c1c1 oracle-setup[2032]: Other values:      FILE_MAX_KERNEL=6815744 IP_LOCAL_>
Jun 02 13:09:27 c1c1 oracle-setup[2032]: RMEM_DEFAULT=262144 WMEM_DEFAULT=262144 RMEM_MAX=4>
Jun 02 13:09:27 c1c1 oracle-setup[2032]: Huge Pages:      SHM_GROUP=dba NR_HUGE_PAGES=0
Jun 02 13:09:27 c1c1 oracle-setup[2032]: ULIMIT values:   MAX_CORE_FILE_SIZE_SHELL=unlimited
Jun 02 13:09:27 c1c1 oracle-setup[2032]:                  FILE_MAX_SHELL=65536 PROCESSES_MA>
Jun 02 13:09:27 c1c1 oracle-setup[2032]: Checking sysctl.conf to overwrite previous kernel sett>
Jun 02 13:09:27 c1c1 oracle-setup[2032]: sysctl value fs.file-max=6815744 restored.
Jun 02 13:09:27 c1c1 oracle-setup[2032]: Kernel parameters set for Oracle:
Jun 02 13:09:27 c1c1 systemd[1]: Finished Setup environment for the Oracle database.
c1c1:~ #

```

```

root@c1c1:~
c1c1:~ # systemctl status oracle
* oracle.service - Oracle Database
   Loaded: loaded (/usr/lib/systemd/system/oracle.service; enabled; vendor preset: enabled)
   Active: failed (Result: timeout) since Wed 2023-06-28 19:32:37 MDT; 8min ago
     Tasks: 100 (limit: 65535)
    CGroup: /system.slice/oracle.service
           └─ 32352 ora_pmon_orcl
              32356 ora_clmn_orcl
              32360 ora_psp0_orcl
              32364 ora_vktm_orcl
              32370 ora_gen0_orcl
              32374 ora_mman_orcl
              32380 ora_gen1_orcl
              32382 ora_gen2_orcl
              32387 ora_vosd_orcl
              32390 ora_diag_orcl
              32392 ora_ofsd_orcl
              32394 ora_dbrm_orcl
              32396 ora_vkrm_orcl
              32398 ora_svcb_orcl
              32402 ora_pman_orcl
              32404 ora_dia0_orcl
              32409 ora_dbw0_orcl
              32411 ora_dbw1_orcl
              32413 ora_dbw2_orcl
              32415 ora_dbw3_orcl
              32417 ora_dbw4_orcl
              32419 ora_lgwr_orcl
              32425 ora_ckpt_orcl
              32569 ora_tt02_orcl
              32571 ora_rcbg_orcl
              32575 ora_aqpc_orcl
              32579 ora_w002_orcl
              32583 ora_cjq0_orcl
              33043 ora_w003_orcl
              33058 ora_w004_orcl
              33064 ora_m001_orcl
              33066 ora_m002_orcl
              33088 ora_m003_orcl
              33090 ora_qm02_orcl
              33094 ora_q002_orcl
              33096 ora_q003_orcl
              33104 ora_cl00_orcl
              33106 ora_cl01_orcl
              33108 ora_cl02_orcl
              33110 ora_cl03_orcl
              33112 ora_cl04_orcl

Jun 28 19:33:27 c1c1 oracle[32186]: - Starting Application Server....unused
Jun 28 19:33:27 c1c1 oracle[32186]: - Starting Application Server Console....unused
Jun 28 19:33:27 c1c1 oracle[32186]: - Starting Agent....unused
Jun 28 19:33:27 c1c1 oracle[32186]: - Starting Enterprise Manager....unused
Jun 28 19:33:27 c1c1 oracle[32186]: - Starting iSQLPLUS Manager....unused
Jun 28 19:33:27 c1c1 oracle[32186]: - Starting Oracle Internet Filesystem....unused
Jun 28 19:33:27 c1c1 oracle[32186]: - Starting Oracle Internet Directory....unused
Jun 28 19:33:27 c1c1 oracle[32186]: #####>
Jun 28 19:33:27 c1c1 oracle[32186]: #                               End of  O R A C L E  section >
Jun 28 19:33:27 c1c1 oracle[32186]: #####>
c1c1:~ # █

```

## Manage Oracle Database

You can use Oracle Enterprise Manager or sqlplus to monitor & manage your newly installed Oracle Database.

### 1. Sqlplus:

```

oracle@c1c1:~> sqlplus / as sysdba

SQL*Plus: Release 21.0.0.0.0 - Production on Wed Jun 28 19:49:07 2023
Version 21.3.0.0.0

Copyright (c) 1982, 2021, Oracle. All rights reserved.

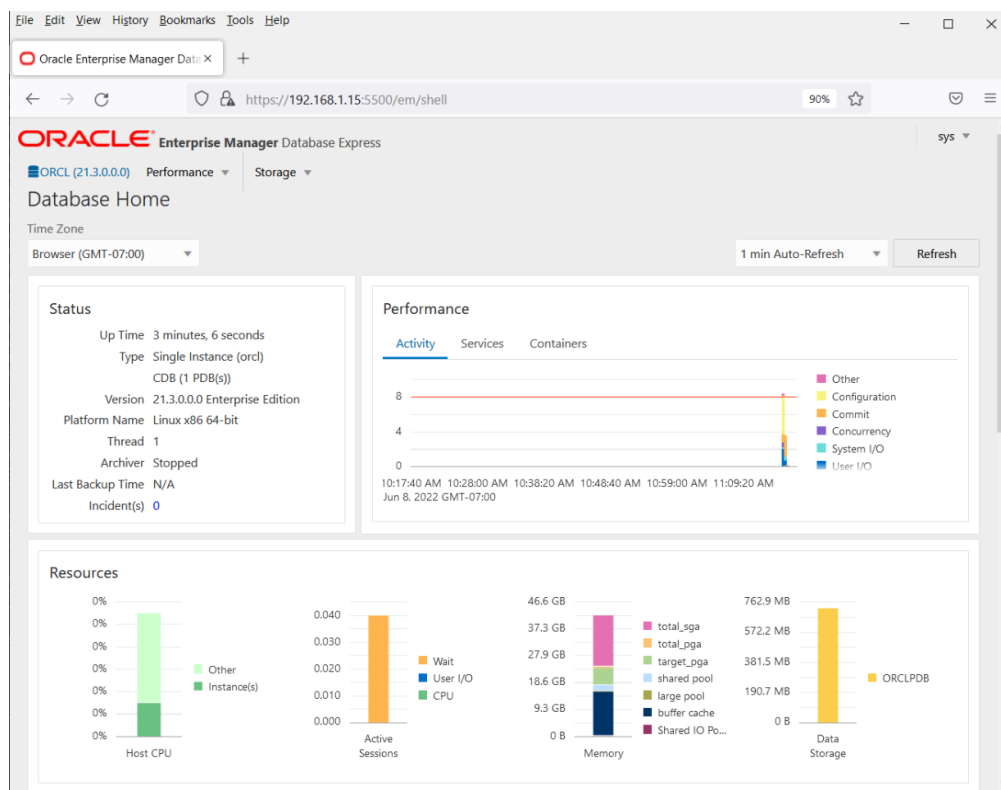
Connected to:
Oracle Database 21c Enterprise Edition Release 21.0.0.0.0 - Production
Version 21.3.0.0.0

SQL> show sga

Total System Global Area 2.0133E+10 bytes
Fixed Size                23857776 bytes
Variable Size              3556769792 bytes
Database Buffers          1.6509E+10 bytes
Redo Buffers               43249664 bytes
SQL> exit
Disconnected from Oracle Database 21c Enterprise Edition Release 21.0.0.0.0 - Production
Version 21.3.0.0.0
oracle@c1c1:~>

```

## 2. Enterprise Manager



## Update Oracle Database to latest version

SLES 15 SP5 is certified with Oracle Database 21.3 (or above). Above instructions covers 21.3 (available for public download). Download and install latest Oracle update i.e. Oracle DB Release Update 21.10.0.0 (April, 2023) - p35134934\_210000\_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!