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| --- | --- | --- | --- | --- |
| **Step #** | **Step Name** | **Description** | **API / Command (CLI)** | **Notes** |
| 8 | Connect to Oracle Instance | Connecting to Oracle database based on ITSM notes and inventory for respective client. Need to set oracle environment setting by using proper profile like .oraenv or setenv | For AIX/linux servers :  export ORACLE\_SID=<input>  export ORACLE\_HOME=`cat /etc/oratab|grep -i $ORACLE\_SID |grep -v "^#"|cut -d: -f2 -s`  For Solaris / HP UX  export ORACLE\_SID=<input>  export ORACLE\_HOME=`cat /var/opt/oratab|grep -i $ORACLE\_SID |grep -v "^#"|cut -d: -f2 -s`  For windows servers?  setx ORACLE\_HOME /K HKEY\_LOCAL\_MACHINE\SOFTWARE\ORACLE\KEY\_{$Homename}\ORACLE\_HOME  echo %ORACLE\_HOME%  setx Oracle\_SID /K HKEY\_LOCAL\_MACHINE\SOFTWARE\ORACLE\KEY\_{$Homename}\Oracle\_SID  echo Oracle\_SID  Set ORACLE\_SID=<SID name>  Set ORACLE\_HOME=<Home name>  ##### connect to the database ######### |  |
| 11. | Take input | Software version selection  Respective action will be taken next steps depend on option selected. | 1. Drop Down   Oracle software version a. 12.1.02 b.11.2.0.4   1. Drop Down   Operating System a. Linux 6 | This should be taken as input |
|  |  |  |  |  |
| 12 | Option 1 | Check if required packages are installed. | For installing oracle 12.1.0.2 on linux 6 below packages are required.  binutils-2.20.51.0.2-5.11.el6  glibc-2.12-1.7.el6  libstdc++-4.4.4-13.el6  libaio-0.3.107-10.el6  libXext-1.1  libXtst-1.0.99.2  libX11-1.3  libXau-1.0.5  libxcb-1.5  libXi-1.3  make-3.81-19.el6  sysstat-9.0.4-11.el6  compat-libcap1-1.10-1  compat-libstdc++-33-3.2.3-69.el6  gcc-4.4.4-13.el6  gcc-c++-4.4.4-13.el6  glibc-devel-2.12-1.7.el6  ksh  libstdc++-devel-4.4.4-13.el6  libaio-devel-0.3.107-10.el6  As oracle user execute the below command  rpm -q binutils glibc glibcc libstdc++ libaio libXext libXtst libX11 libXau libxcb libXi make sysstat compat-libcap1 compat-libstdc++-33 gcc gcc-c++ glibc-devel ksh libstdc++-devel libaio-devel | Check if package version is equal or above the required version. If it is a low version, stop the flow and inform DBA team. The packages need to be updated as root user.  If one of the perquisite package is not installed the output would be like below:  ““package <package name> is not installed””.  Example:  ““package ksh is not installed””.  Stop the flow and inform DBA team. Missing packages should be installed as root user. |
| 13 |  | Verify kernel parameter values are set for installation | Required Values:  net.ipv4.ip\_local\_port\_range = 9000 65500  net.core.rmem\_default = 262144  net.core.rmem\_max = 4194304  net.core.wmem\_default = 262144  net.core.wmem\_max = 1048576  kernel.shmmax = 2147483648  kernel.shmmni = 4096  kernel.sem = 250 32000 100 128  fs.file-max = 6815744  fs.aio-max-nr = 1048576  kernel.shmall = 2097152  Execute the below command as oracle user  grep -E 'net.ipv4.ip\_local\_port\_range|net.core.rmem\_default|net.core.rmem\_max|net.core.wmem\_default|net.core.wmem\_max|kernel.shmmax| kernel.shmmni|kernel.sem|fs.file-max|fs.aio-max-nr|kernel.shmall' /etc/sysctl.conf | If the values of the parameters are low stop the flow and inform DBA team. The values can be changed by root user only. |
| 14 |  | Verify Shell limits are configured for oracle user as per installation requirement | Required values for shell limits for oracle  oracle soft nproc 2047  oracle hard nproc 16384  oracle soft nofile 1024  oracle hard nofile 65536  oracle soft stack 10240  oracle hard stack 10240  Execute the below command as oracle user  grep -E 'nproc|nofile|stack| /etc/security/limits.conf | If the value of the parameters are low stop the flow and inform DBA team. The values can be changed by root user only. |
| 15 |  | Verify if secure linux parameter is set to permissive. | Isssue the below command  grep -E SELINUX /etc/selinux/config | If the SELINUX parameter is other than **PERMISSIVE** exit the flow. This can be changed as root user. |
| 16 |  | Input Values | Accept inputs for Response file and HOME path   1. Oracle Home Path 2. Oracle Base Path 3. 12.1.0.2 software binaries location |  |
| 17 |  | Check if oracle user has permissions on the ORACLE HOME and enough storage is available for installation. | Check oracle user has write permissions on the ORACLE HOME provided as input.  Assuming Oracle home is /u02/app/oracle/product/12.1.0.2/db1  Execute the below command:  $cd /u02  $touch sample.txt    If there is no permission on the file system then the output will be  “touch: cannot touch `sample.txt': Permission denied”  Check for available storage.  Execute the below command:  $df –h /u02    Avail space should be more than 8GB. | If permission is not there exit the flow and inform DBA team. Permission has to be granted using root user.  If the available is space is less than 8GB inform DBA team. File system has to be extended. |
| 14 |  | Create the directories in which oracle software is installed. | Assuming ORACLE HOME path in step number # is/u02/app/oracle/product/12.1.0.2/db1  Please check if the HOME path already exists. If it does not exist goa head with the below.  Issuse the below command  $mkdir –p /u02/app/oracle/product/12.1.0.2/db1 | If the path already exist. Stop the flow and inform the DBA. |
| 15. |  | Create response file in oracle users home directory | Check the home directory  echo $HOME    Here oracle user home directory is /home/oracle  Create a response file in oracle home directory.  echo "oracle.install.responseFileVersion=/oracle/install/rspfmt\_dbinstall\_response\_schema\_v12.1.0" >> /home/oracle/db\_install.rsp  echo " ORACLE.INSTALL.OPTION = INSTALL\_DB\_SWONLY " >> /home/oracle/db\_install.rsp  echo "UNIX\_GROUP\_NAME=oinstall" >> /home/oracle/db\_install.rsp  echo "INVENTORY\_LOCATION=/u02/app/oraInventory" >> /home/oracle/db\_install.rsp  echo "SELECTED\_LANGUAGES=en" >> /home/oracle/db\_install.rsp  echo "ORACLE\_HOME=**/u02/app/oracle/product/12.1.0.2/db1**" >> /home/oracle/db\_install.rsp  echo "ORACLE\_BASE=**/u02/app/oracle**" >> /home/oracle/db\_install.rsp  echo "oracle.install.db.InstallEdition=EE" >> /home/oracle/db\_install.rsp  echo "oracle.install.db.DBA\_GROUP=dba" >> /home/oracle/db\_install.rsp  echo "oracle.install.db.OPER\_GROUP=dba" >> /home/oracle/db\_install.rsp  echo "oracle.install.db.BACKUPDBA\_GROUP=dba" >> /home/oracle/db\_install.rsp  echo "oracle.install.db.DGDBA\_GROUP=dba" >> /home/oracle/db\_install.rsp  echo "oracle.install.db.KMDBA\_GROUP=dba" >> /home/oracle/db\_install.rsp  echo "DECLINE\_SECURITY\_UPDATES=true" >> /home/oracle/db\_install.rsp | The home directory for oracle user is /home/oracle.  Note:  The below parameter is a standard parameter and it is not taken as an input. This has to be included in the response file.  oracle.install.responseFileVersion=/oracle/install/rspfmt\_dbinstall\_response\_schema\_v12.1.0 |
| 16. |  | Unzip the oracle binaries. | Assuming /u02/software/db12c as oracle binary path from step #  Check if the software files are already unzipped.  ls -ltr /u02/software/db12c/database    If the directory “database” is present in /u02/software/db12c, software is unzipped. Go to next step.  If the directory is not present below error is returned  ls: cannot access /u02/software/db12c/database: No such file or directory  There would be 2 zip files which need to be unzipped.  unzip linuxamd64\_12102\_database\_1of2.zip  unzip linuxamd64\_12102\_database\_2of2.zip | Note: Both files take couple of mins to unzip. The time may wary depending upon the load on the server.  After the files are unzipped $ prompt it returned. |
| 17. |  | Install the binaries. | Go to the binary location  Cd /u02/software/db12c/database  Invoke runInstaller in silent mode by issuing the command  $./runInstaller -silent -noconfig -responseFile /home/oracle/db\_install.rsp    This process will take some time to complete deepening upon the resources and load on the server.  Installation log is created in INVENTORY\_LOCATION.  In this case /u02/app/oraInventory/logs. Grep for the string **SEVER** in the logfile.    If any output is displayed inform DBA team and exit the flow.  After the installation is above to complete below messages are displayed on the screen    You should see the message:  “The installation of Oracle Database 12c was successful”.  At this stage you are asked to execute root.sh script which is located in ORACLE\_HOME as ROOT user.  /u02/app/oracle/product/12.1.0.2/db1/root.sh  Execute the script as root user: | Complete install actions are recorded in a log file which gets created in Inventory location under log directory (in our case it is /u02/app/oraInventory/logs.  The installation file name is not standard. The file is created with date and time stamp.  Ex: installActions2016-04-21\_03-12-21PM.log.  If there is any failure in the installation grep for “SEVER” in the log file. |
|  | Option 2 | Check if required packages are installed. | For installing oracle 11.2.0.4 on linux 6 below packages are required.  binutils-2.20.51.0.2-5.11.el6  compat-libstdc++-33-3.2.3-69.el6  glibc-2.12-1.7.el6  ksh  libaio-0.3.107-10.el6  libgcc-4.4.4-13.el6  libstdc++-4.4.4-13.el6  make-3.81-19.el6  compat-libcap1-1.10-1  gcc-4.4.4-13.el6  gcc-c++-4.4.4-13.el6  glibc-devel-2.12-1.7.el6  libaio-devel-0.3.107-10.el6  libstdc++-devel-4.4.4-13.el6  sysstat-9.0.4-11.el6  cpp-4.4.4-13.el6  glibc-headers-2.12-1.7.el6  mpfr.x86\_64 0:2.4.1-6.el6  As oracle user execute the below command  rpm -q binutils compat-libstdc++-33 glibc ksh libaio libgcc libstdc++ make compat-libcap1 gcc gcc-c++ glibc-devel libaio-devel libstdc++-devel sysstat cpp glibc-headers mpfr | Check if package version is equal or above the required version. If it is a low version, stop the flow and inform DBA team. The packages need to be updated as root user.  If one of the perquisite package is not installed the output would be like below:  ““package <package name> is not installed””.  Example:  ““package ksh is not installed””.  Stop the flow and inform DBA team. Missing packages should be installed as root user. |
|  |  | Verify kernel parameter values are set for installation | Required Values:  net.ipv4.ip\_local\_port\_range = 9000 65500  net.core.rmem\_default = 262144  net.core.rmem\_max = 4194304  net.core.wmem\_default = 262144  net.core.wmem\_max = 1048576  kernel.shmmax = 2147483648  kernel.shmmni = 4096  kernel.sem = 250 32000 100 128  fs.file-max = 6815744  fs.aio-max-nr = 1048576  kernel.shmall = 2097152  Execute the below command as oracle user  grep -E 'net.ipv4.ip\_local\_port\_range|net.core.rmem\_default|net.core.rmem\_max|net.core.wmem\_default|net.core.wmem\_max|kernel.shmmax| kernel.shmmni|kernel.sem|fs.file-max|fs.aio-max-nr|kernel.shmall' /etc/sysctl.conf | If the value of the parameters does not match stop the flow and inform DBA team. The values can be changed by root user only. |
|  |  | Verify Shell limits are configured for oracle user as per installation requirement | Required values for shell limits for oracle  oracle soft nproc 2047  oracle hard nproc 16384  oracle soft nofile 1024  oracle hard nofile 65536  oracle soft stack 10240  oracle hard stack 10240  Execute the below command as oracle user  grep -E 'nproc|nofile|stack| /etc/security/limits.conf | If the value of the parameters does not match stop the flow and inform DBA team. The values can be changed by root user only. |
|  |  | Verify if secure linux parameter is set to permissive. | Isssue the below command  grep -E SELINUX /etc/selinux/config | If the SELINUX parameter is other than permissive exit the flow. This can be changed as root user. |
|  |  | Input Values | Accpet inputs for Response file and HOME path   1. Oracle Home Path 2. Oracle Base Path 3. 11.2.0.4 software binaries location   Response file inputs  1. ORACLE.INSTALL.OPTION  2. UNIX\_GROUP\_NAME  3. INVENTORY\_LOCATION  4. SELECTED\_LANGUAGES  5. ORACLE\_HOME  6. ORACLE\_BASE  7. oracle.install.db.InstallEdition  8. oracle.install.db.DBA\_GROUP  9. oracle.install.db.OPER\_GROUP  13. DECLINE\_SECURITY\_UPDATES |  |
|  |  | Check if oracle user has permissions on the ORACLE HOME and enough storage is available for installation. | Check oracle user has write permissions on the ORACLE HOME provided as input.  Assuming Oracle home is /u02/app/oracle/product/11.2.0.4/db\_1  Execute the below command:  $cd /u02  $touch sample.txt    If there is no permission on the file system then the output will be  “touch: cannot touch `sample.txt': Permission denied”  Check for available storage.  Execute the below command:  $df –h /u02    Avail space should be more than 8GB. | If permission is not there exit the flow and inform DBA team. Permission has to be granted using root user.  If the available is space is less than 8GB inform DBA team. File system has to be extended. |
|  |  | Create the directories in which oracle software is installed. | Assuming ORACLE HOME path in step number # is/u02/app/oracle/product/11.2.0.4/db\_1  Create directory using the flowing command.  $mkdir –p /u02/app/oracle/product/11.2.0.4/db\_1  $ls -ltr /u02/app/oracle/product/11.2.0.4/db\_1 |  |
|  |  | Create response file in oracle users home directory | Check the home directory  echo $HOME    Here oracle user home directory is /home/oracle  Create a response file in oracle home directory. Substitue the response file parameter values with the the inputs taken in step number #  echo "oracle.install.responseFileVersion=/oracle/install/rspfmt\_dbinstall\_response\_schema\_v11\_2\_0" >> /home/oracle/db\_install.rsp  echo "ORACLE.INSTALL.OPTION=INSTALL\_DB\_SWONLY " >> /home/oracle/db\_install.rsp  echo "UNIX\_GROUP\_NAME=oinstall" >> /home/oracle/db\_install.rsp  echo "INVENTORY\_LOCATION=/u02/app/oraInventory" >> /home/oracle/db\_install.rsp  echo "SELECTED\_LANGUAGES=en" >> /home/oracle/db\_install.rsp  echo "ORACLE\_HOME=/u02/app/oracle/product/11.2.0.4/db\_1" >> /home/oracle/db\_install.rsp  echo "ORACLE\_BASE=/u02/app/oracle" >> /home/oracle/db\_install.rsp  echo "oracle.install.db.InstallEdition=EE" >> /home/oracle/db\_install.rsp  echo "oracle.install.db.DBA\_GROUP=dba" >> /home/oracle/db\_install.rsp  echo "oracle.install.db.OPER\_GROUP=dba" >> /home/oracle/db\_install.rsp  echo "DECLINE\_SECURITY\_UPDATES=true" >> /home/oracle/db\_install.rsp | The home directory for oracle user is /home/oracle.  Note:  The below parameter is a standard parameter and it is not taken as an input. This has to be included in the response file.  oracle.install.responseFileVersion/oracle/install/rspfmt\_dbinstall\_response\_schema\_v11\_2\_0 |
|  |  | Unzip the oracle binaries. | Assuming /u02/software/db11.2.0.4 as oracle binary path from step #  Check if the software files are already unzipped.  ls -ltr /u02/software/db11.2.0.4/database    If the directory “database” is present in /u02/software/db11.2.0.4, software is unzipped. Go to next step.  If the directory is not present below error is returned  ls: cannot access /u02/software/db11.2.0.4/: No such file or directory  There would be 2 zip files which need to be unzipped.  p13390677\_112040\_LINUX\_1of7.zip  p13390677\_112040\_LINUX\_2of7.zip  $unzip p13390677\_112040\_LINUX\_1of7.zip  $unzip p13390677\_112040\_LINUX\_2of7.zip | Note : Both files take couple of mins to unzip. The time may wary depending upon the load on the server.  After the files are unzipped $ prompt it returned. |
| 27. | mail | Install the binaries. | Go to the binary location  Cd /u02/software/db11.2.0.4/database  Invoke runInstaller in silent mode by issuing the command  $./runInstaller -silent -noconfig -responseFile /home/oracle/db\_install.rsp    This process will take some time to complete deepening upon the resources and load on the server.  Installation log is created in INVENTORY\_LOCATION.  In this case /u02/app/oraInventory/logs. Grep for the string **SEVER** in the logfile.    If any output is displayed inform DBA team and exit the flow.  After the installation is above to complete below messages are displayed on the screen    You should see the message:  “Successfully Setup Software.”.  At this stage you are asked to execute root.sh script which is located in ORACLE\_HOME as ROOT user.  /u02/app/oracle/product/11.2.0.4/db\_1/root.sh  Execute the script as root user: |  |