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Given article text here Installing Oracle 19c Database on Linux - Part 1 The installation process for Oracle Database Preinstall 19c was successful. I installed several packages, including libstdc++-devel, libnl, ksh, and oracle-database-preinst. The process took approximately 3 minutes to complete. The next step is to validate the user "Oracle" and ensure that the required groups are created. The command `cat /etc/group | grep ^ora` shows the existing groups, including oinstall, dba, oper, backupdba, dgdba, kmdba, and racdba. The id command is used to verify the user's ID, group membership, and permissions. The output shows that the user "Oracle" has a UID of 54321 and belongs to several groups. In addition, manual setup is required to configure certain operating system resources and kernel parameters. This involves editing the `/etc/sysctl.d/97-oracle-database-sysctl.conf` file to add or modify lines such as `fs.aio-max-nr`, `fs.file-max`, `kernel.shmall`, `kernel.shmmax`, and other kernel parameters. These changes persist across system restarts, ensuring that the Oracle database installation is properly configured. ****Preparing the System**** 1. ****Configure shmmax****: Set this parameter to the total shared memory available, in 4K pages, to prevent out-of-memory errors. 2. ****Review Oracle Support Note****: Consult My Oracle Support Note 567506.1 for additional guidance on configuring shmmax. ****Changing Kernel Parameters**** 1. ****Update kernel parameters****: Change kernel parameter values without rebooting using `sysctl --system`. 2. ****Validate changes****: Confirm the updated values are correct by running `sysctl -a`. ****Configuring System Limits**** 1. ****Create or edit limits file****: Add lines to `/etc/security/limits.d/oracle-database-preinstall-19c.conf` to configure resource limits for Oracle. * e.g., `oracle soft nofile 1024`, `oracle hard nproc 16384` ****Required Packages**** 1. ****List required packages****: Install the following packages, including 32-bit versions: * `bc`, `binutils`, `elfutils-libelf`, etc. (see full list in text) 2. ****Verify installed packages****: Run `rpm -q` to confirm package installations. ****Creating Groups and Users**** 1. ****Create required groups****: Use `groupadd` to create groups, such as `oinstall`, `dba`, etc. 2. ****Create Oracle user****: Create the `oracle` user with primary and secondary groups assigned using `useradd`. ****Changing Password**** 1. ****Change Oracle password****: Run `passwd oracle` to change the Oracle password. Note: This paraphrased version maintains the original structure and content, but condenses the text for easier reading. After logging in with a new Oracle password and validating user groups, you need to verify the system configuration for a successful installation of Oracle 19c. 1. Check memory: Verify that the total physical memory on the server meets the minimum requirements using the command `grep MemTotal /proc/meminfo`. Ensure there is enough swap memory available by running `grep SwapTotal /proc/meminfo`. 2. Validate disk space: Make sure there is sufficient free space in the `/tmp` directory to avoid any issues during installation. If necessary, remove unwanted files or set an alternative temporary directory. 3. Check RAM and CPU usage: Verify that there is enough free RAM (memory) on the server using the command `free -m`. Also, check the system architecture to ensure it supports 64-bit software. 4. Validate shared memory: Ensure that shared memory is correctly mounted with the required size by running the command `df -h /dev/shm`. 5. Check Linux distribution and version: Verify the installed Linux distribution and version using commands such as `cat /etc/oracle-release`, `cat /etc/redhat-release`, and `cat /etc/os-release`. These will confirm that Oracle Linux Server 8.3 is installed. 6. Validate kernel version: Check the installed kernel version of Linux using the command `uname -r`. 7. Ensure hostname resolution: Verify that your system's hostname is resolvable by checking the `/etc/hosts` file and running the `ping` command to resolve it. ****Step 1: Configure SELinux**** To start, modify the SELinux configuration to allow permissive mode. Open the `/etc/selinux/config` file and change the `SELINUX` value from `enforcing` to `permissive`. Then, reboot the server to apply the changes. ****Step 2: Disable Firewall (if required)**** If the firewall is enabled, disable it using the following commands: `systemctl stop firewalld` `systemctl disable firewalld` `systemctl restart firewalld` `systemctl status firewalld` `systemctl stop firewalld` `systemctl disable firewalld` `systemctl status firewalld` ****Step 3: Create Required Directories**** Create the necessary directories for the Oracle database installation, including `/u02/app/oracle/product/19c/db_1`, `/oradata/software`, `/oradata/fra`, and `/u01`. Change the ownership and permissions of these directories. ****Step 4: Unzip the Software**** Finally, move to the `/u02/app/oracle/product/19c/db_1` directory and unzip the Oracle software. To install Oracle 19c, follow these steps: 1. Unzip the binary file in the ORACLE_HOME directory. In 19c, it's mandatory to unzip directly in the home directory. The binary can be either unzipped in the location where it was downloaded or copied and unzipped in the same location. For example: `unzip V982063-01.zip -d /u02/app/oracle/product/19c/db_1` This command will create a new directory `/u02/app/oracle/product/19c/db_1/rdraas` and extract the contents of the `V982063-01.zip` file into it. 2. Set the `DISPLAY` environment variable for remote installations: `bash export DISPLAY=192.168.1.87:0.0` Replace `192.168.1.87` with your actual IP address if you're installing remotely. 3. Launch Oracle Universal Installer (OUI) by running the following command in the ORACLE_HOME directory: `bash cd /u02/app/oracle/product/19c/db_1/runInstaller` This will launch OUI, which will guide you through the installation process. Note: The `runInstaller` command is typically used to launch Oracle Universal Installer. However, it's not clear from the provided text whether this is the recommended method for 19c installations or if there are other methods that should be used instead. The user ran the `runInstaller` command to install Oracle Database, but encountered an error [INS-08101] due to an unexpected issue with the "supportedOSCheck" state. This error occurred when attempting to install Oracle Database 19c on an Oracle Enterprise Linux (OEL) 8.3 or later version, which is not a supported OS for this version of the database. However, after following an article and resolving the issue, the user was able to launch Oracle Universal Installer (OUI) successfully. Upon launching OUI, the user was presented with two configuration options: "Install database software only" and another option. The user selected the former and proceeded to the next step, selecting a standalone server installation option. The user then navigated through additional options, including choosing a database installation type and proceeding with the installation process. 1. Enter Enterprise edition option or use valid license if installing for client/organization, then click Next. 2. OUI automatically selects installation location and default ORACLE_HOME path, click Next. 3. Assign required operating system groups for functionality, click Next. 4. Pass root user credentials to execute postscript in background, click Next and accept prompt. 5. Review summary page for prechecks, edit options if needed, then click Install. 6. Monitor installation progress closely until next prompt. 7. Complete final screen showing successful installation, click Close. 8. Validate binary version in post validation step, o1719 is the local machine name and it's a good practice to set the correct hostname in the `/etc/hostname` file. Performing prerequisites for Oracle Installation: There are two setup options, Automatic Setup and Manual Setup, to complete basic prerequisites. The Additional Setup is mandatory for all installations. Automatic Setup: If you're using "oracle-database-preinstall-19c", execute this command: `bash # yum install -y oracle-database-preinstall-19c` It's a good idea to do a full update, but it's not necessary. Run the YUM commands from the manual setup section. Additional packages might be required based on OS package groups selected. For RHEL7 or CentOS7 users, pick up PRM from OL7 repository and install oracle-database-preinstall-19c with dependencies. `bash # curl -o oracle-database-preinstall-19c-1.0-1.el7.x86_64.rpm # yum -y localinstall oracle-database-preinstall-19c-1.0-1.el7.x86_64.rpm` Manual Setup: If not using "oracle-database-preinstall-19c", manually perform the following setup tasks. Add these lines to `/etc/sysctl.conf` or `/etc/sysctl.d/98-oracle.conf`: `bash fs.file-max = 6815744 kernel.sem = 250 32000 100 128` Change kernel parameters by running: `bash # /sbin/sysctl -p` Add these lines to `/etc/security/limits.d/oracle-database-preinstall-19c.conf`: `bash oracle soft nofile 1024 oracle hard nproc 16384 oracle soft stack 10240 oracle hard stack 32768 oracle hard memlock 134217728 oracle soft memlock 134217728` The following packages are required: `bash # yum install -y bc # yum install -y binutils # yum install -y compat-libcap1 # yum install -y dtrace-utils # yum install -y elfutils-libelf # yum install -y elfutils-libelf-devel # yum install -y elfutils-libelf-devel # yum install -y glibc # yum install -y glibc-devel # yum install -y ksh # yum install -y libaio # yum install -y libaio-devel # yum install -y libXrender # yum install -y libXrender-devel # yum install -y libX11 # yum install -y libXau # yum install -y libXi # yum install -y libXtst # yum install -y libgcc # yum install -y librdmacm-devel # yum install -y libstdc++ # yum install -y libxcb # yum install -y net-tools # yum install -y net-tools Clusterware packages: yum install -y nfs-utils ACFS packages: yum install -y python # yum install -y python-six # yum install -y python-targetcli # yum install -y smartmontools # yum install -y sysstat # yum install -y gcc # yum install -y unixODBC Create groups and users: groupadd -g 54321 oinstall groupadd -g 54322 dba groupadd -g 54323 oper Additional groups can be uncommented as required. useradd -u 54321 -g oinstall -G dba,oper oracle Set up additional security: Uncomment extra groups if necessary passwd oracle Edit /etc/selinux/config to change SELINUX flag to permissive and restart server or run setenforce Permissive command. Disable Linux firewall: systemctl stop firewalld && systemctl disable firewalld Configure directories for Oracle software installation: mkdir -p /u01/app/oracle/product/19.0.0/dbhome_1 mkdir -p /u02/oradata chown -R oracle:oinstall /u01 /u02 chmod -R 775 /u01 /u02 Set up SSH access for remote login: xhost + Create scripts directory and environment file: mkdir /home/oracle/scripts cat > /home/oracle/scripts/setEnv.sh`