1) Tell me about yourself and the present roles and responsibilities in your present organization.
   Ans:- My Name is B Raghu Rohit, I have completed B.Tech in the year 2017 from Acharya Nagarjuna university with first class distinction. I am having 4 years of experience in IT industry Currently working for YinduSoft Technologies, Bangalore,since begininng of my career i am working in same company I am well versed with Rhel 7 and 8,I am responsible for Linux system administration.
   we are team of 10 members we work 24/7 shifts with on call support
   We are supporting 1000+ servers most of them are virtual,some of them are physical
   I am contributing great in my team,This is about myself.

   What are your daility Activites:-

   Administering day to day tasks such as:

   * handling daily tickets, service requests
   * work on assigned changes
   * participate in bridge calls for severity tickets
   * providing root cause analysis for severity issues
   * automating any repeated tasks
   * reply for emails pertaining to my works (to clients/customers or other teams)
   * work on any server builds
   * work on any project works etc.,

   what do you mean by daily alerts or incidents or what kind of incidents you get:

   I usually get incidents(alerts) to my ticketing tool(remedy), many of them are created by monitoring tools installed in the server such as
   *)cpu usage (more cpu is being used by the server)
   *)memory usage (more memory ie > 80% is being used by the server)
   *)network or disk i/o usage is more
   *)any daemon or service is not working for some reason
   *)filesystem issues such as filesystem space usage issue
   *)time sync issue because of ntp is not working for some reason
   *)application/db team/some user unable to login
   *)user creation, password issues, login issues
   *)directory or file permission issues
   *)scp or ftp where application or db team not able to do scp or ftp for some reason.
   *)user limits reached max resource utilization
   *)swap space usage is more

*)disk failure or system planar(mother board) or network interface card failure detected

*)system is slow

*)disk paths been failed

*)HBA card ports found faulty

*)unable to mount the filesystem or NFS mount is not mouting

*)server is not coming up after issuing the reboot command

*)unable to login to physical system console

*)application is complaining that their password less authentication is not working

*)server is not reachable

*)File system usage is > 80%

*)

Service Requests:-

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*)create/delete users requested by app/db or by customer

*)filesystem creation/deletion/changes(increase or decrease)

*)swap space creation/deletion or add/remove additonal disks to or from the system from SAN team

*)Install requested rpms (request might come from applicaton or db or customer)

*)Request to patch the system

*)Request add any hardware component such as FC card or NIC (if it is physical server)

*)Add/remove or change IP or netmask or route ro bonding(add/remove/modify)

*)Configure any NFS or SAMBA shares

*)Configure/change NTP servers

*)change default gateway or server name any tunable parameter from sysctl file

*)generate kernel dump or generate sos report to troubleshoot any memory leakage issues

*)Request to tar/rsync/ or restore the data

*)request to reboot the server

*)configure cron jobs

*)Run security audit scripts to generate security issues if any found the system?

*)configure ssh passwordless authentication

*)perform sanity checks/or health checks on the server?

*)download or upload files from server to another

*)Create a case with redhat

*)create a service request for HW engineer to enter into the data center

*)server decommissioning

*)configure new ip addresses (aliases or replace existing ips)

2) Booting process - step by step

   Ans:- Poweron→post→BIOS→MBR→Grub→kernel→systemd for rhel8 onwords

3) Issues in Booting the server

Ans:- 1.**/boot contents been deleted accidentally(rm -rf /boot) in RHEL8**

2.vmlinuz file got corrupted or missing

3.initramfs file missing or corrupted.

Dracut –f /boot/initramfs-version.img $(uname –r)

4./boot/grub2/grub.cfg file missing or corrupted.

In such cases I make sure I have console access I will login to vcenter by given credentials,I will poweroff the server that got issue ,I assume I have rhel8 dvd iso image I will load the dvd and boot with dvd. I will troubleshoot and fix the issues occurred.

By using chroot /sys/image will mount filesystem on / and mount the dvd by mount /dvd/cdrom /mnt,I will enter into the dvd and go to packages and use "rpm –ivh --replacepkgs kernel-core version."

Next I will install grub menu by "grub2-install /dev/sda","grub2-mkconfig –o /boot/grub2/grub.cfg"

"Touch /.autorebel" and /boot contents are restored I will reboot the system and booting now done.

4)   What is rescue mode, Diff between Rescue mode and the single user mode

Ans: Rescue mode

Rescue mode is equivalent to single user mode and requires the root password. Rescue mode allows you to repair your system in situations when it is unable to complete a regular booting process. Rescue mode will try to mount all local file systems and start some important system services, but it does not activate network interfaces neither allow multiple users to be logged in.

Single usermode don't need any passwd

5)   How to recover root password without rebooting the server -- System Admin user exists

6)   Server is pinging but not able to connect, what are the different scenarios.

Ans:-

Might be sshd daemon not working or else in the /etc/ssh/sshd.conf file permitlogin for

Root I will check whether sshd daemon is running or not by "systemctl status sshd"

7)   Server is rebooted, but is not coming up. What might be different scenarios.

Ans: 1.**/boot contents been deleted accidentally(rm -rf /boot) in RHEL8**

2.vmlinuz file got corrupted or missing

3.initramfs file missing or corrupted.

Dracut –f /boot/initramfs-version.img $(uname –r)

4./boot/grub2/grub.cfg file missing or corrupted.

8)   What is kernel panic, why does it occur and how to recover the server.

Ans: **kernel** can't load properly and therefore the system fails to boot. ... If initramfs gets corrupted or deleted at this stage because of recent OS patching, updates, or other causes, then we face a **kernel panic**

Hardware errors, software errors also cause kernel crash.

9) What are the physical servers that you are using and how is the configuration done.

Ans: we are using dell,ibm physical servers,by using idrac and ilom ip addresses we will enter into the system.by mounting iso image or by kickstart we will configure the physical server

10) What is Hypervisor, what are the different types of Hypervisors.
Ans: Hypervisor is a program or software to virtualize the hardware
Type of hypervisor
Hyper v-mircosoft,Esxi-vmware,kvm-linux,oracle vm,citrix(company) xen server,RHEV,cisco hyperflex convergence

11) What is kernel, How do you restrict a new kernel while patching.

Ans:kernel is a core operating system I will use yum update –x kernel command to restrict updation of kernel

12) How do you connect to the console of the Physical server and the VM.
Ans:I will go to any browser in the system and by the url and credentials provided by the company I will login to the console,If I want to connect with physical server I will access the physical server and by idrac or ilom ip I will enter into the physical server and power on and launch the screen of the physical server
If it is VM I will select the vm and by credentials to that vm I will enter into the vm

13) How do you change the system parameters in the server (sysctl.conf file)
Ans:I will edit /etc/sysctl.conf file and provide the parameters as instructed,and I will issue sysctl –va to list the parameter and I will issue sysctl –p in command line for immediate effect of that parameter.

14) User is unable to login to the server, what is the issue?
Ans:The password of the user is resetted or in /etc/ssh/sshd_config the user is denied or the user account got expired these are the common issues.

15) How to add a new disk and create a partition and create a VG, LV and Mount it.
Ans: I will contact with storage team and request them via email to add a new disk I will scan for the disk by echo "- - -" > /sys/class/scsi_host/host0/scan
I assume the disk name is sdb ,By gdisk /dev/sdb I will create partitions and by pvcreate /dev/sdb1 pvcreated by vgcreate –s size of pe vgname pvname vgcreated,by lvcreate –n lvname –L size of lv vgname lv is created,by mkfs.xfs /dev/vgname/lvname I will create a filesystem in that lv,then I will use any local mount point to mount I assume the mount point is /sap I will issue mount /dev/vgname/lvname /sap for persistant mount I will add an entry in /etc/fstab. I will verify with df –h whether it is mounted or not.

16) How do you extend the LV and reduce the LV.
Below are the Logical Steps :

– Use the lvextend command (lvextend -L +100M /dev/<Name of the LVM Partition> , in this example we are extending the size by 100MB.

– resize2fs /dev/<Name of the LVM Partition>

– check the size of partition using 'df -h' command

Below are the logical Steps to reduce size of LVM partition :

 -Umount the filesystem using umount command,

 -use e2fsck –f path to lv

use resize2fs command , e.g resize2fs /dev/mapper/myvg-mylv 10G

 -Now use the lvreduce command , e.g lvreduce -L 10G /dev/mapper/myvg-mylv

17) Difference b/w ext2/3/4, converting FS from ext2-3-4.

Ans:ext2 is old version filesystem it don't have any journals whereas in ext3 it is improved version over ext2,it consists of journal attribute,ext4 is improved version of ext3 along with journal it consists of more attributes and features like extents,uniinit_bg,dir_index in it.

To convert ext2 to ext3 use tune2fs –j /dev/vg/lv

To convert ext3 to ext4 use tune2fs –O extents,uniinit_bg,dir_index /dev/vg/lv

18) How do you restore a VG if the data loss occurs.
    Ans:To restore vg I will use vgcfgrestore –f /etc/lvm/archive/filename vgname,but we can't restore the data in that vg if it I not taken backup.
19) What are the reasons for disk corruption. How do you recover the superblock in the disk.
    Ans: Disk corruption occurs if the disk got disconnected at storage due to connectivity issues are any other technical issues.if the partition not done properly that also cause the issue,
    If superblock got corrupted disk will get corrupted,I will run e2fsck /dev/vg/lv to restore superblock that is already backup when we create filesystem.
20) Filesystem is having free space but you are not able to write data in the FS, what are the reasons.
    Ans:If the inodes are used completely we cant write into disk
    If there is no permissions to write to into particular directory of file we cant write
    If the ulimits reached to the limit we cant write.these are the different reasons.
21) df output and du output is different, how to resolve it.
    Ans: umount the file system and mount again
22) What steps do you take if the FS is full?
    Ans:I will check who is the owner to that filesystem,whether they are application or database team I will ask them what is the reason,I will suggest them to delete any unwanted files in that fs,if those are important files I will take necessary permission and increase the file system.
23) How do you automate the FS full issues?
    Ans:

24) What is variable, function, case statement, if statement, for loop in shell scripting.

Ans:-**Variables** in **Shell Scripting**: The **variables** are of two types of user-defined **variables** and system-defined **variables**. A **variable** is nothing but a name representing a piece of memory in the system that stores a particular value, and that value no need to constant, which means it can change.

Function:- A **function** is a block of code that is reusable and performs certain operations. The main program will execute first and then the function code will executes and return a value.

Case statement:-It will enables to build some functionality by this we can choose certain option and we can execute that particular options

If statement:-it will help as to make a decision on bases of condition

For loop:- This for **loop** contains a number of variables in the list and will execute for each item in the list.

25) Can you create Multiple users using shell scripting?
    Ans: By the username details given by application/database team I will write a script and by newusers command I will execute the same
26) A new disk is provided to the server but not visible in server even after the disk scan.

Ans:I will contact with vm ware and storage team,and we sit together and fix the problem.

27) Why ACL is used, how to add a ACL, Del ACL and why is it not enabled by default.

Ans :Access control list(ACL) it provides additional flexible permissions for a file system or directory or files ,acl allows finegrained permissions to any users and groups to a file or directory otherthan the original user,group permissions

To add acl setfacl –m u:user:rwx filename or dir

To del acl setfactl -x u:username filename …By default it is enabled for ext4 and xfs filesystem if you want to give to other file system you have to give entry in /etc/fstab

28) What are the Different types of RAID's, How do you create a software RAID. Which RAID do you use in the present Org.

Ans: Raid: Redundant Array of Independent Disks, There are 8 type of raids

Raid-0(stripping),raid-1 (mirroring),raid-10(mirroring,stripping),raid-5(stripping with distrubated parity)

Raid-6 (two parity all over the disk),raid-2(bitlevel striping),raid-3(bytelevel striping),raid-4(blocklevel sriping) . I will select on vg that I want to create raid upon by vgs command

I assume I want to create raid10 and use lvcreate –n lvname –L size of lv –i2 –I64k –m1 –type raid01 vgname pv1 pv2 pv3 pv4 by this command I will create a software raid,in our organization we use raid5 and raid1 and raid10

29) Have you ever done DR activity? If yes, what are the steps involved in it.
30) SSH from server A to Server B is not Happening even though they are in the same network, what is the issue?

Ans:In /etc/ssh/sshd_config file permitrootlogin is denied or only particular user in the that is allowed or port number is altered this are the common issues

31) How do you setup Password less authentication, how to fix if user reported an issues that it is not working.

Ans:I will create public & private keys by ssh-keygen –t rsa and I will issue ssh-copy-id user@ip and I will provide the password.by these commands public key is shared to other user now password less authentication is done

32) Difference b/w FTP and SFTP.
    Ans: FTP stands for File Transfer Protocol where as SFTP stands for Secure File Transfer Protocol In Ftp files sent in clear text format hence it is not secured but in sftp encryption and decryption was done while transferring file,sftp works based on ssh protocol
33) Difference b/w nfsver3 and nfsver4.
    Ans: 1.NFS version3 supports synctronous writes and is more robust at error handling than NFSv2.
    2.NFS Version 3 supports 64 bit, allows clients to access more than 2GB of data. NFS2 is not supported by RHEL7.
    3.NFSv4 no longer requires rpcbind services, supports ACLs and utilizes stateful operations.
    4.NFSv2, NFSv3 can use UDP(stateless) or TCP(statefull), whereas NFSv4 works with TCP.
    5.The mounting and locking protocols have been incorporated into NFSv4 protocol. NFSv4 also listen at 2049/tcp port.
    6.NFSv4 does not need to interact with rpcbind,lockd, and rpc-statd services. The nfs-mountd service is still required on the NFS server to setup the exports.
    7.The default NFS version in RHEL8 is NFS ver 4.2
34) Difference b/w soft and hard link, soft and Hard mount.

Ans: softlink have different inode numbers whereas hard link having same inode number,Hardlink can be created only in same file system,where as softlink can be created with different and same filesystem also,If the original file deleted the hardlink file will not deleted and can be access the contents by using linkfile,in softlink if original file deleted we cant access the data, whereas the link not deleted.

Soft mount:-In soft mount if the nfs-server connection lost,the process will stops,after connection came up soft mount will start the transfer from beginning.In this data corruption or data loss will happens

HardMount :- A Hard mount is generally used for block resources like a local disk or SAN. When a NFS filesystem mount is a Hard mount, an NFS request affecting any part of the mounted resource is issued repeatedly until the request is satisfied (for example, the server crashes and comes back up later). Once the server is back online, the program will continue to execute undisturbed from the state where it was during server crash.

(Or)

HardMount If the NFS-server connection losts it will try infinity times for the connection,when connection come up it will start the process from where it left,No data loss will happens

35) How do you configure AutoFS in NFS.

Ans:-I will create one text file by vi editor ,in that file I will give any mount point and nfs-serverip:/nfs mount.

Then I will configure /etc/auto.master file I will add a line /- which is dummy directory and path to the textfile that created and I will restart the autofs.service..By these process automount will happens

36) Why does the Read-Only error occurs in the server, How do you resolve it without reboot.

Ans:-If the disks got disconnected due to technical errors,the file system will goes to readonly mode,If it is a userdefined file system we will umount the filesystem and mount the file system,if it is root file system have to reboot

37) DF output is hung in the server what might be the reasons.

Ans: Due to NFS mounts, where the nfs server is not responding, DF output will hung Check mount command to know all the existing mounts, search for NFS mounted file systems to check the problem.

38) What is bonding, how do you configure it.

Ans: Network bonding is a process of combing or joining two or more network interfaces together into a single interface. Network bonding offers performance improvements and redundancy by increasing the network throughput and bandwidth. If one interface is down or unplugged the other one will work. It can be used in situations where you need fault tolerance, redundancy or load balancing networks.

By using ***nmcli con add type team con-name team0 ifname team0 config '{"runner":{"name":"loadbalance"}}' ipv4.method ipv4.addresses ipv4.dns ipv4.dns-search by this team master is created,now we have to join interfaces to this..by using nmcli con add con-name em1 ifname em1 type team-slave master team0 and nmcli con add con-name p1p1 ifname p1p1 type team-slave master team0***
Verify by "ip a s" and teamdctl team0 state in this way bonding is configured

39) How many types of options are there in Bonding and what are they?

There are four types of options are there in bonding They are broadcast, roundrobin, loadbalancing, activebackup.

40) Performance related questions.

    a. What is Load avg in the server, how do you consider that it is high.

    Ans:The load taken by the CPU in last 1min and 5min and 15min gives load average ,if 1min value is high than 5min and 15min I consider it as high.if the no.of jobs in run queue in less than or equal to no of cpu it is a good value

    b. What is Swap space, why is it used, how to configure swap. How to extend swap.

    Ans:swap space a secondary space which is overcommitted memory,it hold inactive 4KB pages.if real memory requires more memory to serve the process in that case swap space is used.By using lvcreate –n swapname –L size of swap vgname pvname I will create lv,mkswap /dev/vg/lvname,swapon /dev/vg/swaplv,swapon or free –h,swapon –s to check

    To extend swap

    Swapoff /dev/vg/lv

    Lvextend –L +size of lv /dev/vg/swaplv

    Mkswap /dev/vg/swaplv

    Swapon /dev/vg/swaplv

    Swapon,swapon –s,free -h

    c. Where do you see the errors if any logged in for network related issues.

    Ans:-/var/log/messages

    d. What is IO wait, what are the reasons for the high IO wait.

    Ans:If the cpu is busy with reading and writing operations IO wait will occur,if the number of processes increased in the background and system went busy high IO wait will happens

    e. How do you see the memory statistics, CPU stats.

    Ans:I use vmstat,mpstat to check memory and cpu statistics.

    f. What all do you check if you get a SR from customer saying Application is very slow

    Ans:

    g. Explain about sar, vmstat, iostat, netstat commands.

41) Network related questions:

    a. How do you add a route and make it permanent.

Ans:I will use this command to add route permanently across the reboot "nmcli con add con-name name ifname name ipv4.method manual ipv4.routes route id ipv4.addresses ip"

Nmcli con mod conname ipv4.routes "Networkaddress

    b. Unable to connect to the server, but it is up in console. How do you resolve it ?

Ans: By the given credentials I will enter into the console and I will check sshd configuration file and allowusers and denyusers I will make sure that the ports or listening

I will check whether the useraccount got expired or inactive

By this steps I will resolve the issue.

    c. How do you block or allow a network or IP ?

Ans:In sshd config file I will edit denyusers *@blockip or allowusers *@allowip

    d. What is DNS , types of DNS , config files for DNS

Ans:-Domain Naming system it use for name resolution in the system

If name resolution done **HOSTNAME** to **IP** it is called **FORWARD Lookup**

If name resolution done **IP** to **HOSTNAME** it is called **RESERVE LookUp**

It is a centralized server where all servers are part of,it will communicate with portno:53/udp

Types of DNS are

DDNS:-Dynamic Domain Naming system

Caching only DNS

Master,Slave DNS

42) What is Kick start? why is it used, tell the process to implement it.

Ans:kickstart is a process to automate the server installation ,This is used to automate the rhel installation process

1.Install required packages

2.Configure local repo and make it accessible via anonymous ftp

A.Configure DNS

B.Configure DHCP

C.Configure Bootp

D.Configure repository

3.Prepare Kickstart answer file to automate(unattended) installation

4.Prepare for PXE boot

5.Perform the installation

43) Have you ever done patching? Explain the steps how to do that. Used any tools to do the same.

Ans:Yes I have done patching.

Redhat Linux Patching:

1. Check if the machine is a physical or VM. and check for System Information

dmidecode -t system

#dmidecode -s system-product-name

#lspci | grep -i vmware

#dmidecode | less

 #cat /etc/info.server

Example :

For Physical :

System Information
        Manufacturer: HP
        Product Name: ProLiant DL385 G5

For Virtual :

System Information
        Manufacturer: VMware, Inc.
        Product Name: VMware Virtual Platform

Note:- Make sure you have console access for the server, test the access and make sure it is working. For virtual server, you might need to have access for vcenter (if you are using vmware).

2. Take System Backup:

For Virtual machines, we can take a snapshot & revert to it in case required(if any issues observed after patch). For Physical machines, check for the ILO address & Take backup using tools if configured.for e.g. TSM backup client,etc.In some environment you may have scripts to do backup of the whole rootvg via LVM snapshot.

3. On day of activity use your monitoring tool to acknowledge alerts. Communicate with monitoring team and ask them(via email or they might have had task in the change to do so.) to not to monitor server during the change window which is part of the change

4. Application or DB team to bring App and DB down on server (Application or DB team will take this responsibility). They will have separate task in the change to do this activitiy.

5. Go for a simple reboot to ensure server doesn't have any prior file system issues. (this is also known as precautionary reboot. Some customers don't agree for this. But this is a best practice).

6. Update the kernel on the machine. It is preferable to go for --install instead of --update option.

7. Do a yum update for security and rest patches to complete the update.

8. Reboot the machine.

9. Once up, confirm the server is updated by uname -a and yum check-update.

10. Put server out of Maintenance mode once confirmed Application/DB is up and running (this is one on the monitoring tool or any relevant tool such as CMDB etc.,)

11. In case of issue, kindly rollback using yum history (RHEL 6) for RHEL5. You might need to create an incident describing the issue. Incase of production server, the incident will have higher severity or priority.

44) Diff b/w RPM and YUM.

Ans: I use rpm or yum command to install the package. When using rpm command, I use rpm –ivh /path/to/package, in case of yum, I use yum install packagename –y command.

While installing packages by rpm it wont pickup dependencies automatically,if we use yum flexibility is more and it will pickup dependencies packages automatically

45) What is Multipath and how is it implemented.

46) How do you see the WWN for a given disk?

47) What is SAMBA, how is that implemented.

Ans:samba is server to share files from windows to linux as well as linux to windows

It will use port 139 .we have to configure /etc/samba/smb.conf file to do this

We have to give parameters like sambashare,comment,path,writeable,browseable,hosts allow,valid users

Then check with testparm,we have to set sambapassword to users by smbpassword –a user

Setfactl give permissions to users

Restart the daemon systemctl restart smb and nmb and go to client side

And issue smbclient -L //ip –U username and smbpassword to check what sambashare

And mount –t cifs –o username=user,password=password //ip/sambashare /localmnt

This is how I will implement sambashare

48) Diff between SCP and Rsync?

Scp stands for Secure copy it will use ssh.It is used to copy data from one server to other server as well as locally

Rsync stands for remote sync ,It is also used to copy data from one server to other server as well as locally

The main difference between scp and rsync is rsync will send data in incremental form

Whereas scp will send data completely

49) What are the different types of Backup's and which tool do you use to configure backups?

There are three types of backup methods:

Full backup

Differential backup

Incremental backup

Full backup

All the files are put on media during a full backup.

Differential backup

The differential backup strategy first looks for the modification time of a file and compares it with the last full backup time. In other words, only modified files are backed up, but only if they changed after the latest full backup. Differential backups are cumulative; once a file has been modified, it will be included in every

differential backup until the next full backup.

Incremental backup

Incremental backups are similar to differential backups in that both back up only modified files. However, incremental backup checks the difference between the modification time of a file and the last backup time (either being full or incremental backup). If the modification date is more recent than the last backup date, the file is backed up.

I will use tar and rsync and scp tools for backup

50) Tell me the process for rebooting the server → change management.

Gold