

### System Access Troubleshooting

#### Server not reachable

```
#ping servername
if no success search for IP for "servername"
with
#nslookup servername
#ping IP-Ser vername
If IP-servername is pingable check:
/etc/host
/etc/resolv.conf
/etc/nsswitch.conf
If IP-servername is not pingable
ping another server with name and ip
Check if your machine has ip-adress `#ip -c -b a
get gateway-ip with #netstat -rnv and
check destination 0.0.0.0 to gateway-ip
ping gateway -ip
check local physics cable etc.
```

#### App or website not reachable

```
ping servername and server-ip
if success connect to service #telnet ip port
if not success login into server check services
eg. #ps -ef |grep -i network
or #systemctl status <service> or
'systemctl --failed
```

#### Cannot ssh as root/user

```
check if root is not permitted #/etc/ssh/sshd_config
check #less /var/log/secure
no user or nologin shell
check #id <user>
check #less /etc/passwd
```

#### Firewall

```
check #service iptables status
or check #systemctl status iptables
or check #ps -ef|grep iptables
or check #systemctl status firewalld
try to temp disable firewall #systemctl disable firewalld
```

#### Terminal or Client is not working

```
check correct port user and password syntax
```

### Filesystem Troubleshooting

#### If you cannot CD into Dir or cannot open file or run a script for hidden file

```
-----
Dir/file not existing
check path relative or absolute
check permissions
check file type
check parent dir permissions
check for hidden dir
```

#### Trouble to find files or dir

```
-----
command find or locate
correct syntax: #find /path - type [d,f] command syntax: #cd /path && find -name 'my_file'
file/dir exists?
```

#### Cannot create links

```
-----
which type of link hard or symbolic
syntax source first then target
check permissions
source or target file/dir missing or not existing
```

#### Cannot write to a file

```
-----
check if it exists
check abs or rel path
file type
check parent dir permissions
check for hidden file
check for file is open by an another user
run #getfacl
```

#### Cannot Move/Rename/Delete/Copy file

```
-----
check if it exists
check abs or rel path
file type
check parent dir permissions
```

### Filesystem Troubleshooting (cont)

```
-----
command syntax #mv; cp; " Source
then Target "
```

#### Cannot change file permissions/ownership

```
-----
check if file exists
check abs. or rel path
check file ownership (user and group)
check Permissions
check parent dir permissions
check for hidden file
command syntax: #chmod (user then file)
command with recursive option -R
only root can change the file ownership
```

#### Cannot view others users files

```
-----
check if file exists
check abs. or rel path
check file ownership (user and group)
check Permissions
check parent dir permissions
check for hidden file
command syntax
only root can view any files
```

#### Cannot change password

```
-----
check if file exists
check abs. or rel path
check file ownership (user and group)
check Permissions
check parent dir permissions
check for hidden file
check command syntax: #passwd <user>
only root can change pw of any user
```

#### Disk space full

```
-----
check: #df -h
```



### Filesystem Troubleshooting (cont)

```
check HD status: #badblocks -v /dev/DISK
check #iostat
```

#### Delete old files

```
command: #rm
syntax:
find /path/ to/ files -type f -name 'example' -mtime +30 -exec rm {} \;
```

#### Filesystem is corrupted

```
filesystem partitions: /var; /etc; /root; /home
check file system : #df , #fdisk -l
check logs in /var/log/ messages or /var/log/syslog
run #fsck on block device (eg /dev/sda) not on mount point
unmount filesystem the run #fsck
```

#### Corrupted /etc/fstab

```
check filesystem: #df
cat or #less /etc/fstab
system not booting: incorrect entry in fstab or fstab deleted
Steps to do:
*boot in rescue mode mounting a cd or cd-iso image
*choose option 1 to mount root fs
*fix the etc/fstab file
*for deleted file run #blkid
```

### System Administration Troubleshooting

#### Out of memory

```
#free -m -h
#top
#vmstat
#dmesg |grep -i "Out of memory "
(/var/log/messages or /var/log/syslog)
check #/etc/ sys ctl.conf
```

### System Administration Troubleshooting (cont)

#### Add Swap Memory

```
$df -h
#dd if=/dev/zero of=/newswap bs=1M count=1024
#free -m
#chmod 600 newswap
#mkswap /newswap
#swapon /newswap
```

change ftsab to: /newswap swap swap defaults 0 0

#### Delete Swap space

```
#swapoff /newswap
#rm /newswap
#free -m
```

#### change your fstab file

#### System rebooted or process is restarting

```
#systemctl status <pr ocess>
#uptime
#top
#dmesg
#iostat -xz 1
#journalctl
```

Check system logs: /var/log/messages /var/log/syslog /var/log/boot.log

Check app logs

#### Unable to receive an IP Address

```
check DHCP Server
check network virtual setting
#check network hardware setting
lspci | egrep -i 'eth|wifi|wireless'
#nmcli -p dev
#ip -h -c address
#ifup <in ter fac e> ifconfig up <in ter fac e>
#systemctl restart network
```

check config files /etc/sysconfig/network-scripts/ifcfg-eno3 or ifcfg-eth0

#### IP assigned but no reachability

```
check to which network you are connected to use ifconfig or ip
a
ping your gateway
#netstat -rnv
#ethtool or mii-tool
```

### System Administration Troubleshooting (cont)

```
#ifup <in ter fac e>
#systemctl resart network
#ip netns exec <ns name> ip -4 <-6> -c add
```

try to turn off temporarily the firewall

#### What if can't run a specific command

```
check permission and ownership
check abs. and rel. path
#echo $PATH
```

check for missing or nit installed sw

```
#whereis <sw>
#yum provides <pa cke t> or dnf
#yum seach telnet
```

#### Password not changeable

```
check file /etc/passwd
and /etc/shadow( pwconv will recreate file)
user exists correct written ?
be root
#passwd <us er>
```

after changes in /etc/shadow use pwconv (PW user has to set again)

#### User has no home dir

```
dir not existing
dir exists but no entry in /etc/passwd
check permission ,ownership and spelling of d
```

#### Change words in files

```
use vi :1,$s/oldword/newword/
use sed:
#sed -i 's/old sri ng/ new str ing en ame>
```

#### sed command

tbd

#### Kill Process, User, Terminal

```
Find process ID (PID) #ps -ef
#kill <PI D>
#kill -9 <pi d> brutal kill
#kill <pr ocess name>
#killall <pr ocess name>
```

#### root pw recovery

restart computer (physical console access nes



### System Administration Troubleshooting (cont)

```
edit grub, search for ro change to:  
rw init=/ sys roo t/b in/sh  
press <ctrl x>  
system reboots in single user mode  
>passwd root'  
>change pw  
>touch /.autorelable'  
>exit  
reboot
```

#### logged in users

```
#last
```

#### System running slow

```
Check disk space (df -h and du)  
Check processing (top, free, lsmem, cat  
/proc/meminfo, vmstat,  
pmap <PID>, dmidecode, lscpu, /proc/  
cpuinf)  
Check disk issues (iostat -y 5, lsof)  
Check networking (tcpdump -i <interface> ,  
lsof -i -P -n |grep -i listen,  
netstat -plnt or ss -plnt, iftop)  
Check uptime (uptime)  
Check logs  
check hw status log into system  
Other external tools (htop, itop, iptraf,  
psacct)
```

#### Rollback updates and patches

Package or patch

```
#dnf history
```

```
#dnf history undo <id>
```

Update (upgrade does not workold obsolete  
packages are lost)

```
#dnf history undo <id>
```

### System Recovery

### Additional Knowledge and Tools



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