

### System Access Troubleshooting

#### Server not reachable

```
#ping servername
if no success search for IP for "servername"
with
#nslookup servername
#ping IP-Servername
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-address `#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

```
-----
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] -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 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)

```
-----
check if hidden file
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 (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 <process>`

`#uptime`

`#top`

`#dmesg`

`#iostat -xz 1`

`#journalctl`

Check system logs: `/var/log/messages /var/log/syslog /var/log/boot.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 <interface> ifconfig up <interface>`

`e>`

`#systemctl restart network`

check config files `/etc/sysconfig/network-scripts/ifcfg-eth0`

`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 <interface>`

`#systemctl resart network`

`#ifconfig or ip -4 <interface> -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 <package> 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 <user>`

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 string/ new string`

`en ame>`

#### sed command

`tbd`

#### Kill Process, User, Terminal

Find process ID (PID) `#ps -ef`

`#kill <PID>`

`#kill -9 <pid> brutal kill`

`#kill <process name>`

`#killall <process name>`

#### root pw recovery

restart computer (physical console access nes

### 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)

```
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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