

***** **Grep** *****

It is use to search any string or pattern from any file or from any command outputs.

```
[root@localhost ~]# grep <options> <pattern> <filename>
```

```
[root@localhost ~]# grep root /etc/passwd
root:x:0:0:root:/root:/bin/bash
operator:x:11:0:operator:/root:/sbin/nologin
```

```
[root@localhost ~]#
[root@localhost ~]# grep ftp /etc/passwd
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]# grep games /etc/passwd
games:x:12:100:games:/usr/games:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]# grep -n root /etc/passwd
1:root:x:0:0:root:/root:/bin/bash
10:operator:x:11:0:operator:/root:/sbin/nologin
```

```
[root@localhost ~]#
[root@localhost ~]# grep -n ftp /etc/passwd
12:ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]# grep -c root /etc/passwd
passwd passwd-
```

```
[root@localhost ~]# grep -c root /etc/passwd
2
```

```
[root@localhost ~]#
[root@localhost ~]# grep root /etc/passwd > /report
[root@localhost ~]#
[root@localhost ~]# ls /
bin  dev  home  lib64  mnt  proc  root  sbin  sys  usr
boot  etc  lib  media  opt  report  run  srv  tmp  var
[root@localhost ~]#
[root@localhost ~]# cat /report
root:x:0:0:root:/root:/bin/bash
operator:x:11:0:operator:/root:/sbin/nologin
```

```
[root@localhost ~]# grep ROOT /etc/passwd
[root@localhost ~]#
[root@localhost ~]# grep -i ROOT /etc/passwd
root:x:0:0:root:/root:/bin/bash
operator:x:11:0:operator:/root:/sbin/nologin
[root@localhost ~]#
```

```

[root@localhost ~]# grep -i root /etc/passwd
root:x:0:0:root:/root:/bin/bash
operator:x:11:0:operator:/root:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# grep -n -i root /etc/passwd
1:root:x:0:0:root:/root:/bin/bash
10:operator:x:11:0:operator:/root:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]# grep -o root /etc/passwd
root
root
root
root
[root@localhost ~]#
[root@localhost ~]# grep -n -i -o root /etc/passwd
1:root
1:root
1:root
10:root
[root@localhost ~]#
[root@localhost ~]# grep -o root /etc/passwd > /string
[root@localhost ~]#
[root@localhost ~]# cat /string
root
root
root
root

[root@localhost ~]# grep root /etc/passwd

[root@localhost ~]#
[root@localhost ~]# grep -v root /etc/passwd

[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# grep root /etc/passwd > /tmp/matched
[root@localhost ~]# grep -v root /etc/passwd > /tmp/unmatched
[root@localhost ~]#
[root@localhost ~]# cat /tmp/matched

[root@localhost ~]#
[root@localhost ~]# cat /tmp/unmatched

[root@localhost ~]#
[root@localhost ~]# grep root /etc/passwd
passwd passwd-

```

```

[root@localhost ~]# grep root /etc/passwd | wc -l
2
[root@localhost ~]#
[root@localhost ~]# grep -v    root /etc/passwd | wc -l
40
[root@localhost ~]#
[root@localhost ~]# grep    'root'    /etc/passwd
root:x:0:0:root:/root:/bin/bash
operator:x:11:0:operator:/root:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]# grep    "root"    /etc/passwd
root:x:0:0:root:/root:/bin/bash
operator:x:11:0:operator:/root:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# grep    "^root"    /etc/passwd
root:x:0:0:root:/root:/bin/bash
[root@localhost ~]#
[root@localhost ~]# grep    "^ftp"    /etc/passwd
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]# grep    "bash$"    /etc/passwd
root:x:0:0:root:/root:/bin/bash
krishna:x:1000:1000:krishna:/home/krishna:/bin/bash
[root@localhost ~]#
[root@localhost ~]# grep    "nologin$"    /etc/passwd
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# grep -n -A2    root    /etc/passwd
1:root:x:0:0:root:/root:/bin/bash
2-bin:x:1:1:bin:/bin:/sbin/nologin
3-daemon:x:2:2:daemon:/sbin:/sbin/nologin
--
10:operator:x:11:0:operator:/root:/sbin/nologin
11-games:x:12:100:games:/usr/games:/sbin/nologin
12-ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]# grep -n -A2    ftp    /etc/passwd
12:ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
13-nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin
14-dbus:x:81:81:System message bus:/:/sbin/nologin
[root@localhost ~]#

```

```

[root@localhost ~]# grep -n -B2 ftp /etc/passwd
10-operator:x:11:0:operator:/root:/sbin/nologin
11-games:x:12:100:games:/usr/games:/sbin/nologin
12:ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]# grep -n -C2 ftp /etc/passwd
10-operator:x:11:0:operator:/root:/sbin/nologin
11-games:x:12:100:games:/usr/games:/sbin/nologin
12:ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
13-nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin
14-dbus:x:81:81:System message bus:/:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# grep rsync /etc/services
rsync          873/tcp          # rsync
rsync          873/udp          # rsync
airsync        2175/tcp         # Microsoft Desktop
AirSync Protocol
airsync        2175/udp         # Microsoft Desktop
AirSync Protocol
[root@localhost ~]#
[root@localhost ~]# grep -w rsync /etc/services
rsync          873/tcp          # rsync
rsync          873/udp          # rsync
[root@localhost ~]#
[root@localhost ~]# grep 873 /etc/services
rsync          873/tcp          # rsync
rsync          873/udp          # rsync
fjmpjps        1873/tcp         # Fjmpjps
fjmpjps        1873/udp         # Fjmpjps
fagordnc       3873/tcp         # fagordnc
fagordnc       3873/udp         # fagordnc
dtp-net        8732/udp         # DASGIP Net Services
ibus           8733/tcp         # iBus
ibus           8733/udp         # iBus
dxspider       8873/tcp         # dxspider linking
protocol
dxspider       8873/udp         # dxspider linking
protocol
[root@localhost ~]#
[root@localhost ~]# grep -w 873 /etc/services
rsync          873/tcp          # rsync
rsync          873/udp          # rsync
[root@localhost ~]#
[root@localhost ~]#

```

```
[root@localhost ~]#
[root@localhost ~]# cat /etc/passwd | grep root
root:x:0:0:root:/root:/bin/bash
operator:x:11:0:operator:/root:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# cat /etc/passwd | grep -n root
1:root:x:0:0:root:/root:/bin/bash
10:operator:x:11:0:operator:/root:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# lscpu | grep -i arch
Architecture:          x86_64
[root@localhost ~]# lscpu | grep -i model
Model:                  142
Model name:             Intel(R) Core(TM) i5-8250U CPU @ 1.60GHz
[root@localhost ~]#
[root@localhost ~]# lscpu | grep -i "model name"
Model name:             Intel(R) Core(TM) i5-8250U CPU @ 1.60GHz
[root@localhost ~]#
[root@localhost ~]# lscpu | grep -i virt
Virtualization type: full
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# ls
anaconda-ks.cfg  Documents  initial-setup-ks.cfg  Pictures
Templates
Desktop          Downloads  Music                Public
Videos
[root@localhost ~]#
[root@localhost ~]# ls | grep ana
anaconda-ks.cfg
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# ls /etc | grep shadow
gshadow
gshadow-
shadow
shadow-
[root@localhost ~]#
[root@localhost ~]# ls /etc | grep passwd
passwd
passwd-
[root@localhost ~]#
[root@localhost ~]# grep root ntp ftp /etc/passwd
grep: ntp: No such file or directory
grep: ftp: No such file or directory
```

```

/etc/passwd:root:x:0:0:root:/root:/bin/bash
/etc/passwd:operator:x:11:0:operator:/root:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]# egrep 'root|ntp|ftp' /etc/passwd
root:x:0:0:root:/root:/bin/bash
operator:x:11:0:operator:/root:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]# egrep -n -i 'root|ntp|ftp' /etc/passwd
1:root:x:0:0:root:/root:/bin/bash
10:operator:x:11:0:operator:/root:/sbin/nologin
12:ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]# grep -E -n -i 'root|ntp|ftp' /etc/passwd
1:root:x:0:0:root:/root:/bin/bash
10:operator:x:11:0:operator:/root:/sbin/nologin
12:ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# fgrep root /etc/passwd /etc/group
/etc/passwd:root:x:0:0:root:/root:/bin/bash
/etc/passwd:operator:x:11:0:operator:/root:/sbin/nologin
/etc/group:root:x:0:
[root@localhost ~]#
[root@localhost ~]# grep -F root /etc/passwd /etc/group
/etc/passwd:root:x:0:0:root:/root:/bin/bash
/etc/passwd:operator:x:11:0:operator:/root:/sbin/nologin
/etc/group:root:x:0:
[root@localhost ~]#
[root@localhost ~]# grep root /etc/passwd /etc/group
/etc/passwd:root:x:0:0:root:/root:/bin/bash
/etc/passwd:operator:x:11:0:operator:/root:/sbin/nologin
/etc/group:root:x:0:
[root@localhost ~]#
[root@localhost ~]# grep -E 'root|ntp|ftp' /etc/passwd
/etc/group
/etc/passwd:root:x:0:0:root:/root:/bin/bash
/etc/passwd:operator:x:11:0:operator:/root:/sbin/nologin
/etc/passwd:ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
/etc/group:root:x:0:
/etc/group:ftp:x:50:
[root@localhost ~]#
[root@localhost ~]# cat /etc/default/useradd
# useradd defaults file
GROUP=100
HOME=/home

```

```
INACTIVE=-1
EXPIRE=
SHELL=/bin/bash
SKEL=/etc/skel
CREATE_MAIL_SPOOL=yes
```

```
[root@localhost ~]#
[root@localhost ~]# grep skel /etc/default/useradd
SKEL=/etc/skel
[root@localhost ~]# grep skel /etc/default
grep: /etc/default: Is a directory
[root@localhost ~]#
[root@localhost ~]# grep -R -i -n skel /etc/default
/etc/default/useradd:7:SKEL=/etc/skel
[root@localhost ~]#
[root@localhost ~]# grep -i -n skel /etc/default/*
/etc/default/useradd:7:SKEL=/etc/skel
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# sed -n '11,15p' /etc/passwd
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
systemd-coredump:x:999:997:systemd Core Dumper:/:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]# sed -n '11,15p' /etc/passwd | grep ftp
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]# sed -n '11,15p' /etc/passwd | grep ftp >
/record
[root@localhost ~]# cat /record
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
[root@localhost ~]#
[root@localhost ~]# head -n 25 /etc/passwd | tail -n 5 | grep -
i dns
unbound:x:996:991:Unbound DNS
resolver:/etc/unbound:/sbin/nologin
```

How to Copy any files and Directory from place to another ?

```
[root@localhost ~]#
```

```

[root@localhost ~]# touch abc
[root@localhost ~]#
[root@localhost ~]# mkdir /data
[root@localhost ~]#
[root@localhost ~]# ls
abc          Desktop      Downloads          Music
Public      Videos
anaconda-ks.cfg  Documents  initial-setup-ks.cfg  Pictures
Templates
[root@localhost ~]#
[root@localhost ~]# ls /
bin  data  etc  lib  media  opt  record  root  sbin  string
tmp  var
boot  dev  home  lib64  mnt  proc  report  run  srv  sys
usr
[root@localhost ~]#
[root@localhost ~]# cp abc /data
[root@localhost ~]#
[root@localhost ~]# cp abc /data
cp: overwrite '/data/abc'? n
[root@localhost ~]#
[root@localhost ~]# cp -i abc /data
cp: overwrite '/data/abc'? y
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# mkdir /redhat
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# cp -r /data /redhat
[root@localhost ~]#
[root@localhost ~]# ls /redhat
data
[root@localhost ~]#
[root@localhost ~]# mkdir -p /network/a1/a2/a3/a4
[root@localhost ~]#
[root@localhost ~]# cp -rf /network /data
[root@localhost ~]#
[root@localhost ~]# ls /data
abc  network
[root@localhost ~]#
[root@localhost ~]# cp -rvf /network /tmp
'/network' -> '/tmp/network'
'/network/a1' -> '/tmp/network/a1'
'/network/a1/a2' -> '/tmp/network/a1/a2'
'/network/a1/a2/a3' -> '/tmp/network/a1/a2/a3'
'/network/a1/a2/a3/a4' -> '/tmp/network/a1/a2/a3/a4'
[root@localhost ~]#

```



```

[root@localhost ~]#
[root@localhost ~]# cp -rf /etc /data
[root@localhost ~]#
[root@localhost ~]# ls /data
abc etc network
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# cp -rvf /etc /tmp
'/etc' -> '/tmp/etc'
'/etc/logrotate.d' -> '/tmp/etc/logrotate.d'
'/etc/logrotate.d/dnf' -> '/tmp/etc/logrotate.d/dnf'
'/etc/logrotate.d/samba' -> '/tmp/etc/logrotate.d/samba'
'/etc/logrotate.d/chrony' -> '/tmp/etc/logrotate.d/chrony
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# touch xyz{1..5}.txt
[root@localhost ~]#
[root@localhost ~]# ls
abc Desktop Downloads Music
Public Videos xyz2.txt xyz4.txt
anaconda-ks.cfg Documents initial-setup-ks.cfg Pictures
Templates xyz1.txt xyz3.txt xyz5.txt
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# cp -rf *.txt /data
[root@localhost ~]#
[root@localhost ~]# ls /data
abc etc network xyz1.txt xyz2.txt xyz3.txt xyz4.txt
xyz5.txt
[root@localhost ~]#
[root@localhost ~]# cp -rf * /tmp
[root@localhost ~]#
[root@localhost ~]# ls /tmp
abc
anaconda-ks.cfg
Desktop
Documents
Downloads
etc
initial-setup-ks.cfg
matched
Music
network
Pictures
xyz1.txt
xyz2.txt

```

```
xyz3.txt
xyz4.txt
xyz5.txt
[root@localhost ~]#
[root@localhost ~]# cp -rf /etc/*.conf /srv
[root@localhost ~]#
[root@localhost ~]# ls /srv
asound.conf                fprintd.conf  ksmtuned.conf
man_db.conf                radvd.conf    sudo-ldap.conf  yum.conf
brlty.conf                 fuse.conf     ld.so.conf
mke2fs.conf                request-key.conf sysctl.conf
chrony.conf                host.conf     libaudit.conf
mtools.conf                rsyslog.conf  tcstd.conf
dley-na-server-service.conf idmapd.conf   libuser.conf
nfs.conf                   sestatus.conf updatedb.conf
dnsmasq.conf               kdump.conf    locale.conf
nfsmount.conf              sos.conf      vconsole.conf
dracut.conf                krb5.conf     logrotate.conf
nsswitch.conf              sudo.conf     xattr.conf
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# cp -rf /etc/yum
yum/                        yum.conf      yum.repos.d/
[root@localhost ~]# cp -rf /etc/y*.conf /tmp
[root@localhost ~]#
[root@localhost ~]# ls /tmp
abc
anaconda-ks.cfg
Desktop
Documents
Downloads
etc
initial-setup-ks.cfg
matched
Music
network
Pictures
Public
Templates
unmatched
Videos
vmware-root_818-2957124693
xyz1.txt
xyz2.txt
xyz3.txt
xyz4.txt
xyz5.txt
```

yum.conf

```
[root@localhost ~]# ls
abc          Desktop      Downloads      Music
Public       Videos     xyz2.txt      xyz4.txt
anaconda-ks.cfg Documents  initial-setup-ks.cfg Pictures
Templates    xyz1.txt    xyz3.txt      xyz5.txt
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# cp -rf a* /srv
[root@localhost ~]#
[root@localhost ~]# ls /srv
abc
dracut.conf  ksmtuned.conf
mke2fs.conf  rsyslog.conf  updatedb.conf
anaconda-ks.cfg fprintd.conf  ld.so.conf
mttools.conf  sestatus.conf vconsole.conf
asound.conf   fuse.conf     libaudit.conf
nfs.conf      sos.conf      xattr.conf
brlty.conf    host.conf     libuser.conf
nfsmount.conf sudo.conf     yum.conf
chrony.conf   idmapd.conf   locale.conf
nsswitch.conf sudo-ldap.conf
dley-na-server-service.conf kdump.conf    logrotate.conf
radvd.conf    sysctl.conf
dnsmasq.conf  krb5.conf     man_db.conf
request-key.conf tcstd.conf
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# ls -l abc
-rw-r--r--. 1 root root 0 Jun  3 23:24 abc
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# mkdir /linux
[root@localhost ~]#
[root@localhost ~]# cp -p abc /linux
[root@localhost ~]#
[root@localhost ~]# ls -l /linux/abc
-rw-r--r--. 1 root root 0 Jun  3 23:24 /linux/abc
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# touch .hcl
[root@localhost ~]# mkdir .deep
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# cp -rf .hcl /linux
[root@localhost ~]#
```

```

[root@localhost ~]# ls /linux
abc
[root@localhost ~]#
[root@localhost ~]# cp -rf .deep /linux
[root@localhost ~]#
[root@localhost ~]# cd /linux
[root@localhost linux]# ls
abc
[root@localhost linux]# ls -a
.  ..  abc  .deep  .hcl
[root@localhost linux]# cd
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# cp -rf /etc /home /network
[root@localhost ~]#
[root@localhost ~]# ls /network
al  etc  home
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# cp -rf /etc /ibm
[root@localhost ~]#
[root@localhost ~]# ls /ibm
adjtime          environment      ld.so.cache
pam.d            sgml
aliases          ethertypes      ld.so.conf
papersize        shadow
alsa             exports         ld.so.conf.d
passwd           shadow-
.....

[root@localhost ~]#
[root@localhost ~]# mkdir /tcs
[root@localhost ~]#
[root@localhost ~]# cp -rf /etc /tcs
[root@localhost ~]#
[root@localhost ~]# ls /tcs
etc
[root@localhost ~]#
[root@localhost ~]# cp /etc/passwd /root
[root@localhost ~]#
[root@localhost ~]# ls
abc          Desktop      Downloads      Music
Pictures    Templates  xyz1.txt      xyz3.txt      xyz5.txt
anaconda-ks.cfg Documents  initial-setup-ks.cfg passwd Public
Videos      xyz2.txt   xyz4.txt
[root@localhost ~]#

```

```

[root@localhost ~]# cp /etc/passwd newfile
[root@localhost ~]#
[root@localhost ~]# ls
abc          Desktop      Downloads      Music
passwd      Public       Videos       xyz2.txt  xyz4.txt
anaconda-ks.cfg Documents  initial-setup-ks.cfg newfile
Pictures    Templates  xyz1.txt  xyz3.txt  xyz5.txt
[root@localhost ~]#
[root@localhost ~]# cat newfile
root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
.....
[root@localhost ~]#
[root@localhost ~]# cp /etc/passwd
passwd passwd-
[root@localhost ~]# cp /etc/passwd /etc/group /srv
[root@localhost ~]#
[root@localhost ~]# ls /srv
abc          dracut.conf  krb5.conf
man_db.conf  radvd.conf  sysctl.conf
anaconda-ks.cfg fprintd.conf ksmtuned.conf
mke2fs.conf  request-key.conf tcstd.conf
asound.conf  fuse.conf   ld.so.conf
mtools.conf  rsyslog.conf updatedb.conf
brlty.conf   group       libaudit.conf
nfs.conf     sestatus.conf vconsole.conf
chrony.conf  host.conf   libuser.conf
nfsmount.conf sos.conf    xattr.conf
dley-na-server-service.conf idmapd.conf locale.conf
nsswitch.conf sudo.conf   yum.conf
dnsmasq.conf kdump.conf  logrotate.conf passwd
sudo-ldap.conf
[root@localhost ~]#

```

How to remove any files and directory ?

```

[root@localhost ~]# ls

```

```

abc                Desktop      Downloads          Music
passwd            Public        Videos            xyz2.txt  xyz4.txt
anaconda-ks.cfg   Documents  initial-setup-ks.cfg newfile
Pictures          Templates  xyz1.txt  xyz3.txt  xyz5.txt
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# rm abc
rm: remove regular empty file 'abc'? n
[root@localhost ~]#
[root@localhost ~]# rm -i abc
rm: remove regular empty file 'abc'? y
[root@localhost ~]#
[root@localhost ~]# rm /data
rm: cannot remove '/data': Is a directory
[root@localhost ~]#
[root@localhost ~]# rm -rf /data
[root@localhost ~]#
[root@localhost ~]# rm -rf /network
[root@localhost ~]#
[root@localhost ~]# ls
anaconda-ks.cfg  Documents  initial-setup-ks.cfg  newfile
Pictures         Templates  xyz1.txt  xyz3.txt  xyz5.txt
Desktop          Downloads  Music
Public           Videos    xyz2.txt  xyz4.txt
[root@localhost ~]#
[root@localhost ~]# rm -rf newfile passwd
[root@localhost ~]# ls
anaconda-ks.cfg  Documents  initial-setup-ks.cfg  Pictures
Templates        xyz1.txt  xyz3.txt  xyz5.txt
Desktop          Downloads  Music
Videos           xyz2.txt  xyz4.txt
[root@localhost ~]#
[root@localhost ~]# rm -rf *.txt
[root@localhost ~]#
[root@localhost ~]# ls
anaconda-ks.cfg  Documents  initial-setup-ks.cfg  Pictures
Templates
Desktop          Downloads  Music
Videos
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# rm -rf a*
[root@localhost ~]#
[root@localhost ~]# ls
Desktop  Documents  Downloads  initial-setup-ks.cfg  Music
Pictures  Public  Templates  Videos
[root@localhost ~]#

```

```
[root@localhost ~]#  
[root@localhost ~]#  
[root@localhost ~]# rm -rf /tmp/*.conf  
[root@localhost ~]#  
[root@localhost ~]# ls /tmp  
abc  
anaconda-ks.cfg  
Desktop  
Documents  
Downloads  
etc  
initial-setup-ks.cfg  
matched  
Music  
network  
Pictures  
Public  
Templates  
tracker-extract-files.0  
unmatched  
Videos  
vmware-root_818-2957124693  
xyz1.txt  
xyz2.txt  
xyz3.txt  
xyz4.txt  
xyz5.txt  
[root@localhost ~]#  
[root@localhost ~]#  
[root@localhost ~]# ls  
Desktop Documents Downloads initial-setup-ks.cfg Music  
Pictures Public Templates Videos  
[root@localhost ~]#  
[root@localhost ~]#  
[root@localhost ~]#  
[root@localhost ~]#  
[root@localhost ~]# rm -rf *  
[root@localhost ~]#  
[root@localhost ~]# ls  
[root@localhost ~]#  
[root@localhost ~]#  
[root@localhost ~]# mkdir -p /net/a1/a2/a3/a4  
[root@localhost ~]#  
[root@localhost ~]# rm -rvf /net  
removed directory '/net/a1/a2/a3/a4'  
removed directory '/net/a1/a2/a3'  
removed directory '/net/a1/a2'
```

```
removed directory '/net/a1'
removed directory '/net'
[root@localhost ~]#
[root@localhost ~]#
```

How to move any files and any directory from place to another place ?

```
[root@localhost ~]# touch xyz
[root@localhost ~]#
[root@localhost ~]# ls
xyz
[root@localhost ~]#
[root@localhost ~]# mkdir /fedora
[root@localhost ~]#
[root@localhost ~]# mv xyz /fedora
[root@localhost ~]#
[root@localhost ~]# ls /fedora
xyz
[root@localhost ~]# ls
[root@localhost ~]#
[root@localhost ~]# mkdir data
[root@localhost ~]#
[root@localhost ~]# ls
data
[root@localhost ~]# mv data /fedora
[root@localhost ~]#
[root@localhost ~]# ls /fedora
data xyz
[root@localhost ~]# ls
[root@localhost ~]#
[root@localhost ~]# touch xyz
[root@localhost ~]#
[root@localhost ~]# ls
xyz
[root@localhost ~]#
```

How to rename any file and directory name ?

```
[root@localhost ~]# mv oldname newname
```



```
[root@localhost ~]# mv xyz abc
[root@localhost ~]# ls
abc
[root@localhost ~]#
[root@localhost ~]# mkdir data
[root@localhost ~]#
[root@localhost ~]# ls
abc data
[root@localhost ~]#
[root@localhost ~]# mv data newtcs
[root@localhost ~]#
[root@localhost ~]# ls
abc newtcs
[root@localhost ~]#
[root@localhost ~]# mv abc newtcs
[root@localhost ~]#
[root@localhost ~]# ls
newtcs
[root@localhost ~]#
[root@localhost ~]# cd newtcs
[root@localhost newtcs]# ls
abc
[root@localhost newtcs]# cd
[root@localhost ~]#
```

How to rename any file and directory name by using rename command ?

```
[root@localhost ~]# mkdir redhat
[root@localhost ~]#
[root@localhost ~]# ls
newtcs redhat
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# rename redhat linux redhat
[root@localhost ~]#
[root@localhost ~]# ls
linux newtcs
[root@localhost ~]#
[root@localhost ~]# touch fedora
[root@localhost ~]#
[root@localhost ~]# rename fedora newfedora fedora
[root@localhost ~]#
[root@localhost ~]# ls
```

```
linux newfedora newtcs
[root@localhost ~]#
```

How to take incremental backup by using rsync command ?

```
[root@localhost ~]# mkdir /sqldata
[root@localhost ~]#
[root@localhost ~]# mkdir /backup
[root@localhost ~]#
[root@localhost ~]# touch /sqldata/xyz{1..3}
[root@localhost ~]#
[root@localhost ~]# ls /sqldata
xyz1 xyz2 xyz3
[root@localhost ~]#
[root@localhost ~]# rsync -av /sqldata /backup
sending incremental file list
sqldata/
sqldata/xyz1
sqldata/xyz2
sqldata/xyz3

sent 225 bytes  received 77 bytes  604.00 bytes/sec
total size is 0  speedup is 0.00
[root@localhost ~]#
[root@localhost ~]# touch /sqldata/xyz5
[root@localhost ~]#
[root@localhost ~]# rsync -av /sqldata /backup
sending incremental file list
sqldata/
sqldata/xyz5

sent 168 bytes  received 39 bytes  414.00 bytes/sec
total size is 0  speedup is 0.00
[root@localhost ~]#
[root@localhost ~]# echo "hello" > /sqldata/xyz1
[root@localhost ~]#
[root@localhost ~]# rsync -av /sqldata /backup
sending incremental file list
sqldata/xyz1

sent 179 bytes  received 36 bytes  430.00 bytes/sec
```

```
total size is 6  speedup is 0.03
[root@localhost ~]#
[root@localhost ~]#
```

What is Inode number in Linux ?

- An inode is an entry in inode table, containing information (the metadata) about a regular file and directory.
- An inode is a data structure on a traditional Unix-style file system such as ext3 or ext4.
- Inode number also called index number, it consists following attributes.

1. File types (executable, block special etc)
2. Permissions (read, write etc)
3. UID (Owner)
4. GID (Group)
5. FileSize
6. Time stamps including last access, last modification and last inode number change.
7. File deletion time
8. Number of links (soft/hard)
9. Location of file on harddisk.
10. Some other metadata about file.

```
[root@localhost ~]# touch abc
[root@localhost ~]#
[root@localhost ~]# ls -li abc
17438220 abc
[root@localhost ~]#
[root@localhost ~]# ls -li
[root@localhost ~]# mkdir /cloud
[root@localhost ~]#
[root@localhost ~]# cp abc /cloud
[root@localhost ~]#
[root@localhost ~]# ls -li /cloud/abc
27840523 /cloud/abc
[root@localhost ~]#
[root@localhost ~]# mkdir /net
[root@localhost ~]#
[root@localhost ~]# mv abc /net
[root@localhost ~]#
```

```
[root@localhost ~]# ls -li /net/abc
17438220 /net/abc
[root@localhost ~]#
[root@localhost ~]# ls -di /net
35206 /net
[root@localhost ~]#
```