

TASK 1 REDHAT

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Server Steps:

1-Mount /dev/sr0 /var/www/html

```
[root@jimmy ~]# df
Filesystem      1K-blocks   Used Available Use% Mounted on
devtmpfs          4096       0     4096   0% /dev
tmpfs            990640       0    990640   0% /dev/shm
tmpfs            396260      7996    388264   3% /run
/dev/mapper/rhel-root 17141760 4720364 12421396 28% /
/dev/nvme0n1p2    983040 269900 713140 28% /boot
/dev/sda1         10419200 105740 10313460 2% /SDA1DRIVE
/dev/nvme0n1p1    613184    7204 605980 2% /boot/efi
tmpfs             198128     112   198016  1% /run/user/0
/dev/sr0           10825576 10825576        0 100% /var/www/html
[root@jimmy ~]#
```

2- Write the local repo inside /etc/yum.repos.d

```
root@jimmy:~ — /usr/bin/vim /etc/yum.repos.d/local.repo

[AppStream_Local]
name=AppStream_On_SERVER
baseurl=file:///run/media/root/RHEL-9-4-0-BaseOS-x86_64/AppStream
enable=1
gpgcheck=0


[BaseOS_local]
name=BaseOS_ON_SERVER
baseurl=file:///run/media/root/RHEL-9-4-0-BaseOS-x86_64/BaseOS
enable=1
gpgcheck=0

~
```

3- Close firewalld

Systemctl stop firewalld

4-Enable and start httpd

Systemctl -enable –now httpd

```
[root@jimmy ~]# systemctl status firewalld
● firewalld.service - firewalld - dynamic firewall daemon
   Loaded: loaded (/usr/lib/systemd/system/firewalld.service; enabled; preset: enabled)
   Active: inactive (dead) since Mon 2025-12-08 22:03:13 EET; 28min ago
     Duration: 2min 53.381s
       Docs: man:firewalld(1)
      Process: 950 ExecStart=/usr/sbin/firewalld --nofork --nopid $FIREWALLD_ARGS (code=exited, status=0/SUCCESS)
     Main PID: 950 (code=exited, status=0/SUCCESS)
        CPU: 827ms

Dec 08 22:00:19 jimmy.com systemd[1]: Starting firewalld - dynamic firewall daemon...
Dec 08 22:00:19 jimmy.com systemd[1]: Started firewalld - dynamic firewall daemon.
Dec 08 22:03:13 jimmy.com systemd[1]: Stopping firewalld - dynamic firewall daemon...
Dec 08 22:03:13 jimmy.com systemd[1]: firewalld.service: Deactivated successfully.
Dec 08 22:03:13 jimmy.com systemd[1]: Stopped firewalld - dynamic firewall daemon.
[root@jimmy ~]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disabled)
   Active: active (running) since Mon 2025-12-08 22:00:20 EET; 31min ago
     Docs: man:httpd.service(8)
    Main PID: 1071 (httpd)
      Status: "Total requests: 19; Idle/Busy workers 100/0;Requests/sec: 0.00994; Bytes served/sec: 4.0KB/sec"
     Tasks: 230 (limit: 11984)
    Memory: 47.7M
      CPU: 2.806s
     CGroup: /system.slice/httpd.service
             ├─1071 /usr/sbin/httpd -DFOREGROUND
             ├─1125 /usr/sbin/httpd -DFOREGROUND
             ├─1126 /usr/sbin/httpd -DFOREGROUND
             ├─1127 /usr/sbin/httpd -DFOREGROUND
             ├─1129 /usr/sbin/httpd -DFOREGROUND
```

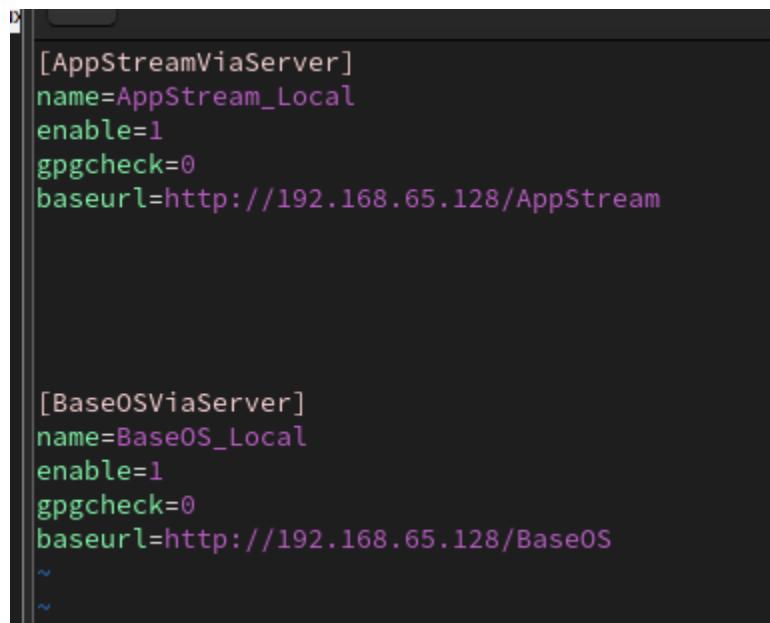
6- verify using

Yum repolist

```
[root@jimmy ~]# yum repolist
repo id                                repo name
AppStream_Local                          AppStream_On_SERVER
BaseOS_local                            BaseOS_ON_SERVER
epel                                    Extra Packages for Enterprise Linux 8 - x86_64
[root@jimmy ~]#
```

Client:

1- Write Client local repo

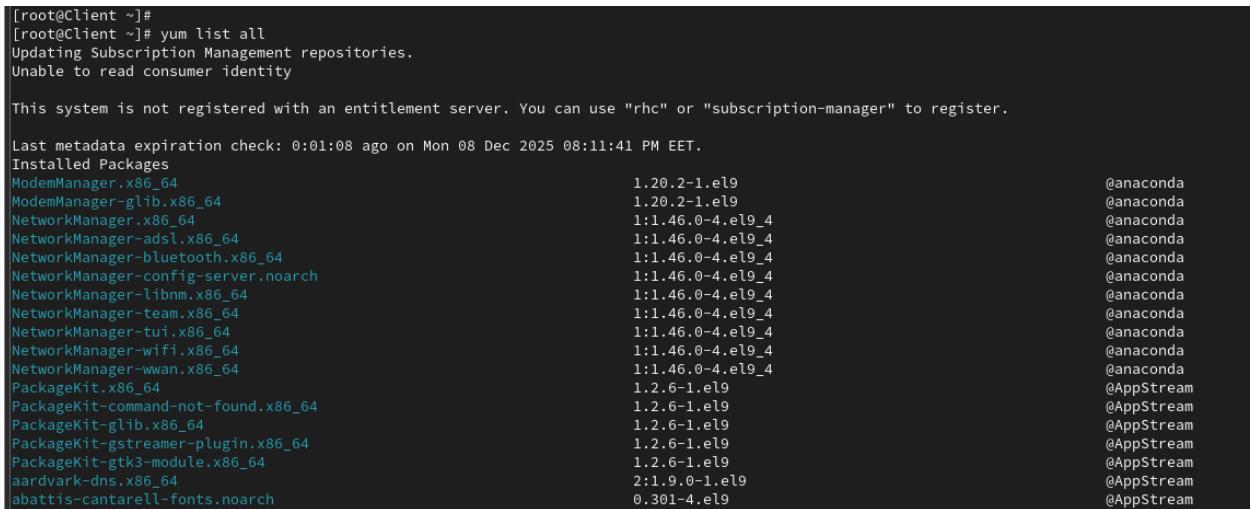


```
[AppStreamViaServer]
name=AppStream_Local
enable=1
gpgcheck=0
baseurl=http://192.168.65.128/AppStream

[BaseOSViaServer]
name=BaseOS_Local
enable=1
gpgcheck=0
baseurl=http://192.168.65.128/BaseOS
~
```

2-Verify

Using yum list all

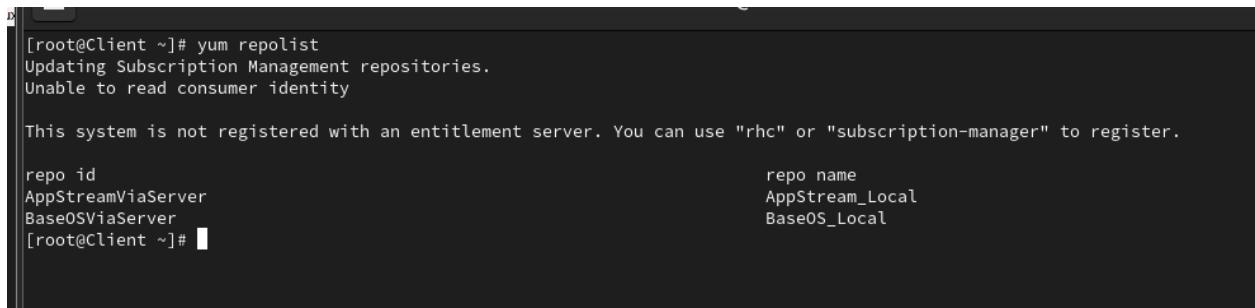


```
[root@Client ~]#
[root@Client ~]# yum list all
Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered with an entitlement server. You can use "rhc" or "subscription-manager" to register.

Last metadata expiration check: 0:01:08 ago on Mon 08 Dec 2025 08:11:41 PM EET.
Installed Packages
ModemManager.x86_64                                1.20.2-1.el9                               @anaconda
ModemManager-glib.x86_64                            1.20.2-1.el9                               @anaconda
NetworkManager.x86_64                                1:1.46.0-4.el9_4                           @anaconda
NetworkManager-adsl.x86_64                          1:1.46.0-4.el9_4                           @anaconda
NetworkManager-bluetooth.x86_64                     1:1.46.0-4.el9_4                           @anaconda
NetworkManager-config-server.noarch                 1:1.46.0-4.el9_4                           @anaconda
NetworkManager-libnm.x86_64                          1:1.46.0-4.el9_4                           @anaconda
NetworkManager-team.x86_64                          1:1.46.0-4.el9_4                           @anaconda
NetworkManager-tui.x86_64                           1:1.46.0-4.el9_4                           @anaconda
NetworkManager-wifi.x86_64                          1:1.46.0-4.el9_4                           @anaconda
NetworkManager-wwan.x86_64                          1:1.46.0-4.el9_4                           @anaconda
PackageKit.x86_64                                    1.2.6-1.el9                               @AppStream
PackageKit-command-not-found.x86_64                1.2.6-1.el9                               @AppStream
PackageKit-glib.x86_64                            1.2.6-1.el9                               @AppStream
PackageKit-gstreamer-plugin.x86_64                 1.2.6-1.el9                               @AppStream
PackageKit-gtk3-module.x86_64                      1.2.6-1.el9                               @AppStream
aardvark-dns.x86_64                                2:1.9.0-1.el9                            @AppStream
abattis-cantarell-fonts.noarch                    0.301-4.el9                               @AppStream
```

Verify using repolist

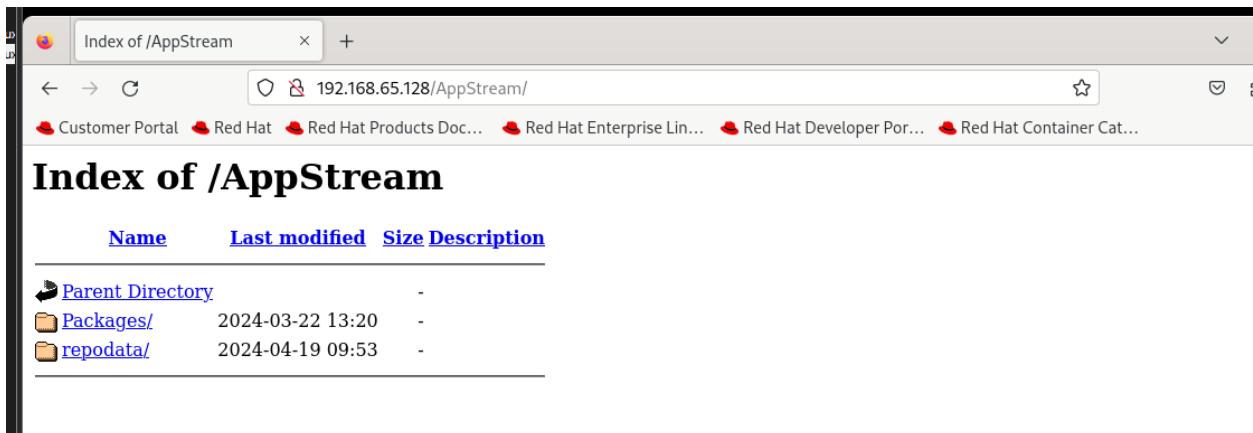


```
[root@Client ~]# yum repolist
Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered with an entitlement server. You can use "rhc" or "subscription-manager" to register.

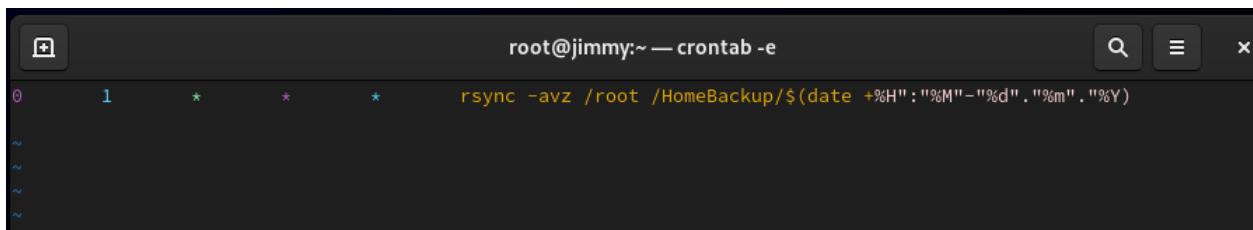
repo id                                repo name
AppStreamViaServer                      AppStream_Local
BaseOSViaServer                         BaseOS_Local
[root@Client ~]#
```

Verify using FireFox



TASK 2 REDHAT

Write a chron tab for backup



```
root@jimmy:~ — crontab -e
0      1      *      *      *      rsync -avz /root /HomeBackup/$(date +%H:%M-%d.%m.%Y)
```

TASK 3 REDHAT

Add some services to pass from firewall at zone dmz

```
[root@jimmy ~]# firewall-cmd --add-service=ntp --add-service=ftp --add-service=ssh --add-service=vnc-server --add-service=dns --add-service=http --zone=dmz
```

```
rich rules:  
[root@jimmy ~]# firewall-cmd --list-all --zone=dmz  
dmz  
target: default  
icmp-block-inversion: no  
interfaces:  
sources:  
services: dns ftp http ntp ssh vnc-server  
ports:  
protocols:  
forward: yes  
masquerade: no  
forward-ports:  
source-ports:  
icmp-blocks:  
rich rules:  
[root@jimmy ~]#
```

TASK 4 REDHAT

Added a hardisk and make primary and extended disks

```
Command (m for help): p  
Disk /dev/nvme0n2: 10 GiB, 10737418240 bytes, 20971520 sectors  
Disk model: VMware Virtual NVMe Disk  
Units: sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0x0ce6c0cd  
  
Device      Boot   Start     End  Sectors Size Id Type  
/dev/nvme0n2p1        2048 2099199 2097152    1G 83 Linux  
/dev/nvme0n2p4        2099200 20971519 18872320    9G  5 Extended  
/dev/nvme0n2p5        2101248 4198399 2097152    1G 83 Linux  
  
Command (m for help):
```

TASK 5 REDHAT

Extending my rhel

Adding a partition that takes all 15G from a new harddisk and make it LVM

```
Command (? for help): n
Partition number (1-128, default 1):
First sector (34-31457246, default = 2048) or {+-}size{KMGTP}:
Last sector (2048-31457246, default = 31457246) or {+-}size{KMGTP}:
Current type is 8300 (Linux filesystem)
Hex code or GUID (L to show codes, Enter = 8300): 8e00
Changed type of partition to 'Linux LVM'
```

Extending our rhel group using this 15G partition

```
[root@jimmy ~]# pvcreate /dev/nvme0n5p1
  Physical volume "/dev/nvme0n5p1" successfully created.
[root@jimmy ~]# pvs
  PV          VG  Fmt Attr PSize   PFree
  /dev/nvme0n1p3  rhel lvm2 a--  18.41g      0
  /dev/nvme0n5p1        lvm2 ---  <15.00g <15.00g
[root@jimmy ~]# vgextend rhel /dev/nvme0n5p1
  Volume group "rhel" successfully extended
[root@jimmy ~]# vgs
  VG #PV #LV #SN Attr   VSize   VFree
  rhel   2   2   0 wz--n- <33.41g <15.00g
```

Adding 14G from this partition into RHEL (Left 1GB) in harddisk I will add them using extent

```
[root@jimmy ~]# lvextend -r -L +14G /dev/rhel/root /dev/nvme0n5p1
  Size of logical volume rhel/root changed from 16.41 GiB (4201 extents) to 30.41 GiB (7785 extents).
  File system xfs found on rhel/root mounted at /.
  Extending file system xfs to 30.41 GiB (32652656640 bytes) on rhel/root...
xfs_growfs /dev/rhel/root
meta-data=/dev/mapper/rhel-root  isize=512    agcount=4, agsize=1075456 blks
                                =                      sectsz=512  attr=2, projid32bit=1
                                =                      crc=1    finobt=1, sparse=1, rmapbt=0
                                =                      reflink=1 bigtime=1 inobtcount=1 nnext64=0
data     =                      bsize=4096   blocks=4301824, imaxpct=25
                                =                      sunit=0   swidth=0 blks
naming   =version 2           bsize=4096   ascii-ci=0, ftype=1
log      =internal log        bsize=4096   blocks=16384, version=2
                                =                      sectsz=512  sunit=0 blks, lazy-count=1
realtime =none                extsz=4096   blocks=0, rtextents=0
data blocks changed from 4301824 to 7971840
xfs_growfs done
  Extended file system xfs on rhel/root.
  Logical volume rhel/root successfully resized.
```

Here we added last 1G using extent method -l

```
[root@jimmy ~]# lvextend -r -L +1G /dev/rhel/root /dev/nvme0n5p1
  Insufficient free space: 256 extents needed, but only 255 available
[root@jimmy ~]# lvextend -r -l +255 /dev/rhel/root /dev/nvme0n5p1
  Size of logical volume rhel/root changed from 30.41 GiB (7785 extents) to <31.41 GiB (8040 extents).
  File system xfs found on rhel/root mounted at /.
  Extending file system xfs to <31.41 GiB (33722204160 bytes) on rhel/root...
xfs_growfs /dev/rhel/root
meta-data=/dev/mapper/rhel-root isize=512    agcount=8, agsize=1075456 blks
          =                     sectsz=512  attr=2, projid32bit=1
          =                     crc=1    finobt=1, sparse=1, rmapbt=0
          =                     reflink=1 bigtime=1 inobtcount=1 nnext64=0
data     =                     bsize=4096 blocks=7971840, imaxpct=25
          =                     sunit=0   swidth=0 blks
naming   =version 2           bsize=4096 ascii-ci=0, ftype=1
log      =internal log        bsize=4096 blocks=16384, version=2
          =                     sectsz=512 sunit=0 blks, lazy-count=1
realtime =none                extsz=4096 blocks=0, rtextents=0
data blocks changed from 7971840 to 8232960
xfs_growfs done
  Extended file system xfs on rhel/root.
  Logical volume rhel/root successfully resized.
[root@jimmy ~]# pvs
  PV            VG  Fmt Attr PSize  PFree
  /dev/nvme0n1p3  rhel lvm2 a--  18.41g    0
  /dev/nvme0n5p1  rhel lvm2 a-- <15.00g    0
[root@jimmy ~]# vgs
  VG #PV #LV #SN Attr  VSize  VFree
  rhel  2   2   0 wz--n- <33.41g    0
```

```
[root@jimmy ~]# lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
sr0       11:0    1 10.3G  0 rom  /run/media/root/RHEL-9-4-0-BaseOS-x86_64
nvme0n1   259:0    0 20G  0 disk
└─nvme0n1p1 259:1    0 600M  0 part /boot/efi
└─nvme0n1p2 259:2    0   1G  0 part /boot
└─nvme0n1p3 259:3    0 18.4G  0 part
  └─rhel-root 253:0    0 31.4G  0 lvm  /
  └─rhel-swap 253:1    0   2G  0 lvm  [SWAP]
nvme0n2   259:4    0 10G  0 disk
└─nvme0n2p1 259:5    0   1G  0 part /root/medial
└─nvme0n2p4 259:6    0   1K  0 part
└─nvme0n2p5 259:7    0   1G  0 part
└─nvme0n2p6 259:8    0   1G  0 part
└─nvme0n2p7 259:9    0   7G  0 part
nvme0n3   259:10   0   7G  0 disk
└─nvme0n3p1 259:17   0   5G  0 part
└─nvme0n3p2 259:18   0   2G  0 part
nvme0n4   259:13   0   5G  0 disk
└─nvme0n4p1 259:16   0   2.8G 0 part
nvme0n5   259:15   0   15G 0 disk
└─nvme0n5p1 259:14   0   15G 0 part
  └─rhel-root 253:0    0 31.4G  0 lvm  /
```

TASK 6 REDHAT

Resetting password using rdbreak

```
GRUB version 2.06

[load_video
set gfxpayload=keep
insmod gzio
linux ($root)/vmlinuz-5.14.0-427.13.1.el9_4.x86_64_rd.break root=/dev/mapper/rhel-root ro resume=/dev/mapper/rhel-swap rd.lvm.lv=rhel/root rd.lvm.lv=rhel/swap rhgb quiet
initrd ($root)/initramfs-5.14.0-427.13.1.el9_4.x86_64.img $tuned_initrd]

Minimum Emacs-like screen editing is supported. TAB lists
completions. Press Ctrl-x or F10 to boot, Ctrl-c or F2 for a
command-line or ESC to discard edits and return to the GRUB menu.
```

```
Generating "/run/initramfs/rdsosreport.txt"

Entering emergency mode. Exit the shell to continue.
Type "journalctl" to view system logs.
You might want to save "/run/initramfs/rdsosreport.txt" to a USB stick or /boot
after mounting them and attach it to a bug report.

switch_root:/# mount -o remount,rw /sys
sys/
switch_root:/# mount -o remount,rw /sysroot/
switch_root:/# chroot /sysroot/
sys/
switch_root:/# sh-5.1# passwd
sh-5.1# password:
Changing password for user root.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
sh-5.1# touch ./autorelabel
sh-5.1# ls
afs autorelabel bin boot dev etc home HomeBackup lib lib64 media mnt opt proc root run sbin SDA1DRIVE srv swap_file sys tmp usr var
sh-5.1# rm -rf autorelabel
sh-5.1# ls
afs bin boot dev etc home HomeBackup lib lib64 media mnt opt proc root run sbin SDA1DRIVE srv swap_file sys tmp usr var
sh-5.1# touch ./autorelabel
sh-5.1# ls
afs bin boot dev etc home HomeBackup lib lib64 media mnt opt proc root run sbin SDA1DRIVE srv swap_file sys tmp usr var
sh-5.1#
exit
switch_root:/# _
```

