

# Apache Based Centralized Yum Repository

## At Server Side: -

1. Mount the Redhat enterprise linux [dvd](#) to [/mnt](#) directory-

```
[root@rhel9-server ~]# mount /dev/sr0 /mnt
mount: /mnt: WARNING: source write-protected, mounted read-only.
[root@rhel9-server ~]#
[root@rhel9-server ~]#
```

2. Verify it using `df -Th` command-

```
[root@rhel9-server ~]# df -Th
Filesystem      Type      Size  Used Avail Use% Mounted on
devtmpfs        devtmpfs  856M   0  856M   0% /dev
tmpfs           tmpfs     875M   0  875M   0% /dev/shm
tmpfs           tmpfs     350M   9.4M 341M   3% /run
/dev/nvme0n1p2  xfs       50G   11G   40G  21% /
/dev/nvme0n1p1  xfs      2.0G  222M   1.8G  11% /boot
tmpfs           tmpfs     175M   0   175M   0% /run/user/0
tmpfs           tmpfs     175M   0   175M   0% /run/user/1000
/dev/sr0        iso9660   8.0G   8.0G   0 100% /mnt
[root@rhel9-server ~]#
```

3. Move existing repository from [/etc/yum.repos.d](#) to [/tmp](#)-

```
[root@rhel9-server ~]#
[root@rhel9-server ~]# mv /etc/yum.repos.d/* /tmp/
```

4. Create directory [/local\\_repo](#) to copy mounted [dvd](#) contents-

```
[root@rhel9-server ~]#
[root@rhel9-server ~]# mkdir /local_repo
```

5. Create local repository file in [/etc/yum.repos.d](#) with extension [.repo](#)-

```
[root@rhel9-server ~]#
[root@rhel9-server ~]# touch /etc/yum.repos.d/local.repo
```

6. Copy the [dvd](#) content from [/mnt](#) to [/local\\_repo](#)-

```
[root@rhel9-server ~]#
[root@rhel9-server ~]# cp -rf /mnt/ /local_repo/
```

7. Enter repository details in local repository file in [/etc/yum.repos.d/local.repo](#)-

```
[root@rhel9-server ~]#
[root@rhel9-server ~]# vim /etc/yum.repos.d/local.repo
```

```
[AppStream]
name=Appstream-RHEL9
metadata_expire=-1
gpgcheck=1
enabled=1
baseurl=file:///local_repo/AppStream
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release

[BaseOS]
name=BaseOS-RHEL9
metadata_expire=-1
gpgcheck=1
enabled=1
baseurl=file:///local_repo/BaseOS
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release
```

8. Run `yum repolist` command to check whether it is working or not-

```
[root@rhel9-server ~]# yum repolist
repo id                               repo name
AppStream                             Appstream-RHEL9
BaseOS                                BaseOS-RHEL9
[root@rhel9-server ~]#
```

9. Install few packages to creating, configuring & managing local repositories-

```
[root@rhel9-server ~]#
[root@rhel9-server ~]# yum install createrepo yum-utils
```

10. Create repository using `createrepo` command-

```
[root@rhel9-server ~]# createrepo /local_repo/
```

This will take 2-3 min to complete.

11. Cleanup temporary repository files-

```
[root@rhel9-server ~]# yum clean all
12 files removed
[root@rhel9-server ~]#
```

12. Check `repodata` content (Created during step 10), as it will be used to setup apache based yum server-

```
[root@rhel9-server ~]# ls -ll /local_repo/repodata/
total 20496
-rw-rw-r-- 1 root root 5049678 Nov  9 22:50 0f8b0d19806b2a7c3e863390ea81d09773d0dbdb75e82a5d0a9309ef579b8507-filelists.xml.gz
-rw-rw-r-- 1 root root 5264105 Nov  9 22:50 13b17a1ee71ae273affdf416b8dd79e9205e5dd94b105def328cf558a1ecd591-primary.sqlite.bz2
-rw-rw-r-- 1 root root 5519578 Nov  9 22:50 18e3b8e784f95fc5b8f1ffa8031c4d59c0bd40d309e84dac901e80003a8d9553-filelists.sqlite.bz2
-rw-rw-r-- 1 root root 1612928 Nov  9 22:50 4c18fed9f403ca4a15b9033177a3590777797a469fb87595cb9c8d84efb209e9-other.sqlite.bz2
-rw-rw-r-- 1 root root 2538597 Nov  9 22:50 e0482f100ce23b9a367e7bd7d5d64731bc0e78dc8b9b44dbc14bc2c45a5c9d19-primary.xml.gz
-rw-rw-r-- 1 root root 989270 Nov  9 22:50 e08222467a01e94827a73a40b0222c7a8e26a130176515ddb8659e0b976670f0-other.xml.gz
-rw-rw-r-- 1 root root 3113 Nov  9 22:50 repomd.xml
[root@rhel9-server ~]#
```

13. Disable Redhat subscription warning-

```
[root@rhel9-server ~]#  
[root@rhel9-server ~]# vim /etc/yum/pluginconf.d/subscription-manager.conf
```

```
[main]  
enabled=0  
  
# When following option is set to 1, then all repositories defined outside redhat.repo will be disabled  
# every time subscription-manager plugin is triggered by dnf or yum  
disable_system_repos=0
```

Make enabled=0

14. Install [http](#) packages-

```
[root@rhel9-server ~]#  
[root@rhel9-server ~]# yum install httpd -y
```

15. Start & enable [httpd](#) service-

```
[root@rhel9-server ~]#  
[root@rhel9-server ~]# systemctl enable --now httpd
```

16. Check [httpd](#) service status-

```
[root@rhel9-server ~]# systemctl status httpd  
● httpd.service - The Apache HTTP Server  
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset: disabled)  
   Active: active (running) since Thu 2022-11-10 07:20:32 IST; 41min ago  
     Docs: man:httpd.service(8)  
   Main PID: 954 (httpd)  
   Status: "Total requests: 2; Idle/Busy workers 100/0; Requests/sec: 0.000797; Bytes served/sec: 2 B/sec"  
    Tasks: 213 (limit: 10953)  
   Memory: 43.8M  
      CPU: 1.586s
```

17. Add [http](#) & [https](#) in firewall, reload & verify it-

```
[root@rhel9-server ~]#  
[root@rhel9-server ~]# firewall-cmd --permanent --add-service=http --zone=public  
  
[root@rhel9-server ~]#  
[root@rhel9-server ~]# firewall-cmd --permanent --add-service=https --zone=public
```

```
[root@rhel9-server ~]#
[root@rhel9-server ~]# firewall-cmd --reload
[root@rhel9-server ~]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: ens160
  sources:
  services: cockpit dhcpv6-client dns http https nfs ntp ssh
  ports:
  protocols:
  forward: yes
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
[root@rhel9-server ~]#
```

18. Verify apache is up & running from web browser using server's IP address.

19. To make changes in default configuration file-

```
[root@rhel9-server ~]# vim /etc/httpd/conf/httpd.conf
```

```
#
DocumentRoot "/local_repo"

#
# Relax access to content within /var/www.
#
<Directory "/local_repo">
    Options All Indexes FollowSymLinks
    AllowOverride None
    Require all granted
</Directory>

# Further relax access to the default document root:
```

20. Restart [httpd](#) service-

21. Remove welcome page from the mentioned location-

```
[root@rhel9-server ~]#
[root@rhel9-server ~]# rm -rf /etc/httpd/conf.d/welcome.conf
```

Now test the [httpd](#) as shown-

```
[root@rhel9-server ~]# httpd -t
Syntax OK
[root@rhel9-server ~]#
```

22. Change permission to give **rwX** permission to **apache** user using ACL-

```
[root@rhel9-server ~]#  
[root@rhel9-server ~]# setfacl -R -m u:apache:rwX /local_repo/
```

23. Check if **SELinux** is enforcing-

```
[root@rhel9-server ~]# getenforce  
Enforcing  
[root@rhel9-server ~]#
```

24. Check default **semanage** policy on **/var/www/html**-

```
[root@rhel9-server ~]# ls -alZ /var/www/html/  
total 0  
drwxr-xr-x. 2 root root system_u:object_r:httpd_sys_content_t:s0 6 Nov 9 23:20 .  
drwxr-xr-x. 4 root root system_u:object_r:httpd_sys_content_t:s0 33 Nov 9 22:58 ..  
[root@rhel9-server ~]#
```

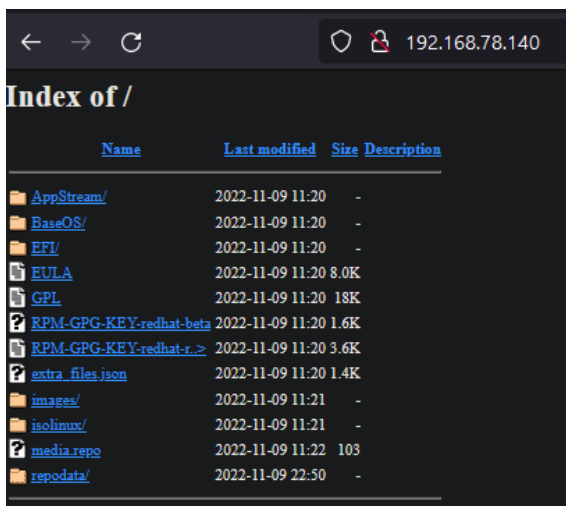
25. We have to set same policy on **/local\_repo** directory & on its subdirectories, files-

```
[root@rhel9-server ~]#  
[root@rhel9-server ~]# chcon -Rt httpd_sys_content_t /local_repo/
```

26. Verify it as shown-

```
[root@rhel9-server ~]# ls -llZ /local_repo/  
total 52  
dr-xrwxr-x+ 4 root root system_u:object_r:httpd_sys_content_t:s0 38 Nov 9 11:20 AppStream  
dr-xrwxr-x+ 4 root root system_u:object_r:httpd_sys_content_t:s0 38 Nov 9 11:20 BaseOS  
dr-xrwxr-x+ 3 root root system_u:object_r:httpd_sys_content_t:s0 18 Nov 9 11:20 EFI  
-r--rwxr--+ 1 root root system_u:object_r:httpd_sys_content_t:s0 8154 Nov 9 11:20 EULA  
-r--rwxr--+ 1 root root system_u:object_r:httpd_sys_content_t:s0 18092 Nov 9 11:20 GPL  
-r--rwxr--+ 1 root root system_u:object_r:httpd_sys_content_t:s0 1669 Nov 9 11:20 RPM-GPG-KEY-redhat-beta  
-r--rwxr--+ 1 root root system_u:object_r:httpd_sys_content_t:s0 3682 Nov 9 11:20 RPM-GPG-KEY-redhat-release  
-r--rwxr--+ 1 root root system_u:object_r:httpd_sys_content_t:s0 1455 Nov 9 11:20 extra_files.json  
dr-xrwxr-x+ 3 root root system_u:object_r:httpd_sys_content_t:s0 59 Nov 9 11:21 images  
dr-xrwxr-x+ 2 root root system_u:object_r:httpd_sys_content_t:s0 4096 Nov 9 11:21 isolinux  
-r--rwxr--+ 1 root root system_u:object_r:httpd_sys_content_t:s0 103 Nov 9 11:22 media.repo  
drwxrwxr-x+ 2 root root unconfined_u:object_r:httpd_sys_content_t:s0 4096 Nov 9 22:50 repodata  
[root@rhel9-server ~]#
```

27. Verify whether packages are visible over **http**-



28. To verify repository at server side, install any package, ex- [vsftpd](#)

## At Client Side: -

### Method 1 (Configure Manually):

1. To configure yum at client, create a repo file & add content to point to apache yum server as shown-

```
[root@client1 ~]# vim /etc/yum.repos.d/local.repo
```

```
[LocalServerRepo]
name=LocalServerRepo
gpgcheck=0
enabled=1
baseurl=http://192.168.78.140/
```

2. Verify configuration-

```
[root@client1 ~]# yum repolist
repo id                                repo name
LocalServerRepo                        LocalServerRepo
[root@client1 ~]#
```

3. Try with installing a package using yum install.

### Method 2 (Configure Automatically)

1. Use [config manager](#) to setup it-

```
[root@system2 yum.repos.d]#
[root@system2 yum.repos.d]# dnf config-manager --add-repo http://192.168.78.140/
Adding repo from: http://192.168.78.140/
[root@system2 yum.repos.d]#
```

2. Verify it-

```
[root@system2 yum.repos.d]# ls
192.168.78.140_.repo
[root@system2 yum.repos.d]#
[root@system2 yum.repos.d]#
[root@system2 yum.repos.d]# cat 192.168.78.140_.repo
[192.168.78.140_]
name=created by dnf config-manager from http://192.168.78.140/
baseurl=http://192.168.78.140/
enabled=1
[root@system2 yum.repos.d]#
```

This is it!!!!