<Date>

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Local Repository for Isolated Networks

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# **YUM Repository**

* Server-side
  + Create a CentOS or RHEL server.
    - OS: CentOS 7 (Minimal Installation/CLI-only)
    - CPU: 1
    - NICs:
      * Internal – 192.168.88.5/24
      * External (Internet) - DHCP
    - Memory: 4
    - Storage: 1TB (Thin-provisioned)
    - Partitioning Scheme:
      * /boot = 1 GB
      * /boot/efi = 512 MB
        + File System = vfat
      * /tmp = 1 GB
      * /home = 1 GB
      * /var/log = 5 GB
      * /var/www/html/repos/base = 200GB
      * /var/www/html/repos/centosplus = 200GB
      * /var/www/html/repos/extras = 200GB
      * /var/www/html/repos/updates = 200GB
      * / = the rest
  + SSH to CentOS 7
  + Set static IPv4
    - This example is the internal NIC
    - Method 1:
      * **nmtui**
    - Method 2:
      * **sudo vi /etc/sysconfig/network-scripts/ifcfg-ens37**
        + *BOOTPROTO=”none”*
        + *PREFIX=”24”*
        + *IPADDR=”192.168.88.5”*
      * Reboot the service
        + **sudo systemctl restart network**
  + Set up static route
    - By default, the routing was not dynamically handled well so I had to create a static route to force all traffic through my Internet connection
    - **ip route**
    - **ip route add 0.0.0.0/0 via [Internet IP]**
  + Install prerequisite software
    - Online:
      * **sudo yum update -y**
      * **sudo yum install -y epel-release yum-utils createrepo**
      * **sudo yum install -y nginx**
    - Offline:
      * Download the packages from [*https://centos.pkgs.org/*](https://centos.pkgs.org/)
    - **yum localinstall \*.rpm -y --nogpgcheck --disablerepo=\* = local install**
  + Configure HTTPS for the web server
  + Adjust server’s binded address
    - Sudo vi /etc/nginx/nginx.conf
    - Find “listen 80 default\_server;”
    - Prepend “listen [internal IP]:80;”
    - Comment out other “listen \*” lines
    - Save
  + Enable the web server
    - **sudo systemctl start nginx**
    - **sudo systemctl enable nginx**
    - **sudo systemctl status nginx**
  + Curl to verify
    - Curl [internal IP]
      * Should see centOS default homepage
    - Curl [external IP]
      * Should see, “curl: (7) Failed to connect to [external IP]:80; Connection refused”
  + Configure firewall to allow the connections
    - **sudo firewall-cmd --zone=public --permanent --add-service=http**
    - **sudo firewall-cmd --zone=public --permanent --add-service=https**
    - **sudo firewall-cmd --reload**
  + Create directories for the downloads to be stored
    - **sudo mkdir -p /var/www/html/repos/{base,centosplus,extras,updates}**
  + Sync repositories to the directories we created
    - If you are not already, connect to the Internet
    - **sudo reposync -g -l -d -m --repoid=base --newest-only --download-metadata --download\_path=/var/www/html/repos/**
      * 10-20m; takes up ~10GB (du -shc /var/www/html/repos/\*)
    - **sudo reposync -g -l -d -m --repoid=centosplus --newest-only --download-metadata --download\_path=/var/www/html/repos/**
      * <15s; takes up <200MB
    - **sudo reposync -g -l -d -m --repoid=extras --newest-only --download-metadata --download\_path=/var/www/html/repos/**
      * <30s; takes up ~350MB
    - **sudo reposync -g -l -d -m --repoid=updates --newest-only --download-metadata --download\_path=/var/www/html/repos/**
      * <3m; takes up ~2GB
  + Create repodata for the local repositories
    - **sudo createrepo -g comps.xml /var/www/html/repos/base/** 
      * ~1m
    - **sudo createrepo -g comps.xml /var/www/html/repos/centosplus/**
      * If this fails, remove **-g comps.xml**. It depends if **reposync** was able to download one or not.
        + **sudo createrepo /var/www/html/repos/centosplus/**
    - **sudo createrepo -g comps.xml /var/www/html/repos/extras/**
      * If this fails, remove **-g comps.xml**.
    - **sudo createrepo -g comps.xml /var/www/html/repos/updates/**
      * If this fails, remove **-g comps.xml**.
  + Create a file to view the files via nginx
    - **sudo vi /etc/nginx/conf.d/repos.conf**
    - Add the following:

*server {*

*listen 192.168.1.1:80; # adjust to your internal IP*

*# listen 192.168.1.1:443; # for https*

*server\_name repos.test.lab; #change test.lab to your real domain*

*root /var/www/html/repos;*

*location / {*

*index index.php index.html index.htm;*

*autoindex on; #enable listing of directory index*

*}*

*}*

* + - Restart nginx
      * **sudo systemctl restart nginx**
  + Set up Cron Job to sync repos
    - Sudo vi /etc/cron.daily/update-localrepos
    - Add the following

#!/bin/bash

##specify all local repositories in a single variable

LOCAL\_REPOS='base centosplus extras updates'

##a loop to update repos one at a time

for REPO in ${LOCAL\_REPOS}; do

reposync -g -l -d -m --repoid=$REPO --newest-only --download-metadata --download\_path=/var/www/html/repos/

if [ $REPO = 'base' ]

then

createrepo -g comps.xml /var/www/html/repos/$REPO/

else

createrepo /var/www/html/repos/$REPO/

fi

done

* + - Set script permissions
      * **sudo chmod 755 /etc/cron.daily/update-localrepos**
    - Adjust the timing
      * **sudo vi /etc/anacrontab**
        + RANDOM\_DELAY=0
        + START\_hours\_range=16-4

6pm – 4am

* + - * + Cron.daily’s delay in minutes (2nd column) set to 0
    - Monitor */var/spool/anacron* for timestamps
      * You can test it via the following command
        + **sudo anacron -fn cron.daily**
  + Restore default SELinux context to allow client access
    - **sudo restorecon -R /var/www/html**
* Client-side
  + Add the repo
    - **sudo vi /etc/yum.repos.d/local-repos.repo**
    - Paste the following contents:

*[local-base]*

*name=CentOS Base*

*baseurl=http://192.168.88.5/base/*

*gpgcheck=0*

*enabled=1*

*[local-centosplus]*

*name=CentOS CentOSPlus*

*baseurl=http://192.168.88.5/centosplus/*

*gpgcheck=0*

*enabled=1*

*[local-extras]*

*name=CentOS Extras*

*baseurl=http://192.168.88.5/extras/*

*gpgcheck=0*

*enabled=1*

*[local-updates]*

*name=CentOS Updates*

*baseurl=http://192.168.88.5/updates/*

*gpgcheck=0*

*enabled=1*

* + - Verify they were added properly
      * **sudo yum repolist**
        + This will display all enabled repos
  + Disable other default repos
    - **sudo vi /etc/yum.repos.d/CentOS-Base.repo**
    - For base, extras, and updates, add the following:
      * *enabled=0*
* **sudo vi /etc/yum.repos.d/epel.repo**
  + For *[epel]*
    - *enabled=0*
    - Verify
      * **sudo yum repolist**
  + Disable default plugins
    - **sudo vi /etc/yum/pluginconf.d/langpacks.conf**
      * Set the following, *enabled=0*
    - **sudo vi /etc/yum/pluginconf.d/fastestmirror.conf**
      * *enabled=0*
  + Download
    - **sudo yum update -y**
      * **sudo yum upgrade -y**
        + **will purge superseded versions**

# References

https://www.tecmint.com/setup-local-http-yum-repository-on-centos-7/