CentOS 8 - After OS Installation (CentOS8/Win2019)

Introduction

The following steps are performed after OS installation, before a specific ROLE is configured.

Cloud Variants

Azure Cloud

For Azure Cloud installations, a user is specified when the VM is created. The root password remains hidden. It is, however, possible to change to root using the following command, using the user's own password:

```
sudo -s
```

Additionally, it is necessary to configure the network card(s) in a particular Zone. This is performed by editing the network configuration file(s):

```
vi /etc/sysconfig/network-scripts/ifcfg-eth0

... (add at end)

ZONE=public

...

service network restart
```

Make sure that **firewalld** is running and not iptables. The following commands are used to ensure this.

```
systemctl disable iptables
systemctl mask iptables
systemctl enable firewalld
systemctl start firewalld
```

System Update

Update the system to the newest patch release and install basic packages.

Note, if this fails due to a proxy server being present, skip this step and create the jtel user first. Then configure the proxy as shown here.

Note, as most machines require the mysql connector, it is installed directly here.

```
dnf -y update
dnf -y install tar nano unzip wget rsync sysstat nfs-utils cifs-utils nmap bind-utils tcpdump lsof tmux chrony virt-what policycoreutils-python-utils libaio
python2 dnf-plugin-versionlock rsyslog
dnf config-manager --disable mysql-connectors-community
dnf config-manager --disable mysql-tools-community
dnf -y module disable mysql
dnf -y install https://dev.mysql.com/get/mysql80-community-release-el8-1.noarch.rpm
dnf -y install mysql-community-client
```

If a new kernel is installed, then a reboot is required.

```
reboot
```

Mandatory Steps

jtel User

Create jtel User

Create the **jtel** user, and add to the group **wheel**, which allows the user to run commands with **sudo**.

CAUTION PASSWORD

```
useradd -m jtel
gpasswd -a jtel wheel
printf '<password>\n<password>\n' | passwd jtel
```

Configure wheel

The following command creates a configuration file allowing all users who are members of the wheel group to run commands as **root** with **sudo**.

```
cat <<EOFF > /etc/sudoers.d/wheelers
## Allows people in group wheel to run all commands
%wheel ALL=(ALL) ALL
EOFF
```

Warning when using git as root

The following command makes it (intentionally) more difficult to use git as the root user.

```
cat <<EOFF >> ~/.bashrc
alias git='printf "It looks like you are trying to run GIT as ROOT.\nFor jtel installations, GIT should always be run from the jtel user.\nIf you really want to
run git as root, you will need to access it directly, using /usr/bin/git for example.\n"'
EOFF
source ~/.bashrc
```

Configure Chrony (NTP)

Chrony is a newer (better) replacement for ntpd. It is configured in a similar way, however the commands used to check the synchronisation are slightly different.

For further information, check out this link: https://opensource.com/article/18/12/manage-ntp-chrony

Setup chronyd

The following commands modify the basic chrony.conf file to remove usage of the default pool and any configured servers, and replace this with the 3 (very reliable) time servers from the German PTB.

```
# Replace all existing servers
sed -i -e "s/^server /# server /" /etc/chrony.conf
# Replace pool setting
sed -i -e "s/^pool /# pool /" /etc/chrony.conf
# Add PTB Servers
cat << EOFF >> /etc/chrony.conf

# Servers to use
server ptbtime1.ptb.de iburst
server ptbtime2.ptb.de iburst
server ptbtime3.ptb.de iburst
EOFF

# Enable chronyd
systemctl enable chronyd

# Stop (just in case it was started), then start and get status
systemctl stop chronyd
systemctl start chronyd
```

Check chronyd

```
# Check the status of the service
systemctl status chronyd

# Check the sources it is using
chronyc sources
```

Remove Anacron, Install Cron

The jtel system requires that cron jobs are performed at a particular time. jtel servers will usually run continuously. The anacron service (which is installed by default) may run a cron job later if the machine has been powered off. However, on a jtel system there is no point doing this, and sometimes this can be destructive.

Therefore the anacron service is removed and replaced with the normal cron service.

```
dnf -y install cronie-noanacron
dnf -y remove cronie-anacron
```

Install Hypervisor Tools

The hypervisor tools make support from the hypervisor console better, when performing operations such as snapshots, starting and stopping and resetting the virtual machine. It is important that the correct tools are installed.

Note: you will not need to and should not do this in most cloud environments!

Detect the Hypervisor

```
virt-what
```

VMWare

The tools are installed as follows:

```
dnf -y install open-vm-tools
```

Hyper-V

Installing Hyper-V Tools

```
dnf -y install hyperv-daemons
```

KVM

Installing KVM (qemu) Guest Tools

```
dnf -y install qemu-guest-agent
systemctl enable qemu-guest-agent
systemctl start qemu-guest-agent
```

Other Hypervisors

Consult the manufacturer for further detals.

Hosts File

Prepare the hosts file. See here for further details: Hosts File - All OS (CentOS8/Win2019).

Optional Steps

SSH Keys

SSH keys can be added, to enable login to the jtel user via an ssh key.

SSH Keys

```
mkdir -p /home/jtel/.ssh
cat << EOFF > /home/jtel/.ssh/authorized_keys
ssh-rsa AAAAB3NzaC1yc2EAAAABJQAAAQEAgJWox9vkWssx24V6m+VB
/9cfFUznUnVJqHeSnQFcE+ANzH+lgv90jQYXRf8XLSaKA4HZGO7SFUwLz7eNHk0lIS+TG+WKGrjl3GRvzNoYVAapeKUV7HjbeagQPNOCKTr6G8Vi/GVMyOx8XhJAgpr5gjyW9GdMdqnOS9uxd83BCh
/UiAP9oVUbLiIIxbtmLAzyfJdjnbFP9sJXw96Vl040Fe4aoLofrkPyPu7cst6TPJx5myDhORG31nD/2iwUNLfv58m9ABMsePfhqzSp/Hi2XY
/e5gikDh3xUxoBmL9fWwbiFb92AFW08rP1CtoCEtOe2nJkdtRzt0GiE+A+zgdDjw== support@jtel.de
ssh-rsa AAAAB3NzaC1yc2EAAAABJQAAAQEAuP5DEZDI6/CITTqk8qburqDuKNj6jnQ9Zbjz6BO+5P8MlrS8KT7y56u/PSqdO3OzD58D2JS0yNvM5RbBGYDUD1ng7VSJLFLfErbuCzJ/Q+BSRaee+7MhLWXdVSc
/EY2B4qUcZGRL/NXHtAY/3KvSSU3wnhI4edLYMAzuxAhNEPRkmniq1CAuykDdHvm0kVQzaSShYDBQWIlbWIMG6jsCmMpZR7v+v6gKWeowQkM4T4XZ1f2K5zlQXd6FHGY8C
/+XICefum2qgQtqgjfQMoqIQbnmfKDGIHPvkas287tdCbU4y1lTsJbTiT7INkd6QbiVUayVxVwwoV+G2F7WofN4nw== root@jtel.de
ssh-rsa AAAAB3NzaC1yc2EAAAABJQAAAQEArTi8N08gDz1CvDriZNALa1tHky/1+QNP0WU43dI7hkn2zH7fz9bXAs32z7dRjfgxaYXWPmClcDLDb0xwjGfMXK0HABPtp0bxh
/58Y0QowBUJkcNi6hUphT+ArGkpjQb5CJcArnbLO727R8jJFgE1QpiWdehd5t3ec0wOL0NhnIE63S+DUm7+bQW6Z8Kmzl0+opGyoURLf8hxeAIUJwdeMFN7AIVPZlyuPobowwjGDXD9YpwXZ2oPtg6XISwW
/O1fsetzmGkgD4gedxJxjc5x5ByZX98UsNJORrG5R5slLqQTJkJzGBLpH8kC9WLIEW0RduVR2mrQzOBRgA92i5ZUFw== lewis.graham@jtel.de
ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAABAQC9W40vFohIPQsH6Q5Rfef7xiC4WRHOkMaMsUXxLCnTCDGI0PDib23NBUTevcnAc+OrCUITRmwngRbcItbR9QM1qNhzrwS8ZI00psZVVnBUwVVpX4UJtmX0CDrtVwH1yz51
/WnZVeS17JqoMjVMB3p+n1CjViwh6qlRTI/9F/KfaOfiLEiHnvcnmSq67R7o5wP65TR00xqA20E569M1lcdn43xL2GylkwHuWw+XcusKqf+lnaawFWhdZUTOuF3ZB+ssuEbXSyZEGtc5
/HNUG8rg9tutzAfq3fNWc5Y5pY+B048g4oDyAQpwMB7i9OwNNk1IEZA+rmqIImf7XLVKIsNn andrey.tsvetkov@jtel.de
ssh-rsa AAAAB3NzaC1yc2EAAAABJQAAAQEAkBiz9SsIXMO/a+7hCxNGQuQ4s
/gqUZ6pyxDxjpDTD+bewxumyhn5aITbBSuHpx0n05JL4nGGdROii54ATildm3Uhi8JSljGy5uv97Sw8Kpy0eO314tOLU3NkAe2YOH1aUeArne4bYPebKBq0r1oln1Gu2+TFvCmMqu3FmleMv1xvw
/waTwO57hSBPN83gOaJR7w6lOUp5HjYLSA0zRs1Os3g6ldQkHeGBknJ6jChqFXJHGl0KYzZGv3Q46fVTptS7NACxZs+ARUzJjbGjxnpHYK8rmSoTfoBS4qlN5+LxYKG341Hmq7cOsaISwUFbE
/CbFOqUtjBviI1c7RLgtGnJQ== serge.djomo@jtel.de
ssh-rsa AAAAB3NzaC1yc2EAAAABJQAAAQEAuh3ZLgQo2e9Uv1vAQxxCGxe9D3u8DWh4egeteUAPj4b7tOxQ6to3zAlGytUR9R6sANL
/CIP3nEA2d3r4km0FQWQ4QFCLTFjyXl0Kvsn1ahN8DljJ6mRlwtvN2r5mBIEy1ClGCh+Jvchzf4ZhXrWxOTYYO77O8wjj9Zbk0Y6wI2qBnE6TaxsRQ7Z61zTe80xfLPQLKjgQ
/5Hdk0z0HAx3jEsZRo9CqMLb44UD+6jVCih1JPMFcnUu0uxRQdOHrg243tqAUmuqICWompZNO75v3HjIIXOebxVGBXugrYc2xR1q964/EE0ZR7JMWM+HJ47V8WJKkE126n9ZElCqNGIR+Q== heidi.
mueller@jtel.de
ssh-rsa AAAAB3NzaC1yc2EAAAABJQAAAQEAilON3Cn1bZPBYtv67Bv63llD1KMTTH52/ioPLm+qYYDV80mSHSb+PHD9awXNKNv5iTecaQ
/a56CkK0z+KI5zvJb3EiRZaRe70cIqdflHmTcasVPVk1hAma5xc5UOCr+dKokqMQGwpDRrDvdS3atflQznvlR8+qoxPjlKC4KDx0GOUeSOIPBO6DdYGPlFX6ohMVRE7p
/vHIRAOfehmG1xFtfk+rGPmgiblPWWWklKYQUfMnHI0pqFJwrPW46nqdUlQwtknATZC2cuKe931zstFhuDsm218yS4hTTlcjw5i/DH7PFr9Y58BtY6ZTy8khwTUeMPpSxE7i2WYoqoJ7DXcw== sou@jtel.de
ssh-rsa AAAAB3NzaC1yc2EAAAABJQAAAQEA0czZLbpaxo/EY9iHDq9n6EWTALeYB7GVmp/mLwp66zeV4DbvTm+3FDUJSD9rqMJzJkAAEicFe+II/ZdIeZzG4JdYf66M
/Y6k0w0Y8jJqDtsdgUf3OJ1hJ53Z+BwFqy1vD
/a7N2hxlEKD2rzyAfVb+xzTzhJTjpX1kNiUxDMXRZs4ytW0CbOqZSpTJ3eT9NS9gH188KFTvHN8rPzDAxRKcexO2fSzNa7e+dYsfImOQoYlxFBX5YU74Ay9F5b7K95Cxe8EstvKNVmjkNWgnNWuS2d7eabepC1jv3z0
FdOGiVoZ1SDgqKz8ysBa6Rzkt5L5peHYAKyH8TedeUk7kRIwZQ== dhia@jtel.de
EOFF
restorecon -R -v /home/jtel/.ssh
chown -R jtel:jtel /home/jtel/.ssh
chmod 0700 /home/jtel/.ssh
chmod 0644 /home/jtel/.ssh/authorized_keys
```

Note, login by ssh key only must be enabled (this is not discussed here, and a word of caution - make sure you have recorded the root password before you do this so at least you can access the machine via the console).

Proxy Server

If a proxy server is used, the following commands will configure the proxy server for root and the jtel user. The top 5 lines should be modified.

CAUTION PASSWORD

```
PROXY_USERNAME=
PROXY_PASSWORD=
PROXY_SERVER=proxy.example.de
PROXY_PORT=3128
PROXY_EXCEPTIONS=.example.de,.local,10.

if [ -n "$PROXY_USERNAME" ] && [ -n "$PROXY_PASSWORD" ]
then
        PROXY="http://$USERNAME:$PASSWORD@$PROXY_SERVER:$PROXY_PORT"
elif [ -n "$PROXY_USERNAME" ]
then
        PROXY="http://$USERNAME@$PROXY_SERVER:$PROXY_PORT"
else
        PROXY="http://$PROXY_SERVER:$PROXY_PORT"
fi

cat <<EOFF >> ~/.bashrc
export ALL_PROXY=$PROXY
export HTTP_PROXY=$PROXY
export HTTPS_PROXY=$PROXY
export FTP_PROXY=$PROXY
export RSYNC_PROXY=$PROXY
export http_proxy=$PROXY
export https_proxy=$PROXY
export ftp_proxy=$PROXY
export rsync_proxy=$PROXY
export NO_PROXY=$PROXY_EXCEPTIONS
EOFF

cat <<EOFF >> /home/jtel/.bashrc
export ALL_PROXY=$PROXY
export HTTP_PROXY=$PROXY
export HTTPS_PROXY=$PROXY
export FTP_PROXY=$PROXY
export RSYNC_PROXY=$PROXY
export http_proxy=$PROXY
export https_proxy=$PROXY
export ftp_proxy=$PROXY
export rsync_proxy=$PROXY
export NO_PROXY=$PROXY_EXCEPTIONS
EOFF

source ~/.bashrc
```