Docker and Docker Compose v2 in Fedora CoreOS

Summary

If you prefer to use Docker over Podman in Fedora CoreOS, use the Butane file below to add the latest version of Docker and Docker Compose v2 to your system.

Details

Butane

```
variant: fcos
version: 1.4.0
passwd:
  users:
    - name: core
      ssh_authorized_keys:
        - ssh-[Your SSH key]
storage:
  files:
    - path: /etc/yum.repos.d/docker-ce.repo
      overwrite: true
      contents:
        inline: |
          [docker-ce-stable]
          name=Docker CE Stable - $basearch
          baseurl=https://download.docker.com/linux/fedora/$releasever/$basearch/stable
          enabled=1
          gpgcheck=1
```

```
          gpgkey=https://download.docker.com/linux/fedora/gpg
systemd:
  units:
    # Removing unofficial copies of docker and related packages
    - name: rpm-ostree-uninstall.service
      enabled: true
      contents: |
        [Unit]
        Description=Docker rpm-ostree install
        Wants=network-online.target
        After=network-online.target
        # We run before `zincati.service` to avoid conflicting rpm-ostree
        # transactions.
        Before=zincati.service
        ConditionPathExists=!/var/lib/%N.stamp

        [Service]
        Type=oneshot
        RemainAfterExit=yes
        ExecStart=/usr/bin/rpm-ostree override remove docker containerd runc
        ExecStart=/bin/touch /var/lib/%N.stamp

        [Install]
        WantedBy=multi-user.target
    # Installing Docker as a layered package with rpm-ostree
    - name: rpm-ostree-install.service
      enabled: true
      contents: |
        [Unit]
        Description=Docker rpm-ostree install
        Wants=network-online.target
        Requires=rpm-ostree-uninstall.service
        After=rpm-ostree-uninstall.service
        # We run before `zincati.service` to avoid conflicting rpm-ostree
        # transactions.
        Before=zincati.service
        ConditionPathExists=!/var/lib/%N.stamp

        [Service]
```

```
        Type=oneshot
        RemainAfterExit=yes
        ExecStart=/usr/bin/rpm-ostree install docker-ce docker-ce-cli containerd.io docker-
buildx-plugin docker-compose-plugin
        ExecStart=/bin/touch /var/lib/%N.stamp

        [Install]
        WantedBy=multi-user.target
```

Butane - Explanation

On line 7, add your SSH public key to be able to sign into your Fedore CoreOS machine. We add the Docker repository as a file. Then, we use some systemd trickery to remove docker, runc and containerd. These are installed by default in Fedora CoreOS, but conflict with the up-to-date versions of Docker, so we remove them. The next service waits for the uninstall service to complete, and installs docker per the Fedora installation guide here.

Your Fedora CoreOS system will reboot in 10 minutes after running these systemd services. It's unfortunately impossible to apply software removals live, so a restart is required. If you wish to restart sooner, you can run `systemctl reboot` manually.

Why?

Podman doesn't have the equivalent of Docker Compose. Per the suggestion of the Podman development team, we can simply use Docker Compose with a Podman backend. There needs to be some trickery done to support building images with a Podman backend, which can be seen here.

Overall, I found Podman to be more trouble than it's worth. As I worked with Podman for nearly a year, I ran into constant incompatibilities and oddities that had me searching for workarounds for things that should *just work.* Simply running the latest version of Docker and Docker Compose not only needs my needs, but is stable—I have yet to have any breaking changes due to automatic updates with Docker and Docker Compose v2.

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