Harvester's OS has an immutable design, which means most files in the OS revert to their pre-configured state after a reboot. The Harvester OS loads the pre-configured values of system components from configuration files during the boot time.

This page describes how to edit some of the most-requested Harvester configurations. To update a configuration, you must first update the runtime value in the system and then update configuration files to make the changes persistent between reboots.

:::note

If you upgrade from a version before `v1.1.2`, the `cloud-init` file in examples will be `/oem/99_custom.yaml`. Please substitute the value if needed.

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DNS servers

Runtime change

1. Log in to a Harvester node and become root. See how to log into a Harvester node for more details.
2. Edit `/etc/sysconfig/network/config` and update the following line. Use a space to separate DNS server addresses if there are multiple servers.

   ```
   NETCONFIG_DNS_STATIC_SERVERS="8.8.8.8 1.1.1.1"
   ```

3. Update and reload the configuration with the following command:

   ```
   netconfig update
   ```

4. Confirm the file `/etc/resolv.conf` contains the correct DNS servers with the `cat` command:

   ```
   cat /etc/resolv.conf
   ```

Configuration persistence

Beginning with v1.1.2, the persistent name of the cloud-init file is `/oem/90_custom.yaml`. Harvester now uses a newer version of Elemental, which creates the file during installation.

When upgrading from an earlier version to `v1.1.2` or later, Harvester retains the old file name (`/oem/99_custom.yaml`) to avoid confusion. You can manually rename the file to `/oem/90_custom.yaml` if necessary.

1. Backup the elemental `cloud-init` file `/oem/90_custom.yaml` as follows:

   ```
   cp /oem/90_custom.yaml /oem/install/90_custom.yaml.$(date --iso-8601=minutes)
   ```

2. Edit `/oem/90_custom.yaml` and update the value under the yaml path `stages.initramfs[0].commands`. The `commands` array must contain a line to manipulate the `NETCONFIG_DNS_STATIC_SERVERS` config. Add the line if the line doesn't exist.

   The following example adds a line to change the `NETCONFIG_DNS_STATIC_SERVERS` config:

```
stages:
  initramfs:
    - commands:
        - sed -i
's/^NETCONFIG_DNS_STATIC_SERVERS.*/NETCONFIG_DNS_STATIC_SERVERS="8.8.8.8
1.1.1.1"/' /etc/sysconfig/network/config
```

Replace the DNS server addresses and save the file. Harvester sets up new servers after rebooting.

NTP servers

We introduce the new mechanism for the NTP configuration in Harvester v1.2.0.

For more information about NTP settings in Harvester v1.2.0 and later versions, see the NTP servers.

Password of user `rancher`

Runtime change

1. Log in to a Harvester node as user `rancher`. See how to log into a Harvester node for more details.
2. To reset the password for the user `rancher`, run the command `passwd`.

Configuration persistence

1. Backup the elemental `cloud-init` file `/oem/90_custom.yaml` as follows:

   ```
   cp /oem/90_custom.yaml /oem/install/90_custom.yaml.$(date --iso-8601=minutes)
   ```

2. Edit `/oem/90_custom.yaml` and update the yaml path `stages.initramfs[0].users.rancher.passwd`. Refer to the configuration `os.password` for details on how to specify the password in an encrypted form.

Bonding slaves

You can update the slave interfaces of Harvester's management bonding interface `mgmt-bo`.

Runtime change

1. Log in to a Harvester node and become root. See how to log into a Harvester node for more details.
2. Identify the interface names with the following command:

   ```
   ip a
   ```

3. Edit `/etc/sysconfig/network/ifcfg-mgmt-bo` and update the lines associated with bonding slaves and bonding mode:

   ```
   BONDING_SLAVE_0='ens5'
   BONDING_SLAVE_1='ens6'
   BONDING_MODULE_OPTS='miimon=100 mode=balance-tlb '
   ```

4. Restart the network with the `wicked ifreload` command:

```
wicked ifreload mgmt-bo
```

:::caution

A mistake in the configuration may disrupt the SSH session.

:::

Configuration persistence

1. Backup the elemental cloud-init file `/oem/90_custom.yaml` as follows:

```
cp /oem/90_custom.yaml /oem/install/90_custom.yaml.$(date --iso-8601=minutes)
```

2. Edit `/oem/90_custom.yaml` and update the yaml path `stages.initramfs[0].files`. More specifically, update the content of the `/etc/sysconfig/network/ifcfg-mgmt-bo` file and edit the `BONDING_SLAVE_X` and `BONDING_MODULE_OPTS` entries accordingly:

```
stages:
  initramfs:
  - ...
    files:
    - path: /etc/sysconfig/network/ifcfg-mgmt-bo
      permissions: 384
      owner: 0
      group: 0
      content: |+
          STARTMODE='onboot'
          BONDING_MASTER='yes'
          BOOTPROTO='none'
          POST_UP_SCRIPT="wicked:setup_bond.sh"


          BONDING_SLAVE_0='ens5'
          BONDING_SLAVE_1='ens6'

          BONDING_MODULE_OPTS='miimon=100 mode=balance-tlb '

          DHCLIENT_SET_DEFAULT_ROUTE='no'

      encoding: ""
      ownerstring: ""
    - path: /etc/sysconfig/network/ifcfg-ens6
      permissions: 384
      owner: 0
      group: 0
      content: |
        STARTMODE='hotplug'
        BOOTPROTO='none'
      encoding: ""
      ownerstring: ""
```

:::note

If you didn't select an interface during installation, you must add an entry to initialize the interface. Please check the `/etc/sysconfig/network/ifcfg-ens6` file creation in the above example. The file name should be `/etc/sysconfig/network/ifcfg-<interface-name>` .

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