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Configure Static Management Address

Goal: Configure a Static Management Address

This guide details how to configure a LANforge system's management port with a static IP address.

By default, LANforge systems expect a DHCP-provided address, falling back to the `192.168.1.101/24` address when it doesn't receive a DHCP-provided address within roughly a minute of booting.

NetworkManager-based Setup

Use this approach for the following system types:

- Ubuntu
- Fedora 41+
- Debian 13+
- Raspbian (end of 2025?)

Configure Static IP

1. **Open terminal and login as root**

```
# If logged in as 'lanforge' or using VNC, run the following to become root
sudo -i
```

2. **Verify management connection is active**
   kinstall by default creates the management port connection with the name `mgt_dev`.

```
nmcli connection show | grep mgt_dev
```

3. **Modify management connection to use static IP configuration**
   Substitute desired IP address and subnet mask prefix.
   Include the prefix in with the system's new static IP (e.g. `192.168.1.101/24`)

```
# Shorthand is 'nmcli c m'
nmcli connection modify mgt_dev ipv4.method manual ipv4.addresses "10.0.0.10/24"
```

4. **Reset the interface or reboot**
   If you're SSH'ed or VNC'ed in, this will stop your connection

```
# Reset the interface
# Shorthand for this is 'nmcli c d mgt_dev'
nmcli connection down mgt_dev
nmcli connection up mgt_dev
```

Reset to DHCP Configuration

1. **Open terminal and login as root**

```
# If logged in as 'lanforge' or using VNC, run the following to become root
sudo -i
```

2. **Verify management connection is active**
   kinstall by default creates the management port connection with the name `mgt_dev`.

```
nmcli connection show | grep mgt_dev
```

3. **Modify management connection to use static IP configuration**

```
# Shorthand is 'nmcli c m'
nmcli connection modify mgt_dev ipv4.method auto ipv4.addresses ""
```

4. **Reset the interface or reboot**
   If you're SSH'ed or VNC'ed in, this will stop your connection

```
# Reset the interface
# Shorthand for this is 'nmcli c d mgt_dev'
nmcli connection down mgt_dev
nmcli connection up mgt_dev
```

Network Scripts-based Setup

Use this approach for the following system types:

- Pre-Fedora 41 LANforge systems (non-CT521-at7)

Configure Static IP

1. **Open terminal and login as root**

```
# If logged in as 'lanforge' or using VNC, run the following to become root
sudo -i
```

2. **Determine the management port MAC address**
   This is generally `eth0` unless non-default configuration is used. If using a CT521-at7, please see the dedicated CT521-at7 section here.

```
# This will output just the MAC address
ip -br link show dev eth0 | awk '{ print $3 }'
```

3. **Open the interface configuration file in desired text editor (e.g. `vim` or `nano`)**
   If the contents are empty or this creates a new file, please ensure the system operating system is not Fedora 41 or newer or Ubuntu with the `head -2 /etc/os-release` command.

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

4. **Set the following in the configuration file, substituting in required fields**
   Required fields include:
   `HWADDR`: Management port MAC address
   `IPADDR`: Static IP address
   `NETMASK`: Subnet mask for static IP network
   `GATEWAY`: Gateway IP address for static IP network
   If using non-default interface (i.e. not `eth0`), you'll also need to modify `NAME` as well. More information on these options can be found here.

```
# Modify as needed
NAME=eth0
HWADDR=00:CA:00:FE:00
IPADDR=172.16.0.101
NETMASK=255.255.255.0
```

```
GATEWAY=172.16.0.1
# This generally should not change
TYPE=Ethernet
BOOTPROTO=static
DEFROUTE=yes
ONBOOT=yes
IPV4_FAILURE_FATAL=no
```

5. **Reset interface or reboot**
   If you're SSH'ed or VNC'ed in, this will stop your connection

```
# Down the interface
ifdown eth0
# Up the interface
ifup eth0
```

Reset to DHCP Configuration

The following only applies to systems like the CT523c or CT521b with the management port as `eth0` (default management port).

1. **Open terminal and login as root**

```
# If logged in as 'lanforge' or using VNC, run the following to become root
sudo -i
```

2. **Run the following kinstall command**

```
# Assumes 'eth0' is management and associated udev rule properly configured
sudo ./lf_kinstall.pl --make_ifcfg_eth0
```

3. **Reset interface or reboot**
   If you're SSH'ed or VNC'ed in, this will stop your connection

```
# Down the interface
ifdown eth0
# Up the interface
ifup eth0
```

`/etc/network/interfaces` Setup

Use this approach for the following system types:

- CT521-at7 (Debian 12)
- Pre-Debian 13 systems

Configure Static IP

Much of this is taken from this forum post:
https://askubuntu.com/a/1228928

1. **Open terminal and login as root**

```
# If logged in as 'lanforge' or using VNC, run the following to become root
sudo -i
```

2. **Open `/etc/network/interfaces` in desired text editor (e.g. `vim` or `nano`)**
   There should be configuration already present here, but we'll overwrite this.
3. **Set the following in the configuration file, substituting in required fields**

Required fields include:
`address`: Static IP address
`netmask`: Subnet mask for static IP network
`gateway`: Gateway IP address for static IP network If using non-default interface (i.e. not `lan4`), you'll also need to modify the interface name as well. More information on these options can be found here.

```
iface lan4 inet static
  address 192.168.99.101
  netmask 255.255.255.0
  gateway 192.168.99.1
```

4. **Reset interface or reboot**
   If you're SSH'ed or VNC'ed in, this will stop your connection

```
systemctl restart networking
```

5. **Verify configuration**

```
systemctl status networking
```

Reset to DHCP Configuration

1. **Open terminal and login as root**

```
# If logged in as 'lanforge' or using VNC, run the following to become root
sudo -i
```

2. **Open `/etc/network/interfaces` in desired text editor (e.g. `vim` or `nano`)**
3. **Set the following in the configuration file, substituting in required fields** If using non-default interface (i.e. not `lan4`), you'll also need to modify the interface name as well. More information on these options can be found here.

```
iface lan4 inet dhcp
```