

## Installing Fedora with LANforge on mSATA

This guide is primarily intended to help restore mSATA images for the ct521 or the ct920 as they do not have video output. It goes through installing a LANforge disk image onto a mSATA drive via Linux or Windows, and then configuration of the LANforge system.

LANforge 5.3.7 on Fedora 27 was the most recent combination as of this writing.

### Suggested Items

We want to begin with:

- Your normally working desktop or laptop and an Internet Connection
- 30GB or larger mSATA drive
- USB3 mSATA drive adapter
- LANforge system with internet connectivity
- LANforge license

### Installation Steps

#### 1. Download image

Download the [f24-msata-28g-img.bz2](#) image. The username and password is guest/guest.

#### 2. Write image to mSATA.

After you've downloaded the disk image [f24-msata-28g-img.bz2](#) to your Downloads folder, you will plug in your mSATA USB adapter (with 30GB+ mSATA drive) and burn the image to it:

##### On Windows

Follow the below guide for installing the image using Windows.

[Writing Disk Images on Windows](#)

##### On Linux

- Connect the mSATA adapter with the mSATA drive to the Linux system.
- Open a terminal window
- To check the drive name of the mSATA, the last system messages should tell you: `dmesg | tail` You might see a message saying :

```
$ dmesg | tail
[ 46.705126] scsi 5:0:0:0: Direct-Access    ASMT      2115          0    PQ: 0 ANSI: 6
[ 46.720670] sd 5:0:0:0: Attached scsi generic sg1 type 0
[ 46.726785] sd 5:0:0:0: [sdc] 58626288 512-byte logical blocks: (30.0 GB/28.0 GiB)
[ 46.728255] sd 5:0:0:0: [sdc] Write Protect is off
[ 46.728260] sd 5:0:0:0: [sdc] Mode Sense: 43 00 00 00
[ 46.728975] sd 5:0:0:0: [sdc] Write cache: enabled, read cache: enabled, doesn't support DPO or
[ 46.733389]   sdc: sdc1 sdc2
[ 46.740492] sd 5:0:0:0: [sdc] Attached SCSI disk
```

Or you might use the command `lsblk` which will list all your drives.

```
$ lsblk
NAME                                MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sdc                                  8:32   0   28G  0 disk
├─sdc2                               8:34   0   27.5G  0 part
│ └─fedora-root                       252:4   0   24.7G  0 lvm
```

```

└─┬ fedora-swap                252:3    0    2.8G    0 lvm
  └─┬ sdc1                    8:33    0    500M    0 part
    sda                        8:0     0   111.8G    0 disk
    └─┬ sda2                  8:2     0   111.3G    0 part
      └─┬ fedora_brent--521--2-swap 252:1    0    7.6G    0 lvm [SWAP]
        └─┬ fedora_brent--521--2-home 252:2    0   53.7G    0 lvm /home
          └─┬ fedora_brent--521--2-root 252:0    0    50G    0 lvm /
            sda1                8:1     0    500M    0 part /boot

```

For this example, we'll assume your mSATA drive is `/dev/sdc`

- You can use the `dd` utility on the command line. **Make sure to replace `/dev/sdc` with your device!**

```

$ cd ~/Downloads
$ sudo bzcat f24-msata-28g-img.bz2 | dd of=/dev/sdc

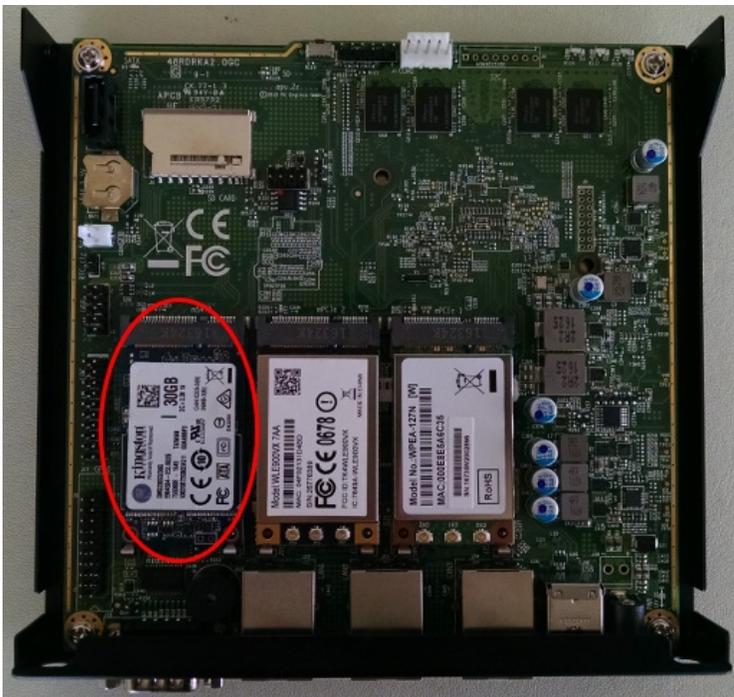
```

**Note:** This command can take a while to run (roughly 20-25 minutes on USB 3.0 or 1-2 hours on USB 2.0).

### 3. Connect mSATA drive.

Remove the mSATA drive from the USB adapter and place it into the desired system.

**Note:** The system will not function correctly if you try to boot off the mSATA while it is in the USB adapter.



The above picture is from a `ct521` system.

### 4. Configure LANforge

Connect to the LANforge system via serial connection and log in.

- User/Password: `root/lanforge`

Configure the LANforge system for internet access.

- Make sure just one ethernet cable is plugged in. For the `ct521` system, use the leftmost port.
- Use the command `ip l show`. One port should show 'UP' as seen below.

```

2: enp2s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP mode DE0
    link/ether 00:0d:b9:44:6f:40 brd ff:ff:ff:ff:ff:ff

```

- Use the command `dhclient portname` where `portname` is the port found above.  
Example: `dhclient enp2s0`
- Verify an IP was obtained with `ifconfig portname`.  
Example: `ifconfig enp2s0`

Update the system and reboot.

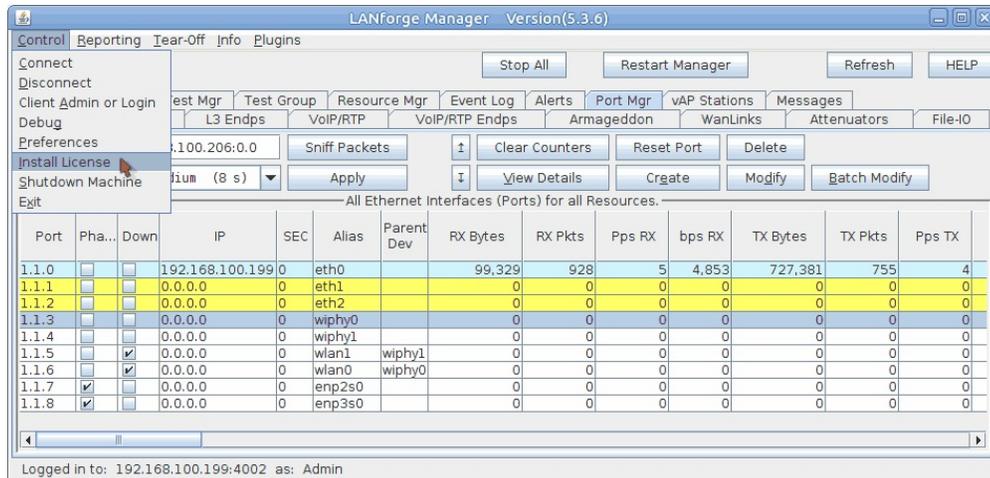
- `dnf update -y`
- `reboot`
- After rebooting you will need to run `dhclient` again to get an IP.  
`dhclient enp2s0`

Run the `lf_install` script to configure LANforge software.

- In the serial terminal, copy and paste the below command.  
`/root/lf_install.pl --lfver 5.3.6 --kver 4.9.27+ --do_all_ct --do_sys_reconfig`
- Reboot the system after `lf_install` completes: `reboot`
- Run `lf_install` again with `do_grub` option. This makes kernel options show up on boot.  
**Note:** The options should normally show up on the first `lf_install`. We are currently looking into this.  
`/root/lf_install.pl --lfver 5.3.6 --kver 4.9.27+ --do_grub`
- Reboot the system once more: `reboot`

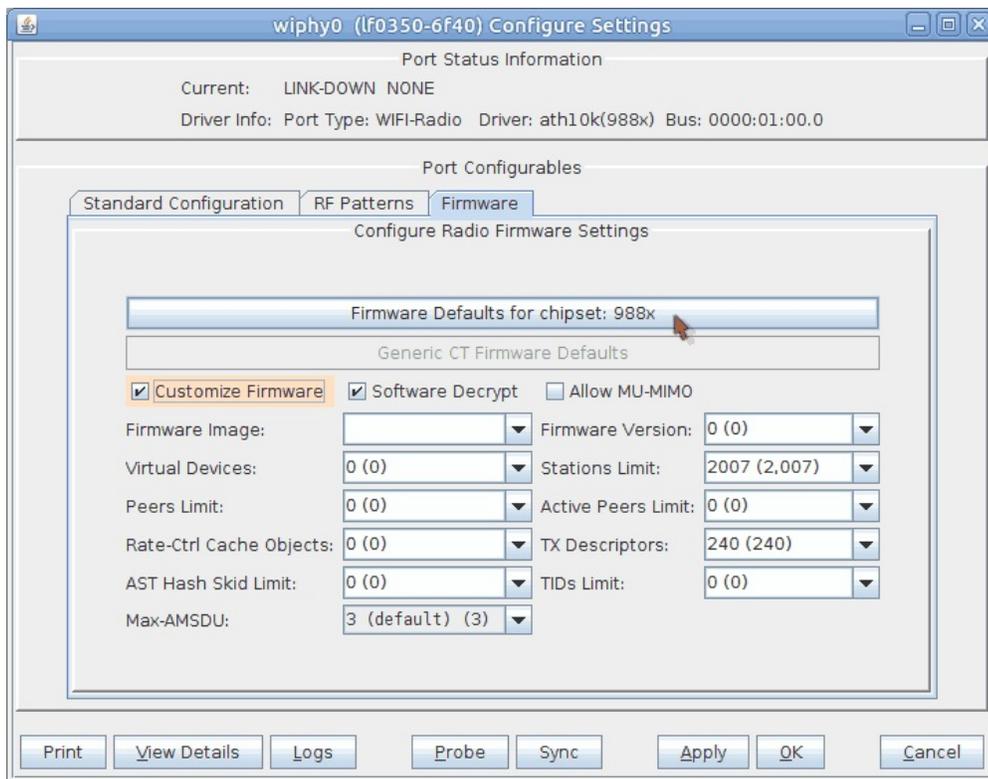
Install the LANforge license.

- The license can be installed via the management GUI under the Control->Install License file menu.



Set firmware for ath10k radios (skip this step if there are no ath10k radios).

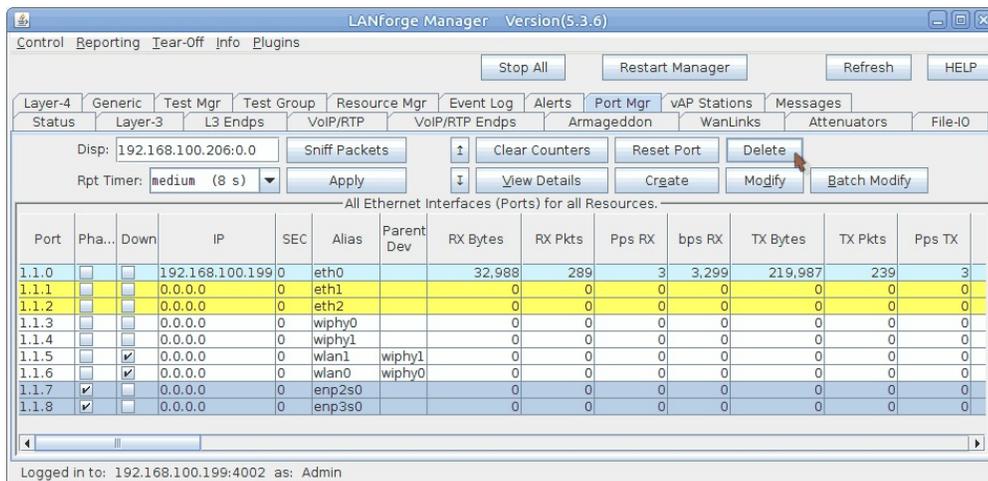
- In the management GUI's **Port Mgr** tab, Modify the wiphy port of the ath10k radio(s).
- In the firmware tab, click **Customize Firmware** and then **Firmware Defaults for chipset: 988x**.



- Click **Apply** and close the window.

Delete Phantom ports.

- There are likely to be some phantom ports in the **Port Mgr** tab such as enp2s0 and enp3s0. These can be deleted as they are just remnants of ports that have been renamed.



All set up! If you have any questions or comments, please contact us at [support@candelatech.com](mailto:support@candelatech.com).

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