

Swap space expansion

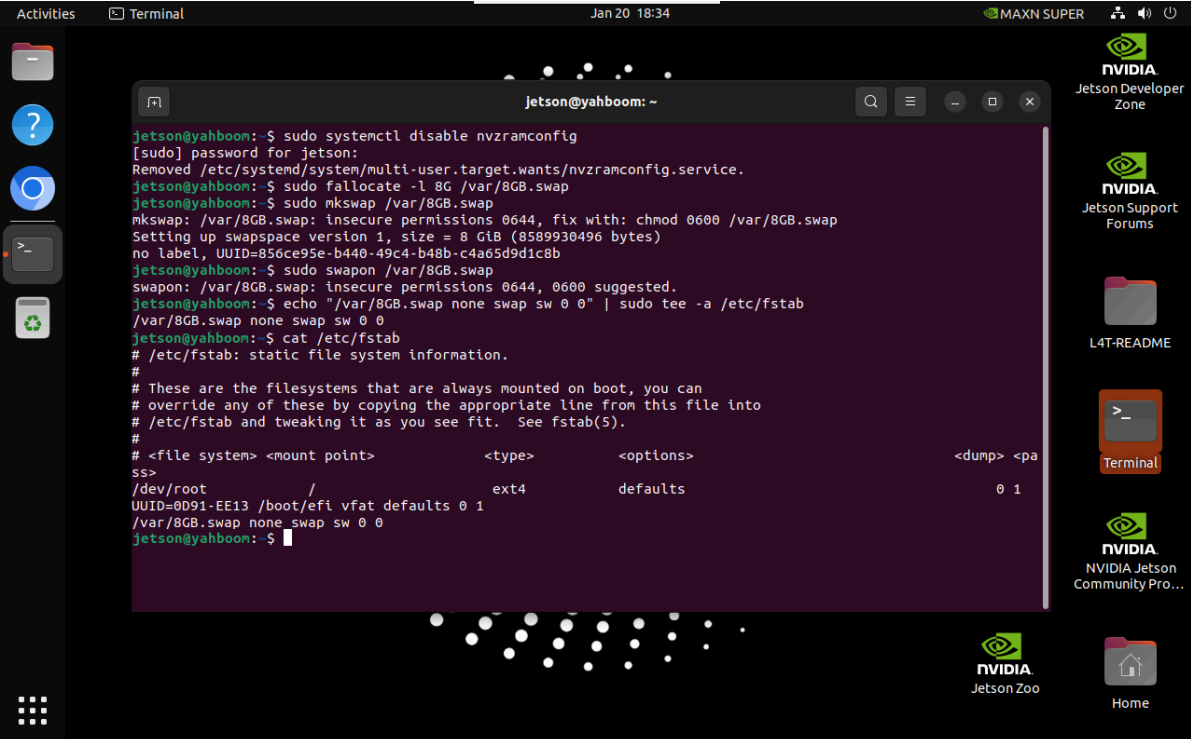
1. Swap space

Swap space is a mechanism used by the operating system to expand available memory. It can continue to run when there is insufficient memory, avoiding program crashes or system freezes!

Note: The access speed of swap space is much lower than that of physical memory. The system comes with 7.6G swap space when it leaves the factory.

2. Swap space expansion

```
sudo systemctl disable nvzramconfig
sudo fallocate -l 8G /var/8GB.swap
sudo mkswap /var/8GB.swap
sudo swapon /var/8GB.swap
echo "/var/8GB.swap none swap sw 0 0" | sudo tee -a /etc/fstab
```

A screenshot of a terminal window on a Jetson device. The terminal shows the following commands and their output:
1. `sudo systemctl disable nvzramconfig`: Output shows the service being disabled.
2. `sudo fallocate -l 8G /var/8GB.swap`: Command executed successfully.
3. `sudo mkswap /var/8GB.swap`: Output shows the setup of swap space version 1, size 8 GiB (8589930496 bytes).
4. `sudo swapon /var/8GB.swap`: Output shows the swap space being activated.
5. `echo "/var/8GB.swap none swap sw 0 0" | sudo tee -a /etc/fstab`: Command executed successfully.
6. `cat /etc/fstab`: Output shows the contents of the /etc/fstab file, including the newly added swap space entry.
The terminal window is titled "Jetson@yahboom: ~" and the desktop background shows the NVIDIA Jetson Developer Zone logo and other icons.

2.1. Disable ZRAM swap configuration

Disable ZRAM swap configuration on Jetson devices: ZRAM compresses and stores memory pages in memory to reduce reliance on disk.

```
sudo systemctl disable nvzramconfig
```

2.2, Create 8GB file

Use `fallocate` to create a file of 8GB in size, located in the `/var/8GB.swap` path.

```
sudo fallocate -l 8G /var/8GB.swap
```

2.3. Set the swap space format

```
sudo mkswap /var/8GB.swap
```

2.4. Enable swap space

```
sudo swapon /var/8GB.swap
```

2.5. Permanently start swap space

```
echo "/var/8GB.swap none swap sw 0 0" | sudo tee -a /etc/fstab
```

3. Verify the expansion

After restarting the system, the system swap space increased to 15.6GB:

The screenshot shows a terminal window titled 'jtop MAXN SUPER|CPU 4.3%|GPU 0.0%' running on a Jetson Orin NX. The terminal output includes the following information:

- Model:** NVIDIA Jetson Orin NX Engineering Reference Developer Kit Super - Jetpack 6.2 [L4T 36]
- Mem:** 1.6G/15.3G
- SWP:** 0k/15.6G
- GPU:** 0.0% 1.2GHz
- Dsk:** 28.2G/232G
- Process List:**

PID	USER	GPU	TYPE	PRI	S	CPU%	MEM	[GPU MEM]	Command
2806	jetson	I	G	20	S	6.9	80.0M	60.4M	gnome-shell
2653	jetson	I	G	20	S	0.8	12.4M	37.2M	Xorg
2757	jetson	I	G	20	S	3.1	15.0M	2.9M	gnome-remote-de
2950	jetson	I	G	20	S	0.0	11.1M	1.5M	xdg-desktop-por

Below the process list, there are sections for hardware engines, sensors, temperatures, and power usage:

- [HW engines]**: APE: [OFF], PVA0a: [OFF], DLA0c: [OFF], DLA1c: [OFF], NVENC: [OFF], NVDEC: [OFF], NVJPG: [OFF], NVJPG1: [OFF], SE: [OFF], VIC: [OFF]
- [Sensor]**: cpu, cv0, cv1, cv2, gpu, soc0, soc1, soc2, tj
- [Temp]**: 55.00C, 51.38C, 51.22C, 46.66C, 52.56C, 51.81C, 49.97C, 49.53C, 55.00C
- [Power]**: CPU 2.9W, GPU 2.9W, SOC 3.0W, VDD_IN 9.6W

The terminal also shows a sidebar on the left with icons for Activities, Terminal, and other system utilities. The desktop background is the NVIDIA Jetson Developer Zone, with various icons and a sidebar on the right.