

Troubleshoot Error "START_BACKING_THREAD:BIND: no SPACE LEFT" on Device NCS1K 7.3.2

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Introduction

This document describes how to troubleshoot and clear the "START_BACKING_THREAD:BIND: no SPACE LEFT" error in NCS1K.

Problem Description

Observing start_backing_thread:bind: No space left on the device unable to monitor alarms in the device (rootfs is filled 100%). PM logs collection in rootfs directory and filling it up. Version: XR 7.3.2

Observations and Actions Performed

- Command `<show alarms b s a>` output is not displayed and observed error "start_backing_thread:bind: No space left on device" and rootfs is fully occupied.
- Rootfs is filled 100%.

```
RP/0/RP0/CPU0:MUMNGD-MCD-O-NK4-01#sh media
```

```
Fri Jun 16 10:03:40.694 IST
```

```
start_backing_thread:bind: No space left on device
```

```
start_backing_thread:bind: No space left on device
```

```
Media Info for Location: node0_RP0_CPU0
```

Partition	Size	Used	Percent	Avail
rootfs:	3.9G	3.9G	100%	0
apphost:	24G	377M	2%	22G
harddisk:	5.8G	154M	3%	5.4G
log:	2.9G	122M	5%	2.7G
config:	976M	2.7M	1%	907M
disk0:	2.4G	5.9M	1%	2.3G
/cpu-dr-backup	9.3G	1.7G	20%	7.2G
/misc/disk2	9.3G	22M	1%	8.8G
/mb-dr-backup	24G	350M	2%	22G

Show Media Output

```
-rw-r--r--. 1 root root 0 Jun 1 06:00 optics2023-06-01 06:00:04.231102-pm.txt
-rw-r--r--. 1 root root 0 Jun 2 09:00 optics2023-06-02 09:00:04.533167-pm.txt
-rw-r--r--. 1 root root 0 Jun 2 09:00 codsp2023-06-02 09:00:04.533167-pm.txt
-rw-r--r--. 1 root root 0 Jun 2 17:00 optics2023-06-02 17:00:04.445199-pm.txt
-rw-r--r--. 1 root root 0 Jun 2 17:00 codsp2023-06-02 17:00:04.445199-pm.txt
-rw-r--r--. 1 root root 0 Jun 3 03:00 optics2023-06-03 03:00:04.270758-pm.txt
-rw-r--r--. 1 root root 0 Jun 3 03:00 codsp2023-06-03 03:00:04.270758-pm.txt
-rw-r--r--. 1 root root 0 Jun 4 05:00 optics2023-06-04 05:00:05.110624-pm.txt
-rw-r--r--. 1 root root 0 Jun 4 20:00 optics2023-06-04 20:00:04.596242-pm.txt
-rw-r--r--. 1 root root 0 Jun 5 04:00 optics2023-06-05 04:00:04.548714-pm.txt
-rw-r--r--. 1 root root 0 Jun 6 00:00 optics2023-06-06 00:00:04.604108-pm.txt
-rw-r--r--. 1 root root 0 Jun 6 00:00 codsp2023-06-06 00:00:04.604108-pm.txt
-rw-r--r--. 1 root root 0 Jun 6 11:00 optics2023-06-06 11:00:04.500239-pm.txt
-rw-r--r--. 1 root root 0 Jun 6 22:00 optics2023-06-06 22:00:04.876125-pm.txt
-rw-r--r--. 1 root root 0 Jun 8 13:00 optics2023-06-08 13:00:04.201333-pm.txt
-rw-r--r--. 1 root root 0 Jun 9 06:00 optics2023-06-09 06:00:05.140655-pm.txt
-rw-r--r--. 1 root root 0 Jun 10 00:00 optics2023-06-10 00:00:05.135763-pm.txt
-rw-r--r--. 1 root root 0 Jun 10 05:00 optics2023-06-10 05:00:04.818213-pm.txt
-rw-r--r--. 1 root root 0 Jun 10 05:00 codsp2023-06-10 05:00:04.818213-pm.txt
-rw-r--r--. 1 root root 0 Jun 10 14:00 optics2023-06-10 14:00:04.316209-pm.txt
-rw-r--r--. 1 root root 0 Jun 10 15:00 optics2023-06-10 15:00:04.772946-pm.txt
-rw-r--r--. 1 root root 0 Jun 10 22:00 optics2023-06-10 22:00:04.378211-pm.txt
-rw-r--r--. 1 root root 0 Jun 11 22:00 optics2023-06-11 22:00:05.017250-pm.txt
-rw-r--r--. 1 root root 0 Jun 12 05:00 optics2023-06-12 05:00:04.738735-pm.txt
-rw-r--r--. 1 root root 0 Jun 13 01:00 optics2023-06-13 01:00:04.821854-pm.txt
-rw-r--r--. 1 root root 0 Jun 13 20:00 optics2023-06-13 20:00:04.245104-pm.txt
-rw-r--r--. 1 root root 0 Jun 14 11:00 optics2023-06-14 11:00:04.385907-pm.txt
```

- Pm log files are filled in rootfs directory.

PM logs stored in rootfs

Procedure to Delete PM Files

This command displays all the files in the root directory.

```
<#root>
```

```
RP/0/RP0/CPU0:MUMNGD-MCD-O-NK4-01#
```

```
run
```

```
[xr-vm_node0_RP0_CPU0:~]$
```

```
cd /root
```

```
[xr-vm_node0_RP0_CPU0:/root]$ls -ltrah
```

This command deletes the file from the directory.

```
rm "filename" ----à
```

Verify the size of rootfs using `show media` command.

```
<#root>
```

```
RP/0/RP0/CPU0:MUMNGD-MCD-0-NK4-01#
```

```
show media
```

- It is important to know why auto deletion did not occur in the system.
- It is identified there is a Python script enabled for automatic log collection every 1 hour in rootfs.
- The pm log generation is not done by the device by default, It is configured manually. Hence, this auto-deletion also needs to be done manually.
- Need to verify the source from where the pm log files are being stored in rootfs to kill this process.
- It is found that some Python scripts are running in the background to collect pm logs in rootfs in 2 nodes out of 4 ncs1k4 nodes in their network.
- These were added during deployment time.

```
[xr-vm_node0_RP0_CPU0:~]$
[xr-vm_node0_RP0_CPU0:~]$cd /harddisk\:/
[xr-vm_node0_RP0_CPU0:/harddisk:]$ls
cisco_support  nvgen_bkup.log  rdsfs_log  tftpboot
dumper         nvgen_traces   rpm_4253.by.7.20230610-220410.xr-vm_node0_RP0_CPU0.9f3ab.core.gz  trusted_store
ima           nvram          rpm_4253.by.7.20230610-220410.xr-vm_node0_RP0_CPU0.9f3ab.core.txt  ztp
lost+found    pam            showtech
mirror        pm_data       shutdown
[xr-vm_node0_RP0_CPU0:/harddisk:]$cd pm_data/
[xr-vm_node0_RP0_CPU0:/harddisk:/pm_data]$ls
codsp2022-08-02 20:04:46.311906-pm.txt  ether2022-08-03 23:54:09.956432-pm.txt  optics2022-08-02 20:04:46.311906-pm.txt
codsp2022-08-03 23:54:09.956432-pm.txt  final-pm-preethi.py  optics2022-08-03 23:54:09.956432-pm.txt
ether2022-08-02 20:04:46.311906-pm.txt  final-pm.py  prefec.py
[xr-vm_node0_RP0_CPU0:/harddisk:/pm_data]$ls -ltr
total 18244
-rwxr-xr-x. 1 root root 5391 Aug 1 2022 prefec.py
-rwxr-xr-x. 1 root root 11527 Aug 1 2022 final-pm.py
-rwxr-xr-x. 1 root root 11527 Aug 2 2022 final-pm-preethi.py
-rw-r--r--. 1 root root 5836800 Aug 2 2022 ether2022-08-02 20:04:46.311906-pm.txt
-rw-r--r--. 1 root root 598016 Aug 2 2022 codsp2022-08-02 20:04:46.311906-pm.txt
-rw-r--r--. 1 root root 2912256 Aug 2 2022 optics2022-08-02 20:04:46.311906-pm.txt
-rw-r--r--. 1 root root 5836800 Aug 3 2022 ether2022-08-03 23:54:09.956432-pm.txt
-rw-r--r--. 1 root root 598016 Aug 3 2022 codsp2022-08-03 23:54:09.956432-pm.txt
-rw-r--r--. 1 root root 2867200 Aug 4 2022 optics2022-08-03 23:54:09.956432-pm.txt
[xr-vm_node0_RP0_CPU0:/harddisk:/pm_data]$
```

Hard Disk Files

To kill the Python process, use the `reload` command in XR.

Resolution:

To terminate these Python processes, you need to `XR RELOAD` on the nodes.

XR RELOAD - Command reloads the VM.

RP/0/RP0/CPU0:MUMNGD-MCD-0-NK4-01#reload (Reloads the VM.)

Reloading does not impact service but you must lose management visibility for around 5-10 mins. You can also clean up the pm-related files using `rm` command:

```
<rm -rf "/misc/disk1/pm_data">
```

```
<rm -rf "/root/*pm.txt">
```

```
<rm -rf "/root/PM-data*>
```

```
<rm -rf *2022.tgz (deletes all the files ending with 2022.tgz)>
```

Similarly, you can delete files that are not needed.