Extreme Search® Manual

Version 2024.10

https://lewis-rhodes.com

support@lewis-rhodes.com

5 Common Issues

5.1 Backends Not Up

The backends need to be up for search to run. When the backends are up, running `npusearch_check` will look something like this:

```
lrl_admin@guava:~$ npusearch_check
[
  "npusearch:request:guava-0-1710520177",
  "npusearch:request:guava-1-1710520177",
```

```
     "npusearch:request:guava-10-1710520177",
     "npusearch:request:guava-11-1710520177",
     "npusearch:request:guava-12-1710520177",
     "npusearch:request:guava-13-1710520177",
     "npusearch:request:guava-14-1710520177",
     "npusearch:request:guava-15-1710520177",
     "npusearch:request:guava-2-1710520177",
     "npusearch:request:guava-3-1710520177",
     "npusearch:request:guava-4-1710520177",
     "npusearch:request:guava-5-1710520177",
     "npusearch:request:guava-6-1710520177",
     "npusearch:request:guava-7-1710520177",
     "npusearch:request:guava-8-1710520177",
     "npusearch:request:guava-9-1710520177"
]
```

When the backend are down, you will see this:

```
lrl_admin@guava:~$ npusearch_check
[]
```

Here are some steps to try to bring the backends up when they are down:

5.1.1 Restart using systemctl

Run `sudo systemctl restart npusearch.service`. Wait about 15 seconds, then try `npusearch_check` again.

5.1.2 Check status using systemctl

Run `sudo systemctl status npusearch.service`.

- If the last thing it prints is that it's satisfying a license, it got stuck during the startup process. If your device has SmartSSDs, try `sudo systemctl restart mpd.service`.
- If it says "Failed to start NPUSearch search backends." and your device has SmartSSDs, try `sudo systemctl restart mpd.service`. If your device has Kuona cards, try `sudo insmod npusearch`. If that errors, try `sudo dpkg-reconfigure npusearch`.

Repeat step 1.1.

5.1.3 Check log messages

In `/opt/lrl/etc/npusearch.conf` the line `export LOGFILE=path/to/logfile` will be where NPUSearch is writing logs. If the line is commented out, un-comment it and set a path for a log file to be written to. Run steps 1 and 2 again and then read the logs to see where the issues may be.

5.2 Search performance is lower than expected

This is commonly caused by the SSDs overheating and throttling.

- Double check to make sure the fan speed is turned up to minimum 100% on your server management platform. Check that the inlet air temperature into the server is not too hot. If anything is changed at this step, run the tests again.
- Inspect the `ssd_nvme_smart_log_data.ndjson` file to see how hot the SSDs are getting. Each line of that file is a `nvme smart-log` output for each SSD at a given timestamp. The

thermal test will fail if any SSD reaches 349 Kelvin, but some SSDs will throttle performance before getting that hot. If desired, send the `ssd_nvme_smart_log_data.ndjson` and `npusearch_install.log` files to support@lewis-rhodes.com. LRL can do detailed analysis to help determine if throttling is happening.

Another cause could be low CPU clock speed. Although running scans uses few CPU cores, the CPUs need to be clocking at their normal, fast speeds. If they are not, latency drops and bandwidth as well. Ensure your CPUs are running at high frequencies.