ADVANCED USE CASE

Using nvmecmd to run Self-Test

www.epicutils.com

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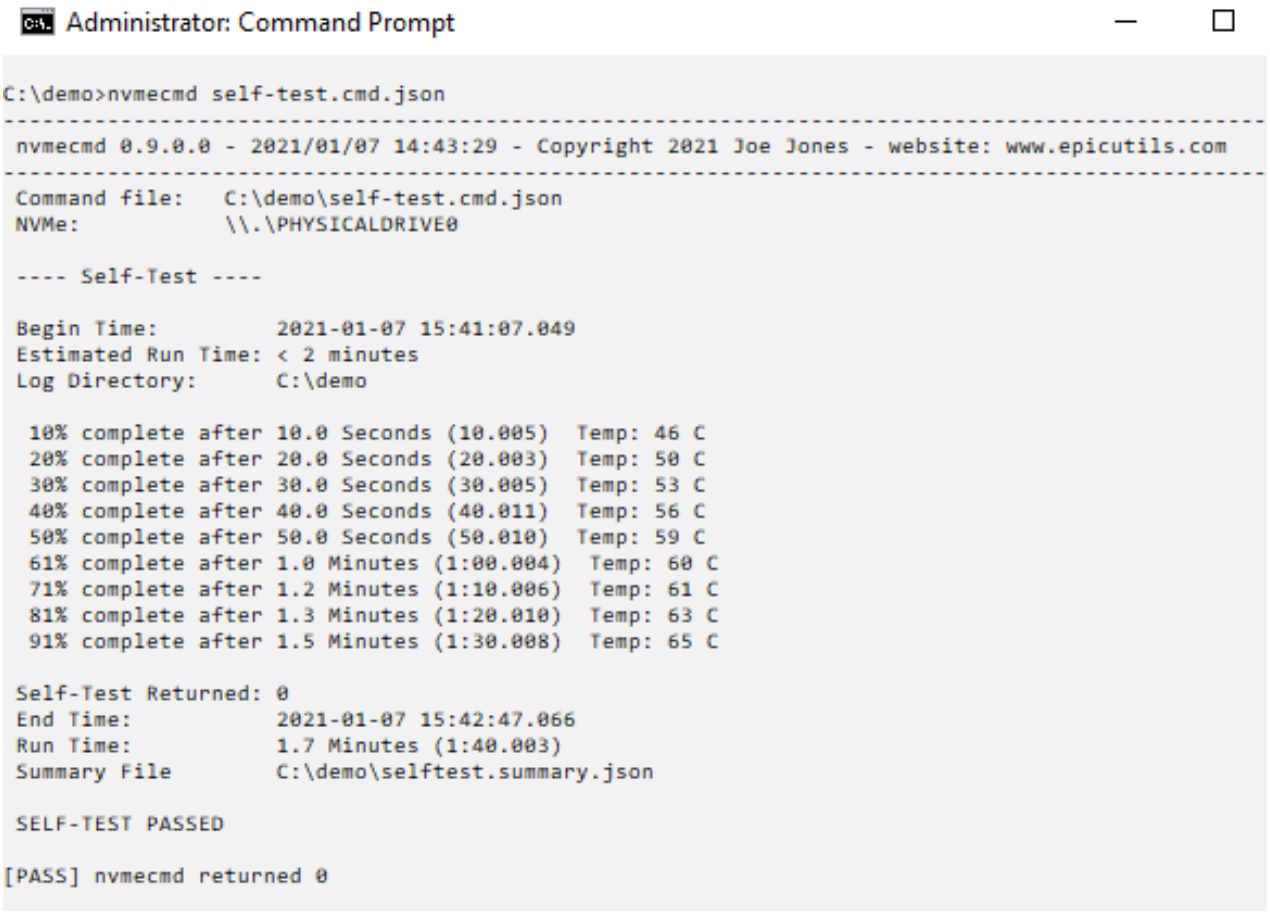
Overview

The nvmecmd command line utility can run short and extended self-tests. The short self-test is run with the following command (this command must be run with administrator privileges):

nvmecmd self-test.cmd.json

This command returns 0 if the self-test passes and non-zero if not.

The example output below shows a short self-test that passes.



The estimated run time for a short self-test is specified in the NVMe specification as 2 minutes or less. At the end of the test the run time is displayed so the user can compare against the estimated time.

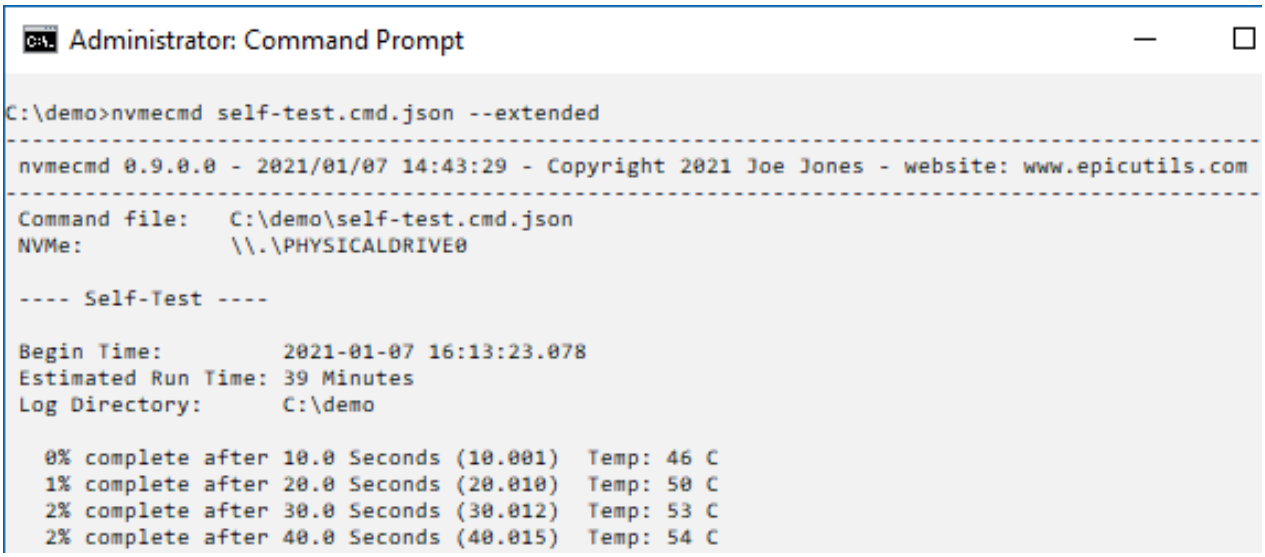
During the self-test the utility reads logs page 6 to update the progress and log page 2 to get SMART information. The utility verifies the progress doesn't decrease during the self- test the result in log page 6.

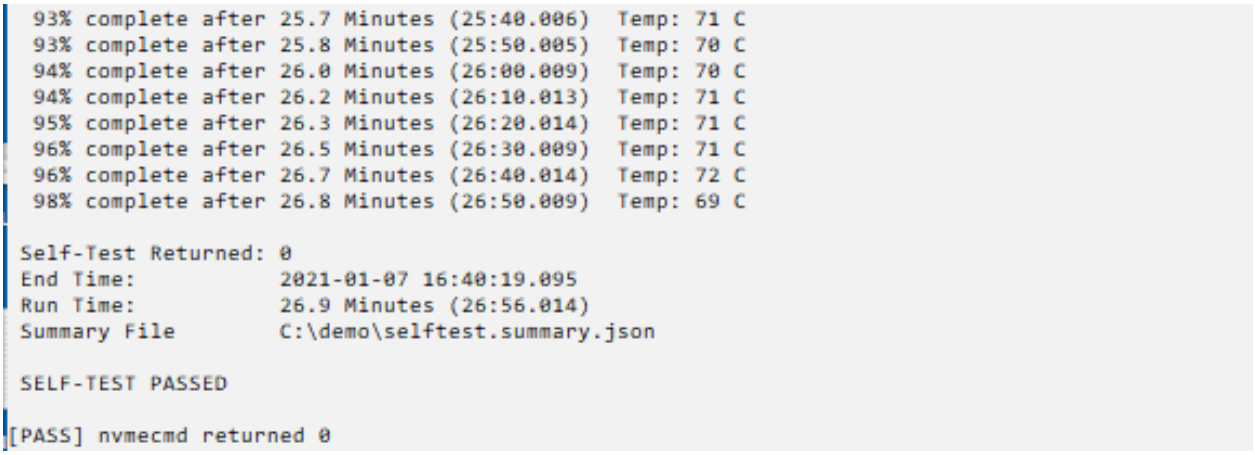
From the output above the user can check if the progress reported from log page 6 is monotonic and linear.

To run the extended self-test add the –extended command line parameter as shown here:

nvmecmd self-test.cmd.json --extended

Below is sample output from an extended self-test. The estimated run time for extended tests is from the EDSTT parameter read using the Identify Controller command.





Self-Test Command File

The self-test command file is a simple json file as shown below. For more information refer to the nvmecmd User Guide.

```
{
  "cmd type": "self-test",
  "short description": "Self-Test",
  "display sample interval in sec": 10,
  "extended self-test": false,
  "read command times": true,
  "read smart data": true,
  "abort time": 0,
  "high priority": false,
  "high resolution timer": false
}
```


References

NVMe specification https://nvmexpress.org/developers/nvme-specification/

Nvmecmd User Guide (Included with NVMe Info application) http://www.epicutils.com

User Guide provided with NVME Info application located in the Documentation folder of the install path for NVMe Info.