



HPT-Accelerate User Guide

V1.06 – August 13, 2024

Copyright 2024 HighPoint Technologies, Inc.

All rights reserved

Contents

Overview	2
Prerequisites	3
Instructions for use	3
Contacting Technical Support	5

Overview

The HPT-Accelerate contains a **Linux** shell program. You can use it to accelerate the performance of HighPoint RAID devices by binding CPU cores.

It can bind a specified number of CPU cores on a single CPU to the HighPoint RAID device to reduce losses and optimize performance. It can only accelerate operations that are running or about to start running on the HighPoint RAID devices.

This guide describes how to use the software to test the performance of these products.

Supported Controller	SSD7540 SSD7505 SSD7502 SSD7580A SSD7580B SSD7120 SSD7180 SSD7184 SSD7101A-1 SSD7104 SSD7104F SSD7140A SSD7204 SSD7749E SSD7749M SSD7749M2 RocketAIC 7749EW Series RocketAIC 7749M2W Series RocketAIC 7540HW Series RocketAIC 7505HW Series RocketAIC 7502HW Series RocketAIC 7140AW Series RocketAIC 7105HW Series RR3742A RR3740C RR3720C RR2840C RR840C R710 R720
Supported Enclosure	SSD6540 SSD6540M SSD6444 SSD6780A RS6434TS RS6438TS RS6542AW

Prerequisites

This section describes the base hardware and software requirements for HPT-Accelerate.

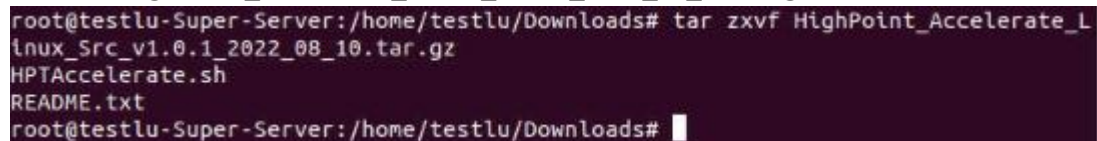
- Server platform with multiple CPUs or Single CPU
- A RAID controller must be physically installed
- The corresponding device driver has been installed

Instructions for use

Unzip the performance file.

Using the system terminal with root privileges, browse to the directory where the driver download is located and enter the following commands to extract the software package:

```
#tar zxvf HighPoint_Accelerate_Linux_v1.0.1_2022_08_10.tar.gz
```




```
root@testlu-Super-Server:/home/testlu/Downloads# tar zxvf HighPoint_Accelerate_Linux_Src_v1.0.1_2022_08_10.tar.gz
HPTAccelerate.sh
README.txt
root@testlu-Super-Server:/home/testlu/Downloads#
```

Note: The driver revision shown in the screenshots may not correspond with current software releases.

How to apply to performance testing.

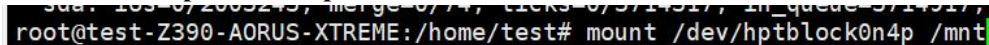
1. Create a RAID array, then partition, format, and mount it for use:

```
#mkfs.ext4 /dev/hptblock0n4p -E lazy_itable_init=0,lazy_journal_init=0
```



```
root@test-Z390-AORUS-XTREME:/home/test# mkfs.ext4 /dev/hptblock0n4p -E lazy_itable_init=0,lazy_journal_init=0
```

```
#mount /dev/hptblock0n4p /mnt/
```



```
root@test-Z390-AORUS-XTREME:/home/test# mount /dev/hptblock0n4p /mnt/
```

2. Run the fio script using the HPTAccelerate tool to test **Sequential Performance /Random Performance**.

Note: When running the HPTAccelerate script, specify the number of CPUs with the command, test Sequential Performance by default 1 CPU, and test Random Performance, generally testing 8 CPU (Internal test script). Using HPTAccelerate.sh, the number after -c is the same as numjobs.

2M-seq-read:

The current script tests the *Sequential read* performance of **2M** large data blocks with *iodepth=64* and *numjobs=1*

```
#!/HPTAccelerate.sh -c 1 fio --filename=/mnt/test.bin --direct=1 --rw=read --
ioengine=libaio --bs=2m --iodepth=64 --size=10G --numjobs=1 --runtime=60 --
time_base=1 --group_reporting --name=test-seq-read
```

```
root@testlu-Super-Server:/home/testlu/Downloads# ./HPTAccelerate.sh -c 1 fio --filename=/mnt
/test.bin --direct=1 --rw=read --ioengine=libaio --bs=2m --iodepth=64 --size=10G --numjobs=1
--runtime=60 --time_base=1 --group_reporting --name=test-seq-read
```

2M-seq-write:

The current script tests the *Sequential write* performance of **2M** large data blocks with *iodepth=64* and *numjobs=1*

```
#!/HPTAccelerate.sh -c 1 fio --filename=/mnt/test.bin --direct=1 --rw=write --
ioengine=libaio --bs=2m --iodepth=64 --size=10G --numjobs=1 --runtime=60 --
time_base=1 --group_reporting --name=test-seq-write
```

```
root@testlu-Super-Server:/home/testlu/Downloads# ./HPTAccelerate.sh -c 1 fio --filename=/mnt
/test.bin --direct=1 --rw=write --ioengine=libaio --bs=2m --iodepth=64 --size=10G --numjobs=
1 --runtime=60 --time_base=1 --group_reporting --name=test-seq-write
```

4k-rand-read:

Note: For SSD7000 series products, the test 4k-random numjobs=32, which can achieve the best performance

The current script tests the *Random read* performance of **4k** small data blocks with *iodepth=64* and *numjobs=8*

```
#!/HPTAccelerate.sh -c 8 fio --filename=/mnt/test.bin --direct=1 --rw=randread --
ioengine=libaio --bs=4k --iodepth=64 --size=10G --numjobs=8 --runtime=60 --
time_base=1 --group_reporting --name=test-rand-read
```

```
root@testlu-Super-Server:/home/testlu/Downloads# ./HPTAccelerate.sh -c 8 fio --filename=/mnt
/test.bin --direct=1 --rw=randread --ioengine=libaio --bs=4k --iodepth=64 --size=10G --numjo
bs=8 --runtime=60 --time_base=1 --group_reporting --name=test-rand-read
```

4k-rand-write:

The current script tests the *Random write* performance of **4k** small data blocks with *iodepth=64* and *numjobs=8*

```
#!/HPTAccelerate.sh -c 8 fio --filename=/mnt/test.bin --direct=1 --rw=randwrite --
ioengine=libaio --bs=4k --iodepth=64 --size=10G --numjobs=8 --runtime=60 --
time_base=1 --group_reporting --name=test-rand-write
```

```
root@testlu-Super-Server:/home/testlu/Downloads# ./HPTAccelerate.sh -c 8 fio --filename=/mnt
/test.bin --direct=1 --rw=randwrite --ioengine=libaio --bs=4k --iodepth=64 --size=10G --numj
obs=8 --runtime=60 --time_base=1 --group_reporting --name=test-rand-write
```

How to apply to actual scenarios

1. If you want to copy /test/a to /test/b (cp -r /test/a /test/b) and want to bind 4 CPU cores on hptnvme.

Note: hptnvme corresponds to HPT SSD7000 series products

./HPTAccelerate.sh -c 4 -d hptnvme cp -r /test/a /test/b

2. If you want to run kdenlive and bind 8 CPU cores on rr3740a:

Note: rr3740a corresponds to HPT RR3700 series products

./HPTAccelerate.sh -c 8 -d rr3740a kdenlive

3. If you want to run kdenlive and bind all HighPoint RAID device's CPU cores on any device type, you have:

./HPTAccelerate.sh kdenlive

Contacting Technical Support

FAQs, technical articles, and troubleshooting tips are available from our Support web page: <https://www.highpoint-tech.com/support-and-services>.

If you require technical Support, please submit a support ticket using our [Online Support Service](#).