

Actifio Sky Tech Brief

Using IOPERF to Ensure Allocated Storage Meets Actifio Sky Requirements

Purpose

The purpose of this document is to provide the Actifio representative a tool to determine whether the storage allocated to an Actifio storage pool can support the demands placed on it.

Note: All scripts and binaries exist under `/act/sky/ioperf/bin` and `/act/sky/ioperf/scripts`

Procedure

After the Actifio Sky appliance ova, vhd, or AMI has been deployed and powered on, but prior to actually running the Actifio installer:

1. Log into the Actifio Sky virtual machine via a terminal session; using port 26, root user, and AVIN key.
2. Create a 200GB disk on the same storage as the Dedup Pool.

Run `lsblk` and `grep` the 200GB size of the storage you created on the Dedup Pool storage. For example:

```
[root@NVPS actifio]# lsblk | grep 200G
sda 202:80    0 200G    0 disk
```

3. Use `fdisk` to find the number of available bytes on the disk:

```
[root@localhost ~]# fdisk -l /dev/sda | grep Disk | grep -v identifier | cut -d " " -f 5
214748364800
```

4. Set the environment variable:

```
export IOPERF_BINARY=/act/sky/ioperf/bin/ioperf
```

5. Make a directory in which to run scripts and to put the script's out put. For example:

```
mkdir /var/log/perftest
```

6. Change to that directory:

```
cd /var/log/perftest
```

7. Run `nohup` with the disk name and size. For example:

```
nohup /act/sky/ioperf/scripts/ioperf_fill_run_sky.py /dev/sda 214748364800 &
```

`nohup` with `&` will run the command in background mode which can be viewed and managed by `jobs` and `fg`

The script will run four tests and create log files for each test.

```
output-rand-reader.csv
```

```
output-rand-writer.csv
```

```
output-seq-reader.csv
```

```
output-seq-writer.csv
```

Note: The log files will be created in the directory from which you executed the script. In this example it will be: `/var/log/perftest`

8. To determine if the storage is compatible with the Actifio Sky appliance, open and examine each log file and review the threads tested to determine if they meet the following requirements:

- `output-rand-reader.csv`

Each thread requires a minimum of 60 Ops per second. For example a single thread requires a minimum of 60 Ops per second. To maintain two threads, 120 Ops per second is required. Three threads require at least 180 Ops per second. The following example shows 15 threads, each of which do not meet the minimum requirements:

Threads	Time (s)	MB/s	Ops/s	Min_Ops/s
15	467	16.684	266	900
14	435	15.349	245	840
13	402	15.772	252	780
12	372	15.443	247	720
11	342	13.748	219	660
10	307	11.836	189	600
9	282	10.819	173	540
8	248	11.275	180	480
7	218	9.684	154	420
6	185	8.967	143	360
5	153	7.829	125	300
4	122	6.174	98	240
3	92	4.570	73	180
2	61	3.254	52	120
1	30	1.683	26	60

- `output-rand-writer.csv`

Each of the first four threads must have a minimum of 200 Ops per second. In the following example, the first three threads do not meet this requirement.

Threads	Time (s)	MB/s	Ops/s	Min_Ops/s
10	309	17.349	277	200
9	276	16.483	263	200
8	246	17.966	287	200
7	215	15.604	249	200
6	185	16.069	257	200
5	154	15.455	247	200
4	123	12.757	204	200
3	93	9.738	155	200
2	62	7.154	114	200
1	31	3.338	53	200

- `output-seq-reader.csv`

Each of the first four threads must have a minimum of 2000 Ops per second. In the following example, the first three threads do not meet this requirement.

Threads	Time (s)	MB/s	Ops/s	Min_Ops/s
10	311	150.813	2413	2000
9	279	146.750	2348	2000
8	248	143.567	2297	2000
7	216	122.843	1965	2000
6	185	127.498	2039	2000
5	153	133.120	2129	2000
4	123	130.116	2081	2000
3	91	104.246	1667	2000
2	62	96.766	1548	2000
1	31	56.502	904	2000

- `output-seq-writer.csv` 2000 ops for threads 1 to 4

Each of the first four threads must have a minimum of 2000 Ops per second. In the following example, the first three threads do not meet this requirement.

Threads	Time (s)	MB/s	Ops/s	Min_Ops/s
10	310	52.003	832	2000
9	273	48.363	773	2000
8	235	44.321	709	2000
7	212	47.041	752	2000
6	186	46.093	737	2000
5	151	48.773	780	2000
4	120	57.875	926	2000
3	92	50.512	808	2000
2	61	41.846	669	2000
1	30	25.755	412	2000

9. Zip and save each csv file for future reference.

