

Alibaba Cloud Apsara File Storage NAS Performance

Issue: 20190423

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Generic conventions

Table -1: Style conventions

Style	Description	Example
	This warning information indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 Danger: Resetting will result in the loss of user configuration data.
	This warning information indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 Warning: Restarting will cause business interruption. About 10 minutes are required to restore business.
	This indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: Take the necessary precautions to save exported data containing sensitive information.
	This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.	 Note: You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
Bold	It is used for buttons, menus, page names, and other UI elements.	Click OK.
<code>Courier font</code>	It is used for commands.	Run the <code>cd / d C :/ windows</code> command to enter the Windows system folder.
<i>Italics</i>	It is used for parameters and variables.	<code>bae log list --instanceid Instance_ID</code>
[] or [a b]	It indicates that it is an optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>

Style	Description	Example
<code>{}</code> or <code>{a b}</code>	It indicates that it is a required value, and only one item can be selected.	<code>swich {stand slave}</code>

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1 Performance testing for NAS

You can use fio to measure the throughput and IOPS of NAS in performance testing.

Performance testing in Linux

Before conducting a performance test, note the following points:

- Ensure that `sunrpc_slo` is properly configured. For more information, see [FAQs](#).
- The maximum throughput will not exceed the bandwidth of an ECS instance. If the bandwidth of an ECS instance is 1 Gbit/s, the maximum throughput can reach 125 Mbit/s.

The following common testing examples are provided for your reference.



Note:

Note: The following estimated values are all based on testing results for a single ECS instance. To reach the performance metrics recommended by the [Network Attached Storage](#) official site, we recommend that you use multiple ECS instances to perform a test.

- Perform a random read test to measure IOPS

```
fio - numjobs = 1 - iodepth = 128 - direct = 1 - ioengine =
libaio - sync = 1 - rw = randread - bs = 4K - size = 1G -
time_based - runtime = 60 - name = Fio - directory = /mnt
```

Estimated value: 14,000

```
Fio: (g=0): rw=randread, bs=(R) 4096B-4096B, (W) 4096B-4096B, (T) 4096B-4096B, ioengine=libaio, iodepth=128
fio-3.1
Starting 1 process
Fio: Laying out IO file (1 file / 1024MiB)
fio: native_fallocate call failed: Operation not supported
Jobs: 1 (f=1): [r(1)][100.0%][r=58.0MiB/s,w=0KiB/s][r=15.1k,w=0 IOPS][eta 00m:00s]
Fio: (groupid=0, jobs=1): err= 0: pid=5196: Mon Mar 11 11:37:36 2019
read: IOPS=15.3k, BW=59.6MiB/s (62.5MB/s)(1793MiB/30061msec)
slat (usec): min=2, max=185, avg= 8.00, stdev= 4.00
clat (usec): min=909, max=684981, avg=8370.96, stdev=13265.50
lat (usec): min=916, max=684986, avg=8379.54, stdev=13265.48
clat percentiles (usec):
| 1.00th=[ 1139], 5.00th=[ 1336], 10.00th=[ 1598], 20.00th=[ 2212],
| 30.00th=[ 2835], 40.00th=[ 3458], 50.00th=[ 4113], 60.00th=[ 4817],
| 70.00th=[ 5800], 80.00th=[ 7898], 90.00th=[ 32900], 95.00th=[ 35390],
| 99.00th=[ 40109], 99.50th=[ 85459], 99.90th=[175113], 99.95th=[177210],
| 99.99th=[181404]
bw ( KiB/s): min=47176, max=96280, per=100.00%, avg=61176.13, stdev=7812.35, samples=60
iops      : min=11794, max=24070, avg=15294.02, stdev=1953.09, samples=60
lat (usec) : 1000=0.04%
lat (msec) : 2=16.63%, 4=31.67%, 10=35.17%, 20=5.03%, 50=10.69%
lat (msec) : 100=0.67%, 250=0.10%, 500=0.01%, 750=0.01%
cpu        : usr=4.42%, sys=23.50%, ctx=254636, majf=0, minf=155
IO depths  : 1=0.1%, 2=0.1%, 4=0.1%, 8=0.1%, 16=0.1%, 32=0.1%, >=64=100.0%
submit     : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.0%
complete  : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.1%
issued rw: total=459008,0,0, short=0,0,0, dropped=0,0,0
latency    : target=0, window=0, percentile=100.00%, depth=128

Run status group 0 (all jobs):
READ: bw=59.6MiB/s (62.5MB/s), 59.6MiB/s-59.6MiB/s (62.5MB/s-62.5MB/s), io=1793MiB (1880MB), run=30061-30061msec
```

- Perform a random write test to measure IOPS

```
fio - numjobs = 1 - iodepth = 128 - direct = 1 - ioengine =
libaio - sync = 1 - rw = randwrite - bs = 4K - size = 1G -
time_based - runtime = 60 - name = Fio - directory =/ mnt
```

Estimated value: 10,000

```
Fio: (g=0): rw=randwrite, bs=(R) 4096B-4096B, (W) 4096B-4096B, (T) 4096B-4096B, ioengine=libaio, iodepth=128
fio-3.1
Starting 1 process
Jobs: 1 (f=1): [w(1)][100.0%][r=0KiB/s,w=59.4MiB/s][r=0,w=15.2k IOPS][eta 00m:00s]
Fio: (groupid=0, jobs=1): err= 0: pid=5205: Mon Mar 11 11:38:53 2019
write: IOPS=15.5k, BW=60.6MiB/s (63.6MB/s)(1820MiB/30016msec)
    slat (usec): min=2, max=7876, avg= 7.64, stdev=11.81
    clat (usec): min=1928, max=247922, avg=8233.26, stdev=4356.30
    lat (usec): min=1933, max=247926, avg=8241.46, stdev=4356.26
    clat percentiles (msec):
    | 1.00th=[ 4], 5.00th=[ 5], 10.00th=[ 5], 20.00th=[ 6],
    | 30.00th=[ 7], 40.00th=[ 7], 50.00th=[ 8], 60.00th=[ 9],
    | 70.00th=[ 9], 80.00th=[ 11], 90.00th=[ 13], 95.00th=[ 16],
    | 99.00th=[ 21], 99.50th=[ 23], 99.90th=[ 40], 99.95th=[ 42],
    | 99.99th=[ 178]
    bw ( KiB/s): min=54968, max=70856, per=100.00%, avg=62109.13, stdev=3242.17, samples=60
    iops        : min=13742, max=17714, avg=15527.25, stdev=810.54, samples=60
    lat (msec)  : 2=0.01%, 4=2.44%, 10=76.87%, 20=19.71%, 50=0.95%
    lat (msec)  : 100=0.01%, 250=0.02%
    cpu         : usr=5.25%, sys=24.21%, ctx=304678, majf=0, minf=24
    IO depths   : 1=0.1%, 2=0.1%, 4=0.1%, 8=0.1%, 16=0.1%, 32=0.1%, >=64=100.0%
    submit      : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.0%
    complete    : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.1%
    issued rwts: total=0,466009,0, short=0,0,0, dropped=0,0,0
    latency     : target=0, window=0, percentile=100.00%, depth=128

Run status group 0 (all jobs):
  WRITE: bw=60.6MiB/s (63.6MB/s), 60.6MiB/s-60.6MiB/s (63.6MB/s-63.6MB/s), io=1820MiB (1909MB), run=30016-30016msec
```

- Perform a random read test to measure throughput

```
fio - numjobs = 1 - iodepth = 128 - direct = 1 - ioengine =
libaio - sync = 1 - rw = randread - bs = 1M - size = 1G -
time_based - runtime = 60 - name = Fio - directory =/ mnt
```

- Estimated value for NAS Capacity: 150 Mbit/s

```
Fio: (g=0): rw=randread, bs=(R) 1024KiB-1024KiB, (W) 1024KiB-1024KiB, (T) 1024KiB-1024KiB, ioengine=libaio, iodepth=128
fio-3.1
Starting 1 process
Jobs: 1 (f=1): [r(1)][100.0%][r=0KiB/s,w=0KiB/s][r=0,w=0 IOPS][eta 00m:00s]
Fio: (groupid=0, jobs=1). err= 0: pid=5208: Mon Mar 11 11:40:35 2019
read: IOPS=148, BW=149MiB/s (156MB/s)(9214MiB/62045msec)
slat (usec): min=74, max=2201.5k, avg=361.66, stdev=22934.09
clat (msec): min=4, max=42052, avg=860.88, stdev=2559.16
lat (msec): min=4, max=42052, avg=861.25, stdev=2559.19
clat percentiles (msec):
| 1.00th=[ 8], 5.00th=[ 9], 10.00th=[ 10], 20.00th=[ 13],
| 30.00th=[ 24], 40.00th=[ 42], 50.00th=[ 56], 60.00th=[ 100],
| 70.00th=[ 197], 80.00th=[ 693], 90.00th=[ 2534], 95.00th=[ 4665],
| 99.00th=[12684], 99.50th=[16711], 99.90th=[17113], 99.95th=[17113],
| 99.99th=[17113]
bw ( KiB/s): min= 2048, max=382211, per=100.00%, avg=157685.99, stdev=45144.76, samples=118
iops      : min=   2, max=  373, avg=153.94, stdev=44.08, samples=118
lat (msec) : 10=11.38%, 20=17.58%, 50=19.70%, 100=11.97%, 250=10.48%
lat (msec)  : 500=6.14%, 750=5.37%, 1000=0.80%, 2000=5.84%, >=2000=10.72%
cpu         : usr=0.12%, sys=2.07%, ctx=9087, majf=0, minf=604
IO depths   : 1=0.1%, 2=0.1%, 4=0.1%, 8=0.1%, 16=0.2%, 32=0.3%, >=64=99.3%
submit      : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.0%
complete    : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.1%
issued rw:  total=9214,0,0, short=0,0,0, dropped=0,0,0
latency     : target=0, window=0, percentile=100.00%, depth=128

Run status group 0 (all jobs):
  READ: bw=149MiB/s (156MB/s), 149MiB/s-149MiB/s (156MB/s-156MB/s), io=9214MiB (9662MB), run=62045-62045msec
```

- Estimated value for NAS Performance: 300 Mbit/s

- Perform a random write test to measure throughput

```
fio - numjobs = 1 - iodepth = 128 - direct = 1 - ioengine =
libaio - sync = 1 - rw = randwrite - bs = 1M - size = 1G -
time_based - runtime = 60 - name = Fio - directory = /mnt
```

- Estimated value for NAS Capacity: 150 Mbit/

```
s Fio: (g=0): rw=randwrite, bs=(R) 1024KiB-1024KiB, (W) 1024K
fio-3.1
Starting 1 process
Fio: Laying out IO file (1 file / 1024MiB)
fio: native_fallocate call failed: Operation not supported
Jobs: 1 (f=1): [w(1)][100.0%][r=0KiB/s,w=30.0MiB/s][r=0,w=3
Fio: (groupid=0, jobs=1): err= 0: pid=4966: Mon Mar 11 12:2
  write: IOPS=152 BW=152MiB/s (160MB/s)(9262MiB/60849msec)
    slat (usec): min=125, max=861634, avg=303.96, stdev=895
    clat (msec): min=26, max=1728, avg=840.31, stdev=143.40
    lat (msec): min=28, max=1729, avg=840.61, stdev=143.15
    clat percentiles (msec):
      | 1.00th=[ 268], 5.00th=[ 726], 10.00th=[ 793], 2
      | 30.00th=[ 835], 40.00th=[ 844], 50.00th=[ 852], 6
      | 70.00th=[ 869], 80.00th=[ 885], 90.00th=[ 911], 9
      | 99.00th=[ 1401], 99.50th=[ 1552], 99.90th=[ 1687], 9
      | 99.99th=[ 1737]
    bw ( KiB/s): min= 2048, max=354304, per=100.00%, avg=15
    iops       : min=    2, max= 346, avg=152.17, stdev=27
    lat (msec) : 50=0.12%, 100=0.08%, 250=0.51%, 500=3.21%,
    lat (msec) : 1000=92.38%, 2000=2.34%
    cpu        : usr=1.56%, sys=1.99%, ctx=8453, majf=0, mi
    IO depths  : 1=0.1%, 2=0.1%, 4=0.1%, 8=0.1%, 16=0.2%, 3
      submit   : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%
      complete  : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%
      issued rwt: total=0,9262,0, short=0,0,0, dropped=0,0,0
      latency   : target=0, window=0, percentile=100.00%, de
Run status group 0 (all jobs):
  WRITE: bw=152MiB/s (160MB/s), 152MiB/s-152MiB/s (160MB/s-
```

- Estimated value for NAS Performance: 600 Mbit/s

Performance testing in Windows

Assume that you mount a NAS file system on Z: and install fio to the path `c:\`

Program Files \ fio \ fio . exe .

- Perform a random read test to measure IOPS

```
" c :\ Program Files \ fio \ fio . exe " - name = Fio - numjobs =
1 - iodepth = 128 - direct = 1 - ioengine = windowsaio - sync =
1 - rw = randread - bs = 4K - size = 1G - time_based - runtime
= 60 - group_repo rting - directory = Z \:\
```

Estimated value: 14,000

```
Fio: (g=0): rw=randread, bs=(R) 4096B-4096B, (W) 4096B-4096B, (T) 4096B-4096B, ioengine=libaio, iodepth=128
fio-3.1
Starting 1 process
Fio: Laying out IO file (1 file / 1024MiB)
fio: native_fallocate call failed: Operation not supported
Jobs: 1 (f=1): [r(1)][100.0%][r=58.0MiB/s,w=0KiB/s][r=15.1k,w=0 IOPS][eta 00m:00s]
Fio: (groupid=0, jobs=1): err= 0: pid=5196: Mon Mar 11 11:37:36 2019
read: IOPS=15.3k, BW=59.6MiB/s (62.5MB/s)(1793MiB/30061msec)
slat (usec): min=2, max=185, avg= 8.00, stdev= 4.00
clat (usec): min=909, max=684981, avg=8370.96, stdev=13265.50
lat (usec): min=916, max=684986, avg=8379.54, stdev=13265.48
clat percentiles (usec):
| 1.00th=[ 1139], 5.00th=[ 1336], 10.00th=[ 1598], 20.00th=[ 2212],
| 30.00th=[ 2835], 40.00th=[ 3458], 50.00th=[ 4113], 60.00th=[ 4817],
| 70.00th=[ 5800], 80.00th=[ 7898], 90.00th=[ 32900], 95.00th=[ 35390],
| 99.00th=[ 40109], 99.50th=[ 85459], 99.90th=[175113], 99.95th=[177210],
| 99.99th=[181404]
bw ( KiB/s): min=47176, max=96280, per=100.00%, avg=61176.13, stdev=7812.35, samples=60
iops : min=11794, max=24070, avg=15294.02, stdev=1953.09, samples=60
lat (usec) : 1000=0.04%
lat (msec) : 2=16.63%, 4=31.67%, 10=35.17%, 20=5.03%, 50=10.69%
lat (msec) : 100=0.67%, 250=0.10%, 500=0.01%, 750=0.01%
cpu : usr=4.42%, sys=23.50%, ctx=254636, majf=0, minf=155
IO depths : 1=0.1%, 2=0.1%, 4=0.1%, 8=0.1%, 16=0.1%, 32=0.1%, >=64=100.0%
submit : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.0%
complete : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.1%
issued rw: total=459008,0,0, short=0,0,0, dropped=0,0,0
latency : target=0, window=0, percentile=100.00%, depth=128

Run status group 0 (all jobs):
READ: bw=59.6MiB/s (62.5MB/s), 59.6MiB/s-59.6MiB/s (62.5MB/s-62.5MB/s), io=1793MiB (1880MB), run=30061-30061msec
```

- Perform a random write test to measure IOPS

```
" c :\ Program Files \ fio \ fio . exe " - name = Fio - numjobs
= 1 - iodepth = 128 - direct = 1 - ioengine = windowsaio -
```

```
sync = 1 - rw = randwrite - bs = 4K - size = 1G - time_based -
runtime = 60 - group_repo rting - directory = Z \:\
```

Estimated value: 10,000

```
Fio: (g=0): rw=randwrite, bs=(R) 4096B-4096B, (W) 4096B-4096B, (T) 4096B-4096B, ioengine=libaio, iodepth=128
fio-3.1
Starting 1 process
Jobs: 1 (f=1): [w(1)][100.0%][r=0KiB/s,w=59.4MiB/s][r=0,w=15.2k IOPS][eta 00m:00s]
Fio: (groupid=0, jobs=1): err= 0: pid=5205: Mon Mar 11 11:38:53 2019
write: IOPS=15.5k, BW=60.6MiB/s (63.6MB/s)(1820MiB/30016msec)
slat (usec): min=2, max=7876, avg= 7.64, stdev=11.81
clat (usec): min=1928, max=247922, avg=8233.26, stdev=4356.30
lat (usec): min=1933, max=247926, avg=8241.46, stdev=4356.26
clat percentiles (msec):
| 1.00th=[ 4], 5.00th=[ 5], 10.00th=[ 5], 20.00th=[ 6],
| 30.00th=[ 7], 40.00th=[ 7], 50.00th=[ 8], 60.00th=[ 9],
| 70.00th=[ 9], 80.00th=[ 11], 90.00th=[ 13], 95.00th=[ 16],
| 99.00th=[ 21], 99.50th=[ 23], 99.90th=[ 40], 99.95th=[ 42],
| 99.99th=[ 178]
bw ( KiB/s): min=54968, max=70856, per=100.00%, avg=62109.13, stdev=3242.17, samples=60
iops : min=13742, max=17714, avg=15527.25, stdev=810.54, samples=60
lat (msec) : 2=0.01%, 4=2.44%, 10=76.87%, 20=19.71%, 50=0.95%
lat (msec) : 100=0.01%, 250=0.02%
cpu : usr=5.25%, sys=24.21%, ctx=304678, majf=0, minf=24
IO depths : 1=0.1%, 2=0.1%, 4=0.1%, 8=0.1%, 16=0.1%, 32=0.1%, >=64=100.0%
submit : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.0%
complete : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.1%
issued rw: total=0,466009,0, short=0,0,0, dropped=0,0,0
latency : target=0, window=0, percentile=100.00%, depth=128

Run status group 0 (all jobs):
WRITE: bw=60.6MiB/s (63.6MB/s), 60.6MiB/s-60.6MiB/s (63.6MB/s-63.6MB/s), io=1820MiB (1909MB), run=30016-30016msec
```

- Perform a random read test to measure throughput

```
" c :\ Program Files \ fio \ fio . exe " - name = Fio - numjobs =
1 - iodepth = 128 - direct = 1 - ioengine = windowsaio - sync =
1 - rw = randread - bs = 1M - size = 1G - time_based - runtime
= 60 - group_repo rting - directory = Z \:\
```

- Estimated value for NAS Capacity: 150 Mbit/s

```
Fio: (g=0): rw=randread, bs=(R) 1024KiB-1024KiB, (W) 1024KiB-1024KiB, (T) 1024KiB-1024KiB, ioengine=libaio, iodepth=128
fio-3.1
Starting 1 process
Jobs: 1 (f=1): [r(1)][100.0%][r=0KiB/s,w=0KiB/s][r=0,w=0 IOPS][eta 00m:00s]
Fio: (groupid=0, jobs=1): err= 0: pid=5208: Mon Mar 11 11:40:35 2019
read: IOPS=148, BW=149MiB/s (156MB/s)(9214MiB/62045msec)
slat (usec): min=74, max=2201.5k, avg=361.66, stdev=22934.09
clat (msec): min=4, max=42052, avg=860.88, stdev=2559.16
lat (msec): min=4, max=42052, avg=861.25, stdev=2559.19
clat percentiles (msec):
| 1.00th=[ 8], 5.00th=[ 9], 10.00th=[ 10], 20.00th=[ 13],
| 30.00th=[ 24], 40.00th=[ 42], 50.00th=[ 56], 60.00th=[ 100],
| 70.00th=[ 197], 80.00th=[ 693], 90.00th=[ 2534], 95.00th=[ 4665],
| 99.00th=[12684], 99.50th=[16711], 99.90th=[17113], 99.95th=[17113],
| 99.99th=[17113]
bw ( KiB/s): min= 2048, max=382211, per=100.00%, avg=157685.99, stdev=45144.76, samples=118
iops : min= 2, max= 373, avg=153.94, stdev=44.08, samples=118
lat (msec) : 10=11.38%, 20=17.58%, 50=19.70%, 100=11.97%, 250=10.48%
lat (msec) : 500=6.14%, 750=5.37%, 1000=0.80%, 2000=5.84%, >=2000=10.72%
cpu : usr=0.12%, sys=2.07%, ctx=9087, majf=0, minf=604
IO depths : 1=0.1%, 2=0.1%, 4=0.1%, 8=0.1%, 16=0.2%, 32=0.3%, >=64=99.3%
submit : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.0%
complete : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.1%
issued rw: total=9214,0,0, short=0,0,0, dropped=0,0,0
latency : target=0, window=0, percentile=100.00%, depth=128

Run status group 0 (all jobs):
READ: bw=149MiB/s (156MB/s), 149MiB/s-149MiB/s (156MB/s-156MB/s), io=9214MiB (9662MB), run=62045-62045msec
```

- Estimated value for NAS Performance: 300 Mbit/s

- Perform a random write test to measure throughput

```
" c :\ Program Files \ fio \ fio . exe " - name = Fio - numjobs
= 1 - iodepth = 128 - direct = 1 - ioengine = windowsaio -
sync = 1 - rw = randwrite - bs = 1M - size = 1G - time_based -
runtime = 60 - group_repo rting - directory = Z \:\
```

- Estimated value for NAS Capacity: 150 Mbit/s

```
Fio: (g=0): rw=randwrite, bs=(R) 1024KiB-1024KiB, (W) 1024KiB-1024KiB, (T) 1024KiB-1024KiB, ioengine=libaio, iodepth=128
fio-3.1
Starting 1 process
Fio: Laying out IO file (1 file / 1024MiB)
fio: native_fallocate call failed: Operation not supported
Jobs: 1 (f=1): [w(1)][100.0%][r=0KiB/s,w=30.0MiB/s][r=0,w=30 IOPS][eta 00m:00s]
Fio: (groupid=0, jobs=1): err= 0: pid=4966: Mon Mar 11 12:27:51 2019
write: IOPS=152 / BW=152MiB/s (160MB/s)(9262MiB/60849msec)
    slat (usec): min=125, max=861634, avg=303.96, stdev=8950.88
    clat (msec): min=26, max=1728, avg=840.31, stdev=143.40
    lat (msec): min=28, max=1729, avg=840.61, stdev=143.15
    clat percentiles (msec):
    | 1.00th=[ 268], 5.00th=[ 726], 10.00th=[ 793], 20.00th=[ 818],
    | 30.00th=[ 835], 40.00th=[ 844], 50.00th=[ 852], 60.00th=[ 860],
    | 70.00th=[ 869], 80.00th=[ 885], 90.00th=[ 911], 95.00th=[ 927],
    | 99.00th=[ 1401], 99.50th=[ 1552], 99.90th=[ 1687], 99.95th=[ 1703],
    | 99.99th=[ 1737]
    bw ( KiB/s): min= 2048, max=354304, per=100.00%, avg=155880.98, stdev=28138.64, samples=120
    iops        : min=    2, max=   346, avg=152.17, stdev=27.48, samples=120
    lat (msec)  : 50=0.12%, 100=0.08%, 250=0.51%, 500=3.21%, 750=1.37%
    lat (msec)  : 1000=92.38%, 2000=2.34%
    cpu         : usr=1.56%, sys=1.99%, ctx=8453, majf=0, minf=23
    IO depths   : 1=0.1%, 2=0.1%, 4=0.1%, 8=0.1%, 16=0.2%, 32=0.3%, >=64=99.3%
    submit      : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.0%
    complete    : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.1%
    issued rwts: total=0,9262,0, short=0,0,0, dropped=0,0,0
    latency     : target=0, window=0, percentile=100.00%, depth=128

Run status group 0 (all jobs):
WRITE: bw=152MiB/s (160MB/s), 152MiB/s-152MiB/s (160MB/s-160MB/s), io=9262MiB (9712MB), run=60849-60849msec
```

- Estimated value for NAS Performance: 600 Mbit/s