

Iozone run rules

In order for Iozone results to be comparable, it is important that some basic rules be followed. The idea is that someone should be able to reproduce the same results given this report. The following is a list of rules.

For buffer cache performance comparisons:

1. For single stream results, be sure the file size is smaller than the buffer cache. For throughput results, be sure the aggregate of files is smaller than the buffer cache. The file size must also be at least 3 times the size of processor cache for both internal and external processor caches.

For disk performance comparisons:

1. For single stream results, be sure the file size is 3 times the size of the buffer cache. For throughput results, be sure the aggregate of files is 3 times the size of the buffer cache.

For automatic mode (-a)

1. Be sure that the buffer cache is less than or equal to 128 Megabytes. The benchmark will automatically start with small file sizes and increment up to 512 Megabytes. This will ensure that the results contain both in and out of buffer cache results.

For NFS results:

1. When publishing results for NFS, the system specification described below expands to include the complete hardware and software disclosure of all networking components and load generators.

System specification disclosure:

1. Report must include:
 - a. Number of cpus in the system
 - b. Total amount of memory in the system
 - c. Total amount of buffer cache in the system
 - d. Total number of disks in the system
 - e. Complete description of the layout of the disks in the system
 - f. Type of cpu, clock speed, processor cache sizes, external cache sizes
 - g. Type of disk controllers
 - h. Number of disk controllers
 - i. Type of disks
 - j. If using striping, include a complete description of the stripe layout
 - k. Complete command line that was issued with Iozone for the given result.
 - l. Version number of Iozone used for the tests.
 - m. Version of the Operating system
 - n. Availability dates of all software and hardware used.
 - o. Type of filesystem being used.
 - p. Total amount of NVRAM in the system. (including the disks, disk controllers)
 - q. Date when tested.
 - r. Any other hardware used in the test.
 - s. Raw Iozone output file with the -R option enabled.
 - t. Filesystems under test must have been cleaned (freshly created) before the test began.
 - u. Minimum results include results for: Read, Write, Re-read, Re-write, Backward read, Strided read, and Random read. The results for mmap, threads, and async I/O are optional as not all vendors support everything that Iozone can test.
 - v. Compiler options used to compile Iozone.
 - w. Options used to create the filesystems.

- x. Options used to mount the filesystems.
- y. List of all tunables that were applied to the system.
- z. Company name if publishing for a company.
- aa. Name of the person that ran the benchmark and their email address.

Other requirements:

1. The benchmark may not be modified.
2. You may use any compiler options you wish.
3. Any tuning that is done that benefits only this benchmark is not permitted. This includes special tunables in the operating system, or any commands or utilities that are used to enhance the results of Iozone and are not used for real customer needs.
4. When running Iozone in any mode that is attempting to flush the data to disk, the data must make it to stable storage (where stable storage is defined to be: Data written is recoverable for a period of at least one week of power outage.)
5. Use of hardware or software that is not available for purchase within a 6 month time period is not permitted.
6. Use of hardware/software that will not be available for at least 6 months after publication is not permitted.
7. The system under test must be in multiuser mode with all daemons that would normally be running.

Review of results:

Unlike other benchmarks, there is no review required for the results to be accepted. There are several reasons why this is not needed.

1. We are all gentlemen and ladies and always act professionally.
2. We all respect the golden rule and treat others as we would like to be treated.
3. If you lie or cheat, you will only discredit yourself and your company.
4. There is no way you won't get caught. The benchmark is publicly available for free. Your customers will download it and check the platform before they accept the machine or pay for it.
5. If your company publishes bogus results that can not be reproduced, this may be interpreted as false advertising. Who knows, it may even get your company a nice lawsuit from a competitor.
6. In general, if you feel guilty about your results, then don't make them available for others to see.

Hostile publications:

In these times of road rage, sometimes people will publish negative results about a product that are not true. In the event that any company or product has been attacked with bogus results, the company may run the benchmark themselves and publish correct results. The incorrect results may not be removed, but the new results will be added. In the event that a publishing conflict continues, the webmaster of the results page maintains the right to delete inaccurate hostile results from the archive. In the event of hostile floods, the webmaster of the results page reserves the right to block further publications from the person/company that is continuing the abuse. Any person/company that believes their product is being slandered is free to pursue the person/company for damages. The Iozone webmaster, authors, site owners, and friends are not liable for hostile publications. The Iozone results web page is like a chalkboard in the hallway of the internet. The maintainers reserve the right to remove graffiti, but are not responsible for what people may write on it.

Web rules:

The webmaster of the results page reserves the right to block publication of results if the intent of the publication is hostile. Hostility may take many forms. Publication of results that are known to be inaccurate, floods of publications in an attempt to overload the web site, publication of results that contain viruses are a few examples. If the webmaster perceives the intent to be hostile in nature, the publication may be refused.

The webmaster reserves the right to control the submittal and publication process.

