



DISK SPEED BASELINE TESTING AUGUST 2018

Rsam
One Harmon Plaza, Suite 700
Secaucus, NJ 07094
Tel: (800) 920-Rsam
(201) 867-1330
Fax: (201) 221-8652
Web site: www.rsam.com

Table of Contents

BASELINE TEST OF DISK SYSTEM3
CLOUD BASED DISK SYSTEMS3
SETTING UP THE TEST.....4

BASELINE TEST OF DISK SYSTEM

It is important to know how well the disk system works for the SQL server as it relates to performance for Rsam platform.

The following tool and process can be used to gather disk system statistics to be used in baseline or troubleshooting of a SQL system.

The testing process takes about 40 minutes and will use 100% of the disk and will use up to 100% of the CPU. It is recommended to stop all applications using disk to get a baseline reading, otherwise if you run the test while using the disks you'll get results skewed by existing usage, as well as a major performance hit will occur to running applications.

It is recommended to inform any team which manages SQL server or disk system as the test which will utilize 100% of the disk system. It is important to discuss this test with your cloud team or disk management team before running it.

CLOUD BASED DISK SYSTEMS

(OR DISK SYSTEMS WITH SPEED CAPS OR BURSTING / BURSTING CREDIT FEATURES)

Some cloud providers, such as Amazon, have set speed for disks per each contract, but allow for “burst” credits to accumulate during low disk activity periods. It may be beneficial to ask the cloud team for the specifics of the disk system as guaranteed by the cloud vendor and to review this test with them before running it. The speeds as advertised by the vendor can be compared to the results of the test.

When high disk activity occurs the cloud provider may allow a “burst” to a faster disk speed for a set amount of time (sometimes based on credits which have accumulated) which can adversely impact the results by providing somewhat false “faster than normal” burst speeds. If you use a disk system with burst capability, you’ll want to speak with your disk manager about this feature before testing the disk system.

Running at full disk capacity may trigger a configured “burst” alert if the disk team has configured one with the cloud vendor. The test may also use up some or all accumulated burst credits. It is recommended that bursting feature be disabled during the test if possible.

Please ask the disk manager to use up the burst credits, if any, before the test is run to ensure the typical disk speed is captured during the tests. This is to prevent the results from being faster than normal due to bursting. However, if you want to baseline using bursting, the test lasts for approximately 40 minutes so you will need to ensure you have burst capability through the entire test, otherwise the initial part of the test may be run in burst mode where the latter tests are not- thus providing bad results for a baseline.

POTENTIAL FEE NOTICE: Bursting credits accumulate due to unused but purchased disk usage. Using bursting credits typically do not create additional cost from the vendor. However, some disk managers may have configured the disk to speed up during high usage to a higher priced tier. It is important to discuss this test before running it on a cloud-based system.

SETTING UP THE TEST

The Microsoft disk speed tool is an .exe file and the Rsam batch file will run 19 different tests using the tool. It will save the results to "results.txt". Use this results file as your baseline or as a comparison for after a major system change. Each time you run the batch file it APPENDS to the "results.txt" file.

The Microsoft tool will run the tests on the DISK system where it is running from. So if it is on the C:\ drive it will run the test on the C:\ drive specifically. This process is NOT setup to run performance on a "target" drive, where the target drive being a drive different than where the app is running from. If you want to do performance on D:\ drive, put the .exe on the D:\ drive in a "disktest" directory.

DOWNLOAD MICROSOFT DISK SPEED TOOL

(<https://gallery.technet.microsoft.com/DiskSpd-A-Robust-Storage-6ef84e62>)

SAVE BATCH FILE:

(Rename .txt to .bat)



RunDiskTestsV2Bat.txt

1. Unzip the disk speed tool
2. Create a test directory on the same drive as where the SQL Database is running (or the drive you want to test)
3. Copy diskspd.exe to the test directory you just created
4. Put the batch file in the same test directory
5. As an administrator, start cmd.exe and go to your test directory
6. Run the batch file from the prompt

Batch File Information:

In addition to the disk test results, the batch file will collect information about the environment, specifically:

1. Directory where it is being run including volume drive letter and label, volume serial number
2. The command line specification running it (c:\windows\system32\cmd.exe for example)
3. Processor Architecture, (AMD64), Identifier (Intel...), Processor Level (6), Processor Revision (3d04)
4. Operating system (Windows_NT)