# DuraCloud SyncOptimize Tool

## Introduction

The SyncOptimize is a tool that will help you determine the best number of threads to configure for optimal throughput given the resources available on your computer and network. Before running the Sync Tool you may want to run SyncOptimize first. Once it has completed running diagnostic tests, it will return a value that you can plug into the -t parameter of the Sync Tool. If you're using Sync Tool's graphical interface, you can invoke SyncOptimize directly without having to run the command line tool. You can fire up the optimizer either by clicking "Optimize" on the final step of the setup wizard or you can access it on the Configuration tab. For more information on running the Sync Tool, go to the DuraCloud Sync Tool page.

## System Requirements

The SyncOptimize Tool has the same OS and Java requirements as the SyncTool. The system requirements for operating the SyncTool are described here

## Download

Download the sync optimize tool from the Downloads page.

## Using the Sync Optimize Tool

- To run the Sync Optimize Tool, open a terminal or command prompt and navigate to the directory where the Sync Optimize Tool is located
- To display the help for the Sync Optimize Tool, run

```
java -jar syncoptimize-{version}-driver.jar --help
```

- When running the Sync Optmize Tool for the first time, you will need to use these options:

| Short Option | Long Option | Argument Expected | Required | Description | Default Value (if optional) |
|---|---|---|---|---|---|
| -h | --host | Yes | Yes | The host address of the DuraCloud DuraStore application | |
| -r | --port | Yes | No | The port of the DuraCloud DuraStore application | 443 |
| -s | --space | Yes | Yes | The ID of the DuraCloud space where content will be stored | |
| -u | --username | Yes | Yes | The username necessary to perform writes to DuraStore | |
| -p | --password | Yes | No | The password necessary to perform writes to DuraStore. If not specified the retrieval tool will first check to see if an environment variable named "DURACLOUD_PASSWORD" exists, if it does exist the retrieval tool will use its value as the password, otherwise you will be prompted to enter the password. | Not set |
| -m | --size-files | Yes | No | The size of files to transfer on each test run, in MB | 5 |
| -n | --num-files | Yes | No | The number of files to transfer on each test run | 10 |

- Examples:
  - Run the Sync Optimize Tool with default size and number of test files

```
java -jar syncoptimize-{version}-driver.jar -h test.duracloud.org -s test-space -u myname -p
mypassword
```

  - Run the Sync Optimize Tool with 50MB test files (perhaps because the average file size in the data sets that will be transferred is 50MB)

```
java -jar syncoptimize-{version}-driver.jar -h test.duracloud.org -s test-space -u myname -p
mypassword -m 50
```