



# Wasabi Performance Benchmark Report

Comparing Wasabi Hot Storage with  
Amazon Simple Storage Service

# EXECUTIVE OVERVIEW

Wasabi is fundamentally transforming cloud storage with the industry's most affordable and highest-performing storage service. To demonstrate the performance advantages of Wasabi's hot cloud storage service relative to Amazon's Simple Storage Service (S3), the Wasabi Performance and Certification Team (PACT) ran a series of performance benchmark tests against both Wasabi hot cloud storage and Amazon S3 storage services. The tests were based on industry-accepted testing methodologies for evaluating cloud storage performance.

## THE BOTTOM LINE

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Wasabi consistently outperformed S3 in all tests, confirming Wasabi hot cloud storage is on average 6x the speed of Amazon S3.<sup>1</sup>

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This report reviews our testing setup, methodology and results. In the spirit of Wasabi's culture of transparency, we have also provided links to our test scripts on GitHub, so you can carry out performance tests and confirm the results on your own.

## TESTING METHODOLOGY

Wasabi's performance testing is modeled on [Nasuni's State of the Cloud Storage Report](#), which has emerged as an industry-accepted cloud storage performance benchmark. We followed Nasuni's performance testing methods and practices, and developed our own scripts to automate the testing.

In the Nasuni report, the performance of various cloud storage providers is benchmarked by executing simple speed tests that measure each provider's ability to handle large numbers of writes, reads and deletes. The test cycles include various size files and different levels of concurrency (simultaneous threads) to cover a wide range of scenarios.

To streamline the testing, Wasabi developed an [automated performance benchmark testing tool](#) that executes Amazon S3 PUT, GET and DELETE operations. The Wasabi hot cloud storage service is fully compatible with S3, so the tool works with Wasabi as well.

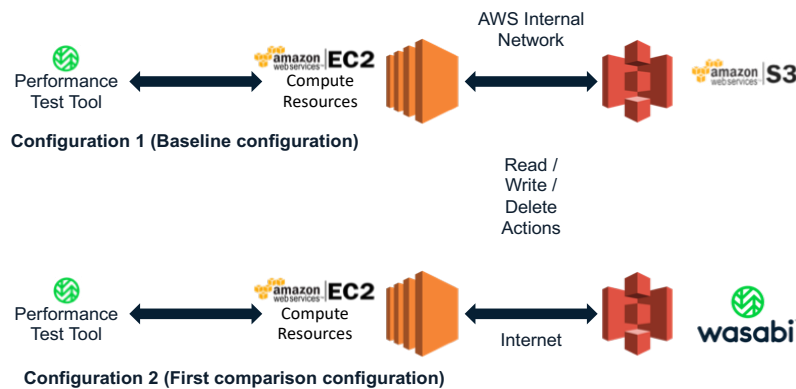
We used the tool to run a series of tests against both S3 and Wasabi to compare the write, read and delete performance of the two storage services in various configurations. As part of the test cycles, we tested with 1 MB and 10 MB objects in 1 thread and 10 thread scenarios.

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<sup>1</sup> For tests performed on 1 MB objects

# TESTING SETUP

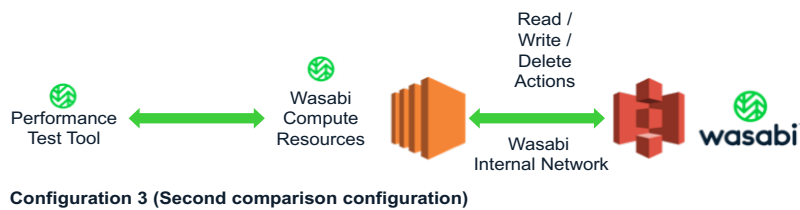
Wasabi PACT executed a common set of tests against three distinct configurations to thoroughly compare the performance characteristics of Wasabi and S3. The first two configurations used Amazon Elastic Compute Cloud (EC2) as a compute source (see Figure 1). The third configuration used compute resources in a Wasabi internal data center (see Figure 2)..



**FIGURE 1 – EC2 COMPUTE CONFIGURATIONS**

The first configuration served as the baseline for the comparison testing. EC2 was connected to S3 directly over the high-bandwidth, low-latency us-east AWS internal network. In our second test configuration, EC2 was connected to Wasabi over a public internet connection (which is inherently slower than the AWS internal network).

To provide a fairer apples-to-apples comparison with the EC2-to-S3 configuration, we also tested Wasabi storage with Wasabi compute resources in our own data center, connected directly over a high-bandwidth, low-latency internal network, as shown in Figure 2.



**FIGURE 2 – WASABI COMPUTE CONFIGURATION**

# TEST RESULTS AND ANALYSIS

Wasabi PACT ran each test cycle five times against all three configurations and calculated the average result for each test. Tables 1 and 2 provide the results and a comparative analysis for tests with 1 MB objects and 10 MB objects, respectively. The top part of each table contains the measured test results for each of the three configurations. The bottom part of the table compares the Wasabi hot cloud storage results with the baseline S3 results and shows the improvement gains achieved with Wasabi.

For example, if you look at the second results column, Wasabi handles 43 one-thread PUT operations per second (configuration 2 results) compared to 6 one-thread PUT operations per second for S3 (configuration 1 results). In the bottom part of the table we divide 43 by 6, determining Wasabi is 7.2 times faster than S3.

**Table 1: Test Results and Analysis for 1 MB Objects**

TEST RESULTS	PUT MB/S	PUT OPS/S	GET MB/S	GET OPS/S	DEL/SEC
<b>PERFORMANCE TOOL RUNNING IN EC2 COMPUTE, TESTING S3 STORAGE (CONFIGURATION 1)</b>					
1 THREAD X 1 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	6	6	16	16	41
10 THREADS X 1 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	61	61	157	157	341
<b>PERFORMANCE TOOL RUNNING IN EC2 COMPUTE, TESTING WASABI STORAGE (CONFIGURATION 2)</b>					
1 THREAD X 1 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	43	43	43	43	209
10 THREADS X 1 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	383	383	407	407	2,218
<b>PERFORMANCE TOOL RUNNING IN WASABI COMPUTE, TESTING WASABI STORAGE (CONFIGURATION 3)</b>					
1 THREAD X 1 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	48	48	49	49	275
10 THREADS X 1 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	487	487	444	444	3,385
<b>COMPARATIVE ANALYSIS (WASABI PERFORMANCE ADVANTAGE OVER S3)</b>					
<b>CONFIGURATION 2 VERSUS CONFIGURATION 1</b>					
1 THREAD X 1 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	7.2x	7.2x	2.7x	2.7x	5.1x
10 THREADS X 1 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	6.3x	6.3x	2.6x	2.6x	6.5x
<b>CONFIGURATION 3 VERSUS CONFIGURATION 1</b>					
1 THREAD X 1 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	8.0x	8.0x	3.1x	3.1x	6.7x
10 THREADS X 1 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	8.0x	8.0x	2.8x	2.8x	9.9x

# TEST RESULTS AND ANALYSIS

Table 2: Test Results and Analysis for 10 MB Objects

TEST RESULTS	PUT MB/S	PUT OPS/S	GET MB/S	GET OPS/S	DEL/SEC
<b>PERFORMANCE TOOL RUNNING IN EC2 COMPUTE, TESTING S3 STORAGE (CONFIGURATION 1)</b>					
1 THREAD X 10 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	15	1	59	6	38
10 THREADS X 10 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	145	15	505	50	331
<b>PERFORMANCE TOOL RUNNING IN EC2 COMPUTE, TESTING WASABI STORAGE (CONFIGURATION 2)</b>					
1 THREAD X 10 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	93	9	81	8	211
10 THREADS X 10 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	555	56	567	57	2,172
<b>PERFORMANCE TOOL RUNNING IN WASABI COMPUTE, TESTING WASABI STORAGE (CONFIGURATION 3)</b>					
1 THREAD X 10 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	93	9	84	8	288
10 THREADS X 10 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	892	89	683	68	3,404
<b>COMPARATIVE ANALYSIS (WASABI PERFORMANCE ADVANTAGE OVER S3)</b>					
<b>CONFIGURATION 2 VERSUS CONFIGURATION 1</b>					
1 THREAD X 10 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	6.2x	9.0x	1.4x	1.3x	5.6x
10 THREADS X 10 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	3.8x	3.7x	1.1x	1.1x	6.6x
<b>CONFIGURATION 3 VERSUS CONFIGURATION 1</b>					
1 THREAD X 10 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	6.2x	9.0x	1.4x	1.3x	7.6x
10 THREADS X 10 MB OBJECTS (AVERAGE OF 5 ITERATIONS)	6.2x	5.9x	1.4x	1.4x	10.3x

**KEY TAKEAWAY:**  
**WASABI HOT CLOUD STORAGE OUTPERFORMED  
 AMAZON S3 IN  
 EVERY SINGLE TEST.**

## RESULTS SUMMARY

Wasabi PACT testing confirms Wasabi hot cloud storage executes writes, reads and deletes much faster than S3 in every scenario. Important takeaways from the performance benchmarking analysis include:

- » Wasabi outperformed Amazon S3 in **every single test**
- » Wasabi is *significantly* faster than S3 even for Amazon EC2 customers
- » Wasabi outperformed S3 by as much as 10x
- » Wasabi performance averaged 6x that of S3 in 1 MB object tests

## NEXT STEPS

- [Try Wasabi for free.](#) Get up to 1 TB for 30 days.
- [Download our test scripts.](#) Execute your own performance tests.
- [Contact Wasabi today.](#) Learn more about our price, performance and protection benefits.

### ABOUT WASABI

Wasabi is fundamentally transforming cloud storage with the industry's simplest, fastest and most affordable storage solution. Unlike legacy cloud storage services with confusing storage tiers and complex pricing schemes, Wasabi is inherently easy to implement and incredibly cost-effective to scale. Gone are the days of purchasing and managing distinct primary, backup and archive storage resources.

Wasabi delivers low cost, insanely fast storage for any purpose with predictable, straightforward pricing. We believe that cloud storage should be standardized, open, simple to use, and secure. We're storage experts. We know how to do storage better than anyone. Our goal is to make cloud storage as simple and ubiquitous as electricity. Our sole focus is to always offer the best price/performance in the industry.

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