



ONLYOFFICE Document Server 7.2.2 stress test: 10,000 simultaneous connections

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Objective: Test the server load equal to 10,000 requests to ONLYOFFICE Document Server (version 7.2.2)

Test environments:

- Ubuntu 22.04. AWS c6a.8xlarge 32 cpu, 64 ram, 8 swap, 100GB SSD aws io2. ONLYOFFICE Docs 7.2.2 Enterprise Edition (Docker).
- 4 Windows 2012 servers. AWS t3.xlarge 4 cpu, 16 ram, 40GB SSD gp2. Jmeter 5.4.1 application.

Test scenario description:

The load test is executed via Apache Jmeter stress testing tool. The test is one hour with 10,000 connections applied from 4 servers, 2,500 connections each.

In the primary phase, the script generates the connection of virtual users to ONLYOFFICE Document Server 10,000 times. Each connection request imitates one user opening a document and starting to make changes in its content. Then, the scenario is executed with following parameters. :

- The connections are added gradually over the first 300 seconds.
- Every 6 seconds, changes are made in all documents. Per 10,000 connections, there are 1,667 changes made per second. However, on a current server this figure does not meet the objective because of the extended timeouts. Using Docker, it is possible to carry out a total of 1,016 operations per second from 4 servers with Jmeter.
- Every 60 seconds, about 4% of connections close. Once the connection is closed, the document is sent to the server for conversion and assembly. Simultaneously, the same number of new connections is opened.

For 10,000 total connections, 400 connections will be closed over 60 seconds. Within 1 hour of testing, 14,488 documents are sent for assembly.

- At the end of the test, all active connections are closed and all remaining documents are sent for assembly.

Important: Unlike test activities involving 1,000 and 2,500 connections, the load in this test is limited for the sake of database load preservation. It is the same load as used in tests involving 5,000 connections. In the table below, *save-changes-throughput-per-minute=10* parameter defines that 10 changes are to be made within each process over 1 minute, while *close-session-percent-per-minute=2* means that about 4% of connections will be closed to send the corresponding files to assembly. The extended timeouts are set in order to discover errors unrelated to timeouts.

Name:	Value
number-of-threads	2500
server-name-or-ip	172.31.25.202
port	80
document-url	http://172.31.38.74/docs/jmeter-test.docx
callback-url	http://172.31.25.202/dummyCallback
changes	[\\"80;AgAADEA//8BADmS8ZeoHgAALQEAAQAAAAAAAAAAAAAAAAEAAAAAAAA9v//x...
save-changes-throughput-per-minute	10
close-session-percent-per-minute	2
connect-timeout	500000
download-timeout	500000
auth-timeout	500000
read-timeout	500000
conversion-timeout	600000
close-timeout	500000

Testing session

Test begins at 3:50 PM and is stopped at 4:50 PM.

The test results on all Jmeter machines is almost equal. Minor amount of errors is registered in reading *read unSaveLock*, which is less than 0,001%. Overall, the test is considered error-free, also considering mistakes in the ONLYOFFICE Document Server logs.

Report from one of the machines with Jmeter:

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
open and send auth	6147	12	1	1321	26.40	0.00%	1.7/sec	0.31	1.46	184.0
read license	6147	0	0	5	0.16	0.00%	1.7/sec	0.46	0.00	276.0
read auth	6147	7636	0	22380	7083.65	0.00%	1.7/sec	1.05	0.00	635.0
read documentOpen	6135	7660	0	22985	7060.70	0.00%	1.7/sec	0.44	0.00	264.0
download Editor.bin	6124	2	1	130	3.71	0.00%	1.7/sec	13.51	0.41	8189.0
send getLock	914261	0	0	199	0.58	0.00%	254.0/sec	0.00	13.14	0
read getLock	914261	11	0	1809	23.70	0.00%	254.0/sec	28.27	0.00	114.0
send isSaveLock	914259	0	0	1275	1.38	0.00%	254.0/sec	0.00	8.68	0
read saveLock	914259	13	0	1803	25.98	0.00%	254.0/sec	12.15	0.00	49.0
send saveChanges	914258	0	0	168	0.74	0.00%	254.0/sec	0.00	436.75	0
read unSaveLock	914258	8401	0	15332	3067.05	0.00%	253.2/sec	17.22	0.00	69.6
Transaction Controller	3647	944351	134	3103637	797049.91	0.69%	1.0/sec	37.79	226.44	38195.3
close	3622	7	0	135	10.15	0.00%	1.0/sec	0.03	0.03	27.0
Transaction Controll...	3622	7	0	135	10.15	0.00%	1.0/sec	0.03	0.03	27.0
TOTAL	5527147	2033	0	3103637	31889.80	0.00%	1528.4/sec	110.91	683.84	74.3

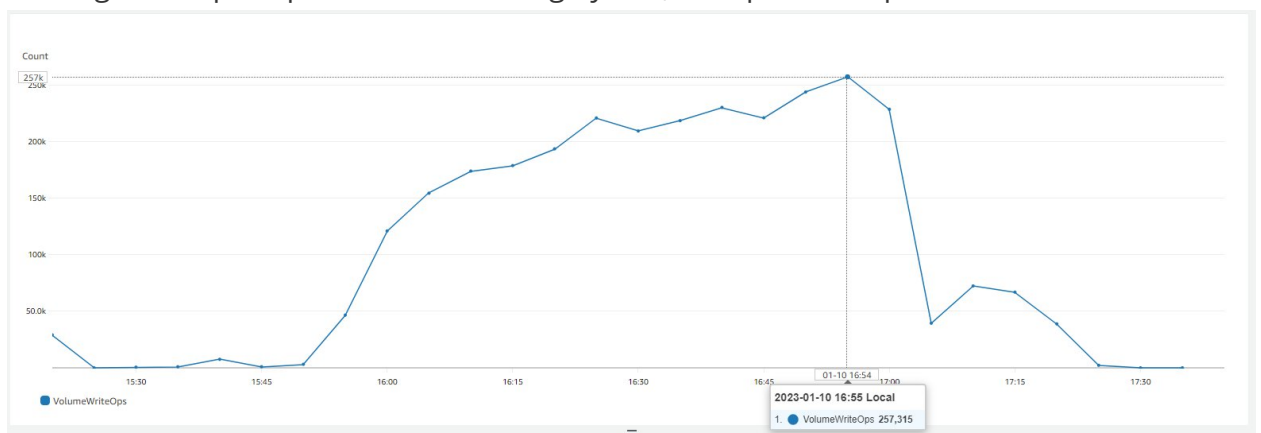
With the the displayed load the opening of DOCX, XLSX и PPTX files was executed within a test example. The following delay was shown by the Jmeter figures:

- File opening: 15-20 seconds
- Saving: 10-14 seconds

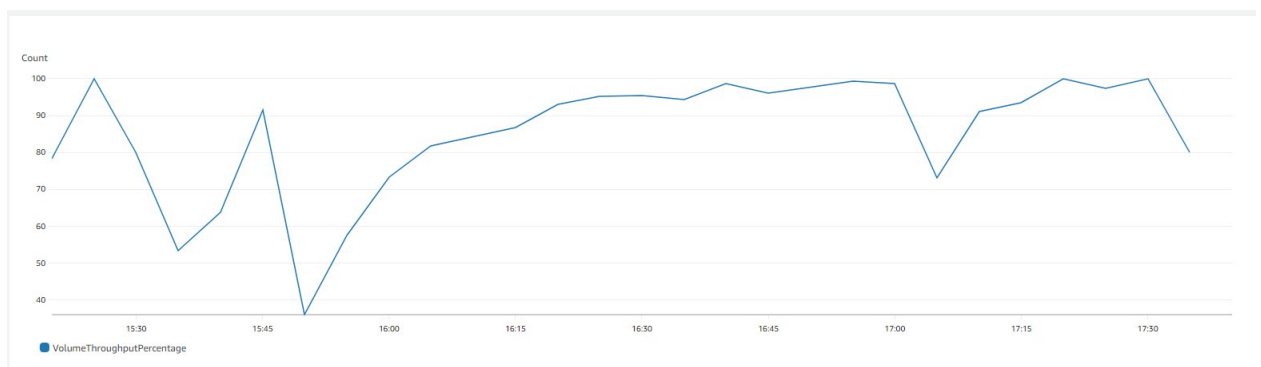
SSD load: The most high-performing SSD was used in this test (<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ebs-volume-types.html>) because even io1 tests show considerable load time (around 3 minutes for document opening), even though the server does not crash, no errors are registered in logs, and the tests do not fail.

However, working with a server showing such an outcome is undesirable. With such a load, we recommend allocating the database as a separate service.

The registered peak performance is roughly 257,000 operations per second:



SSD load during the whole test timeframe:



CPU load: During the whole test timeframe, 20% of CPU capacity was used. The load increased only at the late stage when the test machines began to close the connections and reached 83%.

CPU utilization (%)

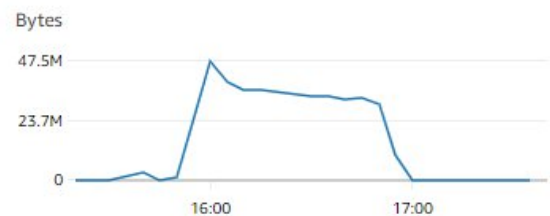


Network load:

Network in (bytes)



Network out (bytes)



Network packets in (count)



Network packets out (count)



RAM load: 20% RAM was loaded during the whole test timeframe.

Conclusions:

1. Despite the fact that the test is considered successful, the maximum load depends largely on SSD performance and particularly the database performance since the majority of requests are made to it.
2. With such an intensity, the test only loads 20% CPU with peak load happening only at the late stage and reaching 83%. It must be concluded that fewer cores can be used for this number of connections.
3. Only 20% of RAM is loaded, so it is also possible to use less memory.