



FUJITSU PRIMERGY TX1310M1 Storage system



Executive summary

After performing all tests, the FUJITSU PRIMERGY TX1310M1 has been officially certified for use with Cloud Data Protection Service by MSP environments.

During the tests, it was found that the system is functional and efficient. With the [Open-E DSS V7 NAS for Cloud Data Protection Service by MSP](#) operating system installed, the FUJITSU PRIMERGY TX1310M1 is stable and performs well.

In general, the system can be used for many different applications, but the following are recommended:

✓ NAS filer

The following features make FUJITSU PRIMERGY TX1310M1 a good NAS filer solution:

- Four SATA hard drives provides plenty of space for user files.
- Fast enough CPU allows to configure SW RAID5 to ensure good performance and data integrity.
- Two 1GbE interfaces for independent connection to different networks.

✓ Storage for backup

The following features make FUJITSU PRIMERGY TX1310M1 a good storage for backup:

- Four SATA hard drives provide plenty of space for backup files.
- Small 100W power consumption ensures low energy usage.
- Two 1GbE interfaces provides enough throughput for demanding backup networks and allows flexibility in backup network topology.

Certification notes

During Certification process the tests were performed only on a functionality used in Cloud Data Protection Service by MSP solution. Also, the system was certified in two configuration variants:

- Basic - as shown in Table 1 without components marked as optional.
- Extended - with HW RAID controller and 10GbE controller marked in Table 1 as optional.



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FUJITSU PRIMERGY TX1310M1 hardware components

Technical specifications about the certified system are listed below:

Model	FUJITSU PRIMERGY TX1310M1
Operating system	Open-E DSS V7 build 18255
Enclosure/chassis	FUJITSU PRIMERGY TX1310M1
CPU	Intel® Core™ i3-4330 Processor 3.50GHz
Motherboard	FUJITSU D3219-A1
Memory	8GB Hynix HMT41GU7BFR8A-PB DDR3 ECC
Network	Intel® Ethernet Connection I217-LM
Network	Intel® Ethernet Controller I210-AT
Network (optionally)	FUJITSU PRIMERGY 10Gb Network Controller (D2755)
HW RAID (optionally)	FUJITSU RAID Controller SAS 6Gb/s RAID 5/6 512MB (D2616)
SW RAID	For Software RAID mainboard controller was used
Hard disk drives	4x 1TB Seagate ST1000NM0033

TABLE 1: Hardware components list of Certified System with Open-E DSS V7



FUJITSU PRIMERGY TX1310M1 photos



FIGURE 1: Front photo



FIGURE 2: Rear photo

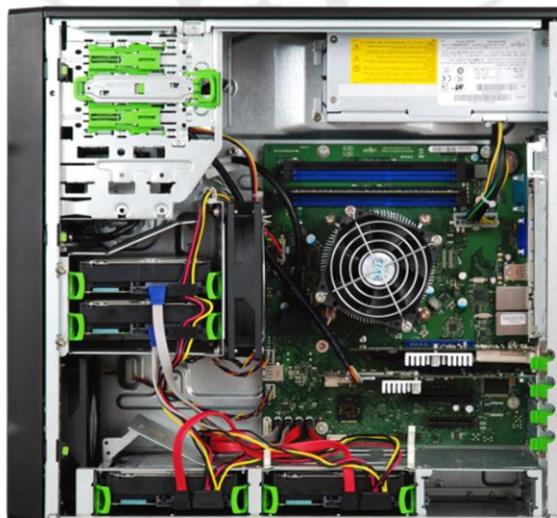


FIGURE 3: Top photo

Auxiliary systems hardware components

Auxiliary systems with MS Windows or Open-E DSS V7 installed, used in Open-E Hardware Certification Process.

Model	Custom
Operating system	MS Windows Server 2012 R2
Enclosure/chassis	Intel® R2224GZ4GC4 2U Chassis
Motherboard	Intel® Server Board S2600GZ4
CPU	2x Intel® Xeon® Processor E5-2643 3.30GHz
Memory	8x 16GB Kingston 9965516-421.A00LF DDR3 ECC REG
Network	Intel® Ethernet Controller I350-AM4
Network	Dual Port Intel® 82599EB 10GbE I/O Module (AXX10GBNIAIOM)
Hard disk controller	Intel® Integrated RAID Module RMS25PB080
Hard disk drives	2x 900GB Western Digital XE WD9001BKHG

TABLE 2: Hardware components of first Workstation with MS Windows

Model	FUJITSU PRIMERGY TX1310M1
Operating system	Open-E DSS V7 build 18255
Enclosure/chassis	FUJITSU PRIMERGY TX1310M1
CPU	Intel® Core™ i3-4330 Processor 3.50GHz
Motherboard	FUJITSU D3219-A1
Memory	8GB Hynix HMT41GU7BFR8A-PB DDR3 ECC
Network	Intel® Ethernet Connection I217-LM
Network	Intel® Ethernet Controller I210-AT
Network (optionally)	FUJITSU PRIMERGY 10Gb Network Controller (D2755)
HW RAID (optionally)	FUJITSU RAID Controller SAS 6Gb/s RAID 5/6 512MB (D2616)
SW RAID	For Software RAID mainboard controller was used
Hard disk drives	4x 1TB Seagate ST1000NM0033

TABLE 3: Hardware components of Workstation with Open-E DSS V7



Model	Supermicro® SSE-G24-TG4
Description	48-ports 1GbE and 4-ports 10GbE switch

TABLE 4: Network switch details for connection with 1GbE and 10GbE

Administration functionality

The following functionality has been tested.

Drive identifier	N/A
Power button	OK
Front and rear LEDs	N/A

TABLE 5: Administration functionality test results



Network functionality

Tests performed in this section check the functionality, performance and stability of the network solutions available in the Open-E DSS V7 product on the certified system.

The tests rely on creating NAS shares and copying the data from a *Workstation with MS Windows* via network connection with various block sizes using the lometer testing tool.

Network test topology

Network topology for Network testing is shown below.



FIGURE 4: Network topology for Network testing

Single NIC performance test

1. Test description

The tests rely on creating NAS shares and copying the data from a Workstation with MS Windows via network connection with various block sizes using the Iometer testing tool.

2. Test results for single NIC test performed on Intel® Ethernet Connection I217-LM

Single NIC performance test results			
NIC model	Intel® Ethernet Connection I217-LM		
Workstations with MS Windows	Write speed [MB/s]	Read speed [MB/s]	Performance test results
1 st Workstation	112.86	111.31	passed

TABLE 6: Single NIC performance test results table for Intel® Ethernet Connection I217-LM

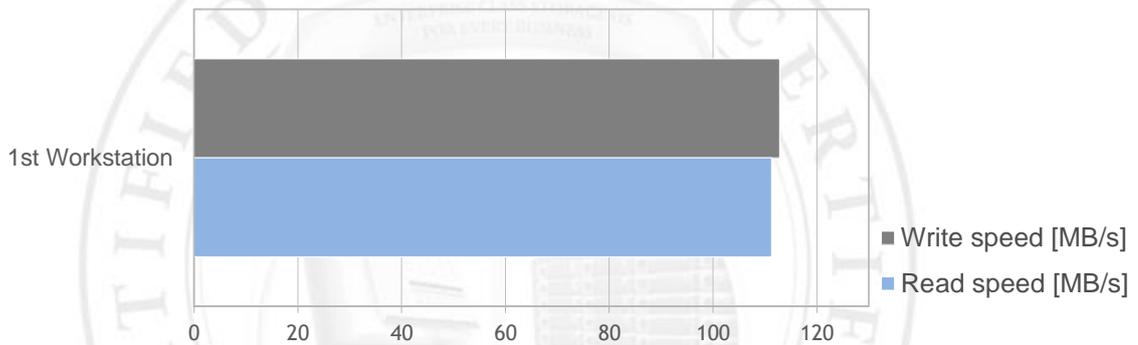


FIGURE 5: Single NIC performance test results chart for Intel® Ethernet Connection I217-LM

3. Test results for single NIC test performed on Intel® Ethernet Controller I210-AT

Single NIC performance test results			
NIC model	Intel® Ethernet Controller I210-AT		
Workstations with MS Windows	Write speed [MB/s]	Read speed [MB/s]	Performance test results
1 st Workstation	112.84	111.73	passed

TABLE 7: Single NIC performance test results table for Intel® Ethernet Controller I210-AT

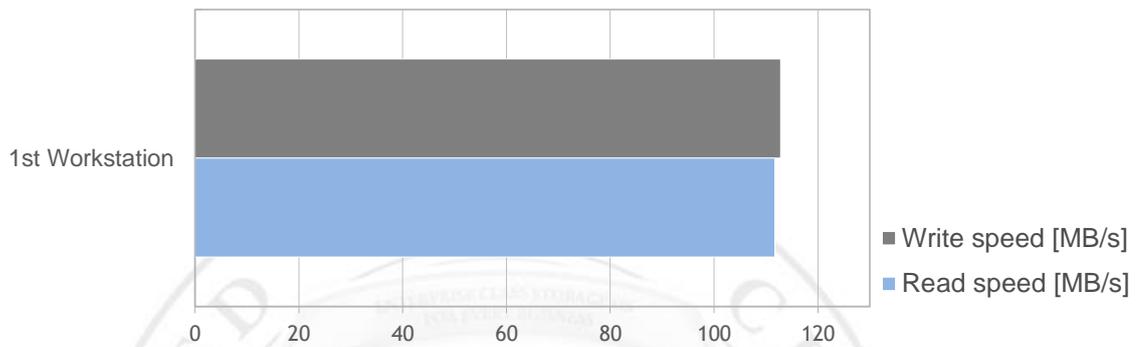
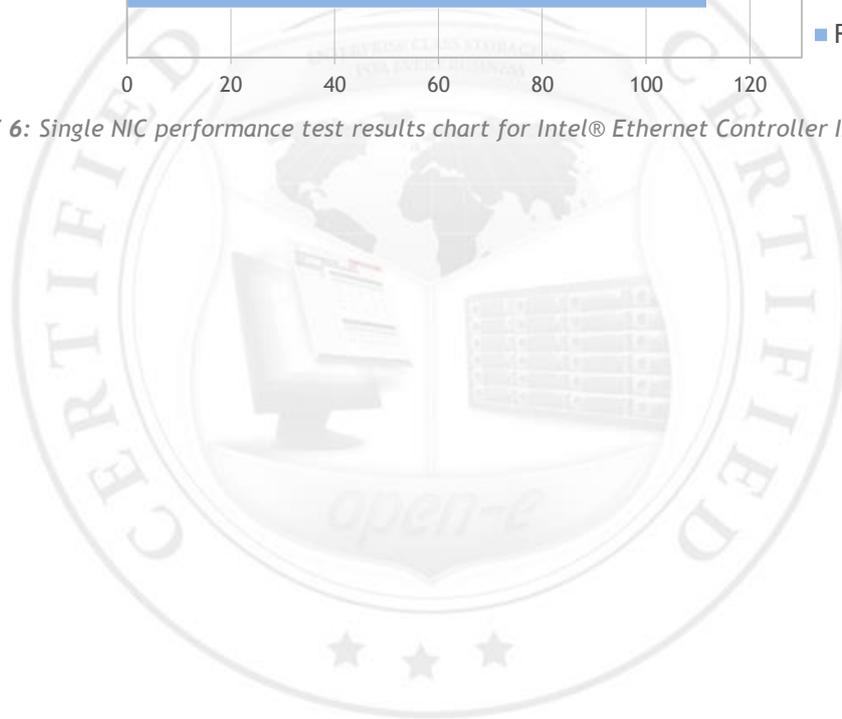


FIGURE 6: Single NIC performance test results chart for Intel® Ethernet Controller I210-AT



4. Test results for single NIC test performed on FUJITSU PRIMERGY 10Gb Network Controller (D2755)

Single NIC performance test results			
NIC model	FUJITSU PRIMERGY 10Gb Network Controller		
Workstations with MS Windows	Write speed [MB/s]	Read speed [MB/s]	Performance test results
1 st Workstation	722.87	482.72	passed

TABLE 8: Single NIC performance test results table for FUJITSU PRIMERGY 10Gb Network Controller (D2755)

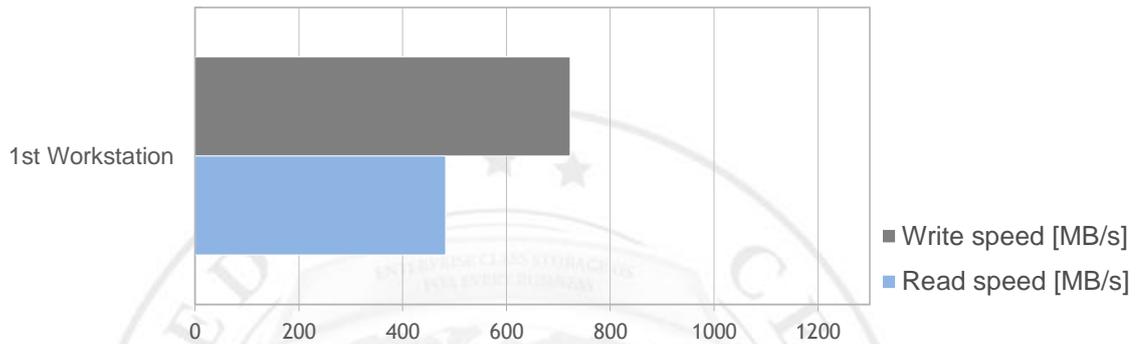


FIGURE 7: Single NIC performance test results chart for FUJITSU PRIMERGY 10Gb Network Controller (D2755)

NAS functionality

Tests performed in this section check the functionality, performance and stability of the NAS protocols in the Open-E DSS V7 product on the certified system.

The tests rely on creating NAS shares and copying the data from a *Workstation with MS Windows* via network connection with various block sizes using the lometer testing tool.

NAS test topology

Network topology for NAS testing is shown below.

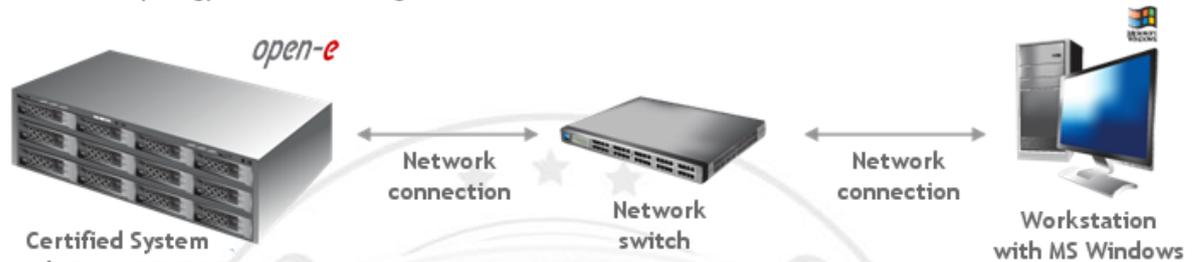


FIGURE 8: Network topology for NAS testing

SMB test

1. Test description

The tests rely on creating NAS shares and copying the data from a *Workstation with MS Windows* via network connection with various block sizes using the Iometer testing tool.

2. Test results for SMB and FUJITSU PRIMERGY 10Gb Network Controller (D2755) with Hardware RAID5

SMB performance test results			
Block size [KB]	Write speed [MB/s]	Read speed [MB/s]	Performance test results
4	71.14	77.36	passed
32	385.22	495.14	passed
64	592.87	414.53	passed
128	557.09	467.28	passed
256	667.75	480.92	passed
512	724.57	483.21	passed
1024	639.25	476.77	passed
4096	586.38	479.14	passed

TABLE 9: SMB performance test results table for FUJITSU PRIMERGY 10Gb Network Controller (D2755)

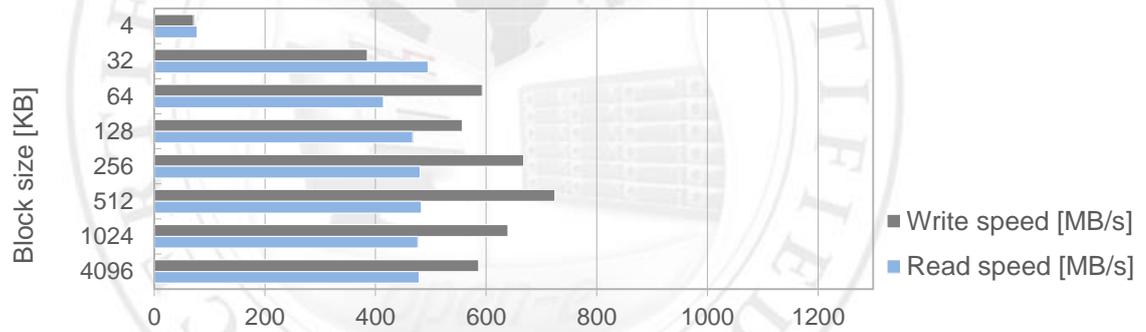


FIGURE 9: SMB performance test results chart for FUJITSU PRIMERGY 10Gb Network Controller (D2755)

3. Test results for SMB and FUJITSU PRIMERGY 10Gb Network Controller (D2755) with Software RAID5

SMB performance test results			
Block size [KB]	Write speed [MB/s]	Read speed [MB/s]	Performance test results
4	36.65	53.80	passed
32	328.58	326.98	passed
64	330.44	337.66	passed
128	332.43	407.17	passed
256	332.87	421.80	passed
512	341.98	381.02	passed
1024	326.47	340.02	passed
4096	326.54	340.11	passed

TABLE 10: SMB performance test results table for FUJITSU PRIMERGY 10Gb Network Controller (D2755)

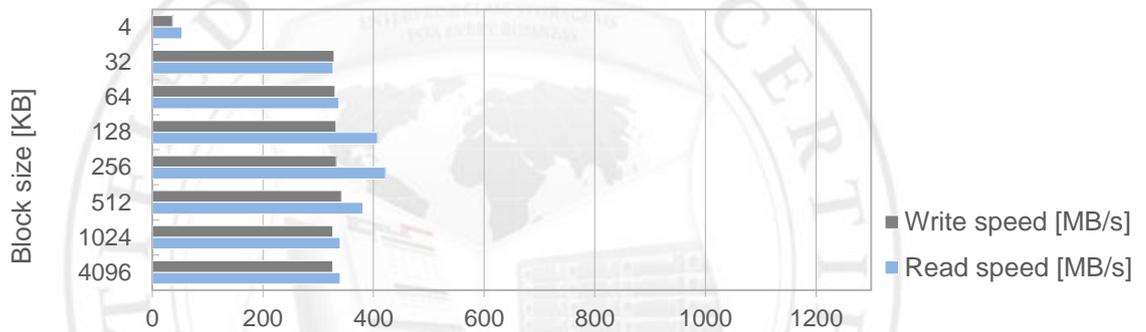


FIGURE 10: SMB performance test results chart for FUJITSU PRIMERGY 10Gb Network Controller (D2755)