



Supermicro – OSNEXUS SDS Solution powered by QuantaStor QuickStart Guide





The Supermicro-OSNEXUS Software-Defined Storage solution featured QuantaStor supports scale-up and scale-out architecture and provides unified storage solution for file, block, and object storage under single management platform:

- Scale-up: support file and block.
- Scale-out: support file, block, and object.

For more information on QuantaStor, please visit: <u>https://www.supermicro.com/en/solutions/osnexus</u>, <u>https://www.osnexus.com/</u>



All Supermicro storage box will be pre-installed with QuantaStor platform before shipment if you order the solution bundle from Supermicro. This document will walk you through simple setup once you receive the box:

- ✓ Identifying the IPMI, QuantaStor management ports and data transfer ports.
- ✓ SAS Cabling (for QS scale-up solution with JBODs connection only)
- ✓ QuantaStor OS Login
- ✓ Configuration of the management network interfaces
- ✓ QuantaStor WUI Login
- ✓ Applying License Keys
- ✓ Contact Support



Scale-up solution – typically includes two head-node controllers running QuantaStor and connecting to JBOD(s) using SAS cables, or simply needs one Supermicro Storage Bridge Bay (SBB) systems which includes dual hot-pluggable controller nodes with shared storage built into the same chassis.

For example: 2x SYS-620C-TN12R + 946SE2C-R1K66JBOD

SYS-620C-TN12R Manual

946SE2C-R1K66JBOD Manual

For example: 1x SSG-2029P-DN2R24L (SBB)

SSG-2029P-DN2R24L Manual

Scale-out solution – a minimum of 4 individual servers are required (EC 2+2).

For example: 2x SSG-6049SP-DE1CR60 (one system includes two nodes)

SSG-6049SP-DE1CR60 Manual

For example: 4x SSG-620P-E1CR24L (4x single nodes) SSG-620P-E1CR24L Manual



Click "Manual" to see how to install the server onto the rack.



Cabling for Scale-up Solution



2x SYS-620C-TN12R + 946SE2C-R1K66JBOD





CSE-946SE2C-R1K66JBOD

- Whenever possible connect the dual power-supplies in the servers/JBODs to separate PDUs for redundancy.
- Connect the 1GbE RJ45 IPMI for OOB management through BMC to your top-of-rack switch and verify that the system is accessible for remote management. Ideally configure a static IP on the IPMI port so that the port number does not change in the future. Remote IPMI access is important to configure first as it provides an alternative means of accessing the system if there are issues accessing the system via the WUI or SSH.

Multiple RJ45/SPF/SPF+ 1/10G ports are for QuantaStor node management. Based on your network environment, build one or multiple links for system admin management.

- Multiple SFP+/QSFP 25G/100G ports are for data transferring. Recommend to connect two cables for redundancy and high throughput.
- SAS cabling between JBOD and head nodes are shown on the diagram. The diagram demonstrates how to connect the SAS cables between two head nodes and one JBOD. For other configurations please refer to

https://wiki.osnexus.com/index.php?title=HA_Cluster_Setup_(JBODs)#Cabling_Diagrams_.2F_Guidelines

SAS cabling from QS node A to JBOD

SAS cabling from QS node B to JBOD



Cabling for Scale-up Solution



2x SYS-620C-TN12R + 947HE2C-R2K05JBOD





- Whenever possible connect the dual power-supplies in the servers/JBODs to separate PDUs for redundancy.
- Connect the 1GbE RJ45 IPMI for OOB management through BMC to your top-of-rack switch and verify that the system is accessible for remote management. Ideally configure a static IP on the IPMI port so that the port number does not change in the future. Remote IPMI access is important to configure first as it provides an alternative means of accessing the system if there are issues accessing the system via the WUI or SSH.

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SAS cabling from QS node A to JBOD

SAS cabling from QS node B to JBOD



1x SSG-2029P-DN2R24L (SBB)







- Whenever possible connect the dual power-supplies in the servers to separate PDUs for redundancy.
- Connect the 1GbE RJ45 IPMI for OOB management through BMC to your top-of-rack switch and verify that the system is accessible for remote management. Ideally configure a static IP on the IPMI port so that the port number does not change in the future. Remote IPMI access is important to configure first as it provides an alternative means of accessing the system if there are issues accessing the system via the WUI or SSH.
- Two onboard RJ45 10G ports for QuantaStor node management.
- Multiple SFP+/QSFP 25G/100G ports are for data transferring.
 Recommend to connect two cables for redundancy and high throughput.

25/100G DATA * - the network interfaces may vary based on different configuration.



2x SSG-6049SP-DE1CR60 (one system includes two nodes), a minimum of 4 nodes are required for scale-out



SSG-6049SP-DE1CR60

- Whenever possible connect the dual power-supplies in the servers to separate PDUs for redundancy.
- Connect the 1GbE RJ45 IPMI for OOB management through BMC to your top-of-rack switch and verify that the system is accessible for remote management. Ideally configure a static IP on the IPMI port so that the port number does not change in the future. Remote IPMI access is important to configure first as it provides an alternative means of accessing the system if there are issues accessing the system via the WUI or SSH.
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4x SSG-620P-E1CR24L, a minimum of 4 nodes are required for scale-out

- 0 the WUI or SSH. SSG-620P-E1CR24L redundancy and high throughput. QuantaStor QuantaStor node A node C 1/10G QS 25/100G DATA **1G RJ45 IPMI** MGMT **OuantaStor** QuantaStor node B node D
- Whenever possible connect the dual power-supplies in the servers to separate PDUs for redundancy.
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 - Two RJ45 10G ports for QuantaStor node management.
 - Multiple SFP+/QSFP 25G/100G ports are for data transferring. Recommend to connect two cables for

1/10G QS MGMT & 25/100G DATA

- the network interfaces may vary based on different configuration.



- All Supermicro storage box will be pre-installed with QuantaStor platform before shipment if you order the solution bundle from Supermicro. After the system bootup, you will see the OSNexus QuantaStor splash screen followed by the console login page with some instructions.
- QuantaStor Console Login default username/password: qadmin/qadmin

OSNEXUS QuantaStor 5.12.2.011+d19c03bed
System has been up for 0 days 0 hours and 0 minutes.
Your OSNEXUS QuantaStor storage system has finished booting but it may take an additional minute or two for all services to activate.
== Web Management Login == QuantaStor's web user interface is accessible via all network ports by default. Enter the IP address of the system into your web browse and login using the default QuantaStor administration acount via username 'admin' and password of 'password'. https://192.168.1.100

== Console Login ==_

A low level system iser account 'qadmin' with password 'qadmin' is setup by default with sude root privileges. Using this account one may configure the system using the 'qs' command line utility. IMPORTANT: Please login as the 'qadmin' user and use the 'passwd' command to update its password immediately after installation.

== Documentation ==

System configuration steps and full documentation is available on the OSNEXUS Documentation web site: https://wiki.osnexus.com

quantastor login: _



• To list network interfaces: \$ qs np-list

qadmin@quantastor:"\$ qs np-list										
Storage System Model	Name MAC Address	Link State ID	State	IP Address	Subnet Mask	Gateway	Config Type	MTU	Vendor	
uantastor Ethernet	eno1 3c:ec:ef:30:40	Link Up :3a b11f0d4	Normal 15-b8f6-fc	172.31.38.131 :7Ъ-6384-032Ъ90	255.255.0.0 6f 19de	172.31.0.1	dhcp	1500	Intel	
1			00011					1500	11	
Ethernet quantastor ex MT22210 F	3c:ec:ef:30:40 enp134s0f0	:3b dead43c Disabled	2-2141-76 Offline	242-501b-ca67a2	721699		unknown	1500	Mellan	
quantastor	enp134s0f1	Disabled	Offline	000-0036-0ac200	OULLUL		unknown	1500	Mellan	
ox MT27710 F quantastor	ac:1f:6b:f8:63 enp59s0f0	:07 595d962 Disabled	2-f7f7-da Offline	ac-8dc5-bb0187	1a57cc		unknown	1500	Mellan	
ox MT27710 F quantastor	ac : 1f :6b : f b : 49 enp59s0f 1	:86 6dadcd2 Disabled	2-78f8-70 Offline	9c6-280b-db3ff3	414af 1		unknown	1500	Mellan	

To configure an interface with a static IP address using the network port modify command: \$ qs np-modify --port=eno1 --ip-address=172.31.200.240 --netmask=255.255.0.0 --port-type=static --gateway=172.31.0.1
 To configure an interface with a static IP address using the network port modify command: \$ qs np-modify --port=eno1 --ip-address=172.31.200.240 --netmask=255.255.0.0 --port-type=static --gateway=172.31.0.1

• To list network interfaces to show the changes: \$ qs np-list

qadmin@quantast 2.31.0.1	or:~\$ qs np-modify	port=eno1 -	-ip-addr	ess=172.31.200.	240netmask=2	55.255.0.0 ₁	oort-type=static	gateway=17
Storage System Model	Name MAC Address	Link State ID	State	IP Address	Subnet Mask	Gateway	Config Type	MTU Vendor
78bed16e-75da-b 1500 Intel	de0-feb5-fc6a58f9da Ethernet	nea eno1 . 3c:ec:ef:30:	Lir 40:3a	ık Up Normal b11f0d45-b8f6-	172.31.200.2 fc7b-6384-032b9	40 255.255.0.0 06f19de	172.31.0.1	static

admin@quantastor:´\$ qs np−list										
Storage System Model	Name MAC Address	Link S	State D	State	IP Address	Subnet Mask	Gateway	Config Type	MTU	Vendor
uantastor Ethernet	eno1 3c:ec:ef:30:40:3	Link I	Up 11f0/49	Normal 5-b8f6-fc7	172.31.200.240 75-6384-0325906	255.255.0.0 f19de	172.31.0.1	static	1500	Intel
uantastor	eno2	Link I	Up ead43c2	Normal 2-2141-7e4	192.168.1.141	255.255.255.0 21699		dhcp	1500	Intel
quantastor ox MT27710 F	enp134s0f0 ac:1f:6b:f8:63:0	Disab 6 c	led 55f517f	Offline -e2e1-fe6	5b-863e-6ac2680	бссбс		unknown	1500	Mellan
quantastor ox MT27710 F	enp134s0f1 ac:1f:6b:f8:63:0	Disab 75	led 9549622	Offline 2-f7f7-daa	ac-84c5-bb01871	a57cc		unknown	1500	Mellan
quantastor	enp59s0f0	Disab	led	Offline 2-78f8-70d	-6-2805-453ff34	14af1		unknown	1500	Mellan
quantastor ox MT27710 F	enp59s0f1 ac:1f:6b:fb:49:8	Disab	led 6be8a84	Offline 1-3df5-a99	9e-6f68-2a5da60	a0306		unknown	1500	Mellan
qadmin@quantastor:~?	à									

• To assign a DNS server for the storage system so that it can connect external network: \$ qs system-modify --storage-system=`hostname` --dns-servers=10.2.1.205

admin@quantastor:~\$ qs system-modify --storage-system=`hostname` --dns-servers=10.2.1.205,10.2.1.225



QuantaStor Web Management Interface Login – Note the IP address and enter it into your web browser, and use default username/password: admin/password

OSNEXUS QuantaStor 5.12.2.011+d19c03bed

System has been up for 0 days 0 hours and 0 minutes.

Your OSNEXUS QuantaStor storage system has finished booting but it may take an additional minute or two for all services to activate.

== Web Management Login ==

QuantaStor's web user interface is accessible via all network ports by default. Enter the IP address of the system into your web browser and login using the default QuantaStor administration acount via username 'admin' and password of 'password'.

https:// 172.31.200.240

== Console Login ==

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quantastor login: _





You shall receive four (4) **key blocks (below example)** for each HA system when you receive your order. Each server gets two license keys, one System License and one Support License. The System License enables and activates the software and the Support License which enables support and enables the system to alert when the license subscription is nearing expiration. The system will work without a Support License applied but a unique System License must be applied to each system. Do not apply the same license (support or system type) to more than one system as they are per system and that will not work.

-----START KEY BLOCK------1234567890abcdef1234567890abcdef12345678 90abcdef1234567890abcdef1234567890abcdef 1234567890abcdef1234567890abcdef12345678 90abcdef1234567890abcdef1234567890abcdef 12345678

-----END KEY BLOCK------

To apply a license via QS Web GUI, log into the QuantaStor web management interface per page 12, and follow https://wiki.osnexus.com/index.php?title=License Management

Note: add a System License to the system first, and then a Support License after. The System License must be applied first. After adding both the System and Support license, activate them using the Active License Online dialog. This will require that your system has internet access. If activation fails, ignore this step, as the unactivated license has a two week grace period and contact OSNexus support to assist you in getting the license activated.



- Contact OSNEXUS support: Contact OSNexus support at support@osnexus.com to schedule assistance with getting your system setup and configured. OSNexus support will do a series of hardware checks, log review and collection, and will assist you with getting Storage Pool(s) created, HA clustering setup, alert management configured and more, to ensure you have a highly reliable and performant setup for production use.
 - Website: <u>https://www.osnexus.com/contact-support</u>
 - Email: <u>support@osnexus.com</u>
- Product Documentation:
 - <u>https://wiki.osnexus.com/index.php?title=OSNEXUS_QuantaStor_Documentation</u>
- Solution Page:
 - https://www.supermicro.com/en/solutions/osnexus
 - <u>https://www.osnexus.com/</u>
- BOM/Quote support:
 - Osnexus-PM <u>Osnexus-PM@supermicro.com</u>