



Supermicro – OSNEXUS SDS Solution powered by QuantaStor

QuickStart Guide

Scale-Up



Scale-Out



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: <https://www.supermicro.com/en/solutions/osnexus>, <https://www.osnexus.com/>



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)

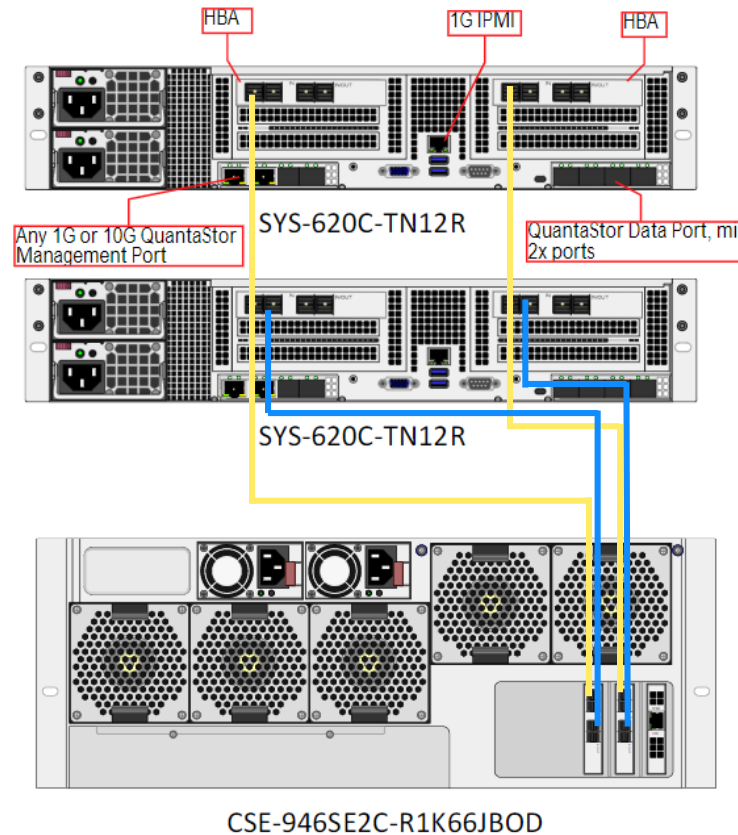
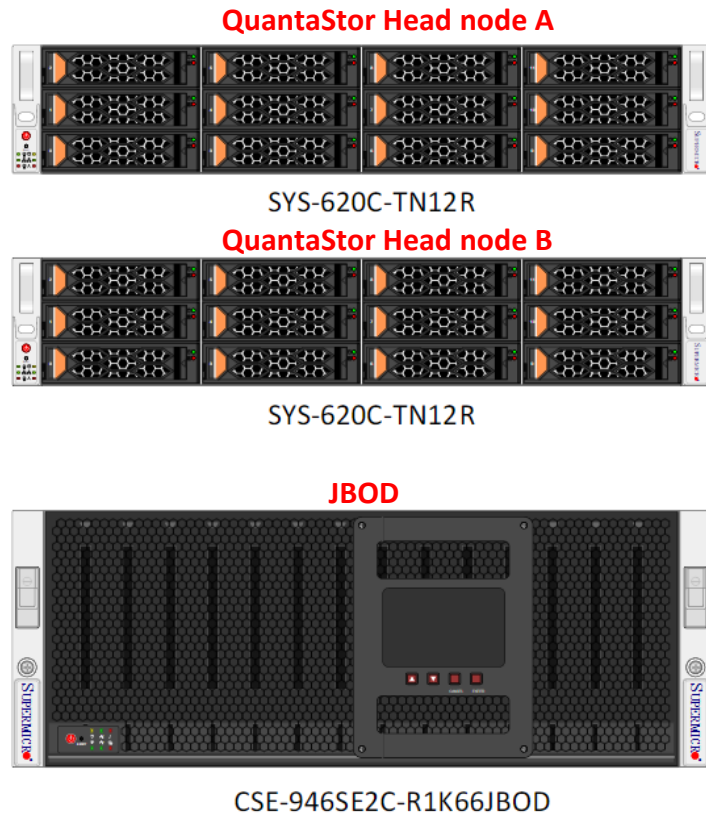
[SSG-6049SP-DE1CR60 Manual](#)

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

[SSG-620P-E1CR24L Manual](#)

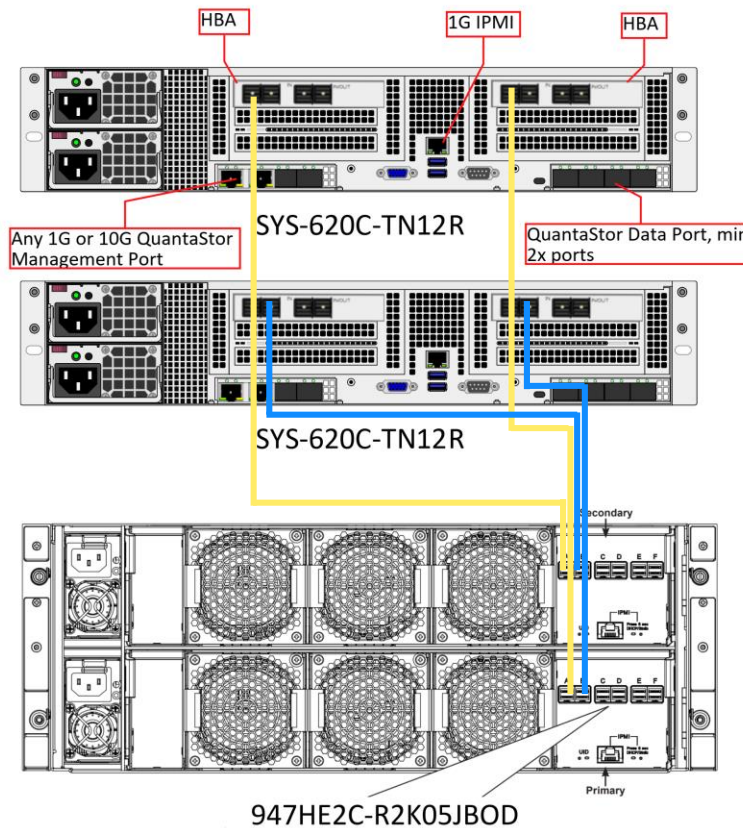
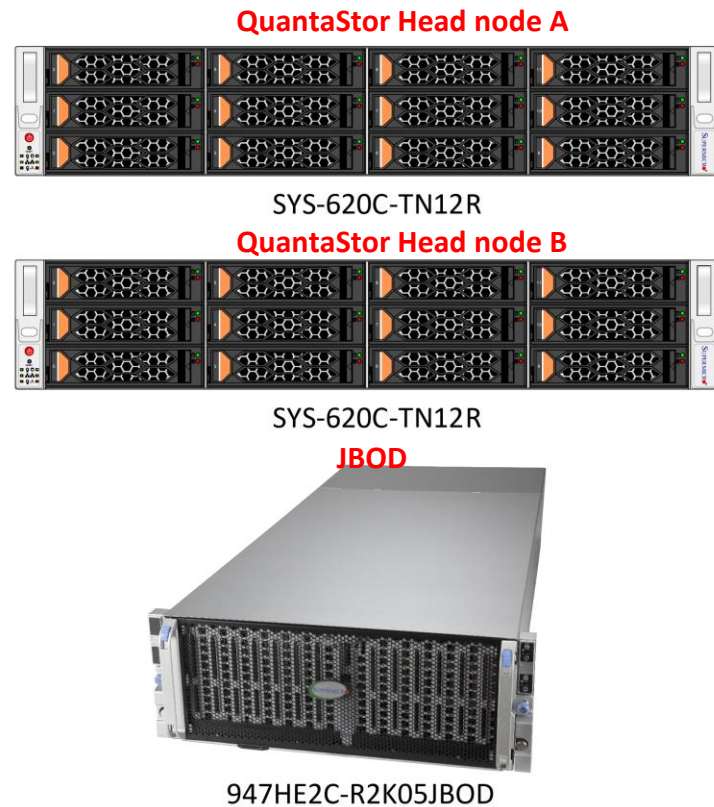
 Click “Manual” to see how to install the server onto the rack.

2x SYS-620C-TN12R + 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](https://wiki.osnexus.com/index.php?title=HA_Cluster_Setup_(JBODs)#Cabling_Diagrams_.2F_Guidelines)

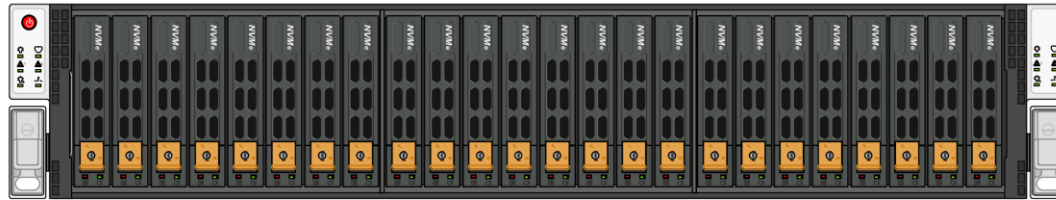
2x SYS-620C-TN12R + 947HE2C-R2K05JBOD



- Whenever possible connect the dual power-supplies in the servers/JBODs to separate PDUs for redundancy.
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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)

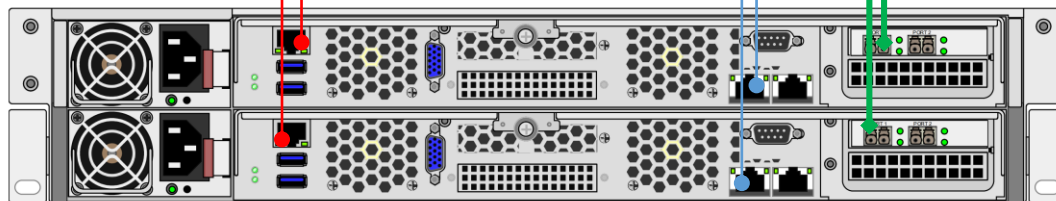


SSG-2029P-DN2R24L

1G RJ45 IPMI 1/10G QS MGMT 25/100G DATA *

QuantaStor
Head node A

QuantaStor
Head node B

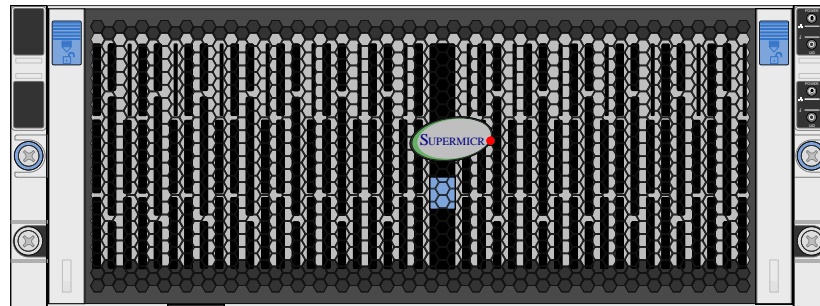


SSG-2029P-DN2R24L

- 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

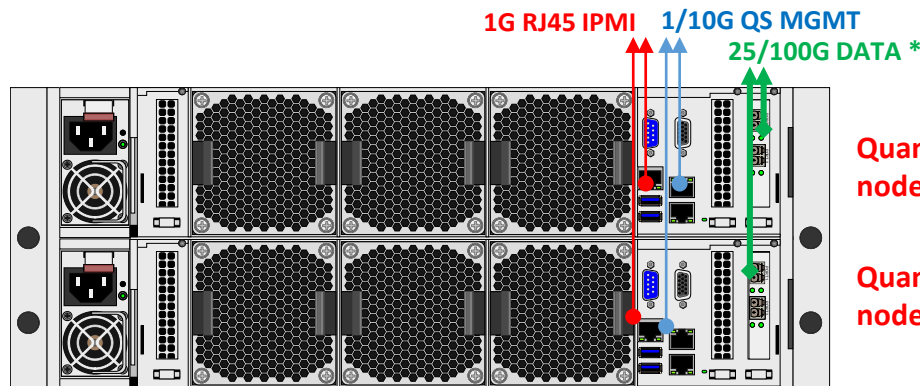


SSG-6049SP-DE1CR60

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- 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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QuantaStor node A

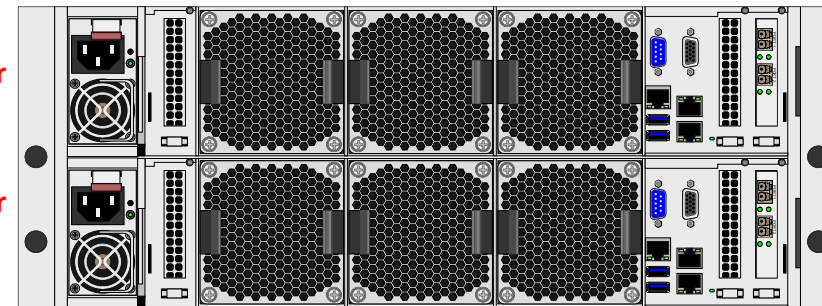
QuantaStor node B



SSG-6049SP-DE1CR60

QuantaStor node C

QuantaStor node D



SSG-6049SP-DE1CR60

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

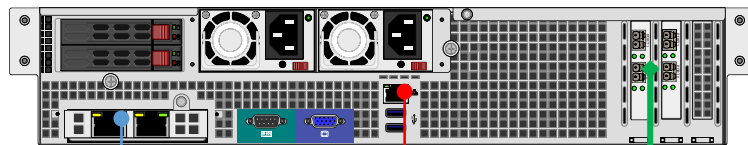
4x SSG-620P-E1CR24L, a minimum of 4 nodes are required for scale-out



SSG-620P-E1CR24L

- 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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QuantaStor node A

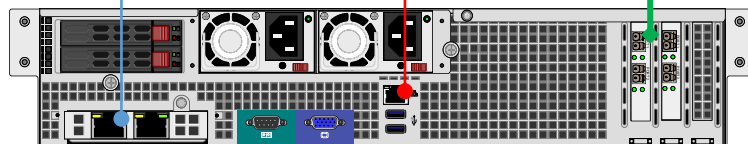


1/10G QS
MGMT

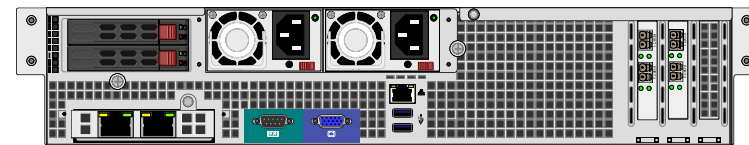
1G RJ45 IPMI

25/100G DATA

QuantaStor node B



QuantaStor node C



QuantaStor node D



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 browser
and login using the default QuantaStor administration account via
username 'admin' and password of 'password'.

    https://192.168.1.100

== Console Login ==
A low level system user account 'qadmin' with password 'qadmin'
is setup by default with sudo/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	State	IP Address	Subnet Mask	Gateway	Config Type	MTU	Vendor
quantastor Ethernet ..	eno1	3c:ec:ef:30:40:3a	Link Up	Normal	172.31.38.131	255.255.0.0	172.31.0.1	dhcp	1500	Intel
quantastor Ethernet ..	eno2	3c:ec:ef:30:40:3b	Link Down	Offline	192.168.1.141	255.255.255.0		dhcp	1500	Intel
quantastor ..	emp134s0f0	emp134s0f0	Disabled	Offline				unknown	1500	Mellanox
quantastor ..	emp134s0f1	emp134s0f1	Disabled	Offline				unknown	1500	Mellanox
quantastor ..	emp59s0f0	emp59s0f0	Disabled	Offline				unknown	1500	Mellanox
quantastor ..	emp59s0f1	emp59s0f1	Disabled	Offline				unknown	1500	Mellanox

- 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`

```
qadmin@quantastor:~$ qs np-modify --port=eno1 --ip-address=172.31.200.240 --netmask=255.255.0.0 --port-type=static --gateway=172.31.0.1
```

Storage System Model	Name	MAC Address	Link State	State	IP Address	Subnet Mask	Gateway	Config Type	MTU	Vendor
78bed1fe-75da-bde0-feb5-fc6a58f9daea	eno1	3c:ec:ef:30:40:3a	Link Up	Normal	172.31.200.240	255.255.0.0	172.31.0.1	static	1500	Intel
quantastor Ethernet ..	eno2	3c:ec:ef:30:40:3b	Link Down	Offline	192.168.1.141	255.255.255.0		dhcp	1500	Intel

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

```
qadmin@quantastor:~$ qs np-list
```

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quantastor ..	emp134s0f0	emp134s0f0	Disabled	Offline				unknown	1500	Mellanox
quantastor ..	emp134s0f1	emp134s0f1	Disabled	Offline				unknown	1500	Mellanox
quantastor ..	emp59s0f0	emp59s0f0	Disabled	Offline				unknown	1500	Mellanox
quantastor ..	emp59s0f1	emp59s0f1	Disabled	Offline				unknown	1500	Mellanox

- 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`

```
qadmin@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**

```
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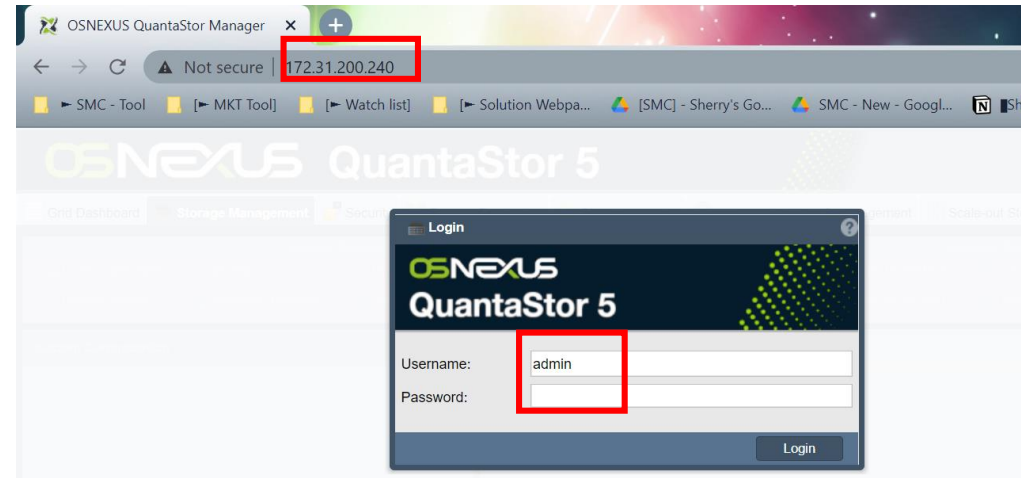
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https:// 172.31.200.240

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quantastor login: _
```



- **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: <https://www.osnexus.com/contact-support>
 - Email: support@osnexus.com

- **Product Documentation:**
 - https://wiki.osnexus.com/index.php?title=OSNEXUS_QuantaStor_Documentation

- **Solution Page:**
 - <https://www.supermicro.com/en/solutions/osnexus>
 - <https://www.osnexus.com/>

- **BOM/Quote support:**
 - Osnexus-PM Osnexus-PM@supermicro.com