



Review appliance network connections (SG6000)

StorageGRID

NetApp
March 18, 2022

This PDF was generated from <https://docs.netapp.com/us-en/storagegrid-116/sg6000/network-bond-modes-for-10-25-gbe-ports.html> on March 18, 2022. Always check docs.netapp.com for the latest.

Table of Contents

Review appliance network connections (SG6000).....	1
Port bond modes for SG6000-CN controller	1

Review appliance network connections (SG6000)

Before installing the StorageGRID appliance, you should understand which networks can be connected to the appliance.

When you deploy a StorageGRID appliance as a Storage Node in a StorageGRID system, you can connect it to the following networks:

- **Grid Network for StorageGRID:** The Grid Network is used for all internal StorageGRID traffic. It provides connectivity between all nodes in the grid, across all sites and subnets. The Grid Network is required.
- **Admin Network for StorageGRID:** The Admin Network is a closed network used for system administration and maintenance. The Admin Network is typically a private network and does not need to be routable between sites. The Admin Network is optional.
- **Client Network for StorageGRID:** The Client Network is an open network used to provide access to client applications, including S3 and Swift. The Client Network provides client protocol access to the grid, so the Grid Network can be isolated and secured. The Client Network is optional.
- **Management network for SANtricity System Manager (optional):** This network provides access to SANtricity System Manager on the storage controller, allowing you to monitor and manage the hardware components in the storage controller shelf. This management network can be the same as the Admin Network for StorageGRID, or it can be an independent management network.

If the optional SANtricity System Manager network is not connected, you might be unable to use some SANtricity features.

- **BMC management network for the SG6000-CN controller (optional):** This network provides access to the baseboard management controller in the SG6000-CN, allowing you to monitor and manage the hardware components in the SG6000-CN controller. This management network can be the same as the Admin Network for StorageGRID, or it can be an independent management network.

If the optional BMC management network is not connected, some support and maintenance procedures will be more difficult to perform. You can leave the BMC management network unconnected except when needed for support purposes.



For detailed information about StorageGRID networks, see the *Grid Primer*.

Related information

[Gather installation information \(SG6000\)](#)

[Cable appliance \(SG6000\)](#)

[Port bond modes for SG6000-CN controller](#)

[Network guidelines](#)

Port bond modes for SG6000-CN controller

When configuring network links for the SG6000-CN, you can use port bonding for the 10/25-GbE ports that connect to the Grid Network and optional Client Network, and the 1-GbE management ports that connect to the optional Admin Network. Port bonding helps protect your data by providing redundant paths between StorageGRID networks and the

appliance.

Related information

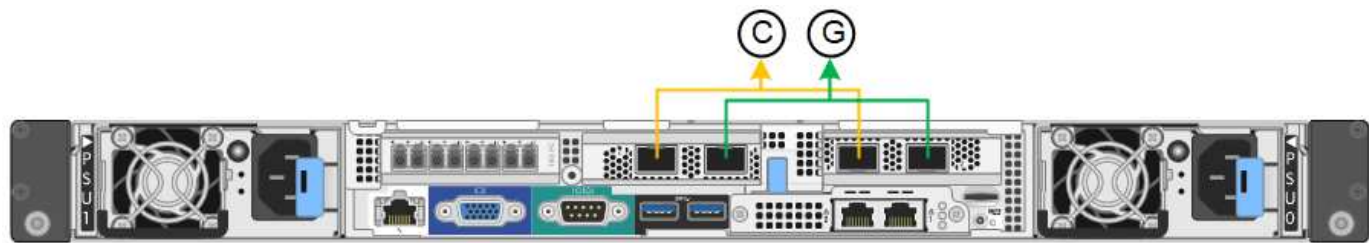
[Configure network links \(SG6000\)](#)

Network bond modes for 10/25-GbE ports

The 10/25-GbE networking ports on the SG6000-CN controller support Fixed port bond mode or Aggregate port bond mode for the Grid Network and Client Network connections.

Fixed port bond mode


Fixed mode is the default configuration for the 10/25-GbE networking ports.



Callout	Which ports are bonded
C	Ports 1 and 3 are bonded together for the Client Network, if this network is used.
G	Ports 2 and 4 are bonded together for the Grid Network.

When using Fixed port bond mode, the ports can be bonded using active-backup mode or Link Aggregation Control Protocol mode (LACP 802.3ad).

- In active-backup mode (default), only one port is active at a time. If the active port fails, its backup port automatically provides a failover connection. Port 4 provides a backup path for port 2 (Grid Network), and port 3 provides a backup path for port 1 (Client Network).
- In LACP mode, each pair of ports forms a logical channel between the controller and the network, allowing for higher throughput. If one port fails, the other port continues to provide the channel. Throughput is reduced, but connectivity is not impacted.

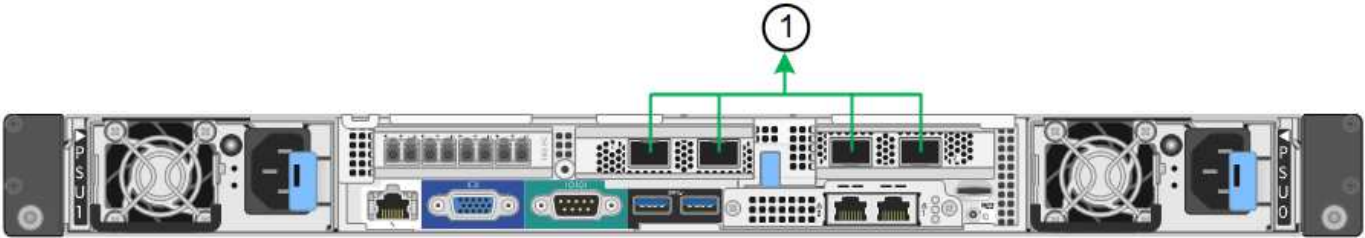


If you do not need redundant connections, you can use only one port for each network. However, be aware that an alert will be triggered in the Grid Manager after StorageGRID is installed, indicating that the link is down. Because this port is disconnected on purpose, you can safely disable this alert.

From the Grid Manager, select **Alert > Rules**, select the rule, and click **Edit rule**. Then, uncheck the **Enabled** check box.

Aggregate port bond mode

Aggregate port bond mode significantly increases the throughput for each StorageGRID network and provides additional failover paths.




Callout	Which ports are bonded
1	All connected ports are grouped in a single LACP bond, allowing all ports to be used for Grid Network and Client Network traffic.

If you plan to use aggregate port bond mode:

- You must use LACP network bond mode.
- You must specify a unique VLAN tag for each network. This VLAN tag will be added to each network packet to ensure that network traffic is routed to the correct network.
- The ports must be connected to switches that can support VLAN and LACP. If multiple switches are participating in the LACP bond, the switches must support multi-chassis link aggregation groups (MLAG), or equivalent.
- You must understand how to configure the switches to use VLAN, LACP, and MLAG, or equivalent.

If you do not want to use all four 10/25-GbE ports, you can use one, two, or three ports. Using more than one port maximizes the chance that some network connectivity will remain available if one of the 10/25-GbE ports fails.



If you choose to use fewer than four ports, be aware that one or more alarms will be raised in the Grid Manager after StorageGRID is installed, indicating that cables are unplugged. You can safely acknowledge the alarms to clear them.

Network bond modes for 1-GbE management ports

For the two 1-GbE management ports on the SG6000-CN controller, you can choose Independent network bond mode or Active-Backup network bond mode to connect to the optional Admin Network.

In Independent mode, only the management port on the left is connected to the Admin Network. This mode does not provide a redundant path. The management port on the right is unconnected and available for temporary local connections (uses IP address 169.254.0.1)

In Active-Backup mode, both management ports are connected to the Admin Network. Only one port is active at a time. If the active port fails, its backup port automatically provides a failover connection. Bonding these two physical ports into one logical management port provides a redundant path to the Admin Network.



If you need to make a temporary local connection to the SG6000-CN controller when the 1-GbE management ports are configured for Active-Backup mode, remove the cables from both management ports, plug your temporary cable into the management port on the right, and access the appliance using IP address 169.254.0.1.



Callout	Network bond mode
A	Both management ports are bonded into one logical management port connected to the Admin Network.
I	The port on the left is connected to the Admin Network. The port on the right is available for temporary local connections (IP address 169.254.0.1).

Copyright Information

Copyright © 2022 NetApp, Inc. All rights reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means-graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system- without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

Trademark Information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.