



Review appliance network connections (SG5700)

StorageGRID

NetApp
March 03, 2022

This PDF was generated from <https://docs.netapp.com/us-en/storagegrid-116/sg5700/network-bond-modes-for-10-25-gbe-ports.html> on March 03, 2022. Always check docs.netapp.com for the latest.

Table of Contents

- Review appliance network connections (SG5700)..... 1
 - StorageGRID appliance networks 1
 - StorageGRID appliance connections 1
 - Port bond modes for E5700SG controller ports 3

Review appliance network connections (SG5700)

Before installing the StorageGRID appliance, you should understand which networks can be connected to the appliance and how the ports on each controller are used.

StorageGRID appliance networks

When you deploy a StorageGRID appliance as a Storage Node in a StorageGRID grid, 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 E2800 controller, allowing you to monitor and manage the hardware components in the appliance. This management network can be the same as the Admin Network for StorageGRID, or it can be an independent management network.

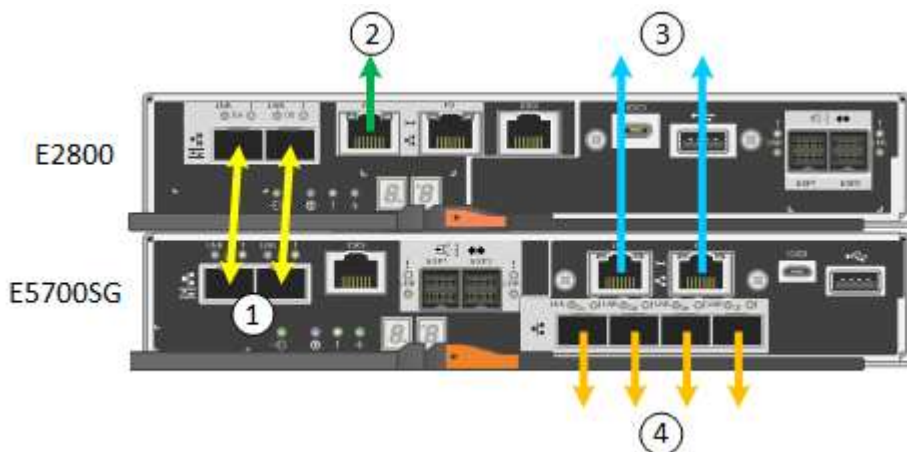
If the optional SANtricity System Manager network is not connected, you might be unable to use some SANtricity features.



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

StorageGRID appliance connections

When you install a StorageGRID appliance, you must connect the two controllers to each other and to the required networks. The figure shows the two controllers in the SG5760, with the E2800 controller on the top and the E5700SG controller on the bottom. In the SG5712, the E2800 controller is to the left of the E5700SG controller.



	Port	Type of port	Function
1	Two interconnect ports on each controller	16Gb/s FC optical SFP+	Connect the two controllers to each other.
2	Management port 1 on the E2800 controller	1-GbE (RJ-45)	Connects to the network where you access SANtricity System Manager. You can use the Admin Network for StorageGRID or an independent management network.
2	Management port 2 on the E2800 controller	1-GbE (RJ-45)	Reserved for technical support.
3	Management port 1 on the E5700SG controller	1-GbE (RJ-45)	Connects the E5700SG controller to the Admin Network for StorageGRID.
3	Management port 2 on the E5700SG controller	1-GbE (RJ-45)	<ul style="list-style-type: none"> • Can be bonded with management port 1 if you want a redundant connection to the Admin Network. • Can be left unwired and available for temporary local access (IP 169.254.0.1). • During installation, can be used to connect the E5700SG controller to a service laptop if DHCP-assigned IP addresses are not available.
4	10/25-GbE ports 1-4 on the E5700SG controller	10-GbE or 25-GbE Note: The SFP+ transceivers included with the appliance support 10-GbE link speeds. If you want to use 25-GbE link speeds for the four network ports, you must provide SFP28 transceivers.	Connect to the Grid Network and the Client Network for StorageGRID. See “10/25-GbE port connections for the E5700SG controller.”

Related information

- [Gather installation information \(SG5700\)](#)
- [Cable appliance \(SG5700\)](#)
- [Port bond modes for E5700SG controller ports](#)
- [Networking guidelines](#)
- [Install VMware](#)
- [Install Red Hat Enterprise Linux or CentOS](#)
- [Install Ubuntu or Debian](#)

Port bond modes for E5700SG controller ports

When configuring network links for the E5700SG controller ports, 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

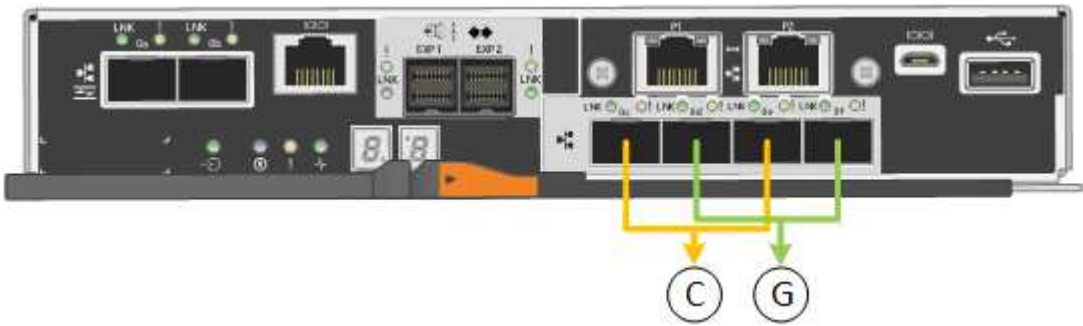
- [Configure network links \(SG5700\)](#)

Network bond modes for 10/25-GbE ports

The 10/25-GbE networking ports on the E5700SG 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.

Callout	Which ports are bonded
G	Ports 2 and 4 are bonded together for the Grid Network.

When using Fixed port bond mode, you can use one of two network bond modes: Active-Backup or Link Aggregation Control Protocol (LACP).

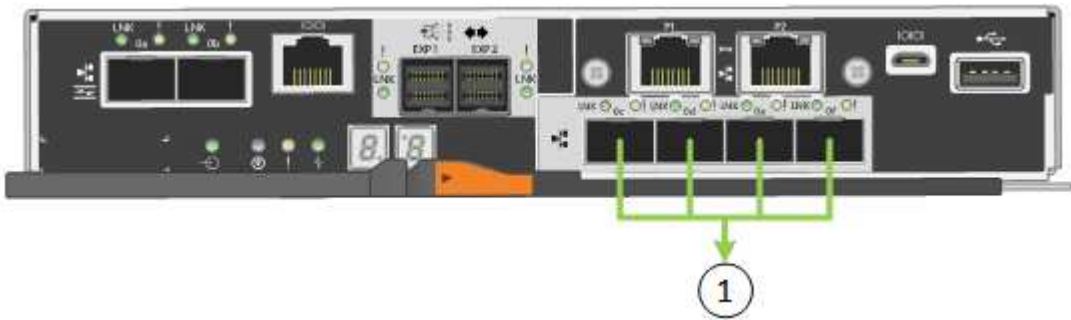
- In Active-Backup mode (default), only one port is active at a time. If the active port fails, its backup port automatically provides a failover connection. Port 4 provides a backup path for port 2 (Grid Network), and port 3 provides a backup path for port 1 (Client Network).
- In LACP mode, each pair 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 alarm will be raised in the Grid Manager after StorageGRID is installed, indicating that a cable is unplugged. You can safely acknowledge this alarm to clear it.

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

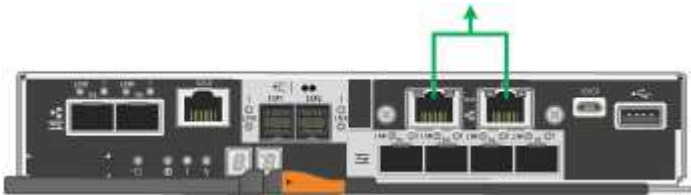
For the two 1-GbE management ports on the E5700SG controller, you can choose Independent network bond mode or Active-Backup network bond mode to connect to the optional Admin Network.

In Independent mode, only management port 1 is connected to the Admin Network. This mode does not provide a redundant path. Management port 2 is left unwired and available for temporary local connections (use IP address 169.254.0.1)

In Active-Backup mode, both management ports 1 and 2 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 E5700SG 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 management port 2, and access the appliance using 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.