Overview

StorageGRID

NetApp
July 18, 2022

Table of Contents

StorageGRID SG5700 appliance overview

The SG5700 StorageGRID appliance is an integrated storage and computing platform that operates as a Storage Node in a StorageGRID grid. The appliance can be used in a hybrid grid environment that combines appliance Storage Nodes and virtual (software-based) Storage Nodes.

StorageGRID SG5700 series appliance provides the following features:

- Integrate the storage and computing elements for a StorageGRID Storage Node.
- Include the StorageGRID Appliance Installer to simplify Storage Node deployment and configuration.
- Includes E-Series SANtricity System Manager for hardware management and monitoring.
- Support up to four 10-GbE or 25-GbE connections to the StorageGRID Grid Network and Client Network.
- Support Full Disk Encryption (FDE) drives or Federal Information Processing Standard (FIPS) drives. When these drives are used with the Drive Security feature in SANtricity System Manager, unauthorized access to data is prevented.

The SG5700 appliance is available in four models: the SG5712 and SG5712X, and the SG5760 and SG5760X. There are no specification or functional differences between the SG5712 and SG5712X except for the location of the interconnect ports on the storage controller. Similarly, there are no specification or functional differences between the SG5712 and SG5712X except for the location of the interconnect ports on the storage controller.

The models include the following components:

Component	SG5712	SG5712X	SG5760	SG5760X
Compute controller	E5700SG controller	E5700SG controller	E5700SG controller	E5700SG controller
Storage controller	E2800A controller	E2800B controller	E2800A controller	E2800B controller
Chassis	E-Series DE212C enclosure, a two rack-unit (2U) enclosure	E-Series DE212C enclosure, a two rack-unit (2U) enclosure	E-Series DE460C enclosure, a four rack-unit (4U) enclosure	E-Series DE460C enclosure, a four rack-unit (4U) enclosure
Drives	12 NL-SAS drives (3.5-inch)	12 NL-SAS drives (3.5-inch)	60 NL-SAS drives (3.5-inch)	60 NL-SAS drives (3.5-inch)

Component	SG5712	SG5712X	SG5760	SG5760X
Redundant power supplies and fans	Two power-fan canisters	Two power-fan canisters	Two power canisters and two fan canisters	Two power canisters and two fan canisters

The maximum raw storage available in the StorageGRID appliance is fixed, based on the number of drives in each enclosure. You cannot expand the available storage by adding a shelf with additional drives.
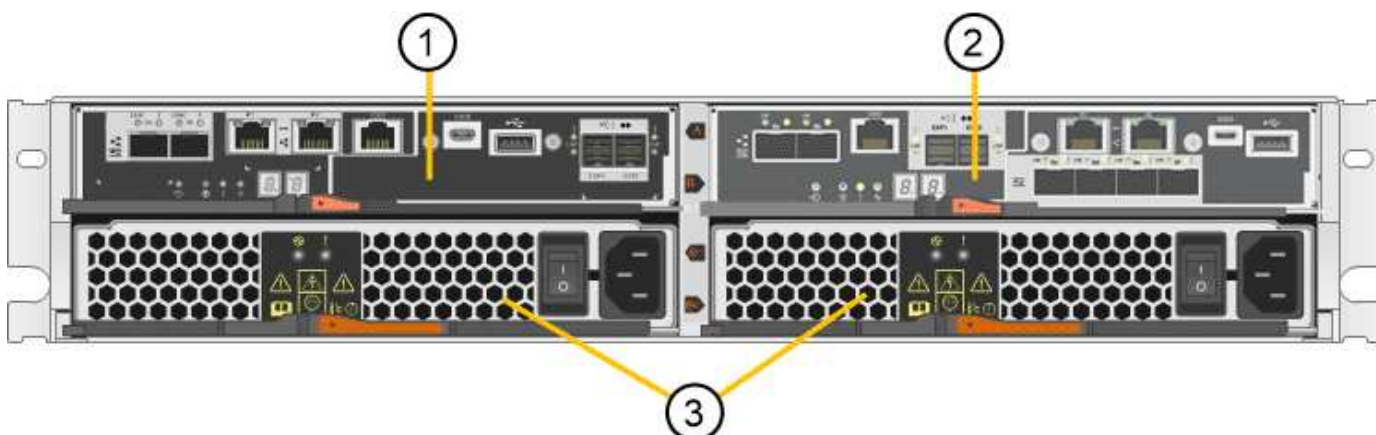
Model SG5712 and 5712X

The figures show the front and back of the SG5712 and SG5712X model, a 2U enclosure that holds 12 drives.

SG5712 front and rear view

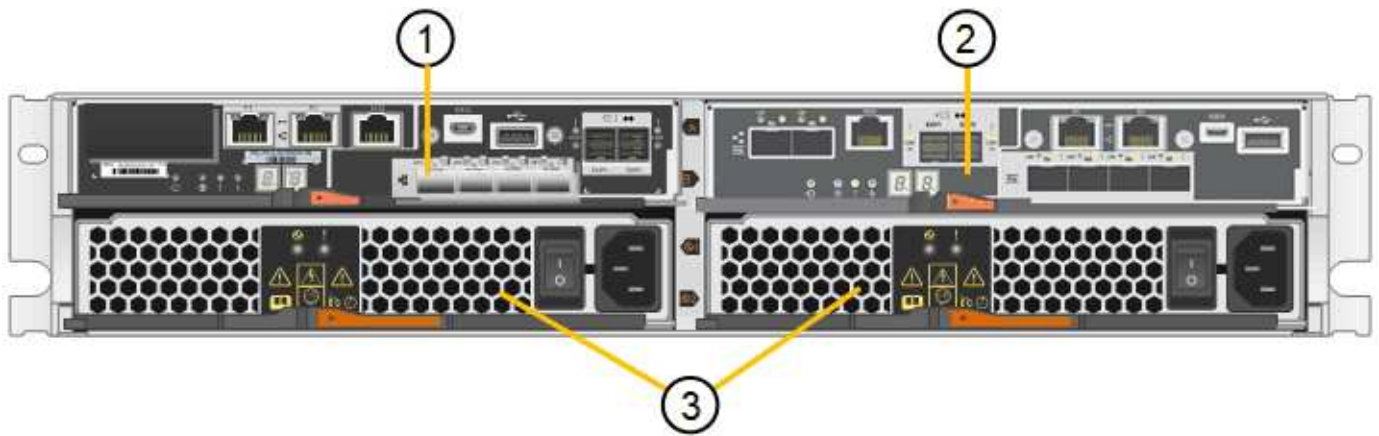The SG5712 includes two controllers and two power-fan canisters.

SG5712 components

Callout	Description
1	E2800A controller (storage controller)
2	E5700SG controller (compute controller)
3	Power-fan canisters

SG5712X front and rear view

The SG5712X includes two controllers and two power-fan canisters.

SG5712X components
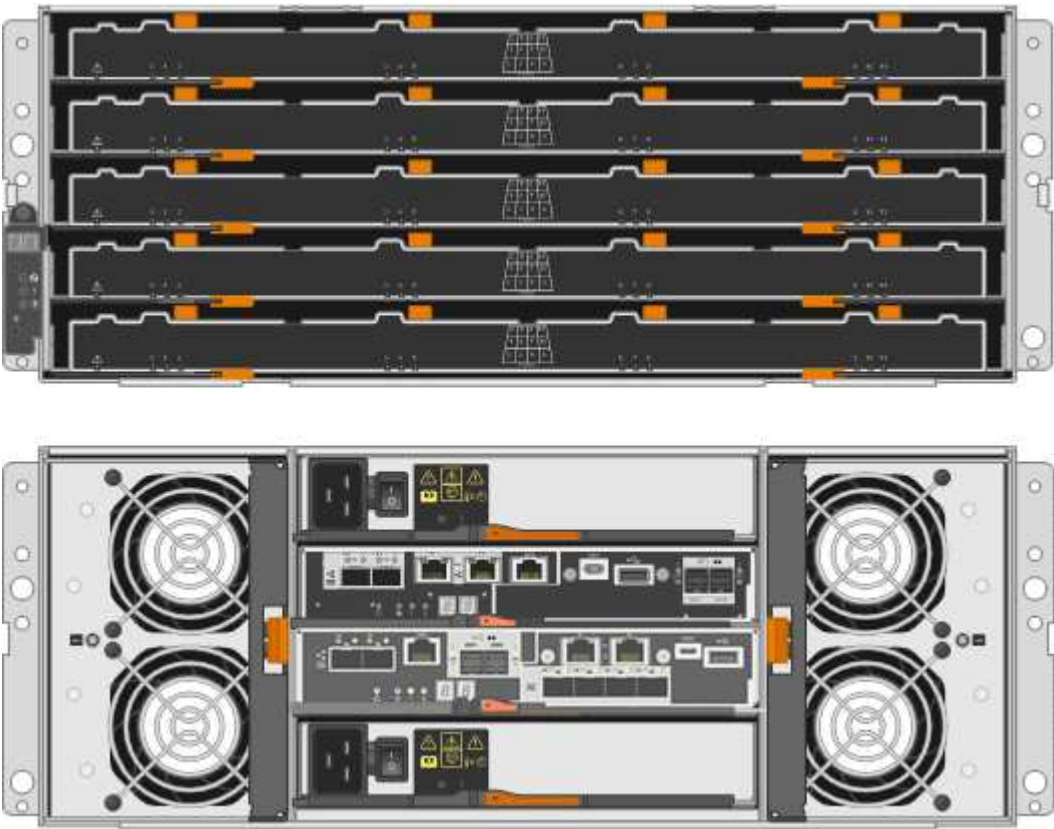

Callout	Description
1	E2800B controller (storage controller)
2	E5700SG controller (compute controller)
3	Power-fan canisters

Model SG5760 and SG5760X

The figures show the front and back of the SG5760 and SG5760X models, a 4U enclosure that holds 60 drives in 5 drive drawers.
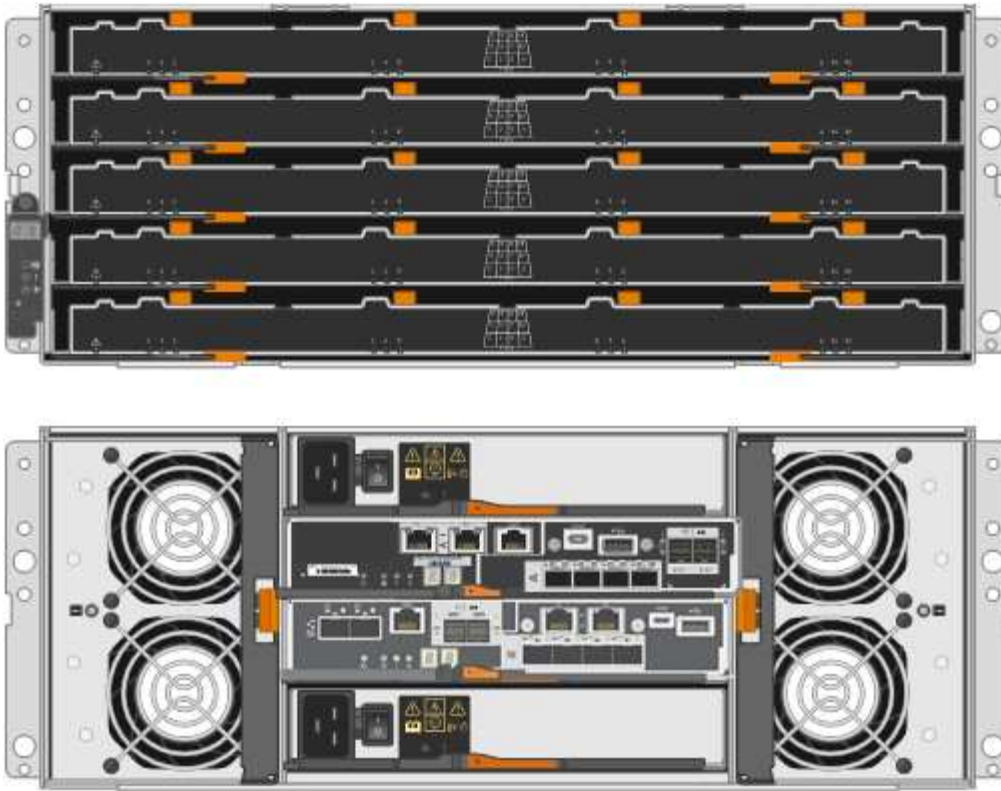
SG5760 front and rear view

The SG5760 includes two controllers, two fan canisters, and two power canisters.

SG5760 components

Callout	Description
1	E2800A controller (storage controller)
2	E5700SG controller (compute controller)
3	Fan canister (1 of 2)
4	Power canister (1 of 2)

SG5760X front and rear view

The SG5760S includes two controllers, two fan canisters, and two power canisters.

SG5760X components

Callout	Description
1	E2800B controller (storage controller)
2	E5700SG controller (compute controller)
3	Fan canister (1 of 2)
4	Power canister (1 of 2)

Related information

NetApp E-Series Systems Documentation Site

Controllers in the StorageGRID 5700 appliance

Both the 12-drive SG5712 and SG5712X and the 60-drive SG5760 and SG5760X models of the StorageGRID appliance include an E5700SG compute controller and an E-Series E2800 storage controller.

- The SG5712 and SG5760 use a E2800A controller.
- The SG5712X and the SG5760X use a E2800B controller.

> The E2800A and E2800B controllers are identical in specification and
> function except for the location of the interconnect ports.

You should review the diagrams to learn the differences among the controllers.
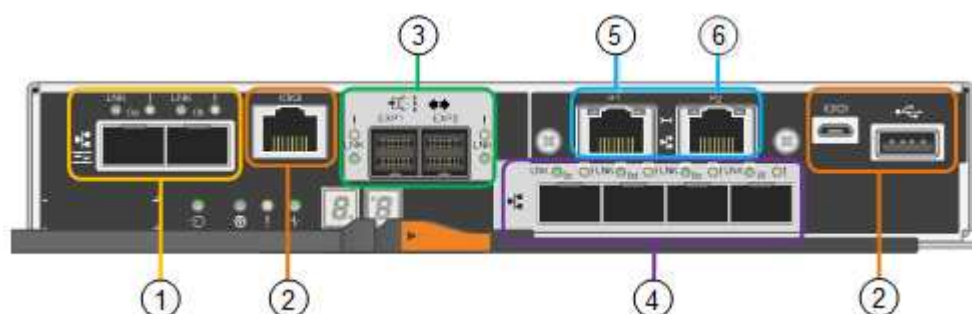
E5700SG controller

- Operates as the compute server for the appliance.
- Includes the StorageGRID Appliance Installer.

> (i) StorageGRID software is not preinstalled on the appliance. This software is accessed from
> the Admin Node when you deploy the appliance.

- Can connect to all three StorageGRID networks, including the Grid Network, the Admin Network, and the Client Network.
- Connects to the E2800 controller and operates as the initiator.

This figure shows the connectors on the back of the E5700SG controller.

	Port	Type	Use
1	Interconnect ports 1 and 2	16Gb/s Fibre Channel (FC), optical SFPa	Connect the E5700SG controller to the E2800 controller.
2	Diagnostic and support ports	• RJ-45 serial port • Micro USB serial port • USB port	Reserved for technical support.
3	Drive expansion ports	12Gb/s SAS	Not used. StorageGRID appliances do not support expansion drive shelves.
4	Network ports 1-4	10-GbE or 25-GbE, based on SFP transceiver type, switch speed, and configured link speed	Connect to the Grid Network and the Client Network for StorageGRID.

	Port	Type	Use
5	Management port 1	1-Gb (RJ-45) Ethernet	Connect to the Admin Network for StorageGRID.
6	Management port 2	1-Gb (RJ-45) Ethernet	Options: • Bond with management port 1 for a redundant connection to the Admin Network for StorageGRID. • Leave unwired and available for temporary local access (IP 169.254.0.1). • During installation, use port 2 for IP configuration if DHCP-assigned IP addresses are not available.

## E2800 series storage controller

There are two versions of the E2800 storage controller used in the SG5700 appliances: E2800A and E2800B. The E2800A does not have a HIC, and the E2800B has a four-port HIC. The two controller versions have identical specifications and function except for the location of the interconnect ports.

The E2800 series storage controller has the following specifications:

- Operates as the storage controller for the appliance.
- Manages the storage of data on the drives.
- Functions as a standard E-Series controller in simplex mode.
- Includes SANtricity OS Software (controller firmware).
- Includes SANtricity System Manager for monitoring appliance hardware and for managing alerts, the AutoSupport feature, and the Drive Security feature.
- Connects to the E5700SG controller and operates as the target.

The following figures show the connectors on the back of the E2800A and E2800B controllers.

Connectors on the back of the E2800A
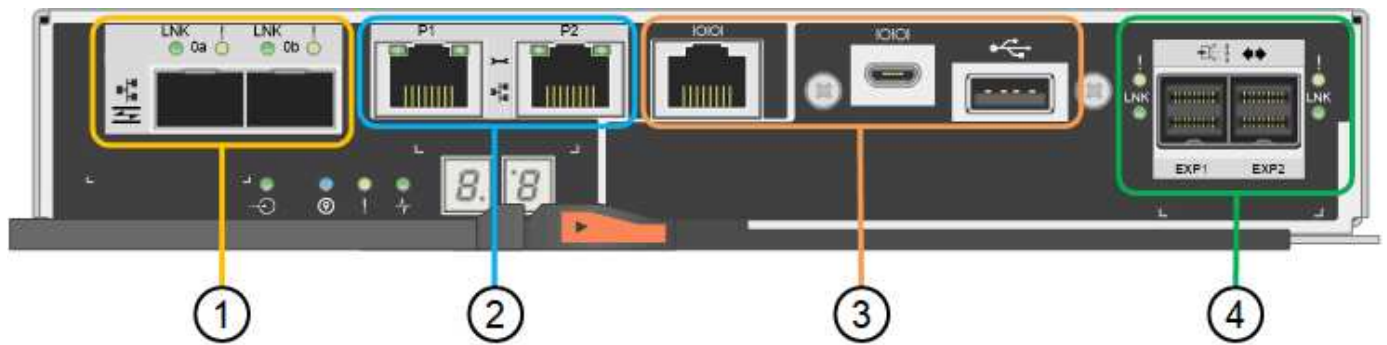
Connectors on the back of the E2800B
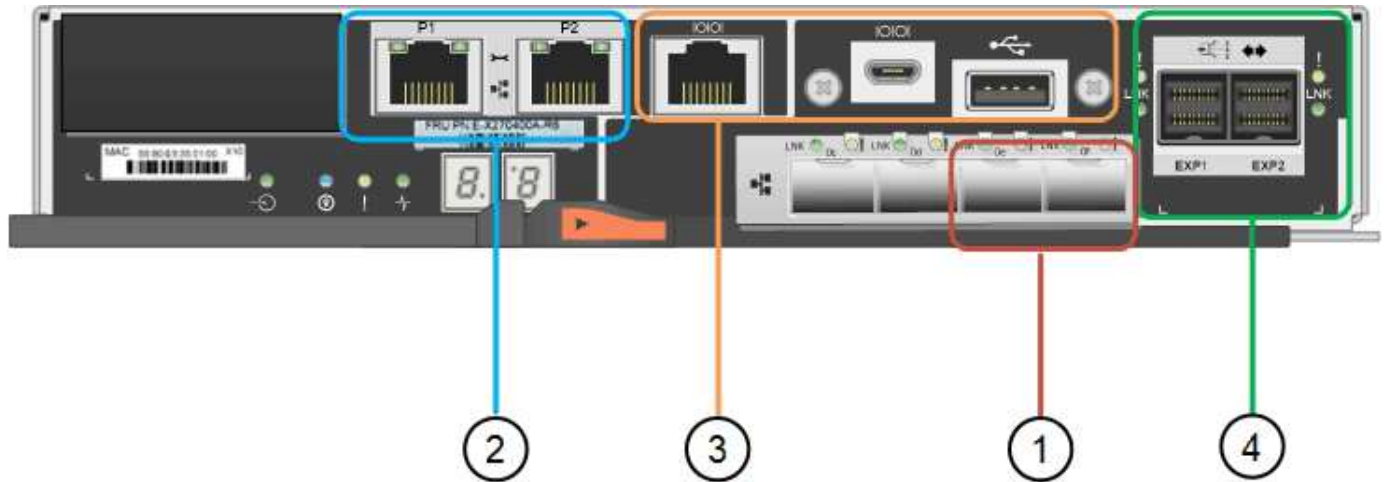
	Port	Type	Use
1	Interconnect ports 1 and 2	16Gb/s FC optical SFPa	Connect the E2800 controller to the E5700SG controller.

	Port	Type	Use

2	Management ports 1 and 2	1-Gb (RJ-45) Ethernet	• Port 1 Options:
			
			  ◦ Connect to a management network to enable direct TCP/IP access to SANtricity System Manager
			
			  ◦ Leave unwired to save a switch port and IP address. Access SANtricity System Manager using the Grid Manager or Storage Grid Appliance Installer UIs.
			
			Note: some optional SANtricity functionality, such as NTP sync for accurate log timestamps, is not available when you choose to leave Port 1 unwired.
			
			Note: StorageGRID 11.5 or greater, and SANtricity 11.70 or greater, are required when you leave Port 1 unwired.
			
			• Port 2 is reserved for technical support use.

3	Diagnostic and support ports	• RJ-45 serial port • Micro USB serial port • USB port	Reserved for technical support use.
4	Drive expansion ports.	12Gb/s SAS	Not used.

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.