



# **Review appliance network connections (SG5600)**

StorageGRID

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# Review appliance network connections (SG5600)

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, 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 Storage Manager (optional):** The E2700 controller connects to the management network where SANtricity Storage Manager is installed, 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.

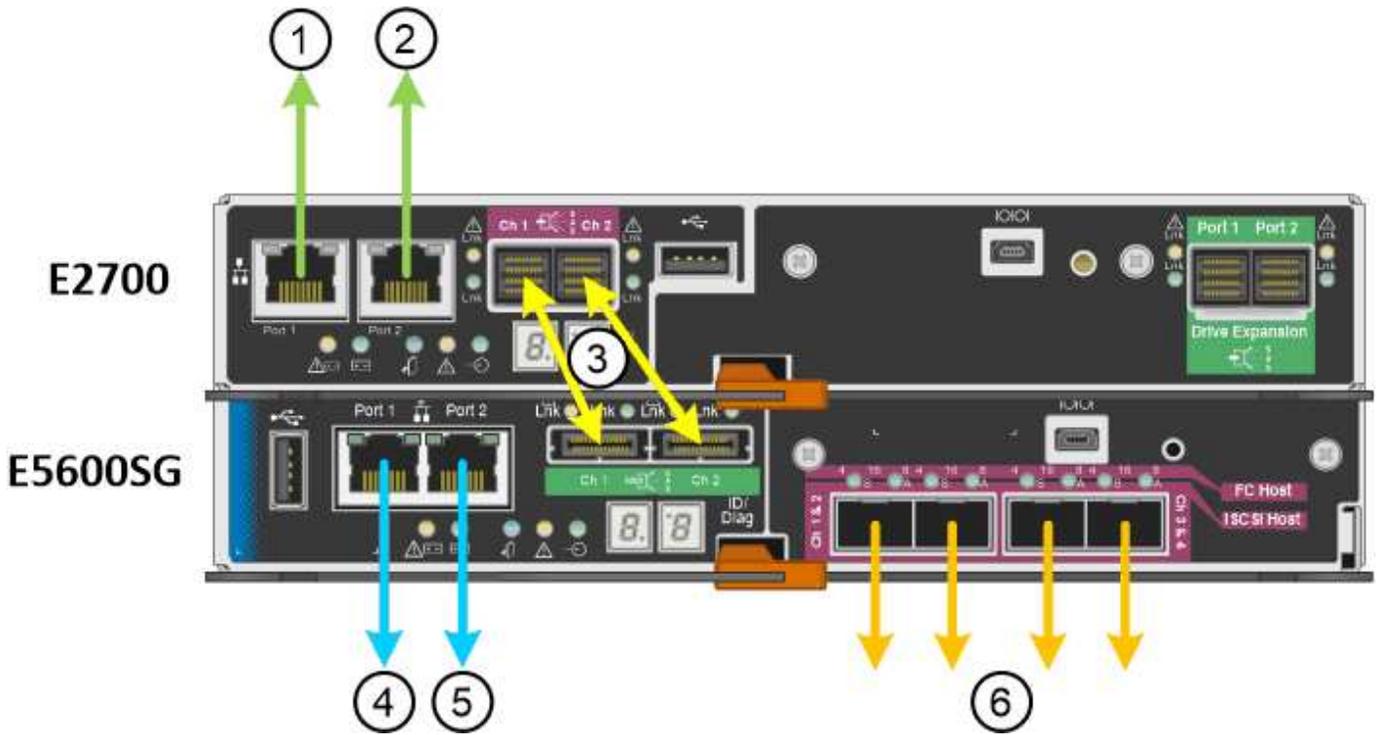
If the optional SANtricity Storage Manager network is not connected, you might be unable to use some SANtricity features.



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 SG5660, with the E2700 controller on the top and the E5600SG controller on the bottom. In the SG5612, the E2700 controller is to the left of the E5600SG controller.



Item	Port	Type of port	Function
1	Management port 1 on the E2700 controller	1-Gb (RJ-45) Ethernet	Connects the E2700 controller to the network where SANtricity Storage Manager is installed.
2	Management port 2 on the E2700 controller	1-Gb (RJ-45) Ethernet	Connects the E2700 controller to a service laptop during installation.
3	Two SAS interconnect ports on each controller, labelled Ch 1 and Ch 2	E2700 controller: mini-SAS-HD E5600SG controller: mini-SAS	Connect the two controllers to each other.
4	Management port 1 on the E5600SG controller	1-Gb (RJ-45) Ethernet	Connects the E5600SG controller to the Admin Network for StorageGRID.

Item	Port	Type of port	Function
5	Management port 2 on the E5600SG controller	1-Gb (RJ-45) Ethernet	<ul style="list-style-type: none"> <li>• Can be bonded with management port 1 if you want a redundant connection to the Admin Network.</li> <li>• Can be left unwired and available for temporary local access (IP 169.254.0.1).</li> <li>• Can be used to connect the E5600SG controller to a service laptop during installation, if a DHCP-assigned IP address is not available.</li> </ul>
6	Four network ports on the E5600SG controller	10-GbE (optical)	Connect to the Grid Network and the Client Network for StorageGRID. See “10-GbE port connections for the E5600SG controller.”

### Related information

[Port bond modes for the E5600SG controller ports](#)

[Gather installation information \(SG5600\)](#)

[Cable appliance \(SG5600\)](#)

[Networking guidelines](#)

[Install VMware](#)

[Install Red Hat Enterprise Linux or CentOS](#)

[Install Ubuntu or Debian](#)

## Port bond modes for the E5600SG controller ports

When configuring network links for the E5600SG controller ports, you can use port bonding for the 10-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

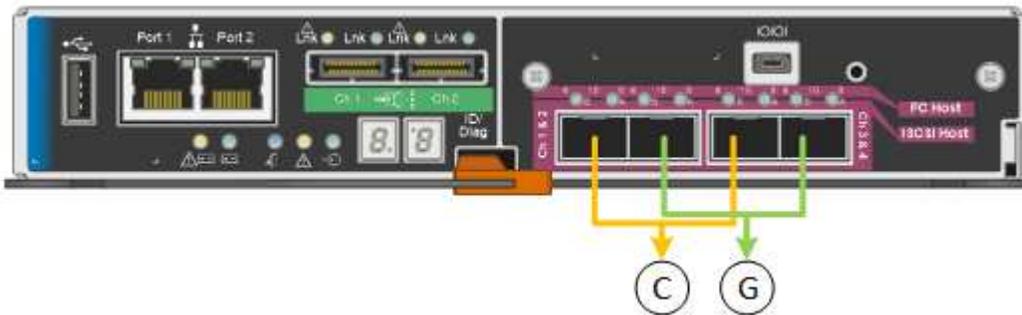
[Configure network links \(SG5600\)](#)

## Network bond modes for 10-GbE ports

The 10-GbE networking ports on the E5600SG 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-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).

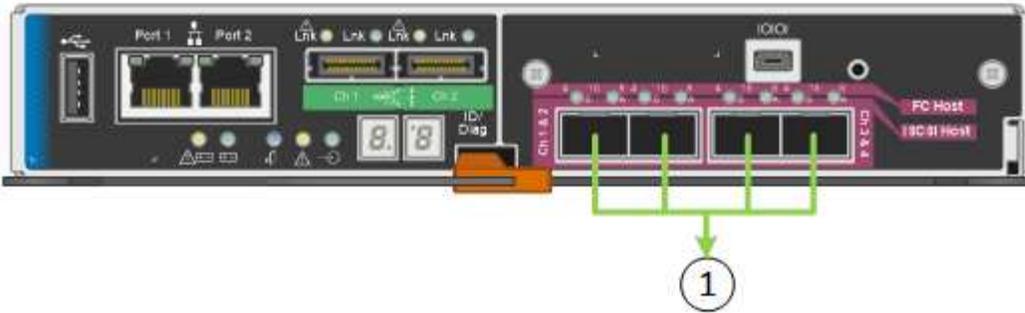
- In active-backup mode (default), only one port is active at a time. If the active port fails, its backup port automatically provides a failover connection. Port 4 provides a backup path for port 2 (Grid Network), and port 3 provides a backup path for port 1 (Client Network).
- In LACP mode, each pair 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 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-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-GbE ports fails.



If you choose to use fewer than four ports, be aware that a **Services appliance link down** alert might be triggered in the Grid Manager after the appliance node is installed, indicating that a cable is unplugged. You can safely disable this alert rule for the triggered alert. From the Grid Manager, select **ALERTS > Rules**, select the rule, and click **Edit rule**. Then, uncheck the **Enabled** check box.

## Network bond modes for 1-GbE management ports

For the two 1-GbE management ports on the E5600SG 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 E5600SG 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.



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