



# **Reviewing appliance network connections**

## **StorageGRID**

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# Reviewing appliance network connections

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

When you deploy a StorageGRID appliance as a 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. You can configure the Client Network so that the appliance can be accessed over this network using only the ports you choose to open. The Client Network is optional.
- **BMC management network for the services appliance:** This network provides access to the baseboard management controller in the SG100 and SG1000, appliances 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.

## Related information

[Gathering installation information \(SG100 and SG1000\)](#)

[Cabling the appliance SG100 and SG1000\)](#)

[Network guidelines](#)

[Grid primer](#)

## Port bond modes for the SG100 and SG1000 appliances

When configuring network links for the SG100 and SG1000 appliances, you can use port bonding for the 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.

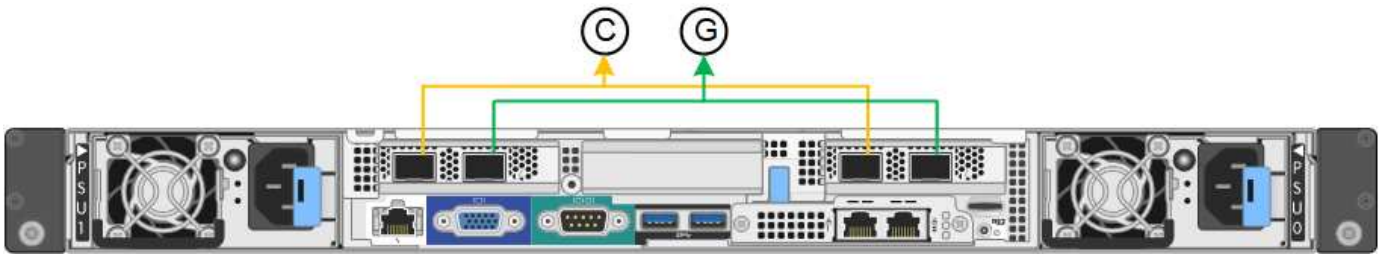
### Network bond modes

The networking ports on the services appliance support Fixed port bond mode or Aggregate port bond mode for the Grid Network and Client Network connections.

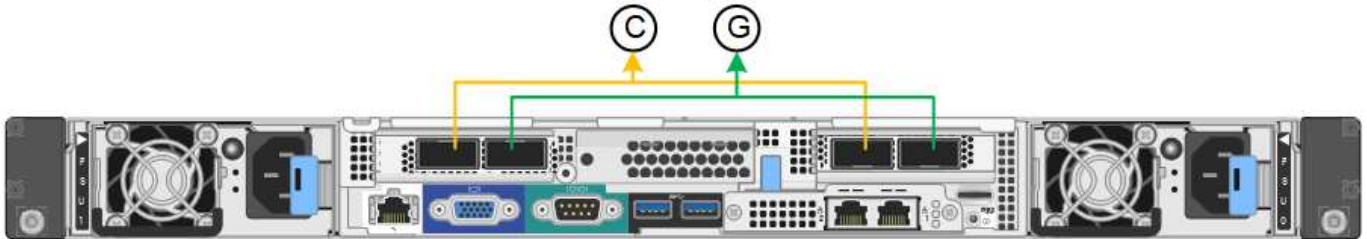
#### Fixed port bond mode

Fixed port bond mode is the default configuration for the networking ports.

#### SG100 fixed port bond mode



### SG1000 fixed port bond mode



	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 services appliance 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.

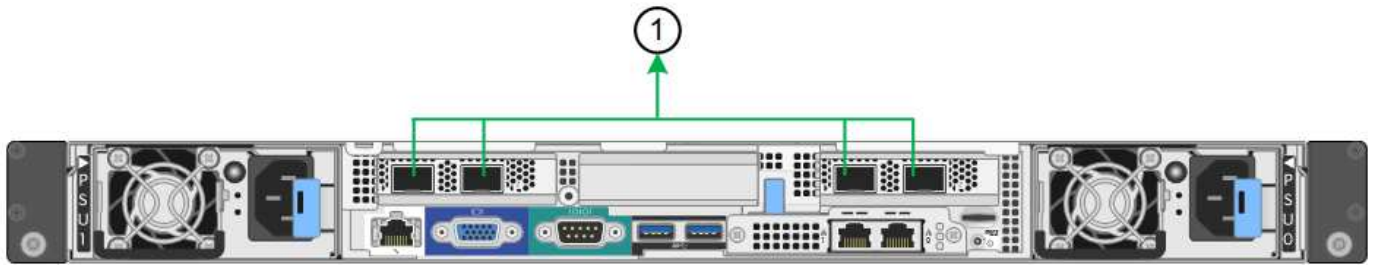


If you do not need redundant connections, you can use only one port for each network. However, be aware that the **Services appliance link down** alert might be triggered in the Grid Manager after StorageGRID is installed, indicating that a cable is unplugged. You can safely disable this alert rule.

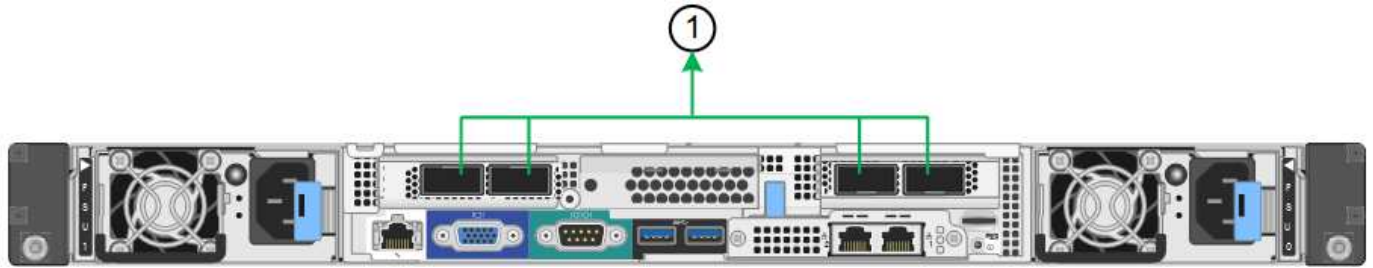
### Aggregate port bond mode

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

### SG100 aggregate port bond mode



SG1000 aggregate port bond mode



	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 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 ports fails.

If you choose to use fewer than four network 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.

### Network bond modes for the management ports

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

### SG100 network management ports



### SG1000 network management ports



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 services appliance 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.

	Network bond mode
A	Active-Backup mode. Both management ports are bonded into one logical management port connected to the Admin Network.
I	Independent mode. 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).

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