SnapSAN™ S1000 Storage Array

This document describes how to unpack and install a SnapSAN S1000 array into a rack.

NOTE: If SnapDisk E1000 expansion arrays are being used, install them first following the instructions in the quick start guide that comes with them.

⚠️ **WARNING:** To reduce the risk of electric shock or damage to equipment, always remove any power cords while working with the unit.

⚠️ **AVERTISSEMENT:** Pour réduire le risque de choc électrique ou endommagement de l'équipement, retirez toujours les cordons électriques en travaillant avec l'appareil.

⚠️ **CAUTION:** While working with the unit, observe standard Electrostatic Discharge (ESD) precautions to prevent damage to micro-circuitry or static-sensitive devices.

Step 1: Activate Your Warranty!

It is **essential** that you activate your warranty before starting. Technical and warranty support are **not available** until that is done:

1. Note the product **serial numbers** from the box labels or on the products.
2. Go to the **Overland Storage** web site:
   http://www.overlandstorage.com/
3. Select **Service & Support > My Products**.
4. At the Site Login, enter your **e-mail address** and **password**, and click **GO**.
5. Click **Register New Product**.
6. Fill in the information and click **Submit**.
7. Register the **Controller** module:
   a. Click the **Manage Products** button.
   b. From the **Product Selector** drop-down list, select the unit in which you are installing the controller.
   c. Click **Add a Component**.
   d. Enter the controller **information**.
   e. Click **Save & Exit**.
8. Repeat Step 7 to register the **Battery Backup Module**.
9. For a **dual-controller** system, repeat Steps 7–8 for the Secondary controller and battery.
10. Repeat Step 7 to register all the **drive assemblies**.

Your warranty certificate will be emailed to you. Follow the instructions in the email to complete the registration process.

# Step 2: Install Batteries and Controllers

Install the Battery Backup Modules

Each controller comes with a Battery Backup Module (BBM) packed separately that must be installed before use:

1. Unpack both a **battery** and a **controller**.

2. Remove the battery **bay cover** at the rear of the controller and set aside. Retain the screws.

3. With the **notched edge** of the back plate on the bottom, carefully slide the BBM all the way into the controller until contact is felt.

4. Firmly push the BBM by its **handle** until seated.

5. Using the retained **screws**, secure the BBM in the controller.

6. If necessary, repeat Steps 1–5 for an optional **Secondary controller**.
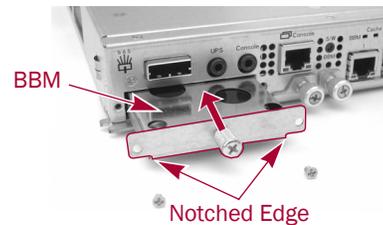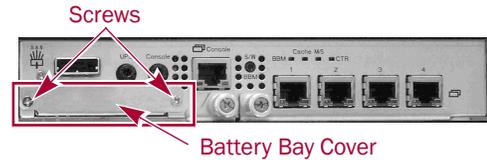
Insert the Master Controller

Install the Master controller into the Master bay:

1. At the Master bay (labeled CL1), loosen the **two captive screws** on the cover and swing the levers out to about 45º.

2. Pull the **cover** out and set aside.

3. Loosen the **two captive screws** on the controller and swing the levers out to about 45º.

4. Carefully slide the **controller** into the empty bay until resistance is felt.

5. Swing both **levers** in toward the controller to seat it.

6. Tighten both **captive screws** to secure the controller.

Insert the Optional Secondary Controller

If your new S1000 array is a dual controller configuration, install the Secondary controller in the remaining bay:

1. At the Secondary bay (labeled CL2), loosen the **two captive screws** on the bay cover and swing the levers out to about 45º.

2. Pull the **cover** out and set aside.

3. Loosen the **two captive screws** on the controller and swing the levers out to about 45º.

4. Carefully slide the **Secondary controller** into the empty bay until resistance is felt.

5. Swing both **levers** in toward the controller to seat it.

6. Tighten **both captive screws** to secure the controller.
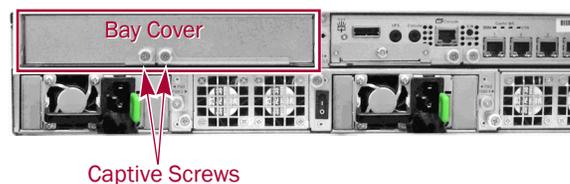
Step 3: Install Array in Rack

Install Rack Tray

1. Install the **screw clips** on the inside of the square-holed rack rails as shown in the graphics to the right.

   Three on the right and two on the left.

2. Install the **Right tray rail**:
   a. Position the rail with the **front flange** (labeled RF for Right Front) outside the rack rail and the bottom hole at the bottom of the 2U space.
   b. Use two gold screws to secure it.
   c. Repeat Steps a–b to secure the **rear flange** (label RR for Right Rear).

3. Repeat Step 2 for the **Left tray rail** (LF and LR).
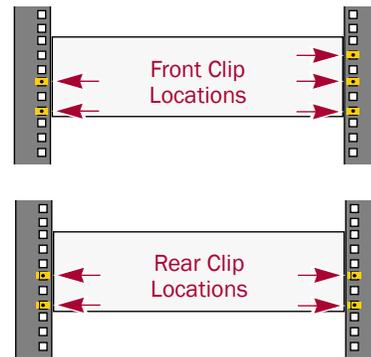
Insert Array in Rack

⚠️ WARNING: It is recommended that a mechanical lifter (or at least two people) be used during rack installation or removal to prevent injury.

⚠️ AVERTISSEMENT: Pour éviter toute blessure il est recommande qu'un monte-charge (ou deux personnes au moins) soit utilisé lors de l'installation ou de l'enlèvement du support.

1. Use a mechanical lifter to position the S1000 **chassis** in front of the rack.

2. Slide the unit onto the **rack tray** until it stops.

3. Use three black screws in the **front flange** holes to secure the unit to the vertical rack rails.
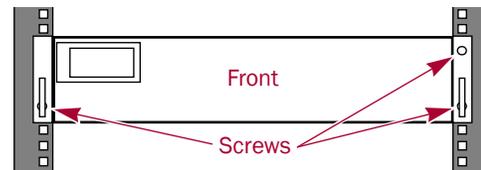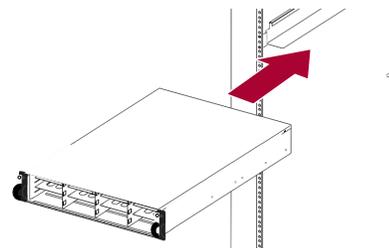
Step 4: Install the Drives

Drive Bay Numbering

The drives can be installed into any unused bay in the chassis.

➡️ IMPORTANT: Install drive assemblies into each of bays 1 through 4 (shaded bays in graphic) as the system event logs are saved on those drives. Otherwise, event logs will no longer exist after a reboot.

NOTE: While drives having different capacities can be installed in the unit, they should be installed as part of different RAID sets because capacity usage of all the drives in a RAID set is limited to the capacity of the smallest drive in that set.

Install Drives

NOTE: Do not remove the disk drives from their carriers. Doing so voids the drive warranty.

As shipped, the first four bays are empty and the remaining bays have blank drive carriers in them. Once the unit is in the rack, install the drives before continuing:

1. If a **blank drive carrier** is in the bay where you are about to install a drive, remove the blank by pressing the lever release button and pulling it out.

   Save the blank for possible future use.

2. Press the **button** to release the lever on a drive assembly.

3. Position the **drive assembly** in front of an empty bay and slide it in until resistance is felt.

4. Push the **lever in** to lock the assembly in the bay.

5. Repeat Steps 1–4 for **each** remaining drive assembly.

> IMPORTANT: To maintain proper airflow and cooling, a drive assembly or a blank drive carrier must be installed in *every* bay. Leave drive blanks in bays not used; no empty bays are allowed.
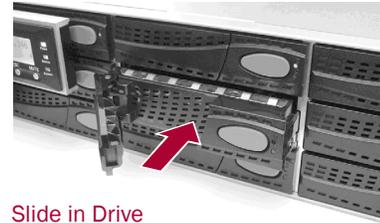
Slide in Drive
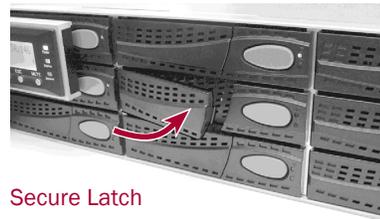
Secure Latch

Attach the Bezel

1. Insert the **bezel tab** into the chassis left flange hole under the Front Panel Display.

2. Push the **latch** toward the bezel center, swing the right side of the bezel into place against the drives, and release the latch.

Front Panel Display

Tab

Latch

Step 5: Attach Cables and Power Cords

Connection Planning

Use this checklist to help you plan the incorporation of your SnapSAN S1000 into your Management and SAN networks.

Management Setup

- **IP address** – DHCP (default) used or Static IP address set.
- **Switch connections** – One (or two on a dual controller system) Management ports (RJ45) to connect to the Management network.

Host Connections

The number of available connections for both the single and dual controllers are shown. Dual controllers double the number of connections available.

Type	Single Controller	Dual Controller	Connection to Host
Fibre Channel	Two 4Gb (SFP)	Four 4Gb (SFP)	Fibre switch
1Gb iSCSI	Four 1Gbs (RJ45)	Eight 1Gbs (RJ45)	1Gb Ethernet switch
10Gb iSCSI	Two 10Gbs (SFP+)	Four 10Gbs (SFP+)	10Gb Ethernet switch
SAS	Two 6Gbs (SFF-8088)	Four 6Gbs (SFF-8088)	SAS switch or connected directly to host

Attach Network Cables

⚠️ CAUTION: The speed/duplex setting of the S1000 defaults to autonegotiate. The switch to which the unit is connected must also be configured to autonegotiate; otherwise, network throughput or connectivity to the array may be seriously impacted.

Follow these steps for **each** controller:

1. Plug the **management connection** into the Management port (4) using a Category 5e (or better) cable.

   Connect the S1000 Management port to a 1Gb or better Ethernet switch on the same LAN as the management system.

2. Connect all iSCSI or Fibre Channel **cables** between the controller network ports (7) and the switch.

   If SFP modules for Fibre Channel or SFP+ modules for 10Gb iSCSI are used, refer to the instructions that come with them on how to install them.

3. For iSCSI controllers, it is recommended that a **iSNS server** be connected to the same LAN as the switch.

4. If an APC UPS with Smart-UPS is used, plug the supplied **UPS cable** into the Smart-UPS port on the Master controller and the other end into the APC serial cable attached to the UPS.

5. If one or more **SnapDisk™ E1000** expansion arrays are used, connect the top of the chain to the SAS expansion port on the Master controller.
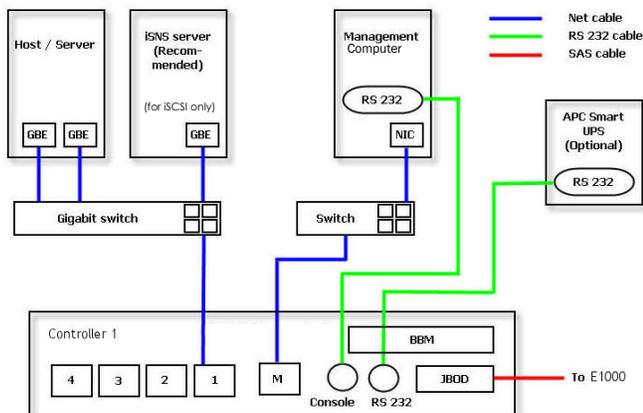
   NOTE: Additional E1000s can be daisy-chained off the last of any previously connected E1000 arrays. Refer to the E1000 documentation for details.

iSCSI 4-Port Controller
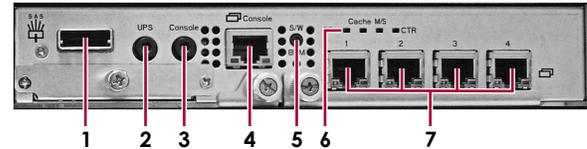
1 - Expansion SAS Port
2 - Smart-UPS Port
3 - Console Serial Port
4 - Management Port
5 - Battery Check (Button)
6 - Cache LEDs
7 - iSCSI RJ45 Ports

10 Gb iSCSI Controller

iSCSI SFP+ Ports & LEDs

Fibre Channel Controller

Fibre Channel SFP Ports

SAS Controller
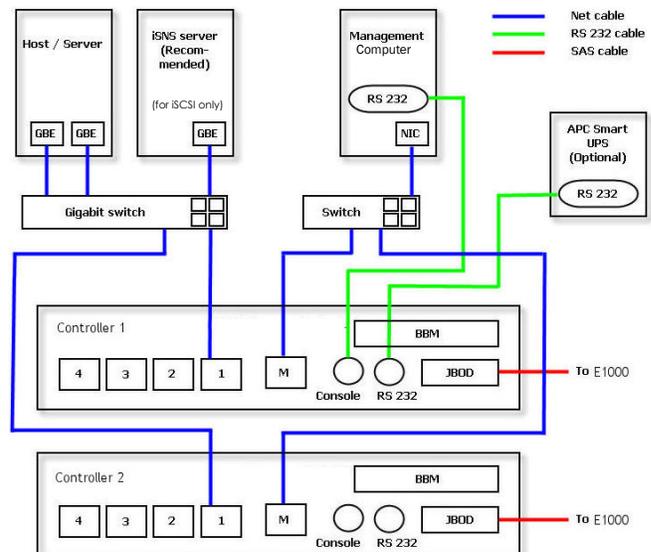

SAS SFF-8088 Ports & LEDs

Setup Examples

These examples show ways to set up a single- or dual-controller system. While these diagrams are basically for the 1Gb iSCSI controller, they are generalizations and can be used for the 10Gb iSCSI, Fibre Channel, and SAS controllers too.

*NOTE: For dual controllers, plug the Secondary controller into a surge-protected power strip.*

Single Controller

Dual Controllers

Attach Power Cords

1. Attach the power cords to the **power cord sockets** on the Power Supply modules.
2. Plug the **Master power cord** from beneath the Master controller into a UPS appliance (or a properly-grounded AC power source).
3. On a dual-controller system, plug the **Secondary power cord** into a surge-protected source.
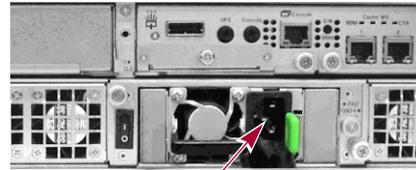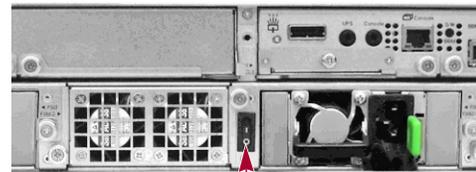

Power Cord Socket

Step 6: Power On the Units

Turn on the arrays as follows:

1. Turn on all **expansion arrays** using each one's main power switch.
2. Wait until the expansion arrays are **up and running**.
3. Turn on the **SnapSAN S1000** by using the power switch.

   The unit performs a Self Test which takes a few minutes.

You are now ready to configure your system.

Power Switch

Step 7: Basic Configuration

Change to Static IP Address (Optional)

If desired, or if there is no DHCP server on the network, the default DHCP address can be changed to a static IP address.

Web Management Interface:

1. Make a note of the current DHCP-assigned **IP address**.
2. Using a browser on the **Management computer** on the same network, log in to that IP address.

   Default user name is "admin" and password is "admin."
3. Click the **System Configuration** option on the left Menu Bar.
4. Click the **Network Settings** tab.
5. In the IP Address section, select **Specify a Static IP Address**.
6. Enter the **IP Address, Subnet Mask, and Gateway**, then click **Apply**.
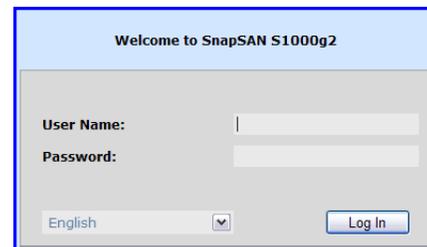
Front Panel Display:

1. Press **ENT** to access the main option list.
2. Press ▼ five times to **Change IP Config**, and press **ENT**.
3. Press ▼ twice to **Static IP**, and press **ENT**.
4. At **IP Address**, press **ENT**, enter the static IP address, and then press ▼.

   Use the arrows to change the numbers, use the ENT button to accept the current vale and move to the right, and use the ESC button accept and move to the left.

   After changing the final digit (on the right), press ENT to accept the change and return to the higher level.

OR

5. At **IP Subnet Mask**, press **ENT**, enter the mask IP address, and then press ▼.

6. At **IP Gateway**, press **ENT**, enter the gateway IP address, and then press ▼.

7. At **Apply IP Setting**, press **ENT**, press ▲ (for Yes), and then press **ENT** to accept the change.

Dual Controller Configuration

When using a Secondary controller in the system, it is necessary to change the Controller Operation Mode from Single to Dual.

1. Go to **System Maintenance > Upgrade**.

2. Change the Controller Operation Mode to **Dual**, and click **Apply**.

3. Shutdown the **SnapSAN S1000** to initiate the change:

   - **Web Management Interface** – Go to **System Maintenance > Reboot and Shutdown** and click the **Shutdown** icon.

   - **Front Panel Display** – Press **ENT**, go to **Reset/Shutdown** (third option), and select **Shutdown**.

4. At the System Shutdown message, turn the power **OFF**.

5. Turn the power back **ON**.

Refer to the *SnapSAN S1000 User Guide* for configuration options.
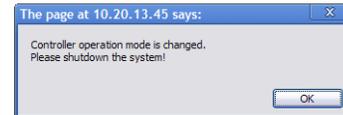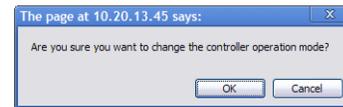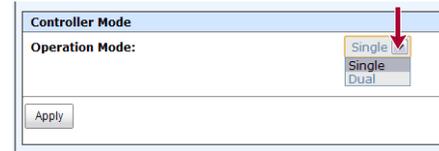
Build RAID Group Using Wizard

This wizard guides you through the process of setting up basic array information, configuring network settings, and the creating a RAID Group. At the Management computer:

1. Browse to the assigned **IP address** to launch the Web Management Interface.

2. Log in as **Administrator**.

   Default user name is "admin" and password is "admin."

3. Click **Quick Installation** on Menu Bar to left.

4. Follow the Wizard's **four basic steps** to build a RAID Group on your new S1000 storage array.

The **Volume Creation Wizard** can be used to:

- Choose from the **largest capacity** for each RAID level.

- Determine the **fewest number of disks** for each RAID level or volume size.
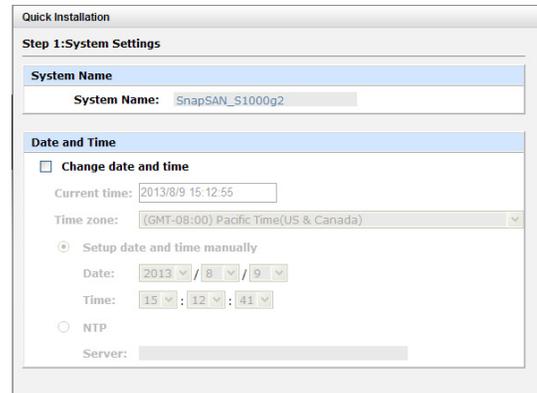
Step 8: Additional Information

User Guide

For detailed information on setting up and configuring your S1000, refer to the *SnapSAN* S1000 *User Guide*. It is **available online** at:

http://support.overlandstorage.com/support/snapsan.htm

Follow the link on the right side of the page to access the user guide.

VSS Software

VSS software is available for installation to support both VSS and VSM. It is **available online** at:

http://support.overlandstorage.com/support/snapsan.htm

Warranty and Technical Support

For warranty and technical support information, see our Contact Us web page:

http://www.overlandstorage.com/company/contact-us/index.aspx

To search for more service information, visit our Expert Knowledge Base System:

http://support.overlandstorage.com/kb