SnapSAN™ S1000 VSS Installation

This document describes how to download and install Overland Storage VSS software on your SnapSAN S1000 storage array. The software includes the following items:

- Multipath I/O (MPIO) driver

  To perform Multipath I/O operations in Fibre Channel or SAS environments, the MPIO driver must be installed on the SnapSAN S1000 storage array.

- Volume Shadow Copy Service (VSS) optional software

  To use VSS as an alternate way of creating snapshots in an iSCSI environment, install the Overland Storage VSS software.

Theory of Operation

When setting up a system that makes use of the snapshot feature, you must create two separate arrays. One of these arrays holds the logical drive that contains the user's data and is available as a standard volume within Windows. The second array is used to hold the snapshot data. Snapshot data is the data copied from the user volume at a specific point in the past.

When enabling the snapshot feature on your SnapSAN S1000 logical drive holding the users data, you must choose the area of the second array. The second array holds the snapshot data and will be made into an internally available logical drive. A special area is created on that second array called the Overwrite Data Area (ODA). This area is not available for normal use by any hosts connected to the system – it is reserved purely for snapshot purposes.

When a snapshot is initiated using a Windows requester such as the Backup Utility, the following happens:

- I/O is temporarily frozen and cached data is written to the originating volume.
- VSS asks any registered providers if they support all of the parts of the selected volume. If a VSS provider responds in a positive way, then VSS commands the provider to start a snapshot.
- A command is then sent to the enclosure to tell it to perform the snapshot. All subsequent writes to the originating volume cause the data that is about to be overwritten to be copied to the snapshot area.
- After the snapshot has completed successfully, VSS waits for the Plug and Play device manager to recognize that a new device has arrived. This new device is the snapshot, itself. The snapshot is hidden, but you can expose and use it as a standard read-only volume at some future time. This allows you to see the volume as it was at the time of the snapshot and map it as a physical volume within the operating system.

Software Installation

NOTE: The software has 2 versions: One for a 32-bits OS (x86) and the other for a 64-bit OS (x64). It can only be installed on Microsoft Windows Servers 2003, 2003 R2, 2008, and 2008 R2.

1. Download the **VSS software**:

   a. Go to the SnapSAN **web site**:
   (http://support.overlandstorage.com/support/snapsan.htm).

    b. Follow the **link** to the software downloads.

    c. Select and download the **VSS software**.

        The executable is labeled "Overland_Storage_Service_Setup-2.0.0-x64-en.msi." The 32-bit version ends in "...2.0.0-x86-en.msi."

2. Double-click the installer **executable** to choose the components:

    a. At the security alert, click **Run**.

    b. At the Welcome screen (Figure 1-1), click **Next**.

Figure 1-1: Overland Storage VSS Setup Welcome Screen

    c. Read the **license** agreement, check the **Agreement** box to accept to the terms and conditions, and click **Next**.

    d. Customize your **setup** (Figure 1-2):

        • If desired, deselect **software** components to be installed (default = all).

        • Choose a destination **folder** for the application (or accept the default location).
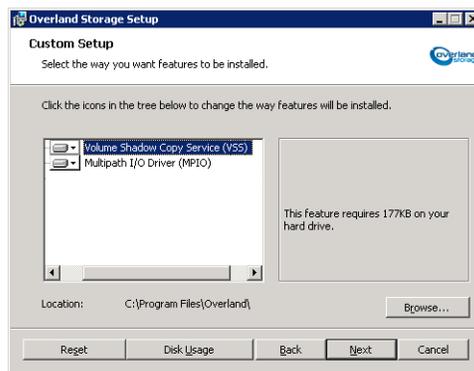
Figure 1-2: Overland Storage VSS Setup Custom Screen

    e. Click **Next** to go to the Start Installation screen.

3. Click **Install** to begin the installation.

    A **DOS window** opens and shows the progress.

4. At the MPIO security alert, click **Yes**.

5. When the installation finishes, click **Finish** to dismiss the installation window.

6. At the restart reminder screen, click **Yes** to reboot the server.

After rebooting, the Multipath Disk Device is displayed in the Computer Management screen. It becomes a disk under Disk Management. It is accessible through the normal program shortcuts (Figure 1-3).

Figure 1-3: Overland Storage VSS Program Installed

Using SnapSAN S1000 VSS

There are four applications that can communicate with VSS.

The following two applications are recommended for use with the hardware provider:

- The vshadow command (part of the Microsoft VSS Software Development Kit).
- A Microsoft VSS compliant backup application.

The following two applications do **not** use the hardware provider – they are configured to use an internal software provider:

- The vssadmin utility
- The Shadow Copy tabs in Windows Explorer's Properties window

Creating a Snapshot

To issue a simple snapshot, type the following command:

    vshadow -p <Drive Letter>

Where:

–p – Creates a persistent snapshot which can be viewed in ULTAMUS RAID.

<Drive Letter> – The Windows label for a drive located on the ULTAMUS RAID enclosure.

NOTE: If the –p is omitted, vshadow causes the snapshot to be deleted at completion of the command.

For example, to create a persistent snapshot on drive F, the command is:

    vshadow -p F

Listing Snapshots

To list all snapshots known to the system, type:

    vshadow -q

Exposing a Snapshot

To expose a snapshot as a drive, making its contents available as if it were any other drive, type:

vshadow -el=<Snapshot ID>,<Drive Letter>:

Where:

<Snapshot ID> – The identifier for the snapshot, including the braces: {}. This can be determined using the "vshadow -q" command.

<Drive Letter> – The Windows label for accessing the snapshot data.

The data is only available to read; data cannot be written to this drive.

For example, to expose the snapshot with ID {6a1c4c9d-3fd7-48dc-adfa-a35d1064f9f9} as drive letter G:

Vshadow -el={6a1c4c9d-3fd7-48dc-adfa-a35d1064f9f9},G: