

# SnapSAN S3000/S5000 Firmware Update to Version 082R.007/U22R.007

October 2013

## Preface

This Technical Bulletin describes how to upgrade SnapSAN S3000 and S5000 controller firmware and software through the SnapSAN Manager Web Management Interface and Command Line Interface.

## Introduction

This Technical Information Bulletin (TIB) walks the reader on how to perform a controller firmware and software update with the SnapSAN S3000/S5000 Storage Array. The SnapSAN controller updates the internal firmware and software on the controller. The firmware upgrade procedure described in this document is non-disruptive for Overland Storage SnapSAN S3000/S5000 products. In order to take advantage of this, redundant paths are imperative and must be configured to production logical disks using either SnapSAN Path Manager or native MPIO.

For logical disks that do not have redundant paths, please shutdown the application that is using logical disks and dismount or offline the drive/filesystem. Please refer to the documentation or best practices guides for your particular operating system or application to properly shutdown or quiesce the application or database before attempting to do the firmware/software update.

These are the two methods of upgrading the SnapSAN Controller Firmware:

- Using the SnapSAN Manager Server Web Management Interface (WMI)
- Through the iSMcfg arrayupdate Command Line Interface (CLI)

## Required Information, Tools, and Files

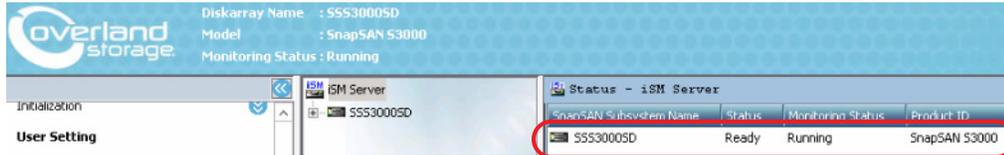
Before you begin these procedures, the following information, tools, and files are required.

## Prerequisites

Prior to performing these procedures, ensure that you have the following:

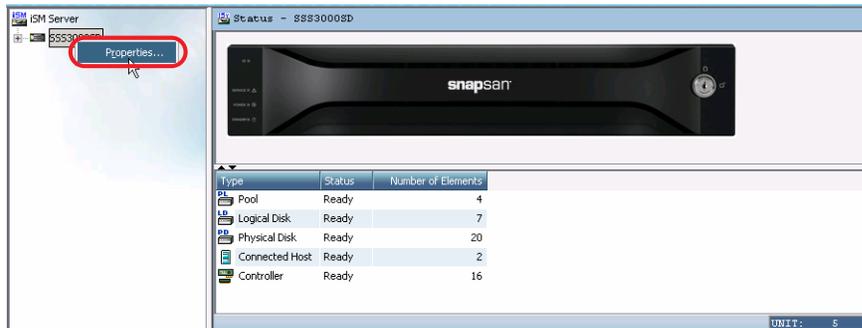
- Overland Storage SnapSAN S3000/S5000 Disk Array must be installed and configured. You can get additional technical support from our website at <http://support.overlandstorage.com>, or by contacting Overland Storage using the information found on the [Contact Us](#) page on our web site.
- Verify if the following are installed on the server:
  - Java Runtime Environment (JRE)
  - SnapSAN Manager Server Web Management Interface

- Only one SnapSAN Manager Server (iSMS) can monitor the disk array on which firmware is being updated.
- The date and time of the iSMS Server and disk array must match.
- Acquire the 082R.007/U22R.007 firmware from the Overland Storage FTP site:  
<ftp://ftp.overlandstorage.com>
- Verify the status of the SnapSAN using SnapSAN Manager Server Web Management Interface.
  - a. Click **iSM Server** and verify if the **Status** of product is **Ready**.

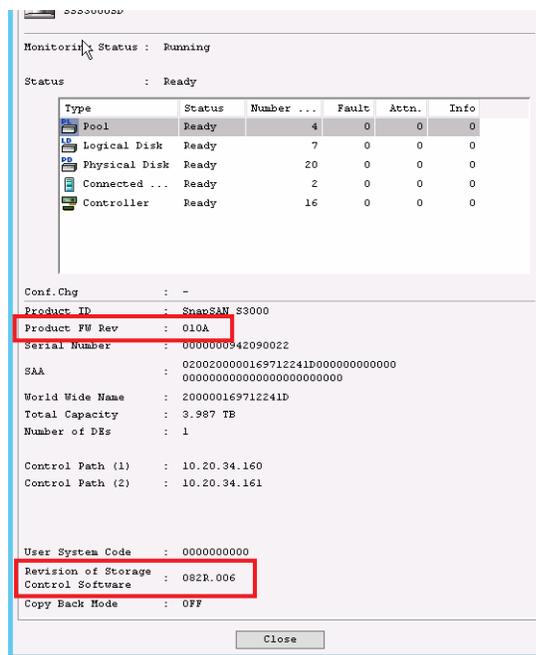


NOTE: If the unit displays Status as Not Ready, please contact Overland Storage Technical Support before proceeding with the firmware upgrade.

- b. Right-click SnapSAN product and select **Properties**.



- c. The **General** tab displays **Product FW Rev** and **Revision of Storage Control Software**.



Make careful note of the versions.

- During the firmware upgrade process, the SnapSAN controllers will restart. Verify that it will be non-disruptive.

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 **IMPORTANT:** In order to achieve a non-disruptive firmware upgrade, a redundant path is required. If this is not possible, shutdown/stop all applications that are accessing the SnapSAN logical disks, synchronize the file system, and dismount the mounted drive or file system prior to starting the firmware upgrade.

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- Make sure the hosts Application Servers with redundant paths that are accessing the SnapSAN disk array has the **SnapSAN Host Agent** installed.
- Verify that both Management LAN ports are configured for each controller. This is required in order to achieve a non-disruptive firmware upgrade. Also, verify you are able to telnet into each controller using the user account **sysadmin** and password **sys123**.

## Versions

The test environment used for illustration in this document uses the following versions:

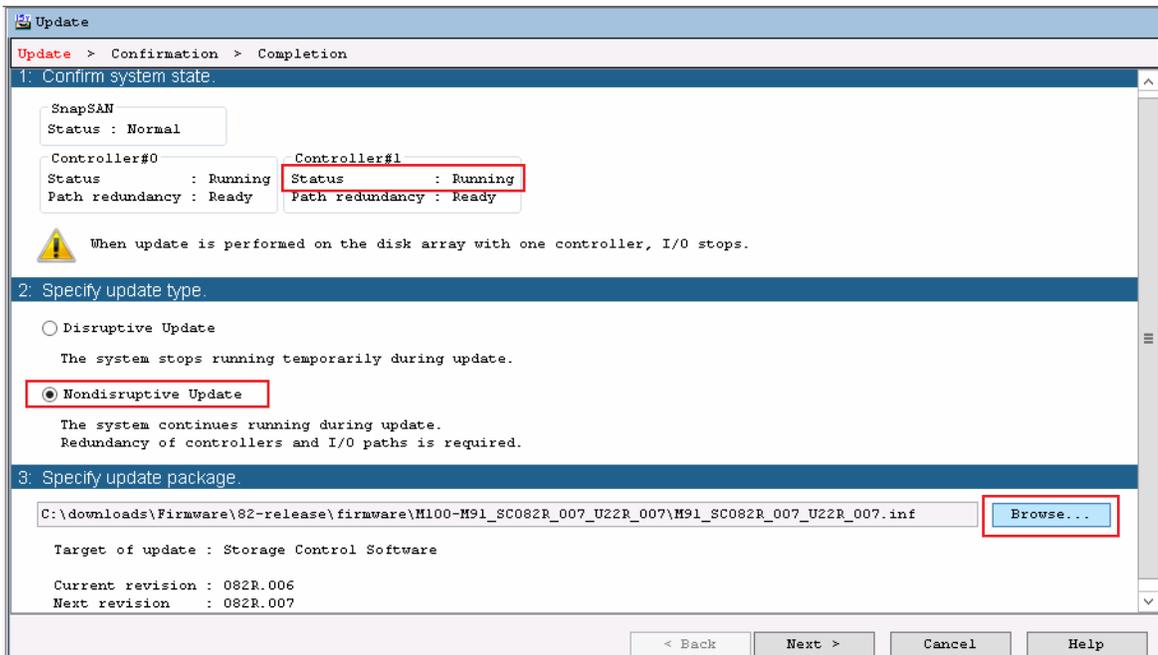
- Windows 2012
- Emulex LP11002
- Java JRE version 7 update 40
- SnapSAN Manager version 8.2.060
- Storage Control Software revision 082R.006
- SnapSAN S3000 firmware revision U22R.006
- Either Storage Path Manager version 5.0.2.1 *or* Native MPIO

## Non-disruptive Upgrade using SnapSAN Manager Server

1. Launch a browser session and access the SnapSAN Manager Web Management Interface.
2. Login to the SnapSAN Manager Server with an administrative account.



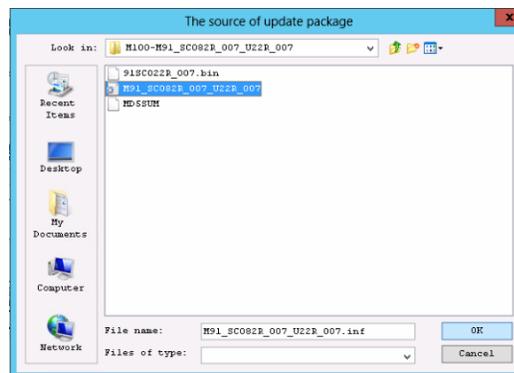
### 3. Navigate to **Configuration > SnapSAN > SnapSAN Management > Update:**



- a. Verify that the **Status** of the controller is **Running**.

**NOTE:** If the Status is Not Running, please contact the Overland Storage Technical Support to resolve the issue.

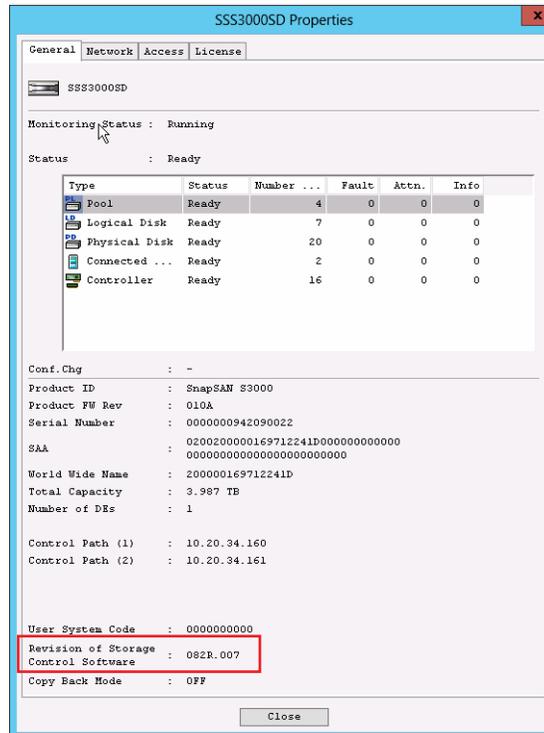
- b. To update the controller without any interruptions and path fail-overs, select **Nondisruptive Update** as the **update type**.
- c. Click **Browse**.
- d. Select the **INF file** which is part of the firmware upgrade procedure, and click **OK**.



4. Click **Next**. to continue the update.
5. Click **Set** and then click **Yes** to start the update.

**NOTE:** Do not disturb the update process.

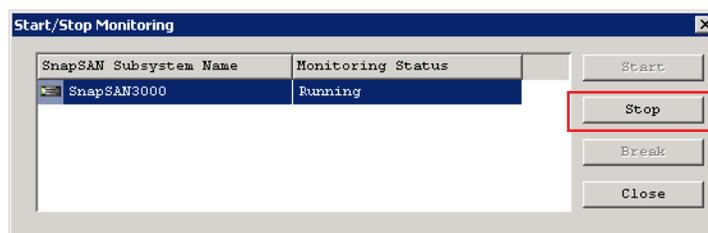
6. When it is done, click **Finish**.
7. Click **Yes** to start disk monitoring.
8. Verify the updated **revision**.



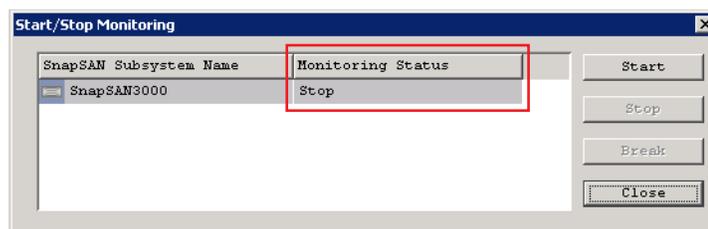
## Non-disruptive Upgrade using Command Line Interface

### Before Updating

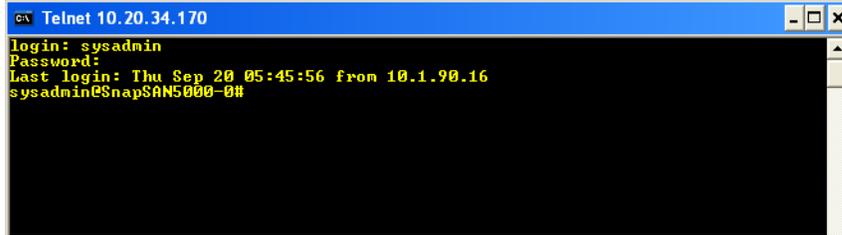
1. From the SnapSAN Manager Monitor screen, navigate to **Monitor > Start/Stop Monitoring**, and stop the monitoring:
  - a. Click **Stop**.



- b. Click **Set** for the confirmation.
  - c. Verify if the **Monitoring Status** is **Stop**. Click **Close** once confirmed.



2. Use a DOS command prompt and telnet to connect to **Controller 0**.  
Login as **sysadmin** with a password **sys123**.



3. Switch the server used for **monitoring** by running the following command:

```
iSMsvr update -r snapsan
```

This changes monitoring from the SnapSAN Manager Server to the Embedded SnapSAN Manager.

```

sysadmin@CNT-1# iSMsvr update -r xxxxxxxxxx <- Input Diskarray Name
iSM01420:This request is accepted, as unembedded iSM server is monitoring,
please stop monitoring on unembedded iSM server
ExitStatus:0
    
```

4. Check the **revisions**:
  - a. To determine the current **Storage control software** revision, and to make sure the SnapSAN disk array is in a **Ready** state, run the following command:

```
iSMview -d
```

```

sysadmin@CNT-1#iSMview -d
:
--- Disk Array Detail Information ---
Disk Array Name      : CNT
Resource State       : ready           ← Disk array status
Monitoring           : running
Vendor ID            : NEC
Product ID           : iStorage M10e
Product FW Revision  : 010A
Serial Number        : 0000000991010002
SAA                  : 02002000000991010002000000000000
                    : 00000000000000000000000000000000
World Wide Name      : 2000000991010002
Total Capacity       : 1.560TB
Number of DE         : 1
User System Code     : 0000000000
Storage Control Software Revision : aaaa ← Check the revision of the storage control software
Configuration Change :
:
    
```

- b. To verify the current revision of the **HD control software**, run this command:

```
iSMview -rev
```

The following example indicates **zzzz** as the current revision and **bbbb** as the previous revision:

```

sysadmin@CNT-1#iSMview -rev
[DiskArray]
--- Disk Array Information ---
Storage Control Software Revision : aaaa

[Controller]
--- Controller Resource Revision List ---
Abbr. Name  No.(h)  Revision
DAC_PS      00      FFF
DAC_PS      01      FFF
HD          00      zzzz ← Check the current revision of CNT-0
HD(Prev.)   00      bbbb ← Check the previous generation revision of CNT-0
HD(BIOS)    00      2M42
HD(BMC)     00      01.73
HD(RMSC)    00      12
HD          01      zzzz ← Check the current revision of CNT-1
HD(Prev.)   01      bbbb ← Check the previous generation revision of CNT-1
HD(BIOS)    01      2M42
HD(BMC)     01      01.73
HD(RMSC)    01      12
ADP(S/S)    00      001D
ADP(S/S)    01      001D

:

```

Make note of the **current version** for use later.

## Update the Firmware

1. Run the following command to stop the monitoring by the **SnapSAN Manager Embedded**:

```
iSMcfg setseize -mode on
```

```

sysadmin@CNT-1#iSMcfg setseize -mode on
iSM31001:[ setseize ]Please wait for a moment.....

```

The following output indicates that the **SnapSAN Manager Embedded** has stopped.

```

iSM31000:[ setseize ]Command has completed successfully.
ExitStatus:0

```

2. To set the environment up for firmware update, run the following command:

```
iSMcfg arrayupdate -mode upload
```

```

sysadmin@CNT-1#iSMcfg arrayupdate -mode upload
iSM31001:[ arrayupdate ]Please wait for a moment.....

```

The following output is displayed when the environment is ready.

```

iSM31000:[ arrayupdate ]Command has completed successfully.
ExitStatus:0

```

3. Transfer the **firmware**:
  - a. Launch a separate **DOS command** prompt.
  - b. Change the **directory** to the one where the firmware files exist.
  - c. Start an **FTP session** by running the following command:

```
ftp <IPADDRESS>
```

NOTE: Use the <IPADDESS> of the SnapSAN controller.

4. Use the **steps** in the following image to transfer the firmware to the controller that you are FTP into.

```
C:\> ftp xxx.xxx.xxx.xxx ← Specify the IP address of the connecting destination
Connected to xxx.xxx.xxx.xxx
220 CNT-1 FTP server ready.
Name (xxx.xxx.xxx.xxx): sysadmin
331 Password required for sysadmin.
Password: ***** • Enter the password actually used
230 User sysadmin logged in. Access restrictions apply.
:
ftp> cd update
250 CWD command successful.
ftp> bin
200 Type set to I.
ftp> put ooooo.inf ← Enter the name of the information file
200 PORT command successful.
:
ftp> put ooooo.bin ← Enter the name of the binary file
200 PORT command successful.
:
ftp> bye
:
221 Goodbye.
```

- Type `ftp xxx.xxx.xxx.xxx` using the controller IP address.
- Login using `sysadmin` and your password.
- Type `cd update`.
- Type `bin`.
- Enter `put <filename>.inf`, where `<filename>.inf` is the name of the information file.
- Enter `put <filename>.bin`, where `<filename>.bin` is the name of the binary file.
- When done, type `bye`.

## Update the Controllers

- Run the following **command** to shift the I/O of the connected hosts to be updated to the standby controller:

NOTE: The controller to be updated should be the standby controller, not the active controller.

```
iSMcfg arrayupdate -mode prepare -file name.inf
```

```
sysadmin@CNT-1#iSMcfg arrayupdate -mode prepare -file ooooo.inf
iSM31001:[ arrayupdate ]Please wait for a moment.....
Current HD revision:bbbb
New HD revision :zzzz
iSM31153:[ arrayupdate ]IO paths will be switched to HD(1).
```

- If the I/O of the connected host is shifted **successfully**, the following message appears.

```
iSM31000:[ arrayupdate ]Command has completed successfully.
ExitStatus:0
```

- If the I/O of the connected host has **failed**, the following message appears.

```
iSM31176:[ arrayupdate ]Server <bbb...b> doesn't have a redundant path.
```

- To stop and force the current **host process** and continue with the **update**, run the following command:

```
iSMcfg arrayupdate -mode prepare -file name.inf -force
```

```
sysadmin@CNT-1#iSMcfg arrayupdate -mode prepare -file ooooo.inf -force
iSM31001:[ arrayupdate ]Please wait for a moment.....
Current HD revision:bbbb
New HD revision   :zzzz
iSM31153:[ arrayupdate ]IO paths will be switched to HD(1).
```

- After confirming that the I/O of the connected host *has* shifted, execute the following command to update the **first controller**:

```
iSMcfg arrayupdate -mode update -file name.inf -rolling
```

NOTE: Do not disrupt this process.

```
sysadmin@CNT-1#iSMcfg arrayupdate -mode update -file ooooo.inf -rolling
May I execute rolling update? [YES/NO] :
YES
```

- During this process, an **update diskarray** percentage is provided.

```
iSM31001:[ arrayupdate ]Please wait for a moment.....
iSM31160:[ arrayupdate ]The target HD's number is 00h.
Current HD revision: bbbb
New HD revision   : zzzz
updating diskarray : 0%
```

- During the update, the **iSM31238** message is displayed after which the first controller reboots. Wait for the controller to reboot, which may take between 5 to 20 minutes to complete the reboot process.

```
iSM31238:[ arrayupdate ]The standby controller(HD(0h)) is rebooted. Please wait
for a while as it is.
iSM31000:[ arrayupdate ]Command has completed successfully.
```

- Repeat **Step 3** to update the **second controller**.
- After starting the update, an **iSM31201** message is displayed before the second controller resumes operation. Hit the **ENTER** key and the **iSM31237** is displayed. That is when the second controller restarts, and the connection with the disk array is disconnected. It takes 5 to 20 minutes for completing this process.

```
iSM31201:[ arrayupdate ]Restart Now, please input [ ENTER ] key.
iSM31237:[ arrayupdate ]Update completed successfully. The communication will
be
disconnected.
iSM31000:[ arrayupdate ]Command has completed successfully.
ExitStatus:0
```

- Verify the **revisions** (like you did at the start).
- Check the **revisions**:
  - To verify the current **Storage control software** revision, and to make sure the SnapSAN disk array is in a **Ready** state, run the following command:

```
iSMview -d
```

- b. To verify the current revision of the **HD control software**, run this command:

```
iSMview -rev
```

## Finish the Update

1. Run the following command to **resume monitoring** in SnapSAN Manager:

```
iSMcfg setsize -mode off
```

```
sysadmin@CNT-1#iSMcfg setsize -mode off
iSM31001:[ setsize ]Please wait for a moment.....
```

The following message is displayed when monitoring is completed successfully.

```
iSM31000:[ setsize ]Command has completed successfully.
ExitStatus:0
```

2. Run the following **command** to show the monitoring status of the disk array:

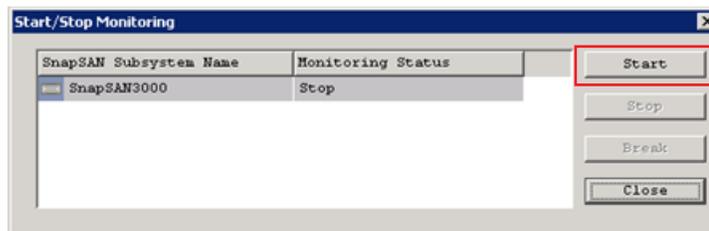
```
iSMview -d
```

```
sysadmin@CNT-1#iSMview -d

#NEC iSM    yyyy/mm/dd HH:MM:SS
Disk Array Physical Information List  iSMview  Version x.y.nnn

[DiskArray]
--- Disk Array Detail Information ---
Disk Array Name           : CNT
Resource State            : ready
Monitoring                 : running    *Disk array monitoring state (note)
:
```

3. Launch a browser and login to the **SnapSAN Manager Server**.  
4. Navigate to **Monitor > Start/Stop Monitoring**.



5. Click **Start**.

The update is complete.