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### 1 HP LeftHand Storage Solution Upgrade Guide

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About this Guide

This guide provides information about:

- Upgrading the SAN/iQ software to Release 8.1

Related Documentation

You can find more information about the HP LeftHand products from the Manuals page of the HP Business Support Center website:

http://www.hp.com/support/manuals

In the Storage section, click Disk Storage Systems > LeftHand SANs and then select your product.

HP Technical Support

For worldwide technical support information, see the HP support website:

http://www.hp.com/support

If you are a current customer with a valid support contract and are in need of product support, have your serial number ready and contact us at:

North America

Basic Contract Customers
1-866-LEFT-NET (1-866-533-8638)
303-217-9010
http://support.lefthandnetworks.com/

Premium Contract Customers
1-888-GO-SANIQ (1-888-467-2647)
303-625-2647
http://support.lefthandnetworks.com/

EMEA

All Customers
00.800.5338.4263 (International Toll-Free number)
+1.303.625.2647 (US number)
http://support.lefthandnetworks.com/

Support Upgrades

To upgrade your current support contract, contact us at:
1-866-4-IPSANs (1-866-447-7267)
HP websites

For additional information, see the following HP websites:

- http://www.hp.com
- http://www.hp.com/go/storage
- http://www.hp.com/service_locator
- http://www.hp.com/support/manuals
- http://www.hp.com/support/downloads
# Planning the Upgrade

**Table 1 Planning Checklist**

<table>
<thead>
<tr>
<th>Upgrade Task</th>
<th>Information and Instructions</th>
</tr>
</thead>
</table>
| **Review health of each storage node with Customer Support.** | 1. Call customer support about 1 week before scheduled maintenance window.  
2. Ensure you have Service Console installed and are uploading logs for each storage node.  
3. Review logs with customer support.  
*Note* - If you do not have Service Console installed, download Service Console for 8.1 from www.lefthandnetworks.com.  
1. On the LeftHand Networks website, click Services & Support > Software Downloads.  
2. Log in to the Resource Center.  
4. Find the Service Console 8.1 download and install it prior to calling Customer Support. |
<p>| <strong>Verify the software version you are currently running and the upgrade path to the new release software.</strong> | Use Table 2 to determine the appropriate upgrade files for your storage nodes. |
| <strong>Are you running iSCSI load balancing? Verify that each cluster has a VIP configured.</strong> | If you are running iSCSI load balancing, you must have a Virtual IP Address configured on each cluster. |
| <strong>Plan for volume access and the impact to iSCSI sessions that the upgrade will have.</strong> | The SAN/iQ software upgrade will reboot the storage node. Therefore, for volumes to remain online during the upgrade process, they must be 2-way replicated or higher (3-way or 4-way). Volumes that are 0-way replicated should be disconnected (logged off) from the application server(s). Rebooting the storage node will cause all iSCSI sessions on that storage node to be terminated and recovered to one of the remaining storage nodes in the cluster. Consequently, application IO to the volume may stop until the iSCSI session is recovered. Consider upgrading during off-peak time (if possible) to avoid application impact. |
| <strong>Schedule time for upgrade.</strong> | Upgrading a storage node to 8.1 may take 30 to 40 minutes, plus up to 10 minutes for the post install qualification. Actual upgrade time depends on the specific platform and configuration. |</p>
<table>
<thead>
<tr>
<th>Upgrade Task</th>
<th>Information and Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apply required Patches</td>
<td>See the Flow Charts and Patches section starting on Upgrade Flowcharts.</td>
</tr>
</tbody>
</table>
| Determine which upgrade components you need to download. Components include:  
  - HP LeftHand Centralized Management Console  
  - SAN/iQ software upgrade package  
  - LSMD upgrade package — required for all upgrades to 8.0. For more information, see 7.0 SP1 Release Notes.  
  - HP LeftHand P4000 Windows Solution Pack and Release Notes (if applicable) | The components are available from the HP LeftHand Networks web site at www.LeftHandNetworks.com. You can determine whether you are using LSMD in the Registration Information on the Registration Tab. See Figure 3. The Release Notes for the HP LeftHand P4000 Windows Solution Pack contain upgrade instructions for the Solution Pack components. |
| Ensure that all patches have been applied before upgrading. | |
| Follow the prescribed order for upgrading, depending upon the components you are upgrading.  
  - Upgrade the CMC and the SAN/iQ software only. | Upgrade in the following order:  
  1. CMC  
  2. SAN/iQ software - Review the upgrade flow charts before proceeding. |
| Upgrade the CMC, the SAN/iQ software, and the Solution Pack. | Upgrade in the following order:  
  1. CMC  
  2. SAN/iQ HP LeftHand P4000 DSM for MPIO  
     If you are running a previous version of the SAN/iQ HP LeftHand P4000 DSM for MPIO, the installer prompts you to first uninstall that version before installing the current version.  
  3. SAN/iQ software - Review the upgrade flow charts before proceeding.  
  4. Remaining Solution Pack components, the SAN/iQ VSS Provider and the Authentication Console as required. |
| Review Upgrading Software - Requirements and Best Practices for installing the software packages. These requirements and best practices dictate the order in which you upgrade storage nodes, depending on your particular configuration. | First install the upgrade for the HP LeftHand Centralized Management Console. Then install the additional software on storage nodes. Use the Release 8.1 CMC to install the Release 8.1 SAN/iQ software upgrade. If you do not have a direct path (as detailed in Table 2) to the 8.1 release, you may be required to first upgrade the software on the storage node(s) to a version that can then upgrade to Release 8.1. Contact Customer Support for access to the interim upgrade files. Go to HP technical support for customer support contact information. |
Upgrading Software - Requirements and Best Practices

Best Practices

- **LSMD Upgrade** - LSMD upgrade is required for upgrading from 7.x to 8.1.
- **Virtual IP Addresses** - If a Virtual IP (VIP) address is assigned to a storage node in a cluster, the VIP storage node needs to be upgraded last. The VIP storage node is shown on the cluster iSCSI tab, shown in Figure 1.
  1. First upgrade the non-VIP storage nodes that are running managers, one at a time.
  2. Then upgrade the non-VIP non-manager storage nodes.
  3. Lastly, upgrade the VIP storage node.

![Figure 1 Find the storage node running the VIP](image)

- **Remote Copy** - If you are upgrading management groups with Remote Copy associations, you should upgrade the remote management groups first. If you upgrade the primary group first, Remote Copy may stop working temporarily, until both the primary management group and the remote group have finished upgrading. Upgrade the primary site to 8.1 immediately after upgrading the remote site to 8.1. Refer to How to Verify Management Group Version.
- **smGenWatch** - Do not install any version of smGenWatch on the storage node. smG-enWatch is pre-installed and pre-configured in SAN/iQ software versions 7.0 and later.
- **Stride Resize** - SAN/iQ software version 7.0 changed the default stride size (the amount of data in an individual volume page, used for Network RAID) for newly created volumes. This change has been shown to improve IO performance on volumes. We recommend converting existing volumes to the new stride size. See the article “HOWTO_Stride_Resize” in the Support Library at www.LeftHandNetworks.com. This is not required if you have upgraded to 7.0 and converted your volumes to the new stride size at that time.

Selecting the type of upgrade

The Release 8.1 SAN/iQ software CMC supports two methods of upgrades, as shown in Figure 2.
- One-at-a-time (recommended) - this is the default and only method that should be used if the storage nodes exist in a management group.
- Simultaneous (advanced) - this allows you to upgrade multiple storage nodes at the same time if they are not in a management group. Use this only for storage nodes in the Available pool.

⚠️ **CAUTION:**

Do not select “Simultaneous (advanced)” if your storage nodes are in a production cluster.
Procedures for Upgrading

Use the following procedures to upgrade storage nodes to the Release 8.1 SAN/iQ software. Review Table 1 before starting the upgrade. Verify the LSMD Upgrade is installed before starting the upgrade to Release 8.1.

- Download the upgrade components
- Upgrade Software on Storage Nodes
- Verify Management Group Version
- Run the 8.1 Service Console Scheduled Task
- Check for Patches
- Converting Volumes to New Stride Size This only applies to pre-7.0 created volumes.
Download the upgrade components

Use Table 2 to determine the appropriate upgrade files for your storage nodes.

Table 2 Upgrade paths available for SAN/iQ software version 8.1

<table>
<thead>
<tr>
<th>Platform</th>
<th>For SAN/iQ Software Version</th>
<th>Use Upgrade File</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSM 160</td>
<td>7.0 (7.0.xx.xxxx) or greater</td>
<td>SANiQ_8.1.00.0047_20090226_all.upgrade</td>
</tr>
<tr>
<td>NSM 260</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSM 2060</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSM 2120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSM 4150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HP LeftHand P4500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HP LeftHand P4300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dell 2950</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DL 320s</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DL 380</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IBM x3650</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VSA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Upgrade Software on Storage Nodes

If you see the following type of message during the upgrade process

ERROR: 8.1.xx.xxxx-- Upgrade will now be aborted.

or if you encounter any other problems during the upgrade, please run the 8.1 Service Console scheduled task to upload a new set of SAN logs and then call customer support based on your support contract.

1. Right-click the first storage node to upgrade and select Install Software. The Install Software window opens.
2. Select from the list which storage nodes to upgrade.
3. Select the upgrade.
4. Click Install.

Upgrade Failover Manager

You can upgrade the Failover Manager from Release 8.0 to Release 8.1.

However, there is no upgrade from Release 7.0 to Release 8.x Failover Manager. You must first uninstall the 7.0 Failover Manager and then install the 8.x Failover Manager.
Verify Management Group Version

- When upgrading from 7.X to 8.1, the management group version will not move to Release 8.1 until all storage nodes in the management group (and in the remote management group if a Remote Copy relationship exists) are upgraded to Release 8.1 SAN/iQ software.
- When upgrading from 7.X to 8.1, the upgrade process validates the hardware identity of all of the storage nodes in the management group. If this validation fails for any reason, the management group version will not be upgraded to 8.1.

How to Verify Management Group Version

1. In the CMC navigation window, select the management group.
   
   The management group tab window opens.

2. Select the Registration tab.
   
   The management group version number is at the top of the Registration Information section, as shown in Figure 3.

![Figure 3 Verifying the management group version number](image)

Run the 8.1 Service Console Scheduled Task

This uploads a new set of SAN logs.

Check for Patches

After you have upgraded to Release 8.1, check the Customer Resource Center for applicable patches.

For software and platform-specific patches


Converting Volumes to New Stride Size

After you have finished upgrading, consider converting your volumes to the new stride size. See the article “HOWTO_Stride_Resize” at the Customer Resource Center at www.LeftHandNetworks.com. This only applies to pre-7.0 created volumes and is not required if you have upgraded from 7.0 and converted your volumes to the new stride size at that time.
Upgrade Flowcharts

The following upgrade flowcharts illustrate the specific requirements, by platform, for upgrading to Release 8.1. Be sure to review the flowchart specific to your platform and software versions.

Upgrade from 7.0.00
### Table 3 Upgrade From 7.0.00

- NSM 160
- NSM 2060
- NSM 4150
- DL 320s
- IBM x3650
- NSM 260
- NSM 2120
- Dell 2950
- DL 380
- VSA

### Figure 4 Upgrade From 7.0.00

**Flowchart:**
- **Upgrade to 8.1 from 7.0.00, 7.0.00.5070, 7.0.00.6990, 7.0.00.6993 or 7.0.00.8100**
  - **Using DSM for MPIO?**
    - NO: Upgrade 7.0 DSM to 8.1 DSM
    - YES: Patch 10017 applied?
      - NO: Apply Patch 10017
      - YES: LSMD upgrade previously applied?
        - NO: Apply 7.0.00 LSMD upgrade (Upgrade to 8.1 will fail if LSMD is not applied)
        - YES: Upgrade CMC to 8.1
          - Apply 8.1 upgrade
            - (if applicable) Uninstall current Failover Manager
            - Install 8.1 Failover Manager
          - Upgrade 7.0 VSS to 8.1 VSS if applicable
            - Install 8.1 Service Console
              - Do not install any version of omGenwatch on the storage module.
              - Run logs
            - Read the Release Notes
Table 4 Upgrade from 7.0.01

- NSM 160
- NSM 2060
- NSM 4150
- DL 320s
- IBM x3650
- NSM 260
- NSM 2120
- Dell 2950
- DL 380
- VSA

Figure 5 Upgrade from 7.0.01

Upgrade to 8.1 from 7.0.01.6046

Using DSM for MPIO?

YES

Upgrade 7.0 DSM to 8.1 DSM

NO

LSMD upgrade previously applied?

YES

Apply 7.0.01 LSMD upgrade
(Upgrade to 8.1 will fail if LSMD is not applied)

NO

Upgrade CMC to 8.1

Apply 8.1 upgrade

(if applicable)
Uninstall current Failover Manager
Install 8.1 Failover Manager

Upgrade 7.0 VSS to 8.1 VSS if applicable

Install 8.1 Service Console
Do not install any version of smiGenwatch on the storage module.
Run logs

Read the Release Notes
Upgrade from 8.0.00

Table 5 Upgrade From 8.0.00

<table>
<thead>
<tr>
<th>Upgrade to 8.1 from</th>
<th>NSM 160</th>
<th>NSM 260</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.0.00.1682, 8.0.00.1704</td>
<td>NSM 2060</td>
<td>NSM 2120</td>
</tr>
<tr>
<td>8.0.00.1712, 8.0.00.1724</td>
<td>NSM 4150</td>
<td>Dell 2950</td>
</tr>
<tr>
<td></td>
<td>DL 320s</td>
<td>DL 380</td>
</tr>
<tr>
<td></td>
<td>IBM x3650</td>
<td>VSA</td>
</tr>
<tr>
<td></td>
<td>HP LeftHand P4300</td>
<td>HP LeftHand P4500</td>
</tr>
</tbody>
</table>

Figure 6 Upgrade From 8.0.00

Upgrade to 8.1 from 8.0.00.1682, 8.0.00.1704, 8.0.00.1712, 8.0.00.1724

- Upgrade CMC to 8.1
- Apply 8.1 upgrade
- (if applicable) Upgrade the 8.0 Failover Manager to 8.1 Failover Manager
- Install/Run 8.0/8.1 Service Console
- Read the Release Notes