



PART NUMBER

96108

EDITION NUMBER

2

FLEXLINE™

ONLINE STORAGE SYSTEMS

INSTALLATION INSTRUCTIONS FOR HP-UX

Open Systems Host Attach

PRODUCT TYPE
SOLUTIONS



FlexLine™ 200/300 Series

Installation Instructions for HP-UX
open systems host attach

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Summary of Changes

The following is the history and summary of changes for this publication.

Date	Edition	Description
October 2003	First	Initial Release
Oct 2004	Second	Updates to reflect new FlexLine terminology

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HP-UX - Installation Instructions

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The following pages help ensure that you order and configure a viable solution for your HP operating environment running HP-UX Version 11 (and appropriate patches - see [Table 1 on page viii](#)). Customers and StorageTek personnel should also be familiar with the Site Preparation Guide, Storage Manager Concepts Guide, and Storage System Planning Checklist for their particular FlexLine™ 200/300 Series storage systems solution.

■ Introduction

This manual is organized to help plan your HP-UX configuration, provide order information, and help to install and attach your storage system to the HP host server running HP-UX. The following should be used in conjunction with the Siebel configurator.

Plan your site configuration

Prior to placing an order for StorageTek storage equipment, one should make sure of the system needs. First measure the locations of each current and future host, storage system, and other network components. Fill in this form with the requested information.

✓	Parameter	Outcome
	HP operating system	
	Distance between host and storage system	
	Distance between other devices	
	Number of HBAs needed (two per host are recommended)	
	Number of storage systems being installed	
	Number of FC cables needed	

Select Host Attach Kit

Select the Host Attach Kit components to go with your HP-UX HBA. Refer to the Connectivity matrix, which can be found on the Sales Community web site or accessed via the engineering web page.

Select the Fibre Channel Cables

Select the length of fiber optic (or copper) cable and the quantity for connection to the host systems. The following are examples of FC optical cables that may be ordered. Write in the quantities needed.

Quantity	FC Optical Cable Description	Part #
	10 meters (32.8 feet) LC to LC Duplex	10800221
	50 meters (164 feet) LC to LC Duplex	10800222
	100 meters (328 feet) LC to LC Duplex	10800223
Note: Other lengths are available. Consult the Seibel Configurator.		

Check your quantities against your earlier distance measurements to ensure your order includes all cable attachments.

Note: Unless there is an existing management station, cable connections to the management station should be via 10BaseT Ethernet.

The latest storage systems are designed to use short wave optical cables, and come with Small Form-factor Packaged (SFP) Transceivers that insert into the host minihubs (or into the controller CRUs on an Array Module).

Place your Order

Make sure that you have the following.

✓	Description
	HP Server running HP-UX Version 11 (and appropriate patches)
	Host Attach Kit
	Fibre Channel cables to configure your storage system

When you make a new order, a CD-ROM along with a CD insert, commonly called a Quick Start Guide will be in your host attach kit. The Quick Start Guide will walk you through your installation—first referring you to the Preconfiguration and Maintenance Set-up Instructions, P/N 95966, and then to any special instructions written to support your particular operating system installation.

CD-ROM file structure

During your installation you will be asked to install files from the CD supplied in your host-attach kit. The CD is structured (in most cases) with three main folders (Docs, Software, and Drivers). Inside the Docs folder are subfolders with pertinent documentation. The following table shows the subfolder names.

Sales and Preinstall	Diagnostic and Service	Engineering Papers
Hardware Install	Cabinet Docs	Miscellaneous
Software Install	Release Notes	

Inside the Software folder you will find files called: SMclient, SMagent, SMruntime, and SMutil.

Inside the Drivers folder are your HBA drivers and configuration files.

Note: If you need information about installing HBAs, drivers, or cables; refer to the Client Server Disk installation supplement, P/N 96015, or to your host installation manuals.

A special SMclient CD is also available as a tool, and it is required to fulfill your preconfiguration requirements. It has the field tasks and applications that may be necessary to upgrade your storage system.

Note: Refer also to the PDF documents and configuration and support files to assist with your installation.

■ Installation

Once you have ordered your hardware and software, read the following information on how to attach the 200/300 Series storage system to a HP Server running HP-UX Version 11 (and appropriate patches).

Before You Begin

The materials needed for the installation are listed below. Check to see that you have each of these items. The following pages provide more information about these materials (see headings) with specific steps and details on what to do.

Before you begin, make sure you have these items:

1. A HP Server running HP-UX Version 11 (and appropriate patches).
2. One or more HBA(s) - obtained through HP.
3. SFP Transceivers for the storage system.

4. The appropriate Fibre Channel cable(s) that will connect the host to the storage system.
5. A 200/300 Series storage system that is fully configured.

Note: If you don't have your storage system configured, you can attach your laptop running SMclient Field Tool to it. This will enable you to assign drives, LUNs, and volumes.

Table 1. HP-UX Patches (minimum versions)

HP-UX 11	<p>"December 1999 Extension Software (patch bundle) and the latest available revision of the Y2K-1100 patch bundle."</p> <p>"PHCO_20765 PHKL_20202 PHCO_19666 PHKL_20016 PHKL_18543 PHCO_20882 (PHKL_21024, PHCO_19047, PHKL_20079, and PHKL_20674 are dependencies of PHKL_18543)."</p> <p>"For applications that use AWT, we require that you use: PHSS_20275 PHSS_17535 PHSS_20716 PHSS_20865 (PHNE_20094 and PHSS_20145 are dependencies of PHSS_20716)."</p> <p>"To run HP-UX SDK for the Java™ 2 Platform applications and applets using GUIs, you also need to ensure that HP aC++ runtime libraries are installed on your system (the latest version is available as patch PHSS_1658)."</p>
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The SANtricity Storage Manager Installation Guide and Storage System Planning Checklist will be updated as required patch levels change. Please refer to it, as it will most likely have the latest patch information.

■ Storage System and Storage Manager - Overview

The 200/300 Series storage systems provide access to high-end storage using Fibre Channel and RAID technology.

This document was created to aid in installing a StorageTek storage system into a Solaris operating environment. It includes driver information, steps to take when planning and assembling a SAN installation, and a list of frequently asked questions (and problems) that may be encountered. This manual is intended to provide tips on attaching to or creating a SAN environment as well as giving some examples of problems that have been encountered.

In addition to this manual, both hardware and software information is available on the CRC by going to **Current Products >> Disk** or **Current Products >> Software**. Documentation is also available via the engineering web sites at:

<http://gandalf.stortek.com/ctp/index.html>

<http://gandalf.stortek.com/ctp/manager/index.html>

<http://gandalf.stortek.com/ctp/installation/index.html>

<http://gandalf.stortek.com/ctp/cabinet/index.html>

Note: Updates to controller/ESM/drive firmware, as well as NVSRAM can be downloaded from the CRC.

Preliminary Steps

Do the following prior to the installation.

Check your operating system and patch revision levels

Use the following commands to assist you.

```
# uname -a
```

```
# swlist -l fileset | grep PHXX
```

Install the Storage System

Refer to the Site Preparation Guide and the appropriate storage system installation documentation, as needed. Do NOT, however, attach fibre channel cables at this time.

After placing the hardware, refer to the Preconfiguration and Maintenance Setup Instructions, P/N 95966, and the Storage Manager Concepts Guide. This will enable you to understand the proper configuration for the business environment, and to understand how to attach your laptop in order to configure the storage system for communications with your management station. Event Notification and Media Scan information is also provided (as applicable).

Note: The management station is used to configure and/or verify that the LUNs are set up as desired.

If you need more information about configuring LUNs, refer to the Concepts Guide and to the SANtricity Storage Manager Installation Guide for your particular OS.

Install Storage Manager onto the customer's storage management station and verify that the LUNs are set up as desired.

Proceed to the next section to verify or install the NVSRAM file to the storage system.

Load NVSRAM

1. Verify or install the current NVSRAM (available on the CD in your host attach kit) onto the Control Module (aka controllers). Refer to the Storage

Manager Concepts Guide, which provides the command for the SMclient:
Storage Array >> Download >> NVSRAM

Install the Host components

The following instructions tell how to attach the HBAs and other components onto your HP-UX host.

Before you perform these instructions, check to see that you:

- are running HP-UX version 11 with the most current patches, as required.
- have the appropriate installation kit (HBAs, cables, etc.)
- know the configuration for your customer's site.

Install the Host Bus Adapters (HBAs)

Consult your HP-UX documentation if you need to install HBAs.

Install HBA Drivers

Install the driver according to the instructions that came with the HBA.

Refer to the connectivity information available on the Interop Tool for additional information.

Install Storage Manager components

The Storage Manager components are located on the CD that comes with your host attach kit. For additional information refer to the Storage Manager Installation Guide for HP-UX.

Note: Before you reboot (as mentioned at the end of the Installation Guide procedures), install the Fibre Channel cables as instructed in the following section.

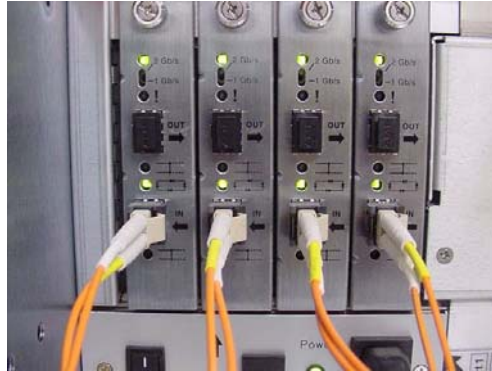
Install Fibre Channel Cable

Attach cables using the following procedures.

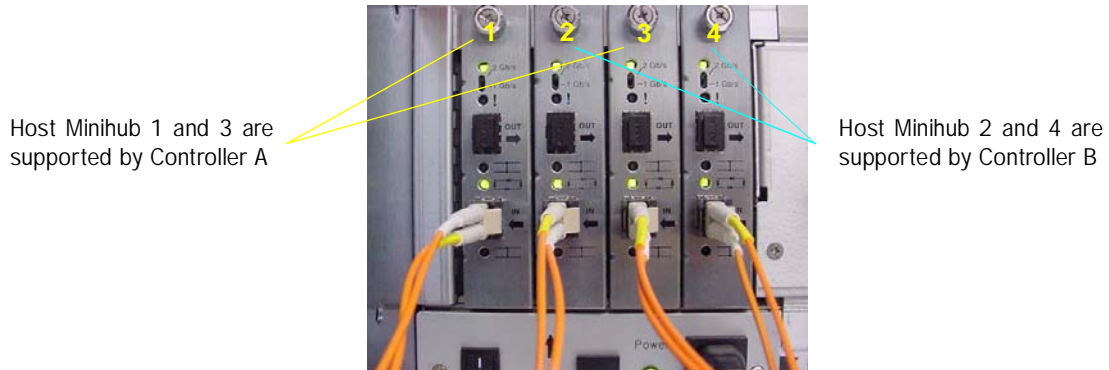
1. Route the fibre channel interface cables between the storage system and the host or per your customer's system configuration plans.
2. Attach the fibre channel cables to the INPUT connectors on the controller's host interface cards.

The following photograph shows the controller end of the Fibre Channel (FC) shortwave (fiber-optic) cable.

Note: In the case of the latest FlexLine storage systems solutions, attachment uses the smaller FC optic (LC to LC Duplex) cable.

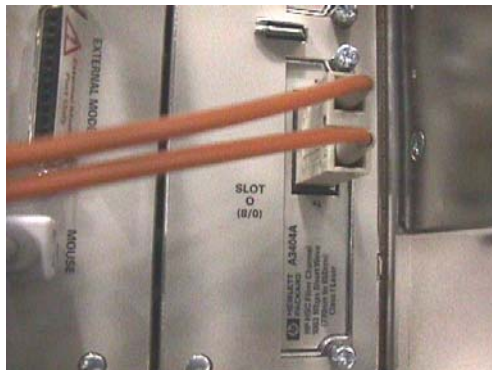


Make sure that your minihub speed (if applicable) is set to correspond with your HBA and switch speed. Also ensure that your host is attached to different controllers as shown below.



Note: Array Modules will have separate CRUs for each controller. The left one is controller A, and the right one is controller B.

3. Connect the other end of the fibre cable(s) to the Host Bus Adapter (HBA). See example below.



Note: Use the Interop Tool to obtain the latest connectivity information.

Verify the install

1. After running the reconfiguration reboot, verify that you can see the volumes by typing the command:

```
ioscan -fnC disk
```




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