

HP Application Storage Automation System

for the HP-UX, Solaris, Red Hat Enterprise
Linux, AIX, and Windows operating systems

Software Version: 7.50

Upgrade Guide

Document Release Date: September, 2008

Software Release Date: September, 2008



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Preface

Overview of this Guide

This guide describes how to upgrade and configure the Application Storage Automation System (ASAS). For information on how to install and configure ASAS, see the *ASAS Installation & Administration Guide*.

Audience and Assumptions

This guide is intended for storage operators and administrators, server operators and administrators, storage managers, and tools administrators responsible for installing or upgrading ASAS. This document assumes that you are familiar with software policies, Storage Agents, and the operating systems on which ASAS will be installed. It is also assumed that you have the system administrator permissions necessary to upgrade the software on managed servers.

Conventions in this Guide





This guide uses the following typographical and formatting conventions.

NOTATION	DESCRIPTION
Bold	Identifies field menu names, menu items, button names, and inline terms that begin with a bullet.
Courier	Identifies text that is entered or displayed at the command-line prompt, such as Unix commands, HP Server Automation commands, file names, paths, directories, environment variable names, contents of text files that are viewed or edited with a text editor, source code in a programming language, and SQL (database) commands.

NOTATION	DESCRIPTION
<i>Italics</i>	Identifies document titles, DVD titles, web site addresses. Used to introduce new terms when they are first defined in a document and for emphasis.

Icons in this Guide

This guide uses the following icons.

ICON	DESCRIPTION
	This icon represents a note. It identifies especially important concepts that warrant added emphasis.
	This icon represents a requirement. It identifies a task that must be performed before an action under discussion can be performed.
	This icon represents a tip. It identifies information that can help simplify or clarify tasks.
	This icon represents a warning. It is used to identify significant information that must be read before proceeding.

Guides in the Documentation Set and Associated Users

- The *SA User's Guide: Server Automation* is intended for system administrators responsible for all aspects of managing servers in an operational environment. It describes how to use SA, introducing the system and the user interface. It provides information about managing servers, remediating servers, script execution,

configuration tracking, deploying and rolling back code, and agent deployment. It also explains how to use the Global Shell and open a Remote Terminal on managed servers.

- The *SA User's Guide: Application Automation* is intended for system administrators responsible for performing the day-to-day functions of managing servers. It reviews auditing and compliance, software packaging, visual application management, application configuration, and software and operating system installation on managed servers.
- The *SA Administration Guide* is intended for administrators responsible for monitoring and diagnosing the health of the SA core components. It also documents how to set up SA user groups and permissions.
- The *SA Planning and Installation Guide* is intended for advanced system administrators responsible for planning all facets of an HP Server Automation installation. It documents all the main features of HP Server Automation, scopes out the planning tasks necessary to successfully install HP Server Automation, explains how to run the BSA Installer, and details how to configure each of the components. It also includes information on system sizing and checklists for installation.
- The *SA Policy Setter's Guide* is intended for system administrators responsible for setting up OS provisioning, configuration tracking, code deployment, and software management.
- The *SA Content Utilities Guide* is intended for advanced system administrators responsible for importing content such as software packages into HP Server Automation. It documents the following command-line utilities: OCLI 1.0, IDK, and DET (CBT).
- The *Server Automation Platform Developer's Guide* is intended for software developers responsible for customizing, extending, and integrating HP Server Automation. It documents how to create Web Services, Java RMI, Python, and CLI clients that invoke methods on the SA API.

Chapter 1: Overview of Storage Agents

IN THIS CHAPTER

This chapter discusses the following topics:

- Storage Agent Lifecycle
- Version Compatibility

Storage Agent Lifecycle

Storage Agents are components that run on managed servers and report data about discovered managed devices to the Web Services Data Access Engine.

The lifecycle of a Storage Agent begins with installation on the core. Agents are then deployed to managed servers and their software policies are remediated. Storage Agents are started after remediation and begin reporting information to the Web Services Data Access Engine. The Web Services Data Access Engine verifies that the Model Repository has an entry for each Storage Agent and then makes it accessible to administrators through the SA Client. Once it is available in the SA Client, you can manage the Storage Agent or its device access controls, which are the credentials that authorize the Storage Agent to access managed devices.

The lifecycle ends when you uninstall the Storage Agent by detaching the corresponding managed server from the software policy. Uninstallation can be performed by uninstalling the software or detaching the managed server in the Software Policy window through the SA Client. The entry created by Web Services Data Access Engine is not automatically deleted by detaching the corresponding managed server and must be removed through the SA Client.

Version Compatibility

See the *ASAS Installation & Administration Guide* for information about supported operating systems and device hardware. Table 1-1 and Table 1-2 list supported Storage Agents and the corresponding supported versions.

Table 1-1: Storage Agent Compatibility Matrix

STORAGE AGENT	SA AGENT PRE-7.0	SA AGENT 7.0	SA AGENT 7.50
1.0	No	Yes	Yes
7.50	No	Yes	Yes

Table 1-2: Supported Storage Agents and Core

STORAGE AGENT	CORE PRE-7.0	CORE 7.0	CORE 7.50
1.0	No	Yes	No
7.50	No	No	Yes



The Storage Host Agent and core versions must match.

Chapter 2: Upgrading Storage Agents

IN THIS CHAPTER

This chapter discusses the following topics:

- Prerequisites
- Upgrade Process
- Upgrading a Storage Agent on the Core
- Upgrading a Storage Agent on a Managed Server
- Modifying Post-Install Scripts

Prerequisites

The following requirements must be met prior to upgrading ASAS:

- SA Agents 7.0 or later must be running on the managed servers.
- All standard SA components must be previously installed on the server on which the HP BSA Installer distribution will run.
- The HP BSA Installer is required to run on the core server that has the Software Repository installed.
- The core must be running when you install a Storage Agent.

Upgrade Process

The upgrade process is comprised of the following steps:

- 1** Receive and mount the new SA distribution and upgrade the SA core. See the *SA Upgrade Guide*.
- 2** Receive and mount the new ASAS distributions from the appropriate DVD and upgrade each Storage Agent separately on the core. See "Upgrading a Storage Agent on the Core" on page 14.

- 3** (Optional) Upgrade the SA Agent for every managed server that has a Storage Agent installed if you have not done so previously.
- 4** Verify and modify post-install scripts as necessary for every managed server that has a Storage Agent installed. See “Modifying Post-Install Scripts” on page 18.
- 5** Upgrade the Storage Agent on each managed server by running the remediation process for the corresponding software policy. See “Upgrading a Storage Agent on a Managed Server” on page 18.



Packages and software policies are upgraded in the Software Repository. No changes to the managed servers occur when upgrading Storage Agents on the core.

Upgrading a Storage Agent on the Core

The process of upgrading a Storage Agent on the core also upgrades the Software Policy for that Storage Agent. Each Storage Agent must be upgraded separately. To upgrade a Storage Agent on the core, perform the following steps:

- 1** Log in to the server that you installed SA on and then launch a command prompt.
- 2** Mount the ASAS Upgrade DVD using a command similar to `mount /dev/cdrom or NFS-mount the directory that contains a copy of the DVD contents.`
- 3** Run the `upgrade_opsware.sh` command from the `opsware_installer` folder on the corresponding DVD. For a mounted file system, the path may look similar to the following:

```
/h/buildusr/distributions/gray.C/opsware_34.C.2462.0-storex/  
disk001/opsware_installer/upgrade_opsware.sh
```

The interview mode similar to the following example appears:

```
Please select the interview mode.
```

```
1 - Simple Interview Mode  
2 - Advanced Interview Mode
```

```
Please select the interview mode from the menu, type 'h' for  
help, 'q' to quit: 1
```

```
Parameter 1 of 1 (truth.oaPwd)Please enter the password for  
the opsware_admin user. This is the password used to connect  
to the Oracle database.: my_password
```

```
All parameters have values. Do you wish to finish the
interview? (y/n): y
```

```
Name of response file to write [/usr/tmp/oiresponse.storage-
pam-mcdata]:
```

```
The file /usr/tmp/oiresponse.storage-pam-mcdata exists.
Overwrite? (y/n): y
```

```
Would you like to continue the installation using this
response file? (y/n): y
```

- 4** Type `1` to select the Storage Agent and then press Enter. There is one option for each type of Storage Agent. Next, a prompt similar to the following example appears:

```
Welcome to the Opsware Installer.
Please select the components to install.
1 ( ) Host Storage Extension Server Modules
Enter a component number to toggle ('a' for all, 'n' for
none).
When ready, press 'c' to continue, or 'q' to quit.
Selection:
```

- 5** To continue the upgrade, type `c` and then press Enter. When the upgrade is complete, a confirmation similar to the following appears:

Figure 2-1: Installation Successful Confirmation

```
[May-23-2007 22:32:16] Opsware Installer ran successfully.
[May-23-2007 22:32:16] #####

For more details, please see the following file:
/var/log/opsware/install_opsware/install_opsware.2007-05-22.20:27:47_verbose.log

#####
WARNING: to make sure that no sensitive information is left
on this server, please remove, encrypt or copy to a secure location
the following files and directories:
-- /var/opt/opsware/install_opsware/resp/*
-- /var/log/opsware/install_opsware/*
-- /var/tmp/*.sh
Also, please encrypt or store in a secure location the response file
that you used to install this core.
#####

Script done, file is /var/log/opsware/install_opsware/install_opsware.2007-05-22.20:27:47.log
You have new mail in /var/spool/mail/root
```

If the upgrade did not complete successfully, the errors and the location of the log file will be displayed. See Chapter 3, “Troubleshooting” on page 21 for more information.

See Table 2-1 on page 17 for a list of the software policy predefined names and paths. If the software policy does not exist at that location, it will be created. If the software policy does exist at that location, it will be modified. No changes occur to any managed servers at this time.



The upgrade process only searches the default locations for software policies. If a software policy is not present at the expected location, a new one will be created. Therefore, any software policies that were moved or renamed in the SA Client will not be upgraded.

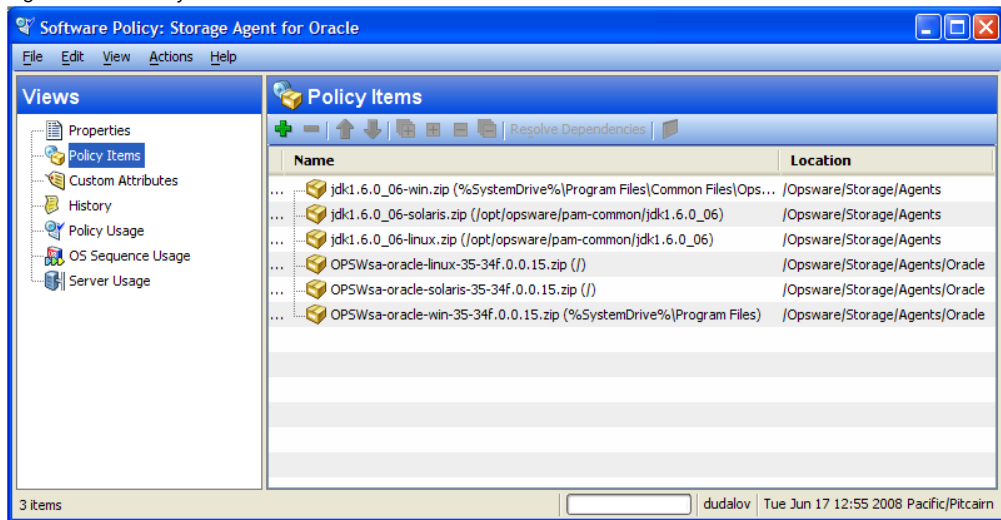
Storage Host Agent Upgrade Changes

The SHA and core versions must match. You must run the SHA distribution in order to upgrade the core repository. The SHA is automatically remediated during every snapshot on the corresponding managed server.

Software Policy Upgrade Changes

Each Storage Agent's software policy contains a package for every supported platform. These packages are located in the Policy Items view in the SA client. The packages are located in **Library > Opware > Storage > Agents**. See Figure 2-2.

Figure 2-2: Policy Items View





The upgrade process does not change the name or location of a policy but modifies the policy items. This modification may result in changes to the OS property. The OS property must match the platform of the policy items.

Not all packages assigned to a software policy will change due to the upgrade. After identifying the software policy to be upgraded, the process removes all items from that policy and assigns new ones in accordance with the rules of the latest distribution. As a result, the software policy will contain the updated set of packages and values for the OS property. All packages assigned to the policy must be uploaded to the core to the folders specified in the Policy Items view.

The upgrade process will not remove obsolete packages from the Software Repository but you can remove them using the SA Client.

Table 2-1: Names and Locations of Storage Agents Software Policies

STORAGE AGENT	SOFTWARE POLICY	OPSWARE FOLDER
Brocade	Brocade Storage Agent	/Opware/Storage/Agents/ Brocade
CLARiiON	EMC CLARiiON Storage Agent	/Opware/Storage/Agents/ CLARiiON
HiCommand	HiCommand Storage Agent	/Opware/Storage/Agents/ Hitachi
McDATA	McDATA Storage Agent	/Opware/Storage/Agents/ McDATA
NetApp	NetApp Storage Agent	/Opware/Storage/Agents/ NetApp
Oracle	Oracle Storage Agent	/Opware/Storage/Agents/ Oracle
Symmetrix	EMC Symmetrix Storage Agent	/Opware/Storage/Agents/ Symmetrix

Upgrading a Storage Agent on a Managed Server

Storage Agent upgrades on a managed server are performed by a remediation process to ensure the binaries on a managed server comply with the corresponding Storage Agent software policy. See the *SA User's Guide: Application Automation* for instructions on remediating managed servers.



You must use remediation to upgrade all Storage Agents after performing core 7.0 to 7.50 and ASAS 1.0 to 7.50 upgrades. Failure to do this will result in the inability to modify device access controls.

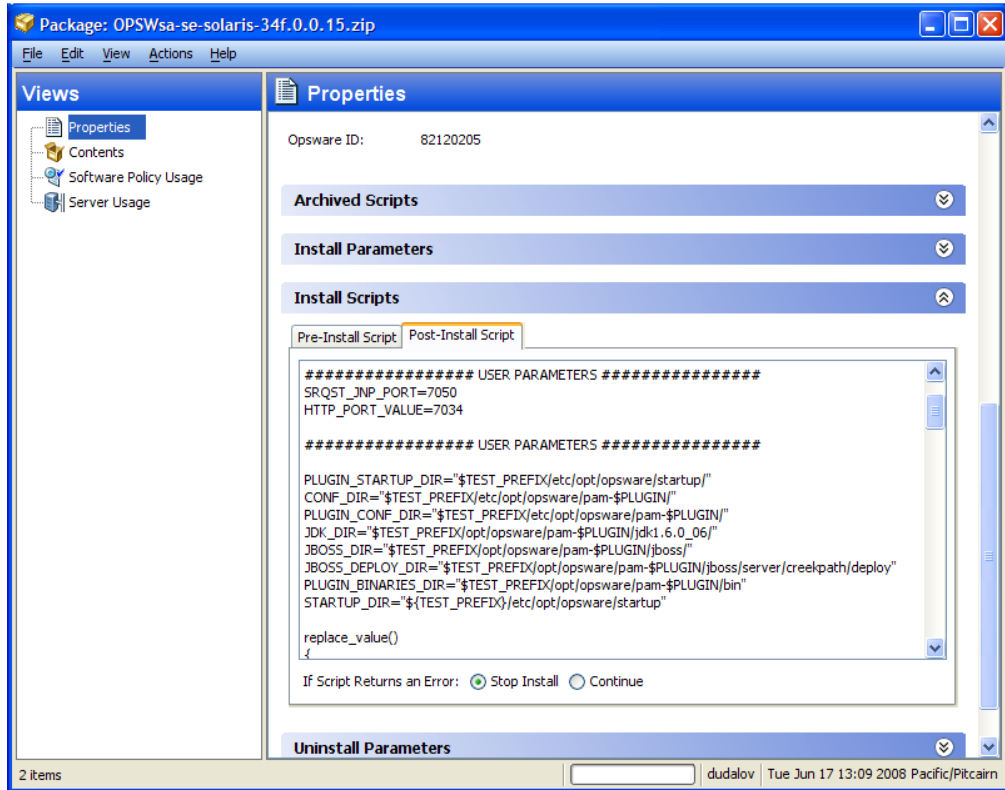
Modifying Post-Install Scripts

You must verify that post-install scripts contain values that correspond with the configuration of the managed server to which you are deploying the Storage Agents. To modify a post-install script, perform the following steps:

- 1** From the Navigation pane, select the By Folder tab and then select Library.
- 2** Go to the folder that corresponds to the Storage Agent you want to modify, such as **Library > Opware > Storage > Agents > Oracle** for the Oracle Storage Agent.
- 3** Double-click the Software Policy.
- 4** From the Software Policy window, click **Policy Items**.
- 5** Double-click the package (*.zip) that contains the name of the platform of the managed server and matches the full path of the Storage Agent in the Location column.
- 6** From the Package Properties window, click **Install Scripts**.
- 7** In the Post-Install Script window, make the necessary changes. See Figure 2-3

- 8** From the File menu, select **Save**.

Figure 2-3: Post-Install Script Window



Modifiable Storage Agent Variables

The following is a list of variables and their parameters for each Storage Agent that can be modified.

EMC CLARiiON (Required)

The value of the property should match the location of NAVICLI on the managed server. Specify NAVICLI_HOME as follows:

Unix-like: /opt/Navisphere/bin/navicli

Windows: C:/Program Files/EMC/Navisphere CLI/navicli

HiCommand

Change HTTP_PORT_VALUE if port 7031 is taken by another application. This port is used by the Storage Agent to listen for new http connections to its management console. The default value is 7031.

McDATA

Change the version of Enterprise Fabric Connectivity Manager if it is not 9.

```
EFCM_VER = 9
```

NetApp

Change HTTP_PORT_VALUE if port 7032 is taken by another application. This is the port where the Storage Agent listens for new http connections to its management console.

The default value is 7032.

EMC Symmetrix (Required)

Specify SYMCLI_HOME, the location of SYMCLI installation as applicable:

Unix-like: ... /opt/emc/SYMCLI/V6.2.1/bin

Windows: C:/Program Files/EMC/SYMCLI/bin

Set REPLICATION_ENABLED to 1 to enable replication discovery.

Chapter 3: Troubleshooting

IN THIS CHAPTER

This chapter discusses the following topics:

- Error Conditions and Handling
- Acceptance of Previous Elements

Error Conditions and Handling

All errors that occur during the upgrade to the core are logged directly to the console and stored in log files located at `/var/log/opsware/install_opsware`.

If the Software Repository is not installed or not running, you will receive a notification and request for confirmation to terminate the process or continue at your own risk.

All errors that occur during remediation are reported by the remediation process. The error messages are located in the Job panel of the SA Client.

All errors that occur during a Storage Agent session are reported to log files stored on the managed server at a standard location, such as `/var/log/opsware/pam-brocade`.

Acceptance of Previous Elements

Device Access Controls: The upgrade process will not remove previously created device access controls stored on a managed server or keep credentials to access managed devices (arrays, switches, databases). The location and format of these files depends upon the Storage Agent architecture and the platform.

Discovered Devices: The upgrade process does not remove previously discovered data such as arrays, switches, and databases.

Storage Agent Authorization: Additional authorization is not required for previously authorized Storage Agents after the upgrade.

