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HPE Storage Optimizer

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Installation Guide

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Chapter 1: Introduction

This section provides an overview of Storage Optimizer.

- ["Storage Optimizer"](#)
- [" Storage Optimizer Architecture"](#)

Storage Optimizer

HPE Storage Optimizer delivers a broad set of features targeted at addressing information management and governance challenges within the enterprise.

Break the Silos of Information: Break down information silos and enforce consistent information governance across the entire corporate infrastructure. HPE Storage Optimizer helps you achieve this using its inbuilt connectivity to the most commonly used data repositories and its capability to address many others.

Apply Information Lifecycle Management: Analyze all your documents to determine if they hold business value, constitute a record, or hold no value. Identify orphaned and unknown data. Develop a taxonomy and apply a complex policy to impose the most appropriate retention to each document.

Enforce Compliance and Security: Use the HPE Storage Optimizer analysis and entity extraction capability to identify potentially sensitive documents that need to be protected. Leverage the available policies to ensure that all the documents are properly secured in the desired locations.

Optimize Storage and Application Performance: Manage and delete data that hold no value. Implement a hierarchical storage management strategy to ensure a better utilization of your storage and to improve your backup and application performance.

In conclusion, HPE Storage Optimizer enables you to understand the value of your data, and thereby gain control of your valuable information and achieve better data management.

Storage Optimizer Architecture

Storage Optimizer is a Web application user interface.

Components

Storage Optimizer includes the following components.

- Storage Optimizer Dashboard
- Storage Optimizer Engine
- Storage Optimizer Data Analysis
- Storage Optimizer Database
- Storage Optimizer MetaStore
- Storage Optimizer Redirector
- Storage Optimizer Connectors

Storage Optimizer Dashboard

The Storage Optimizer Dashboard interface allows users to view repositories, to establish and review allocation of policy, to administer IDOL categories, and to monitor system activity and health, depending on their roles.

The following services are included in the Storage Optimizer Dashboard.

- **Storage Optimizer Web Interface** is an IIS Web application that serves as the Storage Optimizer user interface.

Storage Optimizer Engine

The Storage Optimizer Engine provides the central capability to manage policy content within an organization.

The following services are included in the Storage Optimizer Engine.

- **Storage Optimizer Engine service** is a Windows service that executes all scheduled tasks.
- **CallbackHandler** is an IIS Web application that receives notifications from IDOL connectors.

Storage Optimizer Data Analysis

Storage Optimizer Data Analysis allows your organization to analyze and understand, and to deal with the unstructured data contained within legacy repositories. Storage Optimizer uses IDOL connectors to scan and capture metadata and (optionally) content of files in the repository to analyze them, and then to present the results of the statistical analysis visually in a dynamic user interface.

Storage Optimizer Database

Storage Optimizer Database provide storage for all policies, repository definitions, configuration settings, schedule tasks, and security information.

Storage Optimizer MetaStore

Storage Optimizer MetaStore is a relational database used to store information about all files in repositories that are being managed or analyzed by Storage Optimizer. Information stored includes document and repository metadata such as file create date, document author, and so on. Policy execution status is also stored in Storage Optimizer MetaStore.

Storage Optimizer Redirector

Storage Optimizer Redirector service retrieves file contents when a shortcut established by a Secure Shortcut policy is clicked.

Storage Optimizer Connectors

Storage Optimizer Connectors and accompanying connector framework services scan and extract metadata and (optionally) content from files in source repositories. Connectors are also used to action policy execution instructions such as dispose or secure.

Connectors are repository type specific. The following connectors are provided with HPE Storage Optimizer:

- The **Storage Optimizer Distributed Connector** distributes connector calls to the appropriate connector.
- The **Storage Optimizer Exchange Connector** scans and performs actions on items in Exchange repositories. This connector type has a connector framework deployed alongside.
- The **Storage Optimizer FileSystem Connector** scans and performs actions on items in file shares. This connector type has a connector framework deployed alongside.
- The **Storage Optimizer Hadoop Connector** scans and performs actions on items in Hadoop repositories. This connector type has a connector framework deployed alongside.
- The **Storage Optimizer Notes Connector** scans and executes policy on messages, appointments, contacts, and other items from a Notes server. This connector type has a connector framework deployed alongside.
- The **Storage Optimizer SharePoint 2007 Connector** scans and performs actions on items in SharePoint 2007 sites. This connector type has a connector framework deployed alongside.
- The **Storage Optimizer SharePoint 2010 Connector** scans and performs actions on items in SharePoint 2010 sites. This connector type has a connector framework deployed alongside.
- The **Storage Optimizer SharePoint 2013 Connector** scans and performs actions on items in SharePoint 2013 sites. This connector type has a connector framework deployed alongside.
- The **Storage Optimizer SharePoint Remote Connector** scans and performs actions on items in SharePoint Remote sites. This connector type has a connector framework deployed alongside.
- The **Storage Optimizer StoreAll Connector** scans and performs actions on items in StoreAll repositories. This connector type has a connector framework deployed alongside.

Chapter 2: Plan for an Storage Optimizer Installation

This section describes the prerequisites for an Storage Optimizer installation and provides some deployment examples.

- ["Introduction"](#)
- ["Compatibility Matrix"](#)
- ["Prerequisites"](#)
- ["Deployment Examples"](#)

Introduction

When you install Storage Optimizer, you must consider the Storage Optimizer Connectors that you will need for the repositories you wish to analyze and manage. Storage Optimizer Connectors are specific to the types of repository.

For example:

- To analyze and manage content held in a Windows file share, you must install one or more Storage Optimizer Filesystem Connectors.
- To run archive policies, you must install the HPE Storage Optimizer File System Agent.

The high-level steps to perform to install Storage Optimizer are:

1. Install the Storage Optimizer database, including Storage Optimizer MetaStore. For more information on installing the Storage Optimizer database, see ["Install Storage Optimizer Databases" on page 17](#).
2. Identify or install IDOL connectors. For more information about installing Storage Optimizer connectors using the included Deploy Tool package, see ["Install Storage Optimizer Connectors" on page 19](#). To install the HPE Storage Optimizer File System Agent, see [Install File System Agent](#).
3. Install Storage Optimizer and the Storage Optimizer Engine. For more information on installing Storage Optimizer components, see ["Install Storage Optimizer and the Storage Optimizer Engine" on page 27](#).

Prerequisites

This section lists the prerequisites for installing the various Storage Optimizer components.

Storage Optimizer IDOL Deploy Tool

You must run the Storage Optimizer IDOL Deploy Tool on a server with a Java Run-time Environment (JRE) 32-Bit 7 or higher installed.

Storage Optimizer IDOL Package

Storage Optimizer supports IDOL 10.11 connectors.

Storage Optimizer

You must install Storage Optimizer on a server that has the following products installed.

- Microsoft Internet Information Server (IIS). The following versions are supported.
 - IIS 8.5 on Windows Server 2012 R2
 - IIS 8.0 on Windows Server 2012
 - IIS 7.5 on Windows Server 2008 R2
 - IIS 7.0 on Windows Server 2008
- Microsoft .Net Framework 4.5
- You must install Internet Explorer 9 or later on servers with Storage Optimizer Data Analysis and IIS.
- SQL Server must be accessible from the Storage Optimizer server. Storage Optimizer supports the following versions.
 - SQL Server 2014
 - SQL Server 2012

In addition, you must ensure that the SQL Server Native Client is installed.

For large-scale deployments, you must use Enterprise Edition of SQL Server, as it enables you to split the tables on different files and, thereby, helps in optimizing the performance. For Reporting Services, you can use the Standard or Enterprise edition of SQL Server. To run reports, you must configure the Storage Optimizer data source.

To configure the Storage Optimizer Data Source

- a. Open **Reporting Services Configuration Manager** and ensure that Report Server is started.
- b. Click the **Report Manager URL** tab, where the URL to access Report Manager is defined.
- c. Using a Web browser, access the Report Manager URL.
The startup page (containing the Home folder) of the Report Manager appears.
- d. Navigate to the **HPE ControlPoint Reports > DataSource** folder.
- e. Click the **ControlPointAudit** data source.
By default, the Properties tab of the ControlPointAudit data source appears.
- f. Select one of the following connection options under the Connect using field:

Option	Description
Credentials supplied by the user running the report	User is prompted to specify credentials when the report is run.
Credentials stored securely in the	Credentials are used regardless of who requests a Storage Optimizer Audit report.

Option	Description
report server	
Windows integrated security	Every user who requests a Storage Optimizer Audit report must have an account in SQL Server with the Read permission to ControlPointMetaStore and ControlPointAudit databases.
Credentials are not required	The configured unattended execution account is used. This must be an account in SQL Server with the Read permission to ControlPointMetaStore and ControlPointAudit databases.

Supported Browsers

- Internet Explorer 9 or later
- Google Chrome 41 or later

Windows Server 2008 and 2008 R2 IIS Requirement

On Microsoft Windows Server 2008 and 2008 R2, you must add the Windows Authentication Role, which is not installed by default.

To add the Windows Authentication Role

1. In the Windows Start menu, click **Administrative Tools > Server Manager**.
The Windows Server Manager opens.
2. In the hierarchy pane, expand Roles, and then click **Web Server (IIS)**.
The Web Server (IIS) pane opens.
3. Scroll to the Role Services section, and then click **Add Role Services**.
The Add Role Services wizard opens.
4. Select Windows Authentication, and then click **Next**.
The Confirm Installation Selections page opens.
5. Click **Install**.
The role is installed and the Results page opens.
6. Click **Close**.

Windows Server 2012 Requirement

On Windows Server 2012, you must enable Windows Communication Foundation (WCF) Services HTTP Activation. For more information, refer to the Microsoft Windows Server 2012 documentation.

Storage Optimizer versions 4.5 and later also support the use of Windows Server 2012 R2.

Compatibility Matrix

Storage Optimizer and IDOL Mapping

Component	Version	Operating System
IDOL Server	11.0	Windows, Linux, Solaris
File System Connector	11.0	Windows, Linux, Solaris
Hadoop Connector	10.10	Windows, RHEL, Suse, Solaris
Exchange Connector	10.11	Windows
Sharepoint Connector 2003	10.10	Windows
Sharepoint Connector 2007	10.10	Windows
Sharepoint Connector 2010	10.10	Windows
Sharepoint Connector 2013	10.10	Windows
Sharepoint Connector Remote	10.11	Windows
Store All Connector	10.10	Windows, Linux, Solaris
Edge System Connector	11.0	Windows, RHEL, Suse
Distributed Connector	10.8.1	Windows, Linux, Solaris
Omni Group Server	7.5.10	Windows
meta Store	10.11	Windows

Deployment Examples

This section describes a few typical configurations for a distributed Storage Optimizer installation.

Small Size Deployment

Server 1

- Storage Optimizer License Server
- Storage Optimizer Contents
- Distributed Connector
- Connectors
- Storage Optimizer OGS

Server 2

- Storage Optimizer
- Storage Optimizer Engine
- Storage Optimizer Database
- Storage Optimizer MetaStore

Medium Size Deployment

Server 1

- Storage Optimizer License Server
- Storage Optimizer Contents

Server 2

- Distributed Connector
- Connectors
- Storage Optimizer OGS

Server 3

- Storage Optimizer
- Storage Optimizer Engine
- Storage Optimizer Database
- Storage Optimizer MetaStore

Large Size Deployment

Server 1

- Storage Optimizer License Server
- Storage Optimizer Contents

Server 2

- Distributed Connector
- Connectors
- Storage Optimizer OGS

Server 3

- Storage Optimizer
- Storage Optimizer Engine 1

Server 4

- Storage Optimizer Engine 2
- Storage Optimizer Database
- Storage Optimizer MetaStore

Chapter 3: Install Storage Optimizer Databases

You can install Storage Optimizer databases on the SQL Server versions listed in the "Prerequisites" on page 11 section.

Five databases are installed:

- ControlPoint
- ControlPoint Audit
- ControlPoint MetaStore
- ControlPoint MetaStore Tags
- ControlPoint Document Tracking

To install Storage Optimizer databases

1. Run HPE Storage Optimizer Database Installer.exe.
The database installer opens to the Welcome page.
2. Click **Next**.
The Log Directory dialog box opens.
3. Change the path of the setup log file, if required, and then click **Next**.
The SQL Connection page opens.
4. Type or select from the drop-down list, the required SQL Server and instance name.
5. Select the required authentication method: either Windows or SQL Server.
If you select SQL Server Authentication, you must also provide a Login ID and Password.
6. Click **Test Connection** to verify the server details.
7. Click **Next** to continue to the Databases & Reports page.
8. Install the required databases from ControlPoint, ControlPoint Audit, ControlPoint MetaStore, ControlPoint MetaStore Tags, and ControlPoint Document Tracking.
9. For each database, accept or customize the default settings. Ensure that each database and transaction log is appropriately sized to reflect your needs.
10. Select **Upload Reports** if you want to upload Storage Optimizer audit reports to the SQL Server, and click **Next**.
11. If you selected audit reports, you can specify the installation folder and configure the details of your SQL Server Reporting Services Report Manager and Web service.
12. Click **Next** to continue to the Installation Confirmation page.
13. Check the details on the Installation Confirmation page, and then click **Install** to proceed with the installation or click **Back** to change any of the settings.
14. On the final page, review the installation log, and then click **Finish**.
After the installation is complete, you can review the installation log. Also, a link is provided on this page that copies a sample connection string to your clipboard. Storage Optimizer MetaStore service requires a connection string to access MetaStore. This connection string is entered when configuring your Storage Optimizer IDOL package.

Chapter 4: Install Storage Optimizer Connectors

This section describes how to install Storage Optimizer connectors. In addition, it provides information on installing the HPE Storage Optimizer File System Agent.

- ["Overview"](#)
- ["Create Deployment Packages"](#)
- ["Install Deployment Packages"](#)
- [Install File System Agent](#)

Overview

To install Storage Optimizer Connectors

1. Create deployment packages for the target servers.
2. Copy the deployment packages to the target servers and install them.

To install the HPE Storage Optimizer File System Agent, see [Install File System Agent](#).

Create Deployment Packages

The Storage Optimizer IDOL Deploy Tool automates the creation of deployment packages for Storage Optimizer IDOL connectors. The Deploy Tool does not install the software directly; rather, it builds the deployment packages that you must copy to the target servers for subsequent installation. The Deploy Tool preconfigures the Deployment packages and the software requires no further configuration for use with Storage Optimizer after the installation on target servers.

Note: You can run the Deploy Tool on any server to create Storage Optimizer deployment packages.

You can use the Deploy Tool to configure, save, and build deployment packages.

Configure Deployment Packages

Use the information in this section to configure deployment packages.

To configure deployment packages

1. Start the Storage Optimizer IDOL Deploy Tool by running HPE Storage Optimizer IDOL Deploy Tool.exe.

The Deploy Tool package build dialog box displays with four tabs: **General**, **IDOL**, **Connectors** and **Components**.

2. On the **General** tab, enter the following information.

- **Host Installation Directory.** Specify the directory for installing components on the target deployment servers.
The default location is C:\Program Files\Hewlett Packard Enterprise\HPE Storage Optimizer\.
 - **Host Package Build Location.** Specify the directory creating deployment packages when you run the Deploy Tool. The default location is C:\temp\HPE Storage Optimizer\.
 - **Zip File.** This option outputs the deployment packages as compressed (zip) archives. This option is useful when the deployment packages are to be transferred to different servers. The package size can exceed 1 GB.
 - **Host Operating System.** Select either 32-bit or 64-bit, depending on the architecture of the host operating system.
 - **Default Deployment Host.** Type the name of the server that the Storage Optimizer Server software will be installed on. You define the names of servers that will host other components on the **Components** tab.
3. On the **IDOL** tab, enter the following information.
- **Default Language Type.** Type the default language type to be used by the Storage Optimizer IDOL Server. The default language is *englishUTF8*.
4. On the **Connectors** tab, select the connectors to deploy.
- Exchange Needs (the client needs to be installed on the server hosting the connectors)
 - File System
 - Hadoop
 - Notes (the client needs to be installed on the server hosting the connectors)
 - SharePoint 2007
 - SharePoint 2010
 - SharePoint 2013
 - SharePoint Remote
 - StoreAll
- You must configure each selected connector.
5. Click **Config** to configure each connector.
The connector configuration dialog box opens. The information you must provide depends on the type of connector.
6. (*Optional*) Enter the following information for an Exchange Connector.

- **Number of Connectors in Group.** Type the number of connectors in the group. The maximum number is 9.
 - **Deployment Hosts.** Type the server names to which to deploy the connectors. Each server will host one connector, however, if the number of specified servers is less than the number of connectors, the final server in the list hosts all remaining connectors.
 - **LDAP and Exchange Web Service User Domain.** Type the user domain to use when connecting to both LDAP and the Exchange Web service.
 - **LDAP and Exchange Web Service Username.** Type the user name to use when connecting to both LDAP and the Exchange Web service.
 - **LDAP and Exchange Web Service Password.** Type the password to use when connecting to both LDAP and the Exchange Web service.
7. (*Optional*) Enter the following information for a File System Connector.
- **Number of Connectors in Group.** Type the number of connectors in the group. The maximum number is 9.
 - **Deployment Hosts.** Type the server names to which to deploy the connectors. Each server will host one connector, however, if the number of specified servers is less than the number of connectors, the final server in the list hosts all remaining connectors.
8. (*Optional*) Enter the following information for a Hadoop Connector.
- **Number of Connectors in Group.** Type the number of connectors in the group. The maximum number is 9.
 - **Deployment Hosts.** Type the server names to which to deploy the connectors. Each server will host one connector, however, if the number of specified servers is less than the number of connectors, the final server in the list hosts all remaining connectors.
 - **Hadoop Root Uri.** Type the root URI of the file system to which to connect.
 - **Hadoop Path.** Type the path in the file system to process for files.
9. (*Optional*) Enter the following information for a Notes Connector.
- **Number of Connectors in Group.** Type the number of connectors in the group. The maximum number is 9.
 - **Deployment Hosts.** Type the server names to which to deploy the connectors. Each server will host one connector, however, if the number of specified servers is less than the number of connectors, the final server in the list hosts all remaining connectors.
10. (*Optional*) Enter the following information for a SharePoint 2007, 2010, or 2013 Connector.
- **Number of Connectors in Group.** Type the number of connectors in the group. The maximum number is 9.

- **Deployment Hosts.** Type the server names to which to deploy the connectors. Each server will host one connector, however, if the number of specified servers is less than the number of connectors, the final server in the list hosts all remaining connectors.
 - **SharePoint Host.** Type the name of the SharePoint server that hosts the connector Web service.
 - **SharePoint Port.** Type the port number of the connector Web service.
 - **SharePoint Credentials Username.** Type the name of the user to use when authenticating with the SharePoint server.
 - **SharePoint Credentials Password.** Type the password for the user to use when authenticating with the SharePoint server.
11. (*Optional*) Enter the following information for a SharePoint Remote Connector.
- **Number of Connectors in Group.** Type the number of connectors in the group. The maximum number is 9.
 - **Deployment Hosts.** Enter the server names to which to deploy the connectors. Each server will host one connector, however, if the number of specified servers is less than the number of connectors, the final server in the list hosts all remaining connectors.
 - **SharePoint Credentials Username.** Type the name of the user to use when authenticating with the SharePoint server.
 - **SharePoint Credentials Password.** Type the password for the user to use when authenticating with the SharePoint server.
 - **SharePoint Credentials Domain.** Type the domain of the specified user.
12. (*Optional*) Enter the following information for a StoreAll Connector.
- **Number of Connectors in Group.** Type the number of connectors in the group. The maximum number is 9.
 - **Deployment Hosts.** Type the server names to which to deploy the connectors. Each server will host one connector, however, if the number of specified servers is less than the number of connectors, the final server in the list hosts all remaining connectors.
 - **StoreAll Credentials Username.** Type the StoreAll system username.
 - **StoreAll Credentials Password.** Type the StoreAll system password.
 - **StoreAll API URL.** Type the URL to use to access the StoreAll API.
13. On the **Components** tab, click **Config** next to a component name to configure that component. You can configure the following items for each component.

- **Host.** The name of the server to which to deploy this component.
- **Path.** The installation location for this component.

The Storage Optimizer MetaStore component must be configured with an SQL connection string to use when connecting to the MetaStore database. The connection string has the following general structure when Storage Optimizer databases are configured to use Windows authentication:

```
Driver={SQL Server Native Client 11.0};App=HPE Storage  
Optimizer;Server=servername;Database=ControlPointMetaStore;Trusted_  
Connection=yes
```

Enter the connection string offered by the Storage Optimizer database installer and make any required adjustments.

Save Deployment Package Configuration

To save all configuration settings to a file, select **Save** or **Save As** from the File menu.

Build Deployment Packages

To build deployment packages, click **Deploy**, or select **Deploy** from the Actions menu. The packages are built in the Host Package Build Location that you specified on the **General** tab of the Deploy Tool.

Install Deployment Packages

The Deploy Tool creates deployment packages in the location identified by the Host Package Build Location option. Underneath this location are subfolders or compressed (.ZIP) files for each target server. Move these sub-folders or .ZIP files to the appropriate target servers for installation.

Prerequisites

The following products must be installed on the target servers:

- Microsoft Visual C++ 2005 Redistributable Package
- Microsoft Visual C++ 2010 Redistributable Package
- Microsoft Visual C++ 2013 Redistributable Package
- SQL Native Client

The required prerequisite packages are included in the `vc redistrib` and `sqlNativeClient` subfolders under the deployment package location.

Installation

Perform the procedure in this section to install deployment packages.

To install a deployment package

1. Run the `_deploy_services.bat` Windows batch file to copy the components to the location defined in Host Installation Directory.
 - If Windows UAC is enabled on the server, you must run the batch file manually from the command line.
 - i. Open a command prompt as an Administrator.
 - ii. Change the directory to the temporary location that contains the batch file.
 - iii. Run `_deploy_services.bat`.
2. Run the `_install_services.bat` Windows batch file to install the Windows services. You receive a prompt for the user name and password to use for the first connector in the deployment package.
3. Type the credentials in the following format. Ensure that you include the domain or host name when entering the user name.


```
Please enter username: domain\username
Please enter password: password
```

You receive a prompt to choose whether to use the same credentials for all other connectors. If you use different credentials for other connectors, type them in the same format. You are also prompted for credentials to use for your Storage Optimizer MetaStore service. Enter the required username and password.
4. Copy the IDOL license file to the IDOL License Server folder after installation and before services start.

Start Windows Services

To start all the Windows services, run the `_start_services.bat` Windows batch file.

If IDOL content engines are on a different server than the IDOL connectors, HPE recommends that you start and verify the IDOL services before the connectors start. Starting the connectors starts the analysis process for the locations identified when the connectors were configured in the Deploy Tool.

Stop Windows Services

To safely shut down all Windows services, run the `_stop_services.bat` Windows batch file.

To stop individual components in isolation, run `_stop_service.bat` in the component folder.

Uninstall Deployment Packages

You must manually uninstall deployment packages by running the `_uninstall_services.bat` script.

To uninstall individual components, run `_uninstall_service.bat` in the component folder.

Install HPE Storage Optimizer File System Agent

Prerequisites for File System Agent

- Windows versions: Windows Server 2008 R2 or later and Windows 2012 Server or later.
- Linux versions: RHEL 7.1 and SUSE 12
- Ensure that you have Storage Optimizer installed and ready to use.

Installing the File System Agent

To run archive policies, you need to install the HPE Storage Optimizer File System Agent.

To install the HPE Storage Optimizer File System Agent on Windows

1. Run the HPE Storage Optimizer File System Agent installer, HPE Storage Optimizer File System Agent Installer.exe. You can find the installer at Storage Optimizer x64\HPE Storage Optimizer Utilities\HPE Storage Optimizer File System Agent\Windows. The Welcome screen of the setup wizard appears.
2. Click **Next**. The Log Directory screen appears.
3. Select a directory for the installation setup log files, and click **Next**. The Installation Location screen appears.
4. Specify a location to install the agent. The default installation location is C:\Program Files\Hewlett Packard Enterprise\Storage Optimizer\Edge.
5. Click **Next**. The Server screen appears.
6. Specify the name of the HPE Storage Optimizer server. The HPE Storage Optimizer File System Agent service needs to connect to this HPE Storage Optimizer server to execute the archive policies.
7. Click **Next**. The Service User screen appears.
8. Specify the credentials that will be used to run the HPE Storage Optimizer File System Agent services and to connect to the HPE Storage Optimizer server.
9. Click **Next**. The Installation Confirmation screen appears.
10. Click **Install**. After the connector is installed, you are prompted to restart the system to complete the installation.

To install the HPE Storage Optimizer File System Agent on Linux

1. Open the File System Agent ports: 7210 and 7212.
2. Run the HPE Storage Optimizer File System Agent installer, SORHELInstall.tar.gz. You can find the installer at Storage Optimizer x64\HPE Storage Optimizer Utilities\HPE Storage Optimizer File System Agent\Red Hat Linux or Storage Optimizerx64\HPE Storage Optimizer Utilities\HPE Storage Optimizer File System Agent\SUSE Linux.

3. Extract and install the tarball as follows:
 - a. `tar -xvzf SORHELInstall.tar.gz`
 - b. `cd SORHELInstall`
 - c. `sudo sh sosetup.sh install`
4. Create a mount directory using the following command:
`sudo mkdir /opt/mount`
5. Run the configuration scripts that configure and start the services as follows:
 - a. `sudo sh /opt/Hewlett Packard Enterprise/Edge/Agent/resources/deployLoggedFS.sh`
When prompted, enter the mount location created in Step 3.
 - b. `sudo sh /opt/Hewlett Packard Enterprise/Edge/EdgeFSConnector/deployFSConnector.sh`
When prompted, enter the HPE Storage Optimizer server, domain, username, and password.

Note: If you uninstall this agent on Linux, ensure that you stop the `EdgeConnectorFramework.exe` process or reboot the system after uninstalling the agent.

Uninstall the File System Agent

To uninstall the HPE Storage Optimizer File System Agent on Windows:

1. Uninstall the File System Agent and then the archive service from the Windows **Add/Remove Programs** option.
2. Restart the system.

To uninstall the HPE Storage Optimizer File System Agent on Linux:

1. Change the directory to the `SORHELInstall` directory and run the following command: `sudo sh sosetup.sh remove`

Chapter 5: Install Storage Optimizer Components

This chapter describes how to install Storage Optimizer components.

- ["Overview"](#)
- ["Install Storage Optimizer and the Storage Optimizer Engine" below](#)
- ["Configure Storage Optimizer"](#)

Overview

To install Storage Optimizer, perform the following steps.

1. Install Storage Optimizer and Storage Optimizer Engine.
2. (Optional) Install specific repository components.

Install Storage Optimizer and the Storage Optimizer Engine

Before you install Storage Optimizer and the Storage Optimizer Engine, verify that the Storage Optimizer prerequisites listed in ["Prerequisites"](#) have been met.

To install Storage Optimizer Console and Engine

1. Click `setup.exe`.
The Welcome dialog box opens.
2. Read the information, and then click **Next**.
The License Agreement opens.
3. Select **I accept the terms** in the license agreement, and then click **Next**.
The Customer Information dialog box opens.
4. Type your User Name and Organization, and then click **Next**.
The Setup Type dialog box opens.
5. Select the setup type that meets your requirements.
 - **Typical** installs Storage Optimizer and the Storage Optimizer Engine
 - **Complete** installs Storage Optimizer, Engine, and Web Services
 - **Custom** allows the selection of individual components, as required
6. Click **Next**.
The Destination Folder dialog box opens.
7. (Optional) Click **Change** to change the default installation location.
8. Click **Next**.
9. Review the installation settings that you provided, and then click **Install** to proceed or click **Back** to

change any settings.

10. On the final page, click **Finish** to exit the installer.

If you check **Launch HPE Storage Optimizer Configuration Manager**, the Configuration Manager starts.

Configure Storage Optimizer

The Storage Optimizer Configuration Manager allows the configuration of your Storage Optimizer system to be performed centrally. All Storage Optimizer components are configured by the Configuration Manager.

If you left the option checked, the Storage Optimizer Configuration Manager launches when you exit the Storage Optimizer installer. You can launch the Configuration Manager from the Start menu, under the Storage Optimizer program group.

To configure Storage Optimizer

1. Type or select the Storage Optimizer SQL Server and instance.
2. Choose the connection method.

If you select **SQL Server Authentication**, you must also provide a Login ID and a Password.

Settings are grouped by Configuration area, and you can select them in the left menu. You must complete all mandatory settings before you can deploy the Storage Optimizer components by clicking **Deploy**.

Any previously entered settings appear, if found.

Database Settings

Connection settings entered during database installation appear.

Click **Test Connection** to verify the values.

Note: If you use **SQL Server Authentication**, you can provide alternate login and password credentials. The login credentials must exist in the SQL Server.

IIS Settings

Select the Web site to deploy the Storage Optimizer Web applications to. The deployed Web applications can subsequently be retracted by selecting Not Deployed from the drop-down menu.

Specify the User Account settings for the IIS Application Pool to use. Each of the Storage Optimizer Web applications use the IIS Application Pool.

Engine Settings

To update the account used as the identity for the Storage Optimizer Engine service, check Update Engine Service Account, and then type the appropriate information.

Type the number of threads for the Engine to use (the recommended number of threads is the number of processors in the Storage Optimizer Engine server).

Policy execution requires a temporary location that is accessible by all Storage Optimizer connectors. The Configuration Manager can create and use a default network share named “Storage OptimizerTempLocation” on the local server or you can chose an alternate network share that you created.

Data Analysis Settings

Select whether the current system should be the active Data Analysis Controller.

The SQL server name is the Data Analysis Controller Host. You can specify the Data Analysis Controller Port.

In the IDOL Statistics Server Settings section, specify the Host, Port, and Index Port for the statistics server.

IDOL Settings

Type the name of the IDOL Server host, the Distributed Connector host, and their port numbers. Type the index port number for IDOL Server and the port number for your IDOL DAH component. In addition, enter settings for your Storage Optimizer MetaStore service.

Storage Optimizer policy execution requires configuration files to supply information for insert operations to target locations. These files can either be installed in a local folder or in a specific network share. Use a network share if you intend to install multiple Storage Optimizer Engines so that all engines can access the configuration files.

Select the Date Format that matches the date format used by your Storage Optimizer IDOL Server. Select Default unless you connect to an Enterprise IDOL server that is configured to use a date format other than yyyyMMddHHmmss.

Security Settings

Choose whether to enable Storage Optimizer security. If enabled, specify the system administrator account, the Active Directory server, and a distinguished name.

Mail Server

To enable Storage Optimizer email notification, enter the name of the mail server and the mail address from which messages will be sent.

Deploying Storage Optimizer by Enabling HTTPS Setup

This section provides the information required to deploy Storage Optimizerby enabling HTTPS setup.

[Enabling HTTPS Setup](#)

[Re-deploying When HTTPS Setup is Enabled](#)

Enabling HTTPS Setup

You need to perform the following steps:

1. Create a Certificate Authority to sign the server and client certificates. See [Step 1: Creating Certificates](#).
2. These certificates must be added to the certificate stores. See [Step 2: Configuring Certificates in IIS Manager](#)
3. The applications in IIS have to be set to require these certificates. See [Step 3: Updating the Configuration Files](#)

Step 1: Creating Certificates

You need to create a certificate authority to sign the server and client certificates. These certificates are required for authentication.

Also, complete the following steps:

- Import the *.pfx* file for the Certificate Authority to the Local Computer's Trusted Root Certification Authorities.
- Import the *.pfx* file for the Server certificate to the Local Computer's Personal certificate store.
- Import the *.pfx* file for the Client certificate to the Current User Personal certificate store and into the browser's certificate store.

Note: When generating the certificates, do not use the SHA1 algorithm as it has been deprecated.

Step 2: Configuring Certificates in IIS Manager

After the certificates have been created, you can add them in the IIS Manager.

Importing certificates to IIS.

1. In the IIS Manager, from the navigation pane on the left, select the server and select the Server Certificates.
2. Select **Import** and locate the *.pfx* file. (Personal Information Exchange file generated as part of the certificate making process)
3. Provide the file **Password**.

Updating bindings

1. In the IIS Manager, from the navigation pane on the left, select the web site.
2. In the right pane, from Edit Site, select **Bindings**.
3. Click **Add** and in the Edit Site Binding window, set **Type** to https.
4. Provide the host name.
5. Select **Require Server Name Indication** and select your certificate.
6. Click **OK**.

Require certificates.

1. In the IIS Manager, from the navigation pane on the left, select the Storage Optimizer app.
2. Click **SSL Settings**.
3. Select **Require SSL**.
4. Under Client Certificates, select **Require**.
5. Repeat the steps for the **DataAnalysisService** App.

Step 3: Updating the Configuration files

In this section, you will configure the UI to communicate with the Dashboard and Data Analysis Service using HTTPS and to require user authentication.

Update the Dashboard - Web.config

Navigate to: `\Program Files\Hewlett Packard Enterprise\Storage Optimizer\Dashboard\Web.config` in the production environment.

1. Comment out the `system.serviceModel` tag located below the `Begin HTTP Service Model` comment.
2. Uncomment the `system.serviceModel` tag located below the `Begin HTTPS Service Model` comment.
3. Update the host in the endpoint addresses if necessary.
4. In the `clientCertificate` tag, change `findValue` to be the thumbprint of your client certificate.
5. Your client certificate thumbprint can be found by opening your client certificate and going to the details.

Note: Do not copy this value from the certificate! The encoding will add hidden characters that will cause issues so this value must be hand typed.

Tip: Other methods of finding the certificate can also be used. This article explains in more detail: [https://msdn.microsoft.com/en-us/library/ms731323\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/ms731323(v=vs.110).aspx)

Update the DataAnalysis Service - Web.config

Navigate to: `\Program Files\Hewlett Packard Enterprise\Storage Optimizer\DataAnalysis\Service\Web.config` in the production environment.

1. Comment out the `system.serviceModel` tag located below the `Begin HTTP Service Model` comment.
2. Uncomment the `system.serviceModel` tag located below the `Begin HTTPS Service Model` comment.

After you reset IIS, Storage Optimizer should request and be accessible using the created certificates.

Re-deploying Storage Optimizer when HTTPS Setup is Enabled

If you need to re-deploy Storage Optimizer, then you need to change `http` to `https` in the configuration files. You need to change `http` back to `https` in the Dashboard, Timer, and WebService `web.config` file

in the https service section.

Chapter 6: Troubleshooting

This section provides information on the following:

[File System Agent](#)

[Sharepoint Connectors](#)

File System Agent

Problem

The File System Agent is installed on a Linux environment in a distributed connector system that does not belong to the same domain as Storage Optimizer.

Action

If the File System Agent is installed on a Linux environment in a distributed connector system that does not belong to the same domain as Storage Optimizer, complete the following steps:

1. Stop the File System Agent.
2. On the Distributed Connector system, edit the "hosts" file to add the File System Agent.
3. On the Distributed Connector system, ensure the port 7210 and 7212 are enabled with the File System Agent machine (or simply turn off the firewall).
4. On the File System Agent system, ensure the port 7210 and 7212 are enabled (or simply turn off the firewall).
5. Start the File System Agent.

Sharepoint Connector

Problem

For SharePoint Connectors, `EncryptACLEntries=False` does not work if it's in the [Connector] section. This applies to all sharepoint connectors including SP2007, SP2010, SP2013, and SP remote Connector

Action

The `EncryptACLEntries` parameter has to be set in the [TaskName] section for the Sharepoint Connectors. If the parameter is in the "[Connector]" section, it will not work as expected.

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Feedback on Installation Guide (Storage Optimizer 5.2)

Just add your feedback to the email and click send.

If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to autonomytpfeedback@hpe.com.

We appreciate your feedback!