



# **SIOS DataKeeper Cluster Edition**

**v8.2.1**

**Installation Guide**

**January 2015**

This document and the information herein is the property of SIOS Technology Corp. (previously known as SteelEye® Technology, Inc.) and all unauthorized use and reproduction is prohibited. SIOS Technology Corp. makes no warranties with respect to the contents of this document and reserves the right to revise this publication and make changes to the products described herein without prior notification. It is the policy of SIOS Technology Corp. to improve products as new technology, components and software become available. SIOS Technology Corp., therefore, reserves the right to change specifications without prior notice.

LifeKeeper, SIOS and SIOS DataKeeper are registered trademarks of SIOS Technology Corp.

Other brand and product names used herein are for identification purposes only and may be trademarks of their respective companies.

To maintain the quality of our publications, we welcome your comments on the accuracy, clarity, organization, and value of this document.

Address correspondence to:  
[ip@us.sios.com](mailto:ip@us.sios.com)

Copyright © 2014  
By SIOS Technology Corp.  
San Mateo, CA U.S.A.  
All rights reserved

# Table of Contents

---

<b>Chapter 1: Installing DataKeeper Cluster Edition</b> .....	<b>1</b>
<b>DataKeeper Cluster Edition Core Software</b> .....	<b>1</b>
<b>Installing the DataKeeper Cluster Edition Core Software</b> .....	<b>1</b>
Installation Notes .....	2
<b>Third Party Product Files</b> .....	<b>2</b>
<b>Application Directory Anomaly</b> .....	<b>4</b>
<b>Localized Language Supplement</b> .....	<b>5</b>
<b>Silent Installation of DataKeeper Cluster Edition</b> .....	<b>5</b>
DataKeeper Response File .....	5
<b>Chapter 2: Obtaining and Installing the License</b> .....	<b>7</b>
License Key Manager .....	8
Primary Network Interface Change May Require a License Rehost .....	9
Subscription Licensing .....	10
Troubleshooting .....	10
<b>Chapter 3: Uninstalling DataKeeper Cluster Edition for Windows</b> .....	<b>11</b>
Before Removing DataKeeper .....	11
Uninstall DataKeeper Cluster Edition .....	11
Notes .....	12
<b>Chapter 4: Upgrading DataKeeper Cluster Edition</b> .....	<b>13</b>
Upgrading the Target Server .....	13
Upgrading the Original Source Server .....	13
Reinstalling SIOS DataKeeper Cluster Edition .....	14
Repair .....	14
Considerations .....	14
<b>Index</b> .....	<b>15</b>

# Chapter 1: Installing DataKeeper Cluster Edition

The DataKeeper Cluster Edition Installation Guide contains information on how to install and license your Cluster Edition software.

Once you have completed the steps in this guide, you will be ready to configure your Cluster resources. The DataKeeper Cluster Edition Technical Documentation provides the information necessary to complete your DataKeeper Cluster Edition configuration.

DataKeeper Cluster Edition uses the Flexera InstallShield product to provide a standard installation interface. Once you have downloaded the DataKeeper Cluster Edition software, the topics that follow explain the installation process.

## DataKeeper Cluster Edition Core Software

The DataKeeper Cluster Edition Core software is available via ftp download. The DataKeeper Cluster Edition Core is comprised of:

- DataKeeper
  - DataKeeper Driver (ExtMirr.sys)
  - DataKeeper Service (ExtMirrSvc.exe)
  - Command Line Interface (EMCMD.exe)
  - DataKeeper GUI (Datakeeper.msc)
  - Packaging files, SIOS Protection Suite scripts, help files, etc.

## Installing the DataKeeper Cluster Edition Core Software

DataKeeper Cluster Edition uses the Flexera InstallShield product to provide a standard installation interface. A license must be obtained and installed for each server in the cluster.

We recommend that you read the DataKeeper Cluster Edition for Windows Release Notes before installing and configuring DataKeeper Cluster Edition.

To install DataKeeper Cluster Edition software, run the setup program delivered with the DataKeeper Cluster Edition for Windows product. Follow the setup instructions on each screen. Some explanatory notes are included below.

## Installation Notes

Once installation begins, you will be prompted to select the DataKeeper features to install. A typical installation includes both features.

- DataKeeper Server Components
- DataKeeper User Interface

During installation of DataKeeper Server Components:

1. Configure firewall settings.
2. Select a DataKeeper Service log on account type.
  - If **Domain or Server account** is selected, provide DataKeeper Service log on ID and Password .
3. [Install licensing](#) via the **License Manager**.

Reboot your server and begin using DataKeeper. See the DataKeeper Cluster Edition Technical Documentation for further information on using DataKeeper.

The **SIOS DataKeeper User Interface and Server Components Feature** can be installed independently, and the installation can be modified later to include any feature that has not previously been installed.

**Important:** The SIOS DataKeeper User Interface feature and the target snapshot feature require Microsoft MMC 3.0 and Microsoft .NET Framework 3.5 SP1 to be installed. For Windows 2008 R2 and 2012, use "Server Manager" to enable the .NET Framework 3.5.1 features. If the DataKeeper Cluster Edition install is attempted prior to installing these proper versions, an error will be received and the installer will be stopped. DataKeeper Cluster Edition will need to be uninstalled and the DataKeeper Cluster Edition install process will need to be restarted.

## Third Party Product Files

The following third party files were not developed by SIOS Technology Corp. but are installed during the DataKeeper Cluster Edition installation process.

Path and File Name	Provider	Purpose
<datakeeper dir>/lmdiag.exe	Flexera	License Management
<datakeeper dir>/lmhostid.exe		
<datakeeper dir>/lminstall.exe		
<datakeeper dir>/motdk_libFNP.dll		

Path and File Name	Provider	Purpose
<datakeeper dir>/SnapIn/IronPython.dll (.Net python language implementation) <datakeeper dir>/SnapIn/IronPython.Modules.dll (.Net python modules)	codeplex.com (Microsoft open source)	Testing/Debugging
<datakeeper dir>/SnapIn/J832.Common.dll <datakeeper dir>/SnapIn/J832.Wpf.BagOTricksLib.dll	Kevin Moore, <a href="http://j832.com/bagotricks/">http://j832.com/bagotricks/</a>	Utilities and controls for WPF development
<datakeeper dir>/SnapIn/log4net.dll (.Net logging library)	Apache Software Foundation	Application logging
<datakeeper dir>/SnapIn/Microsoft.Scripting.Core.dll <datakeeper dir>/SnapIn/Microsoft.Scripting.dll	codeplex.com (part of IronPython)	
<datakeeper dir>/SnapIn/MMCFxCommon.dll <datakeeper dir>/SnapIn/microsoft.managementconsole.dll	Microsoft	MMC managed snap-in library

Path and File Name	Provider	Purpose
<datakeeper dir>/VSSHelper/VSSHelper.exe		
<datakeeper dir>/VSSHelper/AlphaVSS-license.txt		
<datakeeper dir>/VSSHelper/AlphaVSS.51.x86.dll		
<datakeeper dir>/VSSHelper/AlphaVSS.52.x64.dll		
<datakeeper dir>/VSSHelper/AlphaVSS.52.x86.dll		
<datakeeper dir>/VSSHelper/AlphaVSS.60.x64.dll		
<datakeeper dir>/VSSHelper/AlphaVSS.60.x86.dll	Pete Palotas, <a href="http://alphavss.codeplex.com/">http://alphavss.codeplex.com/</a>	Alpha VSS provider
<datakeeper dir>/VSSHelper/AlphaVSS.60.x86.xml		
<datakeeper dir>/VSSHelper/AlphaVSS.Common.dll		
<datakeeper dir>/VSSHelper/AlphaVSS.Common.xml		
<datakeeper dir>/VSSHelper/log4net.dll		
<datakeeper dir>/VSSHelper/log4net.xml		
<datakeeper dir>/VSSHelper/cfg/log4net.Config.xml		

## Application Directory Anomaly

The following file is installed in a directory other than the default directory that you selected during the DataKeeper installation procedure. This exception occurs when the operating system installs performance monitor counters.

Path and File Name	Purpose
<windows dir>/inf/ExtMirr/ExtMirrCounters.hi	Performance monitoring. This file contains counter names and definitions

## Localized Language Supplement

For information regarding the Localized Language Supplement, please refer to the topic Installing LifeKeeper for Windows Localized Language Supplement in the SIOS Protection Suite Documentation.

## Silent Installation of DataKeeper Cluster Edition

**Note:** To perform the silent installation for SIOS Protection Suite for Windows, you must contact [Support](#) to get separate LifeKeeper and DataKeeper installation files.

You can install DataKeeper Cluster Edition for Windows silently through the use of the `-silent` command line option. This option suppresses both the wizard and launcher user interfaces (UIs) resulting in what is considered a "silent installation." This is how an installation is performed without any information displaying to or requiring any interaction with the end user. **Response files**, also known as "*options*" files, are used to pass command line options at installation. This is done as you would normally specify them on the command line to represent the responses to dialogs and/or to set the value of a property or variable. The options specified in the **response/options** file are executed after the execution of the options that were entered directly on the command line.

### DataKeeper Response File

To create a response file for DataKeeper, open a command window and run the **SIOS DataKeeper setup program** using the command:

```
DK-{version}-Setup.exe /r /f1C:\setup.iss
```

The responses entered to the dialogs will be recorded into the file *setup.iss*.

**Note:** When creating the initial *setup.iss* file, if a local user server account is used for the DataKeeper service, you must edit the *setup.iss* file for use on other servers. This change can be made by opening the *setup.iss* file in Notepad and changing the name of the server found within the *szName* field. (i.e.- *szName*=<serverName>\Administrator). When using the **Local Service account** or a **Domain account** that is the same across all installations, changing the *setup.iss* file is not required.

To perform a silent install using the created response file, open a command window and run the **SIOS DataKeeper setup program** using the command:

```
DK-{version}-Setup.exe /s /f1C:\setup.iss /f2C:\setup.log
```

Results from the silent install are stored in the file *setup.log*. "ResultCode=0" indicates a successful install. A negative result code indicates failure. Please check the operating system requirements for further information regarding the cause of failure.

When the DataKeeper Cluster Edition install is finished, run the **License Key Installer** utility from the **Start-Programs** menu to install the license key.

```
Start->All Programs->SIOS->DataKeeper->License Key Installer.
```

Reboot the server.

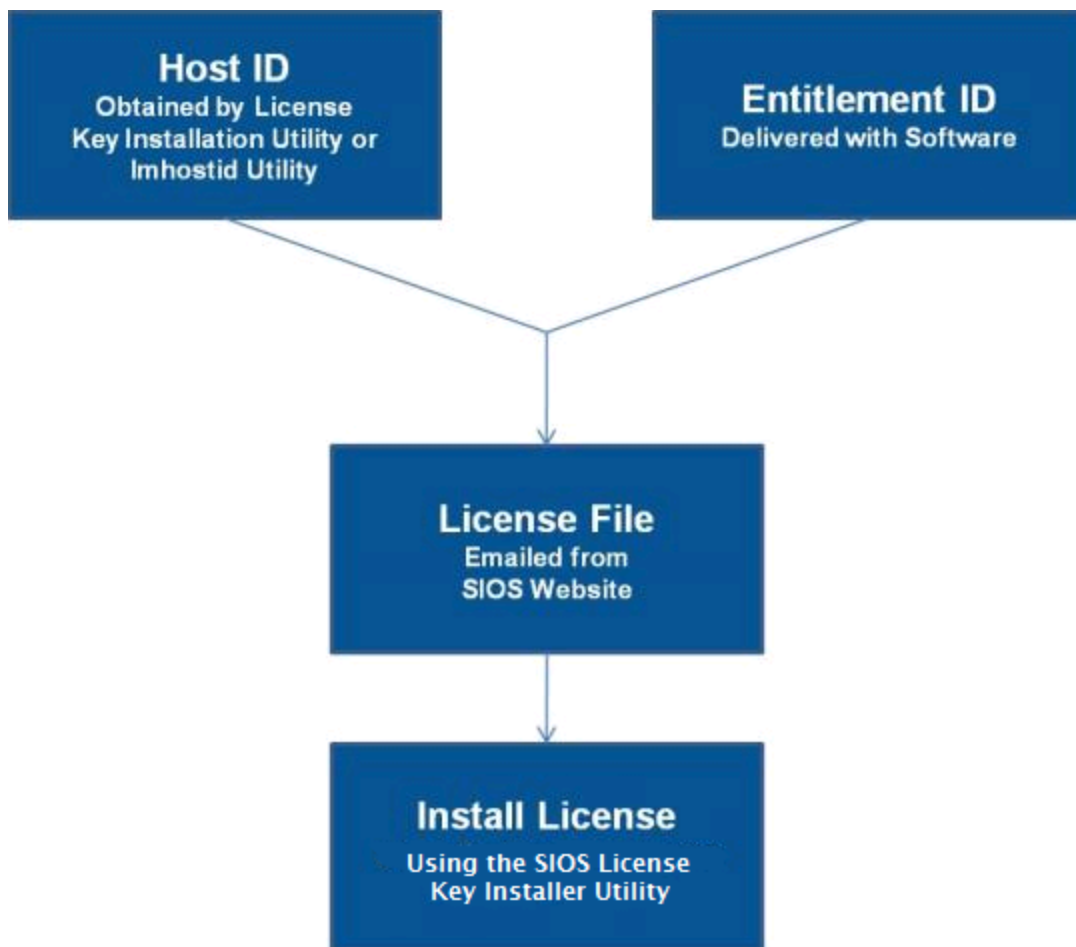




## Chapter 2: Obtaining and Installing the License

DataKeeper Cluster Edition requires a unique license for each server. The license is a run-time license which means that you can *install* it without the license, but the license must be installed before you can successfully *start* and *run* DataKeeper Cluster Edition.

The final screen of the **InstallShield installation utility** displays the Host ID of your server. The **Host ID**, along with the **Entitlement ID** (Authorization Code) that was provided with your DataKeeper Cluster Edition software, is used to obtain the license required to run DataKeeper Cluster Edition. The process is illustrated below.



## License Key Manager

In addition to installing DataKeeper Cluster Edition product licenses, the **License Key Manager** allows you to perform the following functions:

- View all licenses currently installed on your system.
- View all expiration notifications (days remaining) for each time-expiring license.
- Identify invalid licenses that are currently installed.
- Delete any installed licenses (right-click on the license and select **Delete**).
- Delete all expired licenses as a group (press the **Delete Expired License** button).
- **Refresh** the Installed License list when installing software or upgrades.

Perform the following steps to obtain and install your licenses for each server in the DataKeeper Cluster Edition cluster:

1. Get your **Host ID**. At the end of the DataKeeper Cluster Edition installation, make note of the **Host ID** displayed by the **License Key Installer** utility as shown below. The Host ID may also be obtained by running `%ExtMirrBase%\bin\lmhostid` (where `%ExtMirrBase%` is the DataKeeper installation path, by default `C:\Program Files (x86)\SIOS\DataKeeper`) on the system(s) that you are obtaining licenses for. (If you need to obtain your Host ID again at a later time, you may do so by running the **License Key Installer** utility from the **Start-Programs** menu **Start-All Programs-SIOS-DataKeeper-License Key Installer**.)
2. Write the **Host IDs** in a notebook or save them in a file. If saved in a file, copy that file to a system with internet access. Otherwise, take your notebook with you to the system with internet access.
3. Ensure you have your DataKeeper Cluster Edition **Entitlement ID** (Authorization Code). You should have received an email with your software containing the Entitlement ID needed to obtain the license.
4. Obtain your licenses from the [SIOS Technology Corp. Licensing Operations Portal](#).
  - a. Using the system that has internet access, navigate to the [SIOS Technology Corp. Licensing Operations Portal](#) and log in entering your **User Name** and **Password**.
  - b. Select **Manage Entitlements**.
 

**Note:** If changing password, use the **Profile** button in the upper right corner of the display.
  - c. Find your **Entitlement ID** and select each **Activation ID** associated with that Entitlement ID by checking the box to the left of the line item.
  - d. Select the **Activate** tab and enter the requested information then select **Next**.
  - e. Click on **Select Existing Host** to choose an already defined host or create a new host by selecting **Add New Host**.
  - f. Select **ANY** for the Node Locked Host choice if it is available, otherwise select **ETHERNET MAC ADDRESS** and enter the Host ID then click **OK**.
  - g. Check the box to the left of the **Host ID** and select **Generate**. The **Fulfillment ID** will display

## Primary Network Interface Change May Require a License Rehost

on the **License Summary** screen.

- h. Check the box to the left of the **Fulfillment ID** and select the **Email License** tab.
  - i. Enter a valid email address to send the license to and select **Send**.
  - j. Select **Complete**.
  - k. Retrieve the email(s).
  - l. Copy the file(s) to the appropriate system(s).
5. Install your license(s). To install your license(s), choose one of the following options. **Note:** If you received your license after July 23, 2010, use **Option B**.
- a. Install via the **License Key Installer**.
    - On each system, run the **License Key Installer** from the **Start-Programs** menu (**Start-All Programs-SIOS-DataKeeper-License Key Installer**).
    - Press the **Install License File...** button on the main screen of the **License Key Installer**.
    - Browse to the location of the license file that you saved in **Step 4** above.
    - Click on the license file name. It will become highlighted.
    - Press the **Install License File...** button that appears in that dialog box below the file names. A license detection confirmation popup will be displayed.

or

  - b. Copy the license file(s) to the appropriate directory manually.
    - On each system, copy the license file(s) to `%windir%\SysWOW64\LKLlicense` (where `%windir%` is the Windows installation path, by default `C:\Windows`). If the `LKLlicense` directory does not already exist, it will need to be created prior to copying the files. **Note:** It is recommended that this file(s) be renamed to `YYYYMMDD.lic` format to distinguish the day the license was activated.
6. Repeat on all additional servers. You must install a license on the other DataKeeper Cluster Edition server(s) using the unique Host ID for each server.
7. Reboot your system.

## Primary Network Interface Change May Require a License Rehost

The Host ID used by the License Key Installer utility is obtained from the DataKeeper Cluster Edition server's primary network interface card (NIC). DataKeeper Cluster Edition will check for a valid license each time it starts. If your DataKeeper Cluster Edition server should require a NIC replacement in the future that would cause the Host ID to change, then the next time DataKeeper Cluster Edition is stopped, a License Rehost must be performed before starting either again. Log in to the [SIOS Technology Corp. Licensing Operations Portal](#) and select **Support Actions/Rehost** from the **Manage Licenses** screen to perform this rehost. (**Note:** A rehost can be performed one time per six-month period without contacting support.)

## Subscription Licensing

A subscription license is a time-limited license with renewal capability. Similar to an evaluation license, it will expire after a set amount of time unless renewed. This renewal process can be set up to renew automatically by following the procedure below:

1. Install the subscription license program by entering:

```
%ExtMirrBase%\lmSubscribe.exe
```

2. Enter **User ID** and **Password** (from **SIOS Technology Corp. Customer Registration**). These credentials are saved in an encrypted file.
3. Select **OK**.

If the previous steps run successfully, the subscription renewal service will now run, in the background, periodically checking renewal status. If licenses are found that will be expiring in a certain number of days (90, 60, 30, 20, 10, 5, 4, 3, 2, 1), a warning notification will be sent to the **Windows Event Viewer** and an attempt will be made to renew the license. If a new license activation is available (a new activation has been purchased for this system's Entitlement), it will be automatically fulfilled and the new licenses will be installed on the system replacing the old licenses. As long as licenses for this system are renewed (Activations purchased), the service will ensure that the licenses are upgraded on the system without user intervention.

## Troubleshooting

If errors are encountered, please try the following before contacting Support:

- Review the error messages in the **Windows Event Viewer**.
- Verify credentials by logging in to the [SIOS Technology Corp. Licensing Operations Portal](#). Enter **User ID** and **Password**. Run `%ExtMirrBase%\lmSubscribe.exe` again using the correct **User ID** and **Password**.
- To force a manual check for a license renewal, stop and restart the service. (**Note:** To find the service, bring up the view for all of the Windows services and search for “**SIOS Subscription Licensing**”.)
- If ownership of the license certificate has changed, please [contact SIOS Technology Corp. Support](#) personnel to have the certificate moved to the new owner. Once ownership has been moved, the automatic license renewal service will need to be updated with these new credentials by running the above command again using the new **User ID** and **Password**.

# Chapter 3: Uninstalling DataKeeper Cluster Edition for Windows

## Before Removing DataKeeper

If planning to uninstall DataKeeper and reinstall a previous version, all jobs/mirrors must be deleted on each node prior to uninstalling. These will need to be recreated once software is reinstalled.

## Uninstall DataKeeper Cluster Edition

- In **Windows Control Panel**, find your list of installed programs and select **SIOS DataKeeper** .
- Select **Uninstall**.

Once the uninstall process is complete, rebooting the system is required.

**Note:** Uninstalling automatically stops the DataKeeper Cluster Edition services and clears the registry entries.

Once removed, the following files will not be removed by the uninstall procedure.

Path and File Name	Definition and Special Considerations
<code>&lt;windows dir&gt;/SysWOW64/LKLicense</code>	<p>Common license file directory for SIOS Technology Corp. products. This is where license files are installed and licenses for multiple SIOS Technology Corp. products may be installed here at any given time. We don't remove this at uninstall so as to not disturb the installed licenses.</p> <p>Safe to remove manually, but the license will need to be reinstalled if the software is reinstalled at a later time.</p>
<code>&lt;windows dir&gt;/SysWOW64/PerfStringBackup.ini</code>	<p>A backup file created by Windows when new performance monitor counters are installed. This is created when we install the perfmon counters.</p> <p>This should probably be left alone since it is a file created by Windows itself.</p>

Path and File Name	Definition and Special Considerations
<pre>&lt;windows dir&gt;/inf/ExtMirr/0011/ExtMirrCounters.ini</pre>	This file describes the DataKeeper performance monitor counters. This file can be removed or left alone. It is not an executable.

## Notes

- **Important:** Uninstallation of DataKeeper Cluster Edition software requires that the Microsoft Visual C++ 2008 Redistributable package be installed. Do not remove this package until DataKeeper Cluster Edition has been uninstalled.
- **Modify** or **Repair** must be run from the DataKeeper Cluster Edition setup program.
- Removal of DataKeeper Cluster Edition may NOT delete the DataKeeper Cluster Edition directory. This directory can be deleted manually after the **Add/Remove** operation is complete.
- A reboot of the system is required to completely remove DataKeeper Cluster Edition remnants.

## Chapter 4: Upgrading DataKeeper Cluster Edition

Upgrading DataKeeper Cluster Edition from previous versions of DataKeeper Cluster Edition is very straightforward. Simply run the installation process outlined below on all systems. The upgrade process stops the DataKeeper Service, copies the new files to the DataKeeper directory and requires a reboot at the end to load the new DataKeeper driver.

The following information applies to a DataKeeper Cluster Edition upgrade:

- Existing mirrors are not affected by the upgrade and will remain in place.
- It is not necessary to pause or manipulate the mirror(s) in any way before upgrading.
- DataKeeper Cluster Edition licensing is not affected and does not need to be redone after the upgrade.
- **IMPORTANT: Before rebooting a WSFC node that is currently the owner of DataKeeper volume resources which are online, it is recommended that all DataKeeper volume resources either be taken offline or moved to a different node/cluster owner.**

The DataKeeper Cluster Edition upgrade will be performed on the target systems first. Cluster resources will then be switched over to allow for the upgrade of the original source system.

### Upgrading the Target Server

1. Using Microsoft Cluster Manager, move all resources to one node/cluster owner so that only one node is the source server.
2. Close the DataKeeper UI if it is currently running.
3. On each target system, run the `setup.exe` program distributed with the DataKeeper Cluster Edition product. Setup will detect that you are upgrading your existing DataKeeper product and display a confirmation dialog. Click **Yes** to continue the upgrade.
4. The DataKeeper service will be stopped during the upgrade process. After setup completes, you will be prompted to enter a new DataKeeper license key. When upgrading from a previous version of DataKeeper Cluster Edition, applying new licenses is not required and you may exit the License Manager.
5. Reboot your server.
6. Bring up the target systems and allow the mirror(s) to resync and return to the **Mirroring** state.
7. Repeat Steps 2-6 for each target system.

### Upgrading the Original Source Server

1. Using Microsoft Cluster Manager, move all resources to a DataKeeper node that has been upgraded so the source server can be upgraded.



2. Once all resources are online on another node and in the mirroring state, repeat the above procedure on the original source system and reboot the server.
3. Run the DataKeeper UI to view your existing mirrors.

### Reinstalling SIOS DataKeeper Cluster Edition

To reinstall DataKeeper Cluster Edition, perform the same procedures as above, the only exception being that when Setup presents a list of InstallShield options, select **Repair**.

### Repair

The Install process also allows repairing the DataKeeper Cluster Edition software. Use this option if the software that was previously installed was accidentally deleted or if the user is performing a point release upgrade. This option copies all the files from the setup folder and prompts the user to reboot the system.

### Considerations

Upgrading from a previous release to DataKeeper v7.6 or later [read the considerations](#) for chkdsk.

**A****Authorization Code 7****E****Entitlement ID 7****I****Installation**

Command Line 5

License 7

LifeKeeper 1

Reinstalling 14

Silent 5

**L****License**

Installing 7

License Key Manager 8

**R****Rebooting a WSFC Source Node 13****Repair 14****T****Third Party Files 2****U****Uninstallation 11****Upgrade 13**

