Sterling Integrator®

UNIX/Linux Cluster Upgrade

Version 5.0

IBM

Contents

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Note: Before using this information and the product it supports, read the information in *Notices* on page 78.

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Upgrade Overview: UNIX/Linux Cluster Environment

Introduction

This document provides information on performing an upgrade in an UNIX/Linux cluster (multiple node) environment. You need to prepare for an upgrade the same way that you would prepare for an installation.

An upgrade:

- Does not overwrite your current Sterling Integrator directory structure on disk.
- Creates a new installation of Sterling Integrator 5.0 that points to and upgrades the Oracle, DB2 or Microsoft SQL Server 2005 database of your current installation.
- Retains configuration data from the previous release.
- Retains run time data from the previous release.

After the upgrade, you start your Sterling Integrator instance from the newly created directory structure. Your original instance will no longer be operational after performing the upgrade.

What's in this Guide

This guide provides the following upgrade information:

- Upgrade Path Scenarios
- Upgrade Planning Information
- Prepare Your Current System for Upgrade
- Pre-Upgrade Checklist
- Upgrade the Software (GUI, Text, Silent Install)
- Validate the Upgrade
- Post Upgrade Configuration and Testing
- Post Upgrade Maintenance
- Uninstall the Software
- User Documentation

• Troubleshooting Tips

For new installations, use the *Sterling Integrator 5.0 UNIX/Linux Cluster Installation Guide*.

Intended Audience

This document is intended for use by:

• System Administrators
• Installation Engineers
• Database Administrators

Assumptions for this Guide

The procedures in this guide are accurate as of the publication date and are specific to Sterling Integrator 5.0.

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Upgrade Path Scenarios

Upgrade Scenarios (UNIX/Linux Cluster Environment)

Upgrading to Sterling Integrator can follow one of three paths. Keep these scenarios in mind as you plan for your upgrade:

Upgrade Scenario	Example
Operating system and the database are the same between the old Gentran Integration Suite version and Sterling Integrator 5.0	If you are upgrading from Gentran Integration Suite 4.3 (on HPUX 11.11 and using Oracle 10.1.0.4 RAC) to Sterling Integrator 5.0 (on HPUX 11.11 and using Oracle 10.1.0.4 RAC), the upgrade steps are as follows: • Export the configuration data. • Back up the database. • Upgrade to Sterling Integrator 5.0.
Database upgrade before the upgrade to Sterling Integrator 5.0 when the old Gentran Integration Suite database is not supported by Sterling Integrator 5.0	If you are upgrading from Gentran Integration Suite 4.0 (on Solaris 9 and using DB2 8.1 Fixpack 5) to Sterling Integrator 5.0 (on Solaris 9 and using DB2 9.2), the upgrade steps are as follows: • Export the configuration data. • Back up the database. • With help from a database administrator (DBA), copy the database to DB2 9.2. • Back up the newly created database. • Upgrade by pointing to the newly created database. If the upgrade stops, and leaves the newly created database in an incomplete state, you can re-start the upgrade using the backup of the database.
(Oracle example) Old Gentran Integration Suite operating system is not supported by Sterling Integrator 5.0	Oracle example: If you are upgrading from Gentran Integration Suite 4.0 (on RH EL 3.0 and using Oracle) to Sterling Integrator 5.0 (on RH EL 5.0 and using Oracle), the upgrade steps are as follows: • Export the configuration data and back up the database.

Upgrade Scenario	Example
	• Upgrade to Sterling Integrator 5.0 on the RH EL 5.0 machine while pointing to Oracle.

Supporting Information and Detailed Procedures

Upgrade to Microsoft SQL Server 2005

Sterling Integrator 5.0 supports Microsoft SQL Server 2005 Enterprise and Standard version 9.00.3159 or higher within 9.x.x.

To upgrade to Microsoft SQL Server 2005 9.00.3159 from version 9.00.3152:

1. Download the GDR2 hotfix from http://support.microsoft.com/kb/934459/.
2. Apply the GDR2 hotfix.

   The Microsoft SQL Server 2005 version is now 9.00.3159.

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Upgrade Planning Information

Upgrade Planning Information

Before you begin an upgrade you should:

- Read and become familiar with this document so that you have a clear understanding of what the upgrade requires.
- Review the upgrade path scenarios to determine which scenario you want to use.
- Review and record system configuration information.
- Review and record performance and tuning information.
- Review the Best Practices for Upgrade Testing.
- Review the Planning Your Maintenance Window and Production Upgrade.

In addition, you should consider the following:

- Be prepared for the upgrade program to run for several hours. Time the upgrade (and restore) to estimate the maintenance/outage window you will need when you perform the production upgrade.
- Practice on a test instance. Take a production database snap-shot and load a copy of that snap-shot into the test instance.
- Should errors occur during the upgrade, the upgrade program restarts from the beginning and may require a restore. You should build time into your schedule for re-running the upgrade program from the start of the process.
- If the program fails during your trial run, review the InstallSI.log file created by the upgrade script and search the Support Center Knowledgebase for references matching any errors received. Before restarting the upgrade, restore the database snap-shot to the test system. If no solution is found in the Knowledgebase, open a Support case with your InstallSI.log to document the error. If you later get past the original problem causing the upgrade to error, notify Customer Support.
- Keep a record of any changes made to reach successful completion. You will need to apply all of these changes to the production database when you run the upgrade on that system.

Upgrade Planning Checklist

To assist you with your upgrade planning, review the following planning checklist:

#	Upgrade Planning Checklist	Your Notes
1	Read through this entire document so that you have a clear understanding of what the upgrade requires.	
2	Download and review the following information from the Sterling Integrator 5.1 library page http://www.sterlingcommerce.com/Documentation/SI51/HomePage.htm. • *System Requirements* - With each release, Sterling Commerce introduces leading edge technology to improve and enhance its software. Review the *System Requirements* to confirm that your system and databases meet the requirements for this release. • *Release Notes - Review the release notes to obtain information about* issues and resolutions which have been identified for this release of Sterling Integrator. • *What's New in this Release* - Review this guide to find out about new features and functionality provided in this release of Sterling Integrator.	
3	Review the Customer Center Knowledgebase and search for any additional information on upgrade issues.	
4	Collect information on third-party libraries used for adapter configurations that were added to your current release. You will need to add each of these libraries to the upgraded system.	
5	Locate any configuration file changes for JDBC adapter or Lightweight JDBC adapter in your current release. You will need to copy these changes to the upgraded system.	
6	Record your performance tuning configuration. You will need to restore these settings after the system has been upgraded.	
7	Review and note the adapters, business processes, and other configurations in your current release. This information will help you identify the need for updating transport messages, third-party adapters, or configurations to adapters, such as File System or Command Line adapters.	
8	Determine if you have edited any of the pre-defined business processes. If you are upgrading from 4.2 or if you are upgrading from 4.3 and are using the 5.0 GA or 5001 Media, the upgrade process overwrites pre-defined business processes. Your customized business processes are preserved in the system, but they are not the default business process after the upgrade.	

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#	Upgrade Planning Checklist	Your Notes
	If you are upgrading from 4.3 and are using the 5002 Media or later, customized business processes are preserved in the system and remain as the default.	
9	Determine if you have edited any of the property files (.properties or .properties.in). The upgrade process overwrites these property files, unless these changes were made using the customer_overrides.properties file. Your previous property file edits might not be applicable this version of Sterling Integrator.	
10	Determine if you edited any of the following cdinterop files: • cdinterop-proxy-records.properties • cdinterop-spoe-auth.properties • cdinterop-spoe-policy.properties • cdinterop-user-records.properties You must back them up before upgrading. The cdinterop files do not have initialization (*.in) files. After the upgrade, use the backup version of the files in your upgraded installation.	
11	Determine if you have LDAP (Lightweight Directory Access Protocol) configuration information in the security.properties file. This information will automatically be moved to the authentication_policy.properties file.	
12	Determine whether Sterling Integrator is using an application server (JBoss™, WebLogic® or WebSphere®). Sterling Integrator does not require an application server for installation or at runtime. Sterling Integrator supports integration with JBoss and WebLogic during the installation. You can also integrate with WebSphere, JBoss, or WebLogic by using the Sterling Integrator EJB Adapter. This does not represent a WebLogic server for deploying the Application Console.	
13	If you use a File System as your document storage method, determine and record the path to the File System. You will need the File System path structure so that after the upgrade, you can copy/mount the documents to the new installation directory. The directory structure (path to the File System) must be the same in the current and in the upgraded system.	
14	Review the EDI Sequence Check Queue to ensure that no interchanges are in the queue. The EDI Sequence Check Queue is used for X12 and EDIFACT sequence and duplicate checking.	

Best Practices for Upgrade Testing

Before you begin your upgrade, you should review the following questions, as you may need to plan test scenarios for these items after the upgrade:

- Are your Business Processes functioning properly?
- Will your map outputs be the same in the upgraded system?
- Are your Trading Partners set up correctly?
- Are your certificates working correctly?
- Are your communications in and out of the system working correctly?
- Do you have any Disaster Recover/Failover test scenarios?
- If you have a cluster, is the cluster functioning properly?
- If you are upgrading OS or DB versions have you tested the new configuration?

Planning Your Maintenance Window and Production Upgrade

Consider the following when you are planning for the maintenance window and production upgrade:

- Verify that the upgrade is transparent to your customer.
- Determine if you need to communicate any information about the upgrade to your customers.
- Do you have a database maintenance plan?
- Have you tested the volume expectations and is the setup for the proper database levels? (running optimizer, re-orgs, re-indexes, statistics)

Supporting Information and Detailed Procedures

Access the Sterling Integrator Knowledgebase

Before you upgrade, you may want to access the Sterling Integrator knowledgebase. The knowledgebase contains many topics and has a search engine to assist you in finding information. To access the knowledgebase:

1. Go to https://customer.sterlingcommerce.com.
2. Enter your **User Name** and **Password**.
3. Click **Support Center**.
4. Under **Self Support Tools**, select **Knowledgebase**.
5. Enter search criteria and click **Find**.

Obtain the Upgrade Media for Sterling Integrator 5.0

Before you upgrade, it is a best practice to always check the Product Updates & Downloads site to ensure you have the latest version of the upgrade media.

To obtain the most recent version of upgrade media:

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1. Go to https://customer.sterlingcommerce.com.
2. Enter your **User Name** and **Password**.
3. Under **Product Support**, select **Sterling Integrator > Product Updates & Downloads**.
4. Under the **Upgrading Sterling Integrator/GIS**, select **Request Upgrade Jar File - Sterling Integrator Version 5.0**.
5. Enter the following information in the Sterling Integrator/GIS Upgrade Request form:
   - Company Name.
   - Billing Account Name.
   - Ship to Contact Name.
   - Ship to Street Address.
   - Email Address.
   - PSP number - The PSP Number (unique number that identifies a licensed software asset in your Sterling Integrator installation) is present in the temporary or previous version of the keyfile you received from Sterling Commerce.
   - Delivery Method (ground shipment 5 to 7 days or electronic software delivery)
   - Current Software Version
   - IP Address
   - License Filekey
   - Operating System
6. Select the adapters which you are running from the list.
7. Add any additional comments.
8. Click **Submit**.

   Your upgrade media will be shipped to you via the delivery method you selected.

Prepare Your Current System for the Upgrade

Prepare Your System for the Upgrade

Before you begin the upgrade, you need to review and complete each of the following checklists:

- Pre-Upgrade System Checklist
- Pre-Upgrade Database Checklist
- Pre-Upgrade Operating System Verification Checklist

Pre-Upgrade System Checklist

Before you begin an upgrade, you need to:

#	Pre-Upgrade System Checklist	Your Notes
1	Verify that your system meets the hardware and software requirements specified for this release in the System Requirements. Verify you have the correct: • Patches required by Java™ for the operation system • Version of the JDK • JDK Patches • JCE (entire package) • Absolute path to JDK and patches • Database must match the version listed in the requirements If any of the above requirements are not met, the installation will fail and print/log a report of all items that were non-compliant.	
2	Review your current system to determine if you need to apply a patch prior to upgrading. The following are the minimum patch level for upgrading to this release: • Release 4.0 - Patch 4.0.3-5 • Release 4.1 - base release or any patch • Release 4.2 - base release or any patch • Release 4.3 - base release or any patch	

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#	Pre-Upgrade System Checklist	Your Notes
3	For systems with multiple IP addresses, verify that the IP address on which Sterling Integrator resides is accessible by any client computer that is running a browser interface. If you do not verify the IP addresses, your system may not operate properly after installing Sterling Integrator.	
4	If you are using a non-English environment, confirm that you are using the appropriate character set.	
5	Obtain the most recent upgrade media. The Sterling Integrator 5.0 upgrade program has been refreshed since it was initially released. Make sure you have the latest copy before you begin the upgrade.	
6	Backup your Sterling Integrator installation directory and the database. If there are problems with your upgraded system, the only way to ensure that you can roll-back to your previous version is to back up Sterling Integrator and the database.	
7	Archive your data. Archived data can only be restored from the same version and patch of Sterling Integrator from which it was archived. If you need to restore archived data that was archived prior to performing the upgrade, then you must have a running instance of Sterling Integrator that matches the version and patch from which the archive was taken.	
8	Purge any unneeded data.	
9	Export any business objects that can not be upgraded. Including business processes, service configurations, trading partners, maps, etc. The exported business object can be imported into the upgraded system if you need them.	
10	Determine if you have any incompatible data that needs to be modified or deleted. *Incompatible Data Detection* is an optional set of tasks. For this release of Sterling Integrator, data validation has been improved. By screening for these items before running the upgrade, you may address problems that could cause the database changes to fail.	
11	Review the EDI Sequence Check Queue to ensure that no interchanges are in the queue. The EDI Sequence Check Queue is used for X12 and EDIFACT sequence and duplicate checking.	
12	Create an process output log.	
13	Obtain the license file to use the new licensed features in this release.	

#	Pre-Upgrade System Checklist	Your Notes
14	Disable the virus protection software on the server. If the virus protection software is enabled, the upgrade will fail.	

Pre-Upgrade Database Checklist (Cluster Environment)

Before you begin an upgrade, you need to:

#	System Verification Tasks	Your Notes
	Copy the Microsoft SQL Server 2000 Database to an Microsoft SQL Server 2005 Database.	
	If you are using Oracle 8i with Sterling Integrator 4.0, upgrade to Oracle 9i before upgrading to Sterling Integrator 5.0.	
	If you plan to import an Oracle 9 or Oracle 10 database, while upgrading to Sterling Integrator 5.0, you must import the database without the indexes. For example, if you are using the Oracle import (imp) tool, you should use the INDEXES=N option. If you attempt upgrading to Sterling Integrator 5.0 with indexes turned on, the upgrade will fail. If you had created any custom indexes in Oracle database, add them after performing the upgrade as they are not imported.	

Pre-Upgrade Operating System Verification

Before you begin the upgrade, you need to verify your operating system configuration using the following checklist:

For the Operating System	Operating System Configuration Checklist	Your Notes

HP-UX Operating System	For HP-UX operating systems:
	• Verify kernel parameters and establish the following minimum settings by running kctune command:
	  • kctune max_thread_proc 1024
	  • kctune maxdsiz 2147483648
	  • kctune maxdsiz_64bit 8589934592
	  • kctune maxssiz 369098752
	  • kctune maxssiz_64bit 536870912
	• Run ulimit utility, verify, and establish the following minimum settings:
	  • ulimit -d = 2097152 (in kilobytes) or higher
	  • ulimit -s = 360448 (in kilobytes) or higher	

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For the Operating System	Operating System Configuration Checklist	Your Notes
AIX Operating System	For the AIX 5.2 and 5.3 operating systems, establish these settings: • The ncargs value specifies the maximum allowable size of the ARG/ENV list (in 4K byte blocks) when running exec() subroutines. Set ncargs value to 16 or higher. To display the current value of ncargs, enter: lsattr -El sys0 -a ncargs To change the current value of ncargs, enter: chdev -l sys0 -a ncargs=NewValue The lsattr and chdev command options are –El (lowercase L) and –l (lowercase L) respectively. • Change the following default entries in the /etc/security/limits file: fsize = -1 core = 2097151 cpu = -1 data = 262144 rss = 65536 stack = 65536 nofiles = 409	
Linux Operating System	You need to disable SELinux by enter the following: `/etc/sysconfig/selinux: SELINUX=disabled` Ensure that /etc/hosts has short-names first for all entries. For example, 127.0.0.1localhostlocalhost.localdomain If the base locale is English, verify: • that the LANG variable is en_US • LANG variable is exported	
RedHat Enterprise Linux Operating System	Make the following system changes: 1. Verify that the language is set to English(LANG=en_us) in the /etc/sysconfig/i18n file. 2. Export LANG 3. Edit the /etc/security/limits.conf file by adding the following lines: gisuser hard nofile 16384 (maximum value) gisuser soft nofile 4096 (minimum value) gisuser hard memlock 3000000 gisuser soft memlock 3000000 gisuser hard nproc 16000 gisuser soft nproc 16000 gisuser hard stack 512000 gisuser soft stack 512000	

For the Operating System	Operating System Configuration Checklist	Your Notes
	This updates the system ulimits. 4. Save and close the /etc/security/limits.conf file. 5. Reboot the system.	
Solaris Operating System	Set the following entries in the /etc/security/limits file: `nofiles = 4096` (recommended value is unlimited) `set rlim_fd_max=4096 (limit is 65535)` - hard limit `set rlim_fd_cur=4096` - soft limit • To make the setting effective as the hard limit, reboot the server or run the following command: `kill -1 inetd` • To make the setting effective as the soft limit, use the parent shell configuration (for example, .profile). Then, reboot the server.	

Supporting Information and Detailed Procedures

Preserve Custom Changes for System Resources

You can preserve your custom changes to system resources (like workflow definitions and maps) when you update your system. During updates, the system can identify when you make a custom change versus when the system makes a change through an upgrade or patch.

When a patch, installation or upgrade is performed, a baseline record of system resources is created. This baseline is not affected by any subsequent customer changes. When another patch is installed, the resources in this baseline are compared to the resources in the existing system. If a baseline and existing resource are not the same, it means that the existing resource was customized and is not overwritten by the patch.

During an update, the baseline is updated with new system resource information, but not with custom changes to resources.

JCE Distribution File

The Java Cryptography Extension (JCE) is a set of Java packages from Sun Microsystems, Inc. or IBM that provides a framework and implementations for encryption, key generation and key agreement, and Message Authentication Code (MAC) algorithms.

You must obtain the entire JCE (all the zip folders, whether you are using the SUN or IBM JCE). You can not choose the Localpolicy.jar by itself.

By default, Sterling Integrator uses the limited strength JCE file that is included in the JDK that you use during the installation. Installing unlimited strength JCE file will overwrite the limited strength JCE file.

If you are installing the software outside of the United States, check to see if you can get the JCE unlimited strength jurisdiction policy files. The unlimited strength jurisdiction policy files can only be exported to countries to which the United States permits the export of higher-level encryption.

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Obtain the JCE Distribution File for AIX and LINUX

To obtain the zip file for the IBM JDK 1.5 (AIX and Linux):

1. Open your browser and navigate to https://www14.software.ibm.com/webapp/iwm/web/reg/pick.do?source=jcesdk.
2. Enter your **IBM ID** and **password**.

   If you do not have an IBM ID, follow the IBM registration instructions.
3. Click **Sign in**.
4. Select the **Unrestricted JCE Policy files for SDK 1.4.2** and click **Continue**.

   The Unrestricted JCE Policy files for the 1.4.2 SDK are also used for the 1.5.0 SDK.
5. Review your personal information and the license agreement.
6. Select the **I agree** check box and click **I confirm** to continue.
7. Download the unrestrict142.zip file to your system.

   Once the file resides on your system, note the exact directory and file name for this zipped file. You will need this information during the installation process.

Obtain the JCE Distribution File for the Solaris and HP-UX

To obtain this file for the Sun JDK 1.5 (Solaris) and HP-UX JDK 1.5 (HP_UX):

1. Open your browser and navigate to http://java.sun.com/javase/downloads/index_jdk5.jsp.
2. At the bottom of the page (Other Downloads), locate the **Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files 5.0** and click **Download**.
3. Download the jce_policy-1_5_0.zip file to your system.
4. Once the file resides on your system, note the exact directory and file name for this zipped file.

   You will need this information during the installation process.

Install the JDBC Driver in Microsoft SQL Server

Sterling Integrator requires the correct Microsoft SQL Server driver. See *System Requirements* for supported version information.

Go to the Microsoft web site to download the driver and any appropriate patches.

1. Download sqljdbc_*version_language*.tar.gz to a temporary directory.
2. To unpack the zipped tar file, navigate to the directory where you want the driver unpacked and type the following command:

   `gzip -d sqljdbc_version_language.tar.gz`
3. To unpack the tar file, move to the directory where you want the driver installed and type the following command:

   `tar –xf sqljdbc_version_language.tar`

After the package unpacks, you can find out more information about using this driver by opening the JDBC Help System in the /*absolutePath*/sqljdbc_*version*/*language*/help/default.htm file. This will display the help system in your Web browser.

4. When the Sterling Integrator installation asks for the location of the JDBC drivers, specify the extracted jar file created after unpacking the archive (usually named sqljdbc.jar). The JDBC driver version is the same as the version of the drivers downloaded from Microsoft.

Incompatible Data Detection

Some of the data in your existing environment may not be compatible with the newer version of Sterling Integrator. You may choose to screen your data and make changes prior to starting your upgrade. Items you should screen for include:

- Duplicate schedules or schedules associated with deleted business processes - if found you can delete the duplicate schedules
- Duplicate Trading Partners - if found you can rename or delete the duplicates
- Organization Names which exceed 100 characters - if found you can rename
- System business processes which have been deleted - if any have been deleted, record the information

This is an optional task. For this release of Sterling Integrator, data validation has been improved, but by screening for these items, prior to the upgrade, you may save some time during the upgrade.

Determine if You Have Duplicate Schedules

To determine if you have duplicate schedules:

1. Navigate to **Administration Menu > Deployment > Schedules**.
2. In the List panel, click **Go!**
3. Review the list of schedules for duplicates.
4. If you find any duplicates, either rename or delete them.

Delete Duplicate Trading Partners

To determine if you have trading partners:

1. Navigate to **Administration Menu > Trading Partners > Advanced > Identities**.
2. In the List panel, click **Go!**
   The system displays a list of all the trading partners.
3. Review the list of trading partners for duplicates.
4. Determine if you need to delete the duplicates.
5. Click **delete** to delete the duplicates trading partner profiles.

Rename Duplicate Trading Partners

To rename duplicate trading partners:

1. Navigate to **Administration Menu > Trading Partners > Advanced > Identities**.
2. In the List panel, click **Go!**

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The system displays a list of all the trading partners.

3. View the list of trading partners names.
4. If any names are longer than 23 characters, the click edit and rename them.
5. Click **Save**.
6. Click **Finish**.

Determine if Organization Names are more than 100 characters

For AS2 only, determine if any organization names are longer than 100 characters:

1. Navigate to **Administration Menu > Trading Partners > AS2**.
2. In the List panel, click **Go!**
   The system displays a list of all the AS2 trading partners and organizations.
3. Review the list of organization names.
4. If any names are longer than 100 characters, click edit and rename them.
5. Click **Save**.
6. Click **Finish**.

Determine if any System Business Processes have been Deleted

To determine if any system business processes have been deleted:

1. Navigate to **Administration Menu > Business Process > Monitor > Advanced Search > Business Process**.
2. In the **Search Using Business Process Name** panel, review the list of system business processes in the panel.
3. Make a list of any system business processes that have been deleted.

System Business Processes

The following is a list of the system business processes provided with Sterling Integrator:

- BackupService
- CHIPSUtility_ReceiveHandler
- EventNotification
- handleSWIFTNetAcquireQueue
- MailboxEvaluateAllAutomaticRulesSubMin
- MBIAdd
- MBIDocView
- MBIExtract
- MBIPathList
- MBIQuery
- MBIRollBackExtract
- MBISearch
- MBISelfRegistration

- Purge
- PurgeAll
- Recover.bpml
- Restore
- RestoreService
- Schedule_AssociateBPsToDocs
- Schedule_AutoTerminateService
- Schedule_BackupService
- Schedule_BPExpirator
- Schedule_BPLinkagePurgeService
- Schedule_BPRecovery
- Schedule_CheckExpireService
- Schedule_DBMonitorService
- Schedule_DocumentStatsArchive
- Schedule_IndexBusinesssProcessService
- Schedule_IWFCDriverService
- Schedule_MailboxEvaluateAllAutomaticRules
- Schedule_MessagePurge
- Schedule_NonEdiInboundFSAdapter
- Schedule_NonEdiOutboundFSAdapter
- Schedule_PartialDocumentCleanUpService
- Schedule_PerfDataPurgeService
- Schedule_Produced MsgPurgeService
- Schedule_PurgeService
- Schedule_RetentionProcessor
- Schedule_Scheduled_AlertService
- SMTPNotification
- TimeoutEvent

Create Process Output Log

A log of process activity during the upgrade will help if troubleshooting is required. Output is automatically logged to the upgrade log files (PreInstallSi.log and InstallSi.log). Use this procedure to generate a separate output log for each process you want to log.

To create a process output log:

1. From any directory, run the script command to record the processes, ensuring that you have created and specified the name of the file in which to save the process output.

   For example, to start recording output to a file named processoutput.log, type script processoutput.log at the command line. The processoutput.log file will be created in the directory where you ran the script command.

2. After the upgrade is complete, enter exit at the command line to stop recording.
3. You can now retrieve the file containing the process output.

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The following example shows a session after starting the script command, specifying the output to be saved to the file named listing.log, and typing exit to stop the script command from running:

```
[2]%script listing.log
    Script started, file is listing.log
    [3]%ls
    Custard.Recipe FavoriteRecipes Curry.Recipe
    VindalooCurry.Recipe Jelly.Recipe
    [4]%exit
     Script done, file is listing.log
```

Copy a Microsoft SQL Server 2000 Database to an SQL Server 2005

This is an optional procedure. It is the customer's responsibility to perform it. Sterling Commerce Customer Support cannot help with this procedure.

Before upgrading, it is recommended that you first make a backup of your Microsoft SQL Server 2000 database. One way to accomplish this is to make a separate copy of your existing database so that you can preserve your current system. If you are moving from a Microsoft SQL Server 2000 database to an SQL Server 2005 database, use the following procedure. Your existing Gentran Integration Suite instance will no longer function if you upgrade your existing database without making a copy.

After this procedure, you will have two databases:

- A database that you will use in your upgraded version of Sterling Integrator.
- A database that you can use in your old version of Sterling Integrator.

1. Perform a full database backup to the file system on the source SQL 2000 server of the source database.
2. Copy the resultant backup (.bak) file from the file system on the source server file system to the file system on the SQL 2005 server.
3. Connect to the SQL 2005 database server as a Windows authenticated user with administrative privileges on the database server using SQL Server Management Studio 2005.
4. Make sure that the destination database is not in use (disconnect any connected applications).
5. Restore the backup of the SQL 2000 database over the existing SQL 2005 database, using the Tasks|Restore|Database wizard. The restore will be from a "device," the file created above. Specify on the Options tab the correct locations for the data and log files (since the locations in the backup may not be the same as the correct locations for files on the on SQL 2005 database server); also select the check box to specify that the existing database is to be overwritten. Confirm that the restore is reported as successful.
6. Check to make sure that existing users in the database match existing users on the server using the command sp_change_users_login 'report'. If no rows are returned, go to step 8.
7. If rows are returned, execute the command sp_change_users_login 'update_one', 'username', 'username' substituting the unlinked login name in each execution to correct links between existing users in the restored database and existing logins on the server.
8. Examine the users of the database using the SQL Studio or sp_helpuser. If the login (existing on the server) who will be working with this database is not currently a user of the restored database, add that login as a user of the database by executing the following commands (login_name and user_name should generally be the same):

```
USE database_name
Go
EXEC sp_grantdbaccess 'login_name', 'user_name'
```

```
Go
EXEC sp_addrolemember 'db_owner', 'username'
Go
CHECKPOINT
Go
USE master
Go
EXEC sp_defaultdb 'username', 'database_name'
Go
```

Note:

The spaces in the quoted strings in the SQL commands should not be included in the final procedure, as spaces are significant to the procedure and the commands will fail if they are there (EXEC sp_grantdbaccess 'login_name', 'user_name' should be EXEC sp_grantdbaccess 'login_name', 'user_name').

9. Examine the user tables in the SQL 2005 database to determine which schema they currently are in. Using the SQL Studio, the schema will be the prefix before each table listed in the Table tree.

Note:

This assumes that the schema of the user objects is not changed, even if it is a schema name with the same name as a user other than the user who will be accessing the data.

10. Execute the following command in the SQL 2005 database to ensure that the default schema for the user who will interact with the database matches the schema containing the restored user objects. If the objects are in the dbo schema, use dbo as the schema_name.

```
USE database_name
Go
ALTER USER user_name WITH DEFAULT_SCHEMA = schema_name
Go
```

Configure Snapshot for Microsoft SQL Server

The snapshot feature in Microsoft SQL Server allows you to view a read-only copy of the database even when it is locked. Configuring the snapshot feature can also reduce deadlocks.

Enter the following command to enable the snap shot feature:

```
ALTER DATABASE db_name SET READ_COMMITTED_SNAPSHOT ON;
```

License File

After your company signed the sales contract with Sterling Commerce, Sterling Commerce creates a license file containing information about your company, your system, and the packages (components) that your company selected to use, such as services, maps, and adapters.

Your first license file is a temporary keyfile that is e-mailed to you after you purchase Sterling Integrator. It allows you to run the software and all of the licensed features for a limited period. Before the keyfile expires, you must replace the temporary key with a permanent key Failure to either extend your temporary keyfile or replace it with a permanent keyfile will result in the keyfile expiry and Sterling Integrator will fail to start.

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The permanent license keyfile contains your specific operating system and the IP address of your system, and is valid for 20 years from the date of issue.

The permanent license file contains a single or multiple IP addresses in your computing environment. If you change an IP address in your computing environment that is present in your license file, the software will cease to operate. You should take necessary precautions to avoid this potential outage, including notifying the appropriate contacts within your organization (Information technology and related departments) and include the license file updates in your computing environment change plans.

Obtain a License File

To obtain a license file:

1. Navigate to the Sterling Commerce Customer Center (*https://customer.sterlingcommerce.com*).
2. Click **Support Center > Sterling Integrator > Key Requests**.
3. Enter the following information:
   - Company Name
   - Contact Name
   - Phone Number
   - Fax number
   - Email Address
   - Requested Key Type (Permanent or Temporary)
   - PSP number - The PSP Number (unique number that identifies a licensed software asset in your Sterling Integrator installation) is present in the temporary or previous version of the keyfile you received from Sterling Commerce.
   - CD Key (if no PSP number is present in your license key)
   - Order Number
   - Product
   - Platform
   - Environment
   - IP Addresses
   - Previous IP Address
   - Sterling Account Executive
   - Comments
4. Click **Submit**.

   Your new keyfile will be generated and delivered to you as an attachment to an email. Save this attachment and record the absolute path. This will be used during the install process.

Install the License Key

To install the license key from the command line:

1. When you receive the permanent license keyfile, make a copy of it, and keep the copy in a safe place.
2. Stop Sterling Integrator.
3. Copy your license keyfile to the machine where Sterling Integrator is installed.
4. Navigate to /*install_dir*/bin.

5. Enter `./AddLicenseSet.sh` <*path*>.
   Where <*path*> is the path to the license keyfile.
6. Start Sterling Integrator.

   You can also install or update your license file from the Licenses screen (**Operations > System > Licenses**).

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Pre-Upgrade Information Gathering Checklist

Information Gathering Checklist for Upgrades (UNIX/Linux Cluster Environment)

The checklist contains the items you need to gather and tasks you need to complete prior to upgrading the Sterling Integrator in a cluster environment. The checklist contains:

- Brief descriptions for tasks, while more detailed procedures are provided after the checklist
- Information you need to gather to complete the installation

You may want to make a copy of the following checklist and use it to record the information you collect.

#	Information Gathering Checklist for Cluster Upgrades	Node 1	Node 2	Node 3	Your Notes
1	Determine which installation method you are going to use: • GUI- based • Text-based • Silent Installation				
2	Decide which type of security certificates you will use: • The default self-signed SSL (Secure Sockets Layer) certificate that is automatically installed. • A Certificate Authority-related certificate that you install before installing Sterling Integrator.				
3	If you are using an Oracle, SQL Server 2005, or DB2 database, decide if you are going to manually or automatically apply Database Definition Language				

#	Information Gathering Checklist for Cluster Upgrades	Node 1	Node 2	Node 3	Your Notes
	(DDL) Statements (schema) to the database.				
4	If you are using an Oracle 10.2.x database, you must set it up for native compilation by allocating space and by setting the plsql_native_library_dir parameter.				
5	Determine if the database password need to be encrypted.				
6	Record the Hostname on which you plan to install Sterling Integrator.				
7	Record the Directory Name where you plan to install Sterling Integrator.				
8	Record the Login to host machine.				
9	Record the Password to the host machine.				
10	Record the path to the JDBC drivers.				
11	Record the path to the installation wizard and file name.				
12	Record the path to JDK.				
13	Record the path to the License File.				
14	Record the path to JCE file.				
15	Record the Host IP address.				
16	Record the Initial Port Number.				
17	Record the System passphase.				
18	Record the Administrative e-mail address used for sending alert messages.				
19	Record the SMTP Server IP address used for sending alert messages.				
20	Record the Database vendor name.				
21	Record the Database user name.				
22	Record the Database password.				
23	Record the Database (catalog) name.				

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#	Information Gathering Checklist for Cluster Upgrades	Node 1	Node 2	Node 3	Your Notes
24	Record the Database host name.				
25	For Oracle and Microsoft SQL Server 2005, record the path and file name for the JDBC Driver.				
26	For DB2, record the absolute paths and file names for two JDBC drivers.				

Supporting Information and Detailed Procedures

Multicast Ports: Node to Node Communications

Cluster nodes are configured to communicate with each other using JGroups, an open source toolkit that provides flexibility for protocol configuration. JGroups provides rich open management features, along with multiple protocol support. JGroups supports multicast (UDP) and TCP-based communication protocols.

When JGroups is configured to use multicast (UDP), all cluster nodes communicate with each other on a specific IP address and port. The multicast ports are configured based on the installation base port. All clusters that are on the same subnet configured on the same base port will send multicasting messages on the same multicast IP address and port.

To avoid this, each Sterling Integrator cluster on the same subnet needs to be configured on different base ports. Install your clusters on different port ranges or on different network segments with multicast forwarding restricted, so that they will not interfere with each other. The default multicast address used is 239.255.166.17. This address is configurable, with a port range of 10 ports, starting with the multicast base port for the instance.

All nodes participating in the same cluster must be installed on the same multicast base port (the multicastBasePort property in the noapp.properties file). This is usually computed from the system base (non-multicast) port, but can be configured separately in the noapp.properties file, to allow different nodes in a cluster to be installed at different (non-multicast) port ranges. Also, all the nodes in the cluster should be installed in the same subnet.

For node to node communications, the properties are defined in jgroups_cluster.properties. The attributes used to define communications are:

- property_string - default value is UDP.
- distribution_property_string - default value is TCP. This attribute should never be set to UDP.

If you want to change the communication for cluster multicast from the UDP protocol to TCP, you need to change the value of the property_string property in the jgroups_cluster.properties.in file (after backing up the file), and then run the `setupfiles.cmd` command. You can make this change right after the installation or after you have started running the cluster. If you change the file after starting the cluster, you need to stop all nodes of the cluster, make the change on each node, and then re-start your cluster.

To change the communication for cluster multicast from the UDP protocol to TCP, use the following value for the property_string property in the jgroups_cluster.properties.in file:

```
property_string=TCP(start_port=any_available_port_number):
TCPPING (initial_hosts=this_instance_host_ip[start_port_number],
```

```
theothernode_instance_host_ip[theothernode_start_port_number];port_range=2;
timeout=5000;num_initial_members=3;up_thread=true;down_thread=true):VERIFY_SUSPECT(timeout=1500):
pbcast.NAKACK(down_thread=true;up_thread=true;gc_lag=100;retransmit_timeout=3000):
pbcast.GMS(join_timeout=5000;join_retry_timeout=2000;shun=false;print_local_addr=
true;down_thread=true;up_thread=true)
```

For more information about UDP, TCP, and JGroups communications, refer to the *Sterling Integrator Clustering* documentation.

Security Certificates

Before you begin the installation, you must decide which of the following security certificates you will use:

- The default self-signed SSL (Secure Sockets Layer) certificate that is automatically generated by the installation.
- A Certificate Authority-related certificate that you generate before installing the software.

If you install with the default SSL certificate, but you later want to switch to a CA-related certificate, you can make that change using the sslCert property in the noapp.properties.in file.

Port Numbers

During installation, you are prompted to specify the initial port number. Port number guidelines are:

- A range of 200 consecutive open ports between 1025 and 65535 are required for this installation.
- The initial port number represents the beginning port number in the range.
- Make sure that port numbers in the port range are not used by any other applications on your system.

After your installation, refer to the /*install_dir*/install/properties/sandbox.cfg file for all of the port assignments.

UNIX Accounts

In a UNIX or Linux environment, create one UNIX administrative account on the host server for all of the installations. For example, if you want to create a test environment and a production environment, create one UNIX account on the host server. For more information about creating UNIX accounts, see your operating system documentation.

Administrative E-mail Address

You should not change the Administrative e-mail address during an upgrade. If you change this e-mail address, you will have to update adapters, business processes and other items that include this information.

Database Definition Language (DDL) Statements

When you install Sterling Integrator, you can manually apply Database Definition Language (DDL) statements to your database tables instead of requiring the installation process to do it directly. This option is not available for MySQL databases.

This feature increases database security by reducing the database permissions of the Sterling Integrator database user. The rights to database objects can be reserved for a secure user like a customer database administrator (DBA). A business can require that only a DBA with the proper permissions can make database changes.

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If you:	Then
Choose to manually apply the DDL statements	Before you begin the installation, you will need to manually create the database schema using the SQL files in the */install_dir*/install/repository/scripts directory. You need to apply the DDL statements in a specific order. To find an example of the correct order, run an installation where the database schema was applied automatically and then look in the installation log file. The installation process will validate the database with a Sterling Integrator tool called DBVerify and warn you if there are issues, and will exit the installation.
Choose NOT to manually apply the DDL statements	The installation will apply the DDL statements.

Determine Data Type for Oracle in UNIX

To determine the data type for Oracle in UNIX:

1. Navigate to the directory where the property files reside.
2. Enter: grep BLOB $install_dir/properties/sandbox.cfg
   - If ORACLE_USE_BLOB=true is returned, you are using BLOB
   - If ORACLE_USE_BLOB=false or nothing is returned, you are using Long Raw

Upgrade the Software

General UNIX/Linux Upgrade Information for Clusters

Caution: Sterling Integrator should be installed behind a company firewall for security purposes. See the Perimeter Server and Security topics in the Sterling Integrator documentation library for more information on secure deployment options.

Clustering is not supported for Sterling Integrator systems that use the MySQL database, even though it appears as an option. Upgrading Sterling Integrator cluster nodes is similar to upgrading a Sterling Integrator single node, with the following restrictions on all nodes:

- All nodes must use the same database.
- All nodes must use the same passphrase.
- All nodes must use the same operating system.
- When installing nodes on different machines, the initial port numbers must be the same. Installing nodes on different machines helps you take more advantage of the reliability, availability, and scalability features of clustering, including failover.
- When installing nodes on the same machine, you must install nodes 2 and higher in different directories and use different initial port numbers. Each initial port number must be at least 100 higher or lower than other initial port numbers.
- Nodes must be installed sequentially, one at a time, starting with the first node.
- After installing all of the nodes, nodes must be started sequentially, one at a time, starting with the first node.
- This upgrade changes the administrative password to the default password. After the upgrade, change the password back to the administrative password to minimize security risks. This is the Admin password for logging into the UI (/dashboard or /ws).
- The installation creates subsequent ports based on the initial port number. For all of the port assignments, see the /*install_dir*/install/properties/sandbox.cfg file.

Use one of the following methods to upgrade your system:

- Upgrade using the GUI-Based method
- Upgrade using the Text-Based method
- Upgrade using the Silent Install File method

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The following are some general UNIX/Linux guidelines:

- If you are on Linux, do not use any soft/symbolic links in the path to the SCIInstallWizard.jar file.
- If you are using FTP to copy the files, verify that your session is set to binary mode.
- If you are using AIX with the DB2 database, the directory path cannot be longer than 108 bytes.
- The directory path to cannot include any spaces.

General UNIX/Linux Installation Wizard Information

The installation wizard provides:

- The option of either entering the paths or selecting the paths and files (**Select File**).
- For every screen in the GUI-Based installation wizard, you need to click **Next** to move to the next step the wizard. The click **Next** step is not represented in each step in the procedure.
- For every screen in the Text-Based installation wizard, you need to press **Enter** to move to the next step the wizard. The press **Enter** step is not represented in each step in the procedure.

Upgrade Using GUI-Based Method (UNIX/Linux Cluster)

Before you begin:

- You should have completed the *Information Gathering Checklist for Upgrades*.
- The license file must reside on the host machine on which the application is being upgraded. If you saved the license file to a Windows client, transfer the license file to the host.
- *install_dir* refers to the installation directory where the new software will be installed. Do not use any pre-existing directory name or an old version of the Sterling Integrator installation directory. If you do, you could inadvertently overwrite the existing installation. You should create a new installation directory before you begin the upgrade.
- *parent_install* is the directory one level above the install_dir directory.
- Ensure that the *parent_install* directory has the proper permissions set using the chmod command.

To upgrade Sterling Integrator:

1. From the upgrade media, copy the SCIInstallWizard.jar and the SI.jar and to a UNIX/Linux directory.
2. Log in to a Windows machine.
   a) Start X server in your UNIX/Linux server using an X Windows client tool.
   b) Log in to your UNIX/Linux environment.
   c) Set the display to use your server as a client using the following command:
   `export DISPLAY=`*`server`*`:0.0`
3. Navigate to your working directory. For example, cd *parent_install*.
4. Enter: */path_to_java/*`bin/java -jar /`*`absolutePath`*`/SCIInstallWizard.jar`
   The program verifies support for your operating system and JDK. It also verifies that your operating system is patched to the required level. The installation wizard is displayed.
5. Click **Next** to start the installation wizard.
6. Review the **License conditions** and click **Accept** to accept the terms.

7. Enter the full path to the **JDK directory**.
8. Enter the full path to the **license file**.
9. Enter the full path to your **JCE** file.
10. Enter the path to **installation directory**. If the directory does not exist, click **Yes** at the prompt *The directory does not exist, create it?* The installer creates the directory (*install_dir*). Below the installation directory, the installer creates a directory named **install**. This directory contains the installation files.
11. Enter the path to the Sterling Integrator **install jar file**.
12. Enter the explicit **IP address** for the server or use the default value of localhost.
13. Enter the initial **port number** or use the default value of 8080.
14. Enter your **system passphrase**.
15. Re-enter the **system passphrase**.
16. Enter the **administrative e-mail address** to which you want system alert messages sent.
17. Enter the **SMTP mail server** (IP address or host name) that you want to use for system alert messages and other administrative notices.
18. If you want to enable **FIPS** (Federal Information Processing Standards) mode, select the check box. The default is disable FIPS mode.
19. Select the database that you want to use (Oracle, Microsoft SQL Server 2005, or DB2).

    Clustering is not supported for Sterling Integrator systems that use the MySQL database, even though it appears as an option.
20. Select all options that apply to this cluster upgrade:
    - For node 1, select *This installation is an upgrade from a prior version*. By default, this check box is NOT selected. In a cluster environment, you only upgrade node 1.
    - For node 2 or higher, select *This installation is for a cluster node 2 or higher*.
    - If you do not want to *Apply database schema automatically*, clear the check box. The default is to automatically apply DDL statements. If you manually create the database schema, you will have to run the installation command again after manually creating the schema. You will manually create the database schema using the SQL files in the /*install_dir*/install/repository/scripts directory.
    - Select the *Verbose install* check box to generate an installation log for debugging information. The events that occur during the installation are recorded in InstallSI.log file. By default, the check box is not selected.
21. Enter the database connection information.
    - Database user name.
    - Database password (and confirmation).
    - Database catalog name.
    - Database host name. In Oracle, do not use an IP v6 address for the host name.
    - Database port.
    - (Oracle and Microsoft SQL Server 2005 only). Absolute path and file name for one JDBC driver file.
    - (DB2 only) Absolute paths and file names for two JDBC driver files. Use the Type-4 JDBC driver. This type of driver converts JDBC calls into the network protocol used directly by DB2, allowing a direct call from to the DB2 server.
    - (Oracle only) Select the check box to select the data type to use for caching. Select either the default BLOB (binary large object) columns data type or the Long Raw data type.

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You can significantly improve performance by enabling the cache on the BLOB data object in Oracle. For more information, refer to the documentation for slow performance in Oracle.

22. Review and confirm the database information.
23. Review the default **Install Actions**. The following check boxes are automatically selected for an upgrade. You cannot clear them.
    - Verify Operating System is supported
    - Verify the selected JDK is supported
    - Install Components
    - Save install files
    - Clean Up Files
24. Select the appropriate **JDK**. By default, the 64-bit JDK is selected.
25. If you want to create a **desktop icon** for launching Sterling Integrator, select the check box. By default, the check box is not selected.
26. Click **Next** to continue.

    The **Installation Progress** screen appears. You can click **Show Details** to confirm your installation information before starting the upgrade.
27. If you are upgrading multiple nodes on the same machine or used different base ports for node 2 and higher, do the following:
    a) Navigate to the /*install_dir*/install/properties directory of node 1.
    b) Review the multicastBasePort property in the noapp.properties_platform_ifcresources_extfile and the mcast_port property in the jgroups_cluster.properties file. Record the value of the multicastBasePort and mcast_port.
    c) Navigate to the /*install_dir*/install/properties directory of each node (from node 2 onward).
    d) Change the multicastBasePort property in the noapp.properties_platform_ifcresources_ext.in file to the value of the multicastBasePort property in the noapp.properties_platform_ifcresources_ext file in the node 1 installation.
    e) Change the mcast_port property in the jgroups_cluster.properties.in file to the value of the mcast_port property in the jgroups_cluster.properties file in the node 1 installation.
    f) (IPv6 only) For all nodes, change mcast_property from 239.255.166.17 to `FFFF:239.255.166.17`.
    g) (IPv6 only) In the sandbox.cfg file, add `HOST_ADDR=<IPv6_hostname>`.
    h) Enter for each node in the cluster:

       /*install_dir*/install/bin/setupfiles.sh
28. On each node, starting with node 1, run the command startCluster.sh nodeNumber from the /*install_dir*/install/bin directory where nodeNumber is the sequential number assigned to each node starting with 1. For example, on the first two nodes, you would run the following commands:

    Node 1

    ./startCluster.sh 1

    Node 2

    ./startCluster.sh 2
29. Enter the passphrase.

When the cluster environment is configured, you will get the message: `Deployment to application server successful`.

30. After the cluster configuration is complete, navigate to the /*install_dir*/install/bin directory for each node, starting with the first node, enter:

    ./run.sh

    When prompted, enter the passphrase that you entered earlier.

    It might take several minutes for the components to initialize and start up.

    When startup is finished, a message like the following is displayed:

    ```
    Open your Web browser to http://host:port/dashboard
    ```

    Where *host* is the IP address and *port* is port number where the system resides.

31. After performing the upgrade, determine if you need to apply any patches.

Upgrade Using the Text-Based Method (UNIX/LINUX Cluster)

Before you begin:

- You should have completed the *Information Gathering Checklist for Upgrades*.
- The license file must reside on the host machine on which the application is being upgraded. If you saved the license file to a Windows client, transfer the license file to the host.
- *install_dir* refers to the installation directory where the new software will be installed. Do not use any pre-existing directory name or an old version of the Sterling Integrator installation directory. If you do, you could inadvertently overwrite the existing installation. You should create a new installation directory before you begin the upgrade.
- *parent_install* is the directory one level above the install_dir directory.
- Ensure that the *parent_install* directory has the proper permissions set using the chmod command.
- If at any time you wish to go back and change any input previously entered, you will have to re-start the installation. You can cancel the installation by pressing **Ctrl** + **C** and then re-starting the installation.
- The installation program validates the initial port number and confirms that you have enough disk space for the installation. These port assignments are written to the /*install_dir*/install/properties/sandbox.cfg file.

To upgrade the software:

1. From the upgrade media, copy SCIInstallWizard.jar and to a UNIX/Linux directory.
2. Navigate to your working directory. For example, cd *parent_install*.
3. Enter: `/path_to_java/bin/java -jar /absolutePath/SCIInstallWizard.jar`

   The installation wizards starts.
4. Press **Enter** to start the upgrade.
5. Press **Enter** to review the license agreement. You can page through the agreement by entering **n** and pressing **Enter** at each page or you can go directly to the end of the agreement, press **Enter** until you reach the *Do you accept the license?*
6. Press **Enter** to accept the **license** agreement. Default value is Y.
7. Enter the full path of your **JDK directory**.
8. Enter the full path to the **License file**.

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9. Enter the full path to unlimited strength **JCE policy file**.
10. Enter the full path to the **installation directory**. If the installation directory does not exist, when prompted, enter **Y** to create the installation directory.

    The installer creates the directory (*install_dir*). Below the installation directory, the installer creates a directory named **install**. This directory contains the installation files.
11. Enter the path to your installable **jar file** (SI.jar).
12. Enter an explicit **IP address** or host name. Default is localhost.
13. Enter the **initial port number**. Default is 8080.
14. Enter your system **passphrase**.
15. Enter your system **passphrase** again to confirm it.
16. Enter the **administrative e-mail address** to which you want system alert messages sent.
17. Enter the **SMTP mail server** host name that you want to use for system alert messages and other administrative notices.
18. Do you want to use **FIPS** (Federal Information Processing Standards) mode?

    • If yes, enter **true**.
    • If no, press **Enter**. Default value is false.
19. Enter the number of the **database** vendor (Oracle, Microsoft SQL Server 2005, or DB2).
20. At the *This installation is an upgrade from a prior version* prompt:

    • For node 1, enter **true**.
    • For node 2 and higher, press **Enter** to accept the default value of false. In a cluster environment, you only upgrade node 1.
21. At the *This installation is for a cluster node 2 or higher*:

    • For node 1, press **Enter** to accept the default value of false.
    • For node 2 and higher, enter **true**.
22. At the *Apply DDL statements automatically* prompt:

    • Press **Enter** to apply the DDL statements. Default value is true. The upgrade applies both the DDL and the resources.
    • Enter **false** if you want to manually create the database schema. You will have to run the installation command again after manually creating the schema. You will manually create the database schema using the SQL files in the /*install_dir*/install/repository/scripts directory.
23. At the *Verbose Install* prompt:

    • Press **Enter** to accept the default value of false.
    • Enter **true** to record the events in the InstallSI.log file.
24. Configure your database by entering the following information:

    • Database user name.
    • Database password (and confirmation).
    • Database catalog name.
    • Database host name. In Oracle, do not use an IP v6 address for the host name.
    • Database host port number

- (Oracle and Microsoft SQL Server 2005 only) Absolute path and file name for one JDBC driver
- (DB2 only) Absolute paths and file names for two JDBC drivers. Use the Type-4 JDBC driver. This type of driver converts JDBC calls into the network protocol used directly by DB2, allowing a direct call from to the DB2 server.
- (Oracle only) At the *What Datatype would you like to use?* prompt, choose a data type for caching (BLOB or Long Raw).

For	Step:
BLOB (binary large object) columns	Enter **1**. Default value is 1. You can significantly improve performance by enabling the cache on the BLOB data object in Oracle. For more information, refer to the documentation for slow performance in Oracle.
Long Raw data type	Enter **2**.

25. Review the Database Information.
26. Is this a 32 or 64-bit JDK?
    - If you are using a 32-bit JDK, enter **1**.
    - If you are using a 64-bit JDK (default value), press **Enter**.
27. Do you want to create a desktop icon for accessing Sterling Integrator?
    - If yes, enter **true**.
    - If no, press **Enter**. Default value is false.
28. Click **Install** to finish the upgrade. The **Installation Progress** screen shows the general progress of the installation through different stages. For more information about these stages, click **Show Details**.

    The screen displays the progress of your upgrade. You can follow more detailed progress of your installation through the PreInstallSI.log file in your installation directory.

    Installation information is in the following files:

    - ant.install.log (in the /*parent_install*/ directory)
    - InstallSI.log (in the /*install_dir*/install directory)

    When the upgrade is finished, the system displays the following message:

    ```
    BUILD SUCCESSFUL
    Total time: nn minutes nn seconds
    Installation Wizard completed. Please see the installation guide for next steps.
    ```

29. If you are upgrading multiple nodes on the same machine or used different base ports for node 2 and higher, do the following:
    a) Navigate to the /*install_dir*/install/properties directory of node 1.
    b) Review the multicastBasePort property in the noapp.properties_platform_ifcresources_extfile and the mcast_port property in the jgroups_cluster.properties file. Record the value of the multicastBasePort and mcast_port.
    c) Navigate to the /*install_dir*/install/properties directory of each node (from node 2 onward).

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d) Change the multicastBasePort property in the noapp.properties_platform_ifcresources_ext.in file to the value of the multicastBasePort property in the noapp.properties_platform_ifcresources_ext file in the node 1 installation.
e) Change the mcast_port property in the jgroups_cluster.properties.in file to the value of the mcast_port property in the jgroups_cluster.properties file in the node 1 installation.
f) (IPv6 only) For all nodes, change mcast_property from 239.255.166.17 to `FFFF:239.255.166.17`.
g) (IPv6 only) In the sandbox.cfg file, add `HOST_ADDR=<IPv6_hostname>`.
h) Enter for each node in the cluster:

   /*install-dir*/install/bin/setupfiles.sh

30. On each node, starting with node 1, run the command startCluster.sh nodeNumber from the /*install_dir*/install/bin directory where nodeNumber is the sequential number assigned to each node starting with 1. For example, on the first two nodes, you would run the following commands:

    Node 1

    ./startCluster.sh 1

    Node 2

    ./startCluster.sh 2

31. Enter the passphrase.

    When the cluster environment is configured, you will get the message: `Deployment to application server successful`.

32. After the cluster configuration is complete, navigate to the /*install_dir*/install/bin directory for each node, starting with the first node, enter:

    ./run.sh

    When prompted, enter the passphrase that you entered earlier.

    It might take several minutes for the components to initialize and start up.

    When startup is finished, a message like the following is displayed:

    ```
    Open your Web browser to http://host:port/dashboard
    ```

    Where *host* is the IP address and *port* is port number where the system resides.

33. After performing the upgrade, determine if you need to apply any patches.

Silent Installation

The silent installation method automates part of the installation process and limits your manual interaction with the installation program. To use the silent installation method, you will need to first create a silent install file using a text editor (with a .txt file extension).

Create the Silent Install File for an Upgrade (UNIX/LINUX Cluster)

You need to create a silent install file using a text editor. The following entries correlate to prompts in the upgrade procedure.

Silent Install File Entry	Description
ACCEPT_LICENSE	(Required) Indicates if the user accepts the license agreement. Default: YES
JVM_LOC	(Required) Full path to JDK directory.
JCE_DIST_FILE	(Required) Full path to unlimited strength JCE policy file. If present, this file will overwrite the JCE file in the JDK. Example: /*absolutePath*/unrestrict123.zip
LICENSE_FILE_PATH	(Required) Full path to a valid license file. Example: /*absolutePath*/Full_License.xml
SI_LICENSE_AVAILABLE	(Optional) Indicates if a license is being passed in and is required for installation. Default: YES
INSTALL_DIR	(Required) The directory that includes directories like bin and properties. The INSTALL_DIR property cannot point to a pre-existing directory or the installation will fail. The path to this directory might include the following: • The installation directory that you specify during an interactive installation. • The subdirectory install. Although you can enter your own path, the /*install_dir*/install path matches the path that is created during an interactive installation.
REINIT_DB	(Required) Indicates if database should be initialized. • For a single node installation and node 1 of a cluster, this property is true. • For node 2 and higher of a cluster, this property is false. Default: true
CLUSTER	(Required) Indicates if this is the second or higher node of a cluster installation. Valid values: • true - This is the second or higher node of a cluster installation. • false (default) - This is the first node of a cluster or a single node (non-cluster) installation.
DB_VENDOR	(Required) Database vendor. Valid values: • Oracle • MSSQL2005 • DB2 • MySQL

Silent Install File Entry	Description
UPGRADE	(Required) Indicates if you are upgrading. Default: false
INSTALL_IP	(Required) Host IP address. Valid values: • localhost (default) • (your IP address) **Caution:** Before applying an IPv6 address, see *IPv6 Capabilities* section in *System Requirements* guide.If you use an IPv6 address, use a fully qualified address that includes square brackets around the address, and a zero (0) between colons where there are no other numbers. For example, use [fe80:0:0:0:213:72ff:fe3c:21bf] instead of fe80::213:72ff:fe3c:21bf. If you are installing with the IPv6 address, comment the Host Name mapping to IPv4 address and retain the mapping to IPv6 address in the host file located in `/etc/sysconfig/networking/profiles/default/ hosts` directory.You must install using a host name, not an IPv6 address, otherwise the Lightweight JDBC adapter and Graphical Process Modeler (GPM) will not work.
PORT1	(Required) Base port for ASI server. Ports are assigned consecutively from this port (for example, SSL_PORT = base port + 1, MYSQL_PORT = base port + 3). Example: 12345 Default: 8080
APSERVER_PASS	(Required) Passphrase used to secure all encrypted data in database. Default: (blank)
SI_ADMIN_MAIL_ADDR	(Required) E-mail address for the administrative user. Example: abc@xyz.com
SI_ADMIN_SMTP_HOST	(Required) Valid SMTP host through which the system can e-mail the administrative user. Example: mail.xyz.com
FIPS_MODE	(Required) Indicates if you are using FIPS (Federal Information Processing Standards) mode. Valid values: • true - Enable FIPS mode. • false (default) - Disable FIPS mode.
ORACLE_USE_BLOB	(Required if DB_VENDOR=Oracle) Indicates if you are using the BLOB data type. Default: true

Silent Install File Entry	Description
DB_USER	(Required) Database user name. Example: abcd_123_1
DB_PASS	(Required) Database password. Example: xyz
DB_DATA	(Required) Database catalog name. Example: abcd
DB_HOST	(Required) Database host name. Example: abcd Default: localhost
DB_PORT	(Required) Database port. Example: 1234
DB_DRIVERS	(Required) Full path to JDBC driver files. If DB_VENDOR is: • Oracle or MSSQL2005, specify one driver. • DB2, specify two drivers. If you specify more than one driver, use colons (:) to separate the file names. Examples: • *JDBC_driver_dir*/jdbc.jar • *JDBC_driver_dir*/db2_1_jdbc.jar:*JDBC_driver_dir*/db2_2_jdbc.jar
DB_CREATE_SCHEMA	(Required) Indicates if you want the database schema automatically created. Valid values: • true (default) - Automatically create the schema. • false - Manually create the schema. If you create the database schema manually, restart the installation procedure in a new installation directory. You can delete the installation directory created earlier.
DEBUG	(Optional) Records events that occur during the installation in InstallSI.log file. Valid values: • true - records events that occur during the installation. • false (default) - does not record the events that occur during installation.
MSSQL2005	Required for Microsoft SQL Server 2005, set this attribute to true. This attribute is case-sensitive. For all other servers, do not include this attribute.

Silent Install File Entry	Description
JDK64BIT	(Required) Indicates if a 32-bit or 64-bit JDK is being used. Valid values: • true (default) - (64-bit) • false - (32-bit) Refer to the *System Requirements* to determine the type of JDK for your operating system.
Icons	(Optional) Indicates if you want to create a desktop icon for accessing . Valid values: • true - Create a desktop icon. • false (default) - Do not create a desktop icon.

The following entries do not directly correlate to prompts. Use these entries to customize or document your installation.

Silent Install File Entry	Description
DB_DRIVERS_VERSION	(Optional) Free form version string for JDBC driver. This is informational only. Example: 8_1_5
LOAD_FACTORY_SETUP	(Optional) Indicates whether factory setup should be loaded during installation Valid values: • true (default).- loads factory setup during installation. • false - does not load factory setup during installation. Run loadDefaults command after installation. To manually set LOAD_FACTORY_SETUP to false after an installation where LOAD_FACTORY_SETUP=true (the default value), change LOAD_FACTORY_SETUP to false in sandbox.cfg file.
CONFIG_GS	(Optional) Indicates whether integration with Gentran Server should be configured. Default: No
NO_DBVERIFY	(Optional) Valid values are true/false. When set to true during installation and installservice, dbverify will not be run.

Upgrade Using the Silent Install File (UNIX/LINUX Cluster)

Before you begin:

- *install_dir* refers to the installation directory where the new software will be installed. Do not use any pre-existing directory name or an old version of the Sterling Integrator installation directory. If you do, you could inadvertently overwrite the existing installation. You should create a new installation directory before you begin the upgrade.
- *parent_install* is the directory one level above the install_dir directory.

• Ensure that the *parent_install* directory has the proper permissions set using the chmod command.

To upgrade the software using a silent installation file:

1. From the upgrade media, copy to a UNIX/Linux directory.
2. Set up your silent installation file and record its location.
3. Navigate to your working directory. For example, cd *parent_install*.
4. To start the upgrade, enter: `/absolutePath/bin/java -jar /absolutePath/ -f /absolutePath/SilentInstallFile`

   The upgrade starts. You can follow the progress of the installation on screen.

   The installation program verifies support for your operating system and JDK. It also verifies that you have enough space for the upgrade installation.

   When the upgrade of node 1 is finished, the system displays the following message:

   ```
   Installation has completed successfully.
   ```

5. Upgrade each subsequent node, from node 2 onwards.

   If you are installing nodes on separate machines, enter the same information in the silent installation file that you entered for node 1, with the following exceptions:

   • Set REINIT_DB=false. This prevents the database from being re-initialized.
   • Set CLUSTER=true

   If you are upgrading multiple nodes on the same machine, enter the same information in the silent installation file that you entered for node 1, with the following exceptions:

   • Set REINIT_DB=false. This prevents the database from being re-initialized.
   • Set CLUSTER=true.
   • Use a different installation directory for each node (the INSTALL_DIR property in the silent installation file).
   • Use an initial port number that is 200 port numbers higher or lower than the initial port number on other nodes (the PORT1 property). Each node will be configured on a different port range.

   After all the nodes are installed, proceed to the next step.

6. To start the installation of nodes 2 and higher of the cluster, enter the following command, which include paths to the JDK directory, the application jar file, and the silent installation file.

   /absolutePath/bin/java -jar /absolutePath/SI.jar -f /absolutePath/SilentInstallFile

   The installation starts. You can follow the progress of your installation on screen.

7. If you are upgrading multiple nodes on the same machine or used different base ports for node 2 and higher, do the following:
   a) Navigate to the /*install_dir*/install/properties directory of node 1.
   b) Review the multicastBasePort property in the noapp.properties_platform_ifcresources_extfile and the mcast_port property in the jgroups_cluster.properties file. Record the value of the multicastBasePort and mcast_port.
   c) Navigate to the /*install_dir*/install/properties directory of each node (from node 2 onward).

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d) Change the multicastBasePort property in the noapp.properties_platform_ifcresources_ext.in file to the value of the multicastBasePort property in the noapp.properties_platform_ifcresources_ext file in the node 1 installation.
e) Change the mcast_port property in the jgroups_cluster.properties.in file to the value of the mcast_port property in the jgroups_cluster.properties file in the node 1 installation.
f) (IPv6 only) For all nodes, change mcast_property from 239.255.166.17 to `FFFF:239.255.166.17`.
g) (IPv6 only) In the sandbox.cfg file, add `HOST_ADDR=<IPv6_hostname>`.
h) Enter for each node in the cluster:

   /*install_dir*/install/bin/setupfiles.sh

8. On each node, starting with node 1, run the command startCluster.sh nodeNumber from the /*install_dir*/install/bin directory where nodeNumber is the sequential number assigned to each node starting with 1. For example, on the first two nodes, you would run the following commands:

   Node 1

   ./startCluster.sh 1

   Node 2

   ./startCluster.sh 2

9. Enter the passphrase.

   When the cluster environment is configured, you will get the message: `Deployment to application server successful`.

10. After the cluster configuration is complete, go to the /*install_dir*/install/bin directory for each node, starting with the first node, enter:

    ./run.sh

    When prompted, enter the passphrase that you entered earlier.

    It might take several minutes for the components to initialize and start up.

    When startup is finished, a message like the following is displayed:

    ```
    Open your Web browser to http://host:port/dashboard
    ```

    Where *host* is the IP address and *port* is port number where the system resides.

11. After performing the upgrade, determine if you need to apply the latest patch.

Validate the Upgrade

Validate the System Upgrade Checklist (UNIX/Linux Cluster)

As part of the upgrade, you need to run the following tests to ensure that the software upgrade was successful. Complete the following tasks:

#	Validate the Upgrade Checklist	Your Notes
1	Verify the Cluster Environment.	
2	Configure the Nodes in the Cluster.	
3	Start the Cluster Configuration.	
4	Access the Sterling Integrator.	
5	Stop the Cluster tasks include: • Stop a Node in the Cluster (Soft Stop) • Stop a Node in the Cluster (Hard Stop) • Stop the Cluster	

Verify the Cluster Environment Settings in Property Files

To verify the cluster environment is correct, check these property settings on node 2:

1. Verify that CLUSTER=true is in the sandbox.cfg property file.
2. Verify that CLUSTER=true is in the centralops.properties property file.
3. Verify that CLUSTER=true is in the noapp.properties property file.
4. Verify that cluster_env property=true is in the ui.properties property file.

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Configure the Nodes in the Cluster

The first time you configure a cluster, you need to use the startCluster command with true option (startCluster.sh nodeNumber true). Initial configuration should be the only time you need to use the startcluster command. However. if you should need to use the command again, use the startcluster command with the false option (startCluster.sh nodeNumber false). The false option prevents any configuration changes from affecting the system, especially after installation of a patch or hot fix.

To configure the nodes, starting with node 1:

1. Navigate to /*install_dir*/install/bin.
2. Enter `./startCluster.sh <nodeNumber> <true or false>`.

   Where <nodeNumber> is the number of the node, true performs database updates and false prevents database updates. For example for node 1, enter `./startCluster.sh 1 true`.
3. If you are starting node 2 or higher, enter your passphrase.

   For node 1, you are not prompted to enter your passphrase.
4. After the cluster has started, the following message is displayed:

   ```
   BUILD SUCCESSFUL
   Total time nn minutes nn seconds
   Done with ant script
   Running setup files
   ```

   You can proceed to the next node after the command line prompt appears.

After all the nodes are configured, the following message is displayed:

```
Deployment to application server successful.
```

Start the Cluster

You need to perform this task for each node.

To start the cluster:

1. Navigate to /*install_dir*/install/bin.
2. Enter `./run.sh`.
3. Enter your passphrase.
4. The final startup processes run, concluding with the following message:

   `Open your Web browser to http://`*`host:port`*`/dashboard`

   where *host:port* is the IP address and port number where Sterling Integrator resides on your system.

   Depending on system load, it may take several minutes for the UI to be ready.
5. Record the URL address so that you can access Sterling Integrator.

Note: If you need to release all the locks in a cluster and both nodes are down, use the restart parameter for Node 1. For example:

For Node 1, enter:

```
./run.sh restart
```

For Nodes 2 and higher, enter:

```
./run.sh
```

Access Sterling Integrator

To log in to Sterling Integrator:

1. Open a browser window and enter the address displayed at the end of startup. The login page displays.
2. Enter the default user ID (`admin`) and password (`password`). The default login is at an administrative level. One of your first tasks as an administrator is to change the administrative password and to register other users with other levels of permission.

Stop a Node in a Cluster Environment (Soft Stop)

A soft stop halts the system after all the business processes finish running. In a cluster environment, you need to perform this task on each node, starting with node 1.

Running the soft stop command in a clustered environment suspends all of the scheduled business processes. It is recommended to run the hard stop command when stopping individual nodes of a cluster.

To soft stop in a UNIX or Linux environment:

- You can select **Operations > System > Troubleshooter** and click **Stop the System**.
- You can perform the soft stop from the command line interface.

To run a soft stop, from the command line:

1. Navigate to /*install_dir*/install/bin.
2. Enter `./softstop.sh`.
3. Enter your passphrase.

Stop a Node in the Cluster Configuration (Hard Stop)

You can stop a single node Sterling Integrator in an UNIX or Linux cluster environment.

To run a hard stop, perform this task for each node:

1. Navigate to /*install_dir*/install/bin.
2. Enter `./hardstop.sh`.

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Stop the Cluster

To stop the cluster:

1. From the Administration Menu, select **Operations > System > Troubleshooting**.
2. Click **Stop the System**.

Post Upgrade Configuration and Testing

Post Upgrade Configuration and Testing Checklist (UNIX/Linux Cluster)

The upgrade is complete. You need to now perform some post upgrade procedures. Review all of the procedures in the checklist. Some procedures may not be required.

#	Post Upgrade Configuration and Testing Checklist	Your Notes
1	Determine if You Need to Apply a Maintenance Patch	
2	Determine if You Need to Add a Node to the Cluster	
3	Change Default Passwords	
4	Disable Services	
5	Download Sterling Integrator Tools	
6	Determine if you need to make any changes to Network Interface Bindings	
7	Enable Business Processes	
8	Configure Property Files	
9	Configure Customer Overrides File when you have a Firewall between Nodes	
10	Add cdinterop Files	
11	Review the EDI Sequence Check Queue	
12	Configure Document File Systems	
13	Add Third-Party Libraries	

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#	Post Upgrade Configuration and Testing Checklist	Your Notes
14	Configure Services and Adapters	
15	Configure File System Adapter and Command Line2 Adapters	
16	Configure Odette FTP Adapter	
17	Add Advanced File Transfer Tab	
18	Restore Performance Tuning Configuration	
19	Reconfigure Archive Settings	
20	Correct Missing Manager ID	
21	Test Business Process Functionality	
22	Restore customer_overrides.properties File	
23	Test Trading Partner Certificates	
24	Test Inbound and Outbound Communication Channels	
25	Test Disaster Recovery/Failover Scenarios	
26	Test Your Cluster Environment	
27	Test Your Upgraded Operating System or Database	

Determine if You need to Apply a Maintenance Patch in UNIX/Linux Environment

Patches contain cumulative fixes for a specific version of Sterling Integrator. Patch files are available at:

https://customer.sterlingcommerce.com.

Because each patch contains the fixes from previous patches, you only need to install the most recent patch. Patch files are named using the following naming convention:

si_<*release number*>_build_<*build number*>.jar

Information about a patch is located in a PDF file with a similar name. The naming convention for PDF files containing information about a particular patch is:

si_<*release number*>_build_<*build number*>_patch_info.pdf

Before you install the patch, review the following items:

- Preserve your custom changes to system resources.
- The patch installation may use one or more patch property override files. These files will be named *propertyFile_patch*.properties. Do not alter these files.
- Property changes made directly in *.properties or *.properties.in files may be overwritten during the patch installation. Properties overridden using the customer_overrides.properties file are not affected. Sterling Commerce recommends that you maintain property file changes using (when possible) the

customer_overrides.properties file. For more information about this file, refer to the property file documentation.

- If you edited any of the cdinterop files, you must back them up before applying the patch. The cdinterop files do not have initialization (*.in) files. After applying the patch, use the backup version of the files in your patched installation. These files include the following files: cdinterop-proxy-records.properties; cdinterop-spoe-auth.properties; cdinterop-spoe-policy.properties; and cdinterop-user-records.properties.
- Information about the patch installation is automatically logged to /*install_dir*/install/logs/InstallService.log.
- If you would need to rollback a patch, see the *Patch Changes Report*.
- During patch installation, the dbVerify utility compares the list of standard indexes with those present in the database and drops the custom indexes. You should recreate the custom indexes after the patch installation is complete.

Node Management

You can add or remove nodes in a cluster environment. The following prerequisites should be considered before performing any modification in the cluster environment:

- New nodes should have the same range of ports available as the current nodes.
- License file should be updated to include the IP address of the new nodes.
- Directory structure on the new nodes should match with the directory structure of the existing nodes.
- Perimeter servers should be updated with the new IP addresses to ensure proper configuration.
- Any adapters, services, or business processes assigned to or scheduled to run on the node being removed should be assigned to run on other nodes.

Add a Node to the Cluster

You do not need to stop the cluster environment while adding a new node.

To add a node:

1. Install a new node to the cluster with the –cluster option during installation. Ensure that the new node being added is not a primary node.
2. Update jgroups_cluster.properties file, jgroups_cluster.properties.in, and the noapp.properties.in file with the new node details.
3. Configure the new node by running the command ./startcluster.sh nodeNumber from the /install_dir/bin directory. The node number should be greater than 1.

Remove a Node

To remove a node from the cluster:

1. Reassign or stop any adapters, services, or business processes assigned to or scheduled to run on the node being removed.
2. Perform backup of the node being removed
3. Edit jgroups_cluster.properties file and jgroups_cluster.properties.in file in all nodes to remove the IP address of the node being removed.
4. Uninstall the node being removed.

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5. Restart the cluster environment after removing the node from the cluster.

Change Default Passwords

This upgrade changes the administrative password to the default password.

For security purposes, change all default user ID passwords immediately after installation is completed. See the *Update My Account Information* task in the documentation library.

Disable Services

The upgrade process enables services that might have been disabled before the upgrade. If you want to disable these services again, you must disable them in after the upgrade process.

Download Sterling Integrator Tools

Sterling Integrator includes tools that run on a desktop or personal computer. After you install, you can install the following tools:

- Map Editor and associated standards
- Graphical Process Modeler (GPM)
- Web Template Designer
- (If licensed) MESA Developer Studio plug-ins, including, MESA Developer Studio Software Development Kit (SDK) and MESA Developer Studio Skin Editor
- If licensed) Reporting Services, which requires MESA Developer Studio if you want to use the plug-ins to create fact models and custom reports.

Conflicting IP addresses can cause problems when you download a desktop tool.

Changes to Network Interface Bindings

To increase the security of the Administrator Console User Interface, the system only binds to specific network interfaces. By default, previous versions had been bound to all network interfaces. After installing, if the URL returns the error message **Page cannot be displayed**, you can adjust property settings to correct the problem.

Update Property File for Network Interface Binding Changes

On the server where the system resides, edit the noapp.properties.in file.

1. Locate the **admin_host** parameter.

   The default settings are:

   hostname1 is the name of primary network interface, the one given highest priority by the system.

   localhost is the name of the network interface on the server where the system resides.

Default entries: admin_host.1 = hostname1 and admin_host.2 = localhost

2. Correct the parameters as necessary.
3. If no interface is being displayed, edit *hostname1* so that it correctly identifies the primary network interface that accesses the system.
4. If an additional network interface needs to access the system, add an additional *admin_host* entries.

   For example: admin_host.3 = hostname2
5. Stop Sterling Integrator.
6. Navigate to the *install_dir*.
7. Navigate to the bin directory.
8. Run the setupfiles.sh (UNIX) or setup.cmd (Windows).
9. Start Sterling Integrator.

Update Dashboard for Network Interface Binding Changes

For the Dashboard user interface, the system provides unrestricted binding to network interfaces through the perimeter server. To restrict access to the Dashboard user interface, you can adjust property settings so that only one network interface accesses the system.

On the server where the system resides, edit the perimeter.properties.in file.

1. Locate the localmode.interface parameter. The default setting is unrestricted.

   Unrestricted Setting (Default)

   localmode.interface=*
2. To restrict access to the Dashboard, enter the network interface that you want to support.

   Restricted Setting

   localmode.interface=hostname1
3. Stop Sterling Integrator.
4. Navigate to the *install_dir*.
5. Navigate to the bin directory.
6. Run the setupfiles.sh (UNIX) or setup.cmd (Windows).
7. Start Sterling Integrator.

Enable Business Processes

During the upgrade process, your customized business processes are preserved, but they may not be the default business process. Review the business processes and enable the customized versions.

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Property Files Configuration

Property files contain properties that control the operation of the Sterling Integrator. For example, the REINT_DB property in the sandbox.cfg file controls whether or not a database is initialized when you install Sterling Integrator.

By modifying the values of these properties, you can customize the Sterling Integrator to suit your business and technical needs. Most property files are in the:

- For UNIX, /*install_dir*/install/properties directory
- For Windows, *install_dir*\install\properties directory

After installing the Sterling Integrator, most property files and scripts do not need any further configuration for basic operation. However, if you want to customize any specific operations, for example setting a different logging level - you will need to edit (or in some cases, create) certain property or .xml files.

Before changing any property files, refer to Working with Property Files documentation for general information about how to work with Property Files.

Areas where you might need to make specific property files changes after an installation include:

- LDAP user authentication
- Prevention of cross-site script vulnerabilities
- Logging configuration
- Process-specific property file settings
- Securing the Interop Servlet

Configure Customer Overrides File When You Have a Firewall Between Nodes

If you have configured a firewall between nodes that blocks ports outside of the port range assigned to Sterling Integrator, perform the following task on all nodes:

1. Navigate to the */install_dir*/install/properties directory and locate (or create, if necessary) the customer_overrides.properties file.
2. Open the customer_overrides.properties file using a text editor.
3. Add the following properties:

```
noapp.jnp_host=<host_name>
noapp.jnprmiport=<port_number_1>
noapp.jnprmiport2=<port_number_2>
noapp.useSocketFactories=true
noapp.jndirmiport=<port_number_3>
ops.jnp_host=<host_name>
ops.jnprmiport=<port_number_1>
ops.useSocketFactories=true
ops.jndirmiport=<port_number_2>
ops.jnprmiport2=<port_number_3>
```

   This increases the number of threads used by the system.

4. Save and close the customer_overrides.properties file.
5. Stop Sterling Integrator and restart it to apply the changes.

Add cdinterop Files

During the upgrade, the cdinteropt files were replaced. Copy the customized version into the upgrade.

Review the EDI Sequence Check Queue

The EDI Sequence Check Queue is used for X12 and EDIFACT sequence and duplicate checking. You can check the contents of the queue through the UI (Trading Partner > Document Envelopes > EDI Sequence Check Queue). Any interchanges that are in the queue will not be able to be processed after upgrade because the EDI compliance report serialized format has changed.

If you installed the 5005 media or upgrade to 5005 and higher, the EDI Post Processor displays the following error:

```
The compliance report for interchange <interchange document ID> could not be
deserialized because the format has changed. The entry for this interchange should
 be manually removed from the EDI Sequence Check Queue through the UI, and the
inbound deenvelope workflow should be rerun (WF ID <wfid>).
```

If you receive this error, you should follow the instructions in the error message to correct the situation.

Configure Document File Systems

If you use a File System as your document storage method, determine and record the path to the File System.

You will need the File System path structure so that after the upgrade, you can copy/mount the documents to the new installation directory. The directory structure (path to the File System) must be the same in the current and in the upgraded system.

Add Third-Party Libraries

If you added third-party libraries to configure adapters for the previous release, you need to add each of the libraries again after you complete the upgrade. See the documentation for each third party adapter you use.

Configure Services and Adapters

You may need to reconfigure services and adapters after an upgrade. During an upgrade, packages for services and adapters are reprocessed to update the service configurations.

After an upgrade, the configurations of default adapters and services are re-set to their default configurations. This includes directory paths, which are restored to their default paths. You need to reconfigure those adapters and services, which include, but are not limited to:

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- All default FTP adapters
- All default SFTP adapters
- Connect:Enterprise UNIX Server Adapter
- OdetteFTP Adapter
- SAP Suite Adapter
- SWIFTNet Client Service
- SWIFTNet Server Adapter

If you modified the standard configuration for a service or adapter, you may need to reconfigure or reactivate the service or adapter following an upgrade. You may also need to reconfigure adapters that used directories or scripts in the installation directory of your previous release.

Examples of services and adapters that commonly need to be reconfigured following an upgrade include:

- Federation adapter
- FTP adapter
- System services such as the Alert service and the BP Fault Log adapter

The following adapters need special consideration following an upgrade:

- JDBC Adapter and Lightweight JDBC Adapter
- File System Adapter and Command Line2 Adapters
- Odette FTP Adapter

Configure File System Adapter and Command Line2 Adapters

You must configure your File System and Command Line2 adapters before you remove the previous release directory. Reconfigure any File System and Command Line2 adapters that were configured to use directories or scripts in the installation directory for the previous release. Ensure that you create new directories and save scripts outside of the current installation directory and edit each configuration to use the appropriate directories and scripts.

Consider the following:

- If you are using the Command Line2 adapter and have located the CLA2Client.jar file anywhere other than the default location, you must replace it with the new version. For information about the default location and how to start the Command Line2 adapter, see the *Command Line2 adapter*.
- If you are upgrading to Sterling Integrator 5.0 from a version lower than 4.0.1 and are using the Command Line2 adapter, you must update the version of the CLA2Client.jar file with the CLA2Client.jar located in the /*install_dir*/install/client/cmdline2 directory. If you installed the CLA2Client.jar file anywhere other than the default location, you must replace each copy of the file with the new version. If you only installed it in the default location, the update occurs automatically during the upgrade process.
- If you are upgrading to Sterling Integrator 5.0 from a version prior to 4.0 and are using the Command Line adapter, you must update the version of the CLAClient.jar file with the CLA2Client.jar located in the /*install_dir*/install/client/cmdline2 directory. If you installed the CLAClient.jar file anywhere other than the default location, you must replace each copy of the file with the new version. If you only installed it in the default location, the update occurs automatically during the upgrade process.

The CLA instances are now pointing to the CLA2 Service definition. After importing old service instances of CLA onto Sterling Integrator 5.0, you need to reconfigure the imported CLA services to re-set the Remote Name and Remote Port service configuration parameters. For more information, refer to the documentation for the Command Line Adapter and Command Line2 Adapter.

Configure Odette FTP Adapter

If you use the Odette FTP Adapter and are using the Partner Profile XML file version 2.00 used in Gentran Integration Suite 4.3, you must modify it to match the new Partner Profile version 3.00. To modify the XML file, refer to the following table:

Section	Name of Structure or Field	Action	Comment
Partner Profiles	<GeneralParameters> <PartnerProfileVersion>3.00 </PartnerProfileVersion> </GeneralParameters>	Use correct version label of the Partner Profile.	New Version label: 3.00
Physical Partner	Description	Add field and description content	Mandatory in OFTP Partner database
Physical Partner	SubMailbox	Add field, if used.	Optional
Physical Partner	<AuthenticationCertificate type =”…”> <Subject>string</Subject> <Issuer>string</Issuer> <Serial> Bignumber_string </Subject> </AuthenticationCertificate>	Add Structure, if used.	OFTP 2.0: Mandatory for security only. Structure may be repeated.
Physical Partner	<AuthenticationCertificate type =”Private Key”> <Subject>string</Subject> <Issuer>string</Issuer> <Serial>Bignumber_string </Subject> </AuthenticationCertificate>	Add Stucture, if used.	OFTP 2.0: Mandatory for security only.
Physical Partner/ CAPI	DWindowSize	Delete field	
Physical Partner/ IP	IPFilter		Uses IPv4 or IPv6 addresses.
Physical Partner IP	SSL	Add field, if used.	OFTP 2.0: Mandatory for security only.

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Physical Partner IP	CipherStrength	Add field, if used.	OFTP 2.0: Mandatory for security only.
Physical Partner IP	<SSLCertificate type =”…”> <Subject>string</Subject> <Issuer>string</Issuer> <Serial> Bignumber_string </Subject> </SSLCertificate>	Add structure, if used.	OFTP 2.0: Mandatory for security, only. Structure may be repeated.
Physical Partner Contract	Description	Add field and description content.	Mandatory in OFTP Partner database.
Physical Partner Contract	MultipleLoginSessions		Now used.
Physical Partner Contract	DuplicateFilePeriod	Rename DuplicateFileProcessingTestings To DuplicateFilePeriod	
Physical Partner Contract	SessionLogLevel	Add fields.	Optional
Physical Partner Contract	GroupNameList	Add fields, if used.	Optional
Physical Partner Contract	SecureAuthentication	Add fields.	OFTP 2.0: Mandatory
Physical Partner Contract	<TimeScheduleTable> ... <TimeScheduleTable>	Delete structure and create schedules in the Scheduler.	Initiator Business Process and Business Process user fields are still used.
Physical Partner Contract	OdetteFTPAPILevel	Rename OdetteAPILevel to OdetteFTPAPILevel	
Logical Partner	Description	Add field and description content.	Mandatory in OFTP Partner database.
Logical Partner	<FileServiceCertificate type =”…”> <Subject>string</Subject> <Issuer>string</Issuer>	Add structure, if used.	OFTP 2.0: Mandatory for security, only. Structure may be repeated.

	<Serial>string</Subject> </FileServiceCertificate>		
Logical Partner Contract	Description	Add field and description content.	Mandatory in OFTP Partner database.
Logical Partner Contract	FileTransmissionRetries	Rename FileTransmitRetries to FileTransmissionRetries	
Logical Partner Contract	SignedEERPRequest	Add field, if used.	
Logical Partner Contract	EERP/NERPSignatureCheck	Add field, if used.	
Logical Partner Contract	File Signing	Add field, if used.	
Logical Partner Contract	File Encryption	Add field, if used.	
Logical Partner Contract	CipherSuite	Add field, if used.	
Logical Partner Contract	File Compression	Add field, if used.	
Logical Partner Contract	CharEncoding	Add field, if used.	
Logical Partner Contract	Receive VitualFilenamePattern	Add field, if used.	
Logical Partner Contract	EERPTimeout	Rename WaitForEERP to EERPTimeout	
Logical Partner Contract	FileScheduleTimeout	Add field, if used.	
Logical Partner Contract	InboundBusinessProcess	Add field, if used.	Optional
Logical Partner Contract	InboundBusinessProcessUser	Add field, if used.	Optional, if no Inbound business process is specified.

After changing the Partner Profile for version 3.00, import the Partner Profile into the new Odette FTP Partner Profile database. For additional information, see Odette FTP Partner Profile.

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Add Advanced File Transfer Tab

The Advanced File Transfer tab will not be enabled by default after an upgrade. If you have a license for Advanced File Transfer, perform the following steps to add the Advanced File Transfer tab:

1. Log in as **Admin**.
2. Click **Manage Layout**.
3. Click **Add Pane**.
4. Enter the following name: `Advanced File Transfer`
5. Click **Apply**.
6. Click the **customize** icon for the new **Advanced File Transfer** tab.
7. Click **Add Portlet**.
8. Select the Add box for **Advanced File Transfer Management**.
9. Click **Apply**.
10. Select **Clear Borders and Title** from the Decoration menu.
11. Click **Save and Apply**.

Restore Performance Tuning Configuration

Before you begin this procedure, you need to add the Advanced File Transfer Tab.

To restore the performance tuning configuration:

1. From the **Administration Menu**, select **Operations** > **System** > **Performance** > **Tuning**.
2. Next to **Edit Performance Configuration**, click **Go!**
3. Click **Edit settings**.

Reconfigure Archive Settings

The upgrade does not automatically reconfigure the archive configuration. You must reconfigure the Backup Directory setting in Archive Manager after an upgrade.

To reconfigure your Archive settings, use the following procedure:

1. From the **Administration Menu**, select **Operations** > **Archive Manager**.
2. Next to **Configure Archive Settings**, click **Go!**
3. If a message displays about the UI Lock, click **OK** to continue.
4. Click **Next**.
5. Update the Backup Directory field with the correct path information:
6. Click **Save**.
7. Confirm the settings and click **Finish**.

Correct Missing Manager IDs

If you created a Manager ID with no corresponding User ID in your previous version, the Manager ID may be missing after upgrading. If this occurs, create a user in the system with a User ID that matches the missing Manager ID.

Test Business Process Functionality

Once upgrade is complete many of the system business processes will work out of the box. Double check their functionality and ensure they work to completion without error. Also run any custom created Business Processes that came across from your previous version of the software. You may have to manually run the business processes if the schedules are not enabled. In order to test custom Business Processes, you may need to configure communication adapters or drop files to a pickup directory. The adapter configurations may need to be updated to reflect the new system and directories and those directories may need to be created. This will be apparent in any errors arising from testing the processes.

You can use the Business Process usage page to find business processes that ran or have failed. In addition, you can review the system logs to help you determine why a business process has failed or if any other errors are thrown by the application.

Restore customer_overrides.properties File

Copy the customer_overrides.properties file from /*install_dir*/install/properties of the previous installation to /*install_dir*/install/properties of upgrade.

Test Trading Partner Certificates

Many of the partner certificates from the older software version are still in place, and valid in the upgraded instance. If the upgrade is a new installation, then the certificates can be exported/imported using the resource manager. Do not use the certificate wizard to export certificates as this generates a new certificate, which will be invalid in an already configured Business Process. Some certificates will include a common name indicating the system on which it was generated. If the hostname/IP changes, it can cause problems with certificate usage since a partner expects the data to originate from a specific host indicated in the certificate.

Because of this, it’s an essential practice to test all processes which involve certificates.

Test Inbound and Outbound Communication Channels

FTP, HTTP, and Connect Direct are examples of communication protocols which interact with the outside world. When application systems move over to new hardware, many network configurations need to change accordingly (for example, Perimeter Servers, Firewall Ports, End-To-End login and validation). All communication channels used in previous versions must be tested accordingly. This may involve contacting Trading Partners to send test data or simulating Trading Partner communication load internally from one system to another. It is important to test the simplest scenario first since many initial problems in communication are easily identifiable and may resolve communication issues not apparent in a complex process.

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Test Disaster Recovery/Failover Scenarios

Disaster Recovery and Failover is an important aspect of any 24x7 application. The mindset should always encompass a “what-if” logic for worst case scenarios and plan accordingly. At a minimum, file system and Database backups should be performed on a regular basis. It is common for network issues to arise between the application and the database or the outside world. This can be simply tested by disabling the network interface (unplugging or thru administrator tools). Consider the following questions:

- How does the system and any running Business Process’s recover under these conditions?
- Is autorecovery turned on for your important Business Process’s and do they run to completion?
- What occurs if you disable a particular adapter or you have a host file system issue?

Disaster recovery should be well tested for when failure problems occur. Alternate Sterling Integrator host and database hardware should be ready along with the proper IP Address licensing to use those systems. Sterling Integrator clusters are a good option, since they inherently handle nodes going offline for maintenance or in a disaster scenario.

Test Your Cluster Environment

The addition of a cluster node is straightforward. Many of the inter-node communication settings work fine out of the box if UDP multicasting is enabled between the nodes. Testing can be performed to ensure a cluster is behaving properly. Here are some examples:

- Run a sample business process that performs mandatory node pinning. Observe the business process steps and that they perform on the assigned node. The business process should be started from any node in the system and perform the same. Investigate if any failures occur running the step on the other node. Support can provide examples of node pinning.
- Load up a particular cluster node with many business process’s. Have a file system adapter pick up data, wait a few seconds, and drop it into another directory. Load balancing should take affect and you can use queueWatcher to see workflows being pushed to other nodes.
- Configure adapters for the ability to run on all nodes (using ‘ALL’ in the adapter configuration). Test the usage of that adapter on every node. If the adapter requires a 3rd party library, you must install that library on every node using installService.

Cluster nodes should be tested for failover too. You can bring down a particular node and test a business process or adapter for success.

Test Your Upgraded Operating System or Database

All Sterling Integrator installation environments should conform to the supported matrix which includes OS level, JDK version, and database server and driver versions. Many of these checks are done during installation or when the system is started. Do not ignore any warning message given about this subject since the system was only tested on those combinations. Review the System Requirements guide to make sure all OS or database level configurations are proper.

Monitoring of the overall system should be performed when running any kind of test and especially during performance testing. CPU utilization and file system performance can be easily observed using embedded OS tools (for example, top, iostat, netstat). Database Administrators should be on hand to observe any database issues (for example, excessive log writes, table scans, etc.).

Post Upgrade Maintenance

Installation Maintenance for a UNIX/Linux Cluster Environment

From time to time, you will need to apply either a patch or a hotfix to your Sterling Integration installation:

- All nodes in the cluster must be patched to the same level. You must stop all nodes in the cluster before installing a patch, then install the patch on each node.
- Patches contain cumulative fixes for a specific version of Sterling Integrator. Because each patch contains the fixes from previous patches, you only need to install the most recent patch. You should periodically check the web site to verify that you have the most recent patch.
- Hot-fix is one or more fixes applied to a specific existing patch.

It is possible to apply patches to nodes while other nodes are processing. However a patch containing any of the following, requires the entire cluster to be down:

- Critical cluster functionality
- Engine-related changes
- Changes to the database

You can preserve your custom changes to system resources (like workflow definitions and maps) when you update your system. During updates, the system can identify when you make a custom change versus when the system makes a change through an upgrade or patch.

When a patch, installation or upgrade is performed, a baseline record of system resources is created. This baseline is not affected by any subsequent customer changes. When another patch is installed, the resources in this baseline are compared to the resources in the existing system. If a baseline and existing resource are not the same, it means that the existing resource was customized and is not overwritten by the patch.

During an update, the baseline is updated with new system resource information, but not with custom changes to resources.

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Determine if You need to Apply a Maintenance Patch in UNIX/Linux Environment

Patches contain cumulative fixes for a specific version of Sterling Integrator. Patch files are available at:

https://customer.sterlingcommerce.com.

Because each patch contains the fixes from previous patches, you only need to install the most recent patch. Patch files are named using the following naming convention:

si_<*release number*>_build_<*build number*>.jar

Information about a patch is located in a PDF file with a similar name. The naming convention for PDF files containing information about a particular patch is:

si_<*release number*>_build_<*build number*>_patch_info.pdf

Before you install the patch, review the following items:

- Preserve your custom changes to system resources.
- The patch installation may use one or more patch property override files. These files will be named *propertyFile_patch*.properties. Do not alter these files.
- Property changes made directly in *.properties or *.properties.in files may be overwritten during the patch installation. Properties overridden using the customer_overrides.properties file are not affected. Sterling Commerce recommends that you maintain property file changes using (when possible) the customer_overrides.properties file. For more information about this file, refer to the property file documentation.
- If you edited any of the cdinterop files, you must back them up before applying the patch. The cdinterop files do not have initialization (*.in) files. After applying the patch, use the backup version of the files in your patched installation. These files include the following files: cdinterop-proxy-records.properties; cdinterop-spoe-auth.properties; cdinterop-spoe-policy.properties; and cdinterop-user-records.properties.
- Information about the patch installation is automatically logged to /*install_dir*/install/logs/InstallService.log.
- If you would need to rollback a patch, see the *Patch Changes Report*.
- During patch installation, the dbVerify utility compares the list of standard indexes with those present in the database and drops the custom indexes. You should recreate the custom indexes after the patch installation is complete.

Install a Maintenance Patch in UNIX/Linux Cluster Environment

You will need to install the patch on each node in the cluster.

To install the latest patch for Sterling Integrator in a UNIX/Linux cluster environment:

1. Navigate to https://customer.sterlingcommerce.com/user/login.aspx.
2. Login using your email address and password.
3. Download the most recent patch file for your version of Sterling Integrator and record the absolute path to the downloaded file. Do not rename the file. If you use FTP, you must use Binary mode.
4. Verify that the database server is up and ready to accept connections.
5. Stop Sterling Integrator.
6. Perform a full backup of the Sterling Integrator installation directory, including all subdirectories.

7. Perform a backup of the database.
8. If you edited any property files, ensure that the associated properties.in files have the most current changes. Property files will be overwritten with the contents of the associated properties.in files during the patch installation.
9. Is the database password encrypted? If Yes, decrypt the password.
10. Navigate to the bin directory where Sterling Integrator is installed. Enter:

    `cd /install_dir/install/bin`
11. Enter:

    `./InstallService.sh <path>/si_<release number>_build_<build number>.jar`

    If the patch attempts to modify the database schema and the modification fails, you will receive an error message about the failure. The message will provide the error message code from the database and the SQL command that failed. The failure information is also logged to the system.log file (in the /*install_dir*/install directory) and to the patch.log file.
12. Press **Enter** to continue.
13. If you want to accept the license agreement, enter `Y`.
14. Enter the passphrase.

    Information about the patch is displayed. After the patch has been applied, the following message is displayed: Deployment to application server successful
15. If you decrypted the database password, re-encrypt the password.
16. Enter `./startCluster.sh 1` to reconfigure the cluster after installing the patch.
17. Start Sterling Integrator.

    If you are using a perimeter server in the DMZ, you will to need to review the information on how to apply a patch to the perimeter server.

Preserve Custom Configuration Changes in the Cluster Environment (startCluster.sh)

As part of a default cluster configuration, certain values in the database for service or adapter configurations, and default document storage, need to be updated to get the cluster working. The default settings do not include a shared or mounted file system with a line of sight from all cluster nodes. Certain service or adapter configurations are forcibly deployed on node 1 and the default document storage type is set up to "Database" for all business processes.

To keep these custom configuration changes from being overwritten, you can run the following cluster configuration script:

```
./startCluster.sh nodeNumber true/false
```

Where:

- nodeNumber is the cluster node number
- True performs database updates (True is the default)
- False prevents database updates

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The first time you configure a cluster, you need to have the option set to true. After the first configuration, you can use the false option. The false option prevents any configuration changes from affecting the system, especially after installation a patch or hot fix.

Applying a critical fix pack (stopping the whole cluster)

You will need to install the patch on each node in the cluster. To apply a critical fix pack, where the entire cluster needs to be down:

1. Stop the cluster.
2. Navigate to `/`*`install_dir`*`/install/bin`.
3. Enter the following command for each node, starting with node 1: `./InstallServices.sh fixpack_dir/fixpackFilename.jar` .
4. Open the `sandbox.cfg` file and change REINT_DB as follows:
   - For node 1, REINT_DB=True
   - For node 2 or higher, REINT_DB=False, this prevents the database updates from repeating during the fix pack installation on each node.
5. Configure the node in the cluster, enter `./startCluster.sh nodeNumber false`
6. Start the cluster.

Apply a critical fix pack (stopping one node at a time)

To apply a fix pack, where the you stop one node at a time:

Caution: Only use this update method if there are no database changes in the fix pack. Check the release notes for each fix pack for this information.

1. Starting with node 1, navigate to `/`*`install_dir`*`/install/bin/`.
2. Stop the node.
3. After the processes stop, enter the following command `./InstallServices.sh fixpack_dir/fixpackFilename.jar`.
4. Navigate to `/`*`install_dir`*`/install/properties`.
5. Open the `sandbox.cfg` file and change REINT_DB as follows:
   - For node 1, REINT_DB=True
   - For node 2 or higher, REINT_DB=False, this prvents the database updates from repeating during the fix pack installation on each node.
6. Configure the node in the cluster, enter `./startCluster.sh nodeNumber false`.
7. Repeat steps 1 to 6 for each node.

Applying a critical fix pack (stopping the whole cluster, starting one node at a time)

You must install the fix pack on each node in the cluster. To apply a critical fix pack, where the entire cluster must be down:

1. Stop the entire cluster.
2. Starting with node 1, do the following for each node:
    1. Navigate to `/install_dir/install/bin`.
    2. Enter the following command for each node, starting with node 1: `./InstallServices.sh fixpack_dir/fixpackFilename.jar`
    3. Open the `sandbox.cfg` file and change REINT_DB as follows:
        - For node 1, REINT_DB=True
        - For node 2 or higher, REINT_DB=False, this prvents the database updates from repeating during the fix pack installation on each node.
    4. Configure the node in the cluster, enter `./startCluster.sh nodeNumber false`.

Install a Hot-Fix in UNIX/Linux Cluster Environment

After you install the Sterling Integrator you may need to install a hot-fix. A hot-fix is one or more fixes applied to a specific existing patch. In a cluster environment, you need to apply the hot-fix to node 1 first and then to the subsequent nodes.

Before you can install a hot-fix developed for your company, you must have completed the following:

- Received the file name of the ccaseid.jar to install from Sterling Commerce Customer Support
- Created a full backup of the Sterling Integrator
- Created a full backup of your database
- Preserve your custom changes to system resources.

To install a hot-fix:

1. Log in to the computer that you are installing the hot-fix on.
2. If the database password was encrypted, decrypt the password.
3. Enter `ftp theworld.stercomm.com.`
4. Enter your user name and password. If you do not know your user name and password, contact Sterling Commerce Customer Support.
5. Enter `bin` and press **Enter** to select Binary as your transfer mode.
6. At the FTP prompt, enter `get ccaseid.jar`, where *ccaseid* includes the ID number you received from Customer Support.
7. Stop the Sterling Integrator.
8. Navigate to /*install_dir*/install/bin.
9. Enter `./installService.sh` */absolutePath*/*ccaseid*.jar to install the hot-fix.

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You may need to complete this step twice depending on the patch. Read the output from the InstallService.sh script carefully to see if you need to complete this step twice.

10. If you decrypted the database password, re-encrypt the password.
11. Start the Sterling Integrator.
12. In the /*install_dir*/install/bin directory, enter `./dump_info.sh` to verify that the hot-fix was successfully installed.
13. After installing the hot-fix in node, enter `./startCluster.sh nodeNumber` to configure the node.
14. After node 1 is completed, open the sandbox.cfg file and change REINT_DB to false.
    False prevents the database updates from repeating on each node's patch installation.
15. Repeat steps 1 to 13 for the remaining nodes.

DB Checksum Tool

A checksum is a simple redundancy check used to detect errors in data. The DB Checksum tool, a resource difference tool generates a granular report of the changes in the system that was not permitted to be set as defaults.

The DB Checksum tool generates the difference in resource checksum between the default resource and the latest system resource from the database.

Perform a Checksum

To run the DB Checksum tool:

1. Navigate to /*install_dir*/install/bin.
2. Enter:

   ./db_checksum_tool.sh [-d] [-i [1 | 2 | 3 | 4 | 5]] [-r [wfd | map | schema | sii | template]] [-o <output file>] [-g]

   Where:

   -d is the mode to dump the difference of resource checksum between the default resource and latest system resource.

   -i is the resource type integer (optional).

   1 is WFD.

   2 is MAP.

   3 is SCHEMA.

   4 is SII.

   5 is TEMPLATE.

   -r is the resource name (optional). For example, wfd, map, schema, sii, or template.

   -o is the file name to output all the messages (optional).

-g is the file name that lists all the ignored resources (optional).

-h is the help screen.

The DB Checksum tool performs the relevant checksum operation based on the command options and generates the output message.

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Uninstall the Software in a Cluster Environment

Uninstall the Sterling Integrator from a UNIX/Linux Cluster Environment

When you uninstall the Sterling Integrator, the Sterling Integrator is automatically removed from the server.

Additionally, you may perform the following tasks:

- Manually remove the JDK that was installed
- Manually remove any desktop tools that were downloaded
- Free any database space in Oracle, Microsoft SQL Server, or DB2 databases

To uninstall the Sterling Integrator from a UNIX/Linux cluster environment, perform the following procedure on each node, starting with node 1:

1. Stop the Sterling Integrator and wait for shutdown to complete. If you begin removing files before all business processes and the Sterling Integrator are stopped, you may be unable to remove the Sterling Integrator successfully.

   To stop the Sterling Integrator, navigate to /*install_dir*/install/bin and run the following command:

   ```
   ./hardstop.sh
   ```

2. Back up the file system and database.

   This step is optional. However, by backing up the file system and database, you are ensured that the Sterling Integrator is completely recoverable.

3. Remove the installation directory by entering the following command in the parent directory of your installation directory:

   ```
   rm -rf install_dir
   ```

4. If you use an Oracle, Microsoft SQL Server, or DB2 database, these remain intact even after you remove the Sterling Integrator from the server. If you no longer want to reference the data, contact your database administrator about removing unwanted tables and recovering the database space where the Sterling Integrator used to reside.
5. (Optional) To remove the JDK, review and perform the uninstall procedure for the JDK you are using.

6. After you remove the Sterling Integrator from the server, you can remove Eclipse, and any tools that were downloaded to the desktop, including the following:
   - Map Editor and associated standards

     Refer to the *Map Editor Guide* for information about removing the Map Editor.
   - Graphical Process Modeler

     Refer to the *Graphical Process Modeler Guide* for information about removing the Graphical Process Modeler.
   - Web Template Designer

     Refer to the *Web Extensions Guide* for information about removing the Web Template Designer.
   - (If licensed) MESA Developer Studio plug-ins, including:
     - MESA Developer Studio Software Development Kit (SDK)
     - MESA Developer Studio Skin Editor

     Refer to the *MESA Developer Studio* guide for information about removing MESA Developer Studio.
   - (If licensed) Reporting Services, which requires MESA Developer Studio if you want to use the plug-ins to create fact models and custom reports.

     Refer to the *MESA Developer Studio* guide for information about removing Reporting Services.

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User Documentation

Access the Online Documentation

You can also access the Documentation site by opening your Internet browser and entering the following URL:

http://www.sterlingcommerce.com/Documentation/SI50/homepage.htm

After you are in the documentation library, you can:

- Enter a word or phrase and search the entire library for information.
- Move through a hierarchy of contents pages to identify the topic you want to read or print.
- Print topics by using your browser's Print function.
- Download entire documents in PDF format. To download PDF documents, click the Documentation in PDF Format link from the main online documentation page.

To access the Documentation site from within Sterling Integrator or one of its tools, select the Help  icon. The application must reside on a computer that supports Internet access and an Internet browser.

Troubleshooting Tips

Troubleshooting Tips for Cluster Environment

Situation	Message or Symptom	Explanation/Resolution
Installing	You encounter errors or problems during installation.	**Explanation** The installation creates several log files that you can use to diagnose problems like the failure of an installation. **Resolution** Examine the log files generated during installation: • ant.install.log (in the *parent_install* directory) • /*install_dir*/PreInstallSI.log • /*install_dir*/InstallSI.log
Installing	When you entered an absolute path during installation, a message indicated that the command was not found.	**Explanation** You entered an incorrect path. Check the information entered. **Resolution** Enter the correct path.
Installing	The license file cannot be found.	**Explanation** • You did not obtain the license file. • The license file is corrupt. • You downloaded the license file to a PC but have not moved it to the server. **Resolution** You need to obtain the license file. If the license file resides on a PC, save the license file to the server.
Installing a desktop tool or resource	Cannot download any of the following: • Map Editor and associated standards	**Explanation** When you install the Sterling Integrator, system files are created that contain an internal IP address. If you install the Sterling Integrator behind a firewall, and your firewall is configured to

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Situation	Message or Symptom	Explanation/Resolution

	• Graphical Process Modeler
	• Web Template Designer
	• (If licensed) MESA Developer Studio plug-ins, including:
	  • MESA Developer Studio Software Development Kit (SDK)
	  • MESA Developer Studio Skin Editor
	• (If licensed) Reporting Services, which requires MESA Developer Studio if you want to use the plug-ins to create fact models and custom reports.
		accept an external IP address from a client computer, you may not be able to download the desktop tools and resources. The firewall will reject the internal IP address from a client residing outside of the firewall.
		Resolution
		Modify the system files that contain the invalid IP address. Follow these steps:
		1. Navigate to */install_dir*/install/bin.
		2. Enter the following command followed by the external IP address:
		`./patchJNLP.sh external_IP_address`
		3. Stop the Sterling Integrator.
		4. Restart the Sterling Integrator.

Installing	Memory and ulimit errors.	**Explanation** The installation fails with memory and ulimit errors. **Resolution** • Refer to the *Viewing and Editing Performance Configuration Settings* in the *Performance Management* documentation. Modify your memory setting accordingly. • Refer to the *Operating System Configuration Checklist* and tune the ulimit settings.
Accessing the URL	Attempts to access the URL for Sterling Integrator display the message: Page cannot be displayed	See the information on *Changes to Network Inteface Bindings* to update either the property file or the dashboard.
Node status on a dual-stack machine	Displays **Node went down** status in Node Status page, but the node is up and running.	**Explanation** Sterling Integrator is configured using an IPv4 address on a dual-stack machine. The Node Status page displays Node went down status, but the node is up and running. **Resolution** Modify the noapp.properties and jgroups_cluster.properties.in files by performing the following: 1. Identify the IPv6 address of the host machine from the /etc/hosts file. 2. Navigate to the /install_dir/properties directory. 3. Edit noapp.properties.in file and add the IPv6 address: admin_host.2 = <IPv6 address> 4. Edit jgroups_cluster.properties.in and modify the following: &HOST_NAME=<IPv6 address> mcast_addr=FFFF::<IPv4 address 5. Run the ./setupfiles.sh script to apply the changes.

Situation	Message or Symptom	Explanation/Resolution
Installing (HP-UX 11.31)	When entering your email address the @ key is not recognized.	**Explanation** The @ key is being mapped to kill or eol, it needs to be mapped to another character. **Resolution** This resolution only applies to HP-UX 11.31. Map the @ key to another character. Note: If you need want to see what the key is mapped to, use the stty -a command.
Cluster Installation	Cluster is not working properly and your machine is running dual-stack - ipv4 and ipv6.	**Explanation** You can see the node went down from User Interface, but the node is running. **Resolution** • Find your ipv6 address in the /etc/hosts file and update noapp.properties.in file admin_host.2 = <ipv6_address>. • Edit jgroups_cluster.properties.in file and replace &HOST_NAME with the ipv6 address string and change mcast_addr=FFFF::239.255.166.17. • Enter setupfiles.sh.

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