

Sterling B2B Integrator



# UNIX/Linux Cluster Environment Installation

*Version 5.2.0 - 5.2.2*



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**Note**

Before using this information and the product it supports, read the information in "Notices" on page 87.

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## UNIX/Linux Cluster Environment Installation (5.2.0 - 5.2.2)

You may follow different installation and upgrade scenarios when you install and upgrade Sterling B2B Integrator in a UNIX/Linux Cluster environment.

Use the guide to install Sterling B2B Integrator in a UNIX/Linux cluster environment.

### Installation Scenarios for Version 5.2.1 and 5.2.2

It is important to review the following installation scenarios:

Scenario	Instructions
Version 5.2.0 is installed as the base release and it needs to be patched to the 5.2.1 level.	Use the <i>Install Version 5.2.1 or 5.2.2 as a Patch</i> instructions provided in the <i>Install the Software</i> chapter.
Version 5.2.1 is being installed as the base release.	You will need to review this document and use the installation instructions in the <i>Install the Software</i> chapter.
Version 5.2.1 is installed as the base release and it needs to be patched to the 5.2.2 level.	Use the <i>Install Version 5.2.1 or 5.2.2 as a Patch</i> instructions provided in the <i>Install the Software</i> chapter.
Version 5.2.2 is being installed as the base release.	You will need to review this document and use the installation instructions in the <i>Install the Software</i> chapter.

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### Prerequisite Knowledge for Installation

Before you begin the installation, you should be knowledgeable on the following topics:

- Application servers
- Operating system on which you plan to install
- Database administration
- VI or another text editor
- System Requirements for this release.

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### Intended Audience

This document is intended for use by:

- System Administrators
- Installation Engineers
- Database Administrators.

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### Assumptions for this Guide

The procedures in this guide are accurate as of the publication date and are specific to this version of the document.

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## Prepare Your System for Installation

### Before you begin the installation

Before you begin the software installation:

- Perform some system verification tasks
- Perform some operating system verification tasks
- Download the correct version of the JDK, JCE, and JDBC drivers required. See the System Requirements for information about how to download the correct version of each.

### System verification tasks

Before you begin an installation, you must:

#	System Verification Tasks	Your Notes
1	Use the <i>System requirements</i> guide to verify that your system hardware and software meet the requirements that are specified for this release.  For HP, you must run the HP JConfig utility to obtain the required patches and kernel modifications.	
2	Verify that the file system has adequate free disk space.	
3	The following must be verified: <ul style="list-style-type: none"><li>• An operating system user account exists on the host server.</li><li>• User account has permissions to run the commands for the operating environment.</li></ul>	
4	Verify that your database was installed and configured. For more information, see <i>Configure the database</i> .  If you are going to manually apply DDL statements, you must complete the database schema work before you begin the installation.	
5	If you are using a non-English-language environment, confirm that you are using the appropriate character set.	

### Operating system verification

Before you begin the installation, you must verify your operating system configuration, by using the following checklist:



For the Operating System	Operating System Configuration Checklist	Your Notes
HP-UX Operating System	Establish these settings: <ul style="list-style-type: none"> <li>• Verify kernel parameters and establish the following minimum settings by running the kctune command:               <ul style="list-style-type: none"> <li>– kctune max_thread_proc 1024</li> <li>– kctune maxdsiz 2147483648</li> <li>– kctune maxdsiz_64bit 8589934592</li> <li>– kctune maxssiz 369098752</li> <li>– kctune maxssiz_64bit 536870912</li> </ul> </li> <li>• Run the ulimit utility, verify, and establish the following minimum settings:               <ul style="list-style-type: none"> <li>– ulimit -d = 2097152 KB or higher</li> <li>– ulimit -s = 360448 KB or higher</li> </ul> </li> </ul>	

For the Operating System	Operating System Configuration Checklist	Your Notes
AIX Operating System	<p>To ensure that <code>/install_dir/install</code> has the necessary permissions, AIX users must run the following command on the parent directory of <code>/install_dir/install</code> before installation:</p> <pre>chmod -R a-s &lt;absolute path&gt;/install_dir_parent</pre> <p>where <code>install_dir_parent</code> is the directory in which <code>/install_dir/install</code> is created.</p> <p>For example, to specify <code>AIX_1/applications/test1/my_install</code> as your installation directory, run the command from the <code>AIX_1/applications</code> directory (directly above the <code>test1</code> directory):</p> <pre>chmod -R a-s test1</pre> <p>or from another location on the file system:</p> <pre>chmod -R a-s /AIX_1/applications/test1</pre> <p>This command ensures that when the <code>my_install</code> directory is created during installation, it inherits the correct permissions from <code>test1</code>.</p> <p>The <code>ncargs</code> value specifies the maximum allowable size of the ARG/ENV list (in 4K byte blocks) when <code>exec()</code> subroutines are run. Set <code>ncargs</code> value to 16 or higher.</p> <p>To display the current value of <code>ncargs</code>, enter <code>lsattr -El sys0 -a ncargs</code>.</p> <p>To change the current value of <code>ncargs</code>, enter <code>chdev -l sys0 -a ncargs=NewValue</code>.</p> <p><b>Note:</b> The <code>lsattr</code> command options are <code>-El</code> (lowercase L) and the <code>chdev</code> command options are <code>-l</code> (lowercase L).</p> <p>Change the following default entries in the <code>/etc/security/limits</code> file:</p> <ul style="list-style-type: none"> <li>• <code>fsize = -1</code></li> <li>• <code>core = 2097151</code></li> <li>• <code>cpu = -1</code></li> <li>• <code>data = 262144</code></li> <li>• <code>rss = 65536</code></li> <li>• <code>stack = 65536</code></li> <li>• <code>nofiles = 4096</code></li> </ul>	

For the Operating System	Operating System Configuration Checklist	Your Notes
Linux Operating System	<p>You must disable SELinux by entering the following entry:</p> <pre>/etc/sysconfig/selinux: SELINUX=disabled</pre> <p>Ensure that <code>/etc/hosts</code> has short-names first for all entries. For example, 127.0.0.1localhostlocalhost.localdomain</p> <p>If the base locale is English, verify:</p> <ul style="list-style-type: none"> <li>• LANG variable is en_US</li> <li>• LANG variable is exported</li> </ul>	
RedHat Enterprise Linux Operating System	<p>Make the following system changes:</p> <ul style="list-style-type: none"> <li>• If the base locale for the system is English, edit the <code>/etc/sysconfig/i18n</code> file by changing the <code>SUPPORTED</code> variable from <code>en_US.utf8</code> to <code>en_US</code>. You can also allow multiple support with the following format: <code>en_US.utf8:en_US</code></li> <li>• Save and close the <code>/etc/sysconfig/i18n</code> file.</li> <li>• Edit the <code>/etc/security/limits.conf</code> file by adding the following lines: <ul style="list-style-type: none"> <li>– * hard nofile 8196</li> <li>– * soft nofile 4096</li> <li>– * hard memlock 3000000</li> <li>– * soft memlock 3000000</li> <li>– * hard nproc 16000</li> <li>– * soft nproc 16000</li> <li>– * hard stack 512000</li> <li>– * soft stack 512000</li> </ul> </li> </ul> <p>This change updates the system ulimits. For nofile, set the value to unlimited.</p> <ul style="list-style-type: none"> <li>• Save and close the <code>/etc/security/limits.conf</code> file.</li> <li>• Restart the system.</li> </ul>	
Solaris Operating System	<p>Set the following entries in the <code>/etc/security/limits</code> file:</p> <pre>nofiles = 4096 (set this value to unlimited) set rlim_fd_max=4096 (limit is 65535) - hard limit set rlim_fd_cur=4096 - soft limit</pre> <ul style="list-style-type: none"> <li>• To make the setting effective as the hard limit, restart the server or run the following command: kill -1 inetd</li> <li>• To make the setting effective as the soft limit, use the parent shell configuration (for example, <code>.profile</code>). Then, restart the server.</li> </ul>	

For the Operating System	Operating System Configuration Checklist	Your Notes
SUSE Linux Operating System	<p>Make the following system changes:</p> <ul style="list-style-type: none"> <li>• If the base locale for the system is English: <ul style="list-style-type: none"> <li>– for the individual user edit the <code>\$HOME/.i18n</code> file by setting <code>export LANG="en_US"</code>.</li> <li>– for a system-wide change edit the <code>/etc/sysconfig/language</code> file by setting <code>RC_LANG="en_US"</code>. You must also set <code>ROOT_USES_LANG="yes"</code>.</li> </ul> </li> <li>• You can also allow multiple support with the following format: <code>RC_LANG="en_US.utf8:en_US"</code></li> <li>• Save and close the file. Language settings will take effect on your next session.</li> <li>• Edit the <code>/etc/security/limits.conf</code> file by adding the following lines: <ul style="list-style-type: none"> <li>– <code>* hard nfile 8196</code></li> <li>– <code>* soft nfile 4096</code></li> <li>– <code>* hard memlock 3000000</code></li> <li>– <code>* soft memlock 3000000</code></li> <li>– <code>* hard nproc 16000</code></li> <li>– <code>* soft nproc 16000</code></li> <li>– <code>* hard stack 512000</code></li> <li>– <code>* soft stack 512000</code></li> </ul> <p>This change updates the system ulimits. For nfile, set the value to unlimited.</p> </li> <li>• Save and close the <code>/etc/security/limits.conf</code> file.</li> <li>• Restart the system.</li> </ul>	

## Verifying that your system meets the system requirements

Before you begin the installation, verify that your system meets the hardware and software requirements that are specified for this release. The hardware requirements that are listed in the *System Requirements* are the minimum that is required. Your system requirements exceed the minimum if you are running other applications on the same system as Sterling B2B Integrator.

The installation strictly enforces the following system requirements:

- Operating system version must match requirement exactly.
- The minimum fix pack level for the operating system is enforced, but you can apply higher fix pack levels.
- JDK version must match requirement exactly.
- The disk space is a minimum for the installation. The system must be separately sized to handle whatever load is going to be put on the system.
- Database version must match exactly.
- JDBC driver version supports exact matches and wildcard matches.

If any of these requirements are not met, the installation fails. If the installation fails, review the installation log for a list of non-compliant items.

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## Configure the Database

### Supported Database Servers in a Cluster Environment

In a UNIX/Linux cluster environment, Sterling B2B Integrator can support the following databases:

- Oracle®
- DB2
- Microsoft SQL Server - In this document, where ever Microsoft SQL Server (MSSQL) is mentioned, it applies to both 2005 and 2008 depending on which version you have installed. If the information is specific to one version or the other version, the version is specifically stated.

Only a non-clustered installation can use the MySQL database. See *System Requirements* for supported version information.

You must install, create, and configure a database so that each Sterling B2B Integrator instance has a dedicated schema and login for the database.

### Database Information You Need Before You Install Sterling B2B Integrator in a Cluster Environment

Before you begin to install Sterling B2B Integrator, you need to install and configure your database. Review and gather the following information. An “x” indicates the information is required.

Information to Gather	Oracle	DB2	Microsoft SQL Server	Record Information Here
Application Instance Host				
Application Instance Port				
Database User Name	x	x	x	
Database Password	x	x	x	
Database Catalog Name	x	x	x	
Database Host	x	x	x	
Database Port	x	x	x	
JDBC Driver #1	x	x	x	
JDBC Driver #2		x		
Use BLOB data?	x		x	
Enable Multibyte Support?	x	x	x	

### Database Sizing and Capacity Planning

Database sizing is designed to give you estimates of the database growth and to assist in planning the disk requirements.

There are many factors to consider when estimating the amount of disk space that will be required for Sterling B2B Integrator. As a result, trying to consider all growth factors is impractical because the user may not know the answers to many questions that are required to do a detailed forecast. Over the years the cost of disks has dramatically decreased, and the capacity and speed of disks has increased. The method of how information system managers order disk capacity

has also changed, from purchasing disk arrays that are dedicated to a particular database server and project, to the concept of SANS (Storage Area Networks).

Sterling B2B Integrator provides a methodology to estimate your initial disk requirements. Consider the confidence that you have in your data estimates when making the final purchase decision and adjust accordingly. After the initial purchase and production deployment, disk growth should be tracked for future purchase forecasts.

You should track your actual database storage usage and the number of database records regularly. Correlating these two metrics enabled you to plan your future disk requirements. Moreover, determining the average amount of space used for each order line or shipment line, enables you to accurately predict your future growth requirements.

## Database Definition Language (DDL) Statements

When you install Sterling B2B 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 feature increases database security by reducing the database permissions of the Sterling B2B 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.

## Configure the DB2 Database

### DB2 Database Configuration Checklist

Before you begin:

- If you do not have DB2 installed, follow the procedures in the DB2 Installation manual.
- The installation script creates tables and indexes. Certain tables require a page size of 32K. You should have a temporary table space to accommodate such tables. DB2 automatically places tables and indexes in the available table spaces using its internal logic. You can move the tables to a different tablespace after the installation is complete.
- If you are reinstalling the software, be aware that data in your existing database will be deleted. To prevent this, either back up the existing database or save it under a different name.
- After creating and configuring your database, recycle the database. Then stop and restart to apply the changes.

Use the following checklist to configure DB2 for Sterling B2B Integrator:

#	DB2 Database Configuration Checklist	Your Notes
1	<p>Create the database.</p> <p>Refer to the DB2 documentation on creating the database, including creating a schema repository, login, and tablespace.</p> <p>Be sure to install the correct version and patches. See System Requirements for supported version information.</p>	

#	DB2 Database Configuration Checklist	Your Notes
2	Install Client Components, Compilers, and Fix Pack.	
3	Review the DB2 Parameters.	
4	Ensure the DB2 User Privileges are set.	
5	Install JDBC Drivers for DB2.	

## DB2 database user privileges

The DBADM role is required for administrative operations in the DB2 database.

## DB2 parameters

When you install Sterling B2B Integrator with the DB2<sup>®</sup> database, you must set certain DB2 parameters. Other DB2 parameter settings are recommended for the efficient performance of Sterling B2B Integrator.

When you install Sterling B2B Integrator with DB2, you must set the DB2 parameters that are listed in the following topics:

- Mandatory settings for IBM<sup>®</sup> DB2 registry variables
- Mandatory settings for DB CFG parameters

After you install Sterling B2B Integrator with DB2, you can improve the DB2 database performance by setting the recommended parameters that are listed in the performance documentation for the following items:

- DB2 registry variables
- DBM CFG parameters
- DB CFG parameters
- DB2 9.7
- DB2 for Linux on System z<sup>®</sup> (5.2.4.0 or later)
- DB2 for LUW configuration and monitoring

### Mandatory settings for IBM DB2 registry variables:

Mandatory IBM DB2 registry values are critical for IBM DB2 performance with Sterling B2B Integrator.

Variable	Mandatory value
DB2_SKIPDELETED	<p>ON</p> <p>Allows index-range queries or table-scan queries to skip records that are in an uncommitted delete state. This reduces the amount of lock contention from Read Share and Next Key Share locks from range queries in tables with a high frequency of deletes.</p> <p>When enabled, DB2_SKIPDELETED allows, where possible, table or index access scans to defer or avoid row locking until a data record is known to satisfy predicate evaluation. This allows predicate evaluation to occur on uncommitted data.</p> <p>This variable is applicable only to statements using either Cursor Stability or Read Stability isolation levels. For index scans, the index must be a type-2 index. Deleted rows are skipped unconditionally on table scan access while deleted keys are not skipped for type-2 index scans unless DB2_SKIPDELETED is also set.</p> <p>Recommended value: ON</p>
DB2_SKIPINSERTED	<p>ON</p> <p>Allows SELECTs with Cursor Stability or Read Stability isolation levels to skip uncommitted inserted rows. This reduces record lock contention on tables with heavy insert rates.</p>

#### Mandatory settings for DB CFG parameters:

For optimal performance, certain parameters and values are mandatory for DB2 9.x.

Parameter	Mandatory value
Database Code Set	UTF-8

## Install DB2 Client Components, Compilers, and Fix Pack

### About this task

Sterling B2B Integrator uses stored procedures for DB2. You must install or set up the following components:

#### Procedure

1. Install the Administration client.
2. Install the necessary fix pack after you install the client components and compilers. Otherwise, the clients will overwrite the fix pack binaries.
3. Set the path for the compiler by using the **db2set** command.

#### What to do next

For more information about these tasks, see the IBM documentation.



## Install JDBC Drivers for DB2

### About this task

For DB2, install the appropriate DB2 JDBC Type 4 driver and any correlating patches. See *System Requirements* for supported version information.

You can obtain these files from the IBM Web site. After you obtain this JDBC driver, record the absolute path to its location on your system. You must supply this absolute path during installation.

If the JDBC driver provided by your database vendor is distributed among multiple files, you must place all the files that comprise the JDBC driver into one .jar file. Follow these steps to create one .jar file:

### Procedure

1. Identify all the vendor database jar files for the JDBC driver.
2. Record the absolute path to the .jar file you created on the Preinstallation Checklist.

The type-4 driver does not require a separate Java listener running on the database server. Instead, connect directly to the DB2 port.

## Configure the Oracle Database

### Oracle database configuration checklist

#### About this task

You can use an Oracle database for maintaining information with Sterling B2B Integrator.

Before you begin:

- If you are reinstalling the software, be aware that data in your existing database is deleted. To prevent the data from being deleted, either back up the existing database or save it under a different name.
- After you create and configure your database, recycle the database. Then, stop and restart to apply the changes.

Use the following checklist to configure Oracle for Sterling B2B Integrator:

#	Oracle database configuration checklist	Your Notes
1	Create the database.  Refer to the Oracle documentation on creating the database, including creating a schema repository, login, and table space.  Be sure to install the correct version and patches.  See <i>System requirements</i> for supported version information.	
2	Configure an Oracle instance.	
3	Configure Oracle rollback.	
4	Install the Oracle JDBC driver.	

#	Oracle database configuration checklist	Your Notes
5	Enable failover in a multiple node Oracle RAC database cluster.	
6	<p>After Sterling B2B Integrator is installed, if you want to encrypt the data traffic, do one of the following tasks:</p> <ul style="list-style-type: none"> <li>• Configure Sterling B2B Integrator for data traffic encryption</li> <li>• Configure Sterling B2B Integrator for data traffic encryption with SSL</li> </ul>	

## Configuring an Oracle instance

### About this task

Before beginning:

- You must have the Oracle database installed. Ensure that you installed the correct versions and patches. See *System Requirements* for supported version information.
- Ensure that the user responsible for creating and modifying the Oracle database has a specified quota (extent) assigned in the tablespace, even if the user was assigned an unlimited tablespace. Otherwise, the installer can throw the error *ORA-09150: no privileges on tablespace name*.

To configure the Oracle database:

### Procedure

1. Run the create instance procedure. Use AL32UTF8 as the character set.
2. Configure the INIT<INSTANCE\_NAME>.ORA file. The following parameter settings are required:

Parameter	Parameter Definition	Value
OPEN_CURSORS	Number of open cursors	Greater than or equal to 2000
SHARED_POOL_SIZE	Shared pool size	Greater than or equal to 90000000
LARGE_POOL_SIZE	Large pool size	Greater than or equal to 614400
JAVA_POOL_SIZE	Java pool size	Greater than or equal to 20971520
PROCESSES	Number of processes	Greater than or equal to 500  Must be greater than the number of connections that are required by Sterling B2B Integrator (sum of transactional or local and NoTrans pools in <code>jdbc.properties</code> ), and operational management tools.
LOG_BUFFER	Log buffer	Greater than or equal to 163840
DB_BLOCK_SIZE	Database block size	Greater than or equal to 8192
	Maximum extends	Unlimited
	Character set	AL32UTF8
NLS_LENGTH_SEMANTICS	NLS Length semantics	CHAR  When you change the multi-byte character set to CHAR, Oracle reserves space equivalent to "n" characters, which is more than "n" bytes.

Parameter	Parameter Definition	Value
SGA_MAX_SIZE	SGA maximum size	1 GB to <i>n</i> GB, depending on the amount of physical memory on your database server. If the server is running only this database, up to 80% of physical memory.
SGA_TARGET	SGA components total size	1 GB to <i>n</i> GB, depending on the amount of physical memory on your database server. If the server is running only this database, up to 80% of physical memory.
PGA_AGGREGATE_TARGET	PGA target aggregate memory	1 GB to <i>n</i> GB, depending on the amount of physical memory on your database server. If the server is running only this database, up to 80% of physical memory.
cursor_sharing	Cursor sharing	exact
timed_statistics	Timed Statistics	true
optimizer_mode	Optimizer mode	All_rows

3. Identify or create a tablespace for user tables and indexes.
4. Create a user. Unless stated for a task, the user does not require database administrator (DBA) privileges.
5. Grant permissions to the user. The following permissions are required for the administrative user for creating and modifying the Oracle database:
  - GRANT "CONNECT" TO SI\_USER
  - ALTER USER SI\_USER DEFAULT ROLE "CONNECT"
  - GRANT CREATE SEQUENCE TO SI\_USER
  - GRANT CREATE TABLE TO SI\_USER
  - GRANT CREATE TRIGGER TO SI\_USER
  - GRANT SELECT ON CTXSYS.CTX\_USER\_INDEXES TO SI\_USER
  - GRANT SELECT ON SYS.DBA\_DATA\_FILES TO SI\_USER
  - GRANT SELECT ON SYS.DBA\_FREE\_SPACE TO SI\_USER
  - GRANT SELECT ON SYS.DBA\_USERS TO SI\_USER
  - GRANT SELECT ON SYS.V\_\$PARAMETER TO SI\_USER
  - GRANT SELECT ANY DICTIONARY TO SI\_USER
  - GRANT ALTER SESSION TO SI\_USER
  - GRANT CREATE SESSION TO SI\_USER
6. If you are using Oracle AQ, grant the AQ\_ADMINISTRATOR\_ROLE permission.

**Mandatory Oracle init parameters:**

The Oracle init parameters have mandatory settings for Sterling B2B Integrator performance with an Oracle database.

Parameter	Mandatory value
cursor_sharing	Exact
Character set	AL32UTF8

## Configuring Oracle rollback

### About this task

You can roll back changes in Oracle with AUTO UNDO management. Use this option to avoid any manual monitoring of UNDO segments.

If a server is upgraded from Oracle 8i, set the UNDO\_MANAGEMENT=AUTO parameter in `init<SID>.ora`. Your database administrator must determine the UNDO\_RETENTION setting. Ensure that the file system, which has the UNDOTBS1 table space, has enough space to use the AUTOGROW setting.

### Install the Oracle JDBC driver

Sterling B2B Integrator requires the appropriate JDBC driver for Oracle database. These drivers are thin client-based pure Java JDBC drivers. See *System requirements* for supported version information. The supported versions of the JDBC driver build the correct Sterling B2B Integrator directory structure.

## Enable Failover in a Multiple Node Oracle RAC Database Cluster

### About this task

You can enable failover in a multiple node Oracle RAC database cluster in UNIX/Linux using traditional RAC or RAC with SCAN.

### Procedure

1. Navigate to `/install_dir/install/properties` directory to modify the `sandbox.cfg` file.
2. In the `sandbox.cfg` file, add a new property for `ORACLE_JDBC_URL`, which contains the Oracle RAC connection URL.

Choose one of the following depending on whether you are using traditional RAC or RAC with SCAN. The property value must be one string of text starting with `ORACLE_JDBC_URL=`. Your database administrator (DBA) can modify this URL as needed:

- To configure traditional RAC, use this format:

```
jdbc:oracle:thin:@
(DESCRIPTION=
  (ADDRESS_LIST=
    (FAILOVER=ON)
    (LOAD_BALANCE=OFF)
    (ADDRESS=(PROTOCOL=TCP)(HOST=myhost1)(PORT=1521))
    (ADDRESS=(PROTOCOL=TCP)(HOST=myhost2)(PORT=1521))
  )
  (CONNECT_DATA = (SERVER = DEDICATED)(SERVICE_NAME=myservicename OR mySID))
)
```

**Note:** This method uses the default Oracle RAC service provided by Oracle.

- To configure RAC with SCAN, use this format:

```
jdbc:oracle:thin:@host:port/service
```

For example:

```
jdbc:oracle:thin:@RAC-SCAN:1521/ORCL
```

Where:

RAC-SCAN is resolved to an IP address by DNS

1521 = Port number

ORCL = the name of your Oracle RAC service

**Important:** In order to use RAC with SCAN, you must also define a new Oracle RAC service (you cannot use the default service) that defines one node as the preferred node and at least one node as a failover node.

3. Navigate to `/install_dir/install/bin`.
4. Enter `./setupfiles.sh`.

## Data Traffic Encryption in Oracle Database 11g

You can encrypt transactions between Sterling B2B Integrator and Oracle Database 11g. This prevents anyone outside the system from viewing the data while it tracks between Sterling B2B Integrator and the database.

The following is a list of important aspects of enabling database encryption:

- The default configuration for encryption at installation is no encryption. If you want your database transactions to be encrypted, you must perform the tasks provided in this topic.
- The encryption can be enabled at any time.
- Once you enable encryption, it applies to all database transactions between Sterling B2B Integrator and the database.

System performance may be impacted when encryption is enabled. The extent of this impact will depend on your hardware, database configuration, transaction volume, and the relative amount of processing time spent by the system against other activities.

Addition information on data traffic configuration can be found in the Oracle documentation, which can be accessed from [http://www.oracle.com/technology/tech/java/sqlj\\_jdbc/pdf/wp-oracle-jdbc\\_thin\\_ssl.pdf](http://www.oracle.com/technology/tech/java/sqlj_jdbc/pdf/wp-oracle-jdbc_thin_ssl.pdf).

## Before you encrypt data traffic for an Oracle 11g database

Consider the following when you configure database traffic encryption:

- Sterling B2B Integrator must be installed in TCP (clear) mode before you can configure encryption.
- Make these configuration changes to your database before you install Sterling B2B Integrator.
- Configure wallets for encryption only mode even if the wallet used is empty. Enable auto login for all wallets.
- If you want to use SSL for encryption only, follow the instructions in the Oracle *CASE #1: USE SSL FOR ENCRYPTION ONLY* section of the Oracle documentation. It is not necessary to configure certificates for the wallet. In this mode, Diffie-Hellman ciphers are used and the server and client are not authenticated through SSL. You must authenticate by using a user name and a password. However, if you are running Sterling B2B Integrator on an operating system that requires an IBM JDK, you cannot use this mode, as IBM JSSE TrustManager does not allow anonymous ciphers. You must configure wallets with certificates.
- If you want to use SSL for encryption and for server authentication, follow the instructions in the Oracle *CASE #2: USE SSL FOR ENCRYPTION AND SERVER AUTHENTICATION* section of the Oracle documentation.
- If you want to use SSL for encryption and for server authentication of both tiers, follow the instructions in the Oracle *CASE #3: USE SSL FOR ENCRYPTION AND AUTHENTICATION OF BOTH TIERS* section of the Oracle documentation, depending on how you intend to configure client authentication, server authentication, or both.

- After you configure your database for data traffic encryption, the database accepts both TCP (clear) and TCPS (encrypted) connections.
- There is a known issue in Oracle database 11g when the listener is configured only for TCPS. The `lsnrctl` utility (used to start/stop DB listeners) attempts to contact the listener, which is enabled first. Define the address list of the listener to contact either TCP or IPC before you contact TCPS.

## Configuring Sterling B2B Integrator for data traffic encryption in Oracle

### About this task

Use this procedure if you want to enable data traffic encryption only, with anonymous authentication, and not SSL authentication.

If you want to use SSL for encryption only, follow the instructions in the Oracle *CASE #1: USE SSL FOR ENCRYPTION ONLY* section of the Oracle documentation. It is not necessary to configure certificates for the wallet. In this mode, Diffie-Hellman ciphers are used and the server and client are not authenticated through SSL. You must authenticate by using a user name and a password. However, if you are running Sterling B2B Integrator on an operating system that requires an IBM JDK, you cannot use this mode, as IBM JSSE TrustManager does not allow anonymous ciphers. You must configure wallets with certificates.

However, if you are running Sterling B2B Integrator on an operating system that requires an IBM JDK, you cannot use this mode, as IBM JSSE TrustManager does not allow anonymous ciphers. You must configure wallets with certificates.

This procedure is applicable only if you are running Sterling B2B Integrator on an operating system that requires the Sun JDK. The IBM JSSE TrustManager does not allow anonymous ciphers.

If your Sterling B2B Integrator is a cluster installation, you must do this procedure on each node, starting with node 1.

### Procedure

1. Install Sterling B2B Integrator in TCP (clear) mode.
2. Stop Sterling B2B Integrator.
3. Navigate to `/install_dir/install/properties`.
4. Open the `customer_overrides.properties` file and add the following database connection information:

```
jdbcService.oraclePool.prop_oracle.net.ssl_cipher_suites=
  (SSL_DH_anon_WITH_3DES_EDE_CBC_SHA, SSL_DH_anon_WITH_RC4_128_MD5,
   SSL_DH_anon_WITH_DES_CBC_SHA)
jdbcService.oraclePool.prop_oracle.net.ssl_server_dn_match=false
```

If you have a container that is configured, ensure that the same database information is added to the `customer_overrides.properties.in` file. To locate the file, navigate to `/install_dir/install/properties/nodexACy`. Where `x` gives the node number and `y` gives the container number. Do this step for all the containers that are configured in the system.

5. Repeat Step 4 for the following Oracle connection pools by changing only the **pool name**:
  - `oraclePool_local`
  - `oraclePool_NoTrans`

- oracleArchivePool
- oracleUIPool

If you have any other database pools, you must add the properties for those pools.

6. Open the `sandbox.cfg` file and change the database connection information as shown:

```
ORACLE_JDBC_URL= jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS=(PROTOCOL=tcps)
(HOST=<DB host>)
(PORT=<TCPS port as configured in DB config section above>))
(CONNECT_DATA=(SERVICE_NAME=<service name>)))
```

Make sure that you enter the HOST, PORT, and SERVICE\_NAME.

7. Open the `activemqconfig.xml.in` file and modify the following database connection information:

- Remove or comment out the following default ActiveMQ database configuration information:

```
<bean id="gis-ds" class="org.apache.commons.dbcp.BasicDataSource"
  destroy-method="close" singleton="true" lazy-init="default"
  autowire="default" dependency-check="default"
  SCIOVERRIDE="persistence-bean">
<property name="driverClassName">
<value>oracle.jdbc.driver.OracleDriver</value>
</property>
<property name="url">
#:ifdef ORACLE_JDBC_URL
<value>&ORACLE_JDBC_URL;</value>
#:else
<value>jdbc:oracle:thin:@&ORA_HOST;:&ORA_PORT;:&ORA_DATA;</value>
#:endif
</property>
  <property name="username">
<value>&ORA_USER;</value>
</property>
  <property name="password">
<value>&ORA_PASS;</value>
</property>
  <property name="maxActive">
<value>32</value>
</property>
</bean>
```

- Add the following ActiveMQ database configuration information:

```
<bean id="gis-ds"
class="oracle.jdbc.pool.OracleDataSource" destroy-method="close"
singleton="true" lazy-init="default"
autowire="default"
dependency-check="default">
<property name="URL"><value>&ORACLE_JDBC_URL;</value></property>
<property name="user"><value>&ORA_USER;</value></property>
<property name="password"><value>&ORA_PASS;</value></property>
<property name="connectionProperties"><value> oracle.net.ssl_cipher_suites:
(SSL_DH_anon_WITH_3DES_EDE_CBC_SHA, SSL_DH_anon_WITH_RC4_128_MD5,
SSL_DH_anon_WITH_DES_CBC_SHA)
oracle.net.ssl_client_authentication: false
oracle.net.ssl_version: 3.0
driverClassName:oracle.jdbc.driver.OracleDriver
maxActive: 32
</value>
</property>
</bean>
```

8. Navigate to `/install_dir/install/bin`.

9. Enter `./setupfiles.sh`.
10. Restart Sterling B2B Integrator. All the database connections from Sterling B2B Integrator are now connected through TCPS (encrypted) mode.

## Configure Sterling B2B Integrator for Data Traffic Encryption with SSL Authentication in Oracle

### About this task

Use this procedure to enable data traffic encryption and SSL authentication. This procedure is applicable if you are running Sterling B2B Integrator on a platform that requires either Sun JDK or IBM JDK.

The example in this procedure uses 2-way SSL authentication. It is recommended to follow the instructions in the Oracle *CASE #2: USE SSL FOR ENCRYPTION AND SERVER AUTHENTICATION* section of the Oracle documentation.

You can also configure 1-way SSL authentication. If you want to use SSL for encryption and for server authentication of both tiers, it is recommended to follow the instructions in the Oracle *CASE #3: USE SSL FOR ENCRYPTION AND AUTHENTICATION OF BOTH TIERS* section of the Oracle documentation. For more information about 1-way SSL authentication, refer to Oracle documentation, which can be accessed from [http://www.oracle.com/technology/tech/java/sqlj\\_jdbc/pdf/wp-oracle-jdbc\\_thin\\_ssl.pdf](http://www.oracle.com/technology/tech/java/sqlj_jdbc/pdf/wp-oracle-jdbc_thin_ssl.pdf).

If your Sterling B2B Integrator is a cluster installation, you will need to perform this procedure on each node, starting with node 1.

### Procedure

1. Install Sterling B2B Integrator in TCP (clear) mode.
2. Stop Sterling B2B Integrator.
3. Navigate to `/install_dir/install/properties`.
4. Open the `customer_overrides.properties` file and add additional database connection information:

```
jdbcService.oraclePool.prop_javax.net.ssl.trustStore=.../path/.../
  ClientKeyStore.jks
jdbcService.oraclePool.prop_javax.net.ssl.trustStoreType=JKS
jdbcService.oraclePool.prop_javax.net.ssl.trustStorePassword=password
jdbcService.oraclePool.prop_oracle.net.ssl_version=3.0
jdbcService.oraclePool.prop_javax.net.ssl.keyStore=.../path/.../
  ClientKeyStore.jks
jdbcService.oraclePool.prop_javax.net.ssl.keyStoreType=JKS
jdbcService.oraclePool.prop_javax.net.ssl.keyStorePassword=password
```
5. Repeat step 4 for the following Oracle connection pools by changing only the poolname:
  - `oraclePool_local`
  - `oraclePool_NoTrans`
  - `oracleArchivePool`
  - `oracleUIPool`

If you have any other database pools, you will need to add the properties for those pools.

6. Open the `sandbox.cfg` file and change the database connection information to:



```
ORACLE_JDBC_URL= jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS=(PROTOCOL=tcps)
(HOST=<DB host>)
(PORT=<TCPS port as configured in DB config section above>))
(CONNECT_DATA=(SERVICE_NAME=<service name>)))
```

7. Navigate to `/install_dir/install/activemq/conf`.
8. Open the `activemqconfig.xml.in` file and modify the database connection information:

- Remove or comment out the following default ActiveMQ database configuration information:

```
#:ifdef ORACLE
<bean id="gis-ds" class="org.apache.commons.dbcp.BasicDataSource"
  destroy-method="close"
  singleton="true" lazy-init="default" autowire="default"
  dependency-check="default"
  SCIOVERRIDEName="persistence-bean">
<property name="driverClassName">
<value>oracle.jdbc.driver.OracleDriver</value>
</property>
<property name="url">
#:ifdef ORACLE_JDBC_URL
<value>&ORACLE_JDBC_URL;</value>
#:else
<value>jdbc:oracle:thin:@&ORA_HOST;:&ORA_PORT;:&ORA_DATA;</value>
#:endif
</property>
<property name="username">
<value>&ORA_USER;</value>
</property>
<property name="password"><value>&ORA_PASS;</value>
</property>
<property name="maxActive"><value>32</value>
</property>
</bean>
#:endif
```

- Add the following ActiveMQ database configuration information:

```
<bean id="gis-ds"
class="oracle.jdbc.pool.OracleDataSource" destroy-method="close"
singleton="true" lazy-init="default" autowire="default"
dependency-check="default">
<property name="URL"><value>&ORACLE_JDBC_URL;</value></property>
<property name="user"><value>&ORA_USER;</value></property>
<property name="password"><value>&ORA_PASS;</value></property>
<property name="connectionProperties"><value>
javax.net.ssl.trustStore: /.../path/.../ClientKeyStore.jks
javax.net.ssl.trustStoreType:JKS
javax.net.ssl.trustStorePassword:password
oracle.net.ssl_version:3.0
javax.net.ssl.keyStore: /.../path/.../ClientKeyStore.jks
javax.net.ssl.keyStoreType:JKS
javax.net.ssl.keyStorePassword: password
driverClassName:oracle.jdbc.driver.OracleDriver
maxActive:32
</value>
</property>
</bean>
```

9. Enter `./setupfiles.sh`.
10. Restart Sterling B2B Integrator. All the database connections from Sterling B2B Integrator are now connected through TCPS (encrypted) mode.

## Configure the Microsoft SQL Server Database

### Microsoft SQL server database configuration checklist

#### About this task

You can use a Microsoft SQL server database for maintaining information in Sterling B2B Integrator.

Before you begin:

- If you are reinstalling the software, be aware that data in your existing database is deleted. To prevent data deletion, either back up the existing database or save it under a different name.
- After you create and configure your database, recycle the database. Then, stop and restart it to apply the changes.

Use the following checklist to configure Microsoft SQL Server for Sterling B2B Integrator:

#	Microsoft SQL server database configuration checklist	Your Notes
1	<p>If you do not have Microsoft SQL Server installed on your system, follow the installation procedures in the SQL server installation manual.</p> <p>Refer to the Microsoft SQL server documentation on creating the database, including creating a schema repository, login, and table space.</p> <p>Be sure to install the correct version and patches.</p> <p>See <i>System requirements</i> for supported version information.</p>	
2	<p>For Microsoft SQL 2005, install the Microsoft SQL 2005 Server Service Pack and Hotfix.</p>	
3	<p>Ensure that the Microsoft SQL database parameters are set.</p>	
4	<p>Review the Microsoft SQL server database user privileges.</p>	
5	<p>Configure snapshot for Microsoft SQL server.</p>	
6	<p>Install the Microsoft SQL server JDBC driver.</p>	

### Microsoft SQL Server database user privileges

In Microsoft SQL Server, you must grant DBO (Database Owner) permission to the user. The DB\_DDLADMIN role is required for creating objects in the SQL Server database.

## Microsoft SQL Server database parameters

To create a database, ensure that the collation property you select supports all the characters for your database. The following parameter settings are required in your Microsoft SQL Server database:

Parameter	Value
Collation Setting	SQL_Latin1_General_CP850_BIN
Sort order	Binary
Security authentication	SQL Server and Windows
Page Verify Parameter	None

### Mandatory settings for Microsoft SQL Server:

The default collation of Microsoft SQL Server must match the collation for the Sterling B2B Integrator database to prevent collation conversions.

The *tempdb* database that is used by Microsoft SQL Server must be created with the same collation as the default collation of Microsoft SQL Server. The Microsoft SQL Server uses the *tempdb* database for results that are too large to fit in memory.

If the collations of the *tempdb* database and the Sterling B2B Integrator database differ, the database engine must convert from the Sterling B2B Integrator collation to the *tempdb* collation, and then back again before it sends the results to the Sterling B2B Integrator server. These conversions might lead to severe performance issues.

The collation that is required for the Sterling B2B Integrator database is a collation that most closely matches the character set used by Java™. By using this collation, you can avoid character data conversions before the data is stored in the database tables. Use the mandatory parameter that is described in the following table when you configure the collation setting:

Parameter	Value
Database Collation	SQL_Latin1_General_CP850_Bin

Additionally, you must perform these tasks:

- Allow Microsoft SQL Server to manage memory dynamically (default).
- Disable any antivirus software that is running on the Microsoft SQL Server data, transaction log, and binary files directory.

## Installing Microsoft SQL Server 2005 Service Pack and hotfix About this task

Before you begin:

- Ensure that Named Pipes & TCP/IP protocols are enabled in the network utility of the SQL Server.
- For SQL Server 2005, do not use case-sensitive column names in the database. Case-sensitive names prevent the SQL Server 2005 System Management Console from loading.

To install Microsoft SQL Server 2005, Service Pack 2 and hotfixes:

## Procedure

1. Install the Microsoft SQL Server 2005 base release.
2. Install the Microsoft SQL Server 2005 Service Pack 2. You can download it from [http://support.microsoft.com/default.aspx?scid=kb;EN-US;933097](#).
3. Apply the cumulative hotfix package. You can download it from <http://support.microsoft.com/default.aspx?scid=kb;EN-US;933097>.
4. Apply the GDR2 hotfix. You can download it from <http://support.microsoft.com/kb/934459/>.

## Installing the JDBC driver in Microsoft SQL Server

### About this task

Sterling B2B Integrator requires the correct Microsoft SQL Server driver. See *System Requirements* for supported version information.

Go to the Microsoft website to download the driver and any appropriate patches.

## Procedure

1. Download `sqljdbc_version_language.tar.gz` to a temporary directory.
2. To unpack the compressed tar file, move to the directory where you want to unpack the driver 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 to be 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 help file displays the help system in your web browser.

4. When the Sterling B2B Integrator installation asks for the location of the JDBC drivers, specify the extracted JAR file that is created after the archive is unpacked (`sqljdbc.jar`). The JDBC driver version is the same as the version of the drivers that are downloaded from Microsoft.

## Configure Snapshot for Microsoft SQL Server

### About this task

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 snapshot feature:

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

## Database Password Management

### Database Passwords

A password is used by the system to connect to its database. The password is stored as clear text in a system property file. If the security policies at your company require you to encrypt these passwords, you can do so after you install the system. Encrypting these passwords is optional.

## Database Passwords Encryption Methods

Database passwords are encrypted using one of two methods, OBSCURED or ENCRYPTED. The encryption method is decided by the value of the encryptionPrefix in propertyEncryption.properties or propertyEncryption.properties\_platform\_security\_ext file.

## Encrypt Database Passwords

### About this task

To encrypt the database password:

### Procedure

1. Stop Sterling B2B Integrator.
2. Navigate to `/install_dir/install/bin`.
3. Enter `./enccfgs.sh`.
4. Enter `./setupfiles.sh`.
5. Enter `./deployer.sh`.
6. Enter `./run.sh` to start Sterling B2B Integrator.
7. Enter your passphrase.

## Decrypt Database Passwords

### About this task

To decrypt the database password:

### Procedure

1. Stop Sterling B2B Integrator.
2. Navigate to `/install_dir/install/properties`.
3. Open the `sandbox.cfg` file.
4. Copy the encrypted password from the `database_PASS` property.  
Use the text that appears after the `database_PASS=` text. For example, if `database_PASS= OBSCURED:123ABCxyz321`, you would copy the text `OBSCURED:123ABCxyz321`. (OBSCURED is the encryption method for the password.)
5. Navigate to `/install_dir/install/bin`.
6. Enter `./decrypt_string.sh encrypted_password`.  
For `encrypted_password`, use the text that you copied in Step 4.  
You are prompted for the system passphrase.  
After you enter the passphrase, your decrypted password appears.
7. Navigate to `/install_dir/install/properties`.
8. Edit the `sandbox.cfg` file to replace the encrypted password with the password that was returned in Step 6.
9. You need to decrypt the entries for `YANTRA_DB_PASS` and `DB_PASS`. Repeat Steps 4 to 8 to decrypt these entries. You should also decrypt any passwords present in the property files. Encrypted passwords typically reside in the following property files:
  - `sandbox.cfg`
  - `apservsetup`
  - `jdbc.properties/.in`
  - `customer_overrides.properties/.in`

10. Navigate to `/install_dir/install/bin`.
11. Enter `./setupfiles.sh`.
12. Enter `./deployer.sh`.
13. Enter `./run.sh` to start Sterling B2B Integrator.
14. Enter your passphrase.

---

## Installation Checklist

### Installation Checklist for UNIX/Linux Cluster

The installation checklist contains the items you need to gather and tasks you need to complete prior to installing Sterling B2B Integrator in a cluster environment. The checklist contains:

- Brief descriptions for tasks (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.

The cluster environment does not support the following items:

- MySQL database
- AS2 Edition

#	Installation Checklist for UNIX/Linux Cluster	Node 1	Node 2	Node 3	Your Notes
1	Review your IBM contract to determine what software you have licensed. You need to know this <i>License Information</i> so that you can select the correct components/features to install.				
2	Determine which installation method you are going to use: <ul style="list-style-type: none"> <li>• GUI-based</li> <li>• Text-based</li> <li>• Silent Installation</li> </ul>				
3	Decide which type of security certificates you will use: <ul style="list-style-type: none"> <li>• The default self-signed SSL (Secure Sockets Layer) certificate that is automatically installed.</li> <li>• A Certificate Authority-related certificate that you install before installing Sterling B2B Integrator.</li> </ul>				

#	Installation Checklist for UNIX/Linux Cluster	Node 1	Node 2	Node 3	Your Notes
4	If you are using an Oracle, Microsoft SQL Server, or DB2 database, decide if you are going to manually or automatically apply Database Definition Language (DDL) Statements (schema) to the database.				
5	If you are using an Oracle 11.1 database, you must set it up for native compilation by allocating space and by setting the <code>plsql_native_library_dir</code> parameter.				
6	Determine if the database password need to be encrypted.				
7	Record the Hostname on which you plan to install the software.				
8	Record the Directory Name where you plan to install the software.				
9	Record the Login to host machine.				
10	Record the Password to the host machine.				
11	Record the path to the JDBC drivers.				
12	Record the path to the installation wizard and file name.				
13	Record the path to JDK.				
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 Database vendor name.				
19	Record the Database user name.				
20	Record the Database password.				
21	Record the Database (catalog) name.				
22	Record the Database host name.				
23	For Oracle and Microsoft SQL Server, record the Path and file name for the JDBC Driver.				
24	For DB2, record the absolute paths and file names for two JDBC drivers.				

## License information

IBM provides the license files for each feature of Sterling B2B Integrator that you purchased with the software media. You do not have to contact IBM customer support to get the license files.

A separate license is required for each Sterling B2B Integrator feature that you purchased. During installation, you must choose the license files according to what you purchased. IBM customer support will audit your system after it is in use.

For more information about modifying licenses files, see the topic on License Modification.

## 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 that is configured on the same base port send multicasting messages on the same multicast IP address and port.

To avoid this issue, each cluster on the same subnet must 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 do not interfere with each other. The default multicast address that is 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 in the same cluster must be installed on the same multicast base port (the `multicastBasePort` property in the `noapp.properties_platform_ifcresources_ext.in` file). This port is computed from the system base (non-multicast) port, but can be configured separately in the `noapp.properties_platform_ifcresources_ext.in` file, to allow different nodes in a cluster to be installed at different (non-multicast) port ranges. Also, install all the nodes in the cluster in the same subnet.

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

- `property_string` - default value is UDP.
- `distribution_property_string` - default value is TCP. Never set this attribute to UDP.

If you want to change the communication for cluster multicast from the UDP protocol to TCP, you must change the value of the `property_string` property in the `jgroups_cluster.properties.in` file (after you back up the file), and then run the **setupfiles** command. You can change this right after the installation or after you start running the cluster. If you change the file after you start the cluster, you must stop all nodes of the cluster, change the value on each node, and then restart 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` 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 B2B Integrator Clustering* documentation.

## Port numbers

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

- A range of 200 consecutive open ports within the range of 1025 - 65535 are required for this installation.

**Note:** Because of RMI, on occasion, a port number outside the range might be assigned.

- 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.

## Security certificates

Before you begin the installation, you must decide which of the following security certificates to 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 you install the software.

If you install with the default SSL certificate, but you later want to switch to a CA-related certificate, you can switch with the `sslCert` property in the `noapp.properties_platform_ifcresources_ext.in` file.

## 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.

---

## Install the Software

### General UNIX/Linux installation information

**CAUTION:**

Install Sterling B2B Integration behind a company firewall for security purposes. See the Perimeter Server and Security topics in the Sterling B2B Integration documentation library for more information about secure deployment options.

### Installation Scenarios for Version 5.2.1 and 5.2.2

It is important to review the following installation scenarios:

Scenario	Instructions
Version 5.2.0 is installed as the base release and it must be patched to the 5.2.1 level.	Use the instructions in the <i>Installing version 5.2.1 or 5.2.2 as a fix pack</i> guide provided in the <i>Installing the software</i> chapter.
Version 5.2.1 is being installed as the base release.	Review this document and use the installation instructions in the <i>Installing the software</i> chapter.
Version 5.2.1 is installed as the base release and it must be patched to the 5.2.2 level.	Use the instructions in the <i>Installing Version 5.2.1 or 5.2.2 as fix pack</i> guide provided in the <i>Installing the Software</i> chapter.
Version 5.2.2 is being installed as the base release.	Review this document and use the installation instructions in the <i>Installing the Software</i> chapter.

### Installation Methods

Use one of the following methods to install your system:

- IBM Installation Manager (graphical user interface)
- IBM Installation Manager (Text Based)
- Silent Installation

**Important:** Install and run Sterling B2B Integration as a non-root user.

### General Installation Guidelines

The following are some general installation guidelines:

- If you are on Linux, do not use any soft or symbolic links in the path to the IBMInstallWizard.jar file.
- The directory path to SI.jar cannot include any spaces.
- If you are using FTP to copy the files, verify that your session is set to binary mode.
- The installation directory must have adequate free disk space.
- If you are using AIX with a DB2 database, the directory path cannot be longer than 108 bytes.
- 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.
- If you are using an IPv6 address, review *Guidelines for IPv6 Addresses*.

- If you are installing Sterling B2B Integrator on VMware, provide the IP address of the virtual machine, not the IP address of the VMware host. For example, if 10.251.124.160 is the IP address of the VMware host and 10.251.124.156 is the IP address of the Windows 2003 server it is hosting, use 10.251.124.156 as the correct IP address to install Sterling B2B Integrator.

### General wizard information

- There is an option for entering the paths manually or selecting the paths and files with **Select File** in the UI.
- For every screen in the GUI-Based installation wizard, you must click **Next** to move to the next step in 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 must press **Enter** to move to the next step in the wizard. The press **Enter** step is not represented in each step in the procedure.

## Guidelines for a UNIX/Linux Cluster Environment Installation

The cluster environment does not support the following items:

- MySQL database
- AS2 Edition

The following are some installation guidelines for cluster environments:

- 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 advantage of cluster features such as, reliability, availability, scalability, and failover.
- You must install the nodes sequentially, one at a time, starting with the first node.
- When installing nodes on the same machine, you must install node 2 and higher in different directories. Each initial port must be at least 200 higher or lower than the initial port for the other nodes.
- After installing the nodes, you must start the nodes sequentially, one at a time, starting with the first node.

## Guidelines for IPv6 addresses

Before you use an IPv6 address during an installation, see the *IPv6 capabilities* section in *System requirements*.

Consider the following IPv6 address information when you are planning the installation:

- If you use an IPv6 address, use a fully qualified address that includes square brackets around the address, and a zero 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 IPv6 address, comment the host name mapping to IPv4 address and retain the mapping to IPv6 address in the host file in `/etc/sysconfig/networking/profiles/default/hosts` directory.
- You must install with a host name, not an IPv6 address, otherwise the Lightweight JDBC adapter and Graphical Process Modeler (GPM) do not work.

- If you are using an Oracle database, do not use an IP v6 address for the host name.
- If you are using an IPv6 address and are going to configure Sterling B2B Integrator as a dual stack host, after you complete the installation, you must add the IPv6 address (as the `admin_host.3` property) to the `noapp.properties_platform_ifcresources_ext.in` file.

## Install Using the GUI-Based Method in a UNIX/Linux Cluster Environment

### About this task

Before you begin:

- You should have completed the *Installation Checklist for UNIX/Linux Cluster*.
- `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 B2B Integrator installation directory. If you do, you could inadvertently overwrite the existing installation. You should create a new installation directory before you begin the installation.
- `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 install Sterling B2B Integrator:

### Procedure

1. From the installation media, copy `IBMInstallWizard.jar` and `SI.jar` to a UNIX/Linux directory.
2. Log in to a server where you plan to do the software installation. To run the installation wizard in GUI mode, you need to run some type of windows client tool. For example:
  - 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/IBMInstallWizard.jar`  
The installation wizard is displayed.
5. Click **Next** to start the installation.
6. Enter the full path to the JDK directory.
7. Select the Licenses/Features to install. The following list is displayed:
  - IBM Sterling B2B Integrator and/or IBM Sterling File Gateway
  - FIPS Module
  - AS2 Edition Module
  - Financial Services Module
  - EBICS Banking Server Module

**Note:** Select only the licenses/features that have been defined by your IBM contract. If you are unsure which to select, the installation can proceed without making a selection and will complete successfully. Start up and

operation of the software, however, requires one of the licenses to be selected. See *License Modification* to apply licenses post-install.

**Note:** Sterling File Gateway requires additional installation steps. See the *Sterling File Gateway Installation Guide* for more information.

8. Enter the full path to your JCE file.
9. 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 installation directory.

This installation directory is referred to as *install\_dir*. Below the installation directory, *install\_dir*, the installer creates a directory named *install*. This directory contains the installation files.

10. Enter the path to the install jar file (SI.jar).
11. Enter the explicit IP address for the server or use the default value of localhost.
12. Enter the initial port number or use the default value of 8080.
13. Enter your system passphrase.
14. Re-enter the system passphrase.
15. Enter the administrative e-mail address to which you want system alert messages sent.
16. Enter the SMTP mail server (IP address or host name) that you want to use for system alert messages and other administrative notices.
17. If you want to enable FIPS (Federal Information Processing Standards) mode, select the checkbox. The default is disable FIPS mode.
18. Select the database that you want to use (Oracle, Microsoft SQL Server, DB2, or MySQL).
19. Select all options that apply to this node:

Choices:	Action
(Skip for Version 5.2.0) This installation is an upgrade from a prior version.	Do not select this option.
This installation is for a cluster node 2 or higher.	<ul style="list-style-type: none"> <li>• For node 1: Do not select the check box.</li> <li>• For node 2 or higher: Select the check box.</li> </ul>
Apply database schema automatically?	<p>If yes, no action required. The default is to automatically apply the DDL statements.</p> <p>If you want to manually create the database schema, clear the <b>Apply database schema automatically</b> check box and continue with the remaining installation steps.</p> <p><b>Note:</b> Once the install starts, it will run for a short time and then exit. When the installation stops, you must perform additional actions as given in Step 26 of this procedure.</p>
Verbose install?	<ul style="list-style-type: none"> <li>• By default, the check box is not selected.</li> <li>• Select the checkbox to generate the installation log. The events that occur during the installation are recorded in <i>InstallSI.log</i> file.</li> </ul>

20. Enter the database connection information.
  - Database user name

- Database password (and confirmation)
- Database catalog name
- Database host name
- Database port
- For Oracle and Microsoft SQL Server - Absolute path and file name for one JDBC driver file
- For 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 Sterling B2B Integrator to the DB2 server.
- For Oracle only - Select the check box to select the data type to use for binary data. Select either the default BLOB (binary large object) columns data type or the Long Raw data type.  
You can significantly improve performance by enabling the cache on the BLOB data object in Oracle. For more information, refer to the Sterling B2B Integrator documentation for slow performance in Oracle.

21. Review and confirm the database information.
22. Review the default **Install Actions**. The following check boxes are automatically selected and you can not clear them:
  - Verify Operating System is supported
  - Verify the selected JDK is supported
  - Install Components
  - Save install files
  - Clean Up Files
23. Select the appropriate JDK. By default, the 64-bit JDK is selected. By default, the 64-bit JDK is selected.
24. If you want to create a desktop icon for launching Sterling B2B Integrator, select the check box . By default, the check box is not selected.
25. Click **Next** to continue.  
The Installation Progress screen appears.
26. Click **Install**.  
The Installation Progress screen shows the general progress of the installation through different stages. For more information about these stages, click **Show Details**.

**Note:** If you DID NOT select the option to **Apply database schema automatically** , the installation stops and you must perform additional steps for the installation to complete.

**Important:** In version 5.2.x of Sterling B2B Integrator, there is a misleading error displayed if manually applying the database schema. Once you start the installation, an error occurs after the SQL scripts are generated. A dialog box appears with the message, Install failed Error running the install.

To complete the installation with manual DDL statements:

- a. Navigate to your install directory.
- b. Locate the PreInstallSI.log file and open it with a file editor.
- c. Search the file for these error messages:
  - <SI\_Install>/repository/scripts/EFrame\_IndexAdds.sql must be applied to the database.

- <SI\_Install>//repository/scripts/EFrame\_Sequence.sql must be applied to the database.
- <SI\_Install>//repository/scripts/EFrame\_TableChanges.sql must be applied to the database. Exiting installation..."

**Note:** If you do not find the above error messages in the log file, the installation failed because of another reason and you must resolve that error and attempt the installation again. If you did find these messages, continue with the remaining steps.

- d. Edit each .sql script and make changes appropriate for your database. This may include changing the SQL delimiter or adding tablespace options.
- e. Log in to your database as the DB schema user.
- f. Execute the SQL files manually in this order:

**Note:** When you are executing the scripts, it is important to execute the SQL scripts in the specified order.

- EFrame\_IndexDrops.sql
  - EFrame\_TableChanges.sql
  - EFrame\_IndexAdds.sql
  - EFrame\_TextIndexAdds.sql
  - EFrame\_Sequence.sql
  - EFrame\_TextIndexModify.sql
  - EFrame\_TextIndexUpdates.sql
  - EFrame\_TextIndexUpgrade.sql
  - EFrame\_Static.sql
- g. Exit from the database.
  - h. Navigate to the parent directory of *install\_dir*.
  - i. Delete (or Rename as a backup) the Sterling Integrator install directory.
  - j. Restart the installation wizard and provide the same installation options you provided before including clearing the **Apply database schema automatically** check box.

The installation completes automatically. When the installation is finished, the system displays a dialog box with the message Installation Wizard completed. Please see the installation guide for next steps.

Installation information is in the following log files:

- PreInstallSI.log
  - ant.install.log
  - InstallSI.log
27. Install each subsequent node, from node 2 onwards. Navigate to your working directory. For example, `cd parent_install` directory.
  28. You need to start the installation wizard for the additional node, enter:
 

```
/path_to_java/bin/java -jar /absolutePath/IBMInstallWizard.jar
```

 The program verifies support for your operating system and JDK. It also verifies that your operating system is patched to the required level. You will follow the same steps as you did for node 1 until you get to Step 21. When prompted, **This installation is for a cluster node 1 or higher**, enter **true**.
  29. If you used different base ports for node 2 onward, you need to complete the following additional steps:

Step	Action	Your Notes
1	Navigate to <code>/install_dir/install/properties</code> for node 1.	
2	In the <code>noapp.properies_platform_ifcresources_ext</code> file, record the value for <code>multicastBasePort</code> .	
3	In the <code>jgroup_cluster.properties</code> file, record the values for the <code>mcast_port</code> parameters of the <code>property_string</code> and <code>lock.protocolStack</code> properties.	
4	For each subsequent node, you need to perform the remaining steps.	
5	Navigate to <code>/install_dir/install/properties</code> for each node (node 2 and higher).	
6	In the <code>noapp.properies_platform_ifcresources_ext.in</code> file, update the value of the <code>multicastBasePort</code> to match the value for node 1.  For example, replace the string <code>&amp;MULTICAST_NODE_PORT1</code> ; with the port number 45460. <ul style="list-style-type: none"> <li>• (before) <code>multicastBasePort=&amp;MULTICAST_NODE_PORT1;</code></li> <li>• (after) <code>multicastBasePort=45460</code></li> </ul>	
7	In the <code>jgroups_cluster.properties.in</code> file, update all occurrences of the <code>mcast_port</code> property to match the values for node 1.	
8	After you have updated the attributes for all of the nodes, enter:  <code>/install_dir/install/bin/setupfiles.sh</code> for node 2 and higher.	

30. Determine if you need to apply a patch to the installation. Refer to *System Maintenance* for information on how to install the latest patch.

## Install Using the Text-Based Method in a UNIX/Linux Cluster Environment

### About this task

Before you begin:

- You should have completed the *Installation Checklist for UNIX or Linux*.
- `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 B2B Integrator installation directory. If you do, you could inadvertently overwrite the existing installation. You should create a new installation directory before you begin the installation.
- `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 abort the installation by pressing `Ctrl + C` and then re-starting the installation.



To install Sterling B2B Integrator, refer to your pre-installation checklist and follow the steps below:

## Procedure

1. From the installation media, copy IBMInstallWizard.jar and SI.jar 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/IBMInstallWizard.jar`
4. Press **Enter** to start the installation.
5. Enter the full path of your JDK directory.
6. Select the Licenses/Features to install. Enter true to select the license when prompted. Default is false. You will be prompted for each of the following licenses:
  - IBM Sterling B2B Integrator and/or IBM Sterling File Gateway
  - FIPS Module
  - AS2 Edition Module
  - Financial Services Module
  - EBICS Banking Server Module

**Note:** Select only the licenses/features that have been defined by your IBM contract. If you are unsure which to select, the installation can proceed without making a selection and will complete successfully. Start up and operation of the software, however, requires one of the licenses to be selected. See *License Modification* to apply licenses post-install.

**Note:** Sterling File Gateway requires additional installation steps. See the *Sterling File Gateway Installation Guide* for more information.

7. Enter the full path to unlimited strength JCE policy file.
8. Enter the full path name to the installation directory. This must be a newly created directory or the installation will later fail. If the installation directory does not exist, when prompted enter Y to create the directory.  
This installation directory is referred to as *install\_dir*. Below the installation directory, *install\_dir*, the installer creates a directory named install. This directory contains the installation files.
9. Enter the path to your installable jar file.
10. Enter an explicit IP address or host name. Default is localhost.
11. Enter the initial port number. Default is 8080.
12. Enter your system passphrase.
13. Enter your system passphrase again to confirm it.
14. Enter the administrative e-mail address to which you want system alert messages sent.
15. Enter the SMTP mail server host name that you want to use for system alert messages and other administrative notices.
16. Do you want to use FIPS (Federal Information Processing Standards) mode?
  - If yes, enter **true**.
  - If no, press **Enter**. Default value is false.
17. Enter the number of the database vendor (Oracle, Microsoft SQL Server, DB2, or MySQL).

18. (Skip for Version 5.2.0) Press **Enter** at the *This installation is an upgrade from a prior version* prompt. Default is false.
19. At the *This installation is for a cluster node 2 or higher* prompt:
  - For node 1: Press **Enter**.
  - For node 2 or higher: Enter true and press **Enter**.
20. At the *Apply database schema automatically?* prompt:
  - To automatically apply the database schema, press **Enter**. The default is to automatically apply the DDL statements.
  - To manually create the database schema, enter false and continue with the remaining installation steps.

**Note:** Once the install starts, it will run for a short time and then exit. When the installation stops, you must perform additional actions as given in Step 25 of this procedure.

21. At the *Verbose install?* prompt:
  - If no, press **Enter**. (Default value is false).
  - If yes, enter true. The events are recorded in InstallSI.log file.
22. Configure your database by entering the following information:
  - Database user name
  - Database password (and confirmation)
  - Database catalog name
  - Database host name
  - Database host port number
  - For Oracle and Microsoft SQL Server - Absolute path and file name for one JDBC driver
  - For DB2 - 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 Sterling B2B Integrator to the DB2 server.
  - (Oracle only) At the **What Datatype would you like to use?** prompt, choose a data type to use for binary data (BLOB or Long Raw).  
To use caching for BLOB (binary large object) columns, enter 1 (the default value). 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.  
To use the Long Raw data type, enter 2.
23. Review the Database Information.
24. 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**.
25. Do you want to create a desktop icon for accessing Sterling B2B Integrator?
  - If yes, enter **true** at the **Create Desktop Icons (Windows & Linux)** prompt.
  - If no, press **Enter**. Default value is false.

The installation automatically continues. When the installation is finished, the system displays the following message:

```
BUILD SUCCESSFUL
Installation Wizard completed.
Please see the installation guide for next steps.
```

**Note:** If you DID NOT select the option to **Apply database schema automatically**, the installation stops and you must perform additional steps for the installation to complete.

To complete the installation with manual DDL statements:

- a. Navigate to your install directory.
- b. Locate the PreInstallSI.log file and open it with a file editor.
- c. Search the file for these error messages:
  - <SI\_Install>/repository/scripts/EFrame\_IndexAdds.sql must be applied to the database.
  - <SI\_Install>/repository/scripts/EFrame\_Sequence.sql must be applied to the database.
  - <SI\_Install>/repository/scripts/EFrame\_TableChanges.sql must be applied to the database. Exiting installation..."

**Note:** If you do not find the above error messages in the log file, the installation failed because of another reason and you must resolve that error and attempt the installation again. If you did find these messages, continue with the remaining steps.

- d. Edit each .sql script and make changes appropriate for your database. This may include changing the SQL delimiter or adding tablespace options.
- e. Log in to your database as the DB schema user.
- f. Execute the SQL files manually in this order:

**Note:** When you are executing the scripts, it is important to execute the SQL scripts in the specified order.

- EFrame\_TableChanges.sql
  - EFrame\_IndexAdds.sql
  - EFrame\_TextIndexAdds.sql
  - EFrame\_Sequence.sql
  - EFrame\_TextIndexModify.sql
  - EFrame\_TextIndexUpdates.sql
  - EFrame\_TextIndexUpgrade.sql
  - EFrame\_Static.sql
- g. Exit from the database.
  - h. Navigate to the parent directory of *install\_dir*.
  - i. Delete (or Rename as a backup) the Sterling Integrator install directory.
  - j. Restart the installation wizard and provide the same installation options you provided before including clearing the **Apply database schema automatically** check box.

Installation information is in the following log files:

- PreInstallSI.log
  - ant.install.log
  - InstallSI.log
26. If you are using the AIX operating system and are using IPv6:
    - Navigate to the */install\_dir/install/properties*
    - Add the following to the sandbox.config file: `IPV4STACK=false`
    - Navigate to the */install\_dir/install/bin*

- Enter `./setupfiles.sh`
27. Install each subsequent node, from node 2 onwards. Navigate to your working directory. For example, `cd parent_install` directory.
  28. You need to start the installation wizard for the additional nodes, enter:  
`/path_to_java/bin/java -jar /absolutePath/IBMInstallWizard.jar`  
 The program verifies support for your operating system and JDK. It also verifies that your operating system is patched to the required level. You will follow the same steps as you did for node 1 until you get to Step 21. When prompted, **This installation is for a cluster node 1 or higher**, enter **true**.
  29. If you used different base ports for node 2 onward, you need to complete the following additional steps:

Step	Action	Your Notes
1	Navigate to <code>install_dir/install/properties</code> for node 1.	
2	In the <code>noapp.properies_platform_ifcresources_ext</code> file, record the value for <code>multicastBasePort</code> .	
3	In the <code>jgroup_cluster.properties</code> file, record the values for the <code>mcast_port</code> parameters of the <code>property_string</code> and <code>lock.protocolStack</code> properties.	
4	For each subsequent node, you need to perform the remaining steps.	
5	Navigate to <code>install_dir/install/properties</code> for each node (node 2 and higher).	
6	In the <code>noapp.properies_platform_ifcresources_ext.in</code> file, update the value of the <code>multicastBasePort</code> to match the value for node 1.  For example, replace the string <code>&amp;MULTICAST_NODE_PORT1;</code> with the port number 45460. <ul style="list-style-type: none"> <li>• (before) <code>multicastBasePort=&amp;MULTICAST_NODE_PORT1;</code></li> <li>• (after) <code>multicastBasePort=45460</code></li> </ul>	
7	In the <code>jgroups_cluster.properties.in</code> file, update all occurrences of the <code>mcast_port</code> property to match the values for node 1.	
8	After you have updated the attributes for all of the nodes, enter:  <code>/install_dir/install/bin/setupfiles.sh</code> for node 2 and higher.	

30. Determine if you need to apply a patch to the installation. Refer to *System Maintenance* for information on how to install the latest patch.

## 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 must first create a silent installation file with a text editor.

## Create the Silent Installation File in a UNIX/Linux Cluster Environment

### About this task

The following entries correlate to prompts in the Install Using the Text-Based method procedure. The silent install file must contain the entries marked as required in the following table. Record the file name and location, as you will use this information during the installation.

Create a silent installation file with the following variables:

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.
LICENSE_FILE_PATH	(Required) Full path to Core_License.xml.  The Core_License.xml file is located on the same media as the install wizard jar and the installation jar.
LICENSE_FILE_#  (where # is a number between 1 and 99)	(Required) This is required for each license you install. You need to add an entry for each license file to the silent install file. The LICENSE_FILE numbering (#) does not need to be sequential.  For example:  LICENSE_FILE_1= SI_SFG_License.xml  LICENSE_FILE_2= Fin_Serv_License.xml  LICENSE_FILE_3= SI_SFG_FIPS_License.xml  LICENSE_FILE_4= AS2_License_.xml  LICENSE_FILE_5= EBICS_License_.xml
SI_LICENSE_AVAILABLE	(Optional) Indicates if a license is being passed in and is required for the installation.  Default: YES
JCE_DIST_FILE	(Required) Full path to unlimited strength JCE policy file. If present, this file will overwrite the JCE file in the JDK.
INSTALL_DIR	(Required) Directory that includes the bin subdirectory (where many commands are stored) and the properties subdirectory (where many properties are stored).The INSTALL_DIR property cannot point to a pre-existing directory, or the installation will fail.
REINIT_DB	(Required) Indicates if database should be initialized. <ul style="list-style-type: none"> <li>• For node 1 of a cluster, this property is true.</li> <li>• For node 2 and higher of a cluster, this property is false.</li> </ul> Default: true

Silent Install File Entry	Description
CLUSTER	<p>(Required) Indicates if this is the second or higher node of a cluster installation.</p> <p>Valid values:</p> <ul style="list-style-type: none"> <li>• true - This is the second or higher node of a cluster installation.</li> <li>• false (default) - This is the first node of a cluster or a single node (non-cluster) installation.</li> </ul>
INSTALL_IP	<p>(Required) Host name or IP address.</p> <p>Valid values:</p> <ul style="list-style-type: none"> <li>• localhost (default)</li> <li>• (your IP address or host name)</li> </ul> <p>If you are installing Sterling B2B Integrator on VMware, provide the IP address of the virtual machine, not the IP address of the VMware host. For example, if 10.251.124.160 is the IP address of the VMware host and 10.251.124.156 is the IP address of the Windows 2003 server it is hosting, you should use 10.251.124.156 as the correct IP address to install Sterling B2B Integrator.</p> <p>Before applying an IPv6 address, see <i>IPv6 Capabilities</i> section in the <i>System Requirements</i>.</p> <p>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.</p> <p>If you are installing with 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.</p> <p>You must install using a host name, not an IPv6 address, otherwise the Lightweight JDBC adapter and Graphical Process Modeler (GPM) will not work.</p>
PORT1	<p>(Required) Base port for ASI server. Ports are assigned consecutively from this port.</p> <p>Example: 12345</p> <p>Default: 8080</p>
APSERVER_PASS	<p>(Required) Passphrase used to secure all encrypted data in database.</p>
SI_ADMIN_MAIL_ADDR	<p>(Required) E-mail address for the administrative user.</p> <p>Example: abc@xyz.com</p>
SI_ADMIN_SMTP_HOST	<p>(Required) Valid SMTP host through which the system can e-mail the administrative user.</p> <p>Example: mail.xyz.com</p>

Silent Install File Entry	Description
FIPS_MODE	(Optional) Indicates if you are using FIPS (Federal Information Processing Standards) mode.  Valid values: <ul style="list-style-type: none"> <li>• true - Enable FIPS mode.</li> <li>• false (default) - Disable FIPS mode.</li> </ul>
DB_VENDOR	(Required) Database vendor.  Valid values: <ul style="list-style-type: none"> <li>• Oracle</li> <li>• MSSQL2005 (use this value for Microsoft SQL 2005 and 2008)</li> <li>• DB2</li> <li>• MySQL (default)</li> </ul>
DB_CREATE_SCHEMA	(Required) Indicates if you want the database schema automatically created.  Valid values: <ul style="list-style-type: none"> <li>• true (default) - Automatically create the schema.</li> <li>• false - Manually create the schema.</li> </ul>
DEBUG	(Optional, highly recommended) Records events that occur during the installation in InstallSI.log file.  Valid values: <ul style="list-style-type: none"> <li>• true - records events that occur during the installation.</li> <li>• false (default) - does not record the events that occur during installation.</li> </ul>
DB_USER	(Required) Database user name.
DB_PASS	(Required) Database password.
DB_DATA	(Required) Database catalog name.
DB_HOST	(Required) Database host name.  Default: localhost
DB_PORT	(Required) Database port.
DB_DRIVERS	(Required) Full path to JDBC driver files. If DB_VENDOR is: <ul style="list-style-type: none"> <li>• Oracle or MSSQL, specify one driver.</li> <li>• DB2, specify two drivers.</li> </ul> <p>If you specify more than one driver, use colons (:) to separate the file names.</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• <i>JDBC_driver_dir</i>/db2jdbc.jar</li> <li>• <i>JDBC_driver_dir</i>/db2_1_jdbc.jar:<i>JDBC_driver_dir</i>/db2_2_jdbc.jar</li> </ul>
ORACLE_USE_BLOB	(Required if DB_VENDOR=Oracle) Indicates the data type to use for caching. <ul style="list-style-type: none"> <li>• true (default) - BLOB (binary large object)</li> <li>• false - Long Raw</li> </ul>

Silent Install File Entry	Description
MSSQL2005	(Required for Microsoft SQL Server 2005) This attribute is case-sensitive. <ul style="list-style-type: none"> <li>Set this attribute to the default value of true.</li> <li>(All other servers) Do not include this attribute.</li> </ul>
JDK64BIT	Indicates if a 32-bit or 64-bit JDK is being used. Refer to the <i>System Requirements</i> to determine the type of JDK for your operating system. <p>Valid values:</p> <ul style="list-style-type: none"> <li>true (default) - 64-bit</li> <li>false - 32-bit</li> </ul>
Icons	(Required) Indicates whether to create a desktop icon for accessing Sterling B2B Integrator. <p>Valid values:</p> <ul style="list-style-type: none"> <li>true - Create a desktop icon.</li> <li>false (default) - Do not create a desktop icon.</li> </ul>

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

Silent Install File Entry	Description
IPV4STACK	(Required for AIX) Set this parameter to false. <p>For example: IPV4STACK=false</p>
DB_DRIVERS_VERSION	(Optional) Free form version string for JDBC driver. This is informational only. <p>Example: 8_1_5</p>
LOAD_FACTORY_SETUP	(Optional) Indicates whether factory setup should be loaded during 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. <p>Valid values:</p> <ul style="list-style-type: none"> <li>true (default).- loads factory setup during installation.</li> <li>false - does not load factory setup during installation. Run loadDefaults command after installation.</li> </ul>
CONFIG_GS	(Optional) Indicates whether integration with Gentran Server should be configured. <p>Default: No</p>
NO_DBVERIFY	(Optional) Valid values are true or false. When set to true during installation and installservice, dbverify will not be run. <p>This means that Sterling B2B Integrator will not generate DDL to make the database like the XML entity repository.</p>



## Install with a Silent Installation File in a UNIX/Linux Cluster Environment

### About this task

Before you begin:

- *parent\_install* is the directory one level above the *install\_dir* directory.
- *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 B2B Integrator installation directory. If you do, you could inadvertently overwrite the existing installation. You should create a new installation directory before you begin the installation.

To install Sterling B2B Integrator using a silent installation file:

### Procedure

1. From the installation media, copy SI.jar to a UNIX/Linux directory.
2. Set up your silent installation file and record the file location.
3. Navigate to your working directory. For example, `cd parent_install`.
4. To start the installation, enter:

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

The installation 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 installation.

When the installation is finished, the system displays the following message:  
Installation has completed successfully.

**Note:** Select only the licenses/features that have been defined by your IBM contract. If you are unsure which to select, the installation can proceed without making a selection and will complete successfully. Start up and operation of the software, however, requires one of the licenses to be selected. See *License Modification* to apply licenses post-install.

**Note:** Sterling File Gateway requires additional installation steps. See the *Sterling File Gateway Installation Guide* for more information.

5. (Skip this step if you are applying database schema automatically.) If you are going to manually create the database schema, the install starts and runs for a short time before exiting.

**Note:** After the installation stops, you must perform these additional steps:

- a. Navigate to your install directory.
- b. Locate the PreInstallSI.log file and open it with a file editor.
- c. Search the file for these error messages:
  - `<SI_Install>/repository/scripts/EFrame_IndexAdds.sql` must be applied to the database.
  - `<SI_Install>/repository/scripts/EFrame_Sequence.sql` must be applied to the database.
  - `<SI_Install>/repository/scripts/EFrame_TableChanges.sql` must be applied to the database. Exiting installation..."

**Note:** If you do not find the above error messages in the log file, the installation failed because of another reason and you must resolve that error and attempt the installation again. If you did find these messages, continue with the remaining steps.

- d. Edit each .sql script and make changes appropriate for your database. This may include changing the SQL delimiter or adding tablespace options.
- e. Log in to your database as the DB schema user.
- f. Execute the SQL files manually in this order:

**Note:** When you are executing the scripts, it is important to execute the SQL scripts in the specified order.

- EFrame\_TableChanges.sql
  - EFrame\_IndexAdds.sql
  - EFrame\_TextIndexAdds.sql
  - EFrame\_Sequence.sql
  - EFrame\_TextIndexModify.sql
  - EFrame\_TextIndexUpdates.sql
  - EFrame\_TextIndexUpgrade.sql
  - EFrame\_Static.sql
- g. Exit from the database.
  - h. Navigate to the parent directory of *install\_dir*.
  - i. Delete (or Rename as a backup) the Sterling Integrator install directory.
  - j. Restart the installation wizard and provide the same installation options you provided before including clearing the **Apply database schema automatically** check box.

When the installation stops, you need to perform the following steps:

- a. Log in to your database as the DB schema user.
- b. Execute the SQL files manually in this order:

**Note:** When you are executing the scripts, it is important to execute the SQL scripts in the specified order.

- EFrame\_TableChanges.sql
  - EFrame\_IndexAdds.sql
  - EFrame\_TextIndexAdds.sql
  - EFrame\_Sequence.sql
  - EFrame\_TextIndexModify.sql
  - EFrame\_TextIndexUpdates.sql
  - EFrame\_TextIndexUpgrade.sql
  - EFrame\_Static.sql
- c. Exit from the database.
  - d. Navigate to the parent directory of *install\_dir*.
  - e. Delete (or Rename as a backup) the Sterling Integrator install directory.
  - f. Restart the installation and provide the same installation options you provided before including clearing the **Apply database schema automatically** check box.
6. If you are installing nodes on separate machines, copy the silent install file for node 1 into a new silent install file and then set REINIT\_DB=false and set

CLUSTER=true. This REINIT\_DB=false prevents the database from being re-initialized. After you have the silent install files for node 2 and higher, proceed to Step 8.

7. If you are installing multiple nodes on the same machine, copy the silent install file for node 1 into a new silent install file and then set REINIT\_DB=false, set CLUSTER=true, use a different installation directory for each node (INSTALL\_DIR) and make sure that the initial port for each node is 100 port numbers higher or lower than node 1. After you have the silent install files for node 2 and higher, proceed to Step 7.
8. To start the installation of nodes 2 and higher of the cluster, enter:
 

```
/absolutePath/bin/java -jar /absolutePath/SI.jar -f
/absolutePath/SilentInstallFile - cluster
```
9. If you used different base ports for node 2 onward, you need to complete the following additional steps:

Step	Action	Your Notes
1	Navigate to <code>/install_dir/install/properties</code> for node 1.	
2	In the <code>noapp.properies_platform_ifcresources_ext</code> file, record the value for <code>multicastBasePort</code> .	
3	In the <code>jgroup_cluster.properties</code> file, record the values for the <code>mcast_port</code> parameters of the <code>property_string</code> and <code>lock.protocolStack</code> properties.	
4	For each subsequent node, you need to perform the remaining steps.	
5	Navigate to <code>/install_dir/install/properties</code> for each node (node 2 and higher).	
6	In the <code>noapp.properies_platform_ifcresources_ext.in</code> file, update the value of the <code>multicastBasePort</code> to match the value for node 1.  For example, replace the string <code>&amp;MULTICAST_NODE_PORT1;</code> with the port number 45460. <ul style="list-style-type: none"> <li>• (before) <code>multicastBasePort=&amp;MULTICAST_NODE_PORT1;</code></li> <li>• (after) <code>multicastBasePort=45460</code></li> </ul>	
7	In the <code>jgroups_cluster.properties.in</code> file, update all occurrences of <code>mcast_port</code> to match the values for node 1.	
8	After you have updated the attributes for all of the nodes, enter:  <code>/install_dir/install/bin/setupfiles.sh</code> for node 2 and higher.	

10. Determine if you need to apply a patch to the installation. Refer to *System Maintenance* for information on how to install the latest patch.

## Installing version 5.2.1 or 5.2.2 as a fix pack

### About this task

You must install the fix pack on each node in the cluster.

Use this procedure to patch your clustered 5.2.x system to version 5.2.1 or 5.2.2:

### Procedure

1. Download the fix pack file from the installation media.
2. Verify that the database server is up and ready to accept connections.
3. Log in to the server where Sterling B2B Integrator is installed with the user ID and password that was used for the installation.
4. Stop the system.
5. Perform a full backup of the installation directory, including all subdirectories.
6. Perform a backup of the database.
7. If you edited any property files, ensure that the associated `properties.in` files have the most current changes. Property files are overwritten with the contents of the associated `properties.in` files during the fix pack installation.
8. Is the database password encrypted? If Yes, decrypt the password.
9. To install the fix pack:

- UNIX: Navigate to the directory where the system is installed and enter:  
`./InstallService.sh si_<release number>_build_<build number>.jar`

**Attention:** Running **InstallService.sh** removes any previously installed interim fix to prevent conflicts with what is being installed.

- Windows: From a command prompt or the **Run** dialog box, enter:  
`C:\install_dir\install\bin\InstallService.cmd <path>\si_<version>_sp_0_patch_<number>_<app_server>.jar`

**Attention:** Running **InstallService.cmd** removes any previously installed interim fix to prevent conflicts with what is being installed.

If the fix pack attempts to modify the database schema and the modification fails, an error message about the failure is generated. The message provides the error message code from the database and the SQL command that failed. The failure information is also logged to the `system.log` file and to the `patch.log` file.

10. Press **Enter** to continue.
11. If you want to accept the license agreement, enter `Y`.
12. Enter the passphrase.  
Information about the fix pack is displayed. After the fix pack is applied, the following message is displayed: **Deployment to application server successful**
13. If you decrypted the database password, re-encrypt the password.
14. Reconfigure the cluster after you install the fix pack.
15. Start the system.

If you are using a perimeter server in the DMZ, you must review the information about applying a fix pack to the perimeter server.

---

## Validate the Installation

### Checklist for validating the installation in a cluster environment

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

#	Validate Installation Task	Completed
1	Configure the nodes in the cluster.	
2	Verify the cluster environment settings in property files.	
3	Start the cluster.	
4	Access Sterling B2B Integrator.	
5	Validate the Installation (sample business process).	
6	Verify the cluster is running from the user interface.	
7	Stop a node (hard stop or soft stop) or stop the cluster.	

### Verifying the cluster environment settings in property files

#### About this task

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

**Note:** If these property settings are not in place, then add them to the appropriate property file.

#### Procedure

1. Navigate to `/install_dir/install/properties`.
2. Verify that `CLUSTER=true` is in the `sandbox.cfg` file.
3. Verify that `cluster=true` is in the `centralops.properties` file.
4. Verify that `cluster=true` is in the `noapp.properties_platform_ifcresources_ext` file.
5. Verify that `clustered_env=true` is in the `ui.properties` file.

### Configuring the nodes in the cluster

#### About this task

The first time that you configure a cluster, you must use the **startCluster** command with true option (`startCluster.sh nodeNumber true`). Initial configuration is the only time that you must use the **startCluster** command. However, if you must 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 fix pack or interim fix.

To configure the nodes, starting with node 1:

#### Procedure

1. Navigate to `/install_dir/install/bin`.

2. Enter `./startCluster.sh <nodeNumber> <true or false>`. Where *<nodeNumber>* is the number of the node, true runs 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 starts, 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 is displayed.

## What to do next

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

Deployment to application server successful.

## Starting the cluster

### About this task

You must do this task for each node.

To start the cluster:

### Procedure

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 B2B Integrator is located on your system.  
Depending on system load, it might take several minutes for the UI to be ready.
5. Record the URL address so that you can access Sterling B2B Integrator.

## What to do next

If you must release all the locks in a cluster and both nodes are down, use the restart parameter for node 1.

**Note:** The restart parameter can be used on node 1 and cannot be used on any other nodes.

For example:

For node 1, enter:

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

For nodes 2 and higher, enter:

```
./run.sh
```

## Accessing Sterling B2B Integrator

### About this task

To log in to Sterling B2B Integrator:

#### Procedure

1. Open a browser window and enter the address that is displayed at the end of startup. The login page displays.
2. Enter the default user ID and 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.

## Testing a sample business process to validate the installation

### About this task

Validate the installation by testing a sample business process:

#### Procedure

1. From the **Administration Menu**, select **Business Process > Manager**.
2. In the **Process Name** field, enter `Validation_Sample_BPML` and click **Go!**
3. Click **execution manager**.
4. Click **execute**.
5. Click **Go!** The **Status: Success** message displays in the upper left side of the page.

## Verifying that the cluster is running from the user interface

### About this task

To verify that the cluster is running from the user interface (UI):

#### Procedure

1. From the UI, from the **Administration Menu**, select **Operations > System > Troubleshooter**. Ensure you can view the Queue information for each node.
2. From the UI, from the **Administration Menu**, select **Operations > System > Troubleshooter**. Ensure you can view the JNDI Tree for each node.
3. From the UI, from the **Administration Menu**, select **Operations > System > Troubleshooter**. Ensure you can view the host, state, status, adapters, and memory usage information for each node.
4. From the UI, from the **Administration Menu**, select **Operations > System > Troubleshooter**. Ensure you can view the adapter status for each node.

## Stopping a node in a cluster environment (soft stop)

### About this task

A soft stop halts the system after all the business processes finish running. In a cluster environment, you must do 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. Run the hard stop command when you are stopping individual nodes of a cluster.

To soft stop in a UNIX or Linux environment:

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

For more information, see the Performance Management documentation.

To run a soft stop, from the command line:

### Procedure

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

## Stopping a node in a cluster configuration (hard stop)

### About this task

You can stop a single node Sterling B2B Integrator in an UNIX or Linux cluster environment.

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

### Procedure

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

## Stopping the cluster

### About this task

To stop the cluster:

### Procedure

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

---

## Post Installation Configuration

### Post Installation Configuration Checklist for Cluster Environment

After you have install Sterling B2B Integrator, you need to complete the post installation configuration checklist. Review all of the tasks, but note, some tasks may not be required for your system installation.

#	Post Installation Configuration Checklist	Your Notes
1	For security purposes, change all default user ID passwords immediately after installation is completed. See the <i>Update My Account Information</i> task in the documentation library.	
2	Configure ActiveMQ for a cluster environment.	

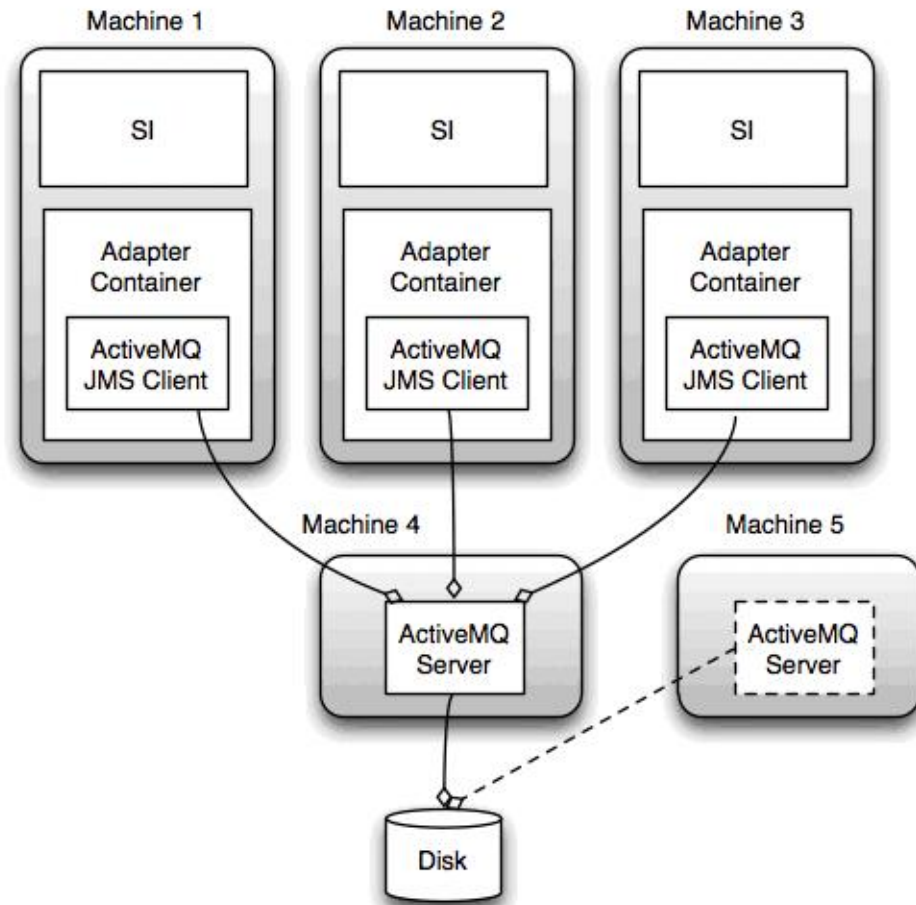


#	Post Installation Configuration Checklist	Your Notes
3	If you are using an IPv6 address in a dual stack configuration, complete the <i>Add the IPv6 Address for the Dual Stack Configuration</i> task.	
4	Download Sterling B2B Integrator Tools.	
5	Determine if you need to modify any Property Files.	
6	Configure Shared File System as Document Storage.	
7	Add host[port] from all the nodes to the jgroups_cluster.property.in for each node.	
8	If you are using an IPv6 address, you need to complete the <i>Update the sandbox.cfg File for IPv6 Address</i> task.	
9	Configure Customer Overrides File with a Firewall between Nodes.	

## JMS cluster configuration for failover

To allow correct JMS execution and failover in the Sterling B2B Integrator cluster environment, you must configure an external ActiveMQ by following the steps that are outlined in the *Configure ActiveMQ for a cluster environment* task.

The following diagram illustrates how the ActiveMQ can be configured to increase availability and failover.



## Configuring ActiveMQ for a cluster environment

### About this task

To configure ActiveMQ for a cluster environment:

#### Procedure

1. Download ActiveMQ 5.2 from <http://activemq.apache.org/activemq-520-release.html> for the appropriate OS.
2. Deploy an instance of ActiveMQ 5.2. The installation can be on the same system as Sterling B2B Integrator or on a separate system.
3. Navigate to `/install_dir/install/properties`.
4. Copy the `activemq.xml` file to the AMQ conf directory. This file configures ActiveMQ to:
  - Use failover clustering
  - Use the Sterling B2B Integrator database for storage
  - Configures the AMQ port usage

By default, ActiveMQ is configured to listen at the Sterling B2B Integrator base port + 64 and the ActiveMQ interface is at base port + 65 (`http://server:base port + 66/admin`). The port can be changed by editing the configuration file.

5. Navigate to `/install_dir/install/properties`.

6. On each Sterling B2B Integrator application node and each Sterling B2B Integrator container node, the queue configuration must be redirected to use the ActiveMQ cluster. In each node, add the following to the `customer_overrides.properties`:

For FIFO Processing:

```
fifo.broker.username=  
fifo.broker.password=  
fifo.broker.url=failover:(tcp://amq_master_hostname:amq_master_port,  
tcp://amq_slave_hostname:amq_slave_port)
```

For adapters that are running in separate JVM containers:

```
iwfcqueue.username=  
iwfcqueue.password=  
iwfcqueue.protocol_config=failover:(tcp://amq_master_hostname:amq_master_port,  
tcp://amq_slave_hostname:amq_slave_port)
```

7. Start the ActiveMQ instances. To start ActiveMQ, it is necessary to supply the **activemq.hostname** property with the host name for the current system. For example:

```
activemq -Dactivemq.hostname=ExampleHostname
```

For more information about running an ActiveMQ instance, see <http://activemq.org>.

8. Start Sterling B2B Integrator.

## Adding the IPv6 address for dual stack configuration

### About this task

If you are using IPv6 and have Sterling B2B Integrator configured in a dual stack, you must add the IPv6 address to the admin host list.

To add the IPv6 address:

### Procedure

1. Navigate to the installation directory that contains the `noapp.properties` file.
2. Open the `noapp.properties_platform_ifcresources_ext.in` file.
3. Add following line to the properties file:  
`admin_host.3=FULL_IPv6_ADDRESS`

Where `FULL_IPv6_ADDRESS` is the IPv6 address of the system. (Make sure that you surround the IPv6 address with square brackets.)

4. Save and close the file.
5. Run the `setupfiles.sh` script.
6. Start Sterling B2B Integrator.

## Download Sterling B2B Integrator Tools

Sterling B2B Integrator includes tools that run on a desktop or personal computer. After you install Sterling B2B Integrator, 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.

## Property files configuration

Property files contain properties that control the operation of Sterling B2B Integrator. For example, the REINIT\_DB property in the `sandbox.cfg` file controls whether a database is initialized when you install Sterling B2B Integrator.

By modifying the values of these properties, you can customize Sterling B2B Integrator to suit your business and technical needs. Most property files are in the following places:

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

After you install Sterling B2B Integrator, most property files and scripts do not need any further configuration for basic operation. However, if you want to customize any specific operations, such as setting a different logging level, you must edit (or in some cases, create) certain property or `.xml` files.

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

Areas where you might 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

## Configure Shared File Systems as Document Storage

### About this task

To configure the shared file systems as document storage:

#### Procedure

1. Navigate to `/install_dir/install/properties`.
2. Open the `jdbc.properties.in` file.
3. Update the value of the `document_dir` attribute to point to the shared files system directory where you store documents.
4. Save and close the file.
5. Navigate to `/install_dir/install/bin`.
6. Enter `./setupfiles.sh`.
7. Restart Sterling B2B Integrator.

## Adding host[port] from all the nodes to the jgroups\_cluster.property.in for each node

### About this task

Complete this task for both vertical and horizontal clusters. You must complete this task for each node, starting with node 1.

Before you begin, it is important that you never override `mcast_addr` in the `jgroup_cluster.properties` file.

To add the host [port] to the `jgroups_cluster.property.in` file:

### Procedure

1. Navigate to the properties file directory for the node.
2. Determine the `initial_hosts` port for each node:
  - Navigate to the properties file directory for the node.
  - Find the `initial_hosts` from the `jgroups_cluster.property` (`initial_hosts=host{port}`).
  - Record the value from the `initial_hosts` for each node.
3. Open the `jgroups_cluster.property.in` file.
4. Add the `initial_hosts` property to the file.

For example, if node 1 is on `host1` and node 2 is on `host2`. For node 1, you would add:

```
initial_hosts=host1[port1],host2[port2]
```

For node 2, you would add:

```
initial_hosts=host2[port2],host1[port1]
```

5. Save and close the file.

## Update the sandbox.cfg file for an IPv6 address

### About this task

Before you begin, it is important to note that you should never override `mcast_addr` in the `jgroup_cluster.properties`.

To update the `sandbox.cfg` file for an IPv6 address (complete this task for each node in the cluster):

### Procedure

1. Navigate to the properties file directory for each node.
2. Open the `sandbox.cfg` file.
3. Add the following line to the file.

```
IPV4STACK=false
```
4. Save and close the file.
5. Navigate to the `bin` directory for your installation.
6. Enter `setupfiles.sh` (UNIX) or `setupfiles.cmd` (Windows).

## Services and adapters associated with node 1 in a cluster

The following service and adapters are associated with node 1 in the cluster:

- Schedule

- FileSystem
- CmdLine
- CDServerAdapter
- CDAdapter
- CDRequesterAdapter
- CEUAdapter
- HttpServerAdapter
- B2B\_HTTP\_COMMUNICATIONS\_ADAPTER
- HTTP\_COMMUNICATIONS\_ADAPTER
- HTTPClient Adapter
- FTPClientAdapter
- FtpServerAdapter
- SFTPClientAdapter

The following services have storage that is set to database:

- HttpServerAdapter
- CEUAdapterServiceType
- CDSERVER\_ADAPTER

The default storage for all of the workflows is set to database.

## Configuring customer overrides file with a firewall between nodes

### About this task

If you configured a firewall between nodes that blocks ports outside of the port range that is assigned to Sterling B2B Integrator, do the following on all nodes:

### Procedure

1. Navigate to the Sterling B2B Integrator installation directory.
2. Navigate to the properties directory and locate (or create, if necessary) the `customer_overrides.properties` file.
3. Open the `customer_overrides.properties` file with a text editor.
4. 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 change increases the number of threads that are used by the system.

5. Save and close the `customer_overrides.properties` file.
6. Stop Sterling B2B Integrator and restart it to apply the changes.

---

## System Maintenance

### Cluster Maintenance Overview

From time to time, you may need to perform system maintenance activities. These activities might include any or all of the following:

- Applying a Patch
- Applying a Hot-fix
- Performing a Checksum
- Generating a Patch Change Report
- Adding or Removing a License

### Fix pack or interim fix for a UNIX/Linux cluster environment

From time to time, you must apply either a fix pack or an interim fix to your installation:

- All nodes in the cluster must be patched to the same level. You must stop all nodes in the cluster before you install a fix pack, then install the fix pack on each node.
- Fix packs contain cumulative fixes for a specific version of Sterling B2B Integrator. Because each fix pack contains all of the fixes from previous fix packs, installing the most recent fix pack is sufficient. Periodically check the website to verify that you have the most recent patch.
- An interim fix is one or more fixes that are applied to a specific existing fix pack.

It is possible to apply fix packs to nodes while other nodes are processing. However, a fix pack that contains 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 is changed through an upgrade or fix pack.

When a fix pack, 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 fix pack 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 fix pack.

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

### Determining whether you must apply a maintenance fix pack in a UNIX/Linux Environment

#### About this task

Fix packs contain cumulative fixes for a specific version of Sterling B2B Integrator. Fix pack files are available from the Support Center website.

Because each fix pack contains the fixes from previous fix packs, installing the most recent fix pack is sufficient. Fix pack files are named under the following naming convention:

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

Information about a fix pack is in a PDF file with a similar name. The naming convention for PDF files that contain information about a particular fix pack is:

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

Before you install the fix pack, review the following items:

- Preserve your custom changes to system resources.
- The fix pack installation uses one or more fix pack property override files. These files are named *propertyFile\_fixpack.properties*. Do not alter these files.
- Property changes made directly in \*.properties or \*.properties.in files can be overwritten during the fix pack installation. Properties that are overridden using the *customer\_overrides.properties* file are not affected. IBM recommends that you maintain property file changes (when possible) in the *customer\_overrides.properties* file. For more information about this file, see the property file documentation.
- If you edited any of the *cdinterop* files, you must back them up before you apply the fix pack. The *cdinterop* files do not have initialization (\*.in) files. After you apply the fix pack, 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 fix pack installation is automatically logged to */install\_dir/install/logs/InstallService.log*.
- If you must roll back a fix pack, see the *Fix Pack Changes Report*.
- During fix pack installation, the *dbVerify* utility compares the list of standard indexes with the indexes present in the database and drops the custom indexes. Re-create the custom indexes after the fix pack installation is complete.

## Preserving custom configuration changes in the cluster environment (startCluster.sh)

### About this task

As part of a default cluster configuration, certain values in the database for service or adapter configurations, and default document storage, must be updated to get the cluster to work. 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 runs database updates (True is the default)
- False prevents database updates



The first time that you configure a cluster, you must set the option 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 of a fix pack or interim fix.

## Installing a fix pack in a UNIX/Linux cluster environment

### About this task

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

To install the latest fix pack for Sterling B2B Integrator in a UNIX/Linux cluster environment:

### Procedure

1. Navigate to the Support Center website.
2. Login using your email address and password.
3. Download the most recent fix pack for your version of Sterling B2B 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. Log in to the server where Sterling B2B Integrator is installed with the user ID and password that was used for the installation.
6. Stop Sterling B2B Integrator.
7. Perform a full backup of the Sterling B2B Integrator installation directory, including all subdirectories.
8. Perform a backup of the database.
9. 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 fix pack installation.
10. Is the database password encrypted? If Yes, decrypt the password.
11. Navigate to the bin directory where Sterling B2B Integrator is installed. Enter:  
`cd /install_dir/install/bin`
12. Enter: `./InstallService.sh <path>/si_<release number>_build_<build number>.jar`  
If the fix pack 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.
13. Press **Enter** to continue.
14. If you want to accept the license agreement, enter **Y**.
15. Enter the passphrase.  
Information about the fix pack is displayed. After the fix pack has been applied, the following message is displayed: Deployment to application server successful
16. If you decrypted the database password, re-encrypt the password.
17. Enter `./startCluster.sh 1` to reconfigure the cluster after installing the fix pack.
18. Start Sterling B2B Integrator.  
If you are using a perimeter server in the DMZ, you will need to review the information on how to apply a fix pack to the perimeter server.

## Apply a critical fix pack (stopping the whole cluster)

### About this task

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

To apply a critical fix pack, where the entire cluster needs to be down:

#### Procedure

1. Stop the cluster.
2. Navigate to `/install_dir/install/bin`.
3. Enter the following command for each node, starting with node 1:  
`./InstallService.sh fixpack_dir/fixpackFilename.jar`  
**Attention:** Running `InstallService.sh` removes any previously installed interim fix to prevent conflicts with what is being installed.
4. Open the `sandbox.cfg` file and change `REINIT_DB` as follows:
  - For node 1, `REINIT_DB=True`
  - For node 2 or higher, `REINIT_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)

### About this task

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.**

#### Procedure

1. Starting with node 1, navigate to `/install_dir/install/bin`.
2. Stop the node.
3. After the processes stop, enter the following command: `./InstallService.sh fixpack_dir/fixpackFilename.jar`  
**Attention:** Running `InstallService.sh` removes any previously installed interim fix to prevent conflicts with what is being installed.
4. Navigate to `/install_dir/install/properties`.
5. Open the `sandbox.cfg` file and change `REINIT_DB` as follows:
  - For node 1, `REINIT_DB=True`
  - For node 2 or higher, `REINIT_DB=False`, this prevents 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)

### About this task

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:

### Procedure

1. Stop the entire cluster.
2. Starting with node 1, do the following for each node:
  - a. Navigate to `/install_dir/install/bin`.
  - b. Enter the following command for each node, starting with node 1:  
`./InstallService.sh fixpack_dir/fixpackFilename.jar`  
**Attention:** Running **InstallService.sh** removes any previously installed interim fix to prevent conflicts with what is being installed.
  - c. Open the `sandbox.cfg` file and change `REINIT_DB` as follows:
    - For node 1, `REINIT_DB=True`
    - For node 2 or higher, `REINIT_DB=False`, this setting prevents the database updates from repeating during the fix pack installation on each node.
  - d. Configure the node in the cluster enter `./startCluster.sh nodeName false`

## Installing an interim fix in a UNIX/Linux cluster environment

### About this task

After you install Sterling B2B Integrator you might be required to install an interim fix. An interim fix is one or more fixes that are applied to a specific existing fix pack. In a cluster environment, you must apply the interim fix to node 1 first and then to the subsequent nodes.

Before you can install an interim fix developed for your company, you must complete the following:

- Receive the file name of the `ccaseid.jar` to install from IBM Customer Support
- Create a full backup of Sterling B2B Integrator
- Create a full backup of your database
- Preserve your custom changes to system resources.

To install an interim fix:

### Procedure

1. Log in to the computer on which you are installing the interim fix.
2. If the database password was encrypted, decrypt the password.
3. Stop Sterling B2B Integrator.
4. Navigate to `/install_dir/install/bin`.
5. Enter `./installService.sh /absolutePath/ccaseid.jar` to install the interim fix.

You might be required to complete this step twice depending on the fix pack. Read the output from the `InstallService.sh` script carefully to see whether you must complete this step twice.

**Attention:** Running **InstallService.sh** removes any previously installed interim fix to prevent conflicts with what is being installed.

6. If you decrypted the database password, re-encrypt the password.
7. Open the `sandbox.cfg` file and change `REINIT_DB` as follows:
  - For node 1, `REINIT_DB=True`
  - For node 2 or higher, `REINIT_DB=False`, this setting prevents the database updates from repeating during the interim fix installation on each node.
8. Configure the node in the cluster, enter `./startCluster.sh nodeName false`.
9. Start Sterling B2B Integrator.
10. In the `/install_dir/install/bin` directory, enter `./dump_info.sh` to verify that the interim fix was successfully installed.
11. Repeat steps 1 - 10 for the remaining nodes.

### Uninstalling an interim fix

Uninstalling an interim fix is a manual process. IBM support must first determine what is included in the interim fix you want to remove, and then manually backout the changes one at a time. The complexity of this process, therefore, can vary greatly.

If you must remove an interim fix, contact IBM support by creating a PMR (Problem Management Record)

## DB checksum tool

A checksum is a simple redundancy check used to detect errors in data. In Sterling B2B Integrator, a verification process is used to compare the checksum between the existing default resource and the resource that was added after application of a fix pack or upgrade. The DB checksum tool generates a granular report of the changes in the system that could not 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

#### About this task

To run the DB Checksum tool:

#### Procedure

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.

1 is WFD.

2 is MAP.

3 is SCHEMA.

4 is SII.

5 is TEMPLATE.

- r is the resource name. For example, wfd, map, schema, sii, or template.
- o is the file name to output all the messages.
- g is the file name that lists all the ignored resources.
- h is the help screen.

The DB Checksum tool runs the relevant checksum operation that is based on the command options that are selected and generates the output message.

## Patch changes report

The patch changes report is used to obtain information if you must roll back a fix pack. The patch changes report can be found in the installation directory patch\_reports folder. The report contains the following fix pack information:

- Fix pack ID
- Fix pack changes
- Number of files deleted
- Number of JARs removed
- Number of JARs added
- Number of files added
- Number of files changed
- Number of properties added
- Number of business processes added
- Number of service instances added
- Number of service definitions added
- Number of templates added
- Number of reports added
- Number of maps added
- Number of schemas added
- Number of business rules added

For example, the installation directory patch\_reports folder contains the file Patch\_Report.html. When you open this html file, you can view the patch information.

### Example: patch changes report

The following is an example of a patch changes report.

```
Summary of Changes
Patch ID: Platform 2.0
Patch Changes: 1287
Number of Files Deleted: 0
Number of JARs Removed: 2
Number of JARs Added: 0
Number of Files Added: 3
Number of Files Changed: 3
Number of Properties Added: 4
Number of BPs Added: 4
Number of Service Instances Added: 2
Number of Service Definitions Added: 3
Number of Templates Added: 0
Number of Reports Added: 0
Number of Maps Added: 3
Number of Schemas Added: 3
Number of Business Rules Added: 0
```

---

```
List of JARs Removed:
JAR Removed: /SAMPLE_INSTALL_1/jar/jaf/1_0_2/activation.jar
```

Time: Wed May 13 15:23:08 EDT 2009  
JAR Removed: /SAMPLE\_INSTALL\_1/jar/commons\_logging/1\_0\_3/commons-logging-api.jar  
Time: Wed May 13 15:23:08 EDT 2009

---

List of Files Added:

File Added: /SAMPLE\_INSTALL\_1/bin/sql/fix\_db2\_schema.sql  
Time: Wed May 13 15:21:30 EDT 2009  
File Added: /SAMPLE\_INSTALL\_1/bin/sql/fix\_db2series\_schema.sql  
Time: Wed May 13 15:21:30 EDT 2009  
File Added: /SAMPLE\_INSTALL\_1/bin/errorQueueManager.sh.in  
Time: Wed May 13 15:21:30 EDT 2009

---

List of Files Changed:

File Changed: /SAMPLE\_INSTALL\_1/properties/lang/en/Reports\_en.properties  
File Changed: /SAMPLE\_INSTALL\_1/properties/lang/es/Reports\_es.properties  
File Changed: /SAMPLE\_INSTALL\_1/properties/lang/fr/Reports\_fr.properties

---

List of Properties Added:

Property Added: /SAMPLE\_INSTALL\_1/properties/filesToRemove.txt  
Property Added: /SAMPLE\_INSTALL\_1/properties/filesToRemove.txt.in  
Property Added: /SAMPLE\_INSTALL\_1/properties/csr.properties.sample  
Property Added: /SAMPLE\_INSTALL\_1/properties/csr.properties.sample.in

---

List of BPs Added:

BP Added: Schedule\_AssociateBPsToDocs.bpm1 version: 4  
Time: Wed May 13 15:23:07 EDT 2009  
BP Added: Recovery.bpm1 version: 17  
Time: Wed May 13 15:23:07 EDT 2009  
BP Added: Schedule\_AutoTerminateService.bpm1 version: 10  
Time: Wed May 13 15:23:07 EDT 2009  
BP Added: Schedule\_DBMonitorService.bpm1 version: 1  
Time: Wed May 13 15:23:08 EDT 2009

---

List of Service Instances Added:

Service Instance Added: RetentionProcessor version: 2  
Time: Wed May 13 15:23:28 EDT 2009  
Service Instance Added: MESAHttpServerAdapter version: 1  
Time: Wed May 13 15:25:11 EDT 2009

---

List of Service Definitions Added:

Service Definition Added: LockServiceType  
Time: Wed May 13 15:22:58 EDT 2009  
Service Definition Added: XAPIServiceType  
Time: Wed May 13 15:22:59 EDT 2009  
Service Definition Added: CleanLockServiceType  
Time: Wed May 13 15:22:59 EDT 2009

---

List of Templates Added:

Template Added: Normalize  
Time: Wed May 13 15:23:26 EDT 2009  
Template Added: Derive  
Time: Wed May 13 15:23:26 EDT 2009

---

List of Maps Added:

Map Added: IBMPutResponseToXML  
Time: Wed May 13 15:24:05 EDT 2009  
Map Added: http\_headers  
Time: Wed May 13 15:24:36 EDT 2009  
Map Added: OracleHttpHeaders  
Time: Wed May 13 15:24:51 EDT 2009

---

List of Schemas Added:

Schema Added: E5\_V20\_Acknowledge\_Result.dtd from file: E5\_V20\_Acknowledge\_Result  
Time: Wed May 13 15:24:36 EDT 2009

Schema Added: E5\_V20\_Acknowledge\_Submit.dtd from file: E5\_V20\_Acknowledge\_Submit  
 Time: Wed May 13 15:24:36 EDT 2009  
 Schema Added: E5\_V20\_APIs\_Result.dtd from file: E5\_V20\_APIs\_Result  
 Time: Wed May 13 15:24:36 EDT 2009

## License modification

If after the installation is finished, you must modify the software licenses you loaded, you can do that by using the AddLicenseSet command. The AddLicenseSet command is in the bin directory of your UNIX or Windows installation. After the initial installation, the license files are at:

- UNIX: `/install_dir/install/properties/licensefiles`
- Windows: `\install_dir\install\properties\licensefiles`
- iSeries: `/install_dir/properties/licensefiles`

You can add licenses or review the license list from the UI. Go to the **Administration Menu > System > B2B Console > Operations > System > Licenses**.

### AddLicenseSet command parameters

The AddLicenseSet command can modify a single license file or the entire license file directory.

To use the AddLicenseSet command:

- Navigate to the bin directory
- Include the absolute path to the license file directory or to a license file

The AddLicenseSet command has the following parameters:

AddLicenseSet Parameters	Description
<b>-reload</b>	<p>Use this parameter to reload the license files.</p> <p>This parameter deletes all of the license files from the database before the new files are loaded. The old license files are saved to the following location:</p> <ul style="list-style-type: none"> <li>• UNIX: <code>/install_dir/install/logs/security/old_licenses</code></li> <li>• Windows: <code>\install_dir\install\logs\security\old_licenses</code></li> <li>• iSeries: <code>/install_dir/logs/security/old_licenses</code></li> </ul>
<b>-upgrade</b>	<p>Use this parameter during an upgrade only.</p> <p>This parameter deletes all of the old license files from the database and installs the new license files. The old license files are saved to the following location:</p> <ul style="list-style-type: none"> <li>• UNIX: <code>/install_dir/install/logs/security/upgrade</code></li> <li>• Windows: <code>\install_dir\install\logs\security\upgrade</code></li> <li>• iSeries: <code>/install_dir/logs/security/old_licenses</code></li> </ul>

---

## Configure Non-English Environment

### Non-English-language environment checklist

You can install Sterling B2B Integrator in an English-language or a non-English-language environment. The base language for the Configurator can be switched only one time. Use the following checklist to help you change a non-english-language environment:

#	Non-English-language environment checklist	Your notes
1	Install the Sterling B2B Integrator language pack.	
2	Load the Sterling B2B Integrator language pack factory defaults.	
3	Load the Sterling B2B Integrator language pack translators.	
4	Configure encodings.	
5	Configure locales.	

### Language settings

Language settings for Java applications involve both character sets and encoding:

- A character set is a set of characters (letters, numbers, and symbols such as #, \$, and &) that are recognized by computer hardware and software.
- An encoding is a representation of data in a particular character set. An encoding set is a group of encodings.

For information about basic and extended encoding sets, see: <http://download.oracle.com/javase/1.5.0/docs/guide/intl/encoding.doc.html>.

The default encoding set includes the following encodings:

- UTF-8 (default)
- ISO-8859-1
- ISO-8859-5
- US-ASCII
- ISO\_8859-1
- EUC-JP
- UTF-16
- ISO-2022-JP

Sterling B2B Integrator provides two property files that contain supported encoding sets. These properties files are in the */install\_dir/install/properties* directory.

- `encodings.properties` – Contains the default encoding set used in the user interface.
- `encodings_large.properties` – Contains all supported encoding sets.

You are not limited to the encodings in the `encoding.properties` file. Sterling B2B Integrator makes it possible for you to configure the encodings properties files to expand the number of encodings you can use.



## Install the Language Pack

### About this task

Before installing the language pack be sure that you have successfully installed Sterling B2B Integrator.

To install the Sterling B2B Integrator language pack:

### Procedure

1. Insert the language CDs into your CD-ROM drive.
2. Navigate to the directory that is appropriate for your operating system.
  - If you are using AIX, open the AIX directory.
  - If you are using HP-UX, open the HP directory.
  - If you are using Solaris, open the Sun directory.
  - If you are using Red Hat Linux, open the Linux directory.
  - If you are using SUSE Linux, open the Linux directory.
3. Enter `./setup.bin`.

## Loading the language pack translations

### About this task

Before you load the Sterling B2B Integrator language pack factory defaults, be sure that you successfully complete all instructions in the database chapter.

To load the language pack translation with custom localization literals:

### Procedure

1. Run the LocalizedStringReconciler tool in the IMPORT mode from the `/install_dir/install/bin` directory. Enter: `./ant.sh -f localizedstringreconciler.xml import -Dsrc=/install_dir/database/FactorySetup/XMLS` This tool first inserts the value that is specified in the `<from_language>_<from_country>_ycplocalizedstrings_<to_language>_<to_country>.properties` file present in the `/install_dir/database/FactorySetup/XMLS/<language>_<country>` directory into the database.

The *basefilename* refers to the file present in the `/database/FactorySetup/XMLS` directory, for which the translations are to be imported into the database.

2. Verify that your locale settings such as currency, time format, and date are correct.

## Configure Encodings

### About this task

To configure your encoding set:

### Procedure

1. Stop Sterling B2B Integrator and wait for shutdown to complete.
2. Navigate to `/install_dir/install/properties`.
3. Open the `encodings_large.properties` file.
4. Select the encodings you want to add to the `encodings.properties` file.

5. Open the encodings.properties.in file.
6. At the end of the encodings.properties.in file, add the encodings you selected from the encodings\_large.properties file. When adding encodings from one file to the other, first copy the encodings as they appear in the encodings\_large.properties file. After adding the new encodings, ensure that the index numbers are consecutive. If the index numbers are not consecutive, change the index number or numbers as needed. For example, encoding54 cannot follow encoding6. In this example, change encoding54 to encoding7.  
The first name in the definition (before the comma) is the name that will appear in the Sterling B2B Integrator user interface. You can change this name to make it more descriptive. For example: encoding4 = 819,ISO8859\_1 may be changed to encoding4 = WesternEurope,ISO8859\_1. ISO8859\_1 is the Java canonical name and should not be changed.
7. Update the first line in the encodings.properties.in file (numberof). Change *numberof* to the number of encodings added to the file. For example, if the current value is numberof = 6 and you add 5 new encodings, the new value is numberof = 11.  
*numberof* indicates the total number of encodings located in the file. You must update numberof to ensure that the encodings you added will be visible in the user interface.
8. Navigate to `/install_dir/install/bin`.
9. Enter `./setupfiles.sh`.
10. Start Sterling B2B Integrator.

## Configure Locale

### About this task

Sterling B2B Integrator runs in any locale that Java supports. If you want to run the in a non-default locale, then configure your environment to the specific locale you want to use.

To configure locale (default is English):

### Procedure

1. Enter `local-a`. A list of locales is displayed.
2. Enter `export LANG <locale>`. Where `<locale>` is the language, for example to set the locale to Japanese, `locale = ja_JP`.
3. Enter `export LC_ALL <locale>`. Some UNIX shells require the `setenv` command instead of the `export` command.

---

## Install/Configure Perimeter Servers

### Perimeter server overview

A perimeter server is an optional software tool for communications management. A perimeter server can be installed within a firewall configuration for securing local area networks (DMZ). A DMZ is a computer host or small network that is inserted as a neutral zone between a company's private network and their public network. A perimeter server requires a corresponding perimeter client.

The perimeter server manages the communications flow between outer layers of your network and the TCP-based transport adapters. A perimeter server can solve

problems with network congestion, security, and scalability, especially in high-volume, Internet-gateway environments.

## Installation guidelines for perimeter servers with Sterling B2B Integrator

The installation program installs a perimeter client and a local mode server. The local mode server is useful for testing purposes or in environments that do not require a secure solution. However, if you require high-volume, secure connections, you must install a perimeter server in a remote zone, either a more secure or less secure network than your integration server.

Consider the following before you install a perimeter server:

- Licensing for a perimeter server is determined by the licensing restrictions on the corresponding B2B adapters.
- Each perimeter server is limited to two TCP/IP addresses:
  - Internal interface is the TCP/IP address that the perimeter server uses to communicate with Sterling B2B Integrator.
  - External interface is the TCP/IP address that the perimeter server uses to communicate with trading partners. To use extra TCP/IP addresses, install more perimeter servers.
- You can have multiple perimeter servers that are installed on the same computer interacting with one instance of Sterling B2B Integrator. To install a perimeter server on a computer with an existing instance, install the new perimeter server in a different installation directory.
- The combination of internal TCP/IP address and port must be unique for all perimeter servers that are installed on one computer.
  - If a perimeter server is installed with the wildcard address, then all ports must be unique. The assigned ports are not available for use by adapters that use the server or any other perimeter server on that computer.
  - The internal and external interface can use the same TCP/IP address. However, the port that is used by the perimeter server is not available to the adapters that use the server.

## Perimeter Server Installation Methods

You can install perimeter server either in silent mode or in interactive mode. The default installation mode is silent. In the silent mode, you should specify the details in a silent file, whereas in the interactive mode, you should enter the value each time a prompt appears.

## Perimeter Server Information Gathering Checklist

Before you install the perimeter server, you need to gather the following information and answer the following questions:

Perimeter Server Information Gathering Checklist	Your Notes
Path to java	
Path to the Sterling B2B Integrator installation directory	
Will this perimeter server be installed in a less secure network?	

Perimeter Server Information Gathering Checklist	Your Notes
TCP/IP address or the DNS address that the perimeter server will listen on.	
Listening port for the perimeter server.	
Local port that the perimeter server will use to connect to Sterling B2B Integrator.	
Port number must be higher than 1024.	

## Perimeter server security vulnerabilities

When Sterling B2B Integrator is deployed with a remote perimeter server in a more secure network zone, there is a security vulnerability. An intruder might compromise the host where the proxy is located, and take over the persistent connection to the perimeter server that is in the more secure zone. If this intrusion happens, the perimeter server can relay all of the intruder's network requests past the firewall into this internal zone.

To prevent an intrusion, limit the activities that the remote perimeter server carries out on behalf of the proxy to specifically the activities that the proxy requires for its operation.

Control these limitations by using a configuration that is in the secure network zone with the remote perimeter server, inaccessible by the proxy that might become compromised.

## Install a Perimeter Server in a More Secure Network in a UNIX or Linux Environment

### About this task

Before you begin:

- Sterling B2B Integrator needs to be installed.
- You should have completed the Perimeter Server Information Gathering Checklist.

To install a perimeter server in a more secure network in a UNIX or Linux environment using the interactive mode:

### Procedure

1. Enter: `/path_to_java/java -jar /install_dir/install/packages/ps_4500.jar -interactive`

The installation program verifies the operating system, required patch level, and the location and version of the JDK.

2. Enter the full path name for the Sterling B2B Integrator installation directory and press **Enter**.

If there is an existing installation in the directory you specify, you can update it using the same settings. Enter yes, and installation will proceed without additional entries.

3. Enter yes to confirm that the installation directory is correct.

The program verifies the amount of available disk space.

4. Is this server in a less secure network than the integration server, enter no.

This installation is for a more secure network.

5. Will this perimeter server need to operate on specific network interface:
  - Enter yes to select from a list network interfaces available.
  - Enter no.
6. Enter the TCP/IP address or DNS name that the integration server will listen on for the connection from this perimeter server.
7. Enter yes to confirm the TCP/IP address or DNS name.
8. Enter the port that the integration server will listen on for the connection from this server. The port number must be higher than 1024.
9. Enter the local port number that the perimeter server will use for the connection to the integration server.

The port number must be higher than 1024, except specify a port of zero if you want the operating system to select any unused port.
10. Enter yes to confirm the port number.

After the installation is complete, the following messages are displayed:

```
Installation of Perimeter Service is finished
To start this Perimeter Server change to the install directory and run
the startup script.
You will also need to configure this server in your integration server
(SI) UI.
```

## Install a Perimeter Server in a Less Secure Network in a UNIX or Linux Environment

### About this task

To install a perimeter server in a UNIX or Linux environment in interactive mode:

### Procedure

1. Copy the ps\_4500.jar installation files from the installation CD (or from another location) to a UNIX/Linux directory. If you are using FTP to copy the file, make sure your session is set to binary mode.
2. Enter: `/path_to_java/java -jar /install_dir/install/packages/ps_4500.jar -interactive`

The program verifies the operating system, required patch level, and the location and version of the JDK.

3. Enter the full path name of the installation directory.
4. If there is an existing installation in the directory you specify, you can update it using the same settings. Answer the question:

There is an existing install at that location, update it while keeping existing settings?

If **yes**, the installation will proceed without additional entries.

**Note:** If you want to change any of the settings, you must use a new directory, or delete the old installation before performing the new installation. You cannot overwrite an existing installation, and you cannot use an existing directory that does not contain a valid installation. The existing installation must be Sterling B2B Integrator 5.0 or later.

5. Confirm that the installation directory is correct.

The program verifies the amount of available disk space.

6. Answer the question:  
Is this server in a less secure network than the integration server?  
**Yes**
7. Answer the question:  
Will this server need to operate on specific network interfaces?  
If **yes**, the program returns a list of the network interfaces available on your host. Select the interfaces for the server to use.
8. Enter the TCP/IP address or DNS name for the internal interface to use to communicate with the integration server (Sterling B2B Integrator). Press **Enter** to use a wildcard for this address.
9. Verify the TCP/IP address or DNS name for the internal interface.
10. Enter the TCP/IP address or DNS name for the external interface to use to communicate with trading partners. Press Enter to use a wildcard for this address.
11. Verify the TCP/IP address or DNS name for the external interface.
12. Enter the port that the perimeter server will listen on for the connection from integration server (Sterling B2B Integrator). The port number must be higher than 1024.
13. Verify the port.  
When the perimeter server is installed, the following message is displayed:  
Installation of Perimeter Service is finished
14. Change to the installation directory.
15. Enter `./startupPs.sh` to start the perimeter server.

## Silent installation method for an external perimeter server

You can install an external perimeter server with a silent installation file. The perimeter server can be installed on the same system where you installed Sterling B2B Integrator or on a separate system. Install the perimeter server on a separate system.

To use the silent installation method, you first create the silent installation file and then use it to complete the installation.

### Create the Silent Installation File for an External Perimeter Server About this task

Create a silent installation file with the following variables:

Entry	Description
INSTALL_DIR	(Required) The installation directory that stores perimeter server files and related directories. This directory must exist prior to running the silent install.
REVERSE_CONNECT	(Optional) Determines if the perimeter server is to be installed in a more secure network zone. Valid values: <ul style="list-style-type: none"> <li>• Y - more secure network zone</li> <li>• N - less secure network zone</li> </ul>
PS_PORT	(Required) Determines the perimeter server port to interact with the system.

Entry	Description
PS_SECURE_IF	(Required) Determines the TCP/IP address or DNS name for the internal interface to communicate with the integration server (Sterling B2B Integrator). You can use a wildcard (*) for this address.
PS_EXTERNAL_IF	(Required) Determines the TCP/IP address or DNS name for the external interface to communicate with the trading partners. You can use a wildcard (*) for this address.
REMOTE_ADDR	(Optional) Determines the remote perimeter server address. (Not required if REVERSE_CONNECT=N)
REMOTE_PORT	(Optional) Determines the remote perimeter server port. (Not required if REVERSE_CONNECT=N)
MAX_JVM_HEAP	(Required) Determines the maximum Java heap size allocated to the JVM.

## Installing an external perimeter server with a silent installation file

### About this task

Before you begin, create the silent installation file.

To install the external perimeter server with a silent installation file:

### Procedure

1. From the installation media, copy SI.jar to a UNIX/Linux directory.
2. Set up your silent installation file and record its location.
3. Move to your working directory.
4. To start the installation, enter:

```
/absolutePath/bin/java -jar /install_dir/install/packages/ps_4500.jar -f silent.txt
```

The installation 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 installation.

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

Installation has completed successfully.

5. Determine whether you must apply any fix packs to the installation. Refer to *Installation maintenance* to install the latest fix pack.

## Install Patches in a Remote Perimeter Server UNIX or Linux Environment

### About this task

Remote perimeter servers are not automatically updated by a service pack or patch. You must reinstall the perimeter server using the new perimeter server installation file supplied with the service pack or patch.

To update a Remote Perimeter Server:

## Procedure

1. Update your installation with the latest maintenance patch. Obtain the maintenance patch file from the Support Center web site. These patches have a name that identifies a build number. For example, `si_43_build_4307.jar`. For more information, refer to the maintenance patch documentation.
2. Locate your perimeter server patch file in the `/install_dir/install/packages` directory of your installation. For maintenance patches, obtain the file from the Support Center web site. These patch files have a name that identifies a version number. For example, `ps_2006.jar`.
3. Copy the file to a directory on the remote server.
4. Stop the perimeter server, enter `./stopPs.sh`.
5. To begin the installation, enter : `/absolutePath/bin/java -jar filename.jar -interactive`  
*absolutePath* is the directory name where the Java version is installed.  
The program verifies the operating system, required patch level, and the location and version of the JDK.
6. Enter the full path to the installation directory. If you do not want to change any settings for your perimeter server, specify the same directory where the remote perimeter server was originally installed.
7. Answer the question:  
There is an existing install at that location, update it while keeping existing settings?  
If **yes**, the installation will proceed without additional entries.  
  
**Note:** If you want to change any of the settings, you must use a new directory, or delete the old installation before performing the new installation. You cannot overwrite an existing installation, and you cannot use an existing directory that does not contain a valid installation. The existing installation must be Sterling B2B Integrator 5.0 or later.  
When the perimeter server is installed, the following message is displayed:  
Installation of Perimeter Service is finished
8. Change to the installation directory.
9. Enter `./startupPs.sh` to start the perimeter server.

## Grant Permissions for Specific Activities for a Perimeter Server

### About this task

Before you begin:

- Remote perimeter server must be installed for a more secure zone.
- Know what permissions you want to grant
- Understand the content of the `restricted.policy` file. The first two grant sections in the `restricted.policy` file are required for correct perimeter server operation. Do not modify these sections.

### Procedure

1. Install a remote perimeter server, choosing the option for a more secure network zone.
2. At the installation prompt *Is this server in a less secure network than the integration server?*, select **No**, which is the option for a more secure network zone.



3. Navigate to the perimeter server installation directory.
4. Open the restricted.policy file.
5. Add permission lines for each back-end server that you intend to allow the proxy to access. There are commented out examples for each type of server. The first two grant sections are required for correct perimeter server operation. Do not modify these sections.

For example, you can grant permission to a target FTP Server. In the example, servers are configured to listen on the following ports: 33001 (for FTP), 33002 (for HTTP), and 1364 (for C:D). These port numbers can be edited.

```
// To restrict or permit the required Host/Server to communicate with the
// PS, update the "ftphost/httpthost/snode" with that of the Server IP and
// provide the appropriate PORT number where the Server will listen. //
// For each target FTP Server
// permission java.net.SocketPermission "10.117.15.87:33001", "connect"; //
// Control connection.
// permission java.net.SocketPermission "10.117.15.87:lowPort-highPort",
// "connect"; // Passive data connections.
// 10.117.15.87 indicates IP of the FTP Server for which the permission is
// granted by PS for communicating with client //
// For each target HTTP Server
//
// permission java.net.SocketPermission "10.117.15.87:33002", "connect";
// 10.117.15.87 indicates IP of the HTTP Server for which the permission
// is granted by PS for communicating with client //

// For each target C:D snode
//
// permission java.net.SocketPermission "snode:1364", "connect";
// 10.117.15.87 indicates IP of the Connect Direct Node for which
// the permission is granted by PS for communication //
```

6. In the perimeter server installation directory, there is the perimeter server settings file called remote\_perimeter.properties. Edit it to change the "restricted" setting to a value of true to turn on restrictions.
7. In the future, any attempt by the perimeter server to access disallowed network resources will be rejected and logged in the perimeter server log written to the perimeter server installation directory.

## Perform DNS lookup on remote perimeter server

### About this task

By default, a perimeter server runs DNS lookups in the main server JVM. If the DNS in your secure area is limited, you can configure the remote perimeter server to look up trading partner addresses in the DMZ.

To enable DNS lookup to occur at the remote perimeter server, edit the remote\_perimeter.properties file and change the following parameter:

Property Name	Description
<psname>.forceRemoteDNS	Forces resolution of DNS names at remote perimeter server. Value is true or false.

## Starting perimeter servers in UNIX or Linux

### About this task

To start a perimeter server in UNIX or Linux:

### Procedure

1. Navigate to the perimeter server installation directory.
2. Enter `./startupPs.sh`.

## Stopping perimeter servers in UNIX or Linux

### About this task

To stop a perimeter server in UNIX or Linux:

### Procedure

1. Navigate to the perimeter server installation directory.
2. Enter `./stopPs.sh`.

---

## Configure the Sterling Gentran:Server for UNIX

### Sterling Gentran:Server and Sterling B2B Integrator Overview

Sterling B2B Integrator has the ability to access information located in Sterling Gentran:Server<sup>®</sup> for UNIX version 5.3 or 6.0. You can configure this immediately following the installation or at a later date.

By configuring Sterling B2B Integrator to run with Sterling Gentran:Server for UNIX, you can:

- View data from your Sterling Gentran:Server trading partners
- Start or stop Sterling Gentran:Server data managers
- View which data managers are running
- View, search, and track Sterling Gentran:Server Life Cycle event records

The following restrictions apply:

- You must have an UNIX or Linux environment
- You must be using one of the following Sterling Gentran:Server for UNIX products:
  - Sterling Gentran:Server for UNIX with Process Control Manager (PCM)
  - Sterling Gentran:Server for UNIX with EC Workbench (ECW)
  - Sterling Gentran:Server for UNIX with Advanced Data Distribution (ADD)

### Install and Configure Attunity<sup>®</sup> Data Connect

#### About this task

If you want Sterling B2B Integrator to use the trading partner information in your Sterling Gentran:Server for UNIX, you must install and configure Attunity Data Connect. The Attunity Data Connect software provides JDBC access to the Gentran DISAM database fields where the trading partner information is stored.

To install and configure Attunity Data Connect:

### Procedure

1. Install Attunity Data Connect 3.3 or later using the installation procedures provided with the Attunity Data Connect software.
2. Ensure the Attunity Data Connect software runs as expected.

3. Create a new DISAM data source and refresh the Attunity Data Connect server. See the Attunity Data Connect documentation for the procedure.
4. Locate the following metadata description files in the `/install_dir/tp_import/gentran/disam_mapping` directory:

Find this file	Replace this string \$YOUR_DATASOURCE with ..	Replace this string \$YOUR_GENTRAN with ..
TP_MAST.XML	the name of the data source for your Sterling Gentran:Server for UNIX system	the path to the root directory of Sterling Gentran:Server for UNIX
TRADACOM.XML	the name of the data source for your Sterling Gentran:Server for UNIX system	the path to the root directory of Sterling Gentran:Server for UNIX
ORGANIZATION.XML	the name of the data source for your Sterling Gentran:Server for UNIX system	the path to the root directory of Sterling Gentran:Server for UNIX
TP_MISC.XML	the name of the data source for your Sterling Gentran:Server for UNIX system	the path to the root directory of Sterling Gentran:Server for UNIX

5. Run the Attunity Data Connect Dictionary (ADD) Editor.
6. Select the DISAM data source you created in Step 3.
7. Import the metadata description files you updated in Step 4. See the Attunity Data Connect documentation for the procedure.
8. Verify that the metadata description files are included in the list of tables.
9. Save your changes.
10. Exit the Attunity Data Connect Dictionary (ADD) Editor.

## Configure Sterling B2B Integrator To Run with Sterling Gentran:Server for UNIX

### About this task

To configure Sterling B2B Integrator to run with Sterling Gentran:Server for UNIX:

### Procedure

1. Set the umask to 002 in Sterling B2B Integrator.
2. Is Sterling B2B Integrator installed on a different computer than Sterling Gentran:Server for UNIX?
  - If No, then continue to Step 3.
  - If Yes, then NFS mount the \$EDI\_ROOT of Sterling Gentran:Server for UNIX onto the Sterling B2B Integrator host. Continue to Step 3.
3. Verify that the remote shell (rsh or remsh) is working. If you are unable to use the rsh/rmesh shell and can only use ssh shell, change the GS\_RSHELL variable located in `sandbox.cfg` file.
4. Navigate to `/install_dir/bin`.
5. Stop Sterling B2B Integrator, enter `./softstop.sh`.

For more information about the `softstop` command line options, refer to the performance management documentation.

**Note:** If you are in a clustered environment, `softstop` suspends all the scheduled business processes. It is recommended to run a `hardstop` when stopping individual nodes in a cluster.

6. Enter `./configGSUnix.sh`. This command starts the configuration.
7. Press **Enter** to continue the configuration.
8. If you currently use Sterling Gentran:Server Life Cycle and want to configure Tracking and Ops, then you need to enter the following the database information:
  - Database vendor
  - Absolute path to the JDBC drivers
  - Database user name
  - Database password
  - Database (catalog) name
  - Database host name using either the IP address or name of the computer where the data base is installed
  - Database port number
9. Is Sterling Gentran:Server for UNIX installed on the same computer as Sterling B2B Integrator?
  - If Yes, enter `EDI_ROOT` for the local computer and continue with next step.
  - If No, enter the host name where Sterling Gentran:Server for UNIX is installed, and the EDI root where Sterling Gentran:Server for UNIX is mounted. Verify the EDI root is installed.
10. Enter the version number for Sterling Gentran:Server for UNIX.
  - Enter 1 for version 5.3.
  - Enter 2 for version 6.0.
11. If you want to configure Sterling B2B Integrator to view Trading Partner Administration, then you need to enter the following Sterling Gentran:Server for UNIX database information:
  - Absolute path to the JDBC drivers (for example, `/attunity_install_dir/java`)
  - Database user name
  - Database password
  - Database (catalog) name
  - Database host name where Attunity Data Connect is installed
  - Attunity port number
12. Enter `yes` and press **Enter** to continue the configuration. After the installation completed, the following message is displayed: *Deployment to the application server successful.*
13. Enter `./run.sh`.

## Sterling Gentran:Server for UNIX and Sterling B2B Integrator Migration Information

When you are migrating maps and setting up processes in Sterling B2B Integrator from Sterling Gentran:Server for UNIX, Sterling Gentran:Server for UNIX now displays translation errors, if any, in the envelope segments and does not process the erroneous envelope segments.

Sterling Gentran:Server for UNIX 6.0 and 6.1 allowed EDI envelope segments (ISA, GS, ST, SE, GE, IEA, UNB, UNH, UNT, and UNZ) with errors to be processed successfully. This has been corrected and Sterling Gentran:Server for UNIX now issues translation errors when using X12 or EDIFACT develope processes. The functional acknowledgments display the errors in the envelope segments.

The following examples illustrate scenarios where Sterling Gentran:Server for UNIX allowed successful processing of EDI segments with errors:

- Sterling Gentran:Server for UNIX did not display an error when the segment count in the UNT or SE segments did not reflect the correct count of segments in a transaction.
- Sterling Gentran:Server for UNIX did not display an error when the use of segment delimiters in the Map Input properties did not match the data. The user could not specify a delimiter in a map with multiple data files that used different delimiters. The user had to use the Syntax Record and specify the positions of the delimiters.

---

## Uninstall the Software in a Cluster Environment

### Uninstalling Sterling B2B Integrator from a UNIX/Linux cluster environment

#### About this task

When you uninstall Sterling B2B Integrator, the software is automatically removed from the server.

Additionally, you can do 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 Sterling B2B Integrator from a UNIX/Linux cluster environment, do the following procedure on each node, starting with node 1:

#### Procedure

1. Stop Sterling B2B Integrator and wait for shutdown to complete. If you begin removing files before all business processes and Sterling B2B Integrator are stopped, you might be unable to remove Sterling B2B Integrator successfully.  
To stop Sterling B2B Integrator, navigate to `/install_dir/install/bin` and run the following command:  

```
./hardstop.sh
```
2. Optional: Back up the file system and database.  
By backing up the file system and database, you ensure that Sterling B2B Integrator is 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, the database remain intact even after you remove Sterling B2B 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 Sterling B2B Integrator used to be located.

5. Optional: To remove the JDK, review and do the uninstall procedure for the JDK you are using.
6. After you remove Sterling B2B Integrator from the server, you can remove Eclipse, and any tools that were downloaded to the desktop:
  - 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:
    - MESA Developer Studio Software Development Kit (SDK)
    - MESA Developer Studio Skin EditorRefer to the *MESA Developer Studio* guide for information about removing MESA Developer Studio.
  - (If licensed) Reporting Services, which require 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

### Sterling B2B Integrator user documentation

The user documentation is available on the online documentation site on the web. Providing the documentation in an online environment allows for frequent updates of content that is based on user feedback and usability.

We also understand the need for a printed copy of documentation. You can print topics of information with your Internet browser, or you can download documents in PDF format. You can also request a documentation CD.

To access the documentation site from within Sterling B2B Integrator or one of its tools, select the **Help**  icon. For the link to the documentation site to work, the system must support internet access and an internet browser.

### Online documentation tips

#### About this task

After you are in the documentation library, you can do the following things:

- 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.

## Requesting a documentation CD

### About this task

You can request a CD that contains all the documentation found on the documentation site. To submit a request, open a support case.

---

## Troubleshooting Tips

### Troubleshooting tips for a cluster environment

Situation	Message or Symptom	Explanation/Resolution
Installing	You encounter errors or problems during installation.	<p><b>Explanation</b></p> <p>The installation creates several log files that you can use to diagnose problems like the failure of an installation.</p> <p><b>Resolution</b></p> <p>Examine the log files that are generated during installation:</p> <ul style="list-style-type: none"><li>• <code>ant.install.log</code> (in the <i>parent_install</i> directory)</li><li>• <code>/install_dir/PreInstallSI.log</code></li><li>• <code>/install_dir/InstallSI.log</code></li></ul>
Installing	When you entered an absolute path during installation, a message indicated that the command was not found.	<p><b>Explanation</b></p> <p>You entered an incorrect path. Check the information that you entered.</p> <p><b>Resolution</b></p> <p>Enter the correct path.</p>

Situation	Message or Symptom	Explanation/Resolution
Installing a desktop tool or resource	<p>Cannot download any of the following:</p> <ul style="list-style-type: none"> <li>• Map Editor and associated standards</li> <li>• Graphical Process Modeler</li> <li>• Web Template Designer</li> <li>• (If licensed) MESA Developer Studio plug-ins: <ul style="list-style-type: none"> <li>– MESA Developer Studio Software Development Kit (SDK)</li> <li>– MESA Developer Studio Skin Editor</li> </ul> </li> <li>• (If licensed) Reporting Services, which require MESA Developer Studio if you want to use the plug-ins to create fact models and custom reports.</li> </ul>	<p><b>Explanation</b></p> <p>When you install Sterling B2B Integrator, system files are created that contain an internal IP address. If you install Sterling B2B Integrator behind a firewall, and your firewall is configured to accept an external IP address from a client computer, you might not be able to download the desktop tools and resources. The firewall rejects the internal IP address from a client that is located outside of the firewall.</p> <p><b>Resolution</b></p> <p>Modify the system files that contain the invalid IP address. Follow these steps:</p> <ol style="list-style-type: none"> <li>1. Navigate to <code>/install_dir/install/bin</code>.</li> <li>2. Stop Sterling B2B Integrator.</li> <li>3. Enter the following command followed by the external IP address:  <pre>./patchJNLP.sh external_IP_address</pre> </li> <li>4. Restart Sterling B2B Integrator.</li> </ol>
Installing	Memory and ulimit errors.	<p><b>Explanation</b></p> <p>The installation fails with memory and ulimit errors.</p> <p><b>Resolution</b></p> <ul style="list-style-type: none"> <li>• Refer to the <i>Viewing and editing performance configuration settings</i> in the <i>Performance Management</i> documentation. Modify your memory setting accordingly.</li> <li>• Refer to the <i>Operating system configuration checklist</i> and tune the ulimit settings.</li> </ul>
Accessing the URL	Attempts to access the URL for Sterling B2B Integrator display the message: Page cannot be displayed	<p><b>Resolution</b></p> <p>See the information about <i>Changes to network interface bindings</i> to update either the property file or the dashboard.</p>



Situation	Message or Symptom	Explanation/Resolution
Node status on a dual-stack system	Displays Node went down status in Node Status page, but the node is up and running.	<p><b>Explanation</b></p> <p>Sterling B2B Integrator is configured using an IPv4 address on a dual-stack system. The Node Status page displays Node went down status, but the node is up and running.</p> <p><b>Resolution</b></p> <p>Modify the <code>noapp.properties_platform_ifcresources_ext.in</code> and <code>jgroups_cluster.properties.in</code> files by performing the following steps:</p> <ol style="list-style-type: none"> <li>1. Identify the IPv6 address of the host system from the <code>/etc/hosts</code> file.</li> <li>2. Navigate to the <code>/install_dir/properties</code> directory.</li> <li>3. Edit <code>noapp.properties_platform_ifcresources_ext.in</code> file and add the IPv6 address: <code>admin_host.2 = &lt;IPv6 address&gt;</code></li> <li>4. Edit <code>jgroups_cluster.properties.in</code> and modify the following entries: <code>&amp;HOST_NAME=&lt;IPv6 address&gt;</code> <code>mcast_addr=FFFF::&lt;IPv4 address&gt;</code></li> <li>5. Run the <code>./setupfiles.sh</code> script to apply the changes.</li> </ol>
Installing (HP-UX 11.31)	When you enter your email address the @ key is not recognized.	<p><b>Explanation</b></p> <p>The @ key is being mapped to kill or eol, it must be mapped to another character.</p> <p><b>Resolution</b></p> <p>This resolution applies to HP-UX 11.31.</p> <p>Map the @ key to another character.</p> <p>Note: If you need want to see what the key is mapped to, use the <b>stty -a</b> command.</p>

Situation	Message or Symptom	Explanation/Resolution
Cluster Installation	Cluster is not working properly and your system is running dual-stack - ipv4 and ipv6.	<p><b>Explanation</b></p> <p>You can see the node went down from User Interface, but the node is running.</p> <p><b>Resolution</b></p> <ul style="list-style-type: none"> <li>• Find your ipv6 address in the /etc/hosts file and update noapp.properties.in file admin_host.2 = &lt;ipv6_address&gt;.</li> <li>• Edit jgroups_cluster.properties.in file and replace &amp;HOST_NAME with the ipv6 address string and change mcast_addr=FFFF::239.255.166.17.</li> <li>• Enter setupfiles.sh.</li> </ul>
Cluster Installation or Upgrade	<p>When you configure TCPS the following warning can be found in the activemqbroker.log:</p> <p>sun.security.provider.certpath. SunCertPathBuilderException: unable to find valid certification path to requested target.</p>	<p><b>Resolution</b></p> <p>Add the system certificate to the truststore with the KeyTool command.</p>
Cluster Installation or Upgrade	<p>When you configure TCPS the following warning can be found in the activemqbroker.log:</p> <p>oracle.net.ns.NetException: Invalid cipher suites specified.</p>	<p><b>Resolution</b></p> <p>Do not mention any SSL cipher in the ActiveMQconfig.xml.</p>

Situation	Message or Symptom	Explanation/Resolution
e-Invoice Upgrade: Oracle Add Constraint Error	<p>When you upgrade Sterling e-Invoicing and are using an Oracle database, the upgrade might fail with the error message name is already used by an existing object. The failure occurs because the default behavior for the drop constraint command was changed in Oracle 10. The index that is used to support the constraint is now only removed if the index was generated by the create constraint command. The indexes for Sterling e-Invoicing are always generated from constraints during an installation. If you receive this error during a Sterling e-Invoicing upgrade, it is because of how the database was restored, the version of Oracle you are using, and because the Oracle imp command exported the indexes and constraints separately. There is no way to determine when the imp command does not add a create index command to the export file if it was generated by a constraint – but if it does add the command, the database restore process loses the association of the constraint and its underlying index. The database script that runs during a Sterling e-Invoicing upgrade runs two steps:</p> <ol style="list-style-type: none"> <li>1. First, it drops the unique constraint so the next step can redefine it using extra columns. However, the drop constraint command does not remove the underlying index if the association with its index was lost.</li> <li>2. The next command that redefines this constraint requires a different index definition, but in this scenario the name of the index the constraint wants to use exists, which causes the name is already used by an existing object error.</li> </ol>	<p><b>Resolution</b></p> <p>If you receive this error message, the solution for this problem is to drop the index and rerun the Sterling e-Invoicing upgrade. The drop index command that you should use is</p> <pre>drop index UNQ_EINV_CANON</pre>



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