

Sterling Control Center™

Getting Started Guide

Version 5.2

Sterling Control Center Getting Started Guide
Version 5.2

First Edition

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Sterling Commerce, Inc.

4600 Lakehurst Court Dublin, OH 43016-2000 *
614/793-7000

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Getting Started Overview

Getting Started is for the staff responsible for installing software and maintaining databases. After you have planned your implementation, use these procedures to install and configure Sterling Control Center based on your environment and database requirements.

Getting Started will help you with the following tasks:

Task	For More Information, See
Planning and creating production and staging databases to store Sterling Control Center information	<i>Before You Install Sterling Control Center</i> on page 9
Determining HTTPS information to communicate with the Control Center engine	<i>Determining HTTPS Information for the Engine and Console Connection</i> on page 18
Installing Sterling Control Center	Chapter 3, <i>Install Sterling Control Center</i>
Configuring the engine to connect to an Oracle RAC database	<i>Configure the Engine to Connect to an Oracle RAC Database</i> on page 24
Changing Control Center engine settings after installation	<i>Change Engine Settings After Installation</i> on page 26
Setting up a console	<i>Set Up a Console</i> on page 27
Troubleshooting engine and console Installations	<i>Troubleshoot Engine/Console Installations</i> on page 29
Configuring Connect:Enterprise for z/OS	<i>Configure Connect:Enterprise for z/OS</i> on page 30
Configuring Sterling Integrator	<i>Monitoring Sterling Integrator with Sterling Control Center</i> in the Sterling Integrator documentation
Uninstalling and reinstalling Sterling Control Center	<i>Uninstall Sterling Control Center</i> on page 33 and <i>Reinstall Sterling Control Center</i> on page 34
Removing temporary files on UNIX	<i>Remove Temporary Files</i> on page 35

Task	For More Information, See
Creating a secure connection between the engine and console or between the engine and a Connect:Direct server	Chapter 4, <i>Configure a Secure Connection</i>
Installing FTP agents to monitor FTP Servers	Chapter 5, <i>Set Up Control Center to Monitor an FTP Server</i>
Setting Up Control Center to monitor Connect:Direct File Agents	Chapter 6, <i>Set Up Control Center to Monitor File Agents</i>
Starting and Stopping Control Center on Windows and UNIX	Chapter 7, <i>Start and Stop Control Center</i>
Accessing and using the main Control Center console and web console	Chapter 8, <i>Working With the Console</i>
Setting console preferences	<i>Set Console Preferences</i> on page 77
Configuring SMTP settings for E-mail messages and SNMP settings to generate and send SNMP traps	Chapter 9, <i>Configure System Settings</i>
Calculating events per second and per day to plan engine requirements and database sizing	Appendix A, <i>Determine Engine and Database Requirements</i>
Looking up answers to questions frequently asked about database requirements	Appendix B, <i>Database FAQ</i>

Before You Install Sterling Control Center

This chapter describes the information you should gather and tasks you should complete before installing Sterling Control Center. It consists of the following sections:

- ◆ Installation Overview
- ◆ Requirements for Creating the Control Center Databases Using MySQL, Oracle, DB2, or Microsoft SQL Server
- ◆ Determining HTTPS Information for the Engine and Console Connection

Installation Overview

At a high level, installing Sterling Control Center involves completing the following tasks:

- ◆ Creating a production and staging database for Control Center to use
- ◆ Installing and configuring the Control Center engine
- ◆ Installing one or more Control Center consoles
- ◆ Logging onto the Control Center engine and using the console

To install Sterling Control Center, you perform the following activities at computers where you plan to install the Sterling Control Center engine:

Installation Task	See:
1 Review the <i>Sterling Control Center Release Notes</i> .	<i>Sterling Control Center Release Notes</i> on the Documentation library
2 Download any product updates from the Sterling Commerce Customer Center Web site.	http://customer.sterlingcommerce.com
3 Determine the computers and the operating systems where Sterling Control Center will be installed.	<i>Sterling Control Center Configurations</i> on page 10 and <i>Determine Engine and Database Requirements</i> on page 85. <i>Sterling Control Center Release Notes</i> on the Documentation library lists supported operating systems.

Installation Task	See:
4 Gather database information for use during Sterling Control Center installation.	<i>About the Sterling Control Center Databases</i> on page 11 and <i>Requirements for Creating the Control Center Databases Using MySQL, Oracle, DB2, or Microsoft SQL Server</i> on page 14.
5 Create a production and staging database to store Sterling Control Center processing information either on UNIX or Windows	Consult your database documentation.
6 If you will install Sterling Control Center on z/Linux, make sure IBM System z/Linux JRE 1.6.0 SR 5 or later is installed on the computer where the engine is to be installed.	See your z/Linux documentation.
7 If consoles will access the Sterling Control Center engine using a secure connection, gather information to configure the HTTPS connection.	<i>Determining HTTPS Information for the Engine and Console Connection</i> on page 18.
8 Install the Sterling Control Center engine.	<i>Install the Engine and Console on UNIX</i> on page 21, or <i>Install the Engine and Console on Windows</i> on page 23.
9 Install a license key.	<i>Install the License Key</i> on page 26 and <i>Sterling MFT License Key Guide</i> in the Sterling Control Center documentation set.

After installing the Sterling Control Center engine, you do the following tasks at computers where you want to run the Control Center console:

Installation task	See:
1 Install the Control Center console.	<i>Set Up a Console</i> on page 27.
2 If the console will access the Sterling Control Center engine using a secure connection, configure a secure connection between the Sterling Control Center engine and the consoles.	<i>Configure a Secure Connection</i> on page 37.

Sterling Control Center Configurations

When you install Sterling Control Center, you install both the engine and the console. To run the console from other systems, use the Web Start installation, available via a URL connection to the Sterling Control Center engine (see *Set Up a Console* on page 27). You can configure Sterling Control Center for console access to the engine using the HTTP and HTTPS protocol.

Before installing the Control Center engine, verify that your platform will support the processing volume. *Determine Engine and Database Requirements* on page 85, contains worksheets for

determining a suitable platform configuration for the Control Center engine. The worksheets are also available in Microsoft Excel spreadsheet form in the directory where the engine is installed.

About the Sterling Control Center Databases

The Sterling Control Center engine uses MySQL, Oracle, DB2, or Microsoft SQL Server production and staging databases to store statistics and other information collected from monitored servers. You or your database administrator must create the databases before installing the Control Center engine. The databases must be located on computers to which the engine has network access. Also, the production database and staging database must be of the same type and version. For example, if you use MySQL for the production database, then the staging database must also be a MySQL database. For information helpful in planning the databases, see *Database FAQ* on page 103.

To create the databases to store Control Center information, first review the *Production Database Worksheet* on page 11, then see *Requirements for Creating the Control Center Databases Using MySQL, Oracle, DB2, or Microsoft SQL Server* on page 14.

Production Database Worksheet

Use the following worksheet to record production database setup information. You will need this information during Sterling Control Center installation.

Parameter	Database Type	Value
Database type Note: Staging and production databases must be of the same type and version.	All	
Database name	All	
User name	All	
Password	All	
Database hostname Can be an IP address or the server name. Note: For MySQL, if Sterling Control Center will be installed on the same computer where the database is located, specify 127.0.0.1 as the IP address. Note: For MS SQL Server 2005 , if you need to connect to a named instance of SQL server, use the format <i>servername;instancename</i> . Example: CSGPQ2;SCCINSTANCE	All	
Port number to access the database. The default port for MySQL is 3306.	All	
Location of the sqjjdbc.jar or sqjjdbc4.jar	Microsoft SQL Server (2005 and 2008)	

Parameter	Database Type	Value
Location of the db2java.zip or db2jcc.jar file.	DB2 (UNIX and Windows)	
Location name of the DB2 database	DB2 (z/OS or OS/390)	
Location of the db2jcc.jar database driver	DB2 (z/OS or OS/390)	
Location of the DB2 database license file	DB2 (z/OS or OS/390, Windows, UNIX)	
Location of the ojdbc14.jar, ojdbc5.jar, or ojdbc6.jar Oracle file	Oracle	

Note these points concerning the DB2 JDBC driver file:

- ◆ The DB2 JDBC driver files can be found in *DB2InstallLocation\IBM\SQLLIB\java*
- ◆ DB2 version 8.x comes with two types of JDBC drivers:
 - ◆ Type 3 driver. Typically the name of the driver file is db2java.zip. To use this driver, start the DB2 JDBC Applet Server service on the computer where the DB2 database server is installed.
 - ◆ Type 4 driver. This driver comes with two files, dbjcc.jar and db2jcc_license_cu.jar (UNIX and Windows) or db2jcc_license_cisuz.jar (z/OS or OS/390).
- ◆ When you use the JDBC driver to configure Control Center with DB2 databases, the JDBC driver files must come from the DB2 database location where Control Center will connect.

Staging Database Worksheet

Use the following worksheet to record staging database setup information. You will need this information during Sterling Control Center installation.

Note: The staging database should not be used for permanent data storage. A company-specific archival process should be employed to move data from the staging database to a permanent data warehouse/archive database. Control Center does not archive data. If the staging database is allowed to grow too large, Control Center performance will be impacted.

Note: To use partitioning for Production database tables, you do not need a separate staging database schema. If you do not use a staging database, you can specify 0.0.0.0 for DB host name. Refer to the Sterling Control Center Database partitioning white paper for more details.

Parameter	Database Type	Value
Database type Note: Staging and production databases must be of the same type and version.	All	
Database name	All	
User name	All	
Password	All	
Database hostname Can be an IP address or the server name. Note: For MySQL, if Sterling Control Center will be installed on the same computer where the database is located (not recommended), specify 127.0.0.1 as the IP address. Note: For MS SQL Server 2005, if you need to connect to a named instance of SQL server, use the format <i>servername;instancename</i> . Example: CSGPQ2;SCCINSTANCE Note: If you do not want to use a staging database, enter 0.0.0.0 as the database hostname for the staging database.	All	
Port number to access the database. The default port for MySQL is 3306.	All	
Location of the sqljdbc.jar or sqljdbc4.jar	Microsoft SQL Server (2005 and 2008)	
Location of the db2java.zip or db2jcc.jar file.	DB2 (UNIX and Windows)	
Location name of the DB2 database	DB2 (z/OS or OS/390)	
Location of the db2jcc.jar database driver	DB2 (z/OS or OS/390)	
Location of the DB2 database license file	DB2 (z/OS or OS/390, Windows, UNIX)	
Location of the ojdbc14.jar, ojdbc5.jar, or ojdbc6.jar Oracle file	Oracle	

Note these points concerning the DB2 JDBC driver file:

- ◆ The DB2 JDBC driver files can be found in *DB2InstallLocation\IBM\SQLLIB\java*
- ◆ DB2 version 8.x comes with two types of JDBC drivers:
 - ◆ Type 3 driver. Typically the name of the driver file is db2java.zip. To use this driver, start the DB2 JDBC Applet Server service on the computer where the DB2 database server is installed.

- ◆ Type 4 driver. This driver comes with two files, dbjcc.jar and db2jcc_license_cu.jar (UNIX and Windows) or db2jcc_license_cisuz.jar (z/OS or OS/390).
- ◆ DB2 version 7.x comes with a Type 3 JDBC driver. The name of the driver file is typically db2java.zip. To use it, start the DB2 JDBC Applet Server service on the computer where the DB2 database server is installed.
- ◆ When you use the JDBC driver to configure Sterling Control Center to use the DB2 databases, the JDBC driver files must come from the DB2 database location to which Control Center is to connect.

Requirements for Creating the Control Center Databases Using MySQL, Oracle, DB2, or Microsoft SQL Server

Sterling Control Center requires two databases; one for production data and another for staging data. The MySQL, Oracle, DB2, or Microsoft SQL databases must be created on a computer to which Control Center has access.

Note: This section does not describe the procedures for creating MySQL, Oracle, DB2, or Microsoft SQL Server databases. Consult your database documentation for those procedures.

Note: If you are going to use partitioning for production database tables, you do not need a separate staging database schema. If you do not use a staging database, you can specify 0.0.0.0 for DB host name. Please refer to the Sterling Control Center Database partitioning white paper for more details.

Requirements for All Database Types

You must have the following information available for both Control Center databases (staging and production), regardless of database type.

Parameter	Description
dbname	The name that you assign to the database. Do not use spaces. For example, CtrlCenterProd.
username	The user name that you assign to access the database. Note: The user must have permission to access all the table spaces in the database. Note: For MS SQL 2005, the user name must be an SQL server-authenticated one.
password	The password for the user name that you assign to access the database.

Requirements by Database Type and Operating System

The following table lists additional requirements based on the database type and operating system for your installation.

Database Type	Operating System	Additional Information or Software
DB2	UNIX	<ul style="list-style-type: none"> ◆ The DB2 databases must each have one buffer pool with a page size of 32K and another with a page size of 4K. ◆ The DB2 databases must each have one system temporary table space with a page size of 32K and another system temporary table space with a page size of 4K. ◆ The DB2 databases must each have one regular table space with a page size of 32K and another table space with a page size of 4K. ◆ Determine the location of db2java.zip or db2jcc.jar IBM DB2 database driver file. Record this information on the <i>Production Database Worksheet</i> on page 11.
DB2	Windows	<ul style="list-style-type: none"> ◆ The DB2 databases must each have one buffer pool with a page size of 32K and another with a page size of 4K. ◆ The DB2 databases must each have one system temporary table space with a page size of 32K and another system temporary table space with a page size of 4K. ◆ The DB2 databases must each have one regular table space with a page size of 32K and another table space with a page size of 4K. ◆ Determine the location of db2java.zip or db2jcc.jar IBM DB2 database driver file. Record this information on the <i>Production Database Worksheet</i> on page 11.
DB2	z/OS or OS/390	<ul style="list-style-type: none"> ◆ The DB2 databases must each have at least one buffer pool with a page size of 32K and another with a page size of 4K. ◆ The DB2 databases must each have one system temporary table space with a page size of 32K and another system temporary table space with a page size of 4K. ◆ The DB2 databases must each have one regular table space with a page size of 32K and another table space with a page size of 4K. ◆ For each database, determine the DB2 database location. This is the path that specifies the DB2 Location name and was defined during the DB2 installation. ◆ Determine the location of the db2jcc.jar database driver. Record this information on the <i>Production Database Worksheet</i> on page 11. ◆ Determine the location of the DB2 database license file, which begins with db2jcc_license_. Record this information on the <i>Production Database Worksheet</i> on page 11.
Microsoft SQL Server (2005 or 2008)	N/A	<ul style="list-style-type: none"> ◆ Download and install the Microsoft SQL Server JDBC drivers setup.exe program from www.microsoft.com. ◆ Determine the location of the sqljdbc.jar file or sqljdbc4.jar

Database Type	Operating System	Additional Information or Software
MySQL	N/A	<ul style="list-style-type: none"> ◆ Download and install the MySQL JDBC driver from MySQL's website. ◆ Determine the location of the MySQL JDBC driver.
	UNIX	<ul style="list-style-type: none"> ◆ Verify that groupadd and useradd commands can be executed by root. These commands are located in /usr/sbin, so add /usr/sbin to the PATH for Linux.
Oracle	N/A	<ul style="list-style-type: none"> ◆ Determine the location of the classes12.zip or ojdbc14.jar Oracle database driver file. Record this information on the <i>Production Database Worksheet</i> on page 11.

Requirements by Database Type and Component

In addition to the operating system-specific information listed above, the following table provides further requirements based on database type.

Database Type	Database Component	Requirement
All	SQL Statement privileges	<p>The database user must be able to execute the following types of SQL Statements:</p> <ul style="list-style-type: none"> ◆ CREATE TABLE ◆ ALTER TABLE ◆ DROP TABLE ◆ CREATE INDEX ◆ DROP INDEX ◆ CREATE VIEW ◆ ALTER VIEW ◆ DROP VIEW ◆ SELECT FROM <table> ◆ INSERT INTO <table> ◆ UPDATE <table> ◆ DELETE FROM <table>
Oracle	Database user privileges	<p>CREATE SESSION UNLIMITED_TABLESPACE</p>

Database Type	Database Component	Requirement
Oracle	Database Settings	<p>Control Center requires the following parameter settings in your Oracle database:</p> <p>Number of open cursors ≥ 2000</p> <p>Database block buffers ≥ 19200</p> <p>Shared pool size ≥ 90000000</p> <p>Large pool size ≥ 614400</p> <p>Java pool size ≥ 20971520</p> <p>Number of processes ≥ 500</p> <p>Log buffer ≥ 163840</p> <p>Database block size ≥ 8192</p> <p>Sort area size ≥ 65536</p> <p>Sort area retained size ≥ 65536</p> <p>Max extends = Unlimited</p> <p>Character set = AL32UTF8</p> <p>Note: If you are using multi-byte character set, set the following and restart Oracle:</p> <p style="text-align: center;">nls_length_semantics=CHAR in INIT<INSTANCE_NAME>.ORA file</p>
MS SQL Server	Database user privileges	<p>Grant the DBO (Database Owner) database role to the database user.</p> <p>Also grant DB_DDLADMIN database role to the user.</p>
MS SQL Server	Database Settings	<p>Control Center requires the following parameter settings in your MS SQL database:</p> <p>Collation Setting = SQL_Latin1_General_CP850_BIN</p> <p>Sort order = Binary</p> <p>Security authentication = SQL Server and Windows</p> <p>Torn Page = Detection Off</p> <p>Note: Control Center supports only SQL Server authentication.</p>
DB2	Database User privileges	Grant Database Administrator Authority (DBADM) to the database user on this database.
DB2	Database Settings	<p>Control Center requires the following parameter settings in your DB2 database:</p> <p>APPLHEAPSZ > 10000</p> <p>APP_CTL_HEAP_SZ > 512</p> <p>MAXAPPLS > 150</p> <p>LOCKLIST > 30000</p> <p>MAXLOCKS = 100</p> <p>Database code page = UTF-8</p>

Determining HTTPS Information for the Engine and Console Connection

Perform the following tasks before installing Sterling Control Center, if the console will use the HTTPS protocol to communicate with the Sterling Control Center engine:

- ◆ *Obtaining a Computer Host Name* on page 18 to obtain the host name of any computer where the Sterling Control Center engine or console is installed.
- ◆ Determine a password to access the keystore (the file that contains certificates which include the identity and private key for an entity) and a password to access the trust store file (the file that contains the entities to be trusted. Each entity includes an identity and its public key).
- ◆ Determine the HTTPS port the Sterling Control Center engine will use.
- ◆ Record this information in the *HTTPS Worksheet* on page 19. Complete one worksheet for each computer where Sterling Control Center will be installed. Use this worksheet during Sterling Control Center installation.

After you install Sterling Control Center, see *Configure a Secure Connection* on page 37, when you are ready to create a connection between the Control Center engine and a Control Center console or a Connect:Direct managed server.

Obtaining a Computer Host Name

To obtain the host name of a computer where the Sterling Control Center engine or console will be installed:

1. Open a command line prompt.
2. Type **hostname** from the command line.
The system returns a text string. For example, **WIN2000**. This string is the host name used in HTTPS setup.
3. Write this string in the *HTTPS Worksheet* on page 19.
4. Perform this procedure for each computer where the Sterling Control Center engine or console will be installed.

HTTPS Worksheet

Write values for the fields in the following worksheet. Use this worksheet during Sterling Control Center installation to supply HTTPS values. Make additional copies as needed.

Field	Description	Value
Host name	The computer where Sterling Control Center will be installed.	
Keystore file	The default location is <i>install directory/conf/security/CCenter.keystore</i> .	
Keystore password	There is no default password. The password must be at least six characters. Spaces are not allowed.	
Trust store file	The default location is <i>install directory/jre/lib/security/cacerts</i> .	
Trust store password	The default password is changeit . If you use the default trust store file, you must use changeit as the password.	
HTTPS port	The default port is 58081.	
HTTPS web port	The default port is 58083.	

Install Sterling Control Center

This chapter consists of the following sections:

- ◆ Install the Engine and Console on UNIX
- ◆ Install the Engine and Console on Windows
- ◆ Install the Engine and Console on z/Linux
- ◆ Configure the Engine to Connect to an Oracle RAC Database
- ◆ Change Engine Settings After Installation
- ◆ Install the License Key
- ◆ Set Up a Console
- ◆ Troubleshoot Engine/Console Installations
- ◆ Configure Connect:Enterprise for z/OS
- ◆ Configure Sterling Integrator
- ◆ Configure FTP Servers
- ◆ Uninstall Sterling Control Center
- ◆ Reinstall Sterling Control Center
- ◆ Remove Temporary Files

Before installing Sterling Control Center, you must perform the procedures described in Chapter 2, *Before You Install Sterling Control Center*.

Note: If you are upgrading from a prior version of Sterling Control Center, refer first to the section on upgrading in the Release Notes.

Install the Engine and Console on UNIX

Use this procedure to install the Sterling Control Center engine and the console on a UNIX operating system from either a console or a command line. Be sure to complete the *Production Database Worksheet* on page 11, the *Staging Database Worksheet* on page 12, and, if consoles will access the Sterling Control Center engine using HTTPS, the *HTTPS Worksheet* on page 19.

To install the console only, refer to *Set Up a Console* on page 27.

To install the Sterling Control Center engine and console on UNIX:

1. Do one of the following:
 - ◆ Navigate to the UNIX directory underneath the folder where you downloaded and extracted the files from the ESD portal.
 - ◆ Insert the Sterling Control Center distribution DVD in the drive of the computer where you are installing Sterling Control Center. Open the folder that corresponds to your UNIX platform on the DVD.
2. Copy the `CCInstall.bin` file from the folder to a directory on your computer.

Note: If you are installing in a 64-bit operating system environment, use **CCInstall64. bin** for the installation file name.

3. Change to the directory where you copied `CCInstall.bin`.
4. Do one of the following:
 - ◆ To start a UNIX command line-based installation, type **sh CCInstall.bin -i console** at the command line.
 - ◆ To start a UNIX GUI-based installation, type **sh CCInstall.bin -i gui** at the command line.
5. If you started a command line-based installation, then configure Control Center by running the **configCC.sh** command from the *install directory/bin* directory.
6. Follow the installation prompts using the information from the *Production Database Worksheet* on page 11).

If the installation fails, review the installation log to determine the cause. This log is named `Sterling_Control_Center_v5.2_InstallLog.log` and is located in the installation directory.

Note: If the problem lies in the settings used to configure the installation, you can run `configCC.sh` to reconfigure the settings. See *Change Engine Settings After Installation* on page 26.

The installation program installs the Java Runtime Environment (JRE) required to run Sterling Control Center.

Special Considerations for HP-UX

The default HP-UX configuration does not support Java programs, including Sterling Control Center. Specific kernel parameters and system tunables must be modified for Java applications to function.

Hewlett-Packard provides a stand-alone bundle for HP-UX 11 and 11i. Java Out-of-Box installs startup (RC) scripts, modifies kernel parameters, rebuilds the kernel, and reboots the system. During startup, the startup scripts modify system tunables, which improve the performance of Java.

Refer to the HP-UX Web site at <http://www.hp.com/products1/unix/java/java2/outofbox/> for details on this product.

Install the Engine and Console on Windows

Use this procedure to install the Sterling Control Center engine and console on a Windows operating system environment. If you want to install the console only, refer to *Set Up a Console* on page 27.

Before starting this installation, complete the *Production Database Worksheet* on page 11, the *Staging Database Worksheet* on page 12, and, if consoles will access the Sterling Control Center engine using HTTPS, the *HTTPS Worksheet* on page 19.

To install Sterling Control Center engine and console on Windows:

1. Close all open applications.
2. Do one of the following:
 - ◆ Navigate to the Windows directory underneath the folder where you downloaded and extracted the files from the ESD portal.
 - ◆ Insert the Sterling Control Center distribution DVD in the drive of the computer where you are installing Sterling Control Center. Open the folder that corresponds to your Windows platform on the DVD.
3. Double-click the **CCInstall.exe** file.

Note: If you are installing in a 64-bit operating system environment, double-click the **CCInstall64.exe** file.

4. Follow the installation prompts using the information from the *Production Database Worksheet* on page 11 and the *Staging Database Worksheet* on page 12.

If the installation fails, review the installation log to determine the cause. This log is named `Sterling_Control_Center_v5.2_InstallLog.log` and is located in the installation directory.

Note: If the problem lies in the settings used to configure the installation, you can run `configCC.bat` to reconfigure the settings. See *Change Engine Settings After Installation* on page 26.

The installation program installs the JRE.

5. After the configuration finishes, continue with *Install the License Key* on page 26, followed by *Set Up a Console* on page 27.

Install the Engine and Console on z/Linux

Use this procedure to install the engine and console in a z/Linux environment.

Note: You must install IBM System z/Linux JRE 1.6.0 SR 5 or later, before you install Control Center using the Java installer.

To install Control Center on z/Linux:

1. Transfer the CCInstall.jar file to the computer where Control Center will be installed.
2. Start the installer using the following syntax:

```
/absolute_path_to_java -jar CCInstall.jar
```

Example:

```
/opt/ibm/java-s390x-60/jre/bin/java -jar CCInstall.jar
```

3. Specify appropriate values for all the prompts including the install location. During installation, Control Center updates various scripts with the location of the JRE.
4. Once the installation is done, run configCC.sh to configure the engine.

Note: The location of the JRE must not be changed after Control Center is installed. If so, Control Center will no longer run.

Note: To upgrade the JRE, first install the newer version of the JRE on the computer where Control Center has been installed. Then reinstall Control Center at the same location.

Configure the Engine to Connect to an Oracle RAC Database

To configure the Control Center engine to connect to an Oracle RAC database, either install the engine via a graphical user interface or configure it through the configCC.sh or configCC.bat command after the engine is installed.

Configure the Engine to Connect to Oracle RAC through the GUI Installer

When setting up the Production database, as shown in the illustration below, specify Oracle RAC cluster nodes separated by semicolons in the **Database hostname** field.

In the **Database port** field, specify the port number separated by semicolons for the corresponding hosts in the hostname field.

In the **Database name** field, specify the Oracle Service Name.

For the Staging database, you can configure the same Oracle RAC similarly.

Configuring the Engine to Connect to Oracle RAC through Command Line Installation

In the Database Connection Parameters configuration step, when you specify the database type as Oracle, you are prompted as to whether the installation is for an Oracle RAC environment. To configure connections to an Oracle RAC database, specify **Y** and press Enter. Then follow the prompts, as shown below, to specify all Oracle hosts in the cluster.

Staging database connection details can be configured in the same way.

```

Config step : Database connection parameters configuration ...
-----
Please provide the following DB Parms...
Database Type(MySQL or Oracle or DB2 or MSSQL or DB2zOS) [MySQL] : oracle
Is this an Oracle RAC environment (Y/N)? [N]Y
How many nodes in the cluster? 2
Database cluster host #1 : []resep
Database port for cluster host#1 : []1521
Database cluster host #2 : []marduk
Database port for cluster host#2 : []1521
Database User[] : SCCUSER
Database Password (no blanks):
Re-enter Database Password :
Database Name (SID) [] : gisr1.sci.local

```

Change Engine Settings After Installation

To change Control Center engine settings (such as database connection details, the HTTP connector port, or HTTPS settings) you can run a configuration program to reconfigure Control Center setup.

To reconfigure engine installation settings:

1. From a command line, run `configCC.bat` (Windows) or `configCC.sh` (UNIX) in the *install directory/bin* subdirectory.

You are prompted for each step of configuration.

2. Changing the engine time zone setting involves making entries similar to the following. These time zone settings take into account regional variations in Daylight Saving Time. Type the number that corresponds to your preferred setting.

```
-----
Config step : Engine Time Zone configuration ...
-----

Engine Time Zone has been defined for this install.

Do you want to select a different Time Zone(Y/N)?y

Are you sure(Y/N)?y
Default Time Zone : (UTC-05:00) Central Time (US & Canada)

1. (UTC-05:00) Central Time (US & Canada)
2. (UTC-05:00) Mexico City
3. (UTC-05:00) Bogota, Lima, Quito
4. (UTC-05:00) Brasilia (ACT)
Please choose TimeZone by number [1] :
```

3. To skip any step in which no change is required, type **n** and press **Enter**, then **y** and press **Enter**.

Install the License Key

A license key is required to run Sterling Control Center. This file must be called *license.key* and be in the *<install directory>/conf* directory.

If you are using only the Sterling Control Center Asset Tracking feature, you can obtain a no charge license from Sterling Commerce. (For more on this feature, see the *Sterling Control Center Asset Tracking Guide*.)

After purchasing Sterling Control Center, you will receive a temporary license key via e-mail. It allows you to run Control Center and use all its features for a limited period. After this period has expired, you must replace the temporary key with a permanent key to continue to run Sterling Control Center. For more information on obtaining the permanent license key and installing it, see *Sterling MFG License Key Guide* in the Sterling Control Center documentation set.

Licensing Information

Your Sterling Control Center license key specifies the following information:

- ◆ The number, the operating systems, and the license types of servers that Sterling Control Center can manage. For example, if your license specifies that Sterling Control Center can manage three Connect:Direct for UNIX servers and one Connect:Direct for z/OS server, you can manage only those types of servers. If you try to add another type of server or more servers than your license permits, Sterling Control Center either displays an error message and prevents you from adding additional servers, or it allows you to add additional servers, but the icons for those servers are dimmed and Control Center is not allowed to communicate with them.
- ◆ Whether your installation allows configuration management. If you are not licensed to perform configuration management, the Sterling Control Center configuration management menus appear dimmed.
- ◆ The number of consoles that can establish a session with the Sterling Control Center engine. If more consoles try to access the engine than your license permits, the additional consoles are not permitted to sign on to Sterling Control Center.

Contact your Sterling Commerce Account Representative if you need to change your Sterling Control Center license.

Set Up a Console

For computers other than the one Sterling Control Center was installed on, you install the console using a browser such as Microsoft Internet Explorer or Firefox.

Note: To access many Control Center user features without installing files locally on your computer, you can use the Sterling Control Center web console. For more information, see *Using the Web Console* in the *Sterling Control Center User Guide*.

Note: If you are upgrading from a previous version of Control Center, after installing the upgrade but before installing the console, clear the browser cache on the computer on which you are launching the console.

1. Click **Start > Run**.
2. Type **javaws -viewer** and click **Run**.
3. In the Java Control Panel, click **Settings**, **Delete Files**, then **OK**.

Deleting temporary internet files only is not sufficient.

To install a Sterling Control Center console:

1. Check with the administrator to ensure that the Sterling Control Center engine is running.
2. Open the URL associated with the Sterling Control Center engine. The URL format is <https://hostname:port> for a secure connection or <http://hostname:port> for a nonsecure

connection, where *hostname* is the DNS name or IP address where the engine is running and *port* is the port number for the Jetty Web server.

Note: The default secure Jetty Web port is 58083. The default nonsecure Jetty Web port is 58082.

If Web Start determines that JRE 1.6.0 is not installed, or if you are not using Internet Explorer as your Web browser, a JRE 1.6.0 installation link is displayed. Click the link to install JRE 1.6.0.

The following Java Launch Page is displayed:

Sterling Commerce **Sterling Control Center**

Sterling Control Center Launch Page

[Sterling Control Center Console - Small Configuration \(Less Than 256 MB\)](#)
[Sterling Control Center Console - Medium Configuration \(Greater Than 256 MB, Less Than 512 MB\)](#)
[Sterling Control Center Console - Large Configuration \(Greater Than 512 MB, Less Than 1 GB\)](#)

Note: The Sterling Control Center Console allocates only up to the amount of memory specified in parentheses.

[Sterling Control Center Web Console](#)
[Connect:Direct Browser User Interface](#)
[Click Here to Download and Install JRE 1.6 Update 20 for Windows](#)

Sterling Control Center Documentation

[Getting Started Guide](#)
[User's Guide](#)
[System Administration Guide](#)
[Reports Guide](#)
[How-To Guide](#)
[Asset Tracking Guide](#)
[Configuration Management Guide](#)
[License Key Guide](#)

Connect:Direct Browser Documentation

[Connect:Direct Browser User Interface Administration Guide](#)
[Connect:Direct Browser Configuration Guide](#)
[Connect:Direct Browser User's Guide](#)
[Connect:Direct Process Concepts and Examples Guide](#)
[Connect:Direct Process Statements Guide](#)

3. Click the Sterling Control Center Console link you want to use.

The Sterling Control Center components are downloaded to your local computer. When all components are downloaded, a security warning informs you that Sterling Control Center is requesting unrestricted access to your computer.

4. Click **Start** to continue to the Sterling Control Center console installation. A security warning informs you that Java Mail is requesting unrestricted access to your computer. This access is necessary to install Sterling Control Center.

5. Click **Install**.

When the Sterling Control Center console installation is complete, you are given the opportunity to create a shortcut for running the console from your desktop.

6. Do one of the following:

- ◆ To create a shortcut on your desktop, click **Yes**.
- ◆ To finish the installation without creating a shortcut, click **No**.
- ◆ To defer creation of a shortcut, click **Ask Later**.

Note: The Configure option in the shortcut creation window is not used for Sterling Control Center.

Troubleshoot Engine/Console Installations

The following Control Center engine and console installation issues are presented along with steps to take should you encounter them.

Problem	Solution
Data Execution Prevention in Windows Server 2003, SP1, prevents installation.	When installing the Control Center Engine on Windows Server 2003 with Service Pack 1, you may get a message like the following: "Data Execution Prevention. To help protect your computer, Windows has closed this program." Click Change Settings in the Data Execution Prevention window and select the current InstallAnywhere instance to exclude it from Data Execution Prevention. The product should then install correctly.
The automatic installation of JRE 1.6.0 fails.	Sterling Control Center requires a JRE 1.6.0 installation. If you have an older version, Control Center attempts to install JRE 1.6.0 automatically. If this installation process should fail, go to the Java Launch web page and click Click Here to Download and Install JRE 1.6 for Windows . The JRE installation will be updated.
Installation fails.	If the installation fails, review the installation log to determine the cause. The log is named Sterling_Control_Center_v.5.2_InstallLog.log and is located in the installation directory. To reconfigure installation, see <i>Change Engine Settings After Installation</i> on page 26.

Problem	Solution
The client computer on which a console has been installed does not recognize the engine name and location when the user attempts to run Control Center via Java Web Start. (An error message is displayed at the console computer stating that it is unable to launch Control Center, followed by a Java Web Start “unable to load resource” download error.)	Run configCC.bat (Windows) or configCC.sh (UNIX). (See <i>Change Engine Settings After Installation</i> on page 26.) Respecify the domain name and location from which the console computer is to download Web Start files.
Internet Explorer generates a warning message that part of the application is missing the digital signature.	<p>Access the Java Control Panel by typing javaws -viewer, and then navigate to the Advanced tab > Expand Security > Expand Mixed Code. Select the Enable Hide Warning - Run with protections option.</p> <p>For Windows platforms, add the deployment.config file to either C:\Windows\Sun\java\Deployment or C:\Program Files\Java\jre6\lib.</p> <p>For the Linux platform, add deployment.config to either /etc/.java/deployment/deployment.config or \${deployment.java.home}/lib/deployment.config where \${deployment.java.home} is the location of the JRE from which the deployment products are run.</p>

Configure Connect:Enterprise for z/OS

Before a Connect:Enterprise for z/OS server (version 1.3 or later) can communicate with Sterling Control Center, you must provide the z/OS server with the address of the Sterling Control Center engine and the port that the Control Center engine listens on. You use the Connect:Enterprise for z/OS Scheduler and Logging application agents for this. Sterling Control Center provides Scheduler and Logging application agent files for you to modify.

To configure a Connect:Enterprise for z/OS server for Sterling Control Center:

1. After successfully installing Sterling Control Center, use a text editor such as Notepad to open the \$RLOG file in the ControlCenter\conf\CEOS390 directory (ControlCenter/conf/CEOS390 on UNIX). This file contains the Logging application agent rules.

2. Locate the following lines:

```
IPADDR=DNS.CONTROL.CENTER,
PORT=162,
```

3. Replace all occurrences of **DNS.CONTROL.CENTER** with the IP address or DNS name of the Sterling Control Center engine.
4. Replace all occurrences of **162** with the port number the Sterling Control Center engine will listen on for SNMP traps from the Connect:Enterprise server.

For example, if the Sterling Control Center engine IP address is 10.20.41.9 and the port number it listens on is 8080, the revised file would look like the following example:

```
*****
* LOGGING APPLICATION AGENT RULES *
*****
RULE NAME=ACNEW
  SNMPTRAP TEXT='FUNC=&ACFUNC BNO=&BATCH# ID=&IDFIELD BID="&BID24" +
    KEY=&KEY RMT=&RMTNAME LINE=&LINNAME STC=&STCNAME L+
    IST=&LISTNAM FC=&FAILCODE',
    IPADDR=10.20.41.9,
    PORT=8080,
    GROUP1=STATUS,
    GROUP2=1,
    ERROR=CONTINUE
RULE NAME=ACUPD
  SNMPTRAP TEXT='FUNC=&ACFUNC BNO=&BATCH# ID=&IDFIELD BID="&BID24" +
    KEY=&KEY RMT=&RMTNAME LINE=&LINNAME STC=&STCNAME L+
    IST=&LISTNAM FC=&FAILCODE',
    IPADDR=10.20.41.9,
    PORT=8080,
    GROUP1=STATUS,
    GROUP2=2,
    ERROR=CONTINUE
```

5. Save the \$RLOG file.
6. Use the text editor to open the \$RSCH file. This file contains the Scheduler application agent rules.
7. Replace the highlighted information in the following example with the IP address or DNS name of the Sterling Control Center engine and the port number on which Control Center will listen for SNMP traps from the Connect:Enterprise server.

```
*****
* SCHEDULER APPLICATION AGENT RULES EXAMPLE *
*****
RULE NAME=TIMER0
  SNMPTRAP TEXT='APKEY="&APKEY" FUNC=0',
    IPADDR=DNS.CONTROL.CENTER,
    PORT=162,
    GROUP1=ALARM,
    GROUP2=8888,
    ERROR=CONTINUE
.
.
```

For example, if the Sterling Control Center engine IP address is 10.20.41.9 and the port number is 8080, this file would contain the following:

```
*****
* SCHEDULER APPLICATION AGENT RULES EXAMPLE *
*****
RULE NAME=TIMER0
  SNMPTRAP TEXT='APKEY="&APKEY" FUNC=0',
           IPADDR=10.20.41.9,
           PORT=8080,
           GROUP1=ALARM,
           GROUP2=8888,
           ERROR=CONTINUE
.
.
```

8. Save the \$RSCH file.
9. Upload the \$RLOG and \$RSCH file to the Connect:Enterprise z/OS server.
If your Connect:Enterprise for z/OS installation already uses Logging and Scheduler application agents, you can insert the new statements into the existing rules.
See the *Connect:Enterprise for z/OS Application Agents and User Exits Guide* for instructions on implementing rules.
10. Perform a rules refresh on the Connect:Enterprise server. The server can now communicate with Sterling Control Center.
11. Repeat this procedure for each Connect:Enterprise server that Sterling Control Center will monitor.

Note: Each Connect:Enterprise for z/OS server that Sterling Control Center will monitor must use a unique port number for sending the SNMP traps.

Configure Sterling Integrator

To use Sterling Control Center with Sterling Integrator servers, including Sterling File Gateway, set up a Control Center service in Sterling Integrator. See the topic called *Monitoring Sterling Integrator with Sterling Control Center* in the Sterling Integrator documentation for more information.

Note: For Control Center to monitor all the steps of Sterling Integrator business processes, set the persistence level on Sterling Integrator to PERSISTENCE_FULL for the business processes.

Note: Control Center issues Ops commands to Sterling Integrator to get adapter status. To avoid server down alerts, set the Ops command timeout on Sterling Integrator to more than 2 minutes.

Configure FTP Servers

To use Sterling Control Center with FTP servers, see *Set Up Control Center to Monitor an FTP Server* on page 43.

Uninstall Sterling Control Center

Read the following note before you uninstall Control Center.

Caution: The trust store (<install dir>/jre/lib/security/cacerts) provided with the installed Java JRE is removed when you uninstall Control Center. If you imported your own certificates into this trust store, avoid losing trust store information that may be used by other applications by copying the file to another directory before uninstalling it. Reinstalling Control Center installs a new copy of the trust store.

Uninstall Sterling Control Center in Windows

1. Back up the <install dir>\conf subdirectory in the Sterling Control Center installation directory. This subdirectory contains all setup information unique to your installation (SLCs, users, and other objects that you have defined).

Note: Although uninstalling Control Center should not delete the setup information, taking this step ensures against losing any data.

2. Select **Start > Programs > Sterling_Control_Center_vx.x > Uninstall_Sterling_Control_Center_vx.x**.
3. In the Uninstall Sterling Control Center vx.x window, click **Uninstall**.

Note: In both Windows and UNIX, existing data files and folders are left intact after Sterling Control Center is uninstalled.

If you click **Uninstall**, the product is removed.

Uninstall Sterling Control Center in UNIX

1. Back up the <install dir>/conf subdirectory in the Sterling Control Center installation directory. This subdirectory contains all setup information unique to your installation (SLCs, users, and other objects that you have defined).

Note: Although uninstalling Control Center should not delete the setup information, taking this step ensures against losing any data.

2. Change to the Sterling Control Center installation directory and type the following at the command line (where *x.x* is your version of the product:

```
UninstallerData/Uninstall_Sterling_Control_Center_vx.x
```

3. When prompted, press **Enter**.

Note: In both Windows and UNIX, existing data files and folders are left intact after Sterling Control Center is uninstalled.

To uninstall Sterling Control Center in z/Linux, run the `Uninstall_Sterling_Control_Center_vx.jar` from the `UninstallerData` directory.

Reinstall Sterling Control Center

To reinstall Sterling Control Center:

1. Back up the `<install dir>\conf` subdirectory in the Sterling Control Center installation directory. This subdirectory contains all setup information unique to your installation (SLCs, users, and so on that you have defined).

Note: Although uninstalling Control Center in the following step should not delete the setup information, taking this step ensures against losing any data.

2. Run the Sterling Control Center uninstall program. (See *Uninstall Sterling Control Center* on page 33.)

This removes the Sterling Control Center executable programs from your computer. It does not remove any data items defined in Sterling Control Center (such as rules, actions, SLCs, users, or servers).

3. Restore the `<install dir>/conf` directory you backed up in step 1 on page 34.
4. Run the installation program again.

During reinstallation, the installation program asks if you want to reinitialize the Sterling Control Center database tables. If you choose to reinitialize, all managed server statistic and Control Center event information is erased from Control Center. If you select not to reinitialize, the existing statistic and event information is available with the reinstalled Control Center. The default selection is not to reinitialize.

Caution: If you reinitialize the existing database, you will lose the Metadata Type mapping configuration for User Data and Server data. Make a note of these values before reinitializing the database and reconfigure them later. See *Managing Metadata Type Mapping* in the *Sterling Control Center System Administration Guide* for instructions on how to map metadata types.

Remove Temporary Files

On some UNIX platforms, the installation program may leave temporary files. Remove these files by typing the following commands at a command prompt:

```
rm /tmp/ia_remove.*
rm /tmp/persistent_state
rm -R /tmp/install.dir.* command
```

Note: If there is insufficient space in the /tmp directory, the installation program will use the home directory. In this case, the above commands must be performed substituting the home directory for /tmp.

Configure a Secure Connection

This chapter describes the tasks required to configure the following secure connections for use with Sterling Control Center:

- ◆ A secure connection between the Control Center engine and a Control Center console. This secure connection uses Secure Hypertext Transfer Protocol (HTTPS).
- ◆ A secure connection between the Control Center engine and a managed Connect:Direct server. This secure connection uses Secure Sockets Layer (SSL) or Transport Layer Security (TLS).

Note: The Control Center engine uses the same trust store file for both types of secure connections.

Use the information recorded on the *HTTPS Worksheet* on page 19 to complete the procedures in this chapter.

Note: To configure Secure+ Option objects on a Connect:Direct server, you must have a secure connection between the server and the Connect:Direct engine or the Connect:Direct server must allow Secure+ configuration over an unsecure connection in its initialization parameters.

Creating a Secure Connection Between the Engine and Console

To ensure the secure transfer of information between Sterling Control Center and a console, use an HTTPS connection between the two locations. This type of secure connection is client and server authenticated, where the console is the client and the Sterling Control Center engine is the server.

Requirements for Client-Server Authentication

For client and server authentication, the following files must be stored at the location of both the client and server:

- ◆ Keystore file—A database of key material used for authentication and data integrity.
- ◆ Trust store file—A keystore which is used when making decisions about what to trust.

Sterling Commerce provides Certificate Wizard to assist you in generating self-signed certificates and the certificate signing requests (CSRs) used to obtain certificates from a Certificate Authority (CA).

The following table presents a summary of the tasks you must complete before you can configure a secure connection between the Sterling Control Center engine and the console using the procedures described in *Configuring the Engine for a Secure Connection* on page 39 and *Configuring the Console for a Secure Connection* on page 39. When appropriate, the table refers to the Certificate Wizard Help for procedures to complete these tasks.

Before you begin the tasks listed in the table, consult your system security administrator for any site-specific security requirements.

Task	How to Accomplish
Obtain certificates. <ul style="list-style-type: none"> ◆ The console needs the private key and certificate for the console and the root certificate for the engine. ◆ The Control Center engine needs the private key and certificate for the engine as well as the root certificate for the console. 	Take one of the following actions: <ul style="list-style-type: none"> ◆ Use Certificate Wizard or any other available certificate-generation tool to generate the CSR to obtain the certificate from a third-party CA. ◆ Create a self-signed certificate. See the Certificate Wizard Help for instructions on generating a CSR and creating a self-signed certificate.
On the computers running the console and the engine, create and save keystore files in JKS format (using Certificate Wizard).	See <i>Generate a Key Certificate, PKCS12, or Java Keystore File</i> in Certificate Wizard Help for instructions on creating a valid JKS keystore file from your private key and certificate. <p>Note: The passphrase for the certificate and the keystore must be the same.</p>
On the computers running the console and engine, create and save trust store files that contain CA information in JKS format.	If a trust store file in JKS format is not available on the server or the console, take one of the following actions: <ul style="list-style-type: none"> ◆ On the engine, use the default trust store file (cacerts) located in the <i><Sterling Control Center installation directory>/jre/lib/security</i> directory. This trust store file contains authentication information for most CAs. ◆ For a self-signed certificate, refer to <i>Create a Self-Signed Certificate</i> in the Sterling Certificate Wizard Help to import the certificate into a JKS trust store. <p>Note: A trust store file is not automatically installed at the console location.</p>
Configure the Control Center engine for a secure connection.	See <i>Configuring the Engine for a Secure Connection</i> on page 39.
Configure the Control Center console for a secure connection.	See <i>Configuring the Console for a Secure Connection</i> on page 39.

After you complete the tasks listed in the table, you are ready to configure the Control Center engine and console for a secure connection.

Configuring the Engine for a Secure Connection

To configure a secure HTTPS connection at the Sterling Control Center engine:

1. If necessary, stop the engine.
2. Do one of the following:
 - ◆ On a UNIX computer, run the configCC.sh program from the *<install directory>/bin* location.
 - ◆ On a Windows computer, double-click configCC.bat in the *<install directory>\bin* directory.
3. In the Keystore and Trust Store configuration steps, specify the keystore location and passphrase and the trust store location and passphrase as well as a port for the secure HTTP connector server to listen on.

Note: The passphrase for the keystore and the certificate must be the same.

4. Restart the Control Center engine.

Configuring the Console for a Secure Connection

After you exchange keystore and trust store information between the Sterling Control Center engine and the console, you are ready to configure the console for a secure connection.

To configure the console for a secure HTTPS connection:

1. Verify that the Control Center engine is running.
2. Open the URL associated with the engine. The Sterling Control Center Java Launch Page is displayed.
3. Click the **Sterling Control Center Console** link corresponding to your memory requirements.
4. From the Login panel, click **Config**.
5. Provide the following information about the keystore:
 - ◆ Keystore Type
 - ◆ Keystore Location
 - ◆ Keystore Password
6. Provide the following information about the trust store:
 - ◆ Trust Store Type
 - ◆ Trust Store Location
 - ◆ Trust Store Password
7. Click **OK**.

Note: If any of the keystore and trust store configuration information is invalid, you are notified after you click **Finish**.

Creating a Secure Connection between the Engine and a Managed Connect:Direct Server

A secure connection between the Sterling Control Center engine and a managed Connect:Direct server is server authenticated. The engine is the client and the managed Connect:Direct server is the server.

Note: Before you configure a secure connection, consult your system security administrator for any site-specific security requirements.

Configuring the Managed Server For a Secure Connection

The managed server must first be configured to support secure client connections. Use the Secure+ Administration tool, SPAdmin, to configure each managed server. Keep these points in mind:

- ◆ The name of the configuration record used for client connections is **.Client**.
- ◆ The Connect:Direct server merges the contents of the **.Client** record, if it exists, with the contents of the **.Local** record to create a merged **.Client** record, similar to the way records representing remote nodes are merged with the **.Local** record.
- ◆ If the value for Node or Copy Statement Override for the merged **.Client** record is Disable Override, then client connections must abide by the value specified for Secure+ Protocol in the merged **.Client** record.
- ◆ If the value for Secure+ Protocol for the merged **.Client** record is:
 - ◆ Disable Secure+, then only non-secure client connections will be permitted
 - ◆ Enable TLS Protocol, then only TLS client connections will be permitted
 - ◆ Enable SSL Protocol, then only SSL client connections will be permitted
 - ◆ Enable STS Protocol, then no client connections will be permitted (as no clients support the STS protocol).
 - ◆ Enable Override, then client connections may be secure, TLS/SSL, or non-secure.

Configuring Control Center For a Secure Connection

The following table summarizes the procedures on the Sterling Control Center side necessary to configure a secure connection between the engine and a managed Connect:Direct server.

Task	How to Accomplish
Obtain a root certificate for the Connect:Direct server.	<ul style="list-style-type: none"> ◆ Use Certificate Wizard or any other available tool to generate the CSR to obtain the certificate from a third-party CA. ◆ Create a self-signed certificate. <p>See the Certificate Wizard Help for instructions on generating a CSR and generating a self-signed certificate.</p>

Task	How to Accomplish
Create a trust store file that contains CA information in JKS format on the Sterling Control Center engine.	If a trust store file in JKS format is not available, use the default trust store file (cacerts) located in the <Sterling Control Center installation directory>/jre/lib/security directory. This trust store file contains authentication information for most CAs.
Import the root certificate of the Connect:Direct server into the trust store on the Sterling Control Center engine.	Use the Import to Trust Store feature of Certificate Wizard.
Configure the Sterling Control Center engine for a secure connection.	Refer to <i>Configuring the Engine for a Secure Connection</i> on page 39.

Set Up Control Center to Monitor an FTP Server

By monitoring an FTP server using Sterling Control Center, you can gather information on the files transferred to and from the server. Control Center SLCs can be written to make sure that FTP file transfers occur on time. Rules can be written to check FTP server status (up or down) and make sure that files are transferred successfully. Finally, reports can be generated to show historical server activity.

Control Center monitoring of FTP servers is enabled via an FTP agent. Control Center ships with FTP agents for z/OS, UNIX, Linux, and Windows platforms. A separate FTP agent must be installed on each FTP server to be monitored.

Sterling Control Center supports the monitoring of two types of FTP servers:

- ◆ FTP servers that use FTP logs to record transfer activities (W3C, xferlog, and IIS)
- ◆ FTP servers that use SNMP traps to record transfer activities (Ipswitch's WS_FTP and z/OS-based FTP servers)

FTP servers also differ according to the types of environments in which they can operate. Refer to the following chart to see where you can run a particular FTP server:

Environment	FTP servers using FTP Logs (W3C, xferlog, IIS)	WS_FTP Server	z/OS FTP Server
Windows	X	X	
UNIX	X		
z/OS			X

Control Center monitors FTP servers through an FTP agent that is installed on the machine where the FTP server is running. This topic tells you what information Control Center gathers from all FTP servers and how that information maps to general Control Center terms in displays and reports. To install and configure a non-z/OS Control Center FTP agent, go to the appropriate section for the platform and type of FTP agent you are using. For Control Center FTP agents that use FTP logs, review the information in *Validating Log Formats to Use with Control Center* on page 50. To install and configure z/OS-based FTP servers, go to *Installing an FTP Agent on z/OS* on page 53.

Based on Monitor Rest Time, Control Center periodically collects information on the transfer activities of the FTP server via the FTP agent. It generates notifications for each transfer. Some mapping is done between the transfer log information and these Control Center notifications. For example, for an FTP PUT, Control Center reports a Process name of “PUT.” Source file name is mapped to the ID of the user who did the transfer, and destination file name is the name of the file found in the transfer log. When an FTP GET is done, the Process name value is “GET,” the source file name is the name of the file received and the destination file name is the ID of the user who initiated the transfer. In terms of FTP commands, RETR, SENT, and DOWNLOADED display as a GET in Control Center while STOR, STOU, CREATED, UPLOADED, and APPENDED display as a PUT.

In addition, all other FTP commands will generate Statistic records. GET and PUT commands will generate Event Types: Process Start, Process Step Start, Process Step End and Process End. All other FTP commands will generate Event Type: Server Command and the Process Name will be the FTP Command. Possible Process Names are USER, PASS, RNFR, RNFO, REN, DELE, MKD, LIST, CWD, PORT, PASV and LOGN.

For a complete list of fields used in Sterling Control Center statistics, server property displays, and reports, see the *Parameters and Fields* appendix in the *Sterling Control Center System Administration Guide*. In this appendix, the fields in FTP logs are mapped to Control Center terms.

High-Level Process to Set Up Non-z/OS FTP Servers

The following list described the high-level steps involved in setting up for monitoring of non-z/OS FTP servers. Detailed instructions for all steps except for defining the FTP server in Control Center are included later in this chapter.

Note: The Control Center FTP agent must be installed on the machine where the FTP server is running. For FTP agents that use FTP logs, Control Center must have read access to the FTP server's log file and know the name and directory location of the FTP logs.

After you have installed Control Center and the product is up and running:

1. Enable the FTP server to write transfer activities to a log file or SNMP trap.
2. Enable read access to the FTP server log file for the Sterling Control Center FTP agent.
3. Install and configure the Control Center FTP agent on the computer where the FTP server resides and start the agent.

Note: If the Sterling Control Center FTP agent fails to start, consult the FTP agent log file in the FTPAgentInstallDir/log folder (where FTPAgentInstallDir is the directory where the agent is installed) to isolate the cause of the problem. The log file name begins with SCCFTPagent_.

4. Define the FTP server in Control Center by providing relevant details about the server and the Control Center FTP agent, and the log formats, if necessary. For specific instructions on adding an FTP server for Control Center to monitor, see the *Managing Servers* chapter in the *Sterling Control Center System Administration Guide*. For more information on log formats, see *Validating Log Formats to Use with Control Center* on page 50.
5. To test whether Control Center is collecting information from the FTP server, use Control Center to view the FTP server activity. For more information, see the *Monitoring Server Activity* chapter in the *Sterling Control Center System User Guide*.

Working with an FTP Agent in Windows

These procedures tell you how to install, configure, start, and stop an FTP agent in the Windows environment. The installation and configuration procedures for WS_FTP, which differ slightly from those for W3C, IIS, and xferlog, are presented last in this section.

Installing an FTP Agent in Windows for W3C, IIS, and xferlog

Use this procedure to install the Sterling Control Center FTP agent on a Windows system for use with W3C, IIS, and xferlog.

To install the Sterling Control Center FTP agent on Windows:

1. Close all open applications.

2. Navigate to the Control Center Windows folder on the drive of the computer where you are installing the FTP agent.
3. Double-click the SCCFTPAgentInstall.exe file.
4. Follow the installation prompts.

If the installation fails, review the installation log to determine the cause. This log is named Sterling_Control_Center_-_FTP_Agent_v5.2_InstallLog.log and is located in the FTP agent installation directory.

The installer creates a Windows service to run the FTP agent. The installation program also installs the Java Runtime Environment (JRE) required to run the FTP agent.

Configuring the FTP Agent in Windows for W3C, IIS, and xferlog

By default, the FTP agent listens on port 58084 on the computer where it is installed. To change the default port, use this procedure to reconfigure the FTP agent on Windows.

To configure the FTP agent on Windows:

1. Open a Command Prompt window on the computer where the FTP agent is installed. (Click Start > Programs > Accessories > Command Prompt.)
2. Change the current working directory to *FTPAgentInstallDir*/bin, where *FTPAgentInstallDir* is the directory where the FTP agent is installed.
3. If the FTP agent is already running, stop it by typing **stopFtpAgent.bat**.
4. Type **configFtpAgent.bat**.
5. Follow the configuration prompts to change the FTP agent listening port.

Manually Starting the FTP Agent in Windows for W3C, IIS, and xferlog

To manually start the FTP agent in Windows, do one of the following:

- ◆ Click Start > Settings > Control Panel > Administrative Tools > Services to display the Services window, then right-click Sterling Control Center - FTP Agent v5.2, and click Start.
- ◆ Display a command window (click Start > All Programs > Accessories > Command Prompt), change to the root directory, and type *FTPAgentInstallDir*\bin\runFtpAgent\$.exe, where *FTPAgentInstallDir* is the directory where you installed the FTP agent.
- ◆ In Windows Explorer, navigate to the *FTPAgentInstallDir*\bin directory and double-click **runFtpAgent\$.exe**.
- ◆ In Windows Explorer, navigate to the *FTPAgentInstallDir*\bin directory and double-click **runFtpAgent.bat**.

By default, the FTP agent listens on port 58084. You will need this information when you define a managed FTP server in Control Center.

Automatically Starting the FTP Agent in Windows for W3C, IIS, and xferlog

To set the Sterling Control Center FTP agent to start automatically in Windows:

1. Click Start > Settings > Control Panel > Administrative Tools > Services. The Services window is displayed.
2. Right-click Sterling Control Center - FTP Agent v5.2 and select Properties.
3. In the Startup Type list, click Automatic.

Stopping the FTP Agent in Windows for W3C, IIS, and xferlog

You can stop the FTP agent in Windows either from the Start menu or from a command line.

To stop the FTP agent from the Windows Start menu:

1. Click Start > Settings > Control Panel > Administrative Tools > Services.
2. Right-click Sterling Control Center - FTP Agent v5.2.
3. Click Stop.

To stop the FTP agent from a Windows command line:

1. Open a Command Prompt window on the computer where the FTP agent is installed. (Click Start > Programs > Accessories > Command Prompt.)
2. Change the current working directory to *FTPAgentInstallDir/bin*, where *FTPAgentInstallDir* is the directory where the agent is installed.
3. Type **stopFtpAgent.bat**.

Note: You may see communication exceptions when you stop the FTP agent from the command line. Please ignore these exceptions.

Installing an FTP Agent in Windows for WS_FTP

Use this procedure to install the Sterling Control Center FTP agent on a Windows system for use with WS_FTP.

To install the Sterling Control Center FTP agent on Windows:

1. Close all open applications.
2. Navigate to the Control Center Windows folder on the drive of the computer where you are installing the FTP agent.
3. Double-click the SCCFTPAgentInstall.exe file.
4. Follow the installation prompts.

Caution: To install the Sterling Control Center FTP agent in a directory other than the default, make sure the name of the directory does not contain any blanks. The installation will proceed as usual, but Control Center will not be able to monitor the WS_FTP server.

If the installation fails, review the installation log to determine the cause. This log is named Sterling_Control_Center_-_FTP_Agent_v5.2_InstallLog.log and is located in the FTP agent installation directory.

The installation program installs the Java Runtime Environment (JRE) required to run the FTP agent.

Configuring the FTP Agent in Windows for WS_FTP

By default, the FTP Agent sends traps to SNMP port 58094 and host address 0.0.0.0. To change the default port and host address to the port/host address where Control Center is running, use this procedure to reconfigure the FTP agent on Windows.

To configure the FTP agent on Windows using SNMP Connector:

1. Open a Command Prompt window on the computer where the FTP agent is installed. (Click Start > Programs > Accessories > Command Prompt.)
2. Change the current working directory to *FTPAgentInstallDir/bin*, where *FTPAgentInstallDir* is the directory where the FTP agent is installed.
3. Type **configWsFtpAgent.bat**.
4. Follow the configuration prompts to change the FTP agent SNMP port and host address. (The host address is where Control Center is running. The SNMP port is the port Control Center monitors for WS_FTP activity.)

Configuring the WS_FTP Server to Use the FTP Agent

To enable the WS_FTP Server to communicate with the Sterling Control Center FTP Agent, you must configure WS_FTP Server to execute the Control Center batch file, *notifySCC.bat*, when it performs actions on files, such as uploading, downloading, and deleting. To configure WS_FTP, you set up and name a Folder Action Rule, such as *SCCWsFtpAgent*, and specify additional information for that Folder Action Rule to tell it how to work with Control Center.

Note: The WS_FTP configuration steps below are based on the most current release of WS_FTP that was available at the time of this publication. An earlier version of WS_FTP was configured a different way, by setting up a Program Notification, and then creating a rule to execute the Programs Notification when files are uploaded, downloaded, deleted, etc. In a future release of WS_FTP, there may yet be another way to configure the server. Therefore, to determine how to configure WS_FTP, consult the documentation for the version of WS_FTP you are using, in conjunction with the following steps.

To configure the WS_FTP server to use the FTP agent:

1. To send notifications for all actions that the WS_FTP performs on files, select all FTP events that you want Control Center to monitor in the **Rules Notifications** section, (Upload, Download, Delete, etc.).
2. To instruct the WS_FTP server to execute the Control Center *notifySCC.bat* batch file when it sends a notification, browse to the *notifySCC.bat* file in the directory where the Control Center FTP Agent is installed, and select it for the **Executable**.

3. To pass the parameters Control Center needs to monitor the WS_FTP server when the WS_FTP server sends a notification, type **%Event %User %Status %File** for the **Arguments**.

Note: Make sure you type the parameters in the order specified for the Arguments field. These parameters must be in that exact order and are case-sensitive.

Working with an FTP Agent in UNIX

These procedures tell you how to install, configure, start, and stop an FTP agent in the UNIX environment. Only FTP Agents that use FTP logs to record transfer activities (W3C, xferlog, and IIS) can run in a UNIX environment.

Installing the FTP Agent in UNIX

Use this procedure to install the Sterling Control Center FTP agent on a UNIX system.

To install the FTP agent in UNIX:

1. Navigate to the Control Center folder that corresponds to your UNIX platform.
2. Copy the SCCFTPAgentInstall.bin file from the folder to a directory on your computer.

Note: If you are installing in a 64-bit operating system environment (Solaris AMD64 or HP-UX Itanium), copy the SCCFTPAgentInstall64. bin file.

3. Change to the directory where you copied SCCFTPAgentInstall.bin.
4. Type **chmod 777 *.bin**.
5. Do one of the following:
 - ◆ To start a console-based installation, type **sh SCCFTPAgentInstall.bin -i console** at the command line.
 - ◆ To start a GUI-based installation, type **sh SCCFTPAgentInstall.bin -i gui** at the command line.
6. Follow the installation prompts.

Note: The installation procedure may leave temporary files you want to get rid of. For more information, see *Remove Temporary Files* on page 35.

If the installation fails, review the installation log to determine the cause. The log is called Sterling_Control_Center_-_FTP_Agent_v5.2_InstallLog.log and is located in the Control Center installation directory.

The installation program installs the Java Runtime Environment (JRE) required to run the FTP agent.

Configuring the FTP Agent in UNIX

By default, the Control Center FTP agent listens on port 58084 on the computer where it is installed. You can change this default port using the following procedure.

To configure the FTP agent on a UNIX computer:

1. Change the current working directory on the computer where the FTP agent is installed to *FTPAgentInstallDir/bin*, where *FTPAgentInstallDir* is the directory where the FTP agent is installed.
2. If the FTP agent is running, stop it by typing **./stopFtpAgent.sh**
3. Type **./configFtpAgent.sh**
4. Follow the configuration prompts to change the FTP agent listening port.

Manually Starting the FTP Agent in UNIX

To start the FTP agent on a UNIX operating system:

1. Log in as root, or as the user who installed the engine.
2. Change the current working directory on the computer where the FTP agent is installed to *FTPAgentInstallDir/bin*.
3. Type **./runFtpAgent.sh**.

By default, the FTP agent listens on port 58084. You will need this information when you define the FTP server as a managed server in Control Center.

Starting the FTP Agent Automatically in UNIX

To set the FTP agent to start automatically in UNIX:

Insert a command line into a startup file to automatically start the agent.

Note: Because UNIX configurations vary, consult your UNIX administrator for the exact procedure and command syntax.

Stopping the FTP Agent in UNIX

To manually stop the FTP agent in UNIX:

1. On the computer where the FTP agent is installed, change the current working directory to *FTPAgentInstallDir/bin*, where *FTPAgentInstallDir* is the directory where the agent is installed.
2. Type **./stopFtpAgent.sh**.

Validating Log Formats to Use with Control Center

When you add an FTP server in Control Center, you first give Control Center information to tell it how to connect to the server. Then for FTP servers using xferlog or IIS logs to record transfer activities, you should validate the log formats to ensure that Control Center can properly interpret the layout of the log. The layout of a W3C log file is contained in the data itself so you do not have

to define the record format of an FTP server that generates log files in a W3C-format. However, because there are some things you should consider, see *W3C FTP Server Logs* on page 51.

FTP xferlog and IIS Log Formats

Before Control Center can read the contents of an FTP xferlog or IIS log file, it needs the layout of all fields in the record.

When you add an FTP xferlog or IIS server, print out a sample log record and confirm that your field layouts match the default from the Log File Format Advanced Settings page. If they do not match, modify the layout on this page by accessing it from the Server Properties - Connection page. For more information, see the *Managing Servers* chapter in the *Sterling Control Center System Administration Guide*.

The following sample shows a typical FTP xferlog record with each field separated by a space:

```
Mon Jun 25 08:40:16 2007 1 10.20.9.84 40 /etc/gre.conf a _ o r pgoun1 ftp 0 * c
```

The following sample shows a typical FTP IIS record with each field separated by a comma:

```
192.168.114.201, SMITH, 03/20/10, 7:30:00, W3SVC2, DALLAS, 172.21.13.45, 4502, 163, 3223, 200, 0, GET, /Crossref.xls, -
```

W3C FTP Server Logs

Control Center can monitor FTP Servers that produce logs in W3C standard as long as the log adheres to the following rules:

- ◆ #Fields—Must begin in column 1 and be followed by the file layout key. For example:

```
#Fields: date time c-ip cs-bytes sc-bytes cs-method sc-status cs-uri-stem
```

- ◆ Fields are delimited by blanks.
- ◆ Fields cannot contain embedded blanks unless surrounded by single quotes. For example, if cs-uri-stem has filename with embedded blanks, cs-uri-stem must be surrounded by single quotes:

```
#Fields: date time c-ip cs-bytes sc-bytes cs-method sc-status cs-uri-stem
2009-04-07 14:20:56 10.20.201.3 738 0 STOR 226 'DATA FROM CE FTP SERVER'
```

- ◆ The date and time fields must be present in the log in the form, YYYY-MM-DD HH:MM:SS. You must set the Time Zone setting for the FTP server to the zone used in log date/time (for more information on this setting, see the *Managing the Servers* chapter in the *Sterling Control Center System Administration Guide*).
- ◆ The FTP command must be found in either the cs-method or cs-uri-stem field. If the FTP is in the cs-method field, it can be in one of the following forms:

```
[nn...nnn] cmd
```

or

cmd

If the FTP command is in the cs-uri-stem field, it must be in the following form:

cmd

- ◆ The status must be in either the sc-win31-status or ws-status field or else the FTP command will be reported as Return Code=8. The return code is determined from the sc-win32-status field if it is present (and not manifested by a - symbol); otherwise, the return code is determined from the sc-status field. The following tables summarize how the status of the FTP server can be manifested in either the sc-win32-status or sc-status field:

sc-win32-status	Return Code
Not in log record	Check sc-status
-	Check sc-status
0	0 which indicates a successful execution
otherwise	8 which indicates an error occurred

sc-status	Return Code
Not in log record	8 which indicates an error occurred
-	8 which indicates an error occurred
1nn, 2nn, 3nn	0 which indicates a successful execution
otherwise	8 which indicates an error occurred

Use the alphabetical listing in the *Parameters and Fields* appendix in the *Sterling Control Center System Administration Guide* to see how the fields in W3C logs are mapped to Control Center terms. For example, the value in the Orig Node field in the Statistics Detail display corresponds to the value in the cs-username field if it is present in the log; otherwise, the value in the c-ip field is used.

Installing an FTP Agent on z/OS

The following section describes how to install, configure, and work with an FTP agent in the z/OS environment.

Perform these steps to install the Sterling Control Center FTP agent on z/OS from the Control Center DVD or the Control Center folder downloaded from the ESD Portal.

Step 1: Install the FTP Agent

1. Using Connect:Direct or a similar tool, copy the installation file (CSDDIST.CCFTP420.MVS.DIST.FILE, located in the z/OS directory on the DVD or the Control Center folder) to the z/OS computer as \$SCC.DIST.FILE, where \$SCC is the high-level qualifier of the z/OS system where you are installing the Control Center FTP agent. Transfer the file as binary.

The following sample FTP session uploads the installation file to the z/OS computer. Modify as necessary for your site:

```
ftp 10.20.129.2
binary
put d:\zos\CSDDIST.CCFTP420.MVS.DIST.FILE $SCC.DIST.FILE
```

Note: The target file (\$SCC.DIST.FILE) on the z/OS computer must be pre-defined as LRECL=80, BLKSIZE=3120, RECFM=FB.

You can also use the PC's file transfer capability (IND\$FILE) to upload the installation file to the z/OS computer. See your computer's documentation for instructions on using this feature.

2. Create and submit the following job to unpack the flat file uploaded to z/OS into \$SCC.TXLIB and \$SCC.LKLIB files. Replace \$SCC with your high-level qualifier.

```

//SCCRECV JOB (SCCFTP), 'SCC FTP AGENT RECV',
//SYSTSIN DD *
// CLASS=0,MSGCLASS=X,REGION=4096K,TIME=1440
//*MAIN CLASS=PROD,SYSTEM=SYZ
//*****
//* CHANGE '$SCC' TO YOUR HIGH LEVEL QUALIFIER
//*****
//DELETES EXEC PGM=IEFBR14
//DISTTX DD DISP=(MOD,DELETE),DSN=$SCC.TXLIB,
// UNIT=SYSDA,SPACE=(TRK,1)
//DISTLK DD DISP=(MOD,DELETE),DSN=$SCC.LKLIB,
// UNIT=SYSDA,SPACE=(TRK,1)
//RECVPDS EXEC PGM=IKJEFT01,REGION=4M,COND=(0,NE)
//SYSTSIN DD *
RECEIVE INDSNAME('$SCC.DIST.FILE') NONAMES
DSNAME('$SCC.DIST') RELEASE
//SYSTSPRT DD SYSOUT=*
//*
//RECVLK EXEC PGM=IKJEFT01,REGION=4M,COND=(0,NE)
//SYSTSIN DD *
RECEIVE INDSNAME('$SCC.DIST(LKLIB)') NONAMES
DSNAME('$SCC.LKLIB') RELEASE
//SYSTSPRT DD SYSOUT=*
//*
//RECVTX EXEC PGM=IKJEFT01,REGION=4M,COND=(0,NE)
//SYSTSIN DD *
RECEIVE INDSNAME('$SCC.DIST(TXLIB)') NONAMES SYSTSIN DD *
DSNAME('$SCC.TXLIB') RELEASE
//SYSTSPRT DD SYSOUT=*
//*
//
//CLEANUP EXEC PGM=IEFBR14
//DISTFILE DD DISP=(MOD,DELETE),DSN=$SCC.DIST.FILE,
// UNIT=SYSDA,SPACE=(TRK,1)
//DIST DD DISP=(MOD,DELETE),DSN=$SCC.DIST,
// UNIT=SYSDA,SPACE=(TRK,1)
//SYSTSIN DD *

```

3. After the \$SCC.TXLIB and \$SCC.LKLIB PDS files have been created, continue with Step 2: Generate the Installation JCL.

Step 2: Generate the Installation JCL

The following procedure describes how to generate the JCL used to install the Sterling Control Center FTP agent on z/OS. It executes a CLIST that displays panels that enable you to customize the FTP agent installation for your system.

1. From the ISPF/PDF TSO Command option, type the following command to execute the CCFINST CLIST, replacing \$SCC with the high-level qualifier of the system on which you are installing the Control Center FTP agent:

```
EXEC '$SCC.TXLIB(CCFINST)' '$SCC'
```

2. The CCFINST CLIST tries to allocate the \$SCC.CNTL and \$SCC.JCL datasets. If these datasets already exist, invoke the CCFINST CLIST using the RESTART parameter as shown in the following example:

```
EXEC '$SCC.TXLIB(CCFINST)' '$SCC.RESTART'
```

Note: To access Help with the CCFINST CLIST, type the following command:

```
EXEC '$SCC.TXLIB(CCFINST)' '?'
```

The Sterling Control Center FTP Agent Installation Main Menu is displayed:

```

Sterling Control Center FTP Agent 4.02.00
Installation Main Menu                                TIME-09:18
                                                    DATE-2009/09/01

CMD ==>

SCC FTP Agent System High Level Qualifier ..... TPYLA1.TEST.CCFTP_____
Permanent DASD Device Type ..... SYSDA_
Permanent DASD Volume Serial Number ..... _____
Temporary DASD Device Type ..... SYSDA_

SMP/E Install (Y,N) ..... Y

Job Card Information
==> //SCCFTP JOB (SCCFTP),'SCC FTP AGENT',_____
==> // CLASS=0,MSGCLASS=X,REGION=4096K,TIME=1440_____
==> //*_____
==> //*_____

Press ENTER to continue, PF5 to Terminate the Install

```

Your choices on this menu determine which subsequent panels are displayed.

Step 3: Installing the Sterling Control Center FTP Agent

You can install the Sterling Control Center FTP agent using SMP/E (recommended) or IEBCOPY. All panels include Help that explains and identifies the required fields. Press PF1 to access Help.

When you install the Sterling Control Center FTP agent using SMP/E, the SMP/E system modification (SYSMOD) is *NvrrmmF*, where *v* is the version number, *rr* is the release number and *mm* is the maintenance level. The *NvrrmmF* SYSMOD contains all the base Control Center FTP agent modules.

To install the Control Center FTP agent using SMP/E:

1. Type Y in the SMP/E Install (Y/N) field, and press Enter to display the Sterling Control Center FTP Agent SMP/E Main Menu.

```
                Sterling Control Center FTP Agent
                  SMP/E Main Menu
                                     TIME-09:31
                                     DATE-2009/09/01

CMD ==>

SMP/E Dataset Information :
SMP/E Datasets HLQ ..... TPYLA1.TEST.CCFTP___

CSI Dataset Name ..... TPYLA1.TEST.CCFTP.CSI_____
CSI Catalog Name ..... _____
CSI Dataset Volser ..... _____

TARGET Zone Dataset Name ..... TPYLA1.TEST.CCFTP.CSI_____
DIST Zone Dataset Name ..... TPYLA1.TEST.CCFTP.CSI_____

Press ENTER to continue  PF3 to return to previous Menu
                        or PF5 to terminate the Install
```

Note: Press PF1 to access help that explains and identifies the required fields.

2. Supply the required information and press Enter.

The Sterling Control Center FTP Agent JCL Generation menu is displayed:

```

Sterling Control Center FTP Agent
                        JCL Generation Menu
                                                    TIME-09:37
                                                    DATE-2009/09/01

CMD ==>

The Sterling Control Center FTP Agent JCL generation may take a moment
to execute.

Press ENTER to begin the generate, PF3 to return to previous Menu,
or PF5 to terminate the Install

```

3. Press Enter to generate the installation members. The list of members is displayed.

```

Sterling Control Center FTP Agent Installation JCL Created
                                                    TIME-09:43
                                                    DATE-2009/09/01

CMD ==>
SCC FTP Agent JCL Generation Complete, RC=0

Jobname           Description
-----
CCFALLOC          Allocation JCL Job Stream
CCFSMPE           SMP/E RECEIVE and APPLY JCL Job Stream
CCFACPT           SMP/E ACCEPT JCL Job Stream
CCFBKOUT          Installation Backout JCL Job Stream

Press ENTER to continue

```

4. Press Enter to exit the installation panels.
5. From the ISPF/PDF TSO Edit option, open the \$SCC.JCL file to verify that these members were generated.

6. Execute the CCFALLOC job. This job deletes any existing Control Center FTP agent files and defines the new files.
7. Execute the CCFSMPE installation job. This job initializes the SMP/E libraries, and performs the SMP/E receive and SMP/E apply installation steps.
8. Execute the CCFACPT installation job to perform an SMP/E accept.

The Sterling Control Center FTP agent is now installed in the proper libraries (\$SCC.LINKLIB and \$SCC.SAMPLIB).

You can also install the Sterling Control Center FTP agent using IEBCOPY.

To install the agent using IEBCOPY:

1. Type N in the SMP/E Install (Y,N) field, and press Enter. The Sterling Control Center FTP Agent JCL Generation menu is displayed:

```
                Sterling Control Center FTP Agent
                JCL Generation Menu                                TIME-09:37
                                                                DATE-2009/09/01

CMD ==>

The Sterling Control Center FTP Agent JCL generation may take a moment
to execute.

Press ENTER to begin the generate, PF3 to return to previous Menu,
or PF5 to terminate the Install
```

2. Press Enter to generate the installation members. The list of members is displayed.

```

Sterling Control Center FTP Agent Installation JCL Created
                                                    TIME-09:59
                                                    DATE-2009/09/01

CMD ==>
  SCC FTP Agent JCL Generation Complete, RC=0

Jobname           Description
-----           -
CCFALLOC          Allocation JCL Job Stream
CCFIEBCP          IEBCOPY Installation Option JCL Job Stream
CCFBKOUT          Installation Backout JCL Job Stream

Press ENTER to continue

```

3. Press Enter to exit the installation panels.
4. From the ISPF/PDF TSO Edit option, open the \$SCC.JCL file to verify that these members were generated.
5. Execute the CCFALLOC job. This job deletes any existing Control Center FTP agent files and defines the new files.
6. Execute the CCFIEBCP job. This job installs the Control Center FTP agent elements into the proper libraries (\$SCC.LINKLIB and \$SCC.SAMPLIB).

Step 4: Generating the Sterling Control Center FTP Agent

The Sterling Control Center FTP agent is generated using the SCC\$FMAC macro provided in the \$SCC.SAMPLIB. The generated agent runs as an SMF exit to the FTP server. The FTP agent generates SNMP traps from the file transfer events within the FTP server.

The SCC\$FMAC macro accepts the following parameters:

Parameter Name	Definition
IP	The TCP/IP address (or DNS name) of the Sterling Control Center engine.
PORT	The TCP/IP port that the Sterling Control Center FTP node service is listening on.

Parameter Name	Definition
SMFWRITE	Specifies whether or not SMF records are to be written. You must turn on SMF records in the FTP server in order for the exit to be driven, but the SMF records can be suppressed by the exit. (Y or N.) Y is the default.
NEXTEXTIT	Specifies the name of the next SMF exit to be called by the Sterling Control Center FTP agent. Installations already using the FTP server SMF exit can continue to use the exit by renaming the exit and specifying the exit name in NEXTEXTIT. The Sterling Control Center FTP agent is called first, and after its work it passes control to the exit named before returning to the FTP server.

To generate the Sterling Control Center FTP agent:

1. Edit the FTPSMFEX member in \$SCC.SAMPLIB with the appropriate parameters for your installation.
2. Assemble the Control Center FTP agent using the following JCL (change \$SCC to your high-level qualifier):

```
//JOB CARD JOB (ACCT), 'PGM', MSGCLASS=X, REGION=4M
//*****
//*
//* SAMPLE JCL TO ASSEMBLE THE SCC FTP AGENT SMF EXIT *
//*
//* CHANGE $SCC TO YOUR HIGH-LEVEL QUALIFIER *
//*
//*****
//ASM EXEC PGM=ASMA90,
// PARM='OBJECT,NODECK,XREF(SHORT),RENT'
//SYSLIB DD DISP=SHR,DSN=$SCC.SAMPLIB
//SYSLIN DD DISP=(,PASS),DSN=&&OBJ,
// UNIT=SYSDA,SPACE=(CYL,(1,1)),
// DCB=(DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=3120)
//SYSIN DD DISP=SHR,DSN=$SCC.SAMPLIB(FTPSMFEX)
//SYSPRINT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//SYSUT1 DD UNIT=SYSDA,SPACE=(CYL,(1,1))
//*****
//* LKED *
//*****
//LKED EXEC PGM=IEWL,COND=(0,LT,ASM),
// PARM='SIZE=(256K,13K),LIST,LET,XREF,AC=1'
//SYSLIB DD DISP=SHR,DSN=$SCC.LINKLIB
//SYSLIN DD DISP=(OLD,DELETE),DSN=&&OBJ
//SYSLMOD DD DISP=SHR,DSN=$SCC.LINKLIB(FTPSMFEX)
//SYSPRINT DD SYSOUT=*
//SYSUT1 DD UNIT=SYSDA,SPACE=(CYL,(1,1),,CONTIG)
```

Note: This sample JCL is included in \$SCC.SAMPLIB(FTPSMFEX).

Step 5: Modifying the FTP Server JCL and Initialization Parameters

To enable the z/OS FTP server SMF user exit, the SMF STD and SMFEXIT statements must be included in the FTP.DATA dataset.

Specifying SMF STD causes the FTP server to attempt to write SMF records for the following events:

- ◆ APPEND
- ◆ DELETE
- ◆ LOGIN FAILURES
- ◆ RENAME
- ◆ RETRIEVE
- ◆ STORE
- ◆ STORE UNIQUE

Specifying the SMFEXIT statement causes the FTP server to call FTPSMFEX (generated in Step 4 above) at each point at which an SMF record is to be written.

The generated FTPSMFEX must be placed in an installation-defined link library, or \$SCC.LINKLIB must be added to the STEPLIB DD in the FTPD cataloged procedure.

Note: If \$SCC.LINKLIB is added to the STEPLIB DD, then \$SCC.LINKLIB must be an APF-authorized dataset.

After these changes have been made, stop and restart the FTP server to make the new initialization parameters active.

Set Up Control Center to Monitor File Agents

Sterling Control Center can monitor the status and activity of file agents that submit processes to a Connect:Direct server managed by Control Center. You must take a few steps for Control Center to be able to monitor file agents.

Set File Agent System Settings

For Control Center to monitor file agents you must provide information in System Settings, on the File Agent tab (Click Control Center > System Settings). Complete the following fields on the File Agent tab:

- ◆ SNMP Listener Address
- ◆ SNMP Listener Port
- ◆ No Process Submitted Warning Time

See the System Settings chapter of the *Sterling Control Center System Administration Guide* for definitions of these fields.

Set Up the Connect:Direct Managed Server

For Control Center to monitor the file agent, you must also set up the Connect:Direct managed server to which the file agent is to submit processes. The steps are:

1. If you have not already done so, add the server to Control Center. See the Manage Servers chapter of the *Sterling Control Center System Administration Guide* for instructions.
2. Make sure that the field **Do Not Monitor Associated File Agents**, on the Connection Tab of the Server Properties panel for the server, is unchecked. (Double-click the server's icon in the node tree on the Control Center Console main window to display its server properties.)

Set Up an SLC to monitor the File Agent

The following rules specific to file agent monitoring are included in the rules that ship with Control Center:

- ◆ Process not submitted by File Agent
- ◆ File Agent Service Initialization Error

The first rule is a linked rule, and it is disabled. To use the rule, enable it. For more information on using rules and SLCs, see the Manage Rules chapter of the *Sterling Control Center System Administration Guide*.

Start and Stop Control Center

This chapter describes the following:

- ◆ Start the Control Center Engine
- ◆ Stop the Control Center Engine

Start the Control Center Engine

The Control Center engine must be running for users and administrators to have access to the Console and manage servers. In Windows, the engine is set at installation to start automatically. This setting can be changed so the engine starts manually. The engine can also be set to start automatically in UNIX.

Manually Start the Engine on a UNIX Operating System

To start the Sterling Control Center engine on a UNIX operating system:

1. Log in as **root**, or as the user who installed the engine.
2. Change the current working directory on the computer where the engine is installed to *Sterling Control Center installation directory/bin*.
3. Type **sh runEngine.sh**.

Change the Engine Startup Setting

You can set the Control Center engine to start automatically whenever the engine's computer boots up, or manually.

To set the Control Center engine to start automatically in UNIX:

Insert a command line into a startup file. Because UNIX configurations vary, consult your UNIX administrator for the exact procedure and command syntax.

To change the Control Center engine startup setting in Windows:

1. Click **Start > Settings > Control Panel > Administrative Tools > Services**.

The **Services** window is displayed.

2. Right-click **Sterling Control Center v5.2 Engine** and select **Properties**.
3. Choose **Automatic** or **Manual** from the **Startup Type** list box.

Manually Start the Engine in Windows

This section provides the engine startup settings required for a manual start in Windows.

To start Sterling Control Center, do one of the following:

- ◆ To start Sterling Control Center as a Windows service, click **Start > Settings > Control Panel > Administrative Tools > Services** to display the **Services** window, then right-click **Sterling Control Center v5.2 Engine**, and click **Start**.
- ◆ From a command window (click **Start > Programs > Accessories > Command Prompt**), change to the root directory, and type *install directory*\ControlCenter\bin\ runEngine\$.exe.
- ◆ In Windows Explorer, double-click **runEngine\$.exe** in the *install directory*\ControlCenter\bin directory.
- ◆ In Windows Explorer, double-click **runEngine.bat** in the *install directory*\ControlCenter\bin directory.

Note: If you start Sterling Control Center using the batch (.bat) or .exe file, the Sterling Control Center v5.2 Engine Service displays the status as Not Started.

Manually Start the Engine Remotely in Windows

You can also start the Sterling Control Center engine service from a remote computer using the Windows command line interface.

To start the Control Center engine remotely:

From a command line interface, type the following:

```
sc "EngineHost start runEngine$"
```

where *EngineHost* is the DNS name of the computer where the engine is running.

Note: You must have administrative permissions for the Sterling Control Center v5.2 engine service to perform this function.

Cold Start Control Center

When the engine is restarted, it collects all statistical records from the monitored servers, including statistical records generated while Control Center was inactive. If the engine was inactive for several hours, unnecessary statistics could fill up the Control Center database and unimportant SLC events could be generated. Cold starting the Control Center engine avoids this issue.

To cold start the Control Center engine on UNIX:

1. Change the current working directory to *install directory*/bin.
2. Type **sh runEngineCold.sh**.

To cold start the Control Center engine on Windows:

1. Open the *Sterling Control Center install directory*\bin.
2. Double-click the file **runEngineCold.bat**.

Stop the Control Center Engine

Working from a Console or from a command line, you can stop the engine and disconnect all Consoles.

From the Console:

To stop the engine and disconnect all Consoles:

1. Click **Control Center > Stop Control Center**.
2. Click **OK** in the confirmation windows.

To stop only the Console:

Click **Control Center > Exit Console**.

To stop only the engine on a Windows computer:

1. Click **Start > Settings > Control Panel > Administrative Tools > Services**.
2. Right-click the **Sterling Control Center v5.2 Engine** program, and click **Stop**.

From a command line:

To stop the engine and disconnect all Consoles:

1. Run *install directory*\bin\stopEngine.bat (Windows) or *install directory/bin/ stopEngine.sh* (UNIX).
2. Supply your Sterling Control Center user ID and password when prompted.

Note: Control Center checks to make sure you have permission to issue a shutdown request before initiating shutdown.

Working With the Console

This chapter describes the following:

- ◆ Start the Sterling Control Center Console
- ◆ Log In To the Console
- ◆ Reconnect to the Engine after a Service Interruption
- ◆ Understand the Control Center Console Window
- ◆ Use the Sterling Control Center Web Console
- ◆ Set Console Preferences

Start the Sterling Control Center Console

You can start the Control Center Console from the computer where the Control Center engine is installed or from the Sterling Control Center Launch Page. The Web Console can also be started from the Sterling Control Center Launch Page.

Starting the Console through Java Web Start from the Sterling Control Center Launch Page gives you full Console functionality. The Control Center Web Console gives access to many Console features without installing Console-related files on your computer. The feature set available through the Web Console, however, is a subset of all features.

Log In To the Console

This section describes how to log into the Console:

- ◆ On the computer where the Control Center engine is installed
- ◆ Using Java Web Start
- ◆ Using the Web Console

To log in to the Console on the Computer where the engine is installed:

1. Ensure that the Sterling Control Center engine is running. Contact your system administrator if unsure.
2. Do one of the following:
 - ◆ Double-click the **Console-Sterling Control Center v5.2** icon from the desktop.
 - ◆ In UNIX, from a command line, after setting the display, change to the `SCCInstallDirectory/bin` directory and type **sh runConsole.sh**.
 - ◆ In Windows, click **Start > Programs > Sterling Control Center v5.2 > Console - Sterling Control Center v5.2**.
3. In the Login screen that displays, enter the following information:
 - ◆ Host name of the computer where the Sterling Control Center engine is installed. This entry can be either a DNS host name or an IP address.
 - ◆ Port number that the Control Center engine is configured to listen on. The default nonsecure port is 58080.
 - ◆ Select HTTPS if you are signing onto the engine with a secure connection. If Sterling Control Center has not been configured for an HTTPS console-engine connection, this field cannot be selected. Refer to *Configure a Secure Connection* on page 37 in the Getting Started Guide .

Note: The default port for the HTTPS connection is 58081.

- ◆ Your Sterling Control Center user name and password. The password is case sensitive. The default user ID and password are **admin**.

Note: After you log in using the default user ID and password, you should change the password.

To log in to Sterling Control Center via Java Web Start:

1. In the Web address field of your Web browser, enter the host and port number for the Sterling Control Center Launch Page.

Note: See your system administrator for these values.

2. From the Launch Page, click **Sterling Control Center Console** (Small, Medium, or Large configuration).
3. In the Login screen that displays, type the following information:
 - ◆ Host name of the computer where the Sterling Control Center engine is installed. This entry can be either a DNS host name or an IP address.
 - ◆ Port number that the Sterling Control Center engine is configured to listen on. The default nonsecure port is 58080.
 - ◆ Select HTTPS if you are signing onto the engine with a secure connection. If Sterling Control Center has not been configured for an HTTPS console-engine connection, this field cannot be selected. Refer to *Configure a Secure Connection* on page 37 in the Getting Started Guide.

Note: The default port for the HTTPS connection is 58081.

- ◆ Your Sterling Control Center user name and password. The password is case sensitive. The default user ID and password are **admin**.

Note: After you log in using the default user ID and password, you should change the password.

Note: If you experience access-time problems using Java WebStart in Windows, do the following:

- 1 Click Start > Run...
 - 2 Type javaws -viewer in the Open field and click OK.
 - 3 Select the Direct Connection option from the Java Control Panel Network Settings.
-

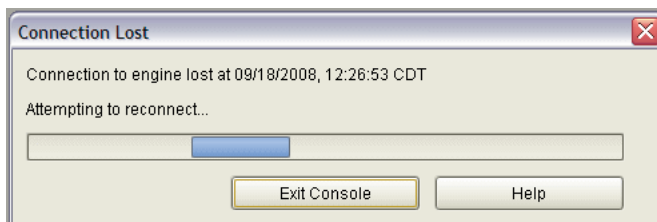
Note: Whenever you upgrade Control Center or install a patch, it is recommended that you empty your Webstart and browser cache.

To log into the Web Console:

1. In the Web address field of your Web browser, enter the host and port number for the Sterling Control Center Launch Page. The default nonsecure port is 58082.
2. On the Launch Page, click **Sterling Control Center Web Console**.
3. On the login page that displays, type your user ID and password and click Login.

Reconnect to the Engine after a Service Interruption

If for any reason the Console is disconnected from the Sterling Control Center engine, it automatically attempts to reconnect. A message window displays:



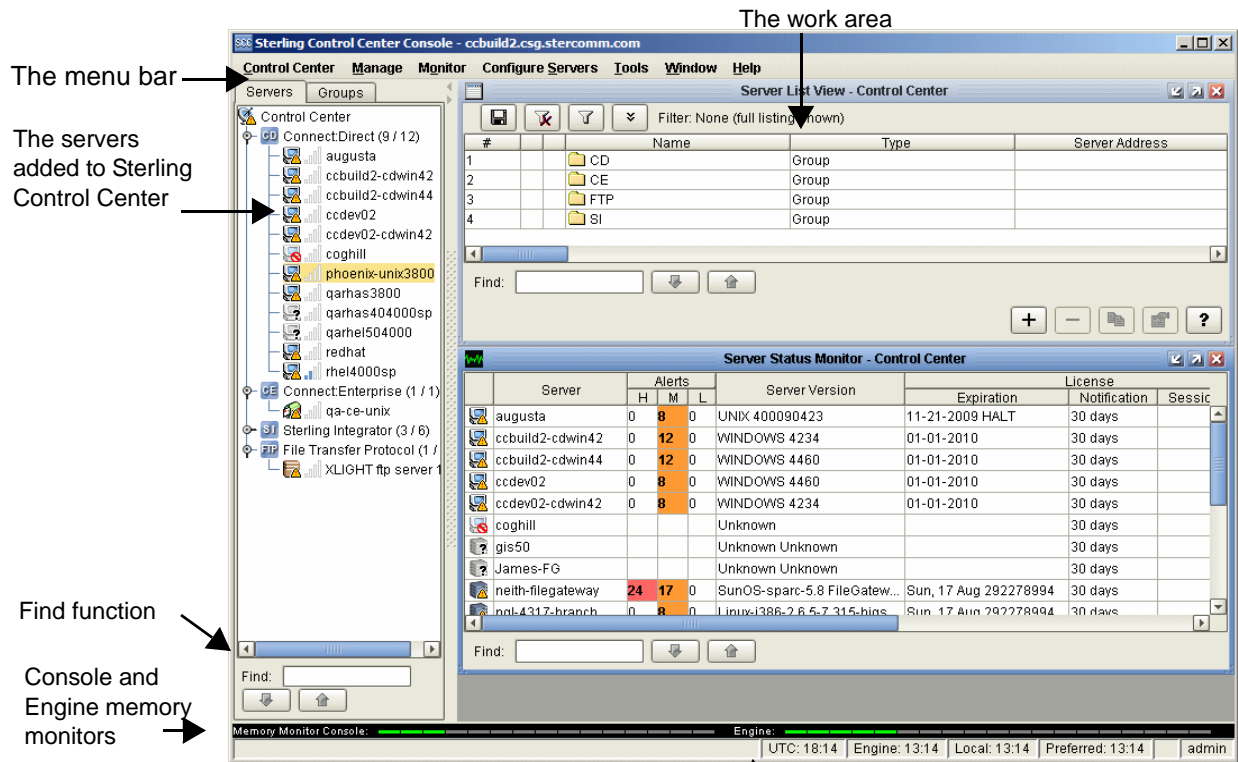
The message includes the time when the connection was lost. The Console continues attempting to reconnect until a connection is established, or until you click **Exit Console**.

When the connection is reestablished, the Console checks to make sure that your login credentials are still valid. If not, a second message window gives you the opportunity to log in again or exit the Console.

Understand the Control Center Console Window

The Control Center Console window enables you to monitor Process activity. It also enables an administrator to perform a variety of tasks, such as creating and maintaining users, rules, actions, service level criteria (SLCs), and email lists, and configuring servers.

See the following figure.



UTC time (Coordinated Universal Time), the time on the server where the engine is installed, the time where the GUI is installed, the preferred time (as set in Time Preferences), and the current user ID. A lock icon indicates a secure GUI-engine connection.

The menu bar contains the main menu items you use in performing most Control Center tasks.

Below the menu bar, on the left side, is the listing of managed servers and server groups that have been added to Control Center.

Arranged horizontally along the bottom of the Control Center window are the memory monitors, which give a visual picture of how much available memory is being used by both the Console and the Control Center engine, and current time settings, including Coordinated Universal Time (UTC) as well as engine, local, and preferred times.

As with many windows, dialogs, and listings in the interface, the Control Center window features a Find function. By entering search text in this function, you can find occurrences of that text in the current window. Occurrences are highlighted in green. Click the up or down arrow to find the next (or previous) occurrence.

The work area is where the various available monitors and listing screens display. After displaying one or more monitors or listings, you can arrange them visually.

To arrange listings or monitors in the work area:

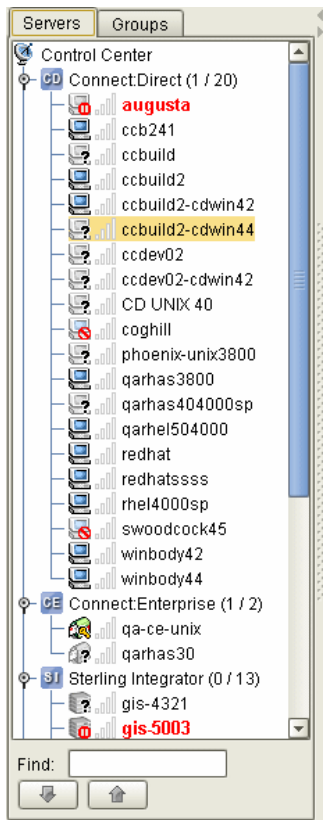
Click **Window** and make a selection.

- ◆ Tile Vertically arranges the listings or monitors to be long in the vertical dimension.
- ◆ Tile Horizontally arranges them to be wide horizontally.
- ◆ Cascade arranges them in a cascaded presentation, one behind the next. Click a window to bring it to the front.

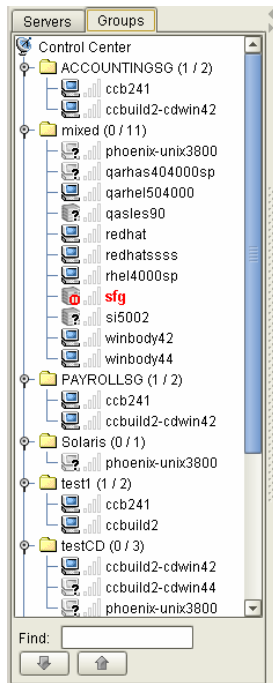
Server and Group Tabs

The **Servers** and **Groups** tabs show the servers defined in Sterling Control Center.

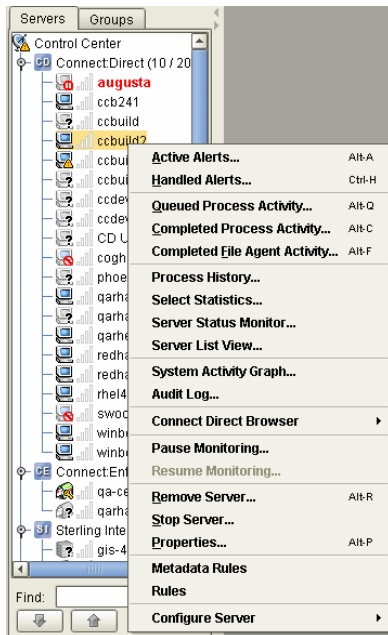
Clicking the **Servers** tab lists Control Center servers in alphabetical order by server type.



Clicking the **Groups** tab lists Control Center servers in groups you have defined.















Right-clicking an object in the server listing displays a number of options to select from, as shown in the following illustration.





Note: The functions you can perform depend on the object selected and your Sterling Control Center role permissions. Functions not available due to role restrictions appear dimmed.

Server Icons

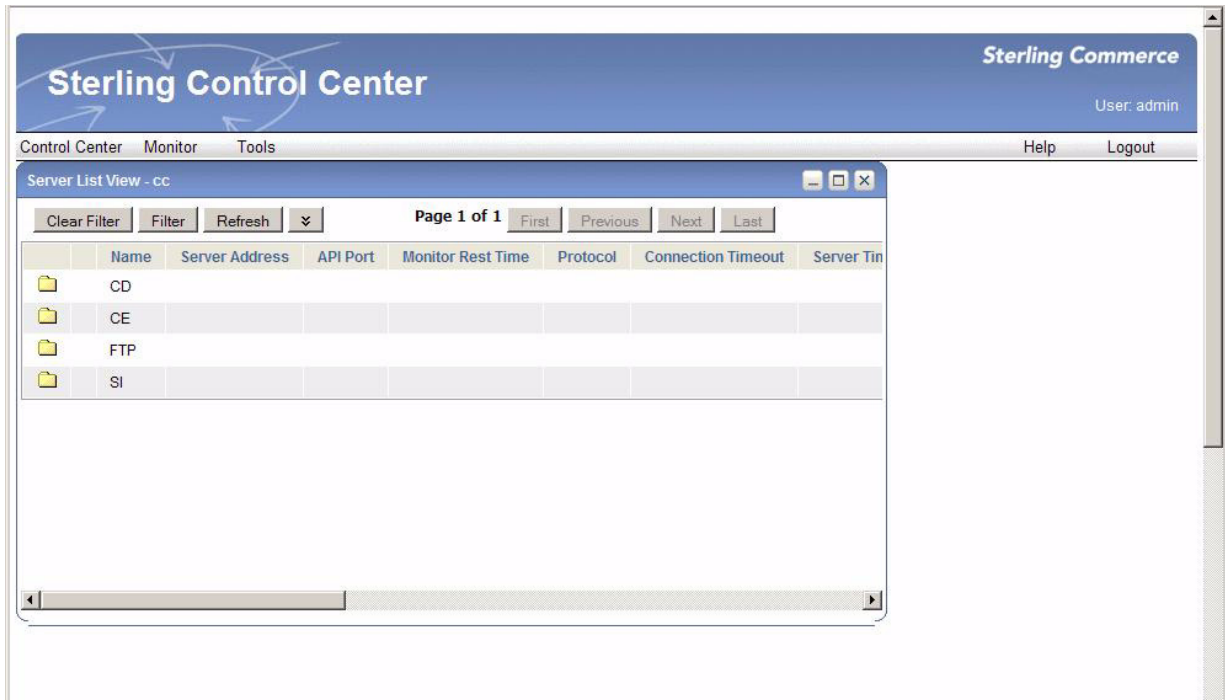
The server icons have different meanings:

Icon	Definition
	A Connect:Direct server that Sterling Control Center has successfully contacted.
	A Connect:Enterprise server that Sterling Control Center has successfully contacted.
	A Sterling Integrator server that Sterling Control Center has successfully contacted.
	A Sterling Integrator node that is part of a Sterling Integrator cluster and that Sterling Control Center has successfully contacted. A Connect:Direct File Agent node (listed under its associated Connect:Direct server) that Sterling Control Center has successfully contacted.
	A managed FTP server contacted by Sterling Control Center.
	Indicates that an alert was generated on the server.
	Indicates that there is a license message for the server.
	Indicates that Control Center cannot sign on to the server due to a user ID or password problem, or that the server is at an unsupported level, or that there are no license slots available to allow monitoring of this server. For an FTP server, can also mean that the log file specified is either invalid or does not exist.
	Indicates that the server was previously contacted by Sterling Control Center, but is currently offline. Note: A server name in red also indicates that the server was previously contacted by Sterling Control Center but is currently offline, regardless of the icon displayed.
	Indicates that a Sterling Integrator cluster is down.
	Indicates that at least one, but not all, of the Sterling Integrator nodes in the cluster is down.
	Indicates that the server was never contacted by Sterling Control Center. The server may be offline, or the server IP address or port number may be incorrect in Sterling Control Center.

Icon	Definition
	Indicates that the server is unavailable, but still has unprocessed alerts.
	Indicates that monitoring of the server is currently paused.

Use the Sterling Control Center Web Console

When you log into the Web Console, the initial Server List displays to enable you to drill down and select only those servers you need to monitor at one particular time:



Use the navigation buttons (First, Previous, Next, Last) to page through displayed information and the Filter button to further define and limit the information displayed in the Console.

The Web Console allows you to do the following tasks.

Note: Your role may limit access to some features.

- ◆ View and handle alerts using the Active Alerts and Handled Alerts monitors
- ◆ View server activity using the Queued Activity and Completed Activity monitors

- ◆ Check status using the Server Status, Daemon Status, and Adapter Status monitors
- ◆ Change Auto Refresh settings that control how frequently open monitors are automatically refreshed
- ◆ Manually refresh open monitors
- ◆ View a server's properties
- ◆ View statistics related to server activity
- ◆ Run and view reports in PDF that have been set up by an administrator

There are some differences in the way you interact with Control Center through the Web Console in comparison to the other types of Console access:

- ◆ With the Web Console, you left-click with the mouse to make all selections. Right-clicking to display contextual menus is not available.
- ◆ The menu items and selections available via the Web Console comprise a subset of Console features.

Set Console Preferences

Console Preferences determine how time is displayed and how often monitors are automatically refreshed on your Console. These settings are associated with your user ID and are employed whenever you log into Sterling Control Center.

The Time Preferences settings determine how time is displayed on the Sterling Control Center Console. Time preferences are set for all Control Center functions you perform or view from the Console.

Auto Refresh settings determine how often open monitors are automatically refreshed.

To set time preferences:

1. Select **Control Center > Console Preferences**, then click on the **Time Preferences** tab.
2. Select one of the following time displays:

Display	Description
UTC	<p>Displays the time in Coordinated Universal Time. (Instead of using the acronym CUT, UTC is the accepted international acronym for Universal Time, Coordinated, which uses the same letters as the French acronym for Temps Universel Coordonné, TUC.)</p> <p>Note: Since UTC never changes for daylight saving time (DST), do not use UTC for your rule or SLC schedules. Otherwise you most likely will need to manually adjust your schedules to compensate for DST.</p>

Display	Description
Local Time	Displays the time from the computer where the Sterling Control Center Console is installed. If you use local time display, verify that the Console is displaying the correct time zone. If the time zone is incorrect, manually select the correct time zone from the Specific Time Zone list box, or adjust your system's time zone value, as that is where the Console obtains this information.
Engine Time	Displays the time on the computer where the Sterling Control Center engine is installed.
Specific Time Zones	Displays the time selected from the list box of standard time zones.

3. Click **Update**. The new time preferences take effect immediately.

To set auto refresh settings:

1. Select **Control Center > Console Preferences**, then click on the **Auto Refresh Settings** tab.
2. Select one of the following:
 - ◆ To use the default system setting for all users, select **Use System Setting**. The current setting is displayed in seconds.
 - ◆ To set your auto refresh setting here (and override System Settings), select **Change Auto Refresh To** and enter a new auto refresh setting in seconds.
3. Click **Update**. The new auto refresh setting takes effect immediately.

Configure System Settings

After installation and configuration, you can begin using Sterling Control Center to monitor processing. However, if you want to use Sterling Control Center to send e-mail notifications to a system administrator, or to send Simple Network Management Protocol (SNMP) traps to an Enterprise System Management (ESM) tool, you must configure additional parameter settings.

This chapter describes the following tasks:

- ◆ Configure SMTP Settings for E-mail Messages
- ◆ Configure SNMP Settings

Note: See *Sterling Control Center Settings* in the *Sterling Control Center System Administration Guide* for a complete description of system settings.

Configure SMTP Settings for E-mail Messages

Simple Mail Transfer Protocol (SMTP) is a communications protocol used to send e-mail messages between servers. In Sterling Control Center, you can create a rule to send an e-mail based upon a system event. To send an e-mail, you must first configure the SMTP settings.

To configure SMTP settings:

1. Click **Control Center** > **System Settings** to display the **System Settings** window.
2. Click the **E-mail** tab.
3. Type the following information:
 - ◆ **SMTP Host**—Specifies the IP address or domain name service host used for sending e-mails. You can type an address or name up to 255 characters in length. This field is required.
 - ◆ **SMTP Port**—Specifies the optional 1- to 5-digit port number that the SMTP host listens on. The default value is 25. The maximum value is 65535.
 - ◆ **User ID**—Specifies the optional 1- to 64-character user ID to log on to the SMTP host. This field is case sensitive.

- ◆ **Password**—Specifies the optional 1 to 64-character password associated with the user ID. This field is case sensitive.
 - ◆ **From E-mail**—Specifies the e-mail address that appears on the From line of all rule-generated e-mails. This field is required.
4. To test your e-mail configuration, click **Test** and type an e-mail address to which to send a test message.
 5. Click **OK**.

You can customize the contents of the e-mail generated by Sterling Control Center. See the procedure for creating an action in “Managing Rules and Actions” in the *Sterling Control Center System Administration Guide* for detailed steps.

Configure SNMP Settings

You can define Sterling Control Center rules and actions to generate SNMP traps and send them to an Enterprise System Management (ESM) tool when certain events occur. These traps contain information from the event that can be used for diagnostics. Before you can use an SNMP trap rule, you must first specify the host computers where the traps are sent.

Sterling Control Center supports any ESM tool that accepts SNMP version 2 (SNMPv2) traps.

The configuration file named `SnmpAdaptorWrapper.xml` is used to control both the content of the SNMP traps that Control Center generates and the length of the traps. You can find this sample file shown below in the `install directory\conf\services\jmx` directory.


```

<service>

<serviceClass>com.sterlingcommerce.scc.agent.services.jmx.SnmpAdaptorWrapper<
/serviceClass>
  <serviceId>SNMPAdaptorWrapper</serviceId>
  <serviceType>SNMPAdaptor</serviceType>
  <snmpPort>161</snmpPort>
  <trapPort>162</trapPort>
  <bufferSize>1024</bufferSize>
  <omitIfEmpty>>false</omitIfEmpty>
  <trapElements>
    <eventId>255</eventId>
    <nodeId>255</nodeId>
    <nodeType>255</nodeType>
    <messageId>255</messageId>
    <returnCode>255</returnCode>
    <processId>255</processId>
    <processName>255</processName>
    <stepName>255</stepName>
    <submitterId>255</submitterId>
    <remoteNode>255</remoteNode>
    <shortText>255</shortText>
    <fileSize>255</fileSize>
    <percentComplete>255</percentComplete>
    <dateTime>255</dateTime>
    <ruleId>255</ruleId>
    <actionId>255</actionId>
    <origNode>255</origNode>
    <sourceFile>0</sourceFile>
    <destFile>0</destFile>
    <fromNode>0</fromNode>
    <userData1>255</userData1>
    <userData2>0</userData2>
    <userData3>0</userData3>
    <userData4>0</userData4>
    <slcId>0</slcId>
    <bytesSent>0</bytesSent>
    <bytesRead>0</bytesRead>
    <processQueue>0</processQueue>
    <isAlert>0</isAlert>
    <ccName>0</ccName>
    <ruleInstanceId>0</ruleInstanceId>
    <slcInstanceId>0</slcInstanceId>
    <slcSource1>0</slcSource1>
    <slcSource2>0</slcSource2>
    <slcSourceEventId>0</slcSourceEventId>
    <SESSION.ADAPTER_TYPE>0</SESSION.ADAPTER_TYPE>
    <SESSION.ADAPTER_NAME>0</SESSION.ADAPTER_NAME>
    <daemonName>0</daemonName>
    <daemonState>0</daemonState>
    <userId>0</userId>
    <certIssuer>0</certIssuer>
    <certSubject>0</certSubject>
    <cipherSuite>0</cipherSuite>
    <ruleInstanceId>0</ruleInstanceId>
    <slcInstanceId>0</slcInstanceId>
    <slcSource1>0</slcSource1>
    <slcSource2>0</slcSource2>
    <slcSourceEventId>0</slcSourceEventId>
  
```

```

(continued)

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<adapterName>0</adapterName>
<daemonName>0</daemonName>
<daemonState>0</daemonState>
<userId>0</userId>
<certIssuer>0</certIssuer>
<certSubject>0</certSubject>
<cipherSuite>0</cipherSuite>
<secureEnabled>0</secureEnabled>
<secureProtocol>0</secureProtocol>
<eventType>255</eventType>
<nodeName>0</nodeName>
<localNode>0</localNode>
<bytesXferred>0</bytesXferred>
<recordId>0</recordId>
<alert>255</alert>
<sourceEventTime>0</sourceEventTime>
<objectType>0</objectType>
<objectId>0</objectId>
<objectVersion>0</objectVersion>
<activityType>0</activityType>
<suspended>0</suspended>
<triggerMilestoneId>0</triggerMilestoneId>
<action>0</action>
<daemonHost>0</daemonHost>
<daemonOriginator>0</daemonOriginator>
<daemonPid>0</daemonPid>
<daemonResource>0</daemonResource>
<daemonSid>0</daemonSid>
<daemonType>0</daemonType>
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<SESSION.ADAPTER_TYPE>0</SESSION.ADAPTER_TYPE>
<SESSION.PROTOCOL>0</SESSION.PROTOCOL>
<XFER.MESSAGE_NAME>0</XFER.MESSAGE_NAME>
<XFER.DOC_NAME>0</XFER.DOC_NAME>
<XFER.MBOX_PATH>0</XFER.MBOX_PATH>
<direction>0</direction>
</trapElements>
<aclEntry>
  <manager>localhost</manager>
  <community>public</community>
  <access>read-write</access>
</aclEntry>
<trapEntry>
  <host>localhost</host>
  <community>public</community>
  <trapPort>162</trapPort>
</trapEntry>
</service>

```

Trap Length

By default the maximum length of traps generated by Control Center is 1024 bytes. If the content of a trap to be generated by Control Center exceeds this length, then when the attempt is made to send the trap an `SnmpStatusException` occurs and is logged in the Control Center engine log file.

The maximum trap length can be changed by changing the value specified for the `bufferSize` element in the configuration file (indicated in bold type in the sample xml file).

Note: If the underlying computer network does not support traps of the length generated by Control Center, an `SnmpStatusException` still occurs and is logged regardless of the buffer size specified.

One element included in the `SnmpAdaptorWrapper.xml` file is called `omitIfEmpty` (indicated in bold type in the sample file). The default value for this element is “false.” If it is set to “true,” traps generated by Control Center contain only event values whose length is greater than zero.

Trap Content

To control which event element values are included in SNMP traps and the maximum number of characters an element can contain, you can change the values (shown as 0 or 255 in the sample xml file) for the subelements listed under the `<trapElements>` element. All elements with a value greater than 0 will be included in SNMP traps generated by Control Center and the value specified for an element will limit its maximum number of characters. All elements with a value of 0 will be excluded from the event data contained in SNMP traps.

For example, the value of the `destFile` element (indicated in bold type in the sample file) is 0 which indicates that, by default, destination file data is excluded from SNMP traps. If you change the value from 0 to 10, the trap object identifier (OID) for `destFile` will be included in a trap along with no more than 10 characters of the destination file name that caused the SNMP trap to be generated. If you leave the `destFile` value as 0 but change `omitIfEmpty` to true, the OID for `destFile` will not be in the trap. If you leave `omitIfEmpty` as false, the OID for `destFile` will be in the trap, but the value associated with the OID will be empty.

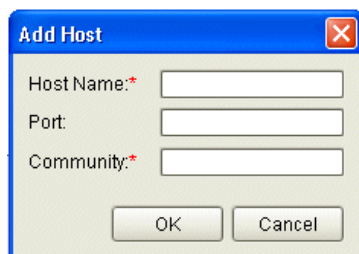
Configuring Where Traps are Sent

When an SNMP trap is generated, it is sent to all configured SNMP hosts.

To add an SNMP host:

1. Click **Control Center > System Settings** to display the **System Settings** window.
2. Click the **SNMP Hosts** tab.
3. Click **Add**.

The **Add Host** window is displayed.



4. Type the following information:
 - ◆ **Host Name**—The required IP address or machine name of the SNMP host (i.e., the address of the ESM).
 - ◆ **Port**—The optional 1- to 5-digit port number that the SNMP host monitors for SNMP trap messages. The maximum value is 65535. The default value is 162.
 - ◆ **Community**—The required 1- to 64-character password to access the SNMP host computer. This field is case sensitive.
5. Click **OK**.
6. Click **Add** to add another SNMP host, or click **OK** to close the **System Settings** window.

Determine Engine and Database Requirements

This appendix describes how to estimate a suitable platform configuration to run the Sterling Control Center engine, including information for calculating an appropriate database size.

Estimation Tools

The Sterling Control Center engine performance is expressed in events per second. The more events per second that the Sterling Control Center engine must handle, the more processing power required. Several tools are provided to assist you in estimating the number of processors (cores) you need and the size of the database needed for your platform configuration, which are described in the following table:

Tip: A Microsoft Excel spreadsheet version of the worksheet is also available in the installation directory on the computer where the Sterling Control Center engine is installed. These worksheets contain formulas for calculating events based on the values you enter.

Tool	Description
Events Per Second Worksheet	Assists you in calculating your estimated Sterling Control Center events per second. This value is needed to estimate the number of processors (cores) needed to run the Control Center engine and the database size.
Events Per Day Worksheet	Assists you in calculating your estimated Sterling Control Center events per day. This value is needed to estimate an appropriate database size for your Control Center implementation.
Database Sizing Worksheet	Assists you in properly sizing the database for your Control Center implementation.

Tool	Description
Platform Configurations Table	Provides you with the number of processors required (by platform) to support the number of events per second you calculated using the <i>Events Per Second Worksheet</i> .
Event Counter Utility	Assists you in completing the <i>Events Per Second Worksheet</i> and the <i>Events Per Day Worksheet</i> to estimate average and peak number of events and processes for Connect:Direct servers in your environment.

High-Level Tasks

Note: If you need assistance completing the Connect:Direct server information in the worksheets involved in these tasks, you can use the Event Counter Utility. For more information, see *Using the Event Counter Utility for Connect:Direct Servers* on page 97.

To size the engine, perform the following tasks:

1. Complete the *Events Per Second Worksheet*.
2. Use the events per second value from line 41 of the *Events Per Second Worksheet* and refer to the *Platform Configurations Table* on page 94 to find a platform configuration that can support your Sterling Control Center engine.

To size the database, perform the following tasks:

1. Complete the *Events Per Second Worksheet* (if you didn't complete it for engine sizing). Values from this worksheet are used to populate the *Events Per Day Worksheet* and the *Database Sizing Worksheet*.
2. Complete the *Events Per Day Worksheet*.
3. On the *Database Sizing Worksheet*, enter the information from the *Events Per Second Worksheet* and the *Events Per Day Worksheet* as instructed.

Events Per Second Worksheet

Use the following worksheet to calculate your estimated Sterling Control Center events per second. Round any fractional amounts up to the next whole number.

Tip: A Microsoft Excel spreadsheet version of the Events Per Second Worksheet (*SizingWorksheets.xls*) is also available in the installation directory on the computer where the Sterling Control Center engine is installed. This worksheet contains formulas for calculating events based on the values you enter.

Events Per Second Worksheet				
1	Connect:Direct: Number of monitored Connect:Direct servers	1		0
2	Number of Processes per Connect:Direct server in a peak 2-hour period	2		0
3	Multiply line 1 by line 2	3		0
4	Number of events per average Connect:Direct Process	4		0
5	Multiply line 3 by line 4	5		0
6	Divide line 5 by 7200 (number of events per second)		6	0
7	Sterling Integrator: Number of monitored Sterling Integrator servers	7		
8	Number of Processes per Sterling Integrator server in a peak 2-hour period	8		
9	Multiply line 7 by line 8	9		0
10	Number of events per average Sterling Integrator Process	10		
11	Multiply line 9 by line 10	11		0
12	Divide line 11 by 7200 (number of events per second)		12	0
13	Connect:Enterprise: Number of monitored Connect:Enterprise servers	13		
14	Number of batches retrieved and added per Connect:Enterprise server in a peak 2-hour period	14		
15	Multiply line 13 by line 14	15		0
16	Divide line 15 by 1800 (number of events per second)		16	0
17	FTP Servers: Number of monitored FTP servers	17		
18	Number of files sent/received per FTP server in a peak 2-hour period)	18		
19	Multiply line 13 by line 14	19		0
20	Divide line 19 by 1800 (number of events per second)		20	0
21	Service Level Criteria (SLCs): Number of enabled SLCs	21		
22	Multiply line 19 by 0.12		22	0
23	Percentage of Connect:Direct Processes to which SLCs apply	23		
24	Multiply line 3 by line 23 and divide by 180,000		24	0
25	Percentage of Sterling Integrator Processes to which SLCs apply	25		
26	Multiply line 9 by line 25 and divide by 180,000		26	0
27	Percentage of Connect:Enterprise batches to which SLCs apply	27		

28	Multiply line 15 by line 27 and divide by 180,000		28	0
29	Percentage of FTP servers to which SLCs apply	29		
30	Multiply line 18 by line 29 and divide by 180,000		30	0
31	Rules: Number of enabled rules	31	0	
32	Percentage of Events that rules match (used in Database Sizing Worksheet)	32	0	
33	Multiply line 31 by 0.18		33	0
34	Consoles: Number of attached Consoles	34	0	
35	Multiply line 34 by 6.00		35	0
36	Number of attached Web Consoles	36		
37	Multiply line 36 by 2.00		0	
38	Effective Events per Second Factor: Total lines 6, 12, 16, 18, 20, 24, 26, 28, 30, 33, 35, and 37		38	0
39	Peak database events per second: Total lines 6, 12, 18, 20, 24, 26, 28, and 30	39	0	
40	Peak database statistics per second: Total lines 16 divided by 4 plus line 6	40	0	
41	Actual Peak database inserts per second (used in Database Sizing Worksheet): Total lines 6, 12, 16, 18, 20, 24, 26, 28, and 30		41	0

After calculating the events per second (line 38), use the *Platform Configurations Table* on page 94 to determine a platform configuration that can support at least this number.

Events Per Second Worksheet Fields

The following table describes the fields on the Events Per Second Worksheet:

Line	Description
1. Number of monitored Connect:Direct servers	The number of Connect:Direct servers that you will manage with Sterling Control Center.
2. Number of Processes per Connect:Direct server in peak 2-hour period	The number of processes that a Connect:Direct server runs during a peak 2-hour period. You can use the Event Counter Utility to get this number or run a series of Connect:Direct SELECT STATISTICS commands for a 2-hour period to obtain the number.

Line	Description
4. Number of events per typical Process	<p>A Connect:Direct process consisting of a COPY step, an IF step, a RUNTASK step, an ELSE step and another RUNTASK step, generates the following nine Sterling Control Center events.</p> <ul style="list-style-type: none"> ◆ Server Command (Process Submit) Event ◆ Connection Started (Session Begin) Event ◆ Process Start Event ◆ Step Start (Copy Initiation) Event ◆ Step End (Copy Term) Event ◆ Step End (If End) Event ◆ Step Start (RUNTASK Start) Event ◆ Step End (RUNTASK End) Event ◆ Process End Event <p>Use this as a guideline to determine how many events one of your typical processes generates. If your processes are less complex, use a lower number than nine. If your processes are more complex, use a higher number.</p>
7. Number of managed Sterling Integrator servers	The number of Sterling Integrator servers that you will monitor with Sterling Control Center.
8. Number of Processes per Sterling Integrator server in peak 2-hour period	The number of processes that a Sterling Integrator server runs during a peak 2-hour period.
10. Number of events per average Sterling Integrator Process	<p>A Sterling Integrator process consisting of 10 activities (including 3 file transfer activities) will generate 28 events:</p> <ul style="list-style-type: none"> ◆ 2 events (Process start, Process ended) ◆ 2 events per activity (Process step started, Process step ended) ◆ 4 events per file transfer activity (Connection started, Process step started (for the file transfer), Process step ended (for the file transfer), Connection shutdown started). <p>Note: If not monitoring Sterling Integrator business Processes, count each file transfer as a process that generates 4 events.</p>
13. Number of monitored Connect:Enterprise servers	The number of Connect:Enterprise servers that you will monitor with Sterling Control Center.
14. Number of batches retrieved and added per Connect:Enterprise server in peak 2-hour period	Use the output from cmureports to count the number of batches added and retrieved for a 2-hour peak period.
17. Number of monitored FTP servers	The number of FTP servers that you will monitor with Sterling Control Center.
18. Number of files sent/received per FTP server in a peak 2-hour period	The number of files sent/received per FTP server in a peak 2-hour period.
21. Number of enabled SLCs	The number of enabled Sterling Control Center SLCs. Use 500 SLCs as an estimate.

Line	Description
23.	Percentage of Connect:Direct Processes to which SLCs apply Assume 50% of the processes.
25.	Percentage of Sterling Integrator Processes to which SLCs apply Assume 50% of the processes.
27.	Percentage of Connect:Enterprise batches to which SLCs apply Assume 50% of the batches.
29.	Percentage of FTP server files to which SLCs apply Assume 50% of the files.
31.	Number of enabled rules The number of enabled Sterling Control Center rules. Use 500 rules as an estimate.
34.	Number of attached consoles The numbers of consoles that will connect to the Sterling Control Center engine.
36.	Number of attached Web consoles The number of Web consoles that will attach to the Sterling Control Center engine.
38.	Total lines 6, 12, 16, 18, 20, 24, 26, 28, 30, 33, 35, and 37 See <i>Events Per Day Worksheet</i> on page 90 for information on using this number.
39.	Total lines 6, 12, 18, 20, 24, 26, 28, and 30 Used in the other worksheets.
40.	Total lines 16 divided by 4 plus line 6 Used in the other worksheets.
41.	Total lines 6, 12, 16, 18, 20, 24, 26, 28, and 30 Used in the other worksheets.

Events Per Day Worksheet

Use the following worksheet to calculate your estimated Sterling Control Center events per day to properly size the database. Round any fractional amounts up to the next whole number.

Tip: A Microsoft Excel spreadsheet version of the worksheet (*SizingWorksheets.xls*) is also available in the installation directory on the computer where the Sterling Control Center engine is installed. These worksheets contain formulas for inserting values from the *Events Per Second Worksheet* and calculating events based on those values and the values you enter in the *Events Per Day Worksheet*.

Events Per Day Worksheet				
1	Connect:Direct: Number of monitored Connect:Direct servers (from line 1 from Events Per Second Worksheet)	1	0	
2	Average number of Processes per Connect:Direct server in a peak 24-hour period	2		
3	Multiply line 1 by line 2 (Connect:Direct Processes per day)	3	0	
4	Number of events per average Connect:Direct Process (from line 4 from Events Per Second Worksheet)	4		
5	Multiply line 3 by line 4 (Connect:Direct events per day)		5	0
6	Sterling Integrator: Number of monitored Sterling Integrator servers (from line 7 from Events Per Second Worksheet)	6	0	
7	Average number of Processes per Sterling Integrator server in a peak 24-hour period	7		
8	Multiply line 6 by line 7 (Sterling Integrator processes per day)	8	0	
9	Number of events per average Sterling Integrator Process (from Line 10 from Events Per Second Worksheet)	9	0	
10	Multiply line 8 by line 9 (Sterling Integrator events per day)		10	0
11	Connect:Enterprise: Number of monitored Connect:Enterprise servers (from Line 13 from Events Per Second Worksheet)	11	0	
12	Average number of batches retrieved and added per Connect:Enterprise server in a peak 24-hour period	12		
13	Multiply line 11 by line 12 (Connect:Enterprise batches per day)	13	0	
14	Multiply line 13 by 4 (Connect:Enterprise events per day)		14	0
15	FTP Servers: Number of monitored FTP servers (from Line 17 from Events Per Second Worksheet)	15	0	
16	Average number of files sent and received per FTP server in a peak 24-hour period	16		
17	Multiply line 15 by line 16 (FTP server files per day)	17	0	
18	Multiply line 17 by 4 (FTP server events per day)		18	0
19	SLCs: Percentage of Connect:Direct Processes to which SLCs apply (from line 23 from Events Per Second Worksheet)	19	0	
20	Multiply line 3 by line 19 and divide by 25 (events generated by SLCs)		20	0
21	Percentage of Sterling Integrator Processes to which SLCs apply (from line 25 of Events Per Second Worksheet)	21	0	
22	Multiply line 8 by line 21 and divide by 25 (Events generated by SLCs)		22	0
23	Percentage of Connect:Enterprise batches to which SLCs apply (from line 23 from Events Per Second Worksheet)	23	0	
24	Multiply line 13 by line 23 and divide by 25		24	0
25	Percentage of FTP server files sent/received to which SLCs apply (from line 25 from Events Per Second Worksheet)	25	0	

26	Multiply line 17 by line 25 and divide by 25	26	0
27	Total lines 5, 10, 14, 16, 18, 20, 22, 24, and 26 (Peak Events per Day)	27	0
28	Copy line 5 (Peak Connect:Direct Stats per Day)	28	0
29	Copy line 14 (peak statistics per Day)	29	0
30	Total lines 28 and 29 (Peak statistics per Day)	30	0
30	Total lines 27 and 30 (Database inserts per Day)	31	0

Events Per Day Worksheet Fields

The following table describes the fields on the *Events Per Day Worksheet*.

Line	Description
2.	Number of Processes per Connect:Direct server in peak 2-hour period The number of Processes that a Connect:Direct server runs during a peak 2-hour period. You can use the Event Counter Utility to get this number or run a series of Connect:Direct SELECT STATISTICS commands for a 2-hour period to obtain the number.
7.	Number of Processes per Sterling Integrator server in peak 2-hour period The number of processes that a Sterling Integrator server runs during a peak 2-hour period.
12.	Number of batches retrieved and added per Connect:Enterprise server in peak 2-hour period Use the output from cmureports to count the number of batches added and retrieved for a 2-hour peak period.
16.	Number of files sent/received per FTP server in a peak 2-hour period. The number of files sent/received per FTP server in a peak 2-hour period.

Database Sizing Worksheet

The values on the Database Sizing Worksheet are calculated from information entered in or calculated in the *Events Per Second Worksheet* and the *Events Per Day Worksheet*. Use the information calculated in the *Database Sizing Worksheet* to assist you in sizing the database requirements for Sterling Control Center.

Database Sizing Worksheet				
1	Database inserts: Peak database inserts per second (from line 41 from Events Per Second Worksheet)		1	0
2	Average database inserts per second Line 31 from Events Per Day Worksheet divided by 86,400		2	0
3	Database inserts per day Line 31 from Events Per Day Worksheet		3	0
4	Database Updates: Percent of events that rules match from line 32 from Events Per Second Worksheet)	4		0
5	Peak events per second (from line 39 of Events Per Second Worksheet)	5		0
6	Peak events per day (from line 27 from Events Per Day Worksheet)	6		0
7	Peak database updates per second Multiply line 5 by line 4 and divide by 100		7	0
8	Avg database updates per second Multiply line 4 by line 6 and divide by 8,640,000		8	0
9	Database updates per day Multiply line 6 by line 4 and divide by 100		9	0
10	Database Size: Average size of event	10		0
11	Average size of statistics	11		0
12	Average Events inserted per day Copy line 27 from Events per Day Worksheet	12		0
13	Average Statistics inserted per day Copy line 27 from Events per Day Worksheet	13		0
14	Database space required per day for events Multiply line 3 by line 10	14		0
15	Database space required per day for statistics Multiply line 11 by line 13	15		0
16	Total database space required (in MB) Add lines 14 and 15	16		0
17	Daily database space required (in MB): Line 16 divided by 1,048,576		17	0 MB
18	Weekly database space required (in GB): Multiply line 17 by 7 and divided by 1,024		18	0 GB

19	Monthly database space required (in GB): Multiply line 17 by 30 and divided by 1,024	19	0 Gb
20	Yearly database space required (in GB): Multiply line 17 by 365 and divided by 1,024	20	0 GB

Database Sizing Worksheet Fields

The following table describes the fields on the *Database Sizing Worksheet*:

Line		Description
1.	Peak database inserts per day	Used for TPMC value for peak transaction inserts per second
2.	Avg database inserts per second	Used for TPMC value for transaction inserts per day
7.	Peak database updates per second	Used for TPMC value for peak transaction inserts per second
9.	Database updates per day	Used for TPMC value for transaction inserts per day
17, 18, 19, and 20	Daily, weekly, monthly, and yearly database space required	Used for calculating disk space requirements.

Platform Configurations Table

Use the value from line 38 of the *Events Per Second Worksheet* on page 86 to determine a platform configuration that can support the calculated events per second based on the following table:

Platform	Processor	Number of Processors (Cores)	Events per Second
Windows	2.13 GHz	1	607
Windows	3.20 GHz	4	927
Windows (64-bit)	2.40 GHz (AMD)	8	1220
Linux Intel	2.40 GHz	2	540
Linux Intel	2.80 GHz	8	1256
AIX	450 MHz	2	305
AIX	4.2GHz	4	1396

Platform	Processor	Number of Processors (Cores)	Events per Second
HP-UX	800 MHz	2	710
HP-UX	1.00 GHz	2	776
HP-UX (64-bit)	1.30 GHz (Itanium)	2	781
Solaris SPARC	750 MHz	2	349
Solaris SPARC	1.0 GHz	2	380
Solaris SPARC (64-bit)	450 MHz	4	410
Solaris Intel (64-bit)	2.40 GHz	4	1456

Note: Sterling Control Center ships with default rules. The Events per Second column takes into account the processing required for the default rules.

For example, if you are installing Sterling Control Center on an HP-UX platform and your calculated events per second is 750, you will need at least an HP-UX computer with two 800MHz processors (cores) to support the Sterling Control Center engine.

Sample Calculation

This section shows a sample engine requirements calculation. In this example, Sterling Control Center will be managing:

- ◆ Four Connect:Direct servers
- ◆ One Sterling Integrator server
- ◆ One Connect:Enterprise server
- ◆ 5,000 Processes per Connect:Direct server in a peak two-hour period
- ◆ 7,500 business Processes per Sterling Integrator server in a peak two-hour period
- ◆ 10,000 batches added or retrieved per Connect:Enterprise server in a peak two-hour period
- ◆ 10 events per average Connect:Direct Process
- ◆ 34 events per average Sterling Integrator Process
- ◆ 500 enabled rules
- ◆ 500 enabled SLCs

The sample calculation includes these additional criteria:

- ◆ 50 percent of the Processes match SLCs
- ◆ 50 percent of the batches match SLCs

- ◆ One console connects to the Sterling Control Center engine
- ◆ Two Web consoles connect to the Sterling Control Center engine

Entering the data in the worksheet results in the following events per second value:

Events Per Second Worksheet				
1	Connect:Direct: Number of monitored Connect:Direct servers	1	4	
2	Number of Processes per Connect:Direct server in a peak 2-hour period	2	5,000	
3	Multiply line 1 by line 2	3	20,000	
4	Number of events per average Connect:Direct Process	4	10	
5	Multiply line 3 by line 4	5	200,000	
6	Divide line 5 by 7200 (number of events per second)	6	28	
7	Sterling Integrator: Number of monitored Sterling Integrator servers	7	1	
8	Number of Processes per Sterling Integrator server in a peak 2-hour period	8	7,500	
9	Multiply line 7 by line 8	9	7,500	
10	Number of events per average Sterling Integrator Process	10	34	
11	Multiply line 9 by line 10	11	255,000	
12	Divide line 11 by 7200 (number of events per second)	12	36	
13	Connect:Enterprise: Number of monitored Connect:Enterprise servers	13	1	
14	Number of batches retrieved and added per Connect:Enterprise server in a peak 2-hour period	14	10,000	
15	Multiply line 13 by line 14	15	10,000	
16	Divide line 15 by 1800 (number of events per second)	16	6	
17	FTP Servers: Number of monitored FTP servers	17	0	
18	Number of files sent/received per FTP server in a peak 2-hour period)	18		
19	Multiply line 13 by line 14	19	0	
20	Divide line 19 by 1800 (number of events per second)	20	0	
21	Service Level Criteria (SLCs): Number of enabled SLCs	21	500	
22	Multiply line 19 by 0.12	22	60	
23	Percentage of Connect:Direct Processes to which SLCs apply	23	50	
24	Multiply line 3 by line 23 and divide by 180,000	24	6	
25	Percentage of Sterling Integrator Processes to which SLCs apply	25	50	

26	Multiply line 9 by line 25 and divide by 180,000	26	2
27	Percentage of Connect:Enterprise batches to which SLCs apply	27	50
28	Multiply line 15 by line 27 and divide by 180,000	28	2
29	Percentage of FTP servers to which SLCs apply	29	0
30	Multiply line 18 by line 29 and divide by 180,000	30	0
31	Rules: Number of enabled rules	31	500
32	Percentage of Events that rules match (used in Database Sizing Worksheet)	32	10
33	Multiply line 31 by 0.18	33	90
34	Consoles: Number of attached Consoles	34	1
35	Multiply line 34 by 6.00	35	6
36	Number of attached Web Consoles	36	2
37	Multiply line 36 by 2.00	37	4
38	Effective Events per Second Factor: Total lines 6, 12, 16, 18, 20, 24, 26, 28, 30, 33, 35, and 37	38	240
39	Peak database events per second: Total lines 6, 12, 18, 20, 24, 26, 28, and 30	39	80
40	Peak database statistics per second: Total lines 16 divided by 4 plus line 6	40	30
41	Actual Peak database inserts per second (used in Database Sizing Worksheet): Total lines 6, 12, 18, 16, 20, 24, 26, 28, and 30	41	110

Based on the calculated events per second value from line 38, which is 240, and the *Events Per Day Worksheet* on page 90, one can see that any of the listed platform configurations can handle the sample engine requirements.

Using the Event Counter Utility for Connect:Direct Servers

The Event Counter Utility is designed to assist you in completing the *Events Per Second Worksheet* to determine the platform necessary to monitor servers with Control Center. This utility goes through the following process when counting Connect:Direct events:

1. Reads an input file containing connection information for one or more Connect:Direct servers
2. Connects to each Connect:Direct server sequentially
3. Issues a SELECT STATISTICS with the particular records IDs that generate Control Center events

4. Calculates and displays the following values:
 - ◆ Average number of events per day for all servers
 - ◆ Peak number of events in a two-hour time period for all servers
 - ◆ Peak number of events in a 24-hour time period for all servers
 - ◆ Average number of processes per day for all servers
 - ◆ Peak number of processes in a two-hour time period for all servers
 - ◆ Peak number of processes in a 24-hour time period for all servers

The record IDs are read from the `conf/services/nodes/statRecordIds` file. This file contains all of the valid record IDs that generate a Control Center event for each platform.

Running the Event Counter Utility

To assist you in planning your Control Center implementation, you can run the Event Counter Utility before fully installing Control Center. This will allow you to determine if your platform is sufficient for the version of Control Center you will be running. The following high-level process will help you assess the sufficiency of your platform/environment:

1. Run the Control Center installation program on any platform supported by Control Center, but do not configure Control Center when prompted.
2. Run the Event Counter Utility as outlined in the procedure below.
3. Input the values calculated by the utility in the *Events Per Second Worksheet* on page 86. (A Microsoft Excel spreadsheet version of the worksheet is also available in the installation directory on the computer where the Sterling Control Center engine is installed.)
4. After you have completed the Events Per Second Worksheet, consult the *Platform Configurations Table* on page 94 to determine if your platform can support Control Center in your environment.
5. If your platform cannot support Control Center, you will need to install Control Center on another platform. If your platform can support Control Center, run `configCC.sh` when you are ready to configure Control Center and to complete the installation.

To run the Event Counter Utility:

1. Download the Sterling Control Center installer for your platform from Customer Center.
2. Navigate to the location of the downloaded installer.
3. Start the installation:

Note: This cmd line install only asks about accepting the license and the directory for the install.

- ◆ On Windows, go to a cmd prompt and enter the following:

```
CCInstall.exe -i console (or CCInstall64.exe -i console)
```

- ◆ On non-Windows, go to a cmd shell and enter the following:

```
sh CCInstall.bin -i console (or sh CCInstall64.bin -i console)
```

4. Accept the license.
5. Enter the <Install directory>.
6. After installation is complete, ignore the message about running configCC.
7. Navigate to <Install directory>/bin.
8. To run the utility, you can execute the batch file, runEventCounter.bat, or run one of the following scripts in the <Install directory>/bin directory:
 - ◆ On Windows, go to a cmd prompt and enter:

```
runEventCounter
```

- ◆ On non-Windows, go to a cmd shell and enter:

```
sh runEventCounter.sh
```

You can also specify two optional parameters when you are running the Event Counter Utility as follows:

Parameter	Description
<dateRange>	Number of days to collect data. Default is 30, maximum is 60.
<filename>	Input file containing comma-separated values with connection information for Connect:Direct Servers, one per line. The first line of the file can optionally contain the header information for each field. If <filename> contains blanks, enclose it in double quotes. Note: The default filename is EventCounter.csv located in the directory where the utility is run.

For example:

```
runEventCounter 30 EventCounter.csv
```

Input

The Event Counter Utility connects Connect:Direct servers based on information in the input file found in the Sterling Commerce/Control Center/bin directory. The default input file is named EventCounter.csv, but a different filename can be specified when you run the utility. See *Running the Event Counter Utility* on page 98. You can edit the default file with a text editor or a spreadsheet programs such as Microsoft Excel.

The input file contains the following connection information that is used by the Event Counter Utility:

- ◆ Server Address (Host name or IP Address)
- ◆ IP Port (must be a number)
- ◆ Userid
- ◆ Password

Header information is included for each field, and connection information is separated by commas. Any line that starts with a double slash (//) is treated as a comment and is skipped. The following example shows a sample input file for the Event Counter Utility:

```
Server Name, Server Address, IP Port, Userid, Password, Protocol, Description,
Contact Name, Contact Phone, Contact Comments
SERVERTEST, 127.0.0.1, 1363, user1, Password1, TCPIP, C:D Windows, Alice, 123-4567,
Office 123
CD.ZOS, 123.456.789.1,8851,USERIDA,PASSWORDA, TCPIP, C:D z/OS, Bobby, , Office 234
TEST.HPNS, 123.456.789.2,9121,USER.IDB,PASSWORDB, TCPIP, C:D HP NonStop, Chris,
345-6789, Office 345
unix.testserver, testserver,4000, useridc, PasswordC, , C:D UNIX HP-UX Itanium
prodserver4000, prodserver,3422,userida,passworda, , C:D UNIX
// testserver104000,123.456.789.3,3422,userida,passworda, , C:D UNIX, Georgia
testserver104000, 123.456.789.4,3422,userida,passworda, , C:D UNIX, Georgia
testsol104000, 123.456.789.5,3422,useridb,passwordb, , C:D UNIX
prodrhel1504000, 123.456.789.6,3422,useridc,passwordc, , C:D UNIX
```

Output

The following example shows sample output from the Event Counter Utility:

Note: For each Connect:Direct Server, the Event Counter utility displays a line indicating that it is attempting to connect to the server. After it is connected, the Connect:Direct Server type and Server name are displayed. When all Connect:Direct Server data has been gathered, the utility displays the calculated event rates.

```

Configuration Directory is 'C:\
ControlCenter\dist\SterlingCommerce\ControlCenter\conf'
Reading from C:\EventCounter.csv

Connecting to 127.0.0.1;1363
Connect:Direct for Windows, Server name = SERVTEST

Connecting to 123.456.789.1;8851
Connect:Direct for z/OS, Server name = CD.ZOS

Connecting to 123.456.789.2;9123
Connect:Direct for HP NonStop, Server name = TEST.HPNS

Connecting to testserver;4000
Connect:Direct for UNIX, Server name = unix.testserver

Connecting to prodserver;3422
Connect:Direct for UNIX, Server name = prodserver4000

Connecting to 123.456.789.4;3422
Connect:Direct for UNIX, Server name = testserver104000

Connecting to 123.456.789.5;3422
Connect:Direct for UNIX, Server name = testsol104000

Connecting to 123.456.789.6;3422
Connect:Direct for UNIX, Server name = prodrhel504000

Average number of events per day:          5869
Number of events in peak 2-hour time period: 9965
Number of events in peak 24-hour time period: 29318

Average number of Processes per day:       646
Number of Processes in peak 2-hour time period: 1140
Number of Processes in peak 24-hour time period: 3665

```

Error Processing

The following messages are displayed by the Event Counter Utility for common errors:

- ◆ If the statRecordIds file cannot be found:

```
Cannot find statRecordIds file
```

Note: If Control Center is installed correctly, this error should not occur.

- ◆ If the input file containing the connection input cannot be found:

```

Reading from C:\EventCounterBad.csv
Could not find csv input file
java.io.FileNotFoundException: C:\EventCounterBad.csv (The system cannot find
the file specified)

```

- ◆ If the utility gets a `ConnectionException` and cannot connect to a `Connect:Direct Server` listed in the input file:

```
Connecting to 123.456.789.2;9121
Error: Connection Exception!
End of file in CommunicationBuffer::Receive().
```

- ◆ If the utility gets a `LogonException` because the connection information has an invalid userid or password:

```
Connecting to 127.0.0.1;1363
Error: Logon failed! Userid or password may be invalid.
```

- ◆ If the utility cannot contact one or more `Connect:Direct Servers`, then processing continues, but a warning is displayed before the results:

```
Warning: Could not connect to nn servers out of nn.
```

Database FAQ

This appendix presents answers to questions frequently asked about database requirements, which fall into these categories:

- ◆ Type of Data Stored
- ◆ Maintenance and Archival
- ◆ Connectivity
- ◆ Configuration

Type of Data Stored

1. Why does Sterling Control Center need databases?

When Sterling Control Center monitors a managed server, it collects data from that server, as well as commands and instructions initiated by the Control Center console.

2. What kind of data is stored in the Sterling Control Center databases?

- ◆ Connect:Direct, Connect:Enterprise, File Transfer Protocol (FTP), and Sterling Integrator server statistics
- ◆ Sterling Control Center auditing data
- ◆ Sterling Control Center service-level criteria (SLC) recovery data
- ◆ Node Discovery-related data
- ◆ Comments for handled alerts

3. How is the data used?

The Sterling Control Center console provides online quick reports that use the stored data. Conventional reports can be run against the production or staging database, or both. Also Sterling Control Center ships with sample report templates (for use with Crystal Reports software) that can use the data stored in the databases.

Note: Sterling has seen response time problems when the production or staging database grows to 10,000,000 rows or more.

4. Where is the Sterling Control Center configuration data kept?
All Sterling Control Center configuration data (such as rules and actions) is kept where Sterling Control Center is installed.
5. Is confidential information (such as password data) stored in the database or file system?
Yes. These are encrypted with DESede (Triple DES).

Maintenance and Archival

1. How do I maintain the Sterling Control Center database?

The recommended method for maintaining your database is to use database partitioning. You can use database partitioning for production database tables and eliminate the need for a staging database. Please see the *Sterling Control Center Database Partitioning* white paper for more details on partitioning.

If your database doesn't support partitioning, then the recommended way would be to use both a production and a staging database. To use this method for maintaining your database, at installation, you establish two separate databases—a production database and a staging database. Then, go into Control Center > System Settings (Database tab) to set up the parameters for staging of production data and purging of staging data.

Caution: The staging database is not an archive or data warehouse. Data cannot be permanently stored in the staging database.

You can also manually stage and purge the databases. Even if you have set up automated staging/purging of the Control Center databases, occasions may arise when you may wish to manually archive or purge them.

Note: The manual method of archival and purging is not recommended because the Sterling Control Center engine does not “know” when data has been removed except when the engine is restarted.

2. In the absence of an automated staging/purging schedule, how often should I manually archive or purge the databases?
That depends on how many Processes run on all the managed servers each day. It also depends on the hardware configuration of the database server or servers. Keeping one week's worth of data in the Sterling Control Center production database and two weeks in the production or staging database is normally sufficient. Sterling Commerce has seen response time problems when the staging database is above the 10,000,000 row mark.
3. How do I take advantage of Control Center's automated staging and purge facilities?
Separate production and staging databases must be defined and set up during installation. To set up the staging database after the fact, run the *Control Center Installation Directory*\bin\configCC.bat file and configure the staging database. Then go into Control Center > System Settings (Database tab) and set up the parameters for staging and purging.
4. Should I stage production data on the same database server or use a different database server?

For optimal performance, stage production data on the same database server. The staged data can be located on a different database server, but if activity traffic is high, performance can be degraded.

Note: The production and staging databases must be of the same type (for example, if the production database is a MySQL database, the staging database must also be a MySQL database).

5. What is available in Sterling Control Center to manually archive and purge the database?

For manual archival and purging, use the SQL scripts that ship with Sterling Control Center. For more information, see *Database Administration* in the *Sterling Control Center System Administration Guide* or in the Help system.

Connectivity

1. How does Sterling Control Center access the database servers?

Sterling Control Center uses the Java Database Connectivity (JDBC) interface to connect to database servers.

2. What are the database servers that Sterling Control Center supports?

Please consult the *Sterling Control Center Release Notes* for the list of supported databases.

3. Does Sterling Control Center ship with all the required JDBC drivers?

No, you have to obtain the required JDBC drivers for your databases. If you have licensed a particular database server, then you will be able to get the JDBC drivers for that server (either as part of the database software or directly from the database vendor).

4. How many database connections are created by Control Center?

Control Center maintains a pool of database connections. By default, the number of connections in the pool can equal the number in Simultaneous Pollers (found in System Settings) + 10. Control Center may create up to that many database connections with the Production database.

To limit the number of database connections to a certain value, edit the JDBCService.xml file, located in the *install directory/conf/services/system* folder.

The following elements are a partial listing from that file.

```
<maxpool>50</maxpool>
<dynamicConnections>true</dynamicConnections>
```

To limit the number of connections to a certain value, in the above, the value “true” must be changed to “false” and a new value must be substituted between <maxpool> and </maxpool>.

Note: Control Center must be restarted for this change to take effect.

If you change the maxpool value to a value much less than Simultaneous Pollers, node services within Control Center could be forced to compete for database connections. This in turn could affect Control Center performance.

Configuration

1. Can I install the production and staging databases on the same computer where Sterling Control Center is installed?
For optimal performance, install the Control Center databases on dedicated servers separate from the one on which the Control Center engine is installed.
2. Should I set up database replication for the Sterling Control Center databases?
It is not necessary. All the Control Center configuration data is stored where Sterling Control Center is installed.
3. What kind of hardware configuration is recommended for the database servers?
Follow the guidelines provided by the database vendor.
4. How much disk space is needed for the Sterling Control Center databases each day?
That depends on the number of servers managed, the number of Processes handled on each managed server, and the number of weeks of current data you wish to maintain. See *Database Sizing Worksheet* on page 92 to calculate your requirements.
5. Does the number of Sterling Control Center consoles open at one time affect database performance?
No. All the Sterling Control Center consoles connect to the Control Center engine. Control Center consoles do not directly connect to the database servers.
6. What can affect Control Center database performance?
If you run a large number of reports against the production database from outside of Control Center, this could affect performance.
7. What kinds of database operations are performed on the Control Center databases?
The Control Center engine issues SQL Insert, Update, Delete, and Select queries against the databases (primarily Inserts and Updates)

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