

Sterling Control Center



Getting Started Guide

Version 54.1

Sterling Control Center



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Note

Before using this information and the product it supports, read the information in "Notices" on page 101.

This edition applies to version 5.4.1 of IBM Sterling Control Center and to all subsequent releases and modifications until otherwise indicated in new editions.

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Chapter 1. Before you install Sterling Control Center

Installation overview

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

- Creating production, staging, and reports databases for Sterling Control Center to use
- Installing and configuring the Sterling Control Center engine
- Logging on to the Sterling 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 Sterling Control Center Release Notes.	Sterling Control Center 5.4.1 Release Notes
2	Download any product updates from IBM Passport Advantage.	IBM Passport Advantage
3	Determine the computers where Sterling Control Center will be installed. Based on operating system, estimate engine and database requirements.	Sterling Control Center configurations and “Estimation tools” on page 81 Detailed System Requirements
4	Gather database information for use during Sterling Control Center installation.	“Overview of the Sterling Control Center databases” on page 2 and Detailed System Requirements
5	Create production, staging, and reports databases to store Sterling Control Center processing information either on UNIX or Microsoft Windows. Tip: A staging database is unnecessary if partitioning is being used by the database server. Note: The reports database is used by IBM® Cognos® Business Intelligence server to generate Sterling Control Center reports.	Consult your database documentation and see Creating DB2 databases and database users for Linux, UNIX, and Windows, “Creating DB2 databases and database users on z/OS” on page 11, “Creating an Oracle database and database users (schemas)” on page 12, or “Creating Microsoft SQL Server databases and database users” on page 16.
6	If you install Sterling Control Center on z/Linux, make sure IBM System z/Linux JRE 1.6.0 SR 6 or later is installed on the computer where the engine will 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.	“Determine HTTPS information for the engine and console connection” on page 21
8	Install the Sterling Control Center engine.	“Installing the engine and console on UNIX” on page 23 or “Installing the engine and console on Microsoft Windows” on page 24
9	Configure Sterling Connect:Enterprise® for z/OS® servers to communicate with Sterling Control Center. Skip this step if you are not using Sterling Control Center to monitor Sterling Connect:Enterprise servers.	“Configuring Sterling Connect:Enterprise for z/OS” on page 30
10	If you will monitor FTP servers, install the FTP agents.	Chapter 5, “Setting up Sterling Control Center to monitor Sterling Connect:Direct File Agent,” on page 57

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

Installation task		See:
1	Install the Sterling Control Center console.	"Setting up a console" 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.	"Configuring the console for a secure connection" on page 40

Overview of the Sterling Control Center databases

The Sterling Control Center engine uses DB2, Oracle, or Microsoft SQL Server production and staging databases to store statistics and other information collected from monitored servers. In addition, Cognos Business Intelligence server uses a reports database to generate Sterling Control Center reports.

Sterling Control Center supports the following database server types:

- DB2 on Linux, UNIX, and Microsoft Windows
- DB2 on z/OS
- Oracle on Linux, UNIX, and Microsoft Windows
- Microsoft SQL Server on Microsoft Windows servers

For more information on supported platforms, versions, and editions, see the Detailed System Requirements.

Sterling Control Center uses the following databases:

- Production database - To store activities and configuration information for monitored servers.
- Staging database (optional) - To offload the data from the production database.
 - If you plan to use database partitioning for production database tables, then do not define a staging database.
 - For better performance on new installations, instead of using a staging database, enable table partitioning on the production database.
- Reports database - To generate Sterling Control Center reports.

Keep the following general requirements in mind when choosing and creating Sterling Control Center databases:

- You must use the same database server type for all Sterling Control Center databases.
- The databases must be created on a database server that the Sterling Control Center engine can communicate with.

Before you install Sterling Control Center, complete the following high-level tasks to create and setup databases for use with Sterling Control Center:

1. Review all topics in *Getting Started* related to database requirements and configuration and create databases/schemas for Sterling Control Center with the required settings.

Tip: Use the production, staging, and reports database worksheets included in *Getting Started* to record database information.

2. After you create the required databases, provide the database server details such as host, port, user ID, password, and database name during the Sterling Control Center installation and configuration process. Sterling Control Center creates the required tables, views, and indexes during the installation and configuration process.
3. Ensure Sterling Control Center database users are given the required permissions to access the created databases.

For information helpful in planning the databases, see the database FAQs provided, such as *Type of data stored*.

Creating Linux, UNIX, and Windows DB2 databases and database users

To use DB2 databases on Linux, UNIX, and Windows with Sterling Control Center, you need to create the databases with required settings.

Before you begin

Install the DB2 server and ensure that you have the authority to create the databases and database users.

About this task

Complete the high-level tasks for creating DB2 databases on Linux, UNIX, and Windows for use with Sterling Control Center.

Procedure

1. Create the databases with the required settings. See *Required settings for Sterling Control Center DB2 databases* for settings that apply to Sterling Control Center production, staging, and reporting databases. See the *DB2 information center* for information on creating DB2 databases. In addition, you create the databases using example scripts. See *Create DB2 databases from example scripts*.
2. Grant the user the required permissions to access the databases that are created.

What to do next

During the Sterling Control Center installation or later when the `conficCC` utility is run, configure Sterling Control Center to use the DB2 databases.

Required settings for DB2 databases on Linux, UNIX, and Windows operating systems

When you are creating DB2[®] databases on Linux, UNIX, and Windows operating systems, use the required settings to ensure Sterling Control Center can use the databases.

Required setting	Production DB	Reports DB	Staging DB	More information
Code set	UTF-8	UTF-8	UTF-8	Set this setting during database creation.

Required setting	Production DB	Reports DB	Staging DB	More information
Buffer Pools	<p>One buffer pool with the page size of 32K</p> <p>One buffer pool with the page size of 16K</p> <p>One buffer pool with the page size of 8K</p> <p>One buffer pool with the page size of 4K</p>	<p>One buffer pool with the page size of 32K</p> <p>One buffer pool with the page size of 16K</p> <p>One buffer pool with the page size of 8K</p> <p>One buffer pool with the page size of 4K</p>	<p>One buffer pool with the page size of 32K</p> <p>One buffer pool with the page size of 16K</p> <p>One buffer pool with the page size of 8K</p> <p>One buffer pool with the page size of 4K</p>	<p>A default buffer pool is created as part of the database creation. The page size of the buffer pool defaults to the page size specified during database creation.</p> <p>See <i>Creating DB2 databases and database users for Linux, UNIX, and Windows</i> in <i>Getting Started</i>.</p>
Regular Table Spaces	<p>One regular table space with the page size of 32K</p> <p>One regular table space with the page size of 16K</p> <p>One regular table space with the page size of 8K</p> <p>One regular table space with the page size of 4K</p>	<p>One regular table space with the page size of 32K</p> <p>One regular table space with the page size of 16K</p> <p>One regular table space with the page size of 8K</p> <p>One regular table space with the page size of 4K</p>	<p>One regular table space with the page size of 32K</p> <p>One regular table space with the page size of 16K</p> <p>One regular table space with the page size of 8K</p> <p>One regular table space with the page size of 4K</p>	<p>One regular default table space is created as part of the database creation. The size of the table space defaults to the page size specified during database creation.</p> <p>See <i>Creating DB2 databases and database users for Linux, UNIX, and Windows</i> in <i>Getting Started</i>.</p>
User Temporary Table Spaces		<p>One user temporary table space with a page size of 32K</p>		
System Temporary Table Spaces	<p>One system temporary table space with a page size of 32K</p>	<p>One system temporary table space with a page size of 32K</p>		
Table Space permissions	<p>The database user must have access permissions to the newly created table spaces</p>	<p>The database user must have access permissions to the newly created table spaces</p>	<p>The database user must have access permissions to the newly created table spaces</p>	
Database user permissions	<p>CREATETAB, BINDADD, CONNECT, IMPLICIT_SCHEMA</p>	<p>CREATETAB, BINDADD, CONNECT, IMPLICIT_SCHEMA</p>	<p>CREATETAB, BINDADD, CONNECT, IMPLICIT_SCHEMA</p>	<p>The database user ID that will be specified during Sterling Control Center configuration must have these permissions for the database.</p>

Additional settings for configuration parameters on DB2 V9.x databases

For optimal performance, use these parameters and values for DB2 V9.x databases.

Parameter	Description	Value
SELF_TUNING_MEM	Enables the DB2 self-tuning memory manager (STMM) to automatically and dynamically set memory allocations to memory consumers such as buffer pools, lock lists, package cache, and sort heap.	ON
DATABASE_MEMORY	Allows DB2 to adjust the amount of database memory depending on load, memory pressures, and other factors.	AUTOMATIC (Windows and AIX) COMPUTED (Linux, HP-UX, and Solaris)
LOCKLIST	Allows STMM to dynamically manage memory allocations.	AUTOMATIC
MAXLOCKS	Allows STMM to dynamically manage memory allocations.	AUTOMATIC If AUTOMATIC is not supported: 100
PCKCACHESZ	Allows STMM to dynamically manage memory allocations.	AUTOMATIC
SHEAPTHRES_SHR	Allows STMM to dynamically manage memory allocations.	AUTOMATIC
SORTHEAP	Allows STMM to dynamically manage memory allocations.	AUTOMATIC
NUM_IOCLEANERS		AUTOMATIC
NUM_IOSERVERS		AUTOMATIC
DFT_PREFETCH_SZ		AUTOMATIC
MAXAPPLS		AUTOMATIC
APPLHEAPSZ		AUTOMATIC
APPL_MEMORY		AUTOMATIC
APP_CTL_HEAP_SZ		512 Attention: APP_CTL_HEAP_SZ is deprecated in DB2 V9.5.
DBHEAP	Amount that is required depends on the amount of memory available and the traffic volume.	AUTOMATIC Attention: The default DBHEAP value is inadequate.
LOGFILSIZ	Refer to the topic Log Configuration.	65536 if you are configuring 20 transaction logs of 256 MB (65536 4KB pages)
LOGPRIMARY	Number of primary transaction logs. Refer to the topic Log Configuration.	40 or more
LOGSECOND	Number of secondary transaction logs. These logs are allocated by DB2 when it cannot reuse any of the primary logs due to active transactions. Refer to the topic Log Configuration.	12
NUM_LOG_SPAN	Refer to the topic Log Configuration.	LOGPRIMARY - Safety buffer

Parameter	Description	Value
DFT_DEGREE	Sets the default degree of parallelism for intrapartition parallelism. In general, online transactional applications such as Sterling B2B Integrator typically experience a high volume of short queries that do not benefit from parallel queries.	1 – Disable intrapartition parallelism
DB2LOCK_TO_RB		STATEMENT

Additional settings for DB2 V9.7 or later

Use these settings for DB2 V9.7 or later.

Feature	Description	Value
Currently Committed Semantics	<p>The DB2 database used the default Cursor Stability (CS) isolation level in all versions until DB2 9.7. If an application changed a row and another application tried to read that row before the first application committed the changes, the second application waited until the commit.</p> <p>You can now set the currently committed semantics of the CS level, which informs DB2 that when the second application tries to read a locked row, it will get an image of what the row looked like before committing the change.</p> <p>In the enhanced currently committed semantics, only committed data is returned, as it was in previous versions. However, now the read operation does not wait for the write operation to release the row locks. Instead, the read operation returns the data prior to the start of the write operation.</p> <p>The currently committed semantics is turned on by default in the new DB2 9.7 database. The new database configuration parameter, cur_commit is used to override this behavior.</p> <p>Currently committed semantics requires more log space for write operations. In addition, extra space is required for logging the first update of a data row during a transaction, which can have an insignificant or measurable impact on the total log space used.</p> <p>The currently committed semantics feature has the following limitations:</p> <ul style="list-style-type: none"> • The target table that is used for a data update or delete operation does not use currently committed semantics. • An uncommitted modification to a row forces the currently committed read operation to access appropriate log records and determine the currently committed version of the row. Although log records that are no longer present in the log buffer can be physically read, currently committed semantics does not support the retrieval of log files from the log archive. • The following scans do not use currently committed semantics: <ul style="list-style-type: none"> – Catalog table scans – Referential integrity constraint enforcement scans – LONG VARCHAR or LONG VARGRAPHIC column reference scans – Range-clustered table (RCT) scans – Spatial or extended index scans 	ON

Feature	Description	Value
Statement concentrator	<p>DB2 uses less server resources while processing queries that have parameters instead of queries that have literal values in them. DB2 compile an SQL statement once and caches it. The same query execution plan from the cache is presented the next time for the same query, thereby utilizing fewer resources to compile/prepare the same statement.</p> <p>However, it becomes a difficult task when SQL statements use literal values instead of parameters when matching incoming statements to what is already present in the statement. To handle this situation, statement concentrator modifies dynamic SQL statements at the database server so that similar, but not identical, SQL statements can share the same access plan.</p>	<p>You can enable statement concentrator by running the following SQL statement:</p> <pre>db2 update db cfg for <db-alias> using stmt_conc literals</pre>

Using example scripts to create DB2 databases

You can use scripts to create DB2 databases with required parameters on Linux, UNIX, and Windows operating systems.

There are two scripts you can use to create DB2 databases with required parameters on Linux, UNIX, and Windows operating systems:

- Option 1 - Use this script if the database user creating the database and the database user that will be used in Sterling Control Center are the same
- Option 2 - Use this script if the database user creating the database and the database user that will be used in Sterling Control Center are not the same

Option 1 - Create DB2 databases:

Use the option 1 example script to create DB2 databases on Linux, UNIX, and Windows operating systems when the user creating the database is the same user who will be the database user in Sterling Control Center.

About this task

To create DB2 databases using the option 1 script:

Procedure

1. Copy the option 1 script commands to a file named `create_scc_db_sql`. See *Option 1 script example*. in *Getting Started*.
2. Edit the `create_scc_db.sql` file to replace `@DBNAME@` with your database name.
3. Run the `create_scc_db.sql` script from the `bin` folder in the DB2 install (or using any other option).
 - On Windows, type the following:

```
C:\db2\BIN\DB2CW.BAT (This sets up the DB2 command line environment.)

C:\db2\BIN> db2 -stvf create_scc_db.sql
```
 - On Linux and UNIX, type the following:

```
. $HOME/sqllib/db2profile (For bash or Korn shell,
this sets up the DB2 command line environment.)

cd $HOME/sqllib/bin

db2 -stvf create_scc_db.sql
```

For more information on setting up the Linux and UNIX environments, see the DB2 solution information center.

What to do next

Repeat this procedure to create all the databases needed by Sterling Control Center.

Note: A staging database is optional if you enable table partitioning for production database tables.

Option 1 script example:

The option 1 script example provides commands you can use to create DB2 databases on Linux, UNIX, and Windows operating systems for use with Sterling Control Center.

For information about using the script, see *Option 1 script - Create DB2 databases*.

```
-- Script to create production, reporting and staging databases for
-- IBM Sterling Control Center.
-- The db user that creates the database automatically inherits the
-- database administration privilege.
-- Edit this script and replace @DBNAME@ with your database name.

--
CREATE DATABASE @DBNAME@
AUTOMATIC STORAGE YES
USING CODESET UTF-8 TERRITORY DEFAULT
COLLATE USING SYSTEM PAGESIZE 32768;

CONNECT TO @DBNAME@;

CREATE BUFFERPOOL @DBNAME@_04KBP IMMEDIATE SIZE 1000 PAGESIZE 4K;
CREATE BUFFERPOOL @DBNAME@_08KBP IMMEDIATE SIZE 1000 PAGESIZE 8K;
CREATE BUFFERPOOL @DBNAME@_16KBP IMMEDIATE SIZE 1000 PAGESIZE 16K;
CONNECT RESET;

CONNECT TO @DBNAME@;

CREATE USER TEMPORARY TABLESPACE SCCUSERTMP PAGESIZE 32K BUFFERPOOL IBMDEFAULTBP;
CREATE REGULAR TABLESPACE TS_REG04_@DBNAME@ PAGESIZE 4K BUFFERPOOL @DBNAME@_04KBP;
CREATE REGULAR TABLESPACE TS_REG08_@DBNAME@ PAGESIZE 8K BUFFERPOOL @DBNAME@_08KBP;
CREATE REGULAR TABLESPACE TS_REG16_@DBNAME@ PAGESIZE 16K BUFFERPOOL @DBNAME@_16KBP;
CONNECT RESET;
```

Option 2 - Create DB2 databases:

Use the option 2 example script to create DB2 databases on Linux, UNIX, and Windows operating systems when the user creating the database is *not* the same user who will be the database user in Sterling Control Center.

About this task

To create DB2 databases using the option 2 script:

Procedure

1. Copy the option 2 script commands to a file named `create_scc_db.sql`. See *Option 2 script example* in *Getting Started*.
2. Edit the `create_scc_db.sql` file to replace `@DBNAME@` with your database name and replace `@USERID@` with your database user ID.
3. Run the `create_scc_db.sql` script from the `bin` folder in the DB2 install (or using any other option).

- On Windows, type the following:

```
C:\db2\BIN\DB2CW.BAT (This sets up the DB2 command line environment.)
```

```
C:\db2\BIN> db2 -stvf create_scc_db.sql
```

- On Linux and UNIX, type the following:

```
. $HOME/sqllib/db2profile (For bash or Korn shell,  
this sets up the DB2 command line environment.)
```

```
cd $HOME/sqllib/bin
```

```
db2 -stvf create_scc_db.sql
```

For more information on setting up the Linux and UNIX environments, see the DB2 solution information center.

What to do next

Repeat this procedure to create all the databases needed by Sterling Control Center.

Option 2 script example:

The option 2 script example provides commands you can use to create DB2 databases on Linux, UNIX, and Windows operating systems for use with Sterling Control Center.

For information about using the script, see *Option 2 script - Create DB2 databases*.

```
-- Script to create production, reporting and staging databases for
```

```
-- IBM Sterling Control Center.
```

```
-- The db user that creates the database automatically inherits the
```

```
-- database administration privilege.
```

```
-- Edit this script and replace @DBNAME@ with your database name.
```

```
-- Replace @DBUSERID@ with your DB user ID.
```

```
CREATE DATABASE @DBNAME@
```

```

AUTOMATIC STORAGE YES

USING CODESET UTF-8 TERRITORY DEFAULT

COLLATE USING SYSTEM PAGESIZE 32768;

CONNECT TO @DBNAME@;

CREATE BUFFERPOOL @DBNAME@_04KBP IMMEDIATE SIZE 1000 PAGESIZE 4K;
CREATE BUFFERPOOL @DBNAME@_08KBP IMMEDIATE SIZE 1000 PAGESIZE 8K;
CREATE BUFFERPOOL @DBNAME@_16KBP IMMEDIATE SIZE 1000 PAGESIZE 16K;

CONNECT RESET;

CONNECT TO @DBNAME@;

CREATE USER TEMPORARY TABLESPACE SCCUSERTMP PAGESIZE 32K BUFFERPOOL IBMDEFAULTBP;
CREATE REGULAR TABLESPACE TS_REG04_@DBNAME@ PAGESIZE 4K BUFFERPOOL @DBNAME@_04KBP;
CREATE REGULAR TABLESPACE TS_REG08_@DBNAME@ PAGESIZE 8K BUFFERPOOL @DBNAME@_08KBP;
CREATE REGULAR TABLESPACE TS_REG16_@DBNAME@ PAGESIZE 16K BUFFERPOOL @DBNAME@_16KBP;

CONNECT RESET;

CONNECT TO @DBNAME@;

GRANT CREATETAB,BINDADD,CONNECT,IMPLICIT_SCHEMA ON DATABASE TO USER @DBUSERID@;
GRANT USE OF TABLESPACE SCCUSERTMP TO USER @DBUSERID@;
GRANT USE OF TABLESPACE USERSPACE1 TO USER @DBUSERID@;
GRANT USE OF TABLESPACE TS_REG04_@DBNAME@ TO USER @DBUSERID@;
GRANT USE OF TABLESPACE TS_REG08_@DBNAME@ TO USER @DBUSERID@;
GRANT USE OF TABLESPACE TS_REG16_@DBNAME@ TO USER @DBUSERID@;

CONNECT RESET;

```

Configure Sterling Control Center to use DB2 databases on Linux, UNIX, and Windows operating systems

To configure Sterling Control Center to use DB2 databases on Linux, UNIX, and Windows operating systems, you need to specify database connection details.

Specify database connection details for the three different Sterling Control Center databases using one of the following methods:

- On Windows operating systems - Either as part of the installation or later when **configCC** is run, you can specify the database connection details for the three Sterling Control Center databases.
- On Linux and UNIX operating systems - After you install Sterling Control Center, when you run **configCC**, you can specify the database details for the three Sterling Control Center databases.

Provide the following database connection information when you are configuring Sterling Control Center to use DB2 databases:

DB connection information	Description	More information
Database Host Name		If you do not want to use a staging database, enter "N" to the staging database configuration step.
Database port	The port number on which the database server listens	Ensure that the database server is listening on this database port. From the server where you are installing Sterling Control Center, try establishing a "telnet" connection to the database host and port using the following command: telnet <<dbhost>> <<dbPort>>
Database User ID		
Database password for the DB User		
Database Name		
JDBC Drivers	db2jcc.jar and db2jcc_license_cu.jar	Copy these drivers to the server where Sterling Control Center will be installed. These files are typically in<<db2Install>>/sqllib/java.

Creating DB2 databases and database users on z/OS

When you create DB2 databases for use with Sterling Control Center, ensure that you configure the settings required for operation with Sterling Control Center.

Before you begin

Install the DB2 database server and ensure that you have the authority to create the databases and database users.

About this task

Create the database with the required settings outlined in *Required settings for DB2 databases on the z/OS operating system*. These settings apply to production, staging, and reports databases. The following high-level steps are used to create DB2 databases on the z/OS operating system:

Procedure

1. Create the required databases (production, staging, and reports) with the required settings.
2. Grant the user the required permissions to access the databases.
3. Install and configure Sterling Control Center to use the defined databases and database user.
4. Run the additional DB2 z/OS scripts against the reports database.
5. Start the Sterling Control Center engine.

Required settings for DB2 databases on z/OS

When you are creating DB2 databases on the z/OS operating system, use the required settings to ensure Sterling Control Center can use the databases.

- Create the databases (production, staging, and reports) with the following settings:

- UNICODE encoding scheme
- 32K Buffer Pool
- 32K Index Buffer Pool

For example:

```
CREATE DATABASE <<SCCPRD>> BUFFERPOOL BP32K INDEXBP BP32K
STOGROUP <<SCCSTG>> CCSID UNICODE;
```

- Grant the user the following permissions to the database user:
 - BINADD


```
GRANT BINADD TO <<SCCUSER>>;
```
 - Permission to use the Buffer Pool


```
GRANT USE OF BUFFERPOOL BP32K TO <<SCCUSER>>;
```
 - Permission to use the Storage group


```
GRANT USE OF STOGROUP <<SCCSTG>> TO <<SCCUSER>>;
```
- Grant the user the following permissions on the databases (production, staging, and reports)
 - CREATETAB, CREATETS

Sample commands:

```
GRANT CREATETAB ON DATABASE <<SCCPRD>> TO <<SCCUSER>>;
GRANT CREATETS ON DATABASE <<SCCPRD>> TO <<SCCUSER>>;
```

Configuring the DB2 reports database on the z/OS operating system

After you create the DB2 databases on the z/OS operating system and install Sterling Control Center, configure the reports database before you start the Sterling Control Center engine for the first time.

About this task

To configure the reports database, you must run configuration scripts against the database.

Procedure

Locate and run the following scripts against the reports database:

```
<installation location>/Cognos/configuration/schemas/content/db2zOS/
tablespace_db2zOS.sql
<installation location>/Cognos/configuration/schemas/ans/zosdb2/
ANN_TABLESPACES.sql
<installation location>/Cognos/configuration/schemas/delivery/zosdb2/
NC_TABLESPACES.sql
<Installation location>/Cognos/configuration/schemas/hts/zosdb2/
HTS_TABLESPACES.sql
```

Creating an Oracle database and database users (schemas)

When you create an Oracle database and database users for use with Sterling Control Center, ensure that you configure the settings required for operation with Sterling Control Center.

Before you begin

Install the Oracle database server instance and ensure that you have the authority to create the database and database users.

About this task

Create the database with the required settings outlined in *Required settings for the Oracle database and database users*. You can use one Oracle database instance for the production, staging, and reports database by creating three different database users (schemas). The following high-level steps are used to create an Oracle database:

Procedure

1. Create and configure an Oracle database instance with the required settings. Use AL32UTF8 as the character set when creating the instance. If your existing Oracle instance has the required settings, then you do not need to create a new instance.
2. Identify or create table spaces for user tables and indexes.
3. Create three different database users (schemas).
Attention: A staging schema is optional if you enable table partitioning for production schema tables.
4. Grant permissions to the users.

Required settings for the Oracle database and database users

When you are creating the Oracle database, use the required settings to ensure Sterling Control Center can use the database.

Required setting	Production schema	Reports schema	Staging schema	More information
Character set	AL32UTF8	AL32UTF8	AL32UTF8	This setting is set as part of database instance creation.

Required setting	Production schema	Reports schema	Staging schema	More information
Database user permissions	GRANT "CONNECT" TO <<productionsSchemaUser>> GRANT CREATE TABLE TO <<productionsSchemaUser>> GRANT CREATE VIEW TO <<productionsSchemaUser>> GRANT "SELECT_CATALOG_ROLE" TO <<productionsSchemaUser>> GRANT UNLIMITED TABLESPACE TO <<productionsSchemaUser>>	GRANT "CONNECT" TO <<reportingSchemaUser>> GRANT "SELECT_CATALOG_ROLE" TO <<reportingSchemaUser>> GRANT UNLIMITED TABLESPACE TO <<reportingSchemaUser>> GRANT CREATE PROCEDURE TO <<reportingSchemaUser>> GRANT CREATE SEQUENCE TO <<reportingSchemaUser>> GRANT CREATE TABLE TO <<reportingSchemaUser>> GRANT CREATE TRIGGER TO <<reportingSchemaUser>> GRANT CREATE VIEW TO <<reportingSchemaUser>> GRANT SELECT ANY DICTIONARY TO <<reportingSchemaUser>>	GRANT "CONNECT" TO <<productionsSchemaUser>> GRANT CREATE TABLE TO <<productionsSchemaUser>> GRANT CREATE VIEW TO <<productionsSchemaUser>> GRANT "SELECT_CATALOG_ROLE" TO <<productionsSchemaUser>> GRANT UNLIMITED TABLESPACE TO <<productionsSchemaUser>>	

Additional settings for the Oracle database instance

For optimal performance, configure the INIT<INSTANCE_NAME>.ORA file to use these parameters and values for Oracle databases.

Parameter	Description	Value
OPEN_CURSORS	Number of open cursors	Greater than or equal to 2000
SHARED_POOL_SIZE	Shared pool size	Greater than or equal to 90000000
LARGE_POOL_SIZE	Large pool size	Greater than or equal to 614400
PROCESSES	Number of processes	Greater than or equal to 500
LOG_BUFFER	Log buffer	Greater than or equal to 163840
DB_BLOCK_SIZE	Database block size	Greater than or equal to 8192
NLS_LENGTH_SEMANTICS	NLS Length semantics	CHAR
SGA_MAX_SIZE	SGA maximum size	1 GB to <i>n</i> GB, depending on the amount of physical memory on your database server. If the server is running only this database, up to 80% of physical memory.
SGA_TARGET	SGA components total size	1 GB to <i>n</i> GB, depending on the amount of physical memory on your database server. If the server is running only this database, up to 80% of physical memory.

Parameter	Description	Value
PGA_AGGREGATE_TARGET	PGA target aggregate memory	1 GB to <i>n</i> GB, depending on the amount of physical memory on your database server. If the server is running only this database, up to 80% of physical memory.
cursor_sharing	Cursor sharing	exact
timed_statistics	Timed Statistics	true
optimizer_mode	Optimizer mode	All_rows
	Max extends	Unlimited

Configuring Sterling Control Center to use Oracle database schemas

To configure Sterling Control Center to use Oracle database schemas, you need to specify database connection details.

Specify database connection details for the three different Sterling Control Center database schemas using one of the following methods:

- On Windows operating systems - Either as part of the installation or later when **configCC** is run, you can specify the database connection details for the three Sterling Control Center database schemas.
- On Linux and UNIX operating systems - After installing Sterling Control Center, when you run **configCC**, you can specify the database details for the three Sterling Control Center database schemas.

Provide the following database connection information when you are configuring Sterling Control Center to use Oracle database schemas:

DB connection information	Description	Notes
Database Host Name		In case of multimode Oracle RAC, host name of all nodes If you do not want to use a staging database, enter 0.0.0.0 as the database hostname for the staging database.
Database port	The port number on which database server listens on	Typically, the port is 1521. In case of multimode Oracle RAC, this is the port number of all the nodes. Ensure that the database server is listening on that port. From the server where you are installing the Sterling Control Center engine, you can try to establish a "telnet" connection to the db host and port. telnet <<dbhost>> <<dbPort>>

DB connection information	Description	Notes
Database User ID		When using the same Oracle instance for production, staging, and reports schemas, the User ID must be set for each schema.
Database password for the DB User		
Database Name(SID for non-RAC or Service Name for Oracle RAC)		The same Oracle instance can be used for all three schemas.
JDBC Drivers	Use one of the following JDBC driver files: ojdbc5.jar or ojdbc6.jar.	These drivers are thin client-based, pure Java JDBC drivers. Copy one of these files to the server where Sterling Control Center will be installed These files are located under <<oracleDBHome>>/ jdbc/lib.

Creating Microsoft SQL Server databases and database users

When you create Microsoft SQL databases and database users for use with Sterling Control Center, ensure that you configure the settings required for operation with Sterling Control Center.

Before you begin

Install the Microsoft SQL Server database server. When you install the server, accept the following settings:

- Collation Setting as SQL_Latin1_GeneralCP1_CI_AS
- Server Authentication as SQL Server and Windows Authentication Mode

Also, ensure that you have the authority to create the databases and database users.

About this task

Create the database with the required settings outlined in *Required settings for Microsoft SQL Server databases and database users*.

Procedure

1. Create and configure an Oracle database instance with the required settings. Use **SQL_Latin1_GeneralCP1_CI_AS** as the **Collation Setting** when creating the instance.
2. Create three different databases.
Attention: A staging database is optional if you enable table partitioning for production database tables.
3. Create user or users. You can use the one database user to access the three different databases.
4. Grant permissions to the user or users.

Required settings for Microsoft SQL Server databases and database users

When you are creating Microsoft SQL Server databases, use the required settings to ensure Sterling Control Center can use the databases.

Required setting	Production schema	Reports schema	Staging schema	More information
Login Security authentication	SQL Server Authentication User Mapping: Select the Production database. For Role Members, select db_owner. Map the user's default schema to "dbo".	SQL Server Authentication Clear the Enforce password policy check box. User Mapping: Select the Reporting database. For Role Members, select db_owner. Map the user's default schema to "dbo".	SQL Server Authentication User Mapping: Select the Staging database. For Role Members, select db_owner. Map the user's default schema to "dbo".	Sterling Control Center supports only SQL Server authentication.
Torn Page	Detection Off	Detection Off	Detection Off	

Configure Sterling Control Center to use Microsoft SQL Server databases

To configure Sterling Control Center to use Microsoft SQL Server databases, you need to specify database connection details.

Specify database connection details for the three different Sterling Control Center databases using one of the following methods:

- On Windows operating systems - Either as part of the installation or later when **configCC** is run, you can specify the database connection details for the three Sterling Control Center databases.
- On Linux and UNIX operating systems - After installing Sterling Control Center, when you run **configCC**, you can specify the database details for the three Sterling Control Center databases.

Provide the following database connection information when you are configuring Sterling Control Center to use Microsoft SQL Server databases:

DB connection information	Description	Notes
Database Host Name		For MS SQL Server 2005, if you need to connect to a named instance of SQL server, use the format <code>servername;instancename</code> . Example: <code>CSGPQ2;SCCINSTANCE</code>
Database port	The port number on which database server listens on	Typically, it is 1433. Ensure that the database server is listening on that port. From the server where you are installing the Sterling Control Center engine, try to establish a "telnet" connection to the database host and port. <code>telnet <<dbhost>> <<dbPort>></code>

DB connection information	Description	Notes
Database User ID		
Database password		
Database Name		
JDBC Drivers	Use sqljdbc4.jar	The drivers can be downloaded from the following location: Microsoft JDBC Driver for SQL Server

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: Production, staging, and reports 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 MS SQL Server 2005 , if you need to connect to a named instance of SQL server, use the format <code>servername;instancename</code> . Example: <code>CSGPQ2;SCCINSTANCE</code>	All	
Port number to access the database.	All	
Location of the sqljdbc4.jar	Microsoft SQL Server (2005 and 2008)	
Location of the db2jcc.jar file	DB2 (UNIX and Microsoft 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, Microsoft 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 9.x, type 4 driver. This driver comes with two files, `dbjcc.jar` and `db2jcc_license_cu.jar` (UNIX and Microsoft Windows) or `db2jcc_license_cisuz.jar` (z/OS or OS/390).
- When you use the JDBC driver to configure Sterling Control Center with DB2 databases, the JDBC driver files must come from the DB2 database location where Sterling 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. Sterling Control Center does not archive data. If the staging database is allowed to grow too large, Sterling Control Center performance will be impacted.

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 see the IBM Sterling Control Center Database Partitioning paper for more details on partitioning.

Parameter	Database Type	Value
Database type Note: Production, staging, and reports 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. For MS SQL Server 2005, if you need to connect to a named instance of SQL server, use the format servername;instancename. Example: CSGPQ2;SCCINSTANCE 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.	All	
Location of the sqljdbc4.jar	Microsoft SQL Server (2005 and 2008)	
Location of the db2jcc.jar file.	DB2 (UNIX and Microsoft 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, Microsoft 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 9.x, Type 4 driver. This driver comes with two files, dbjcc.jar and db2jcc_license_cu.jar (UNIX and Microsoft Windows) or db2jcc_license_cisuz.jar (z/OS or OS/390).

- 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 Sterling Control Center is to connect.

Reports database worksheet

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

Parameter	Database Type	Value
Database type Note: Production, staging, and reports 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 MS SQL Server 2005 , if you need to connect to a named instance of SQL server, use the format <code>servername;instancename</code> . Example: <code>CSGPQ2;SCCINSTANCE</code>	All	
Port number to access the database.	All	
Location of the sqljdbc4.jar	Microsoft SQL Server (2005 and 2008)	
Location of the db2jcc.jar file	DB2 (UNIX and Microsoft 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, Microsoft 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 9.x, Type 4 driver. This driver comes with two files, `dbjcc.jar` and `db2jcc_license_cu.jar` (UNIX and Microsoft Windows) or `db2jcc_license_cisuz.jar` (z/OS or OS/390).
- When you use the JDBC driver to configure Sterling Control Center with DB2 databases, the JDBC driver files must come from the DB2 database location where Sterling Control Center will connect.

Determine HTTPS information for the engine and console connection

You need to determine HTTPS information for the engine and console connection before you install Sterling Control Center.

About this task

If the Sterling Control Center console will use the HTTPS protocol to communicate with the Sterling Control Center engine, gather the following information before installation:

Procedure

1. The host name of any computer where the Sterling Control Center engine or console is to be installed. Obtain the host name by doing the following:
 - a. Open a command line prompt at the computer.
 - b. Type **hostname** from the command line. The system returns a text string. For example, **WIN2000**. This string is the host name.
2. 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).
3. Determine the HTTPS port the Sterling Control Center engine will use.
4. Record this information in the *HTTPS worksheet*. Complete one worksheet for each computer where Sterling Control Center will be installed. Use this worksheet during Sterling Control Center installation.

What to do next

After you install Sterling Control Center, when you are ready to create a connection between the Sterling Control Center engine and a Sterling Control Center console or a Sterling Connect:Direct® managed server, see *Requirements for creating a secure connection between the engine and the console* or *About creating a secure connection between the engine and a managed server*.

HTTPS worksheet

Enter your HTTPS requirements in the following worksheet and refer to it during Sterling Control Center installation. Complete a worksheet for every computer on which the engine or a console is to be installed. Make additional copies as needed.

Field	Description	Value
Host name	The computer where the Sterling Control Center engine or console will be installed.	
Keystore file	The default location is <i>installation 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.	

Field	Description	Value
Trust store file	The default location is <i>installation directory/jre/lib/security/cacerts</i> . Important: The default JKS trust store file (cacerts) installed with Sterling Control Center should only be used in a nonproduction environment. During upgrade, maintenance, and reinstallation this file is overwritten (or removed as with uninstallation). If you customize this file and use it as your truststore, you will lose all of your updates. Instead, create a copy of cacerts to store your CA authentication information, and update the directory path as appropriate.	
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.	

Chapter 2. Install Sterling Control Center

Installing the engine and console on UNIX

You can install the Sterling Control Center engine and the console on a UNIX operating system from either a console or a command line.

Before you begin

Be sure to complete the *Production database worksheet*, the *Staging database worksheet*, and, if consoles will access the Sterling Control Center engine using HTTPS, the *HTTPS worksheet*.

About this task

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.

Note: If you are upgrading from a prior version of Sterling Control Center, see Release Notes.

To install the console only, refer to *Setting up a console*.

Procedure

1. Navigate to the UNIX directory where you extracted the files. If using an installation DVD, insert it in the computer where you are installing Sterling Control Center, and navigate to the appropriate folder.
2. Copy the `CCInstall.bin` file (or `CCInstall64.bin` file for a 64-bit operating system environment) to a directory on your computer.
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 Sterling 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*.

If the installation fails, review the installation log to determine the cause. This log is named `Sterling_Control_Center_v5.4.1_InstallLog.log` and is located in the installation directory.

Tip: If the problem lies in the settings used to configure the installation, you can run `configCC.sh` to reconfigure the settings. See *Changing engine settings after installation*.

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

Special considerations for installing 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 website for details on this product.

Removing 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 commands must be performed substituting the home directory for /tmp.

Installing the engine and console on Microsoft Windows

It is possible to install the Sterling Control Center engine and console on Microsoft Windows.

Before you begin

Before starting this installation, complete the *Production database worksheet*, the *Staging database worksheet*, and, if consoles will access the Sterling Control Center engine using HTTPS, the *HTTPS worksheet*.

About this task

Use this procedure to install the Sterling Control Center engine and console on a Microsoft Windows operating system environment. If you want to install the console only, refer to *Setting up a console*.

Note: If you are upgrading from a prior version of Sterling Control Center, see Release Notes.

Procedure

1. Close all open applications.
2. Navigate to the Microsoft Windows directory where you extracted the files. If using an installation DVD, insert it in the computer where you are installing Sterling Control Center, and navigate to the appropriate folder.
3. Double-click the **CCInstall.exe** (or **CCInstall64.exe** file for a 64-bit operating system environment) file.
4. Follow the installation prompts using the information from the *Production database worksheet* and the *Staging database worksheet*.

If the installation fails, review the installation log to determine the cause. This log is named `IBM_Sterling_Control_Center_v5.4.1_InstallLog.log` and is located in the installation directory.

Tip: If the problem lies in the settings used to configure the installation, you can run `configCC.bat` to reconfigure the settings. See *Changing engine settings after installation*.

The installation program installs the JRE.

Installing the engine and console on z/Linux

You can install the Sterling Control Center engine and console in a z/Linux environment.

Before you begin

- Before you install Sterling Control Center using the Java installer, you must install a 64-bit version of IBM System z/Linux JRE 1.6.0 SR 5 or later.
- Define `localhost` in `etc/hosts`.
- Set `ulimit` to unlimited for the user that installs Sterling Control Center.

About this task

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

Note: If you are upgrading from a prior version of Sterling Control Center, see Release Notes.

Procedure

1. Transfer the `CCInstall64.bin` file to the computer where Sterling Control Center will be installed.
2. Set the following environment variables:
 - a. `JAVA_HOME` environment variable to the installed Java JRE.
 - b. Set the `PATH` environment variable to include the absolute path to the installed Java. For example:

```
export JAVA_HOME=/opt/ibm/java_s390x_60/jre
export PATH=/opt/ibm/java_s390x_60/jre/bin:$PATH
```
3. Start the installer using the following syntax:

```
sh CCInstall64.bin
```
4. Specify appropriate values for all the prompts including the install location. During installation, Sterling Control Center updates various scripts with the location of the JRE.
5. Once the installation is done, run `configCC.sh` to configure the engine.

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

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

Configuring the engine to connect to an Oracle RAC database

To configure the Sterling 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.

Configuring the engine to connect to Oracle RAC through the GUI installer

You can use the GUI installer to configure the engine to connect to Oracle RAC.

Before you begin

Specify the database hostnames and ports, as well as the Oracle Service Name.

About this task

When setting up the production database, specify the following information in the Database Information dialog box. For the staging database, you can configure the same Oracle RAC similarly.

Procedure

1. Specify Oracle RAC cluster nodes separated by semicolons in the **Database hostname** field.
2. In the **Database port** field, specify the port number separated by semicolons for the corresponding hosts in the hostname field.
3. In the **Database name** field, specify the Oracle Service Name.

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 to specify whether the installation is for an Oracle RAC environment. Staging database connection details can be configured in the same way.

Procedure

1. To configure connections to an Oracle RAC database, Type **Y** and press **Enter**.
2. Follow the prompts, as shown in the following example, to specify all Oracle hosts in the cluster.

```
Config step : Database connection parameters configuration ...
```

```
-----  
Please provide the following DB Parms...  
Database Type(Oracle or DB2 or MSSQL or DB2zOS) : oracle  
Is this an Oracle RAC environment(Y/N)?[N]Y  
How many nodes in the cluster? 2  
Database cluster host #1 : []reseph  
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
```

Changing engine settings after installation

About this task

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

Procedure

1. From a command line, run `configCC.bat` (Microsoft Windows) or `configCC.sh` (UNIX) in the *installation directory/bin* subdirectory.
You are prompted for each step of configuration.
2. To skip any step in which no change is required, type **n** and press **Enter**, then **y** and press **Enter**.

Setting up a console

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

About this task

Note: To access many Sterling Control Center user features without installing files locally on your computer, you can use the Sterling Control Center web console.

Procedure

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. The hostname is the DNS name or IP address where the engine is running and the port is the port number for the WebSphere® Application Server. (The default secure web port is 58083. The default nonsecure 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 Java Launch Page is displayed:



IBM Sterling Control Center Launch Page

You must have JRE 1.6 or higher installed before running IBM Sterling Control Center Console.

[IBM Sterling Control Center Console - Small Configuration \(Less Than 256 MB\)](#)

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

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

[IBM Sterling Control Center Console - Very Large Configuration \(Greater Than 1 GB, Less Than 2 GB\) - This requires 64-bit Operating System and 64-bit Java Runtime on the console system](#)

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

[IBM Sterling Control Center Web Console](#)

[IBM Sterling Connect:Direct Browser User Interface](#)

[IBM Sterling Control Center Documentation Library](#)

[IBM Sterling Connect:Direct Browser Documentation Library](#)

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 JavaMail 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, create a shortcut for running the console from your desktop.
6. Do one of the following steps:
 - 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.

Clearing the cache before upgrading your console

About this task

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

Procedure

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

- Note:** Only deleting temporary internet files is not sufficient.
4. Proceed with installing the console by following the steps in *Setting up a console*.

Troubleshoot engine and console installations

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

Data Execution Prevention in Microsoft Windows Server 2003, SP1, prevents installation.

When installing the Sterling Control Center Engine on Microsoft Windows Server 2003 with Service Pack 1, you may get a message like the following: "Data Execution Prevention. To help protect your computer, Microsoft 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, Sterling 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 Microsoft 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.5.4.1_InstallLog.log` and is located in the installation directory. To reconfigure installation, see *Changing engine settings after installation*.

The client computer on which a console has been installed does not recognize the engine name and location when the user attempts to run Sterling Control Center via Java Web Start. (An error message is displayed at the console computer stating that it is unable to launch Sterling Control Center, followed by a Java Web Start "unable to load resource" download error.)

Run `configCC.bat` (Microsoft Windows) or `configCC.sh` (UNIX). (See *Changing engine settings after installation*.) 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.

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.

For Microsoft Windows platforms, add the `deployment.config` file to either `C:\Windows\Sun\java\Deployment` or `C:\Program Files\Java\jre6\lib`.

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.

Configuring Sterling Connect:Enterprise for z/OS

It is possible to configure Sterling Connect:Enterprise for z/OS.

Before you begin

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

About this task

In order to configure Sterling Connect:Enterprise for z/OS, use the following procedure:

Procedure

1. After successfully installing Sterling Control Center, use a text editor such as Notepad to open the \$RLOG file in the ControlCenter\conf\CE0S390 directory (ControlCenter/conf/CE0S390 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 listens on for SNMP traps from the Sterling 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 information highlighted in bold text in the following example with the IP address or DNS name of the Sterling Control Center engine and the port number on which Sterling Control Center listens for SNMP traps from the Sterling 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 settings:

```
*****
* 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 Sterling Connect:Enterprise for z/OS server.

If your Sterling 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 IBM Sterling Connect:Enterprise for z/OS Application Agents and User Exits Guide for instructions on implementing rules.

10. Perform a rules refresh on the Sterling Connect:Enterprise server. The server can now communicate with Sterling Control Center.
11. Repeat this procedure for each Sterling Connect:Enterprise server that Sterling Control Center monitors.

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

Configuring Sterling B2B Integrator

To use Sterling Control Center with Sterling B2B Integrator servers, including IBM® Sterling File Gateway, set up a Sterling Control Center service in Sterling B2B Integrator. See the topic called Monitoring Sterling B2B Integrator with Sterling Control Center in the Sterling B2B Integrator documentation for more information.

For Sterling Control Center to monitor all the steps of Sterling B2B Integrator business processes, set the persistence level on Sterling B2B Integrator to PERSISTENCE_FULL for the business processes.

Sterling Control Center issues Ops commands to Sterling B2B Integrator to get adapter status. To avoid server down alerts, set the Ops command timeout on Sterling B2B Integrator to more than 2 minutes.

Uninstalling Sterling Control Center

About this task

Read the following note before you uninstall Sterling Control Center:

Important: The default trust store (*installation directory/jre/lib/security/cacerts*) provided with the installed Java JRE is removed when you uninstall Sterling Control Center. If you customized this file, avoid losing trust store information that may be used by other applications by copying the file to another directory before uninstalling. Reinstalling Sterling Control Center installs a new copy of the default trust store.

Procedure

1. Back up the *installation directory/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 Sterling Control Center should not delete the setup information, taking this step ensures against losing any data.

2. In Microsoft Windows:

Select **Start > All Programs > IBM Sterling Control Center vx.x**

In the Uninstall Sterling Control Center vx.x window, click **Uninstall**.

3. In UNIX:

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
```

When prompted, press **Enter**.

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

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

Reinstalling Sterling Control Center

About this task

During reinstallation, the installation program asks if you want to reinitialize the Sterling Control Center database tables. Make a note of these values before reinitializing the database and reconfigure them later. See *Managing metadata type mapping* in *System Administration* for instructions on how to map metadata types.

If you select not to reinitialize, the existing statistic and event information is available with the reinstalled Sterling Control Center. The default selection is not to reinitialize.

Important: Reinstalling Sterling Control Center installs a new copy of the default trust store file (cacerts). If you created a copy of this file for customization, make sure that you update the directory path (*installation directory/jre/lib/security/cacerts*) after reinstall with the correct filename.

Procedure

1. Back up the *installation directory\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 Sterling 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 *Uninstalling Sterling Control Center*.)

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 *installation directory\conf* directory you backed up in step 1.
4. Run the installation program again.

Performing a silent installation

To facilitate installing Sterling Control Center across your enterprise, you can perform a silent installation on Microsoft Windows or UNIX.

About this task

To perform a silent installation of Sterling Control Center:

Procedure

1. If installing from a CD or DVD, copy the installer onto a disk. Otherwise, download the installer onto a disk.
2. In the directory where the installer is located, create a new file named, *installer.properties*.
3. Edit the *installer.properties* file and insert the following data:

```
USER_INSTALL_DIR=<location where you want Sterling Control Center V5.4 to  
be installed>  
LICENSE_ACCEPTED=true
```

For example, to install Sterling Control Center V5.4 into C:\Program Files\ControlCenter5.4, use:

```
USER_INSTALL_DIR=C:/Program Files/IBM/ControlCenter5.4.1
```

Tip: You can use forward slashes on Microsoft Windows. However, if you use back slashes, you must use two black slashes as shown in the following example:

```
USER_INSTALL_DIR=C:\\Program Files\\IBM\\ControlCenter5.4.1
```

4. At this point, you can begin the silent installation.
 - On Microsoft Windows:

- a. From a command prompt, change directory to the directory where you placed the installer (CCInstall.exe or CCInstall64.exe) and installer.properties files.
 - b. Issue the following command:

```
start /b /wait CCInstall -i silent
```

or

```
start /b /wait CCInstall64 -i silent
```
- On UNIX:
 - a. From a command prompt, change directory to the directory where you placed the installer (CCInstall.bin or CCInstall64.bin) and installer.properties files.
 - b. Issue the following command:

```
sh CCInstall.bin -i silent
```

or

```
sh CCInstall64.bin -i silent
```

What to do next

Run bin/configCC to configure Sterling Control Center V5.4.1.

Chapter 3. Configure a secure connection

You can configure secure connections for use between Sterling Control Center and a Sterling Connect:Direct or IBM Sterling B2B Integrator server and between the Sterling Control Center engine and a console.

The following secure connections can be configured for use with Sterling Control Center:

- A secure connection between the Sterling Control Center engine and a Sterling Control Center console. This secure connection uses Secure Hypertext Transfer Protocol (HTTPS).
- A secure connection between the Sterling Control Center engine and a managed Sterling Connect:Direct server or IBM Sterling B2B Integrator SOA SSL Server Adapter. This secure connection uses Secure Sockets Layer (SSL) or Transport Layer Security (TLS).

The Sterling Control Center engine uses the same truststore file for both types of secure connections.

Use the information recorded on the *HTTPS worksheet* to complete the configuration procedures.

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

For Sterling B2B Integrator, use the HTTP Server adapter preconfigured for SSL (Sterling B2B Integrator SOA SSL Server adapter).

About creating a secure connection between the engine and a managed server

A secure connection between the Sterling Control Center engine and a managed Sterling Connect:Direct server or Sterling B2B Integrator is server authenticated. The engine is the client and the managed Sterling Connect:Direct or Sterling B2B Integrator server is the server. Client authentication functionality can also be enabled and is controlled by the server.

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

Before you set up the managed server to be secure, make sure the Sterling Control Center engine is secure by reading and following these procedures:

- *Summary of tasks*
- *Configuring the engine for a secure connection*

Configuring the Sterling Connect:Direct server for a secure connection

It is possible to configure the Sterling Connect:Direct server for a secure connection.

Before you begin

The managed Sterling Connect:Direct server must first be configured to support secure client connections. Use the Sterling Connect:Direct Secure Plus Administration tool, SPAdmin, to configure each managed server.

About this task

In order to Configuring the Sterling Connect:Direct server for a secure connection, see the following procedure:

Procedure

- The name of the configuration record used for client connections is `.Client`.
- The Sterling 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 Sterling Connect:Direct Secure Plus Protocol in the merged `.Client` record.
- If the value for Sterling Connect:Direct Secure Plus Protocol for the merged `.Client` record is:
 1. `Disable Sterling Connect:Direct Secure Plus`, then only non-secure client connections are permitted.
 2. `Enable TLS Protocol`, then only TLS client connections are permitted.
 3. `Enable SSL Protocol`, then only SSL client connections are permitted.
 4. `Enable STS Protocol`, then no client connections are permitted (as no clients support the STS protocol).
 5. `Enable Override`, then client connections can be secure, TLS/SSL, or non-secure.

Configuring a Sterling B2B Integrator server for a secure connection

The Sterling B2B Integrator SOA SSL Http server adapter is predefined and ready to use with little configuration to set up a secure connection with Sterling Control Center.

About this task

To configure a Sterling B2B Integrator server for a secure connection with Sterling Control Center:

Procedure

1. From the Sterling B2B Integrator Admin Console, select **Deployment > Services > Configuration**.
2. On the Services Configuration page, select **HTTP Server Adapter** from the **Search by Service Type**.

3. From the list of search results, enable the **SOA SSL Http Server Adapter** and click **Next**.
4. Select the **System Certificate** you want to use. (This certificate must be the same root certificate that is in the truststore on the Sterling Control Center engine.)
5. Select a **Cipher Strength**.
6. For client authentication, select the **CA Certificate** that contains the client authentication information.
7. Save the changes.
8. To configure the `SCCInteropService`, select **Deployment > Web Services > Manager**.
9. On the `SCCInteropService: SOAP Transport Binding Settings` page, click **Use HTTPS as SOAP transport**.
10. Click **Save**.

What to do next

To add the Sterling B2B Integrator server in Sterling Control Center, set the **Web Service Port** to the secure port defined in Sterling B2B Integrator. Set the web protocol to **HTTPS**.

Configuring Sterling Control Center for a secure connection

To ensure the secure transfer of information between Sterling Control Center and a managed server, get the necessary certificates, and keystore and truststore files ready before configuring.

The following list summarizes the procedures on the Sterling Control Center side necessary to configure a secure connection between the engine and a managed Sterling Connect:Direct server or IBM Sterling B2B Integrator SOA SSL Server Adapter.

Obtain a root certificate for the Sterling Connect:Direct server or IBM Sterling B2B Integrator SOA SSL Server Adapter.

Take one of the following actions:

- Use Sterling 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 Sterling Certificate Wizard Help for instructions on generating a CSR and creating a self-signed certificate.

Create a truststore file that contains CA information in JKS format on the Sterling Control Center engine.

If a truststore file in JKS format is not available, use the default truststore file (`cacerts`) located in the *installation directory*/`jre/lib/security` directory. This truststore file contains authentication information for most CAs.

Import the root certificate of the Sterling Connect:Direct server or IBM Sterling B2B Integrator SOA SSL Server Adapter into the truststore on the Sterling Control Center engine.

See *Configuring the engine for a secure connection*.

Requirements for creating a secure connection between the engine and the 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.

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

- Keystore file: A database of key material used for authentication and data integrity.
- Truststore file: A keystore used to determine what to trust.

IBM provides IBM Sterling 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).

Summary of tasks

The following list 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* and *Configuring the console for a secure connection*.

When appropriate, the table refers to the Sterling 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.

Obtain certificates. The console needs the private key and certificate for the console and the root certificate for the engine. The Sterling 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:

- Use Sterling 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 Sterling Certificate Wizard Help for instructions on generating a CSR and creating a self-signed certificate.

On the computers where the console and the engine are running, create and save keystore files in JKS format (by using Sterling Certificate Wizard).

See the Sterling Certificate Wizard Help for instructions on creating a valid JKS keystore file from your private key and certificate.

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

On the computers where the console and engine are running, create and save truststore files that contain CA information in JKS format.

If a truststore file in JKS format is not available on the server or the console, take one of the following actions:

- On the engine, use the default truststore file (cacerts) in the *installation directory/jre/lib/security* directory. This truststore file contains authentication information for most CAs.

Important: The default JKS trust store file (cacerts) installed with Sterling Control Center should only be used in a nonproduction environment. During upgrade, maintenance, and reinstallation this file is overwritten (or removed as with uninstallation). If you customize this file and use it as your truststore, you will lose all of your updates. Instead, create a copy of cacerts to store your CA authentication information, and update the directory path as appropriate.

- For a self-signed certificate, refer to the Sterling Certificate Wizard Help for instruction on how to import the certificate into a JKS truststore.

Note: A truststore file is not automatically installed at the console location.

Configure the Sterling Control Center console for a secure connection.

See *Configuring the console for a secure connection*.

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

Configuring the engine for a secure connection

It is possible to configure the Sterling Control Center engine for a secure connection.

Before you begin

Be sure that you have the keystore and truststore information handy before configuring the Sterling Control Center engine for a secure connection.

About this task

In order to configure the Sterling Control Center engine for a secure connection, use the following procedure:

Procedure

1. If necessary, stop the engine.
2. Perform one of the following steps:
 - On a UNIX computer, run the configCC.sh program from the *installation directory/bin* location.
 - On a Microsoft Windows computer, double-click configCC.bat in the *installation directory/bin* directory.
3. In the Keystore and Trust Store configuration steps, specify the keystore location and passphrase and the truststore 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 Sterling Control Center engine.

Configuring the console for a secure connection

To ensure the secure transfer of information between Sterling Control Center and a console, use an HTTPS connection between the two locations. Disable all non-secure ports.

Procedure

1. Verify that the Sterling 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 truststore:
 - Trust Store Type
 - Trust Store Location
 - Trust Store Password
7. Click **OK**.

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

Chapter 4. Setting up Sterling Control Center to monitor FTP servers

By monitoring an FTP server using Sterling Control Center, you can gather information on the files transferred to and from the server.

Sterling 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.

Sterling Control Center monitoring of FTP servers is enabled via an FTP agent. Sterling Control Center ships with FTP agents for z/OS, UNIX, Linux, and Microsoft 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
Microsoft Windows	X	X	
UNIX	X		
z/OS			X

Sterling 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 Sterling Control Center gathers from all FTP servers and how that information maps to general Sterling Control Center terms in displays and reports. To install and configure a non-z/OS Sterling Control Center FTP agent, go to the appropriate section for the platform and type of FTP agent you are using. For Sterling Control Center FTP agents that use FTP logs, review the information in *About validating log formats to use with the Sterling Control Center*. To install and configure z/OS-based FTP servers, see *About installing an FTP agent on z/OS*.

Based on Monitor Rest Time, Sterling 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 Sterling Control Center notifications. For example, for an FTP PUT, Sterling 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 Sterling 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 *Keys and Fields in System Administration*. In this section, the fields in FTP logs are mapped to Sterling Control Center terms.

High-level process to set up non-z/OS FTP servers

You can set up non-z/OS FTP servers for use with Sterling Control Center.

Before you begin

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

Install and start Sterling Control Center.

About this task

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 Sterling Control Center are included later in this chapter.

Procedure

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 Sterling Control Center FTP agent on the computer where the FTP server is located 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 to isolate the cause of the problem. The log file name begins with *SCCFTPagent_*.

4. Define the FTP server in Sterling Control Center by providing relevant details about the server and the Sterling Control Center FTP agent. If necessary, provide the log formats. For specific instructions on adding an FTP server for Sterling Control Center to monitor, see *Manage Servers in System Administration*. For more information about log formats, see *About validating log formats to use with Sterling Control Center*.
5. To test whether Sterling Control Center is collecting information from the FTP server, use Sterling Control Center to view the FTP server activity. For more information, see *Monitoring Server Activity in User*.

About Working with an FTP Agent in Windows

These following 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 in *Installing an FTP agent in Microsoft Windows* and *Configuring the WS_FTP server to use the FTP agent*.

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

About this task

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

To install the Sterling Control Center FTP agent on Microsoft Windows:

Procedure

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

Results

If the installation fails, review the installation log to determine the cause. This log is called `Sterling_Control_Center_-_FTP_Agent_v5.4.1_InstallLog.log` and is located in the FTP agent installation directory.

The installer creates a Microsoft 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 Microsoft Windows for W3C, IIS, and xferlog

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

About this task

To change the default port, use this procedure to reconfigure the FTP agent on Microsoft Windows.

Procedure

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 listen port.

Manually starting the FTP agent in Microsoft Windows for W3C, IIS, and xferlog

You can manually start the FTP agent in Microsoft Windows for W3C, IIS, and xferlog.

About this task

To manually start the FTP agent, you can use Windows Services or run an executable or batch file. By default, the FTP agent listens on port 58084. You need this information when you define a managed FTP server in Sterling Control Center. To manually start the FTP agent in Microsoft Windows, use one of the following methods:

Procedure

- Click **Start > Control Panel > Administrative Tools > Services** to display the Services window, then right-click **IBM Sterling Control Center - FTP Agent v5.4.1**, 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 Microsoft Windows Explorer, navigate to the `FTPAgentInstallDir\bin` directory and double-click **runFtpAgent\$.exe**.
- In Microsoft Windows Explorer, navigate to the `FTPAgentInstallDir\bin` directory and double-click **runFtpAgent.bat**.

Automatically starting the FTP agent in microsoft windows for W3C, IIS, and xferlog

It is possible to set SCC up so that the FTP agent will automatically start up in Microsoft Windows for W3C, IIS, and xferlog.

About this task

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

Procedure

1. Click **Start > Settings > Control Panel > Administrative Tools > Services**. The Services window is displayed.
2. Right-click **IBM Sterling Control Center - FTP Agent v5.4.1** and select **Properties**.
3. In the Startup Type list, click **Automatic**.

Stopping the FTP agent from the Microsoft Windows start menu for W3C, IIS, and xferlog

About this task

To stop the FTP agent from the Microsoft Windows Start menu:

Procedure

1. Click **Start > Control Panel > Administrative Tools > Services**.
2. Right-click **IBM Sterling Control Center - FTP Agent v5.4.1**.
3. Click **Stop**.

Stopping the FTP agent from a Microsoft Windows command line for W3C, IIS, and xferlog

About this task

To stop the FTP agent from a Microsoft Windows command line:

Procedure

1. Open a Command Prompt window on the computer where the FTP agent is installed.
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 Microsoft Windows for WS_FTP

About this task

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

To install the Sterling Control Center FTP agent on Microsoft Windows:

Procedure

1. Close all open applications.
2. Do one of the following:
 - Navigate to the Microsoft Windows directory underneath the folder where you downloaded and extracted the files.
 - Insert the Sterling Control Center installation DVD in the drive of the computer where you are installing Sterling Control Center. Open the folder that corresponds to your Microsoft Windows platform on the DVD.
3. Double-click the `SCCFTPAgentInstall.exe` file.
4. Follow the installation prompts.

Results

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 Sterling 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 `IBM_Sterling_Control_Center_-_FTP_Agent_v5.4.1_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 Microsoft Windows for WS_FTP

By default, the FTP Agent sends traps to SNMP port 58094 and host address 0.0.0.0. Change the default port and host address to the port/host address where Sterling Control Center is running. Reconfigure the FTP agent by using the SNMP Connector.

Procedure

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 `config WsFtpAgent.bat`.
4. Follow the configuration prompts to change the FTP agent SNMP port and host address. (The host address is where Sterling Control Center is running. The SNMP port is the port Sterling Control Center monitors for WS_FTP activity.)

Configuring the WS_FTP server to use the FTP agent

About this task

To enable the WS_FTP Server to communicate with the Sterling Control Center FTP Agent, you must configure WS_FTP Server to execute the Sterling 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 Sterling Control Center.

Note: The WS_FTP configuration steps in this procedure 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.

Procedure

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

About working with an FTP agent in UNIX

The following 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

It is possible to install the Sterling Control Center FTP agent on a UNIX system.

About this task

Use this procedure to install the Sterling Control Center FTP agent on a UNIX system. The installation program installs the Java Runtime Environment (JRE) required to run the FTP agent.

Procedure

1. Navigate to the Sterling 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 *Removing temporary files*.

What to do next

If the installation fails, review the installation log to determine the cause. The log is called `IBM_Sterling_Control_Center_-_FTP_Agent_v5.4_InstallLog.log` and is located in the Sterling Control Center installation directory.

Configuring the FTP agent in UNIX

About this task

By default, the Sterling 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.

Procedure

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 on a UNIX computer

You can manually start the FTP Agent on a UNIX Computer.

About this task

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 Sterling Control Center.

Procedure

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`.

Starting the FTP agent automatically in UNIX

It is possible to set Sterling Control Center up so that the FTP agent will automatically start up in UNIX.

About this task

To set the FTP agent to start automatically in UNIX, insert a command line into a startup file to automatically start the agent. Because UNIX configurations vary, consult your UNIX administrator for the exact procedure and command syntax.

Procedure

To set the FTP agent to start automatically in UNIX, insert a command line into a startup file to automatically start the agent.

Stopping the FTP agent in UNIX

About this task

To manually stop the FTP agent in UNIX:

Procedure

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`.

About validating log formats to use with Sterling Control Center

When you add an FTP server in Sterling Control Center, you first give Sterling 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 Sterling 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*.

FTP xferlog and IIS log formats

Before Sterling 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 *Manage Servers in System Administration*.

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

Sterling 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 *Manage servers in System Administration*).
- 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, use 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 *Keys and Fields in System Administration* to see how the fields in W3C logs are mapped to Sterling 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.

About Installing an FTP Agent on z/OS

The following 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 Sterling Control Center DVD or the Sterling Control Center folder downloaded from IBM Passport Advantage.

Step 1: Installing the FTP agent

Procedure

1. Using Sterling 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 Sterling 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 Sterling 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: Generating the installation JCL

You can 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.

About this task

The following procedure describes how to generate the JCL used to install the Sterling Control Center FTP agent on z/OS:

Procedure

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

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

CMD ==>
IBM 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.

About this task

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 Sterling Control Center FTP agent modules.

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

Procedure

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

```
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 IBM Sterling Control Center FTP Agent JCL Generation menu is displayed:

```
IBM Sterling Control Center FTP Agent
JCL Generation Menu
```

TIME-09:37
DATE-2009/09/01

```
CMD ==>
The IBM 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.

```
IBM Sterling Control Center FTP Agent Installation JCL Created
```

TIME-09:43
DATE-2009/09/01

```
CMD ==>
IBM 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 Sterling 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).

An Alternative Step 3: Installing the FTP agent with IEBCOPY

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

About this task

To install the Sterling Control Center FTP agent using IEBCOPY, use the following procedure:

Procedure

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

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

CMD ==>
The IBM 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 to generate the installation members. The list of members is displayed.

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

```
CMD ==>
IBM 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 Sterling Control Center FTP agent files and defines the new files.
6. Execute the CCFIEBCP job. This job installs the Sterling 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.

About this task

The SCC\$FMAC macro accepts the following parameters:

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.

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:

Procedure

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

```
//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=$SCC.SAMPLIB(FTSPMFEX)
//SYSPRINT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//SYSUT1 DD UNIT=SYSDA,SPACE=(CYL,(1,1))
//*****
//* LKED *
//*****
//LKED EXEC PGM=IEWL,COND=(0,LT,ASM),
// PARM='SIZE=(256K,13K),LIST,LET,XREF,AC=1'
//SYSLIB DD DISP=SHR,DSN=$SCC.LINKLIB
//SYSLIN DD DISP=(OLD,DELETE),DSN=&&OBJ
//SYSLMOD DD DISP=SHR,DSN=$SCC.LINKLIB(FTSPMFEX)
//SYSPRINT DD SYSOUT=*
//SYSUT1 DD UNIT=SYSDA,SPACE=(CYL,(1,1)),CONTIG
```

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.

Before you begin

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) 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.

Chapter 5. Setting up Sterling Control Center to monitor Sterling Connect:Direct File Agent

Sterling Control Center can monitor the status and activity of Sterling Connect:Direct File Agents that submit processes to a Sterling Connect:Direct server that is managed by Sterling Control Center.

About this task

To set up Sterling Control Center to monitor Sterling Connect:Direct File Agent:

Procedure

1. Click **Control Center > System Settings**.
2. Click the **File Agent** tab.
3. Complete the following fields:
 - SNMP Listener Address
 - SNMP Listener Port
 - No Process Submitted Warning Time

For more information, see *Database settings field definitions* in *System Administration*.
4. For Sterling Control Center to monitor the Sterling Connect:Direct File Agent, you must set up the Sterling Connect:Direct managed server to which the Sterling Connect:Direct File Agent is to submit processes. To do so:

If you have not already added it, add the server to Sterling Control Center. For more information, see *Manage Servers* in *System Administration*.

When adding the server, make sure that **Do Not Monitor Associated File Agents** on the **Connection** tab of the Server Properties panel is unchecked. (Double-click the server's icon in the node tree on the console main window to display the server's properties.)
5. Set up an SLC to monitor the Sterling Connect:Direct File Agent. Choose among the following rules to set up an SLC to monitor the Sterling Connect:Direct File Agent. The rules are specific to Sterling Connect:Direct File Agent monitoring and are included in the rules that ship with Sterling 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 *Manage rules* in *System Administration*.

Chapter 6. About configuring events to process through Business Monitor

Before configuring IBM Sterling Control Center to emit JMS events to an MQ Broker, first set up your MQ Broker to accept the JMS events to the desired topic or queue. Then configure Sterling Control Center to emit the JMS events to the MQ Broker. After you configure this setup, you can then configure the IBM Business Monitor to subscribe to the topic or queue in the MQ Broker and receive the events.

After the events are received in Business Monitor, Monitor Models can be written to consume the events and capture the data you require. In order to configure the components necessary to process through WebSphere, you must have access to an IBM WebSphere MQ or ActiveMQ administrator with the knowledge and authority to set up the MQ Broker as well as an IBM Business Monitor administrator.

For more information on:

- Configuring WebSphere MQ, see WebSphere MQ System Administration SC33-1873.
- Configuring ActiveMQ, see the ActiveMQ website.
- Configuring WebSphere to access ActiveMQ, see the IBM developerWorks website.

Pre-configuration tasks

Before configuring Sterling Control Center to forward events to WebSphere, you must set up IBM MQ Broker or ActiveMQ to accept MQ messages sent from Sterling Control Center.

About this task

Follow these steps to complete the necessary pre-configuration tasks.

Procedure

- To set up IBM MQ Broker to accept MQ messages from Sterling Control Center, define the following components and authority:
 1. Topic where events will be published.
 2. Queue manager to use.
 3. Channel to use.
 4. Appropriate authority to the user ID running Sterling Control Center to allow Sterling Control Center to publish events to the topic.
- To configure ActiveMQ Broker to accept MQ messages from Sterling Control Center, do the following:
 1. Define the topic or queue.
 2. Obtain the correct user ID and password from the ActiveMQ Broker. The default is userid=system and password=manager.
 3. Make sufficient space available to store Sterling Control Center events as they are created.

Configuring Sterling Control Center to forward events to MQ Broker

It is possible to enable Sterling Control Center to forward events to MQ Broker.

About this task

In order to enable Sterling Control Center to forward events to MQ Broker, you must configure Sterling Control Center to emit its events by using a JMS service.

Procedure

- To enable this function on Microsoft Windows, go to the *installation directory\bin* directory. Then type the following command:
`configCC.bat`
- To enable this function on UNIX, go to the *installation directory\bin* directory. Then type the following command:
`configCC.sh`

Information required to publish an event to an IBM MQ Broker

You need specific information publish an event to an IBM MQ Broker.

About this task

To publish events to an IBM MQ Broker, gather the following information:

Procedure

- Hostname and port of the IBM MQ Broker.
- Name of the Queue Manager.
- Name of the IBM MQ Broker channel to use.
- Name of the topic.
- Time-to-live for the messages—How long the MQ message should stay in the queue or topic before it can be purged by the MQ Broker. The time is specified in milliseconds.
- Number of retries on a JMS failure.
- Wait time between retries.

Information required to publish an event to an ActiveMQ Broker

Specific information is required to publish an event to an ActiveMQ Broker.

About this task

To publish events to an ActiveMQ Broker, gather the following information:

Procedure

- Hostname and port of the ActiveMQ Broker.
- Queue or topic where event is published.
- Topic or queue subject.
- User ID and password to access the ActiveMQ Broker.
- If you want to embed the broker in Sterling Control Center, gather the following information:
 - Name of the embedded broker.

- Data directory where the MQ messages will be persisted.
- Time-to-live for the messages— How long the MQ message should stay in the queue or topic before it can be purged by the MQ Broker. The time is specified in milliseconds.
- Number of retries on a JMS failure.
- Wait time between retries.

Sample IBM MQ Broker configuration

Following is a sample configuration to enable IBM MQ Broker for use with Sterling Control Center:

```
Config step : JMS Configuration ...
-----
Do you want to configure JMS parameters(Y/N)?y
Are you sure(Y/N)?
Enable JMS Events(Y/N)? [n] : y
Enter JMS Type(IBM MQ/ActiveMQ). [IBM MQ] :
Enter JMS Hostname. [localhost] : host-ip-address
Enter JMS Port. [1414] :
IBM MQ Tracing(Y/N)? [n] :
Enter JMS Queue Manager Name. [] : MQ_QueueName
Enter JMS Channel. [] : MQ_Channel
Enter JMS Topic. [] : $SYS/Broker/MB7BROKER/Monitoring/SCC
Enter Time to Live (in milliseconds). [3600000] :
Enter Number of Retries on Connection Failure. [30] :
Enter Time to Wait between Retries (in seconds). [2] :
You provided these JMS configuration options:
JMS Type = IBM MQ
JMS Hostname = host-ip-address
JMS Port = 1414
JMS Trace = false
JMS Queue Manager Name = MQ_QueueName
JMS Channel = MQ_Channel
JMS Topic = $SYS/Broker/MB7BROKER/Monitoring/SCC
JMS Time to Live: 3600000
JMS Retries = 30
JMS Retry Wait = 2
Are these correct(Y/N)? [y] : y
```

Sample configuration for ActiveMQ

Following is a sample configuration to enable ActiveMQ Broker for use with Sterling Control Center:

```
Config step : JMS Configuration ...
-----
Do you want to configure JMS parameters(Y/N)?y
Are you sure(Y/N)?
Enable JMS Events(Y/N)? [n] : y
Enter JMS Type(IBM MQ/ActiveMQ). [IBM MQ] : activemq
Enter JMS Hostname. [localhost] : host-ip-address
Enter JMS Port. [1414] : 61616
Publish to a Queue(Y/N)? [n] : y
Enter JMS Subject. [] : SCC.INPUT
Enter JMS Userid. [] : system
Enter JMS Password (No Blanks).
Re-Enter JMS Password (No Blanks).
Embed the Broker?(Y/N)? [n] : n
Enter Time to Live (in milliseconds). [3600000] :
Enter Number of Retries on Connection Failure. [30] :
Enter Time to Wait between Retries (in seconds). [2] :
You provided these JMS configuration options:
JMS Type = IBM MQ
```

```
JMS Hostname = host-ip-address
JMS Port = 61616
JMS Publishing to Queue
JMS Queue = SCC.INPUT
JMS Userid = system
JMS Password = *****
JMS Broker Not Embedded
JMS Time to Live: 3600000
JMS Retries = 30
JMS Retry Wait = 2
Are these correct(Y/N)? [y] : y
```

Sample configuration of ActiveMQ with embedded broker

Following is a sample configuration to enable ActiveMQ Broker with embedded broker for use with Sterling Control Center:

Config step : JMS Configuration ...

```
-----
Do you want to configure JMS parameters(Y/N)?y
Are you sure(Y/N)?
Enable JMS Events(Y/N)? [n] : y
Enter JMS Type(IBMMQ/ActiveMQ). [IBMMQ] : activemq
Enter JMS Hostname. [localhost] : host-ip-address
Enter JMS Port. [1414] : 61616
Publish to a Queue(Y/N)? [n] : y
Enter JMS Subject. [] : SCC.INPUT
Enter JMS Userid. [] : system
Enter JMS Password (No Blanks).
Re-Enter JMS Password (No Blanks).
Embed the Broker?(Y/N)? [n] : y
Enter Broker Name. [] : SCC
Enter Data Directory. [] : C:\ActiveMQDataDirectory
Enter Time to Live (in milliseconds). [3600000] :
Enter Number of Retries on Connection Failure. [30] :
Enter Time to Wait between Retries (in seconds). [2] :
You provided these JMS configuration options:
JMS Type = IBMMQ
JMS Hostname = host-ip-address
JMS Port = 61616
JMS Publishing to Queue
JMS Queue = SCC.INPUT
JMS Userid = system
JMS Password = *****
JMS Broker Embedded
JMS Broker Name = SCC
JMS Data Directory = C:\ActiveMQDataDirectory
JMS Time to Live: 3600000
JMS Retries = 30
JMS Retry Wait = 2
Are these correct(Y/N)? [y] : y
```

Chapter 7. Starting and stopping Sterling Control Center

Start the Sterling Control Center engine

The IBM Sterling Control Center engine must be running for users and administrators to have access to the console and manage servers. In Microsoft 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.

Starting the engine manually on a UNIX operating system

You can start Sterling Control Center manually on the UNIX operating system by using `runEngine.sh`.

Procedure

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 *installation directory/bin*.
3. Type `sh runEngine.sh`.

Starting the engine automatically on UNIX

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

About this task

Use the following procedure to start the engine automatically on UNIX.

Procedure

Insert a command line into a startup file.

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

Starting the engine manually in Microsoft Windows

You can start the Sterling Control Center engine manually in Microsoft Windows using startup settings.

About this task

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

Procedure

- To start Sterling Control Center as a Microsoft Windows service, click **Start Control Panel > Administrative Tools > Services** to display the **Services** window, then right-click **IBM Sterling Control Center v5.4.1 Engine**, and click **Start**.

- From a command window (click **Start > All Programs > Accessories > Command Prompt**), change to the root directory, and type *install directory \IBM\ControlCenter\bin\ runEngine\$.exe*.
- In Microsoft Windows Explorer, double-click **runEngine\$.exe** in the *installation directory\IBM\ControlCenter\bin* directory.
- In Microsoft Windows Explorer, double-click **runEngine.bat** in the *installation directory\IBM\ControlCenter\bin* directory.

Manually starting the engine remotely in Microsoft Windows

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

Procedure

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 IBM Sterling Control Center v5.4.1 engine service to perform this function.

Changing the engine startup setting on Microsoft Windows

At installation, the engine is set to start automatically on Microsoft Windows. You can change the startup setting to start manually or automatically on Microsoft Windows whenever the engine's computer boots up.

Procedure

1. Click **Start > Control Panel > Administrative Tools > Services**.
The **Services** window is displayed.
2. Right-click **IBM Sterling Control Center v5.4.1 Engine** and select **Properties**.
3. Choose **Automatic** or **Manual** from the **Startup Type** list box.

Cold starting Sterling Control Center

It is possible to cold start your Sterling Control Center engine in order to avoid issues

About this task

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

Procedure

- On UNIX:
 1. Change the current working directory to the *installation directory\bin* directory.
 2. Type `sh runEngineCold.sh`.
- On Microsoft Windows:

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

Stopping the Sterling Control Center engine

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

About this task

Sterling Control Center checks to make sure that you have permission to issue a shutdown request before initiating shutdown. The following procedure gives instructions for stopping the engine and disconnecting Consoles:

Procedure

- To stop the engine and disconnect all Consoles from the Console, click **Control Center > Stop Sterling Control Center** and click **OK**.
- To stop only the Console, click **Control Center > Exit Console**.
- To stop only the engine on a Microsoft Windows computer, click **Start > Control Panel > Administrative Tools > Services**, then right-click the **IBM Sterling Control Center v5.4.1 Engine** program, and click **Stop**.

Note: You must manually stop WebSphere and Cognos processes. But before you do this, read *Cognos and liberty server considerations* in Release Notes to understand all ramifications.

- To stop the engine and disconnect all Consoles from a command line:

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

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

Chapter 8. Logging into Sterling Control Center

Logging in from the computer where the engine is installed

You can start the full-functioned IBM Sterling Control Center Console and log in to Sterling Control Center from the computer where the Sterling Control Center engine is installed.

Procedure

1. Ensure that the Sterling Control Center engine is running. Contact your system administrator if unsure.
2. Take one of the following actions:
 - Double-click the **Console-IBM Sterling Control Center v5.4** icon from the desktop.
 - In Microsoft Windows, click **Start > All Programs > IBM Sterling Control Center v5.4.1 > Console - IBM Sterling Control Center v5.4.1**.
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 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 was not configured for an HTTPS console-engine connection, this field cannot be selected. For more information about how to configure a secure connection, see *Configure a secure connection*. (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.

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

The IBM Sterling Control Center Console is displayed. The next time you log in, you will have to only enter your password. The rest of the information on the Login screen will be filled in from the information you entered previously.

Logging in through Java Webstart

You can start the console and log in to Sterling Control Center from any computer by using the IBM Sterling Control Center Launch Page. Starting the Console through Java Web Start from the IBM Sterling Control Center Launch Page gives you full Console functionality.

Procedure

1. In the Web address field of your Web browser, enter the host and port number for the IBM Sterling Control Center Launch Page. Contact your system administrator for these values.
2. From the Launch Page, click **IBM Sterling Control Center Console** (Small, Medium, Large, or Very Large configuration).
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 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. For more information about how to configure a secure connection, see *Configure a secure connection*. (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, change the password.

Note: If you experience access-time problems by using Java WebStart in Microsoft Windows, perform the following steps:

- a. Click **Start > Run**.
- b. Type `javaws -viewer` in the **Open** field and click **OK**.
- c. Select the **Direct Connection** option from the Java Control Panel Network Settings.

Note: Whenever you upgrade Sterling Control Center or install a patch, it is recommended that you empty your Webstart and browser cache. The IBM Sterling Control Center Console is displayed. The next time you log in, you will have to enter only your password. The rest of the information on the Login screen will be filled in from the information you entered previously.

Logging in through the web console

You can start the web console and log in to Sterling Control Center by using the IBM Sterling Control Center Launch Page.

About this task

The IBM Sterling Control Center Web Console gives access to many but not all of the console features without installing console-related files on your computer.

Procedure

1. In the web address field of your web browser, enter the host and port number for the IBM Sterling Control Center Launch Page. Contact your system administrator for these values. (The default secure port is 58083 while the default nonsecure port is 58082.)
2. From the Launch Page, click **IBM Sterling Control Center Web Console**.
3. On the login page that displays, type your user ID and password and click **Login**. The Sterling Control Center Web Console is displayed.

Tip: If a user attempts to log in multiple times, at the end of the log in process, a warning message displays. The message identifies the user ID and number of other logins by that user.

Reconnecting to the engine after a service interruption

If for any reason the IBM Sterling Control Center Console is disconnected from the Sterling Control Center engine, the system automatically attempts to reconnect.

Procedure

A Connection Lost message is displayed in the status bar and includes the time when the connection was lost. Next, when a pop-up window is displayed, you can choose to exit the application. 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.

Setting console preferences

Console preferences determine how time is displayed and how often monitors are automatically refreshed. These settings are associated with your user ID and are employed whenever you log in to Sterling Control Center. You can also enable screen readers for accessibility purposes.

About this task

The Time Preferences settings determine how time is displayed on the console and web console. Time preferences are set for all Sterling Control Center functions or information you select to view.

The Auto Refresh setting determines how often open monitors are automatically refreshed. (To access this setting, go to **Control Center > System Settings > Console > Default Console Auto Refresh System Setting in seconds**.)

Attention: The web console uses a minimum of 60 seconds if the auto refresh setting is less than 60 seconds.

The Enable Compatibility with Screen Reader setting enables screen readers to more effectively read information that is displayed in console columns. When this feature is enabled, the horizontal scroll bar is enabled for all columns. In addition, the first four or five columns are not locked as in the standard grid display.

The Console Timeout settings determine the number of minutes of inactivity before users are logged out of their console session. When the inactivity timeout is set, you can set the point at which a warning message opens prior to the user session log out.

Procedure

1. Click **Control Center > Console Preferences**.
2. Click the **Time Preferences** tab and select a time display:

Setting	Description
UTC	Displays the time in Coordinated Universal Time. (UTC is the accepted international acronym for Universal Time, Coordinated, which uses the same letters as the French acronym for Temps Universel Coordonné, TUC.) Important: Since UTC never changes for daylight saving time (DST), do not use UTC for your rule or SLC schedules. Otherwise, you must manually adjust your schedules to compensate for DST.
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, you can take one of the following actions: <ul style="list-style-type: none"> Manually select the correct time zone from the Specific Time Zone list box Adjust the time zone value of your system, 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 that is selected from the list box of standard time zones.

- Click **Update**. The new time preferences take effect immediately. For the web console, the setting does not take effect, until the user associated with the change logs out of the full-functioned console.
- Click **Auto Refresh Settings** and take one of the following actions:
 - To use the default system setting for all users, click **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.
- Click **Update**. The new auto refresh setting takes effect immediately. For the web console, the setting does not take effect until the user associated with the change logs out of the full-functioned console. Your web console session times out unless the **Auto Refresh** option is enabled.

Note: The auto refresh feature can be disabled for the web console for all users that belong to a particular role. To disable auto refresh:

- Click **Control Center > Roles**.
 - Double-click the role and select the **Permissions** tab.
 - Select the **None (Manual)** setting. If you select this setting, the web console sessions times out unless users click **Refresh**.
- To enable a screen reader, click the **Web UI Accessibility Settings** tab and select **Enable Compatibility with Screen Reader**. The new screen reader setting does not take effect until the user associated with the change logs out of the full-functioned console.
 - Click the **Console Timeout** tab and take one of the following actions:
 - To use the default system setting, click **Use System Setting**. To change the default system setting, see *Change system settings* in *System Administration*.
 - To set your own console timeout (and override System Settings), click **Change Console Timeout to** and type a value for the following settings:
 - Time out after *n* minute(s) of inactivity
 - Display warning message *n* minute(s) before timing out.

See *Console settings field descriptions* in *System Administration*.

8. Click **Update**.

Chapter 9. Configuring 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.

For more information, see *Database settings field definitions* in *System Administration*.

Configuring SMTP settings for email messages

In Sterling Control Center, you can create a rule to send an email based upon a system event. To send an email, you must first configure the Simple Mail Transfer Protocol (SMTP) settings during the Sterling Control Center installation. After installation, configure or re-configure email settings with the configCC utility.

About this task

To configure SMTP settings for email messages:

Procedure

- During installation, type values for the email settings when prompted.
- To configure email settings after installation, run the configCC utility. For more information, see *Changing engine settings after installation*.

Note: If you want to use a null user ID and password, enter a period (.) when prompted by the configCC utility.

Important: When using configCC to change email settings, you must also configure Cognos Business Intelligence server, even if nothing is changed in the Cognos Business Intelligence server configuration. This step is necessary because some of the email information goes into the Cognos Business Intelligence server configuration, which must be encrypted. This process is done in the Cognos Business Intelligence server portion of configuration using the configCC utility.

About SNMP settings

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

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

The configuration file named `SnmAdaptorWrapper.xml` controls the content of the SNMP traps that Sterling Control Center generates and the length of the traps. You can find the following sample file in *Installation Directory*\conf\services\jmx.

```

- <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>
    <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>
<SESSION.ADAPTER_NAME>0</SESSION.ADAPTER_NAME>
<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>
<serverMetaData1>0</serverMetaData1>
<serverMetaData2>0</serverMetaData2>
<serverMetaData3>0</serverMetaData3>
<serverMetaData4>0</serverMetaData4>
<serverMetaData5>0</serverMetaData5>
<serverMetaData6>0</serverMetaData6>
<serverMetaData7>0</serverMetaData7>
<serverMetaData8>0</serverMetaData8>
<serverMetaData9>0</serverMetaData9>
<serverMetaData10>0</serverMetaData10>
<fgActivityType>0</fgActivityType>
<FG.FILE_NAME>0</FG.FILE_NAME>
<FG.STATE>0</FG.STATE>
<FG.PROD_ORG_KEY>0</FG.PROD_ORG_KEY>
<FG.CONSOLE_ORG_KEY>0</FG.CONSOLE_ORG_KEY>
<FG.EVENT_CODE>0</FG.EVENT_CODE>
<FG.DATA_FLOW_ID>0</FG.DATA_FLOW_ID>
<SI.MESSAGE_ID>0</SI.MESSAGE_ID>
<QF.file>0</QF.file>
<QF.recipient.userEmail>0</QF.recipient.userEmail>
<QF.recipient.userId>0</QF.recipient.userId>
<QF.userEmail>0</QF.userEmail>
<QF.userId>0</QF.userId>
<QF.operation>0</QF.operation>
<QF.eventType>0</QF.eventType>
<QF.userRegistered>0</QF.userRegistered>
  </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 Sterling Control Center is 1024 bytes.

If the content of a trap generated by Sterling Control Center exceeds this length and an attempt is made to send the trap, an `SnmpStatusException` occurs and is written to the 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).

If the underlying computer network does not support traps of the length generated by Sterling 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 Sterling 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 Sterling 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. You must configure the SNMP hosts in Sterling Control Center.

About this task

To add an SNMP host:

Procedure

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 (that is, the address of the ESM).
 - **Port**—The optional one- to five-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.

Chapter 10. Changing system server group names

You can change system server group names by editing the `systemGroups.properties` file. However, you must change system server group names *before* you define other Sterling Control Center objects that reference system server groups.

About this task

If a system server group is referenced by a role object and the name is changed, the Sterling Control Center engine will not start. An error message (CROL009E) in the `EngineStartup` log shows the role object `.xml` file that references the old system server group name. The role object `.xml` file must be manually edited to the new name before the engine will start. Other objects (rules, metadata rules, DVGs, and SLCs) that reference the renamed system server group must be manually changed before they will become effective.

Observe the following guidelines when changing the name of a system server group:

- Never change system server group names if they are referenced by some other object, such as a report, an SLC, or a DVG.
- If you change the name of a system server group, be sure to give it a unique name. System server group names cannot match any user-defined server group.
- System server group names must meet the same naming conventions as other Sterling Control Center server groups:
 - They must be syntactically correct.
 - They must contain less than 51 characters.
 - They cannot contain the following characters: `& \ / : " ' < > | #`

To change the name of a system server group:

Procedure

1. In a text editor, open the `systemGroups.properties` file in *Installation Directory*\conf\servergroups\.
2. Edit the text after the equal sign (=) to change the system server group name.

CAUTION:

Each system server group must have a unique name. A system server group cannot have the same name as another system server group or a user-defined server group. If a naming conflict exists, the engine will not start until the conflict is resolved. If objects reference the old system server group name, edit the object properties to reference the new system server group name.

3. Save the file.

What to do next

To put the name changes into effect immediately, stop and restart the Sterling Control Center engine. Otherwise, the name changes are put into effect the next time you start the engine. Do not create Sterling Control Center objects that reference the system server groups until the engine is started (or restarted) and the changes put into effect. For more information, see *Resolving system server group naming conflicts* in *System Administration*.

Chapter 11. Determining Engine and Database Requirements

Sterling Control Center provides a variety of resources to assist you in sizing your engine and database.

Estimation tools

Several tools are provided to assist you in estimating a suitable platform configuration to run the Sterling Control Center engine. These tools collect information for calculating an appropriate database size, the number of processors (cores) you need, and the size of the database needed for your platform configuration.

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. The tools are described in the following table:

A Microsoft Excel spreadsheet version of the worksheets (SizingWorksheets.xls) are 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.

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 Sterling 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 Sterling Control Center implementation.

Database Sizing Worksheet

Assists you in properly sizing the database for your Sterling Control Center implementation.

Heap Sizing Worksheet

Assists you in determining the heap size required for your Sterling Control Center implementation.

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 Events Per Second Worksheet.

Event Counter Utility

Assists you in completing the *Events Per Second Worksheet* and the *Events Per Day Worksheet* to estimate average and peak number of events and processes for Sterling Connect:Direct servers in your environment.

High-level workflows for sizing the engine and database

Follow the high-level workflows for sizing the engine and the database.

Before you begin

If you need assistance when completing the Sterling Connect:Direct server information in the worksheets involved in these tasks, you can use the Event Counter Utility. For more information, see *About the event counter utility*.

Procedure

- To size the engine:
 1. Complete the *Events Per Second Worksheet*.
 2. Use the events per second value from line 61 of the *Events Per Second Worksheet*. Use the *Platform Configurations Table* to find a platform configuration that can support your Sterling Control Center engine.
- To size the database:
 1. Complete the *Events Per Second Worksheet* (if you did not complete it for sizing the engine). 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.

Calculating events per second

Use the *Events Per Second Worksheet* to calculate your estimated Sterling Control Center events per second.

A Microsoft Excel spreadsheet version of the *Events Per Second Worksheet* (*SizingWorksheets.xls*) is 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. Round any fractional amounts up to the next whole number.

After calculating the events per second (line 64), use the *Platform configurations table* to determine a platform configuration that can support at least this number.

Events Per Second Worksheet fields

This table describes the input fields on the *Events Per Second Worksheet*.

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

Line		Description
4	Number of events per average Sterling Connect:Direct Process	<p>A Sterling 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 monitored Sterling Connect:Enterprise servers	The number of Sterling Connect:Enterprise servers that you will monitor with Sterling Control Center.
8	Number of batches retrieved and added per Sterling Connect:Enterprise server in peak two-hour period	Use the output from cmureports to count the number of batches added and retrieved for a two-hour peak period.
11	Number of monitored Sterling Connect:Express servers	The number of Sterling Connect:Express servers that you will monitor with Sterling Control Center.
12	Number of files retrieved and added per Sterling Connect:Express server in a peak two-hour period	The number of files that a Sterling Connect:Express retrieves and adds during a peak two-hour period.
15	Number of monitored FTP servers	The number of FTP servers that you will monitor with Sterling Control Center.
16	Number of files sent/received per FTP server in a peak two-hour period)	The number of files sent/received per FTP server in a peak two-hour period.
19	Number of monitored MQ MFT servers	The number of MQ MFT servers that you will monitor with Sterling Control Center.
20	Number of files sent/received per MQ MFT server in a peak two-hour period	The number of files sent/received per MQ MFT server in a peak two-hour period.
23	Number of monitored QuickFile servers	The number of QuickFile servers that you will monitor with Sterling Control Center.
24	Number of files retrieved and added per QuickFile server in a peak two-hour period	The number of files sent/received per QuickFile server in a peak two-hour period.
27	Number of monitored Sterling B2B Integrator servers	The number of Sterling B2B Integrator servers that you will monitor with Sterling Control Center.
28	Number of Processes per Sterling B2B Integrator server in peak two-hour period	The number of processes that a Sterling B2B Integrator server runs during a peak two-hour period.

Line		Description
30	Number of events per average Sterling B2B Integrator Process	A Sterling B2B Integrator process consisting of 10 activities (including 3 file transfer activities) will generate 28 events: <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). Note: If not monitoring Sterling B2B Integrator business Processes, count each file transfer as a process that generates 4 events.
33	Number of monitored Sterling File Gateway servers	The number of Sterling File Gateway servers you will monitor with Sterling Control Center.
34	Number of files retrieved and added per Sterling File Gateway server in a peak two-hour period	The number of Sterling File Gateway files that will be retrieved/added in a peak two-hour period. Sterling Control Center.
36	Number of events per average Sterling File Gateway file	The number of events for an average Sterling File Gateway file.
39	Number of enabled SLCs	The number of enabled Sterling Control Center SLCs. Use 500 SLCs as an estimate.
41	Percentage of Sterling Connect:Direct Processes to which SLCs apply	Assume 50% of the processes.
43	Percentage of Sterling Connect:Enterprise batches to which SLCs apply	Assume 50% of the batches.
45	Percentage of Sterling Connect:Express files to which SLCs apply	Assume 50% of the files.
47	Percentage of FTP server files to which SLCs apply	Assume 50% of the files.
49	Percentage of MQ MFT server files to which SLCs apply	Assume 50% of the files.
51	Percentage of QuickFile files to which SLCs apply	Assume 50% of the files.
53	Percentage of Sterling B2B Integrator processes to which SLCs apply	Assume 50% of the processes.
55	Percentage of Sterling File Gateway files to which SLCs apply	Assume 50% of the files.
57	Number of enabled rules	The number of enabled Sterling Control Center rules. Use 500 rules as an estimate.
58	Percentage of Events that rules that match (used in Database Sizing Worksheet)	
60	Number of attached consoles	The numbers of consoles that will connect to the Sterling Control Center engine.
62	Number of attached Web consoles	The number of Web consoles that will attach to the Sterling Control Center engine.

Events Per Day Worksheet

Use the *Events Per Day Worksheet* to calculate your estimated Sterling Control Center events per day to properly size the database.

A Microsoft Excel spreadsheet version of the *Events Per Day Worksheet* (SizingWorksheets.xls) is available in the installation directory on the computer where the Sterling Control Center engine is installed. The worksheets included in the SizingWorksheets.xls file 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*. Many of the values that you need to provide in this worksheet are found on the *Events Per Second Worksheet*. Complete the *Events Per Second Worksheet* before you complete the *Events Per Day Worksheet*. Round any fractional amounts up to the next whole number.

Events Per Day Worksheet fields

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

Line		Description
2	Average number of Processes per Sterling Connect:Direct server in peak 24-hour period	The number of Processes that a Sterling Connect:Direct server runs during a peak 24-hour period. You can use the Event Counter Utility to get this number or run a series of Sterling Connect:Direct SELECT STATISTICS commands for a 24-hour period to obtain the number.
7	Average number of batches retrieved and added per Sterling Connect:Enterprise server in peak 24-hour period	Use the output from cmureports to count the number of batches added and retrieved for a 24-hour peak period.
11	Average number of files retrieved and added per Sterling Connect:Express server in a peak 24-hour period	The number of files that a Sterling Connect:Express server retrieves or adds in a peak 24-hour period.
15	Average number of files sent/received per FTP server in a peak 24-hour period	The number of files sent/received per FTP server in a peak 24-hour period.
19	Average number of files sent and received per MQ MFT server in a peak 24-hour period	The number of files sent/received per MQ MFT server in a peak 24-hour period.
23	Average number of files retrieved and added per QuickFile server in a peak 24-hour period	The number of files that a QuickFile server retrieves or adds in a peak 24-hour period.
27	Average number of Processes per Sterling B2B Integrator server in peak 2-hour period	The number of processes that a Sterling B2B Integrator server runs during a peak 24-hour period.
32	Average number of files per Sterling File Gateway server in a 24-hour period	The number of Sterling File Gateway files that will be retrieved/added in a 24-hour period.

Calculating database size

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.

A Microsoft Excel spreadsheet version of the *Database Sizing Worksheet* (SizingWorksheets.xls) is available in the installation directory on the computer where the Sterling Control Center engine is installed. This spreadsheet contains formulas for calculating database size based on the values you enter. Round any fractional amounts up to the next whole number.

Determining a suitable platform configuration

Use the *Platform Configurations Table* to determine a platform configuration for Sterling Control Center.

Use the value from line 64 of the *Events per second worksheet* 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
Microsoft Windows	2.13 GHz	1	607
Microsoft Windows	3.20 GHz	4	927
Microsoft Windows (64-bit)	2.40 GHz	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
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

Attention: 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 sample calculation uses the *Events Per Second Worksheet* to calculate an events per second value that can be used together with the *Events Per Day Worksheet* to determine a sample platform configuration for the Sterling Control Center engine.

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

- Four Sterling Connect:Direct servers
- One Sterling Connect:Enterprise server
- One Sterling Connect:Express server
- One Sterling B2B Integrator server
- 5,000 Processes per Sterling Connect:Direct server in a peak two-hour period
- 10,000 batches added or retrieved per Sterling Connect:Enterprise server in a peak two-hour period

- 7,500 business processes per Sterling Connect:Express server in a peak two-hour period
- 7,500 business processes per Sterling B2B Integrator server in a peak two-hour period
- 10 events per average Sterling Connect:Direct Process
- 34 events per average Sterling B2B 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
- 50 percent of files 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 following Events Per Second worksheet sample results in the following events per second value:

Row	Product and criteria or calculation	Value	Result of calculation (if applicable)
1	Sterling Connect:Direct Number of monitored Sterling Connect:Direct servers	4	
2	Number of Processes per Sterling Connect:Direct server in a peak two-hour period	5,000	
3	Multiply line 1 by line 2		20,000
4	Number of events per average Sterling Connect:Direct Process	10	
5	Multiply line 3 by line 4		200,000
6	Divide line 5 by 7200 (number of events per second)		28
7	Sterling Connect:Enterprise: Number of monitored Sterling Connect:Enterprise servers	1	
8	Number of batches retrieved and added per Sterling Connect:Enterprise server in a peak two-hour period	10,000	
9	Multiply line 7 by line 8		10,000
10	Divide line 9 by 1800 (number of events per second)		6
11	Sterling Connect:Express: Number of monitored Sterling Connect:Express servers	1	
12	Number of lines retrieved and added per Sterling Connect:Express server in a peak two-hour period	7,500	
13	Multiply line 11 by line 12		7,500
14	Divide line 13 by 1800 (number of events per second)		5

Row	Product and criteria or calculation	Value	Result of calculation (if applicable)
15	FTP Servers: Number of monitored FTP servers		
16	Number of files sent/received per FTP server in a peak two-hour period)		
17	Multiply line 15 by line 16		0
18	Divide line 17 by 1800 (number of events per second)		0
19	MQ MFT Servers: Number of monitored MQ MFT servers		
20	Number of files sent/received per MQ MFT server in a peak two-hour period		
21	Multiply line 19 by line 20		0
22	Divide line 21 by 1800 (number of events per second)		0
23	QuickFile: Number of monitored QuickFile servers		
24	Number of files retrieved and added per QuickFile server in a peak 2-hour period		
25	Multiply line 23 by line 24		0
26	Divide line 25 by 1800 (number of events per second)		0
27	Sterling B2B Integrator: Number of monitored Sterling B2B Integrator servers	1	
28	Number of Processes per Sterling B2B Integrator server in a peak two-hour period	7,500	
29	Multiply line 27 by line 28		7,500
30	Number of events per average Sterling B2B Integrator Process	34	
31	Multiply line 29 by line 30		255,000
32	Divide line 31 by 7200 (number of events per second)		36
33	Sterling File Gateway: Number of monitored Sterling File Gateway servers		
34	Number of files retrieved and added per Sterling File Gateway server in a peak two-hour period		
35	Multiply line 33 by line 34		0
36	Number of events per average Sterling File Gateway file		
37	Multiply line 35 by line 36		0
38	Divide line 37 by 7200 (number of events per second)		0
39	Service Level Criteria (SLCs): Number of enabled SLCs	500	
40	Multiply line 39 by 0.12		60

Row	Product and criteria or calculation	Value	Result of calculation (if applicable)
41	Percentage of Sterling Connect:Direct Processes to which SLCs apply	50	
42	Multiply line 3 by line 41 and divide by 180,000		6
43	Percentage of Sterling Connect:Enterprise batches to which SLCs apply	50	
44	Multiply line 9 by line 43 and divide by 180,000		3
45	Percentage of Sterling Connect:Express files to which SLCs apply	50	
46	Multiply line 13 by line 45 and divide by 180,000		3
47	Percentage of FTP server files to which SLCs apply	50	
48	Multiply line 17 by line 47 and divide by 180,000		0
49	Percentage of MQ MFT server files to which SLCs apply	50	
50	Multiply line 21 by line 49 and divide by 180,000		0
51	Percentage of QuickFile files to which SLCs apply	50	
52	Multiply line 25 by line 51 and divide by 180,000		0
53	Percentage of Sterling B2B Integrator Processes to which SLCs apply	50	
54	Multiply line 29 by line 53 and divide by 180,000		3
55	Percentage of Sterling File Gateway files to which SLCs apply	50	
56	Multiply line 35 by line 55 and divide by 180,000		0
57	Rules: Number of enabled rules	500	
58	Percentage of Events that rules match (used in Database Sizing Worksheet)	10	
59	Multiply line 57 by line 58 and multiply by 0.03		150
60	Consoles: Number of attached Consoles	1	
61	Multiply line 60 by 13.00		13
62	Number of attached Web Consoles	2	
63	Multiply line 62 by 6.00		12
64	Effective Events per Second Factor: Total lines 6, 10, 14, 18, 22, 26, 32, 38, 40, 42, 46, 48, 50, 52, 54, 56, 59, 61, 63		325
65	Peak database events per second: Total lines 6, 10, 14, 18, 22, 26, 32, 38, 40, 42, 46, 48, 50, 52, 54, 56	90	
66	Peak database statistics per second: Total lines 6, 10, 14, 22, 26	39	

Row	Product and criteria or calculation	Value	Result of calculation (if applicable)
67	Actual Peak database inserts per second (used in Database Sizing Worksheet): Total of lines 65, 66		129

Based on the calculated events per second value from line 64, which is 325, and the *Events per day worksheet*, one can see that any of the listed platform configurations can handle the sample engine requirements.

Calculating heap size

Use the Heap Size Worksheet to calculate heap size for the Sterling Control Center engine.

A Microsoft Excel spreadsheet version of the *Heap Size Worksheet* (SizingWorksheets.xls) is available in the installation directory on the computer where the Sterling Control Center engine is installed. The worksheets included in the SizingWorksheets.xls file 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 *Heap Size Worksheet*. Some of the values that you need to provide in this worksheet are found on the *Events Per Second Worksheet*. Complete the *Events Per Second Worksheet* before you complete the *Heap Size Worksheet*. Round any fractional amounts up to the next whole number.

Heap Size Worksheet fields

The following table describes the input fields on the *Heap Size Worksheet*.

Line		Description
2	Number of simultaneous pollers	Defaults to 7. You can set this number using the <simulataneousCdPollers> tag in the CCEngineService.xml file located in <i>installation directory\conf</i> .
5	Maximum number of configuration jobs in any 2 hour period	If unsure, use 10.
6	Average number of servers affected by each configuration job	If unsure, use number of Sterling Connect:Direct servers * .10.
7	Heap size required for configuration jobs affected by each configuration job	If unsure, use 200.

If the value in line 9 is greater than 1,500, a 64-bit installation is required. See *Administrative Troubleshooting in System Administration* for information on making the maximum heap size changes.

Event Counter Utility

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 Sterling Control Center.

This utility goes through the following process when counting Sterling Connect:Direct events:

- Reads an input file that contains connection information for one or more Sterling Connect:Direct servers
- Connects to each Sterling Connect:Direct server sequentially
- Issues a SELECT STATISTICS with the particular record IDs that generate Sterling Control Center events
- 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 Sterling Control Center event for each platform.

To assist you in planning your Sterling Control Center implementation, you can run the Event Counter Utility before fully installing Sterling Control Center. For more information, see *Running the Event Counter Utility before installing Sterling Control Center*. You can use this utility to determine whether your platform is sufficient for the version of Sterling Control Center you plan to use.

Use the following high-level process in assessing your environment:

- Run the Sterling Control Center installation program on any platform supported by Sterling Control Center, but do not configure Sterling Control Center when prompted.
- Run the Event Counter Utility as outlined in *Running the Event Counter Utility*.
- Input the values calculated by the utility in the *Events Per Second Worksheet*. (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.)
- After you complete the Events Per Second Worksheet, consult the *Platform Configurations Table* to determine whether your platform can support Sterling Control Center in your environment.
- If your platform cannot support Sterling Control Center, install Sterling Control Center on another platform. If your platform can support Sterling Control Center, run **configCC.sh** when you are ready to configure Sterling Control Center and to complete the installation.

Input

The Event Counter Utility connects Sterling 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*. You can edit the default file with a text editor or a spreadsheet program 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
prodrhel504000, 123.456.789.6,3422,useridc,passwordc, , C:D UNIX
```

Output

This is the sample output from the Event Counter Utility.

Note: For each Sterling 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 Sterling Connect:Direct Server type and Server name are displayed. When all Sterling 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
Sterling Connect:Direct for Windows, Server name = SERVERTEST
```

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

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

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

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

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

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

```
Connecting to 123.456.789.6;3422
Sterling 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

Messages are produced by the Event Counter Utility for common errors.

The following messages are displayed:

- If the statRecordIds file cannot be found:
Cannot find statRecordIds file

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

- If the input file that contains 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 Sterling 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 user ID 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 Sterling Connect:Direct servers, then processing continues, but a warning is displayed before the results:
Warning: Could not connect to nn servers out of nn.

Running the event counter utility

You can run the event counter utility to assist you in determining the platform necessary to monitor servers with Sterling Control Center.

About this task

To run the event counter utility:

Procedure

1. Download the Sterling Control Center installer for your platform from IBM Support Portal.
2. Navigate to the location of the downloaded installer.
3. Start the installation:
 - On Microsoft Windows, go to a cmd prompt and enter the following command:
CCInstall.exe -i console (or CCInstall64.exe -i console)
 - On non Microsoft Windows, go to a cmd shell and enter the following command:
sh CCInstall.bin -i console (or sh CCInstall64.bin -i console)
4. Enter the Installation directory.
5. After installation is complete, ignore the message about running configCC.

6. Navigate to *installation directory/bin*.
7. To run the utility, you can execute the batch file, `runEventCounter.bat`, or run one of the following scripts in *installation directory/bin*:
 - On Microsoft Windows, go to a cmd prompt and enter:


```
runEventCounter
```
 - On UNIX or zLinux, go to a cmd shell and enter:


```
sh runEventCounter.sh
```

Results

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. The default is 30 days. The maximum is 60 days.
<filename>	Input file that contains comma-separated values with connection information for Sterling 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 quotation marks. The default file name is <code>EventCounter.csv</code> in the directory where the utility is run.

The following code sample illustrates the use of these optional parameters:

```
runEventCounter 30 EventCounter.csv
```

Running the event counter utility before installing Sterling Control Center

The event counter utility can be run before installing Sterling Control Center to assist you in determining the platform necessary to monitor servers.

About this task

To run the event counter utility before installing Sterling Control Center:

Procedure

1. Download the Sterling Control Center installer for your platform.
2. Navigate to the location of the downloaded installer.
 - For Microsoft Windows, go to a cmd prompt and type one of the following commands:


```
CCInstall.exe -i console
```

```
CCInstall64.exe -i console
```

Note: This command line prompts you to accept the license and the directory for the installation.
 - For non Microsoft Windows, go to a cmd shell and type one of the following commands:


```
sh CCInstall.bin -i console
```

```
sh CCInstall64.bin -i console
```

3. Accept the license.
4. After installation is complete, ignore the message about running the configCC utility.
5. Navigate to the /bin directory.
6. To run the Event Counter Utility:
 - For Microsoft Windows, go to a cmd prompt and type:
runEventCounter
 - For non Microsoft Windows, go to a cmd shell and type:
sh runEventCounter sh

What to do next

For more information, see *Running the Event Counter Utility*.

Chapter 12. Database FAQ

Type of data stored

These are frequently asked questions about data storage in Sterling Control Center.

- 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 Sterling Control Center console.

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

- Sterling Connect:Direct, Sterling Connect:Enterprise, File Transfer Protocol (FTP), QuickFile, Sterling Connect:Express, MQ MFT, and Sterling B2B 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

- 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: Response time problems have been reported when the production or staging database grows to 10,000,000 rows or more.

- 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.

- 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

These are frequently asked questions about database maintenance and archiving.

- 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. See the IBM Sterling Control Center Database Partitioning paper for more details on partitioning.

If your database does not 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 set up automated staging and purging of the Sterling Control Center databases, there are instances when you might want to manually archive or purge them.

Note: Avoid manually archiving and purging databases because the Sterling Control Center engine does not “know” when data is removed except when the engine is restarted.

- 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 of data in the Sterling Control Center production database and two weeks in the production or staging database is normally sufficient. Response time problems can occur when the staging database is above the 10,000,000 row mark.

- How do I take advantage of Sterling 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 *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.

- 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 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 an Oracle database, the staging database must also be an Oracle database).

Connectivity

These are frequently asked questions about connectivity.

- How does Sterling Control Center access the database servers?

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

- What are the database servers that Sterling Control Center supports?

For the list of supported databases, see System Requirements.

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

No, you have to obtain the required JDBC drivers for your databases. 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).

- How many database connections are created by Sterling Control Center?

Sterling 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. Sterling 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 *installation 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, change the “true” value to “false” and substitute a new value between <maxpool> and </maxpool>.

Note: Sterling 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 Sterling Control Center could be forced to compete for database connections. This in turn could affect Sterling Control Center performance.

Configuration

These are frequently asked questions about database configuration.

- Can I install the production and staging databases on the same computer where Sterling Control Center is installed?

For optimal performance, install the Sterling Control Center databases on dedicated servers separate from the one on which the Sterling Control Center engine is installed.

- Should I set up database replication for the Sterling Control Center databases?

It is not necessary. All the Sterling Control Center configuration data is stored where Sterling Control Center is installed.

- What kind of hardware configuration is recommended for the database servers? Follow the guidelines provided by the database vendor.

- 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 the *Database sizing worksheet* to calculate your requirements.

- 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 Sterling Control Center engine. Sterling Control Center consoles do not directly connect to the database servers.

- What can affect Sterling Control Center database performance?

If you run a large number of reports against the production database from outside of Sterling Control Center, this could affect performance.

- What kinds of database operations are performed on the Sterling Control Center databases?

The Sterling Control Center engine issues SQL insert, update, delete, and select queries against the databases (primarily inserts and updates).

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