Gentran Integration Suite™

Connect:Direct Server Adapter User Guide

Version 4.2

Sterling Commerce
An IBM Company

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Chapter 1

About Connect:Direct and Sterling Integrator Interoperability

Sterling Integrator enables a business to define business processes in a software application and route data between enterprise systems using different protocols and formats.

Connect:Direct is a peer-to-peer data transfer application that uses a proprietary protocol to exchange data between Connect:Direct servers.

The Connect:Direct Server adapter is a component of Sterling Integrator that allows Sterling Integrator to act like a Connect:Direct server, sending and receiving data using the Connect:Direct protocol. The Connect:Direct Server adapter enables you to use files from a Connect:Direct server in a Sterling Integrator business process and to create business processes that exchange files with a Connect:Direct server.

Connect:Direct and Sterling Integrator Processes

Connect:Direct and Sterling Integrator each have their own version of a process. Connect:Direct uses a Process statement to initiate a session with another Connect:Direct node and then uses specific statements to perform tasks and make requests on that node.

Sterling Integrator uses business process services to initiate a session with another Connect:Direct node to perform tasks and make requests on that node. It is possible to use Sterling Integrator business processes to handle complex processes such as order fulfillment, invoicing, inventory, and other processes that require data exchange and business integration.

These business processes enable you to transfer your files, or business documents, to internal processing activities and to trading partners, exchanges, and customers.

Business Processes and Mailboxes

You can copy files from a Connect:Direct node directly to a Sterling Integrator business process or mailbox. Sterling Integrator business processes utilize services and adapters, such as the

Connect:Direct Server adapter and related services, in a sequence of steps to achieve business goals. The Sterling Integrator Mailbox is a business document repository that enables you to organize, store, and manage trading partner documents and transactions.

Although staging and scheduling of data transmission is present to varying degrees in numerous applications and infrastructure components, it is beneficial to centralize the definition, operation, management, and control of this staging and scheduling. In Sterling Integrator, these capabilities are centralized in the Mailbox.

You can set up mailboxes within Sterling Integrator so that files copied over to Sterling Integrator are stored and retrieved later. When the files are stored in a mailbox, they are referred to as messages. You can also use mailbox routing rules to initiate business processes in Sterling Integrator based on messages that are stored in a mailbox.

Using Connect:Direct Server Adapter Services in a Business Process

The Connect:Direct Server adapter provides a suite of B2B services to establish communication between Sterling Integrator and Connect:Direct.

Using these services, you can create business processes to perform the same tasks performed with Connect:Direct Processes and with Connect:Direct commands.

The Connect:Direct Server services correspond to the Connect:Direct Process Language. These services work with the Connect:Direct Server adapter. These services are used when the Connect:Direct Server adapter is the PNODE.

The services created specifically for use with Connect:Direct are described in sample workflows in this user guide. These workflows demonstrate how each service is used within a business process.

The Connect:Direct Server adapter supports the following services:

- Connect:Direct Server Begin Session Service
- Connect:Direct Server BP Response Service
- Connect:Direct Server CopyFrom Service
- Connect:Direct Server CopyTo Service
- Connect:Direct Server End Session Service
- Connect:Direct Server Run Job Service
- Connect:Direct Server Run Task Service
- Connect:Direct Server Submit Service

Purpose of the User Guide

The User Guide describes how to perform common user tasks with the Sterling Integrator Connect:Direct Server adapter and remote Connect:Direct servers. These tasks include:

- *Use Connect:Direct to Copy a File to a Sterling Integrator Mailbox* on page 21
- *Use Connect:Direct to Copy a File to a Sterling Integrator Business Process* on page 25
- *Use Connect:Direct to Pull a File from Sterling Integrator* on page 33
- *Use Sterling Integrator to Copy a File to Connect:Direct* on page 43
- *Use Sterling Integrator to Copy a File from Connect:Direct* on page 51
- *Add Error Handling to Sterling Integrator Business Process* on page 59
- *Add Secure+ Option* on page 67
- *Use Sterling Integrator to Submit a Connect:Direct Process* on page 73
- *Use Sterling Integrator to Start a Connect:Direct Run Job* on page 81
- *Use Sterling Integrator to Start a Connect:Direct Run Task* on page 89
- *Hide the Connect:Direct Password in the Business Process* on page 97

Requirements

Interoperability between Sterling Integrator and Connect:Direct has the following system requirements:

Supported Connect:Direct Versions

The following versions of Connect:Direct support interoperability with Sterling Integrator:

- Connect:Direct for Windows 4.2 or later
- Connect:Direct for UNIX 3.7 or later
- Connect:Direct for z/OS 4.6 or later
- Connect:Direct HP NonStop 3.3 or later
- Connect:Direct Select 1.0 or later

Supported Sterling Integrator Versions

Sterling Integrator versions 4.2 or later support interoperability with Connect:Direct.

Chapter 2

Setup Procedures

Before you can transfer files or initiate processes between Connect:Direct servers and the Sterling Integrator Connect:Direct Server adapter, perform the following:

- *Create Connect:Direct and Sterling Integrator User IDs* on page 13
- *Configure a Sterling Integrator Netmap Entry* on page 13
- *Configure a Sterling Integrator Connect:Direct Server Adapter* on page 17
- *Add Connect:Direct Server Adapter Node to Connect:Direct Netmap* on page 19

Create Connect:Direct and Sterling Integrator User IDs

Your Sterling Integrator administrator must create a Sterling Integrator User ID for you. The administrator must give this User ID permission to execute Sterling Integrator business processes that you copy files to or from. When you create your Connect:Direct processes, use this Sterling Integrator User ID as the SNODEID of the Process statement.

Your Connect:Direct administrator must create a Connect:Direct user account and give this account permission to copy files, submit processes, perform Run Jobs, and perform Run Tasks on the Connect:Direct node. When you create your Sterling Integrator business processes, use this Connect:Direct user account as the remote Connect:Direct User ID.

Configure a Sterling Integrator Netmap Entry

A node is a Connect:Direct server. Two Connect:Direct servers (local and remote) function together to perform data transfers. Either node can initiate the work by submitting a Process.

During the transfer of data, the Connect:Direct server where the Process is initiated is the primary node (PNODE) and the secondary node (SNODE) is the partner node.

When a session is established, the node that initiates the session is the PNODE regardless of the direction of information flow. The other is the SNODE. The Process can specify work destined for either the PNODE or SNODE.

Note: Sterling Integrator can be a Connect:Direct local or remote node and can function as a PNODE or an SNODE.

The Connect:Direct Server adapter configuration identifies the remote nodes that it can communicate with through the use of a network map, called a netmap.

When you create a Connect:Direct Server adapter, you must specify a netmap.

Sterling Integrator version 4.3 and earlier does not support Sterling Integrator netmaps. In Sterling Integrator version 4.3 and earlier, you specify remote Connect:Direct nodes in the Connect:Direct Server adapter configuration. In Sterling Integrator version 5.0 and later, you specify a netmap in the Connect:Direct Server adapter.

In Sterling Integrator version 5.0 and later, you can configure a netmap in Sterling Integrator from the Administration menu by selecting Deployment > Adapter utilities > C:D Netmaps.

From this menu, you can configure:

- Connect:Direct Nodes
- Connect:Direct Netmaps
- Connect:Direct Netmap cross-references (X-REF)

Note: If you make changes to an existing netmap, you must disable and re-enable the Connect:Direct Server adapter for the changes to take effect.

Connect:Direct Nodes

Create a Connect:Direct node definition for each remote Connect:Direct node that communicates with the Sterling Integrator Connect:Direct Server adapter.

Use the following procedure to create a new Connect:Direct node:

1. From the Administration menu, select Deployment > Adapter Utilities > C:D Netmaps > C:D Nodes.
2. In the Create Nodes pane, click Go!. The Create Nodes page appears.

Field	Value to Enter	Description
Connect:Direct Server Node Name	Type the node name for the Connect:Direct server.	Name that will be used to identify the Connect:Direct server. Required.
Connect:Direct Server Host	Type the host name or IP address for the Connect:Direct server.	Required.

Field	Value to Enter	Description
Connect:Direct Port	Type the host port number for the Connect:Direct server.	TCP/IP port number that Connect:Direct monitors for requests from remote nodes. Required.
Max locally initiated (pnode) sessions allowed	During testing, set this value to 100 so that you do not run out of sessions. After testing, if you require more than 5 locally initiated concurrent sessions with remote Connect:Direct nodes, enter the estimated number of sessions. Otherwise, accept the default value of 5	Maximum number of sessions the Connect:Direct Server adapter may have active at any time. Required. May be overridden at the node level. If a node-level value is configured, the effective session limit is the smaller of the two values: the limit for the adapter and the session limit for the remote node. Valid value: Any number up to 9999. Minimum value is 1. Default is 5.
Max remotely initiated (snode) sessions allowed	During testing, set this value to 100 so that you do not run out of sessions. After testing, if you require more than 5 remotely initiated concurrent sessions with remote Connect:Direct nodes, enter the estimated number of sessions. Otherwise, accept the default value of 5.	Maximum number of sessions from remote nodes that may be active at any point of time. Required. May be overridden at the node level. If a node-level value is configured, the effective session limit is the smaller of the two values: the limit for the adapter and the session limit for the remote node. Valid value: Any number up to 9999. Minimum value is 1. Default is 5.
Secure+ Option	Accept the default setting (Disabled) until you start using Secure+. Files are not encrypted during copy operations.	Valid if Netmap Override=Yes at the Connect:Direct Server adapter. Indicate if you want to disable or enable encryption. Required. Valid values are: ◆ Disabled (default) ◆ Enabled

3. Click Next. The Confirm page appears.
4. Review your configuration settings and click Finish.

Connect:Direct Netmaps

Once you have defined at least one Connect:Direct node you want to use, you can create a netmap. When you configure a Connect:Direct Server adapter, you must specify the netmap you want to use rather than the individual Connect:Direct nodes you want to communicate with. The individual Connect:Direct nodes are associated with netmaps with cross references. This arrangement is very flexible and allows you to:

- ✦ Define each Connect:Direct node one time no matter how many Connect:Direct Server adapters you have.
- ✦ Use the same netmap for multiple Connect:Direct Server adapters.
- ✦ Create specialized netmaps for different Connect:Direct Server adapters.

Use the following procedure to create a new Connect:Direct netmap:

1. From the C:D Netmaps menu, select C:D Netmaps. The C:D Netmaps page appears.

2. In the Create New Netmap pane, click Go!. The Create Netmap page appears.

Field	Value to Enter	Description
Netmap Name	Type the Connect:Direct netmap name.	Required. **Note:** If you maintain multiple Connect:Direct Server adapters, you can use the same name for the netmap and Connect:Direct Server adapter for easier administration.
Netmap Description	Type the netmap description.	Required.

3. Click Next. The Confirm Page appears.
4. Review your configuration settings and click Finish.

Connect:Direct Netmap Cross-References

You can reuse nodes for a netmap or several netmaps by setting up a cross reference so you don't have to create a new node for each Connect:Direct Server adapter.

Use the following procedure to create a new netmap cross reference:

1. From the C:D Netmaps menu, select C:D Netmap X-REF.
2. In the Create or Modify Netmap Cross Reference pane, click Go!. The Create Cross Reference page appears.

Field	Value to Enter	Description
C:D Netmap Name	Select the Connect:Direct netmap name that you created in *Connect:Direct Netmaps* on page 15.	Select the Connect:Direct Netmap name. Required.
Add Node	Click the plus sign to add a Node Name to the cross-reference. A new window appears, allowing you to select the Connect:Direct Node Name(s). Select the node name that you created *Connect:Direct Netmaps* on page 15.	

3. Click Next. The Confirm page appears.
4. Review your configuration settings and click Finish.

Configure a Sterling Integrator Connect:Direct Server Adapter

The Sterling Integrator Connect:Direct Server adapter functions as both PNODE and SNODE in the Connect:Direct network, initiating and responding to Connect:Direct transfer requests. Configuring a Connect:Direct Server adapter is similar to configuring a Connect:Direct server.

Use the following procedure to configure a Connect:Direct Server adapter in Sterling Integrator:

1. From the Deployment menu, select Services > Configuration.
2. Click Go in the Create New Service pane.
3. In the Service Type box, type Connect:Direct Server Adapter and click Next.
4. Configure the following fields for this scenario. Accept default values for all other fields. For more information about all Connect:Direct Server adapter fields, refer to the Sterling Integrator online documentation.

Field	Value to Enter	Description
Name	Type a unique name for the Connect:Direct Server adapter configuration.	Required. **Note:** Name is the adapter name, not the node name. However, in Sterling Integrator business processes, Name is the CDLocalNodeName. To avoid confusion, use the same value for both Name and Connect:Direct Server Node Name in your Connect:Direct Server adapter configuration.
Description	Type a description for the Connect:Direct Server adapter configuration.	Required
Connect:Direct Server Node Name	Type the node name to use to identify this Connect:Direct Server adapter. Best practice is to use the same value as the Name field.	Maximum 16 characters. This node name must match the Connect:Direct netmap entry for the Connect:Direct Server adapter. Required.
Connect:Direct Server Port	Type the listening port number for the Connect:Direct Server adapter. Make sure you select a port number that is not in use by another application.	TCP/IP port number that Connect:Direct Server adapter monitors for requests from remote nodes. Required. **Note:** If your application is installed on a UNIX operating system, do not select ports in the range 1-1024. These are normally reserved by the operating system.

Field	Value to Enter	Description
Max locally initiated (pnode) sessions allowed	During testing, set this value to 100 so that you do not run out of sessions. After testing, if you require more than 5 locally initiated concurrent sessions with remote Connect:Direct nodes, enter the estimated number of sessions. Otherwise, accept the default value of 5. If you need to specify session limits for each node, set this value at the highest anticipated number of total, locally initiated sessions and then specify node limits in the netmap.	Maximum number of sessions the Connect:Direct Server adapter may have active at any point in time. Required. May be overridden at the node level. If a node-level value is configured, the effective session limit is the smaller of two values: the limit for the adapter and the session limit for the remote node. Valid value: Any number through 9999. Minimum value is 1. Default is 5.
Max remotely initiated (snode) sessions allowed	During testing, set this value to 100 so that you do not run out of sessions. After testing, if you require more than 5 remotely initiated concurrent sessions with remote Connect:Direct nodes, enter the estimated number of sessions. Otherwise, accept the default value of 5. If you need to specify session limits for each node, set this value at the highest anticipated number of total, remotely initiated sessions and then specify node limits in the netmap.	Maximum number of sessions from remote nodes that may be active at any point in time. Required. May be overridden at the node level. If a node-level value is configured, the effective session limit is the smaller of two values: the limit for the adapter and the session limit for the remote node. Valid value: Any number through 9999. Minimum value is 1. Default is 5.
Netmap Check	For testing purposes, select the default (No).	Whether the node netmap should be checked to authorize sessions. Required values are: ◆ Check both node name and IP address—Searches the Connect:Direct Server adapter network map for an entry corresponding to the node name of the remote client. If one exists, the IP address is obtained and compared to the IP address of the remote node making the request. ◆ Check node name only—Searches the Connect:Direct Server adapter network map for an entry corresponding to the node name of the remote client. ◆ No (default)—Disables netmap validation.
Netmap	Select the netmap name you created in *Connect:Direct Netmaps* on page 15.	

Field	Value to Enter	Description
Encryption using Secure+	Select the default setting (Disabled) until you start using Secure+.	Whether Secure+ is enabled. Required. Valid values are Enabled and Disabled. Default is Disabled.

5. On the Confirm page, review your configuration settings, select Enable Service for Business Processes and click Finish.

   This will complete the Connect:Direct Server adapter configuration and start the adapter.

Add Connect:Direct Server Adapter Node to Connect:Direct Netmap

On your Connect:Direct server, add the Sterling Integrator Connect:Direct Server adapter node information to your Connect:Direct netmap with the following settings:

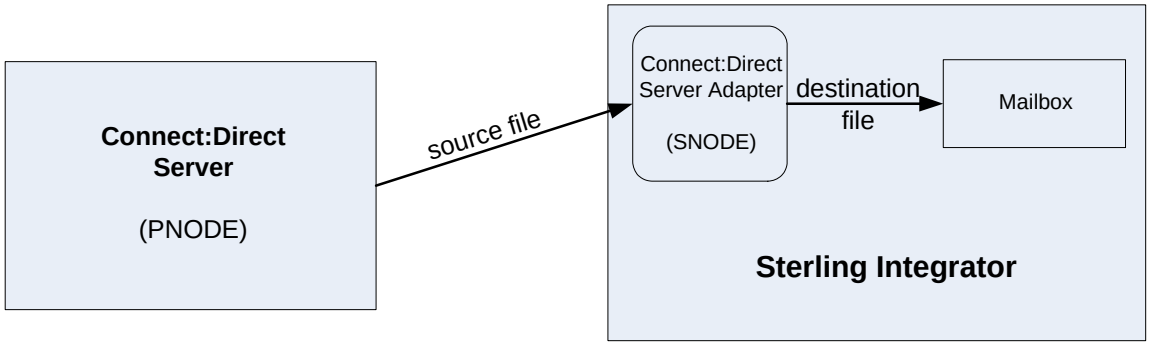
Parameter	Value
Node Name	The node name of the Sterling Integrator Connect:Direct Server adapter.
Operating System	The operating system for your Sterling Integrator system.
Host/IP Address	Host or IP address of your Sterling Integrator system
Port/Service	Port/Service of your Sterling Integrator Connect:Direct Server adapter
Mode Override	Mode1
Selected Communication Path	TCPCommPath

Chapter 3

Use Connect:Direct to Copy a File to a Sterling Integrator Mailbox

This chapter describes how to copy a file from a Connect:Direct server (PNODE) to a Sterling Integrator Connect:Direct Server adapter (SNODE). The Connect:Direct Server adapter passes this file to a Sterling Integrator Mailbox.

You can set up a mailbox rule so that a document copied to a mailbox triggers a Sterling Integrator business process. For more information about mailbox rules, refer to the Sterling Integrator online documentation.



Use the following workflow to copy a file from a Connect:Direct server to a Sterling Integrator mailbox:

- *Create a Sterling Integrator Mailbox* on page 22
- *Create Your Connect:Direct Process* on page 23
- *Submit and Monitor Your Connect:Direct Process* on page 23

Create a Sterling Integrator Mailbox

When you copy a file from Connect:Direct to Sterling Integrator, you must copy to a Sterling Integrator business process or mailbox. In this scenario, you copy a document to a mailbox.

Note: You do not create a virtual root for your mailbox in this workflow. If you need to create a virtual root for your mailbox, refer to the Sterling Integrator online documentation.

Use the following procedure to create and configure the Sterling Integrator mailbox:

1. Log in to Sterling Integrator.
2. From the Deployment menu, select Mailboxes > Configuration.
3. On the Mailbox Configuration page, click Go! in the Create a new Mailbox pane.
4. On the Mailbox Name page, highlight the forward-slash in the Select pane.

   Note: If you are required to specify a virtual root for your mailbox, highlight the mailbox or mailbox path in the Select pane for your virtual root.

5. In the Name box, type the name of your mailbox.
6. In the Description box, type a short description for your mailbox and click Next.
7. On the Assign Groups page, click Next.
8. On the Assign Users page, select your Sterling Integrator User ID in the Available Users pane and click the right-arrow to move your User ID to the Selected Users pane.
9. Click Next.
10. On the Confirm page, click Finish to create your mailbox.

Create Your Connect:Direct Process

Create the following Connect:Direct process:

```
COPY2MB PROCESS
  SNODE=yourCDSANode
  SNODEID=(yourUserID,password)

STEP1 COPY
  FROM (
  FILE=yourSourceFile
  )
  TO (
  FILE=/mailbox/yourMailbox/yourDestinationFile
  DISP=RPL
  )

PEND
```

This Connect:Direct process copies *yourSourceFile* from your Connect:Direct server to the Sterling Integrator Connect:Direct Server adapter, which passes the document to your mailbox. There are three parts to the destination FILE name in this Copy step:

- /mailbox/ is a reserve word and signals to Sterling Integrator that you are copying to a Mailbox.
- *yourMailbox* includes the name of your Sterling Integration Mailbox.
- *yourDestinationFile* is the document that is passed to your mailbox by the Connect:Direct Server adapter. This document is stored in the mailbox. This document can be retrieved by an FTP client, business process or another Connect:Direct process.

Submit and Monitor Your Connect:Direct Process

Submit the Connect:Direct process.

Monitor with Connect:Direct

You can use Connect:Direct Select Statistics to monitor your Connect:Direct to Sterling Integrator processes.

If the Connect:Direct process is successful, the Select Statistics detail will report the following:

Attribute	Value
Message ID	SCPA000I
Message Text	Copy operation successful
Destination File	/mailbox/*yourMailbox*/*yourDestinationFile*

If the Connect:Direct process is not successful, refer to *Troubleshooting* on page 145.

View the Mailbox Document in Sterling Integrator

You can view *yourDestinationFile* in your mailbox with Sterling Integrator.

Use the following procedure to view your mailbox document with Sterling Integrator:

1. From the Deployment menu, select Mailboxes > Messages.
2. On the Message Management page, select Filter by Name to display the Available Mailboxes pane.
3. In the Available Mailboxes pane, scroll down and highlight /*yourMailbox* and click the down-arrow to move /*yourMailbox* to the Selected Mailboxes pane.
4. Click Go! to display the search results.

   Information about the *yourDestinationFile* document is displayed, including Document ID, Created date, Size, Mailbox, Extract Policy, Policy Value, and whether this document is locked by a business process.

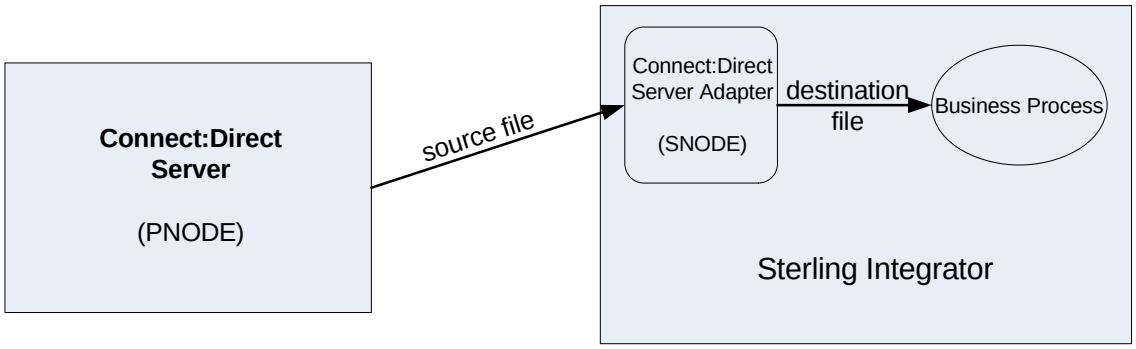
   In this example, *yourDestinationFile* has an Extraction Policy of Extractable. This means that users can extract this document from /*yourMailbox* an unlimited number of times with no expiration date and time. You can change the extraction policy for *yourDestinationFile* by clicking on the Edit link. If you need to change the extraction policy for documents you copy to mailboxes using Connect:Direct, edit your Connect:Direct Server adapter configuration for Extractability.

Note: You can also monitor your Connect:Direct process from the Business Process menu by navigating to Monitor > Advanced Search > Documents or Monitor > Advanced Search > Communication Sessions.

Chapter 4

Use Connect:Direct to Copy a File to a Sterling Integrator Business Process

This chapter describes how to use Connect:Direct to copy a file to Sterling Integrator. In this scenario, the Connect:Direct server is the PNODE and the Sterling Integrator Connect:Direct Server adapter is the SNODE. The Connect:Direct Server adapter receives the file and passes it to a business process.



Use the following workflow to copy a file from Connect:Direct to a Sterling Integrator business process:

- *Create a Sterling Integrator Business Process* on page 25
- *Check Your Business Process into Sterling Integrator* on page 27
- *Create Your Connect:Direct Process* on page 28
- *Submit and Monitor Your Connect:Direct Process* on page 29

Create a Sterling Integrator Business Process

When you copy a file from Connect:Direct to Sterling Integrator, you must copy to a Sterling Integrator business process or mailbox. In this scenario, you are copying a document to a business process. This business process contains a service that provides information about the source file.

Use the Sterling Integrator Graphical Process Modeler to create and modify business processes. Individual services and adapters are represented by icons in the Modeler.

Use the following procedure to create the Sterling Integrator business process:

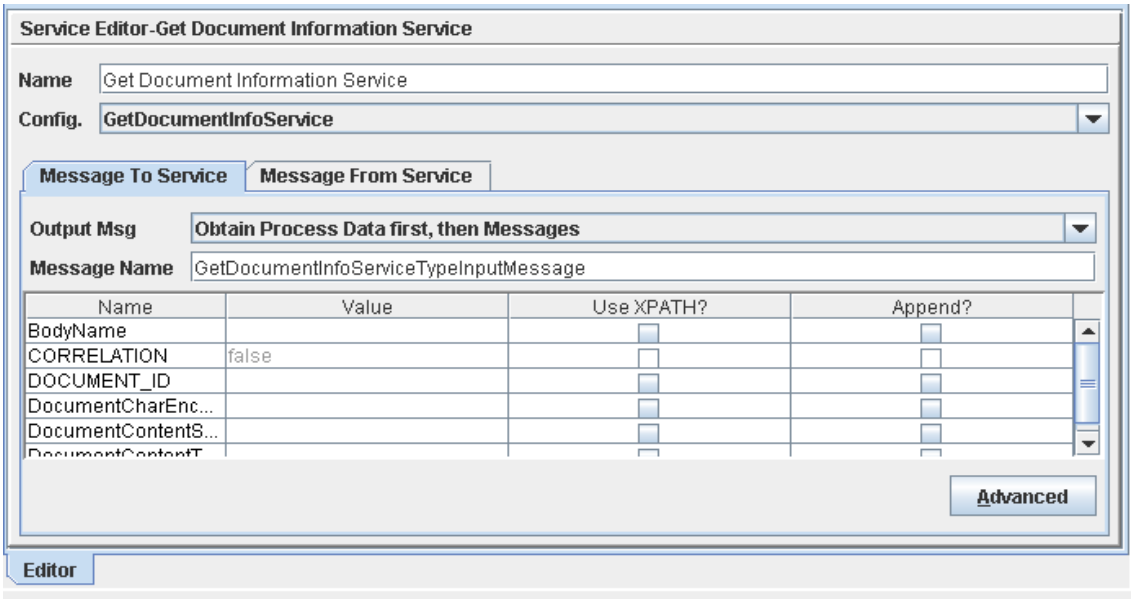
1. Log in to Sterling Integrator and launch the Graphical Process Modeler from the Home screen.
2. Enter your Sterling Integrator User ID and password in the Log In dialog box.
3. From the View menu, select Stencil > BPML. This will add the BPML stencil to the GPM.

   The BPML stencil contains BPML icons to use in your business processes.
4. From the View menu, select Stencil > Sync Mode. This will add the Sync Mode stencil to the GPM.

   The Sync Mode stencil contains an icon you will need in your business processes.
5. From the File menu, select New to open a new business process.
6. Drag and drop the following icons from the BPML and Sync Mode stencils into the Business Process window in the following order, from left to right:
   - Start
   - Get Document Information Service
   - End
7. To link the icons:
   a. Click the arrow on the right side of the Start icon and drag it to the arrow on the left side of the Get Document Information Service icon.
   b. Click the arrow on the right side of the Get Document Information Service icon and drag it to the arrow on the left side of the End icon.

All business processes begin with a Start icon and end with an End icon. In this business process, the Get Documentation Information Service provides information about the primary document.

8. Configure the Get Document Information Service using the following procedure:
   a. Double-click the Get Document Information Service icon. This opens the Service Editor window.
   b. In the Service Editor-Get Documentation Information Service window, select GetDocumentInfoService from the Config drop-down list.



   In this step you specify the pre-defined GetDocumentInfoService configuration for the Get Document Information Service. You can override configuration values in the Service Editor.
9. From the File menu, select Save. In the Validate dialog box, click Yes to validate the business process.
10. On the Save dialog box, type the business process file name in the File Name box and click Save.

    Remember where you save this file.

Note: To see a sample business process, refer to *Sample Business Process: Copy a File from Connect:Direct to Sterling Integrator* on page 105.

Check Your Business Process into Sterling Integrator

Use the following procedure to check the business process into Sterling Integrator:

1. Log in to Sterling Integrator.

2. From the Business Process menu, select Manager.
3. On the Business Process Manager page, in the Create Process Definition pane, click Go!.
4. Type the name of your business process in the Name box.
5. Under Select an input mode for defining the new process, select Check in Business Process created by the graphical modeling tool and click Next.
6. On the Check-in page, click Browse and navigate to the business process file name that you saved in step 10 of the previous procedure.
7. Type a short description for your business process in the Description box and click Next.
8. On the Process Levels page, select the Set onfault processing check box.
9. Set the Persistence Level to Full.
10. Set the Event Reporting Level to Full and click Next.
11. On the Deadline Settings page, click Next.
12. On the Life Span page, click Next.
13. On the Confirm page, select the Enable Business Process box.
14. Select the Create Permission box.

    This adds the business process to the list of Sterling Integrator security permissions. This makes it possible to assign permission for this business process to the user account.
15. Click Finish.

Note: The Sterling Integrator administrator must assign your Sterling Integrator User ID permission to run this business process.

Create Your Connect:Direct Process

Create the following Connect:Direct process:

```
COPY2SI PROCESS
  SNODE=yourCDSANode
  SNODEID=(yourUserID,password)

STEP1 COPY
  FROM (
  FILE=yourSourceFile
  )
  TO (
  FILE=/businessprocess/yourBusinessProcess/yourDestinationFile
  DISP=RPL
  )

PEND
```

This Connect:Direct process copies *yourSourceFile* from your Connect:Direct server to the Sterling Integrator Connect:Direct Server adapter, *yourCDSANode*, which invokes your business process. The SNODEID, *yourUserID*, is your Sterling Integrator User ID. There are three parts to the destination FILE name in this Copy step:

- /businessprocess/ is a reserve word and signals to Sterling Integrator that you are copying to a business process.
- *yourBusinessProcess* is the name of the Sterling Integration business process that the Connect:Direct Server adapter invokes.
- *yourDestinationFile* is the name of the document that is passed to the business process by the Connect:Direct Server adapter. This document becomes the Primary Document in the *yourBusinessProcess* business process. The primary document is the document that the services in a business process act on or in relation to; this is usually the document passed to a business process by the initiating adapter.

Submit and Monitor Your Connect:Direct Process

Submit the Connect:Direct process.

Monitor with Connect:Direct

You can use the Connect:Direct Select Statistics to monitor your Connect:Direct to Sterling Integrator processes.

If the Connect:Direct process is successful, the Select Statistics detail will report the following:

Attribute	Value
Message ID	SCPA000I
Message Text	Copy operation successful
Destination File	/businessprocess/*yourBusinessProcess*/*yourDestinationFile*

If the Connect:Direct process is not successful, refer to *Troubleshooting* on page 145.

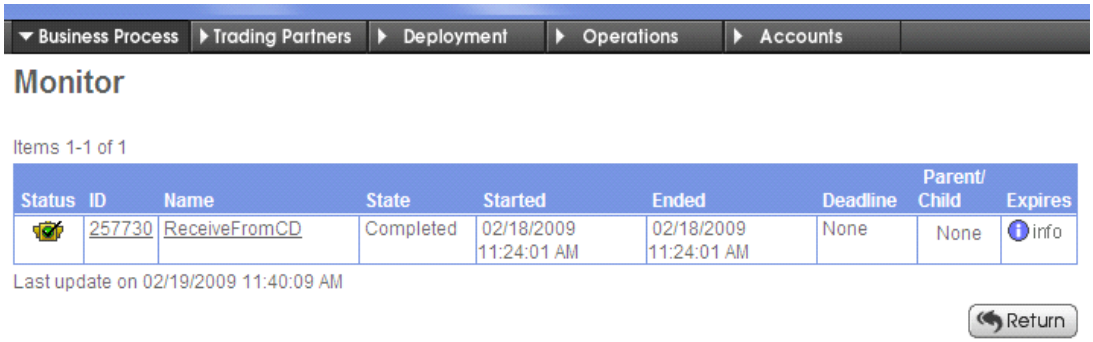
Monitor with Sterling Integrator

You can also use Sterling Integrator to monitor your Connect:Direct to Sterling Integrator processes.

Use the following procedure to monitor your Connect:Direct process with Sterling Integrator:

1. From the Business Process menu, select Monitor > Advanced Search > Business Processes.

2. In the Search Using Business Process Name pane, select *yourBusinessProcess* in the Business Processes list and click Go!.

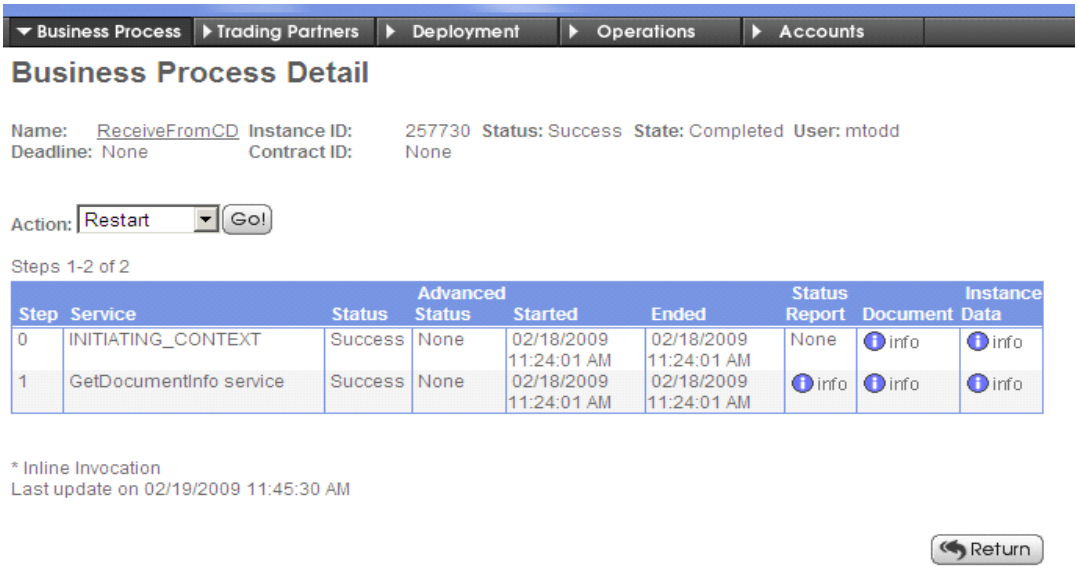


The Monitor page displays the following information:

Label	Description
Status	Status of the business process—a green traffic light signals a successful execution
ID	The business process ID number
Name	The business process name
State	The current state of the business process

If the Status indicates unsuccessful execution, refer to *Troubleshooting* on page 145.

3. Click the ID number to see details about the business process execution.



The Business Process Detail page displays the following information:

Label	Description
Step	The business process step number
Service	The Sterling Integrator service name used in the step
Status	The status of the step
Advanced Status	Additional status information
Started	The time and date the step started
Ended	The time and date the step ended
Status Report	A link to the status report for the step
Document	A link to documents in use by the step
Instance Data	A link to process data for the step

4. Click the Document info link for Step 1, GetDocumentInfo service.

   The PrimaryDocument page displays the contents of the Primary Document, *yourDestinationFile*.

5. Close the PrimaryDocument page.
6. From the Business Process Detail page, click the Instance Data info link for Step 1, GetDocumentInfo service.

The Process Data page displays process data for the business process. The data is presented in XML format as shown:

```
<?xml version="1.0" encoding="UTF-8"?>
<ProcessData>
  <PrimaryDocument SCIObjectID="oxnard:node1:11efefe9db6:26492407"/>
  <CDServerNodeData>
    <RemoteFileName>C:\source.txt</RemoteFileName>
    <PnodeName>CDWIN</PnodeName>
    <LocalFileName>/businessprocess/ReceiveFromCD/dest.txt</LocalFileName>
    <SnodeName>SI50CD</SnodeName>
  </CDServerNodeData>
  <BodyName>dest.txt</BodyName>
  <BodyLength>5</BodyLength>
  <DocumentBodyLength>5</DocumentBodyLength>
  <DocumentLength>5</DocumentLength>
  <DocumentName>dest.txt</DocumentName>
  <DocumentId>oxnard:node1:11efefe9db6:26492400</DocumentId>
...
</ProcessData>
```

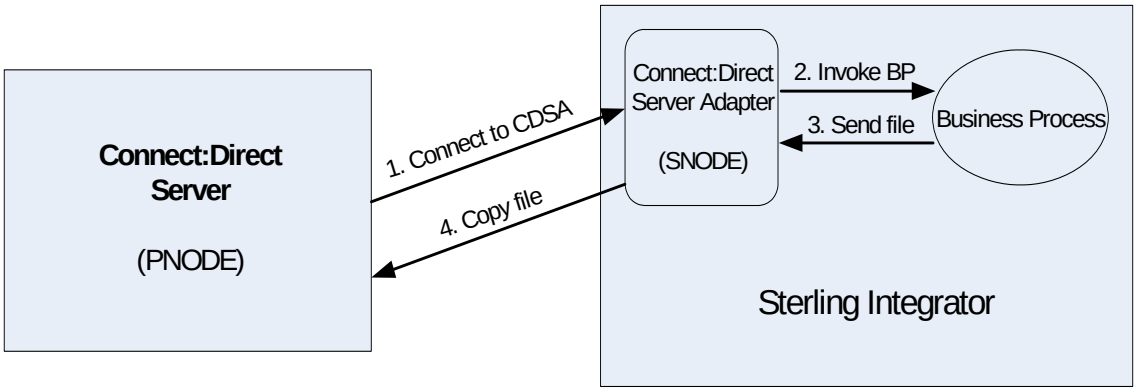
In this example, the Get Document Information Service puts information about the Primary Document, such as the BodyName and BodyLength, into process data.

Note: You can also monitor your business processes from the Business Process menu by navigating to Monitor > Advanced Search > Documents or Monitor > Advanced Search > Communication Sessions.

Chapter 5

Use Connect:Direct to Pull a File from Sterling Integrator

This chapter describes how to pull a file from a Sterling Integrator Connect:Direct Server adapter (SNODE) using the Connect:Direct node (PNODE). The Connect:Direct node connects to the Sterling Integrator Connect:Direct Server adapter which invokes a business process. This business process passes a document back to the Connect:Direct Server adapter which sends the file back to the Connect:Direct node.



Use the following workflow to pull a file from Sterling Integrator to a Connect:Direct server:

- *Configure a File System Adapter* on page 34
- *Create a Sterling Integrator Business Process* on page 36
- *Check Your Business Process into Sterling Integrator* on page 38
- *Create Your Connect:Direct Process* on page 39
- *Submit and Monitor Your Connect:Direct Process* on page 39

Configure a File System Adapter

Use the File System Adapter within a Sterling Integrator business process to collect a file from the Sterling Integrator file system. Use the following procedure to create the directory and file for the File System Adapter:

1. Create a collection directory on the Sterling Integrator file system.
2. Create a source file in the collection directory.
3. Add the some text to the file so that you can verify that Connect:Direct pulls the correct file.
4. Create an extraction directory on the Sterling Integrator file system.

   An extraction directory is required to configure a File System Adapter configuration, but it is not used to extract files in this example.

Before you can use the File System Adapter in a business process, create a configuration of the adapter in Sterling Integrator. Use the following procedure to configure a File System Adapter:

1. Log in to Sterling Integrator and navigate to Deployment > Services > Configuration.
2. On the Services Configuration page, click Go! in the Create New Service pane.
3. In the Service Type box, type File System Adapter and click Next.

Field	Value to Enter	Description
Name	Type a unique name for the File System Adapter service configuration.	Required.
Description	Type a meaningful description for the File System Adapter service configuration.	Required.
Collection folder	Specify the collection folder you created above.	The name of the folder or subfolder on the same computer where Application is installed and where it collects (or picks up) files as part of a business process. If the path of the folder is not included as part of the name, the folder is assumed to be in the Application working directory.

Field	Value to Enter	Description
Filename filter	Specify the filter to match the file you created in the collection folder above.	Collect only files that match a specified filter within the collection folder. Optional. Examples include: ◆ *.txt (collects only .txt files) ◆ *.dat (collects only .dat files) ◆ EDI.* (collects only files named EDI with any file extension) ◆ EDI.txt (collects only files named EDI with a file extension of .txt) **Note:** If there are multiple files in the collection folder and you leave this field blank, one of the following occurs: ◆ If the adapter is configured to start a business process, it processes all files in the collection folder. ◆ If the adapter is within a business process, it collects only the first file in the folder.
Collect files from subfolders within and including the collection folder?	Select No for this scenario so that the File System Adapter does not collect files from subfolders of the collection folder.	Whether to scan for files in subfolders of the collection folder. Required. Valid values: Yes—Collects files in the specified folder and all subfolders. No—Collects files in the specified folder only.
User absolute file path name for the document name?	Select No for this scenario so that the document name does not include the path name.	Whether to keep the absolute path name of the files collected when assigning the document name. Required. Valid values: Yes—The absolute file path name is kept with the document in the business process. Choose this value if your business process requires the path information to precede the file name. No—Only the file name is kept with the document in the business process.
Start a business process once files are collected?	Select No for this scenario. Since you use the File System Adapter within a business process, there is no need to start another business process.	Whether to start a business process using the File System adapter after files are collected. Required. Valid values: Yes—Starts the business process specified from the business process drop-down list. No—No business process will be started.
Extraction folder	Select No for this scenario. The File System Adapter collects a file, but does not write (extract) a file in this scenario.	The name of the folder or subfolder on the same computer where Application is installed and where it installs (or writes) data from the primary document as part of a business process. If you do not include the file path for the folder as part of the name, the folder is assumed to be in the Application working directory. Required.

4. Click Finish to save the configuration.

Create a Sterling Integrator Business Process

When you use Connect:Direct to pull a file from Sterling Integrator, you invoke a Sterling Integrator business process. This business process contains a CD Server BP Response Service that sends the primary document back to Connect:Direct.

In this example, the business process uses a File System adapter to collect a file from the Sterling Integrator file System. This file becomes the primary document in the business process. The CD Server BP Response Service then sends the primary document to the Connect:Direct node via the Connect:Direct Server adapter.

Use the following procedure to create the Sterling Integrator business process:

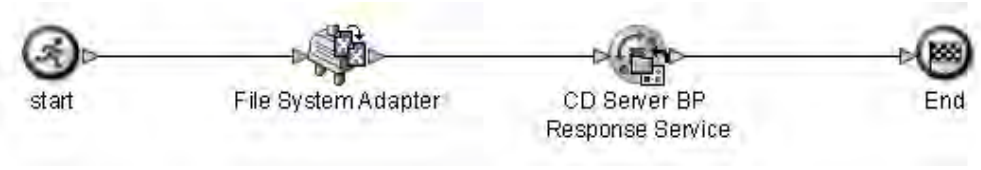
1. Log in to Sterling Integrator and launch the Graphical Process Modeler from the Home screen.
2. Enter your Sterling Integrator User ID and password in the Log In dialog box.
3. If the BPML stencil is not visible in the GPM, navigate to the View menu and select Stencil > BPML.

   This will add the BPML stencil to the GPM.
4. If the Sync Mode stencil is not visible in the GPM, navigate to the View menu and select Stencil > Sync Mode.

   This will add the Sync Mode stencil to the GPM.
5. From the View menu, select Stencil > Applications > Sterling Commerce > Connect:Direct.

   This will add the Connect:Direct stencil to the GPM. The Connect:Direct stencil contains an icon you will need in your business processes.
6. From the File menu, select New to open a new business process.
7. Drag and drop the following icons from the BPML, Sync Mode, and Connect:Direct stencils into the Business Process window in the following order, from left to right:
   - Start
   - File System Adapter
   - CD Server BP Response Service
   - End
8. To link the icons:
   a. Click the arrow on the right side of the Start icon and drag it to the arrow on the left side of the File System Adapter icon.
   b. Click the arrow on the right side of the File System Adapter icon and drag it to the arrow on the left side of the CD Server BP Response Service icon.

c. Click the arrow on the right side of the CD Server BP Response Service icon and drag it to the arrow on the left side of the End icon.

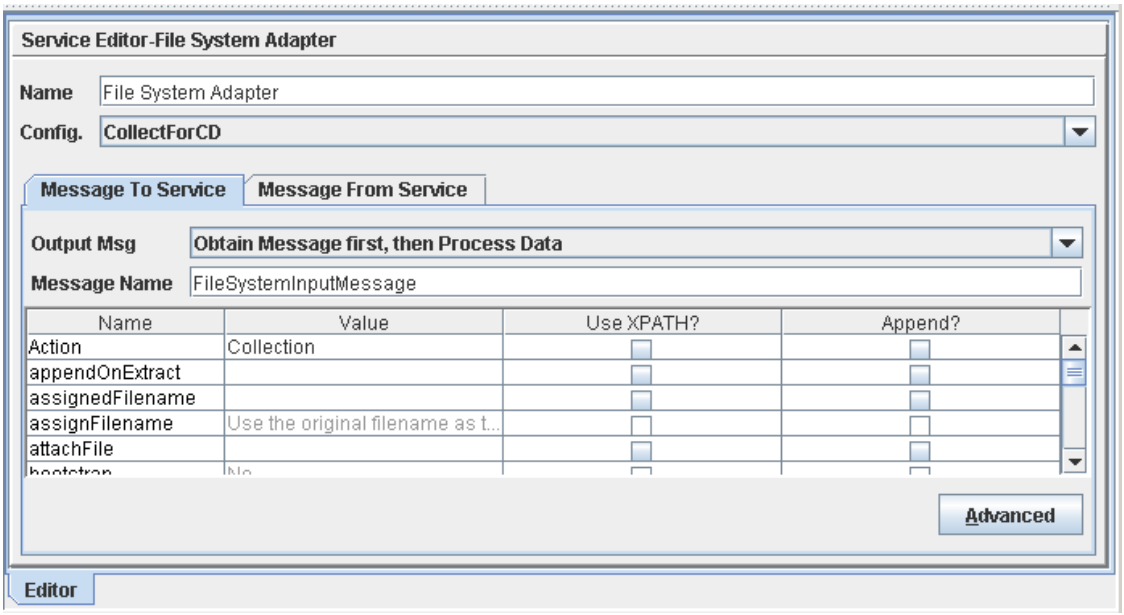


9. Configure the File System Adapter using the following procedure:
   a. Double-click the File System Adapter icon.
   b. In the Service Editor-File System Adapter window, select your File System Adapter configuration from the Config drop-down list. The Message To Service tab is displayed.

      In this step you specify the configuration that you created for the File System Adapter. You can override configuration values in the Service Editor.
   c. On the Message to Service tab, select Collection as the Value for Action.

      This causes the File System Adapter to collect files from the collection folder.
   d. Select No as the Value for deleteAfterCollect.

      If deleteAfterCollect is set to Yes, the File System Adapter deletes the files in the collection folder after it collects them. When you are testing this business process, keep this value set to No so that you don't have to replace the source file after each test run.



10. Configure the CD Server BP Response Service using the following procedure:
    a. Double-click the CD Server BP Response Service icon.

       This opens the Service Editor window.

    b. In the Service Editor-CD Server BP Response Service window, select CDServerBPResponse from the Config drop-down list.

       In this step you specify the pre-defined CDServerBPResponse configuration for the CD Server BP Response Service. You can override configuration values in the Service Editor.
11. From the File menu, select Save. In the Validate dialog box, click Yes to validate the business process.
12. On the Save dialog box, type the name of your business process in the File Name box and click Save.

    Remember where you save this file.

Note: To see a sample business process, refer to *Sample Business Process: Pull a File from Sterling Integrator to Connect:Direct* on page 106.

Check Your Business Process into Sterling Integrator

Use the following procedure to check the business process into Sterling Integrator:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. On the Business Process Manager page, in the Create Process Definition pane, click Go!.
4. Type your business process name in the Name box.
5. Under Select an input mode for defining the new process, select Check in Business Process created by the graphical modeling tool and click Next.
6. On the Check-in page, click Browse and navigate to the business process file that you saved in step 12 of the previous procedure.
7. Type a short description of the business process in the Description box and click Next.
8. On the Process Levels page, select the Set onfault processing check box.
9. Set the Persistence Level to Full.
10. Set the Event Reporting Level to Full and click Next.
11. On the Deadline Settings page, click Next.
12. On the Life Span page, click Next.
13. On the Confirm page, select the Enable Business Process box.

14. Select the Create Permission box.

    This adds the business process to the list of Sterling Integrator security permissions. This makes it possible to assign permission for this business process to the user account.

15. Click Finish.

Create Your Connect:Direct Process

Create the following Connect:Direct process:

```
PULLFILE PROCESS
  SNODE=yourCDSANode
  SNODEID=(yourUserID,password)

STEP1 COPY
  FROM (
  FILE=/businessprocess/yourBusinessProcess/yourSourceFile
  SNODE
  )
  TO (
  FILE=yourDestinationFile
  PNODE
  DISP=RPL
  )

PEND
```

This Connect:Direct process retrieves *yourSourceFile* from the Sterling Integrator Connect:Direct Server adapter which receives the file from your business process. There are three parts to the FROM FILE name in the Copy step:

- /businessprocess/ is a reserve word and signals to Sterling Integrator that you are invoking a business process.
- *yourBusinessProcess* is the name of the Sterling Integration business process that the Connect:Direct Server adapter invokes.
- *yourDestinationFile* is the name of the document that is passed from the Sterling Integrator Connect:Direct Server adapter to your Connect:Direct node. This document is the Primary Document in your business process.

Submit and Monitor Your Connect:Direct Process

Submit the Connect:Direct process.

Monitor with Connect:Direct

You can use the Connect:Direct Select Statistics to monitor your Connect:Direct to Sterling Integrator processes.

If the Connect:Direct process is successful, the Select Statistics detail will report the following:

Attribute	Value
Message ID	SCPA000I
Message Text	Copy operation successful
Source File	/businessprocess/*yourBusinessProcess*/*yourSourceFile*
Destination File	<*default download directory*>*yourDestinationFile*

If the Connect:Direct process is not successful, refer to *Troubleshooting* on page 145.

Monitor with Sterling Integrator

Use the following procedure to monitor your Connect:Direct process with Sterling Integrator:

1. From the Business Process menu, select Monitor > Advanced Search > Business Processes.
2. In the Search Using Business Process Name pane, select your business process in the Business Processes list and click Go!.

   The Monitor page displays the following information:

Label	Description
Status	Status of the business process—a green traffic light signals a successful execution
ID	The business process ID number
Name	The business process name
State	The current state of the business process

   If the Status indicates unsuccessful execution, refer to *Troubleshooting* on page 145.
3. Click the ID number to see details about the business process execution.

   The Business Process Detail page displays the following information:

Label	Description
Step	The business process step number
Service	The Sterling Integrator service name used in the step

Label	Description
Status	The status of the step
Advanced Status	Additional status information
Started	The time and date the step started
Ended	The time and date the step ended
Status Report	A link to the status report for the step
Document	A link to documents in use by the step
Instance Data	A link to process data for the step

4. Click the Document info link for the Connect:Direct Server Response Service.

   The PrimaryDocument page displays the contents of the primary document.

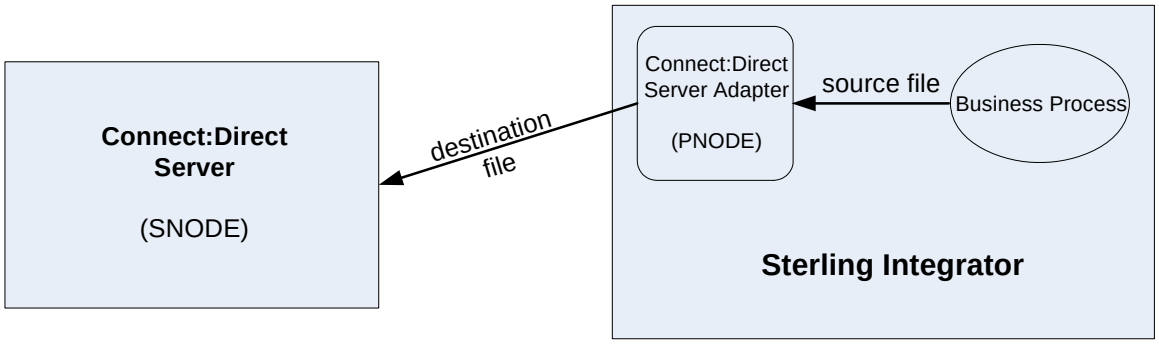
5. Close the PrimaryDocument page.

Note: You can also monitor your business processes from the Business Process menu by navigating to Monitor > Advanced Search > Documents or Monitor > Advanced Search > Communication Sessions.

Chapter 6

Use Sterling Integrator to Copy a File to Connect:Direct

This chapter describes how to copy a file from Sterling Integrator to Connect:Direct. The Sterling Integrator business process passes a document to the Connect:Direct Server adapter (PNODE) which copies the file to the Connect:Direct node (SNODE). The business process functions much like a Connect:Direct process.



Use the following workflow to copy a file from Sterling Integrator to a Connect:Direct server:

- *Create a Sterling Integrator Business Process* on page 44
- *Check Your Business Process into Sterling Integrator* on page 47
- *Submit and Monitor Your Sterling Integrator Business Process* on page 48

Create a Sterling Integrator Business Process

When you use Sterling Integrator to copy a file to Connect:Direct, you execute a Sterling Integrator business process that contains Connect:Direct Server adapter services to send the primary document to Connect:Direct.

Use the following procedure to create the Sterling Integrator business process:

1. Log in to Sterling Integrator and launch the Graphical Process Modeler from the Home screen.
2. Enter your Sterling Integrator User ID and password in the Log In dialog box.
3. If the BPML stencil is not visible in the GPM, navigate to the View menu and select Stencil > BPML.

   This will add the BPML stencil to the GPM.
4. From the View menu, select Stencil > Applications > Sterling Commerce > Connect:Direct.

   This will add the Connect:Direct stencil to the GPM.
5. From the File menu, select New to open a new business process.
6. Drag and drop the following icons from the BPML and Connect:Direct stencils into the Business Process window in the following order, from left to right:
   - Start
   - CD Server Begin Session Service
   - CD Server CopyTo Service
   - CD Server End Session Service
   - End
7. To link the icons:
   a. Click the arrow on the right side of the Start icon and drag it to the arrow on the left side of the CD Server Begin Session Service icon.
   b. Click the arrow on the right side of the CD Server Begin Session Service icon and drag it to the arrow on the left side of the CD Server CopyTo Service icon.
   c. Click the arrow on the right side of the CD Server CopyTo Service icon and drag it to the arrow on the left side of the CD Server End Session Service icon.
   d. Click the arrow on the right side of the CD Server End Session Service icon and drag it to the arrow on the left side of the End icon.

8. Configure the CD Server Begin Session Service using the following procedure:
   a. Double-click the CD Server Begin Session Service icon.

      The CD Server Begin Session Service functions like the Connect:Direct Process statement. It initiates a session on a specified remote Connect:Direct node.

   b. In the Service Editor-CD Server Begin Session Service window, select CDServerBeginSession from the Config drop-down list. The Message To Service tab is displayed.

      In this step you specify the pre-defined CDServerBeginSession configuration for the CD Server Begin Session Service. You can override configuration values in the Service Editor.

   c. Select your Connect:Direct Server adapter node name as the Value for LocalCDNodeName.

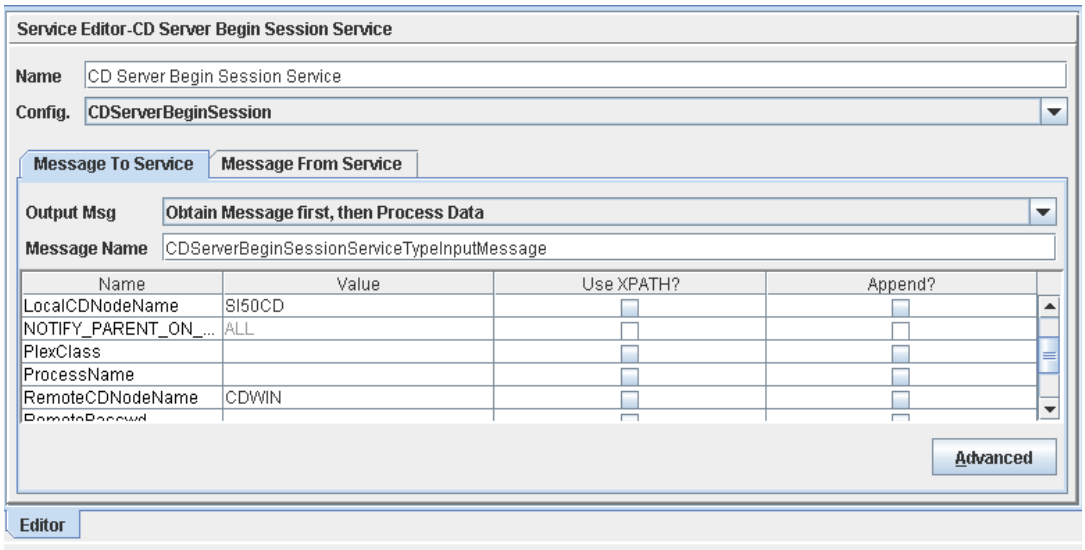
   d. Type the remote Connect:Direct node name as the Value for RemoteCDNodeName.

   e. Type the Connect:Direct User ID as the Value for RemoteUserId.

      Note: You must add the Connect:Direct User ID to your Connect:Direct User Authorities.

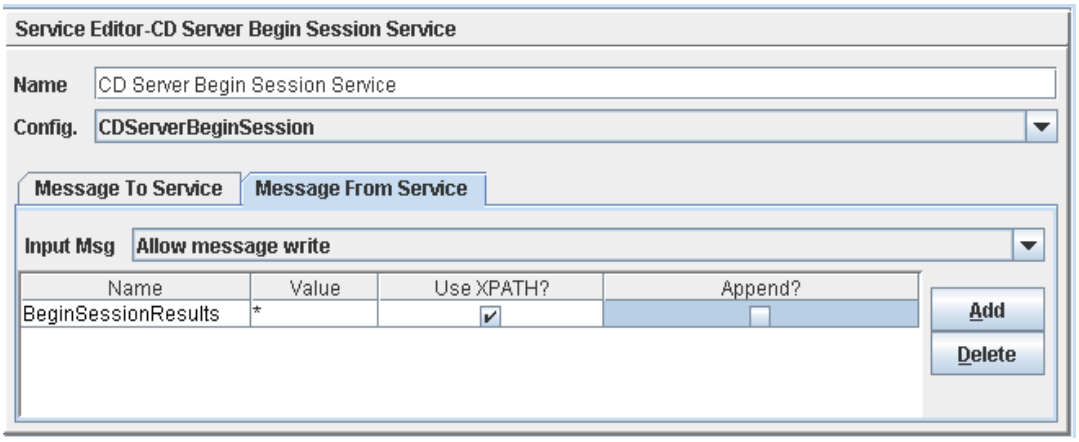
   f. Type the password for the Connect:Direct User ID as the Value for RemotePasswd.

   g. Select No as the Value for UsingObscuredPasswd.



9. Click the Message From Service tab.
10. Select Allow message write for Input Msg.
11. Click Add and add the following information to the new record:
    - In the Name box, type BeginSessionResults.

- In the Value field, type *.
- Select the Use XPATH? check box.



12. Configure the CD Server CopyTo Service using the following procedure:
    a. Double-click the CD Server CopyTo Service icon. This opens the Service Editor window.

       The CD Server CopyTo Service functions like the Connect:Direct Copy statement. It copies a file from the PNODE to the SNODE.

    b. In the Service Editor-CD Server CopyTo Service window, select CDServerCopyTo from the Config drop-down list.

       In this step you specify the pre-defined CDServerCopyTo configuration to use for the CD Server CopyTo Service. You can override configuration values in the Service Editor.

    c. Type rpl as the Value for CDDisposition.

       This is equivalent to DISP=RPL in a Connect:Direct Copy statement.

    d. Type the destination file name as the Value for RemoteFileName.

    e. Type //BeginSessionResults/SessionToken/node() as the Value for SessionToken and select the Use XPATH? box.

       The Session Token is created by the CD Server Begin Session Service and identifies the session that is established with the remote Connect:Direct node. The SessionToken value in the CD Server CopyTo Service ensures that this service copies the file using the session initiated by the CD Server Begin Session Service.

13. Configure the CD Server End Session Service using the following procedure:
    a. Double-click the CD Server End Session Service icon.

       The CD Server End Session Service functions like the Connect:Direct End statement. It terminates the session with the remote Connect:Direct node. If the CD Server End Session does not execute, the session remains open.

b. In the Service Editor-CD Server End Session Service window, select CDServerEndSession from the Config drop-down list.

   In this step you specify the pre-defined CDServerEndSession configuration to use for the CD Server End Session Service. You can override configuration values in the Service Editor.

c. Type //BeginSessionResults/SessionToken/node() as the Value for SessionToken and select the Use XPATH? box.

   The SessionToken value in the CD Server End Session Service ensures that this service closes the session initiated by the CD Server Begin Session Service.

14. From the File menu, select Save. In the Validate dialog box, click Yes to validate the business process.
15. On the Save dialog box, type your business process file name in the File Name box and click Save.

    Remember where you save this file.

Note: To see a sample business process, refer to *Sample Business Process: Copy a File from Sterling Integrator to Connect:Direct* on page 107.

Check Your Business Process into Sterling Integrator

Use the following procedure to check your business process into Sterling Integrator:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. On the Business Process Manager page, in the Create Process Definition pane, click Go!.
4. Type your business process name in the Name box.
5. Under Select an input mode for defining the new process, select Check in Business Process created by the graphical modeling tool and click Next.
6. On the Check-in page, click Browse and navigate to your business process file that you saved in step 15 of the previous procedure.
7. Type a short description of your business process in the Description box and click Next.
8. On the Process Levels page, select the Set onfault processing check box.
9. Set the Persistence Level to Full.
10. Set the Event Reporting Level to Full.
11. Set the Recovery Level to Auto Resume and click Next.

    If Sterling Integrator stops responding during a copy transaction and the recovery level is set to Auto Resume, the business process resumes automatically at the next Sterling Integrator start up.

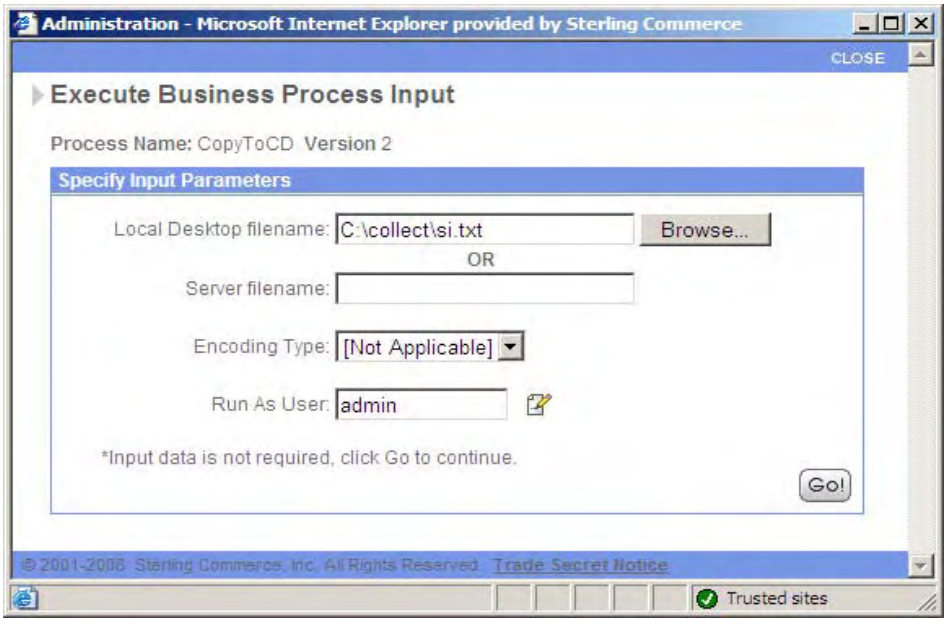
12. On the Deadline Settings page, click Next.
13. On the Life Span page, click Next.
14. On the Confirm page, select the Enable Business Process box.
15. Click Finish.

Submit and Monitor Your Sterling Integrator Business Process

Use the following procedure to submit your Sterling Integrator business process:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. In the Search pane, type your business process name in the Process Name box and click Go!.
4. On the Business Process Manager page, click Execution Manager.
5. On the Execution Manager page, click Execute to launch the Execute Business Process Input dialog box.
6. Click Browse and navigate to your source file on your local system and click Open.

   This is the file that the business process will copy to the Connect:Direct server.



7. Click Go! to submit the business process.

   The Execute Business Process page is displayed.
8. Close the Execute Business Process page.

Monitor with Sterling Integrator

Use the following procedure to monitor your business process with Sterling Integrator:

1. From the Business Process menu, select Monitor > Advanced Search > Business Processes.
2. In the Search Using Business Process Name pane, select your business process name in the Business Processes list and click Go!.

   The Monitor page displays the following information:

Label	Description
Status	Status of the business process—a green traffic light signals a successful execution
ID	The business process ID number
Name	The business process name
State	The current state of the business process

   If the Status indicates unsuccessful execution, refer to *Troubleshooting* on page 145.
3. Click the ID number to see details about the business process execution.

   The Business Process Detail page displays the following information for each step:

Label	Description
Step	The business process step number
Service	The Sterling Integrator service name used in the step
Status	The status of the step
Advanced Status	Additional status information
Started	The time and date the step started
Ended	The time and date the step ended
Status Report	A link to the status report for the step
Document	A link to documents in use by the step
Instance Data	A link to process data for the step

4. Click the Status Report link for the Connect:Direct Server Primitive CopyTo Service.

   The Status Report displays a short summary of the CopyTo operation including the destination file name and number of bytes copied.
5. Click the Document info link for the Connect:Direct Server Primitive CopyTo Service.

   The PrimaryDocument page displays the contents of the Primary Document.
6. Close the PrimaryDocument page.

7. From the Business Process Detail page, click the Instance Data info link for the Connect:Direct Server Primitive CopyTo Service.

   The Process Data page displays process data for the business process. The data is presented in XML format and contains several fields and values, such as:

   - Remote Node—node name of the remote Connect:Direct server
   - Remote User—Connect:Direct User ID
   - Remote File Name—your destination file

8. The last step in the Business process Detail page is the CD Server End Session Service. The Status indicates that it successfully terminates the Connect:Direct session.

Note: You can also monitor your business processes from the Business Processes menu by navigating to Monitor > Advanced Search > Documents or Monitor > Advanced Search > Communication Sessions.

Monitor with Connect:Direct

You can use the Connect:Direct Select Statistics to monitor your Sterling Integrator to Connect:Direct business process.

If the Connect:Direct process is successful, the Select Statistics detail will report the following:

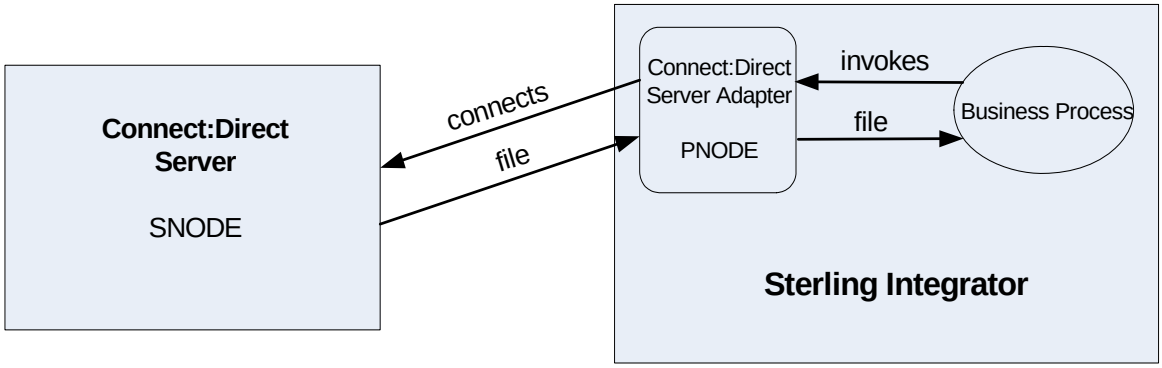
Attribute	Value
Message ID	SCPA000I
Message Text	Copy operation successful
Destination File	<*default download directory*>\<*your destination file*>

If the Connect:Direct process is not successful, refer to *Troubleshooting* on page 145.

Chapter 7

Use Sterling Integrator to Copy a File from Connect:Direct

This chapter describes how to use Sterling Integrator to copy a file from Connect:Direct. The Sterling Integrator business process invokes the Connect:Direct Server adapter (PNODE) which copies the file from the Connect:Direct node (SNODE) and passes it back to the business process. The business process functions much like a Connect:Direct process.



Use the following workflow to copy a file from Sterling Integrator to a Connect:Direct server:

- *Create a Sterling Integrator Business Process* on page 52
- *Check Your Business Process into Sterling Integrator* on page 55
- *Submit and Monitor Your Sterling Integrator Business Process* on page 56

Create a Sterling Integrator Business Process

When you use Sterling Integrator to copy a file from Connect:Direct, you execute a Sterling Integrator business process that contains Connect:Direct Server adapter services to copy the file from Connect:Direct.

Use the following procedure to create the Sterling Integrator business process:

1. Log in to Sterling Integrator and launch the Graphical Process Modeler from the Home screen.
2. Enter your Sterling Integrator User ID and password in the Log In dialog box.
3. If the BPML stencil is not visible in the GPM, navigate to the View menu and select Stencil > BPML.

   This will add the BPML stencil to the GPM.
4. From the View menu, select Stencil > Applications > Sterling Commerce > Connect:Direct.

   This will add the Connect:Direct stencil to the GPM.
5. From the File menu, select New to open a new business process.
6. Drag and drop the following icons from the BPML and Connect:Direct stencils into the Business Process window in the following order, from left to right:
   - Start
   - CD Server Begin Session Service
   - CD Server CopyFrom Service
   - CD Server End Session Service
   - End
7. To link the icons:
   a. Click the arrow on the right side of the Start icon and drag it to the arrow on the left side of the CD Server Begin Session Service icon.
   b. Click the arrow on the right side of the CD Server Begin Session Service icon and drag it to the arrow on the left side of the CD Server CopyTo Service icon.
   c. Click the arrow on the right side of the CD Server CopyFrom Service icon and drag it to the arrow on the left side of the CD Server End Session Service icon.
   d. Click the arrow on the right side of the CD Server End Session Service icon and drag it to the arrow on the left side of the End icon.

8. Configure the CD Server Begin Session Service using the following procedure:
   a. Double-click the CD Server Begin Session Service icon.

      The CD Server Begin Session Service functions like the Connect:Direct Process statement. It initiates a session on a specified remote Connect:Direct node.

   b. In the Service Editor-CD Server Begin Session Service window, select CDServerBeginSession from the Config drop-down list. The Message To Service tab is displayed.

      In this step you specify the pre-defined CDServerBeginSession configuration for the CD Server Begin Session Service. You can override configuration values in the Service Editor.

   c. Select your Connect:Direct Server adapter node name as the Value for LocalCDNodeName.

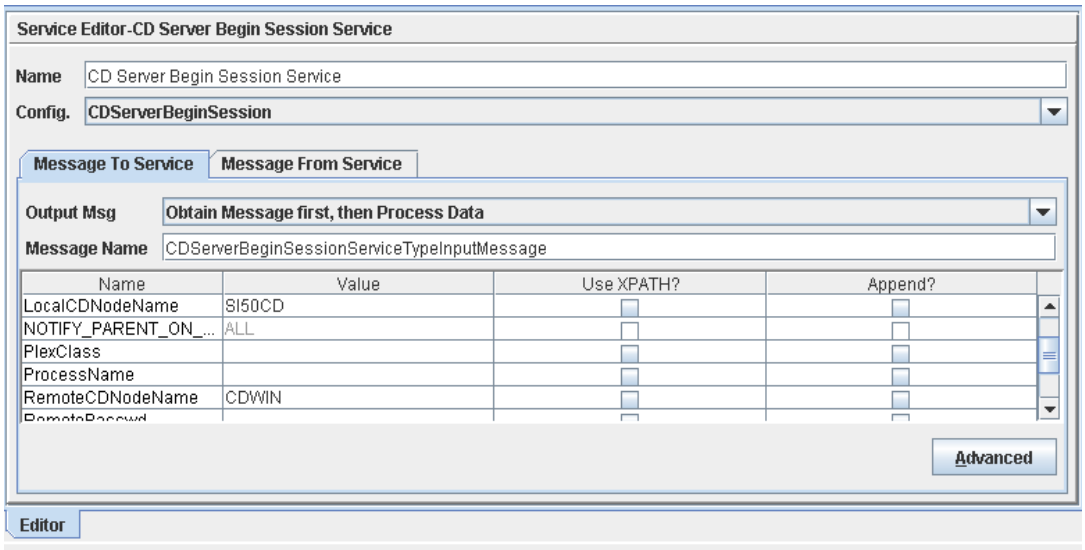
   d. Type the remote Connect:Direct node name as the Value for RemoteCDNodeName.

   e. Type the Connect:Direct User ID as the Value for RemoteUserId.

      Note: You must add the Connect:Direct User ID to your Connect:Direct User Authorities.

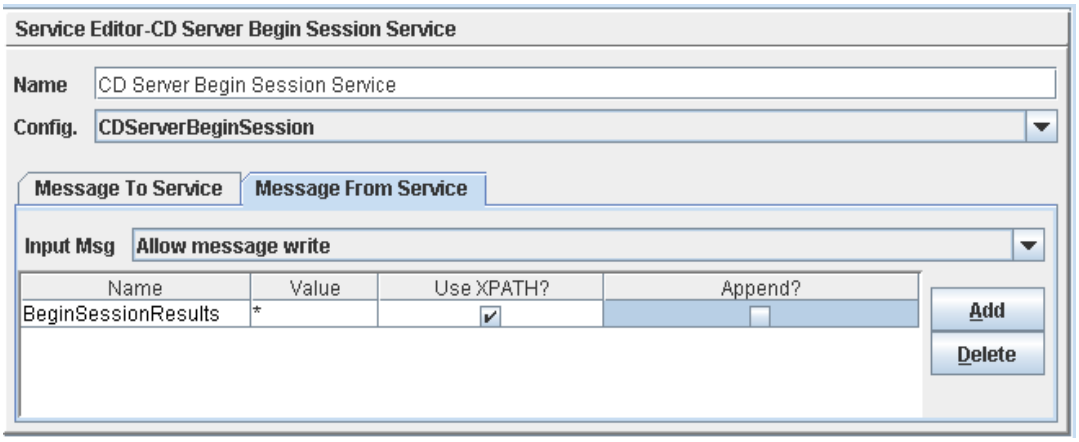
   f. Type the password for the Connect:Direct User ID as the Value for RemotePasswd.

   g. Select No as the Value for UsingObscuredPasswd.



9. Click the Message From Service tab.
10. Select Allow message write for Input Msg.
11. Click Add and add the following information to the new record:
    - In the Name box, type BeginSessionResults.

- In the Value field, type *.
- Select the Use XPATH? check box.



12. Configure the CD Server CopyFrom Service using the following procedure:
    a. Double-click the CD Server CopyFrom Service icon. This opens the Service Editor window.

       The CD Server CopyFrom Service functions like the Connect:Direct Copy statement. It copies a file from the SNODE to the PNODE.

    b. In the Service Editor-CD Server CopyFrom Service window, select CDServerCopyFrom from the Config drop-down list.

       In this step you specify the pre-defined CDServerCopyFrom configuration to use for the CD Server CopyFrom Service. You can override configuration values in the Service Editor.

    c. Type the source file name as the Value for RemoteFileName.

       This file must reside on the file system of the Connect:Direct node.

    d. Type //BeginSessionResults/SessionToken/node() as the Value for SessionToken and select the Use XPATH? box.

       The Session Token is created by the CD Server Begin Session Service and identifies the session that is established with the remote Connect:Direct node. The SessionToken value in the CD Server CopyFrom Service ensures that this service copies the file using the session initiated by the CD Server Begin Session Service.

13. Configure the CD Server End Session Service using the following procedure:
    a. Double-click the CD Server End Session Service icon.

       The CD Server End Session Service functions like the Connect:Direct End statement. It terminates the session with the remote Connect:Direct node. If the CD Server End Session does not execute, the session remains open.

b. In the Service Editor-CD Server End Session Service window, select CDServerEndSession from the Config drop-down list.

   In this step you specify the pre-defined CDServerEndSession configuration to use for the CD Server End Session Service. You can override configuration values in the Service Editor.

c. Type //BeginSessionResults/SessionToken/node() as the Value for SessionToken and select the Use XPATH? box.

   The SessionToken value in the CD Server End Session Service ensures that this service closes the session initiated by the CD Server Begin Session Service.

14. From the File menu, select Save. In the Validate dialog box, click Yes to validate the business process.
15. On the Save dialog box, type your business process file name in the File Name box and click Save.

    Remember where you save this file.

Note: To see a sample business process, refer to *Sample Business Process: Copy a File from Connect:Direct to Sterling Integrator* on page 109.

Check Your Business Process into Sterling Integrator

Use the following procedure to check your business process into Sterling Integrator:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. On the Business Process Manager page, in the Create Process Definition pane, click Go!.
4. Type your business process name in the Name box.
5. Under Select an input mode for defining the new process, select Check in Business Process created by the graphical modeling tool and click Next.
6. On the Check-in page, click Browse and navigate to your business process file that you saved in step 15 of the previous procedure.
7. Type a short description of your business process in the Description box and click Next.
8. On the Process Levels page, select the Set onfault processing check box.
9. Set the Persistence Level to Full.
10. Set the Event Reporting Level to Full.
11. Set the Recovery Level to Auto Resume and click Next.

    If Sterling Integrator stops responding during a copy transaction and the recovery level is set to Auto Resume, the business process resumes automatically at the next Sterling Integrator start up.

12. On the Deadline Settings page, click Next.
13. On the Life Span page, click Next.
14. On the Confirm page, select the Enable Business Process box.
15. Click Finish.

Submit and Monitor Your Sterling Integrator Business Process

Use the following procedure to submit your Sterling Integrator business process:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. In the Search pane, type your business process name in the Process Name box and click Go!.
4. On the Business Process Manager page, click Execution Manager.
5. On the Execution Manager page, click Execute to launch the Execute Business Process Input dialog box.
6. Click Go! to submit the business process.

   The Execute Business Process page is displayed.
7. Close the Execute Business Process page.

Monitor with Sterling Integrator

Use the following procedure to monitor your business process with Sterling Integrator:

1. From the Business Process menu, select Monitor > Advanced Search > Business Processes.
2. In the Search Using Business Process Name pane, select your business process name in the Business Processes list and click Go!.

   The Monitor page displays the following information:

Label	Description
Status	Status of the business process—a green traffic light signals a successful execution
ID	The business process ID number
Name	The business process name
State	The current state of the business process

If the Status indicates unsuccessful execution, refer to *Troubleshooting* on page 145.

3. Click the ID number to see details about the business process execution.

   The Business Process Detail page displays the following information for each step:

Label	Description
Step	The business process step number
Service	The Sterling Integrator service name used in the step
Status	The status of the step
Advanced Status	Additional status information
Started	The time and date the step started
Ended	The time and date the step ended
Status Report	A link to the status report for the step
Document	A link to documents in use by the step
Instance Data	A link to process data for the step

4. Click the Status Report link for the Connect:Direct Server Primitive CopyFrom Service.

   The Status Report displays a short summary of the CopyFrom operation including the source file name and number of bytes copied.

5. Click the Document info link for the Connect:Direct Server Primitive CopyFrom Service.

   The PrimaryDocument page displays the contents of the Primary Document.

6. Close the PrimaryDocument page.

7. From the Business Process Detail page, click the Instance Data info link for the Connect:Direct Server Primitive CopyFrom Service.

   The Process Data page displays process data for the business process. The data is presented in XML format and contains several fields and values, such as:

   - Remote Node—node name of the remote Connect:Direct server
   - Remote User—Connect:Direct User ID
   - Remote File Name—your source file

8. The last step in the Business process Detail page is the CD Server End Session Service. The Status indicates that it successfully terminates the Connect:Direct session.

Note: You can also monitor your business processes from the Business Processes menu by navigating to Monitor > Advanced Search > Documents or Monitor > Advanced Search > Communication Sessions.

Monitor with Connect:Direct

You can use the Connect:Direct Select Statistics to monitor your Sterling Integrator to Connect:Direct business process.

If the Connect:Direct process is successful, the Select Statistics detail will report the following:

Attribute	Value
Message ID	SCPA000I
Message Text	Copy operation successful
Source File	*<default upload directory>\<your source file>*

If the Connect:Direct process is not successful, refer to *Troubleshooting* on page 145.

Chapter 8

Add Error Handling to Sterling Integrator Business Process

This chapter describes how to add error handling to an existing Sterling Integrator business process. The business process passes a document to the Connect:Direct Server adapter (PNODE) which copies the file to the Connect:Direct node (SNODE). The error handling ensures that the Connect:Direct session closes if an error is encountered during the session.

You can add OnFault Groups to your business processes to capture specific errors and take appropriate actions in the business process based on those errors. OnFault Groups allow you to add business process logic to handle specific and general error conditions. If you do not use OnFault Groups, your business process will quit on the step where the error occurs with no error handling.

Business Process Version Management

Sterling Integrator uses version management for implementing business process. As you make changes to an existing business process and create variations of that business process, you need to be sure that the business process that runs is the appropriate version.

The first time you check in a business process, the data you enter creates a business process definition—a uniquely named copy of the process that is stored in Sterling Integrator. The business process stored in Sterling Integrator is independent of any .bp file of the process that you save in a local directory.

At any time, you can open an existing business process, modify and save it, and then either check in the new version to Sterling Integrator, or save the modified copy of the process in Sterling Integrator as a new process altogether. All previously checked-in versions of business processes continue to be stored in Sterling Integrator. This enables you to revert to using an older version should the need arise.

Use the following workflow to update your business process with error handling:

1. *Check Out the Business Process* on page 60
2. *Edit the Business Process* on page 60
3. *Check In Your Business Process* on page 62
4. *Submit and Monitor Your Sterling Integrator Business Process* on page 63

Check Out the Business Process

When you check out an existing business process with the Source Manager, you lock the business process and prevent other users from modifying it at the same time.

Use the following procedure to check out your existing business process that copies a file from Sterling Integrator to Connect:Direct:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. On the Business Process Manager page, in the Search pane, type the existing business process name in the Process Name box and click Go.
4. Click Source Manager for your business process.
5. On the Source Manager page, click check out for the version of the business process you want to check out.
6. Click OK in the dialog box to lock the file for editing.
7. In the File Download dialog box, click Save to save a copy of the business process to your local file system.
8. In the Save As dialog box, navigate to the directory where you want to save the business process, type the business process file name in the File name box, and click Save.

Edit the Business Process

In this scenario, you add an OnFault Group to handle errors in your business process.

Use the following procedure to edit the Sterling Integrator business process:

1. Log in to Sterling Integrator and launch the Graphical Process Modeler from the Home screen.
2. Enter your Sterling Integrator User ID and password in the Log In dialog box.
3. If the BPML stencil is not visible in the GPM, navigate to the View menu and select Stencil > BPML.

   This will add the BPML stencil to the GPM.
4. If the Connect:Direct stencil is not visible in the GPM, navigate to the View menu and select Stencil > Applications > Sterling Commerce > Connect:Direct.

   This will add the Connect:Direct stencil to the GPM.
5. From the File menu, select Open, navigate to the existing business process file and click Open.
6. Drag and drop the following icons from the BPML stencil into the Business Process window:
   - Sequence Start
   - OnFault Group
   - Sequence End

7. To arrange and link the icons:
   a. Click the link between the CD Server Begin Session Service icon and CD Server CopyTo Service icon and press Delete to remove the link.
   b. Place the Sequence Start icon between the CD Server Begin Session Service icon and the CD Server CopyTo Service icon.
   c. Click the arrow on the right side of the CD Server Begin Session Service icon and drag it to the arrow on the left side of the Sequence Start icon.
   d. Click the arrow on the right side of the Sequence Start icon and drag it to the arrow on the left side of the CD Server CopyTo Service icon.
   e. Click the link between the CD Server End Session Service icon and End icon and press Delete to remove the link.
   f. Place the Sequence End icon between the CD Server End Session Service icon and the End icon.
   g. Click the arrow on the right side of the End Sequence icon and drag it to the arrow on the left side of the End icon.
   h. Place the OnFault Group icon below and to the right of the Begin Sequence icon.
   i. Click the arrow on the right side of the Begin Sequence icon and drag it to the arrow on the left side of the OnFault Group.

8. Configure the OnFault Group using the following procedure:
   a. Double-click the OnFault Group icon. This opens the Property Editor window and Layers window.

      The OnFault element contains a fault handling activity. If an error occurs between the Sequence Start and Sequence End, the fault handling activity is invoked. In this example, the fault handling activity contains a CD Server End Session Service to ensure that the session ends if there is an error. If the OnFault Group is not included in this business process and an error occurs on the CD Server CopyTo Service, the business process would stop before the CD Server End Service and the session would stay active.
   b. In the Layers Window, click the Default icon to open the fault handling activity in the business process window.

      The business process window contains an OnFault Start icon and an OnFault End icon.
   c. In the Service Editor-CD Server Begin Session Service window, select CDServerBeginSession from the Config drop-down list.

      The Message To Service tab is displayed.

d. Drag and drop the CD Server End Session icon from the Connect:Direct stencil into the Business Process window and place it between the OnFault Start icon and the OnFault End icon.

e. Click the arrow on the right side of the OnFault Start icon and drag it to the arrow on the left side of the CD Server End Session Service icon.

f. Click the arrow on the right side of the CD Server End Session Service icon and drag it to the arrow on the left side of the OnFault End icon.

g. Double-click the CD Server End Session Service icon.

h. In the Service Editor-CD Server End Session Service window, select CDServerEndSession from the Config drop-down list.

In this step you specify the pre-defined CDServerEndSession configuration to use for the CD Server End Session Service. You can override configuration values in the Service Editor.

i. Type //BeginSessionResults/SessionToken/node() as the Value for SessionToken and select the Use XPATH? box.

The SessionToken value in the CD Server End Session Service ensures that this service closes the session initiated by the CD Server Begin Session Service.

9. From the File menu, select Save. In the Validate dialog box, click Yes to validate the business process.
10. On the Save dialog box, type your business process file name in the File Name box and click Save. Remember where you save this file.

Note: To see a sample business process, refer to *Sample Business Process: Add Error Handling* on page 111.

Check In Your Business Process

Use the following procedure to check the revised business process into Sterling Integrator:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. On the Business Process Manager page, in the Search pane, type your business process name in the Process Name box and click Go!.

4. Click Source Manager for your business process.
5. On the Source Manager page, select Go! to Check in an updated definition for this business process.
6. On the Process Definition Check-in page, click Browse and navigate to the business process file that you saved in step 10 of the previous procedure.
7. Type a short description of the business process changes in the Description box and click Next.
8. On the Process Levels page, select the Set onfault processing check box.
9. Set the Persistence Level to Full.
10. Set the Event Reporting Level to Full.
11. Set the Recovery Level to Auto Resume and click Next.

    If Sterling Integrator stops responding during a copy transaction and the recovery level is set to Auto Resume, the business process resumes automatically at the next Sterling Integrator start up.
12. On the Deadline Settings page, click Next.
13. On the Life Span page, click Next.
14. On the Set Default Version page, select the updated version of the business process.
15. On the Confirm page, select the Enable Business Process box.
16. Click Finish.

Submit and Monitor Your Sterling Integrator Business Process

Submit and monitor your revised Sterling business process to verify that it still works. The OnFault Group should not execute and the execution results should be the same as they were before you modified the business process.

In order to test the OnFault logic, you must cause the CD Server CopyTo Service to fail.

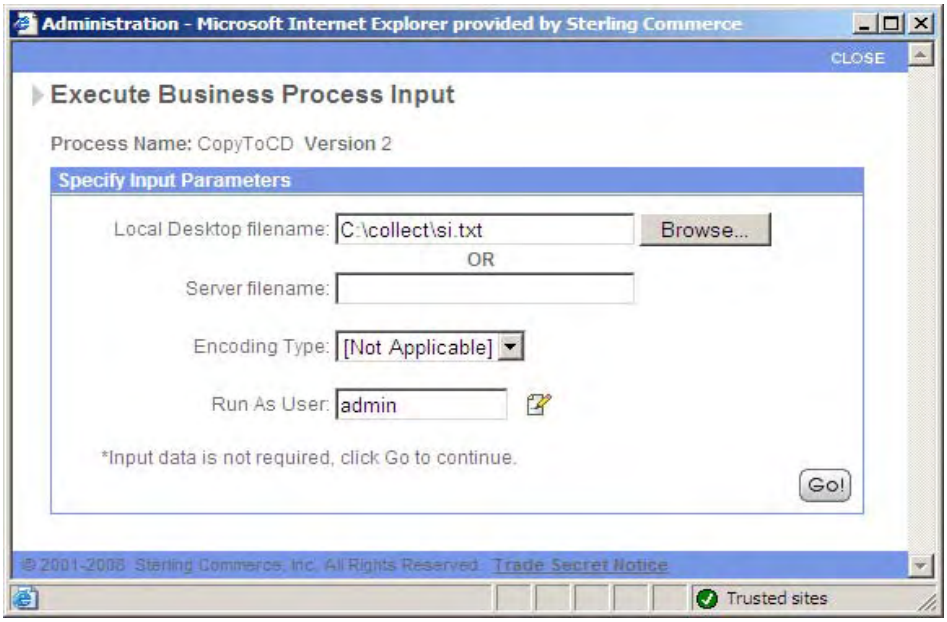
Use the following procedure to test the revised business process OnFault logic:

1. Modify the Connect:Direct User ID in Connect:Direct. In the Functional Authorities, set the Download directory for the account to a nonexistent directory.
2. Submit the revised business process.
   - The CD Server CopyTo Service fails and the business process executes the OnFault logic.
   - The CD Server End Session Service contained in the fault handling logic ends the Connect:Direct session.

Use the following procedure to submit your Sterling Integrator business process:

1. Log in to Sterling Integrator.

2. From the Business Process menu, select Manager.
3. In the Search pane, type your business process name in the Process Name box and click Go!.
4. On the Business Process Manager page, click Execution Manager.
5. On the Execution Manager page, click Execute for the revised business process to launch the Execute Business Process Input dialog box.
6. Click Browse and navigate to your source file on your local system and click Open.



7. Click Go! to submit your business process. The Execute Business Process page is displayed.
8. Close the Execute Business Process page.

Monitor with Sterling Integrator

Use the following procedure to monitor your business process with Sterling Integrator:

1. From the Business Process menu, select Monitor > Advanced Search > Business Processes.
2. In the Search Using Business Process Name pane, select your business process name in the Business Processes list and click Go!.

   The Monitor page displays the following information:

Label	Description
Status	Status of the business process—a green traffic light signals a successful execution
ID	The business process ID number
Name	The business process name
State	The current state of the business process

If the Status indicates unsuccessful execution, refer to *Troubleshooting* on page 145.

3. Click the ID number to see details about the business process execution.

   The Business Process Detail page displays the following information for each step:

Label	Description
Step	The business process step number
Service	The Sterling Integrator service name used in the step
Status	The status of the step
Advanced Status	Additional status information
Started	The time and date the step started
Ended	The time and date the step ended
Status Report	A link to the status report for the step
Document	A link to documents in use by the step
Instance Data	A link to process data for the step

4. Check the Status and Advanced Status for the Connect:Direct Server CopyTo Service.

   The CopyTo service generates an error and reports *Check the file permissions or path on Remote Connect:Direct*.

Step	Service	Status	Advanced Status	Started	Ended	Status Report	Document	Instance Data
10	Connect:Direct Server CopyTo Service	Success	Inline Begin CDInterop_CopyToWithLoop	02/24/2009 4:07:22 PM	02/24/2009 4:07:22 PM	None	None	None
11*	Echo Service	Success	None	02/24/2009 4:07:22 PM	02/24/2009 4:07:22 PM	None	info	info
12*	Assign Service	Success	None	02/24/2009 4:07:22 PM	02/24/2009 4:07:22 PM	None	info	info
13*	Assign Service	Success	None	02/24/2009 4:07:22 PM	02/24/2009 4:07:22 PM	None	info	info
14*	Connect:Direct Server Primitive CopyTo Service	Error	Check the file permissions or path on Remote Connect:Direct	02/24/2009 4:07:22 PM	02/24/2009 4:07:22 PM	None	info	info
15	Connect:Direct Server CopyTo Service	Error	Check the file permissions or path on Remote Connect:Direct	02/24/2009 4:07:22 PM	02/24/2009 4:07:22 PM	info	info	info
16	Decision Engine Service	Success	5	02/24/2009 4:07:22 PM	02/24/2009 4:07:22 PM	None	info	info
17	Connect:Direct Server End Session Service	Success	None	02/24/2009 4:07:22 PM	02/24/2009 4:07:22 PM	info	info	info

5. The next step in the Business Process Detail is the Decision Engine Service.

   This step is invoked by the error handling of the OnFault Group in the business process. The Status for this step indicates that the Decision Engine Service is successfully able to invoke the OnFault error handling.

6. The last step in the Business Process Detail is the CD Server End Session Service.

   The Status for this step indicates that it successfully closes the Connect:Direct session.

Note: You can also monitor your business processes from the Business Processes menu by navigating to Monitor > Advanced Search > Documents or Monitor > Advanced Search > Communication Sessions.

Monitor with Connect:Direct

You can use the Connect:Direct Select Statistics to monitor your revised Sterling Integrator to Connect:Direct business process.

If the Connect:Direct process is unsuccessful, the Select Statistics detail will report the following:

Attribute	Value
Message ID	LSFN001 (if Connect:Direct is installed on a Windows system)
Message Text	Unable to open file <*your destination file*> - Fdbk=3
Destination File	<*revised download directory*>\<*your destination file*>

If the Connect:Direct process is not successful, refer to *Troubleshooting* on page 145.

Chapter 9

Add Secure+ Option

The Connect:Direct Secure+ Option provides enhanced security for Connect:Direct and Sterling Integrator Connect:Direct Server adapter. When you enable the Secure+ Option, the files are encrypted using SSL or TLS during transfer.

This chapter describes how to configure and enable Secure+ Option on Connect:Direct and the Sterling Integrator Connect:Direct Server adapter.

The Secure+ Option for Connect:Direct is an optional component. Your Connect:Direct node must be licensed for Secure+ Option and the Secure+ Option must be installed on your system. This workflow assumes you have the required certificates for implementing Secure+. You can use the Sterling Certificate Wizard to generate certificate signing requests, self-signed certificates, key certificate files and certificate chains. For more information, refer to *Appendix D, Certificate Wizard*.

Use the following workflow to implement Secure+:

- *Configure Connect:Direct Secure+ Option* on page 67
- *Configure Secure+ Option in Sterling Integrator* on page 68
- *Copy a File Using Connect:Direct Secure+ Option* on page 70
- *Copy a File Using Your Sterling Integrator Business Process* on page 70

Configure Connect:Direct Secure+ Option

Use the following procedure to configure Secure+ Option with Connect:Direct:

1. Launch the Connect:Direct Secure+ Admin Tool.

   If the Secure+ Admin Tool has not been initialized, follow the on-screen instructions to complete the initialization.
2. From the File menu, select Sync with Netmap. The Available Netmaps dialog box is displayed.
3. Select the netmap to open and click Sync. The Select Netmap Entries to Add dialog box is displayed.

4. Click Add All.

   The Select Parameters File Entries to Delete dialog box is displayed.

5. Click Skip to close the parameters file without deleting any entries.

   The Secure+ Option parameters file is populated and the Secure+ Admin Tool Main window displays remote node records in the parameters file including any records you added from the network map, including the Sterling Integrator Connect:Direct Server adapter node.

6. Double-click the Sterling Integrator Connect:Direct Server adapter node. The Edit Record dialog box displays the Security Options tab, the node name, and the type of node.
7. On the Security Options tab, select Enable TLS Protocol or Enable SSL Protocol depending on which protocol you are using.
8. On the Node or Copy Statement Override pane, select Enable Override.

   This allows you to configure the TLS/SSL protocol at the node level.

9. Click the TLS/SSL Protocol tab. The TLS/SSL Options dialog box is displayed.
10. Click Browse next to the Trusted Root Certificate File box, navigate to the Connect:Direct Server adapter root certificate, and double-click the file to select it.
11. Click Browse next to the Key Certificate File box, navigate to the key certificate, and double-click the file to select it. The Certificate Passphrase dialog box is displayed.
12. Type the passphrase you specified when you created your private key in the Certificate Passphrase box.
13. Click OK. The Certificate File box is populated with the certificate file name and location.
14. Highlight the cipher suites to enable in the Available list and click Add.
15. If necessary, use the Up and Down buttons to reorder the cipher suites. Place the cipher suites in order of preference.
16. Click OK to close the Edit Record dialog box and update the parameters file.

Configure Secure+ Option in Sterling Integrator

Use the following procedure to check in the Connect:Direct root CA certificate with Sterling Integrator:

1. From the Trading Partner menu, select Digital Certificates > CA.
2. In the Check in New Certificate pane, click Go!.
3. On the Get Certificate page, click Browse and navigate to the Connect:Direct CA root certificate.
4. On the Choose File dialog box, click Open. The dialog box closes and returns you to the Get Certificate page.
5. Click Next to advance to the Naming page.
6. Make a note of the Certificate Name and click Next.

7. On the Confirm page, click Finish.

Use the following procedure to check in the Key Certificate file for your Connect:Direct Server adapter:

Note: You can use a self-signed certificate that you create in Sterling Integrator or Certificate Wizard as your system certificate for testing purposes. Self-signed certificates are not recommended for production use.

1. From the Trading Partner menu, select Digital Certificates > System.
2. In the Check in pane, click Go! for Key Certificate.
3. On the Key Certificate Data page, type a descriptive name in the Certificate Name box.
4. In the Private Key Password box, type the passphrase associated with the Sterling Integrator Connect:Direct Server adapter private key.

   You created this passphrase when you generated your CSR.
5. Click Browse and navigate to the private key file.
6. On the Choose File dialog box, click Open. The dialog box closes and you return to the Key Certificate Data page.
7. Click Next to advance to the Validate When Used page.
8. Click next to advance to the Confirm Page.
9. Click Finish.

Modify the Connect:Direct Server Adapter Configuration to Use Secure+

Field	Value to Enter	Description
Encryption using Secure+	Enabled.	Whether Secure+ is enabled. Required. Valid values are Enabled and Disabled. Default is Disabled.
Enable Netmap Node Override	Select No for this scenario. Configure Secure+ at the Connect:Direct Server adapter level rather than the node level.	If Yes, specifies that remote node netmap security settings override the adapter security settings. Required. Valid values are Yes and No. Default is No.
CA Certificates	Select the CA certificate you checked in above. This is the CA root certificate for the Connect:Direct server.	Drop-down menu that contains a list of trusted Certificate Authority public certificates. Only displayed if "Encryption using Secure+" is enabled. Required if Encryption using Secure+ is enabled. Valid values are all CA certificates in this installation of your application.
System Certificate	Select the System certificate you checked in above. This is the certificate for the Connect:Direct Server adapter node.	List of private keys and public certificates signed by the trading partner trusted certificate authority. This represents the certificate for the local node (this adapter). Only displayed if Encryption using Secure+ is enabled. Required if Encryption using Secure+ is enabled. Valid values are all system certificates in this installation of your application.

Field	Value to Enter	Description
Certificate Common Name	If you want to verify the Common Name of the Connect:Direct CA certificate, specify it here. This feature is only available if you use signed certificates. Coordinate this with the remote Connect:Direct administrator.	Value to be compared with the Common Name (CN) field from the remote node's certificate during TLS/SSL handshake in order to enhance certificate authentication. Only displayed if Encryption using Secure+ is enabled. May be overridden at the node level. Note: To see the actual CNs being compared during the handshake, set the Perimeter Services logging level to ALL.
Cipher Suites	Select which cipher suites you wish to use. Coordinate this list with the remote Connect:Direct administrator. Best practice is to list cipher suites in strongest to weakest order.	Indicates cipher suites available to support varying encryption levels. Multiple selections allowed. Selections can be rank ordered. Only displayed if "Encryption using Secure+" is enabled. Required if "Encryption using Secure+" is enabled. Valid values are all available cipher suites in this installation of your application.
SSL or TLS	Select SSL or TLS. Coordinate this choice with the remote Connect:Direct administrator.	Indicates if Secure+ is enabled using SSL or TLS. Only displayed if "Encryption using Secure+" is enabled. Required if "Encryption using Secure+" is enabled. Valid values are SSL and TLS. Default is SSL.
Require Client Authentication	Select Yes or No for client authentication. Coordinate this choice with the Connect:Direct administrator.	Indicates whether authentication occurs at the client level. Valid values are: Yes No

Copy a File Using Connect:Direct Secure+ Option

Secure+ is configured and enabled on Connect:Direct and Sterling Integrator. You do not have to modify your Connect:Direct process to encrypt the file with Secure+.

Submit your existing Connect:Direct process to copy a file to Sterling Integrator. You can monitor the process results from Connect:Direct or Sterling Integrator as before.

Copy a File Using Your Sterling Integrator Business Process

You do not have to modify your Sterling Integrator business process to encrypt the file with Secure+.

Submit and monitor your revised Sterling business process that contains the OnFault Group to verify that it still works. The OnFault Group should not execute and the execution results should be the same as they were before you modified the business process.

Chapter 10

Use Sterling Integrator to Submit a Connect:Direct Process

This chapter describes how to modify the Sterling Integrator business process to submit a process on the Connect:Direct node after the file is copied. The Connect:Direct process copies the file received from Sterling Integrator to a z/OS system.

Use the following workflow to submit a Connect:Direct process with Sterling Integrator:

- *Create Connect:Direct Process* on page 73
- *Check Out the Business Process* on page 74
- *Edit the Business Process* on page 74
- *Check In Your Business Process* on page 76
- *Submit and Monitor Your Sterling Integrator Business Process* on page 76

Create Connect:Direct Process

Create a Connect:Direct process that copies the file received from the Sterling Integrator node to a Connect:Direct for z/OS system. This process is invoked by the Sterling Integrator business process.

```
COPY2ZOS PROCESS
  SNODE=mainframeNode

STEP1 COPY
  FROM (
  FILE=sourceFile
  )
  TO (
  FILE=destinationFile
  DISP=RPL
  )

PEND
```

Check Out the Business Process

When you check out an existing business process with the Source Manager, you lock the business process and prevent other users from modifying it at the same time.

Use the following procedure to check out your business process that contains the OnFault Group from Sterling Integrator:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. On the Business Process Manager page, in the Search pane, type your business process name in the Process Name box and click Go!.
4. Click Source Manager for your business process.
5. On the Source Manager page, click check out for the version of the business process you want to check out.
6. Click OK in the dialog box to lock the file for editing.
7. In the File Download dialog box, click Save to save a copy of the business process to your local file system.
8. In the Save As dialog box, navigate to the directory where you want to save the business process, type the business process file name in the File name box, and click Save.

Edit the Business Process

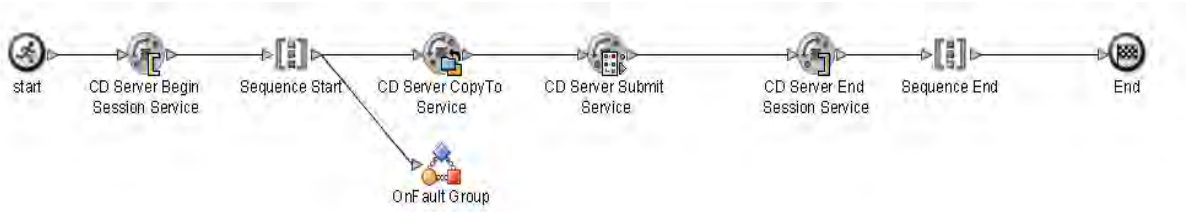
In this scenario, you add a CD Server Submit Service to the business process. The business process copies a file to the Connect:Direct server and then submits a process on that same server.

Use the following procedure to edit the Sterling Integrator business process:

1. Log in to Sterling Integrator and launch the Graphical Process Modeler from the Home screen.
2. Enter your Sterling Integrator User ID and password in the Log In dialog box.
3. If the Connect:Direct stencil is not visible in the GPM, navigate to the View menu and select Stencil > Applications > Sterling Commerce > Connect:Direct.

   This will add the Connect:Direct stencil to the GPM.
4. From the File menu, select Open, navigate to the CopyToCD.bp file and click Open.
5. Drag and drop the CD Server Submit Service icon from the Connect:Direct stencil into the Business Process window.

6. To arrange and link the icons:
   a. Click the link between the CD Server CopyTo Service icon and CD Server End Session Service icon and press Delete to remove the link.
   b. Place the CD Server Submit Service icon between the CD Server CopyTo Service icon and the CD Server End Session Service icon.
   c. Click the arrow on the right side of the CD Server CopyTo Service icon and drag it to the arrow on the left side of the CD Server Submit Service icon.
   d. Click the arrow on the right side of the CD Server Submit Service icon and drag it to the arrow on the left side of the CD Server End Session Service icon.



7. Configure the CD Server Submit Service using the following procedure:
   a. Double-click the CD Server Submit Service icon. This opens the Service Editor window.

      The CD Server Submit Service acts like a Submit statement in a Connect:Direct process. Use this service to submit a Connect:Direct process on a remote Connect:Direct server.
   b. In the Service Editor-CD Server Submit Service window, select CDServerSubmit from the Config drop-down list.

      In this step you specify the pre-defined CDServerSubmit configuration to use for the CD Server Submit Service. You can override configuration values in the Service Editor.
   c. Type the Connect:Direct process file name as the Value for RemoteProcessFile.
   d. Type //BeginSessionResults/SessionToken/node() as the Value for SessionToken and select the Use XPATH? box.

      The SessionToken value in the CD Server Submit Service ensures that this service submits the Connect:Direct process using the session initiated by the CD Server Begin Session Service.
8. From the File menu, select Save. In the Validate dialog box, click Yes to validate the business process.
9. On the Save dialog box, type the business process name in the File Name box and click Save. Remember where you save this file.

Note: To see a sample business process, refer to *Sample Business Process: Submit a Connect:Direct Process* on page 113.

Check In Your Business Process

Use the following procedure to check the revised business process into Sterling Integrator:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. On the Business Process Manager page, in the Search pane, type the business process name in the Process Name box and click Go!.
4. Click Source Manager for the business process.
5. On the Source Manager page, select Go! to Check in an updated definition for this business process.
6. On the Process Definition Check-in page, click Browse and navigate to the business process file that you saved in step 9 of the previous procedure.
7. Type a short description of the updated business process in the Description box and click Next.
8. On the Process Levels page, select the Set onfault processing check box.
9. Set the Persistence Level to Full.
10. Set the Event Reporting Level to Full.
11. Set the Recovery Level to Auto Resume and click Next.

    If Sterling Integrator stops responding during a copy transaction and the recovery level is set to Auto Resume, the business process resumes automatically at the next Sterling Integrator start up.
12. On the Deadline Settings page, click Next.
13. On the Life Span page, click Next.
14. On the Set Default Version page, select the updated version of the business process.
15. On the Confirm page, select the Enable Business Process box.
16. Click Finish.

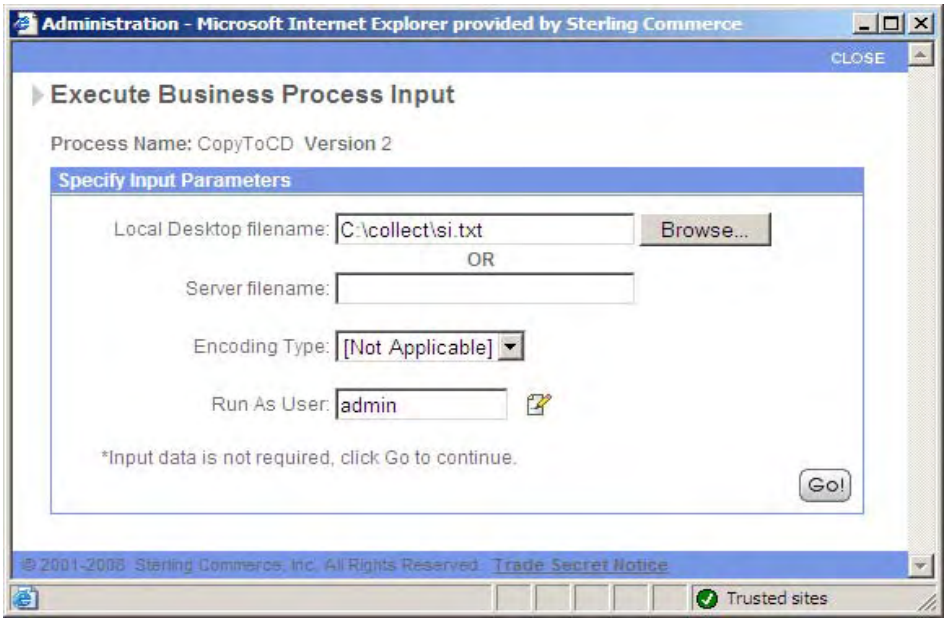
Submit and Monitor Your Sterling Integrator Business Process

Before you submit your revised Sterling business process, modify the Connect:Direct User ID in Connect:Direct. In the Functional Authorities, set the Download directory back to its original setting so that the CD Server CopyTo Service does not fail.

Use the following procedure to submit your Sterling Integrator business process:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.

3. In the Search pane, type the business process name in the Process Name box and click Go!.
4. On the Business Process Manager page, click Execution Manager.
5. On the Execution Manager page, click Execute for the revised business process to launch the Execute Business Process Input dialog box.
6. Click Browse and navigate to your source file on your local system and click Open.



7. Click Go! to submit the business process.

   The Execute Business Process page is displayed.
8. Close the Execute Business Process page.

Monitor with Sterling Integrator

Use the following procedure to monitor your business process with Sterling Integrator:

1. From the Business Process menu, select Monitor > Advanced Search > Business Processes.
2. In the Search Using Business Process Name pane, select your business process in the Business Processes list and click Go!.

   The Monitor page displays the following information:

Label	Description
Status	Status of the business process—a green traffic light signals a successful execution
ID	The business process ID number

Label	Description
Name	The business process name
State	The current state of the business process

If the Status indicates unsuccessful execution, refer to *Troubleshooting* on page 145.

3. Click the ID number to see details about the business process execution.

   The Business Process Detail page displays the following information for each step:

Label	Description
Step	The business process step number
Service	The Sterling Integrator service name used in the step
Status	The status of the step
Advanced Status	Additional status information
Started	The time and date the step started
Ended	The time and date the step ended
Status Report	A link to the status report for the step
Document	A link to documents in use by the step
Instance Data	A link to process data for the step

4. The Status for the Connect:Direct Server Submit Service is Success. This indicates only that the Connect:Direct process was successfully submitted. It does not provide a completion status for the process. You must use the Connect:Direct Statistics to verify completion status for the process.

5. The last step in the Business Process Detail is the CD Server End Session Service. The Status for this step indicates that it successfully closes the Connect:Direct session.

Note: You can also monitor your business processes from the Business Processes menu by navigating to Monitor > Advanced Search > Documents or Monitor > Advanced Search > Communication Sessions.

Monitor with Connect:Direct

You can use the Connect:Direct Select Statistics to monitor your revised Sterling Integrator to Connect:Direct business process.

If the Connect:Direct process is successfully submitted, the Select Statistics detail will report the following:

Attribute	Value
Message ID	LSMG407I (if Connect:Direct is installed on a Windows system)
Message Text	SUBMIT within a process step completed successfully
Source File	*<default process directory>\<Connect:Direct process file>*

If the Connect:Direct process is not successfully submitted, refer to *Troubleshooting* on page 145.

If the Connect:Direct process completes successfully, the Select Statistics will report the following:

Attribute	Value
Message ID	LSMG252I (if Connect:Direct is installed on a Windows system)
Message Text	A user process has completed successfully
Process Name	*Connect:Direct process name*

If the Connect:Direct process is not successful, refer to *Troubleshooting* on page 145.

Chapter 11

Use Sterling Integrator to Start a Connect:Direct Run Job

This chapter describes how to modify the Sterling Integrator business process to start a program on the Connect:Direct server using a Run Job after a file is copied. The Connect:Direct Server adapter does not verify the validity of the submitted program and does not wait for the submitted job to complete. The program runs as a separate process.

Use the following workflow to start a Connect:Direct Run Job from Sterling Integrator:

- *Check Out the Business Process* on page 81
- *Edit the Business Process* on page 82
- *Check In Your Business Process* on page 83
- *Submit and Monitor Your Sterling Integrator Business Process* on page 84

Check Out the Business Process

When you check out an existing business process with the Source Manager, you lock the business process and prevent other users from modifying it at the same time.

Use the following procedure to check out your business process that contains the CD Server Submit Service from Sterling Integrator:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. On the Business Process Manager page, in the Search pane, type your business process name in the Process Name box and click Go!.
4. Click Source Manager for your business process.
5. On the Source Manager page, click check out for the version of the business process you want to check out.
6. Click OK in the dialog box to lock the file for editing.

7. In the File Download dialog box, click Save to save a copy of the business process to your local file system.
8. In the Save As dialog box, navigate to the directory where you want to save the business process, type the business process file name in the File name box, and click Save.

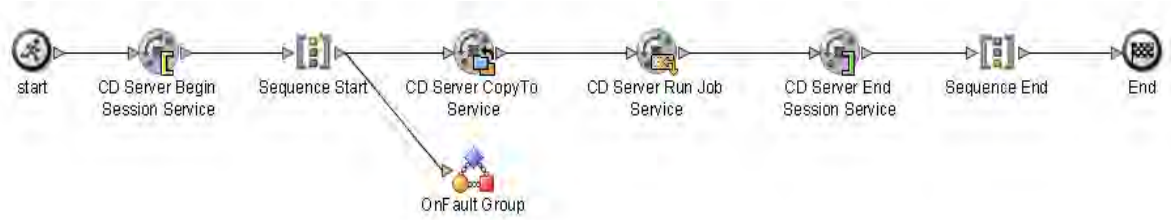
Edit the Business Process

In this scenario, you replace the CD Server Submit Service with the CD Server Run Job Service in your business process. The business process copies a file to the Connect:Direct server and then starts a Connect:Direct Run Job on that server.

Use the following procedure to edit the Sterling Integrator business process:

1. Log in to Sterling Integrator and launch the Graphical Process Modeler from the Home screen.
2. Enter your Sterling Integrator User ID and password in the Log In dialog box.
3. If the Connect:Direct stencil is not visible in the GPM, navigate to the View menu and select Stencil > Applications > Sterling Commerce > Connect:Direct.

   This will add the Connect:Direct stencil to the GPM.
4. From the File menu, select Open, navigate to the business process file and click Open.
5. Drag and drop the CD Server Run Job Service icon from the Connect:Direct stencil into the Business Process window.
6. To arrange and link the icons:
   a. Click the CD Server Submit Service icon and press Delete to remove it.
   b. Place the CD Server Run Job Service icon between the CD Server CopyTo Service icon and the CD Server End Session Service icon.
   c. Click the arrow on the right side of the CD Server CopyTo Service icon and drag it to the arrow on the left side of the CD Server Run Job Service icon.
   d. Click the arrow on the right side of the CD Server Run Job Service icon and drag it to the arrow on the left side of the CD Server End Session Service icon.



7. Configure the CD Server Run Job Service using the following procedure:
   a. Double-click the CD Server Run Job Service icon. This opens the Service Editor window.

      The CD Server Run Job Service acts like a Run Job statement in a Connect:Direct process. Use this service to start a Connect:Direct Run Job on a remote Connect:Direct server.

   b. In the Service Editor-CD Server Run Job Service window, select CDServerRunJob from the Config drop-down list.

      In this step you specify the pre-defined CDServerRunJob configuration to use for the CD Server Run Job Service. You can override configuration values in the Service Editor.

   c. Type pgm(*path*/*filename*) desktop(yes) as the Value for Sysopts, where *path* is the full directory path and *filename* is the file name of the program or script you wish to run in the Run Job.

   d. Type //BeginSessionResults/SessionToken/node() as the Value for SessionToken and select the Use XPATH? box.

      The SessionToken value in the CD Server Run Job Service ensures that this service starts the Connect:Direct Run Job using the session initiated by the CD Server Begin Session Service.
8. From the File menu, select Save. In the Validate dialog box, click Yes to validate the business process.
9. On the Save dialog box, type the business process name in the File Name box and click Save. Remember where you save this file.

Note: To see a sample business process, refer to *Sample Business Process: Start a Connect:Direct Run Job* on page 115.

Check In Your Business Process

Use the following procedure to check the revised business process into Sterling Integrator:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. On the Business Process Manager page, in the Search pane, type the business process name in the Process Name box and click Go!.
4. Click Source Manager for your business process.
5. On the Source Manager page, select Go! to Check in an updated definition for this business process.
6. On the Process Definition Check-in page, click Browse and navigate to the business process file that you saved in step 9 of the previous procedure.
7. Type a short description of your business process in the Description box and click Next.
8. On the Process Levels page, select the Set onfault processing check box.
9. Set the Persistence Level to Full.

10. Set the Event Reporting Level to Full.
11. Set the Recovery Level to Auto Resume and click Next.

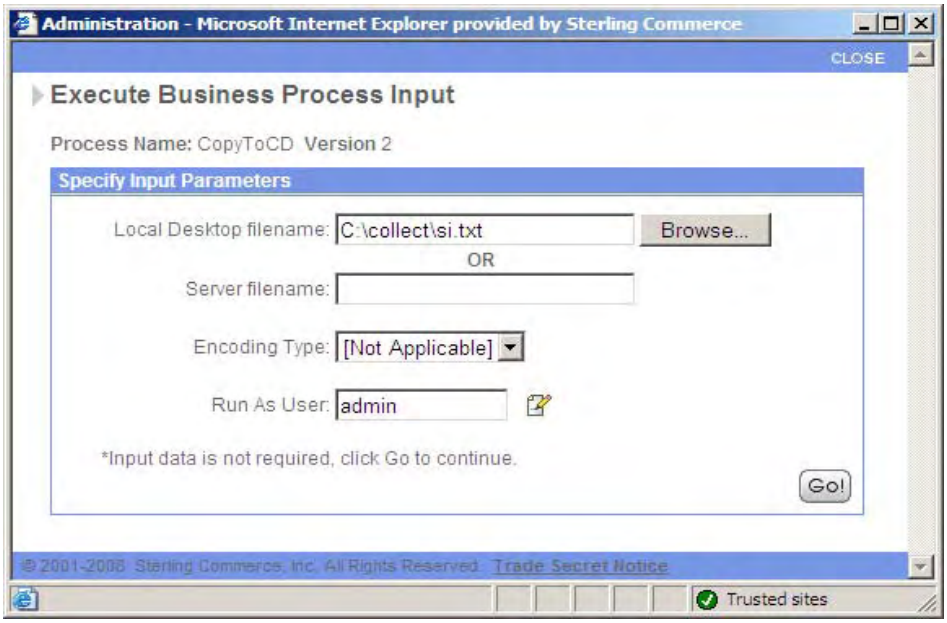
    If Sterling Integrator stops responding during a copy transaction and the recovery level is set to Auto Resume, the business process resumes automatically at the next Sterling Integrator start up.
12. On the Deadline Settings page, click Next.
13. On the Life Span page, click Next.
14. On the Set Default Version page, select the updated version of the business process.
15. On the Confirm page, select the Enable Business Process box.
16. Click Finish.

Submit and Monitor Your Sterling Integrator Business Process

Use the following procedure to submit your Sterling Integrator business process:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. In the Search pane, type your business process name in the Process Name box and click Go!.
4. On the Business Process Manager page, click Execution Manager.
5. On the Execution Manager page, click Execute for the revised business process to launch the Execute Business Process Input dialog box.

6. Click Browse and navigate to the source file on your local system and click Open.



7. Click Go! to submit the business process.

   The Execute Business Process page is displayed.

8. Close the Execute Business Process page.

   The program, application, or script runs on the Connect:Direct server.

Monitor with Sterling Integrator

Use the following procedure to monitor your business process with Sterling Integrator:

1. From the Business Process menu, select Monitor > Advanced Search > Business Processes.
2. In the Search Using Business Process Name pane, select your business process name in the Business Processes list and click Go!.

   The Monitor page displays the following information:

Label	Description
Status	Status of the business process—a green traffic light signals a successful execution
ID	The business process ID number
Name	The business process name
State	The current state of the business process

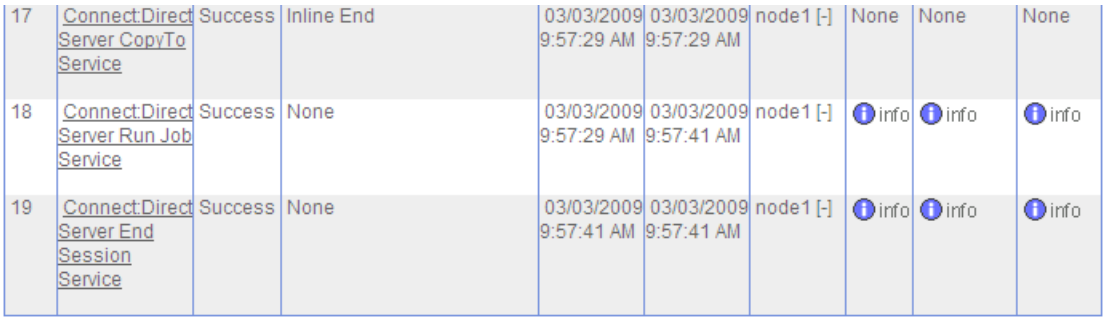
If the Status indicates unsuccessful execution, refer to *Troubleshooting* on page 145.

3. Click the ID number to see details about the business process execution.

   The Business Process Detail page displays the following information for each step:

Label	Description
Step	The business process step number
Service	The Sterling Integrator service name used in the step
Status	The status of the step
Advanced Status	Additional status information
Started	The time and date the step started
Ended	The time and date the step ended
Status Report	A link to the status report for the step
Document	A link to documents in use by the step
Instance Data	A link to process data for the step

4. The Status for the Connect:Direct Server Run Job Service is Success. This indicates only that the Connect:Direct Run Job successfully started. It does not provide a completion status for the application invoked by the Run Job.



17	Connect:Direct Server CopyTo Service	Success	Inline End	03/03/2009 9:57:29 AM	03/03/2009 9:57:29 AM	node1 [-]	None	None	None
18	Connect:Direct Server Run Job Service	Success	None	03/03/2009 9:57:29 AM	03/03/2009 9:57:41 AM	node1 [-]	info	info	info
19	Connect:Direct Server End Session Service	Success	None	03/03/2009 9:57:41 AM	03/03/2009 9:57:41 AM	node1 [-]	info	info	info

5. The last step in the Business Process Detail is the CD Server End Session Service. The Status for this step indicates that it successfully closes the Connect:Direct session.

Note: You can also monitor your business processes from the Business Processes menu by navigating to Monitor > Advanced Search > Documents or Monitor > Advanced Search > Communication Sessions.

Monitor with Connect:Direct

You can use the Connect:Direct Select Statistics to monitor your revised Sterling Integrator to Connect:Direct business process.

If the Connect:Direct Run Job starts successfully, the Select Statistics detail will report the following:

Attribute	Value
Message ID	LSMG400I (if Connect:Direct is installed on a Windows system)
Message Text	A user RUNJOB step completed successfully
Source File	pgm(*path*/*filename*) desktop(yes)

If the Connect:Direct process is not successful, refer to *Troubleshooting* on page 145.

Chapter 12

Use Sterling Integrator to Start a Connect:Direct Run Task

This chapter describes how to modify your Sterling Integrator business process to start and wait on a program on the Connect:Direct server via a Run Task after the source file is copied. The program may be a program or script. The Connect:Direct Server adapter does not verify the validity of the submitted program, but it does wait for the submitted job to complete before moving to the next service in the business process. The program or script runs as a separate process.

Use the following workflow to start a Connect:Direct Run Task from Sterling Integrator:

- *Check Out the Business Process* on page 89
- *Edit the Business Process* on page 90
- *Check In Your Business Process* on page 91
- *Submit and Monitor Your Sterling Integrator Business Process* on page 92

Check Out the Business Process

When you check out an existing business process with the Source Manager, you lock the business process and prevent other users from modifying it at the same time.

Use the following procedure to check out your business process that contains the CD Server Run Job Service from Sterling Integrator:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. On the Business Process Manager page, in the Search pane, type your business process name in the Process Name box and click Go!.
4. Click Source Manager for your business process.
5. On the Source Manager page, click check out for the version of the business process you want to check out.
6. Click OK in the dialog box to lock the file for editing.

7. In the File Download dialog box, click Save to save a copy of the business process to your local file system.
8. In the Save As dialog box, navigate to the directory where you want to save the business process, type the business process file name in the File name box, and click Save.

Edit the Business Process

In this scenario, you replace the CD Server Run Job Service with the CD Server Run Task Service in your business process. The business process copies a file to the Connect:Direct server and then starts a Connect:Direct Run Task on that server. The business process waits for the Run Task to complete before the CD Server End Session Service terminates the Connect:Direct session.

Use the following procedure to edit the Sterling Integrator business process:

1. Log in to Sterling Integrator and launch the Graphical Process Modeler from the Home screen.
2. Enter your Sterling Integrator User ID and password in the Log In dialog box.
3. If the Connect:Direct stencil is not visible in the GPM, navigate to the View menu and select Stencil > Applications > Sterling Commerce > Connect:Direct.

   This will add the Connect:Direct stencil to the GPM.
4. From the File menu, select Open, navigate to the business process file and click Open.
5. Drag and drop the CD Server Run Task Service icon from the Connect:Direct stencil into the Business Process window.
6. To arrange and link the icons:
   a. Click the CD Server Run Job Service icon and press Delete to remove it.
   b. Place the CD Server Run Task Service icon between the CD Server CopyTo Service icon and the CD Server End Session Service icon.
   c. Click the arrow on the right side of the CD Server CopyTo Service icon and drag it to the arrow on the left side of the CD Server Run Task Service icon.
   d. Click the arrow on the right side of the CD Server Run Task Service icon and drag it to the arrow on the left side of the CD Server End Session Service icon.

7. Configure the CD Server Run Task Service using the following procedure:
   a. Double-click the CD Server Run Task Service icon. This opens the Service Editor window.

      The CD Server Run Task Service acts like a Run Task statement in a Connect:Direct process. Use this service to start a Connect:Direct Run Task on a remote Connect:Direct server and wait for it to complete before executing the next service in a business process.

   b. In the Service Editor-CD Server Run Task Service window, select CDServerRunTask from the Config drop-down list.

      In this step you specify the pre-defined CDServerRunTask configuration to use for the CD Server Run Task Service. You can override configuration values in the Service Editor.

   c. Type pgm(*path*/*filename*) desktop(yes) as the Value for SystemOpts, where *path* is the full directory path and *filename* is the file name of the program or script you wish to run in the Run Task.

   d. Type //BeginSessionResults/SessionToken/node() as the Value for SessionToken and select the Use XPATH? box.

      The SessionToken value in the CD Server Run Task Service ensures that this service starts the Connect:Direct Run Task using the session initiated by the CD Server Begin Session Service.
8. From the File menu, select Save. In the Validate dialog box, click Yes to validate the business process.
9. On the Save dialog box, type the business process file name in the File Name box and click Save. Remember where you save this file.

Note: To see a sample business process, refer to *Sample Business Process: Start a Connect:Direct Run Task* on page 117.

Check In Your Business Process

Use the following procedure to check the revised business process into Sterling Integrator:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. On the Business Process Manager page, in the Search pane, type the business process name in the Process Name box and click Go!.
4. Click Source Manager for your business process.
5. On the Source Manager page, select Go! to Check in an updated definition for this business process.
6. On the Process Definition Check-in page, click Browse and navigate to the business process file that you saved in step 9 of the previous procedure.
7. Type a short description of your business process in the Description box and click Next.

8. On the Process Levels page, select the Set onfault processing check box.
9. Set the Persistence Level to Full.
10. Set the Event Reporting Level to Full.
11. Set the Recovery Level to Auto Resume and click Next.

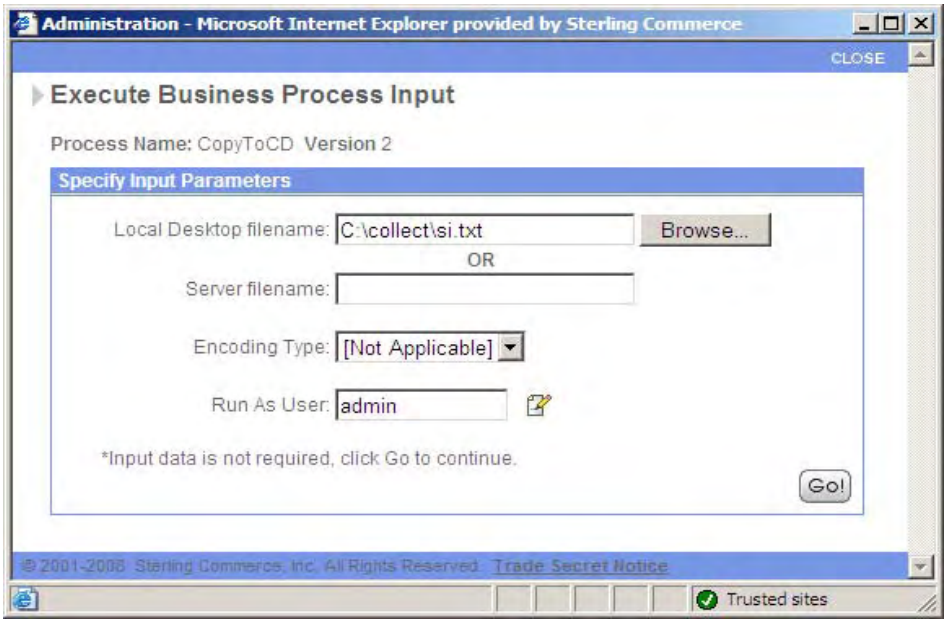
    If Sterling Integrator stops responding during a copy transaction and the recovery level is set to Auto Resume, the business process resumes automatically at the next Sterling Integrator start up.
12. On the Deadline Settings page, click Next.
13. On the Life Span page, click Next.
14. On the Set Default Version page, select the updated version of the business process.
15. On the Confirm page, select the Enable Business Process box.
16. Click Finish.

Submit and Monitor Your Sterling Integrator Business Process

Use the following procedure to submit your Sterling Integrator business process:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. In the Search pane, type your business process name in the Process Name box and click Go!.
4. On the Business Process Manager page, click Execution Manager.
5. On the Execution Manager page, click Execute for the revised business process to launch the Execute Business Process Input dialog box.

6. Click Browse and navigate to the source file on your local system and click Open.



7. Click Go! to submit the business process. The Execute Business Process page is displayed.
8. Close the Execute Business Process page.

Monitor with Sterling Integrator

Use the following procedure to monitor your business process with Sterling Integrator:

1. From the Business Process menu, select Monitor > Advanced Search > Business Processes.
2. In the Search Using Business Process Name pane, select your business process in the Business Processes list and click Go!.

   The Monitor page displays the following information:

Label	Description
Status	Status of the business process—a green traffic light signals a successful execution
ID	The business process ID number
Name	The business process name
State	The current state of the business process

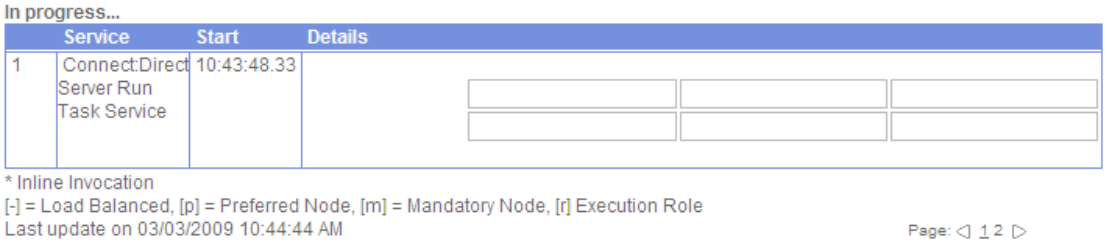
If the Status indicates unsuccessful execution, refer to *Troubleshooting* on page 145.

3. Click the ID number to see details about the business process execution.

   The Business Process Detail page displays the following information for each step:

Label	Description
Step	The business process step number
Service	The Sterling Integrator service name used in the step
Status	The status of the step
Advanced Status	Additional status information
Started	The time and date the step started
Ended	The time and date the step ended
Status Report	A link to the status report for the step
Document	A link to documents in use by the step
Instance Data	A link to process data for the step

   The Status for the Connect:Direct Server Run Task Service is not reported until the application or script completes. The Business Process Detail screen shows that the Connect:Direct Server Run Task Service is *In progress...*



4. When you close the application or script, The CD Server Run Task Service completes and the last step in the business process, the CD Server End Session Service, terminates the Connect:Direct session.

Note: You can also monitor your business processes from the Business Processes menu by navigating to Monitor > Advanced Search > Documents or Monitor > Advanced Search > Communication Sessions.

Monitor with Connect:Direct

You can use the Connect:Direct Select Statistics to monitor your revised Sterling Integrator to Connect:Direct business process.

If the Connect:Direct Run Task completes successfully, the Select Statistics detail will report the following:

Attribute	Value
Message ID	LSMG402 (if Connect:Direct is installed on a Windows system)
Message Text	A user RUNTASK step completed. Exit code = 0
Source File	pgm(*path*/*filename*) desktop(yes)

If the Connect:Direct process is not successful, refer to *Troubleshooting* on page 145.

Chapter 13

Hide the Connect:Direct Password in the Business Process

This chapter describes how to hide the value of the user password in your business process. Modify your Sterling Integrator business process by adding an Obscure Data - Process Data Values Service before the CD Server Begin Session Service.

Use the following workflow to hide the Connect:Direct password in the business process:

- *Configure the Obscure Data - Process Data Values Service* on page 97
- *Check Out the Business Process* on page 98
- *Edit the Business Process* on page 98
- *Check In Your Business Process* on page 100
- *Submit and Monitor Your Sterling Integrator Business Process* on page 100

Configure the Obscure Data - Process Data Values Service

Use the following procedure to configure the Obscure Data - Process Data Values Service:

1. Log in to Sterling Integrator.
2. From the Deployment menu, select Services > Configuration.
3. On the Services Configuration page, click Go! in the Create New Service pane.
4. In the Service Type box, type Obscure Data - Process Data Values and click Next.

> **Note:** Alternately, you can navigate to Obscure Data - Process Data Values by clicking one of the navigation buttons next to the Service Type box.

5. On the Name page, in the Name box, type CDClientObscureParameter.
6. In the Description box, type a short description of what you are obscuring and click Next.
7. On the Parameters page, in the first Parameter Name box, type the Connect:Direct User ID.

8. In the first Parameter Value box, type the password for the Connect:Direct User ID and click Next.
9. On the Confirm page, click Finish.

Check Out the Business Process

When you check out an existing business process with the Source Manager, you lock the business process and prevent other users from modifying it at the same time.

Use the following procedure to check out your business process that contains the CD Server Run Task Service from Sterling Integrator:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. On the Business Process Manager page, in the Search pane, type your business process name in the Process Name box and click Go!.
4. Click Source Manager for your business process.
5. On the Source Manager page, click check out for the version of the business process you want to check out.
6. Click OK in the dialog box to lock the file for editing.
7. In the File Download dialog box, click Save to save a copy of the business process to your local file system.
8. In the Save As dialog box, navigate to the directory where you want to save the business process, type the business process file name in the File name box, and click Save.

Edit the Business Process

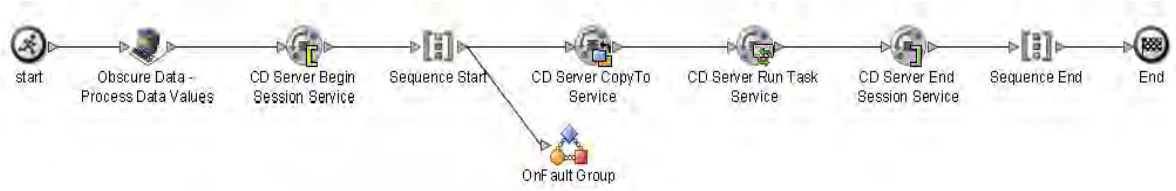
In this scenario, add the Obscure Data - Process Data Values to your business process. The Obscure Data - Process Data Values retrieves the remote password from the CDClientObscureParameter configuration. The CD Server Begin Session Service gets the remote password from the Obscure Data - Process Data Value. The remote password is not revealed in the business process.

Use the following procedure to edit the Sterling Integrator business process:

1. Log in to Sterling Integrator and launch the Graphical Process Modeler from the Home screen.
2. Enter your Sterling Integrator User ID and password in the Log In dialog box.
3. If the All Services stencil is not visible in the GPM, navigate to the View menu and select Stencil > All Services.

   This will add the All Services stencil to the GPM.
4. From the File menu, select Open, navigate to your business process file and click Open.

5. Drag and drop the Obscure Data - Process Data Values icon from the Connect:Direct stencil into the Business Process window.
6. To arrange and link the icons:
   a. Click the arrow between the start icon and the CD Server Begin Session Service icon and press Delete to remove it.
   b. Place the Obscure Data - Process Data Values icon between the start icon and the CD Server Begin Session Service icon.
   c. Click the arrow on the right side of the start icon and drag it to the arrow on the left side of the Obscure Data - Process Data Values icon.
   d. Click the arrow on the right side of the Obscure Data - Process Data Values icon and drag it to the arrow on the left side of the CD Server Begin Session Service icon.



7. Configure the Obscure Data - Process Data Values using the following procedure:
   a. Double-click the Obscure Data - Process Data Values icon. This opens the Service Editor window.
   b. In the Service Editor-Obscure Data - Process Data Values window, select CDClientObscureParameter from the Config drop-down list.

      In this step you specify the CDClientObscureParameter configuration to use for the Obscure Data - Process Data Values. You can override configuration values in the Service Editor.
8. Edit the CD Server Begin Session Service using the following procedure:
   a. Double-click the CD Server Begin Session Service icon.
   b. Type revealObscured(*CDUserID*) as the Value for the RemotePasswd and select the Use XPATH? box. *CDUserID* is the Connect:Direct User ID.
   c. Select Yes as the Value for UsingObscuredPasswd.
9. From the File menu, select Save. In the Validate dialog box, click Yes to validate the business process.
10. On the Save dialog box, type your business process file name in the File Name box and click Save.

    Remember where you save this file.

Note: To see a sample business process, refer to *Sample Business Process: Hide the Connect:Direct Password* on page 119.

Check In Your Business Process

Use the following procedure to check the revised business process into Sterling Integrator:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. On the Business Process Manager page, in the Search pane, type your business process name in the Process Name box and click Go!.
4. Click Source Manager for your business process.
5. On the Source Manager page, select Go! to Check in an updated definition for this business process.
6. On the Process Definition Check-in page, click Browse and navigate to your business process file that you saved in step 10 of the previous procedure.
7. Type Added Obscure Data - Process Data Values to hide password in the Description box and click Next.
8. On the Process Levels page, select the Set onfault processing check box.
9. Set the Persistence Level to Full.
10. Set the Event Reporting Level to Full.
11. Set the Recovery Level to Auto Resume and click Next.

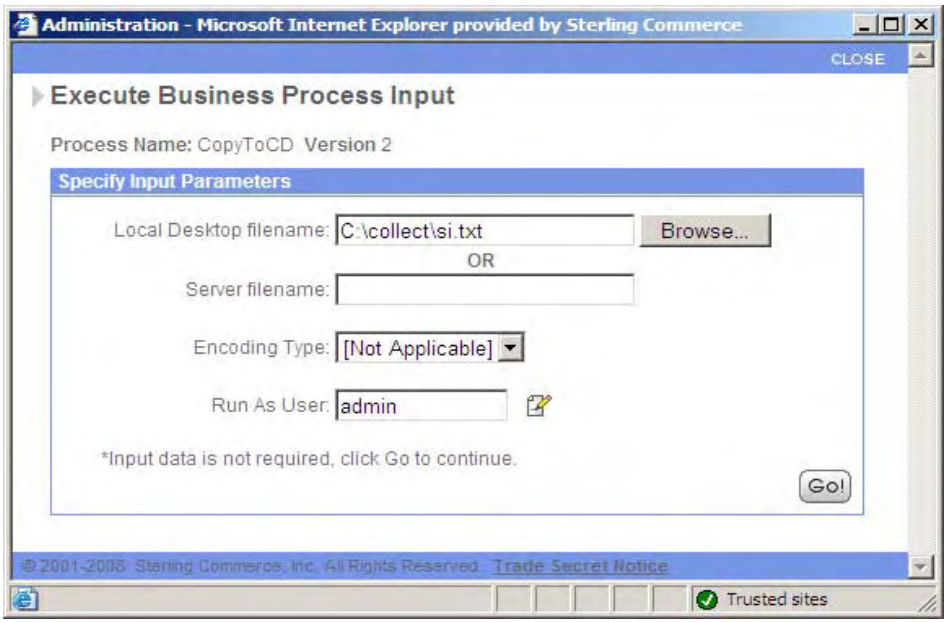
    If Sterling Integrator stops responding during a copy transaction and the recovery level is set to Auto Resume, the business process resumes automatically at the next Sterling Integrator start up.
12. On the Deadline Settings page, click Next.
13. On the Life Span page, click Next.
14. On the Set Default Version page, select the updated version of the business process.
15. On the Confirm page, select the Enable Business Process box.
16. Click Finish.

Submit and Monitor Your Sterling Integrator Business Process

Use the following procedure to submit your Sterling Integrator business process:

1. Log in to Sterling Integrator.
2. From the Business Process menu, select Manager.
3. In the Search pane, type your business process in the Process Name box and click Go!.
4. On the Business Process Manager page, click Execution Manager.

5. On the Execution Manager page, click Execute for the revised business process to launch the Execute Business Process Input dialog box.
6. Click Browse and navigate to the source file on your local system and click Open.



7. Click Go! to submit your business process.

   The Execute Business Process page is displayed.
8. Close the Execute Business Process page.

   The application or script runs on the Connect:Direct server.

Monitor with Sterling Integrator

If you modify your business process with the Obscure Data - Process Data Values correctly, the business process execution results will be unchanged.

Use the following procedure to monitor your business process with Sterling Integrator:

1. From the Business Process menu, select Monitor > Advanced Search > Business Processes.
2. In the Search Using Business Process Name pane, select your business process in the Business Processes list and click Go!.

   The Monitor page displays the following information:

Label	Description
Status	Status of the business process—a green traffic light signals a successful execution
ID	The business process ID number

Label	Description
Name	The business process name
State	The current state of the business process

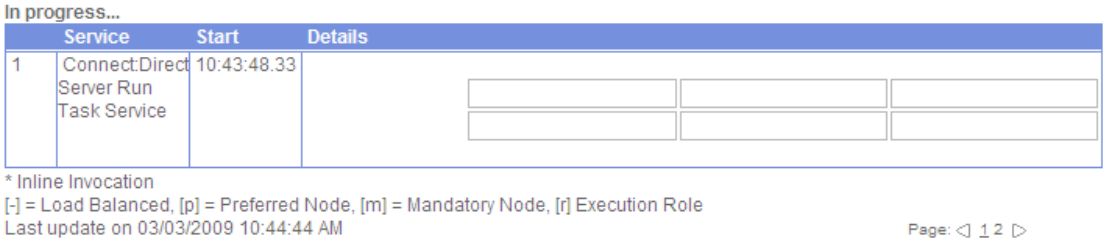
If the Status indicates unsuccessful execution, refer to *Troubleshooting* on page 145.

3. Click the ID number to see details about the business process execution.

   The Business Process Detail page displays the following information for each step:

Label	Description
Step	The business process step number
Service	The Sterling Integrator service name used in the step
Status	The status of the step
Advanced Status	Additional status information
Started	The time and date the step started
Ended	The time and date the step ended
Status Report	A link to the status report for the step
Document	A link to documents in use by the step
Instance Data	A link to process data for the step

4. The Status for the Connect:Direct Server Run Task Service is not reported until the application or script completes. The Business Process Detail screen shows that the Connect:Direct Server Run Task Service is *In progress*...



5. When you close the application or script, The CD Server Run Task Service completes and the last step in the business process, the CD Server End Session Service, terminates the Connect:Direct session.

Note: You can also monitor your business processes from the Business Processes menu by navigating to Monitor > Advanced Search > Documents or Monitor > Advanced Search > Communication Sessions.

Monitor with Connect:Direct

You can use the Connect:Direct Select Statistics to monitor your revised Sterling Integrator to Connect:Direct business process.

If the Connect:Direct Run Task completes successfully, the Select Statistics detail will report the following:

Attribute	Value
Message ID	LSMG402I (if Connect:Direct is installed on a Windows system)
Message Text	A user RUNTASK step completed. Exit code = 0
Source File	pgm(*path*/*filename*) desktop(yes)

If the Connect:Direct process is not successful, refer to *Troubleshooting* on page 145.

Appendix A

Sample Business Processes

Sample Business Process: Copy a File from Connect:Direct to Sterling Integrator

In this sample, copy a file from a Connect:Direct Server (PNODE) to a Sterling Integrator Connect:Direct Server adapter (SNODE). The Connect:Direct Server adapter invokes the ReceiveFromCD business process and passes the file to the business process.

In the sample business process, shown in BPML, the Get Document Information Service obtains file information about the primary document and places it into process data. You can add additional services to this business process to perform operations such as translating the file or copying the file to another server using FTP.

```
<process name = "ReceiveFromCD">
  <operation name="Get Document Information Service">
    <participant name="GetDocumentInfoService"/>
    <output message="GetDocumentInfoServiceTypeInputMessage">
      <assign to="." from="*"></assign>
    </output>
    <input message="inmsg">
      <assign to="." from="*"></assign>
    </input>
  </operation>

</process>
```

Sample Business Process: Pull a File from Sterling Integrator to Connect:Direct

In this sample, shown in BPML, the Connect:Direct node (PNODE) pulls a file from a Sterling Integrator Connect:Direct Server adapter (SNODE). The Connect:Direct node connects to the Sterling Integrator Connect:Direct Server adapter which invokes the RespondToCD business process. This business process passes a document to the Connect:Direct Server adapter which sends the file back to the Connect:Direct node.

In the first operation of the RespondToCD business process, the File System Adapter collects (reads) a file from the Sterling Integrator local file system. This file becomes the primary document of the business process.

In the next operation of the business process, the CD Server BP Response Service passes the primary document back to the Connect:Direct node (PNODE).

```
<process name = "RespondToCD">
  <sequence>
    <operation name="File System Adapter">
      <participant name="CollectForCD"/>
      <output message="FileSystemInputMessage">
        <assign to="Action">FS_COLLECT</assign>
        <assign to="deleteAfterCollect">false</assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>

    <operation name="CD Server BP Response Service">
      <participant name="CDServerBPResponse"/>
      <output message="CDServerBPResponseServiceTypeInputMessage">
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>

  </sequence>
</process>
```

Sample Business Process: Copy a File from Sterling Integrator to Connect:Direct

In this sample, shown in BPML, the Sterling Integrator CopyToCD business process passes a document to the Connect:Direct Server adapter (PNODE) which copies the file to the Connect:Direct node (SNODE). The business process functions much like a Connect:Direct process.

The first operation uses the CD Server Begin Session Service to establish a connection to the remote Connect:Direct node, CDWIN. The local node name of the Connect:Direct Server adapter is SI50CD. The Begin Session Service uses the remote user ID of cduser to authenticate to the Connect:Direct server.

The second operation uses the CD Server CopyTo Service to copy the primary document to the remote Connect:Direct server. The destination file name is cd.txt.

The third operation uses the CD Server End Session Service to terminate the session with the Connect:Direct server.

```
<process name="CopyToCD">
  <sequence>
    <operation name="CD Server Begin Session Service">
      <participant name="CDServerBeginSession"/>
      <output message="CDServerBeginSessionServiceTypeInputMessage">
        <assign to="LocalCDNodeName">SI50CD</assign>
        <assign to="RemoteCDNodeName">CDWIN</assign>
        <assign to="RemotePasswd">xxxxxxxx</assign>
        <assign to="RemoteUserId">cduser</assign>
        <assign to="UsingObscuredPasswd">NO</assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>

    <operation name="CD Server CopyTo Service">
      <participant name="CDServerCopyTo"/>
      <output message="CDServerCopyToServiceTypeInputMessage">
        <assign to="RemoteFileName">cd.txt</assign>
        <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>
```

```
 <operation name="CD Server End Session Service">
      <participant name="CDServerEndSession"/>
      <output message="CDServerEndSessionServiceTypeInputMessage">
        <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>

  </sequence>
</process>
```

Sample Business Process: Copy a File from Connect:Direct to Sterling Integrator

In this sample, shown in BPML, the Sterling Integrator CopyFromCD business process invokes the Connect:Direct Server adapter (PNODE) which copies the file from the Connect:Direct node (SNODE) back to the business process as the primary document. The business process functions much like a Connect:Direct process.

The first operation uses the CD Server Begin Session Service to establish a connection to the remote Connect:Direct node, CDWIN. The local node name of the Connect:Direct Server adapter is SI50CD. The Begin Session Service uses the remote user ID of cduser to authenticate to the Connect:Direct server.

The second operation uses the CD Server CopyFrom Service to copy the source file from the remote Connect:Direct server. The source file name is sample.txt.

The third operation uses the CD Server End Session Service to terminate the session with the Connect:Direct server.

```
<process name="CopyFromCD">
  <sequence>
    <operation name="CD Server Begin Session Service">
      <participant name="CDServerBeginSession"/>
      <output message="CDServerBeginSessionServiceTypeInputMessage">
        <assign to="LocalCDNodeName">SI50CD</assign>
        <assign to="RemoteCDNodeName">CDWIN</assign>
        <assign to="RemotePasswd">xxxxxxxx</assign>
        <assign to="RemoteUserId">cduser</assign>
        <assign to="UsingObscuredPasswd">NO</assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>

    <operation name="CD Server CopyFrom Service">
      <participant name="CDServerCopyTo"/>
      <output message="CDServerCopyFromServiceTypeInputMessage">
        <assign to="RemoteFileName">sample.txt</assign>
        <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>
```

```
 <operation name="CD Server End Session Service">
      <participant name="CDServerEndSession"/>
      <output message="CDServerEndSessionServiceTypeInputMessage">
        <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>

  </sequence>
</process>
```

Sample Business Process: Add Error Handling

In this sample, shown in BPML, you add error handling to the Sterling Integrator business process you created that passes a document to the Connect:Direct Server adapter (PNODE) which copies the file to the Connect:Direct node (SNODE). The error handling ensures that the Connect:Direct session closes if an error is encountered during the session.

The onFault branch contains an instance of the CD Server End Session Service. If an error occurs after the Begin Session Service, the onFault logic is invoked and the End Session Service terminates the session with the Connect:Direct server.

```
<process name="CopyToCD">
  <sequence>
    <operation name="CD Server Begin Session Service">
      <participant name="CDServerBeginSession"/>
      <output message="CDServerBeginSessionServiceTypeInputMessage">
        <assign to="LocalCDNodeName">SI50CD</assign>
        <assign to="RemoteCDNodeName">CDWIN</assign>
        <assign to="RemotePasswd">xxxxxxxx</assign>
        <assign to="RemoteUserId">cduser</assign>
        <assign to="UsingObscuredPasswd">NO</assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>

    <sequence>
      <operation name="CD Server CopyTo Service">
        <participant name="CDServerCopyTo"/>
        <output message="CDServerCopyToServiceTypeInputMessage">
          <assign to="RemoteFileName">cd.txt</assign>
          <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
          <assign to="." from="*"></assign>
        </output>
        <input message="inmsg">
          <assign to="." from="*"></assign>
        </input>
      </operation>

      <operation name="CD Server End Session Service">
        <participant name="CDServerEndSession"/>
        <output message="CDServerEndSessionServiceTypeInputMessage">
          <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
          <assign to="." from="*"></assign>
        </output>
        <input message="inmsg">
          <assign to="." from="*"></assign>
        </input>
      </operation>
```

```
      <onFault>
        <operation name="CD Server End Session Service">
          <participant name="CDServerEndSession"/>
          <output message="CDServerEndSessionServiceTypeInputMessage">
            <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
            <assign to="." from="*"></assign>
          </output>
          <input message="inmsg">
            <assign to="." from="*"></assign>
          </input>
        </operation>

      </onFault>
    </sequence>
  </sequence>
</process>
```

Sample Business Process: Submit a Connect:Direct Process

In this sample, shown in BPML, you modify the Sterling Integrator business process to submit a process on the Connect:Direct node after the file is copied. The Connect:Direct process copies the file received from Sterling Integrator to a Z/OS system.

The CD Server Submit Service is placed after the CD Server CopyTo Service. The Submit Service submits a Connect:Direct process called Copy2ZOS.cdp.

```
<process name="CopyToCD">
  <sequence>
    <operation name="CD Server Begin Session Service">
      <participant name="CDServerBeginSession"/>
      <output message="CDServerBeginSessionServiceTypeInputMessage">
        <assign to="LocalCDNodeName">SI50CD</assign>
        <assign to="RemoteCDNodeName">CDWIN</assign>
        <assign to="RemotePasswd">xxxxxxxx</assign>
        <assign to="RemoteUserId">cduser</assign>
        <assign to="UsingObscuredPasswd">NO</assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>

    <sequence name="Sequence Start">
      <operation name="CD Server CopyTo Service">
        <participant name="CDServerCopyTo"/>
        <output message="CDServerCopyToServiceTypeInputMessage">
          <assign to="RemoteFileName">cd.txt</assign>
          <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
          <assign to="." from="*"></assign>
        </output>
        <input message="inmsg">
          <assign to="." from="*"></assign>
        </input>
      </operation>

      <operation name="CD Server Submit Service">
        <participant name="CDServerSubmit"/>
        <output message="CDServerSubmitServiceTypeInputMessage">
          <assign to="RemoteProcessFile">Copy2ZOS.cdp</assign>
          <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
          <assign to="." from="*"></assign>
        </output>
        <input message="inmsg">
          <assign to="." from="*"></assign>
        </input>
      </operation>
```

```
      <operation name="CD Server End Session Service">
        <participant name="CDServerEndSession"/>
        <output message="CDServerEndSessionServiceTypeInputMessage">
          <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
          <assign to="." from="*"></assign>
        </output>
        <input message="inmsg">
          <assign to="." from="*"></assign>
        </input>
      </operation>
      <onFault>
        <operation name="CD Server End Session Service">
          <participant name="CDServerEndSession"/>
          <output message="CDServerEndSessionServiceTypeInputMessage">
            <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
            <assign to="." from="*"></assign>
          </output>
          <input message="inmsg">
            <assign to="." from="*"></assign>
          </input>
        </operation>

      </onFault>
    </sequence>
  </sequence>
</process>
```

Sample Business Process: Start a Connect:Direct Run Job

In this sample, shown in BPML, you modify the Sterling Integrator business process to start a program on the Connect:Direct server using a Run Job after a file is copied. The Connect:Direct Server adapter does not verify the validity of the submitted program and does not wait for the submitted job to complete. The program runs as a separate process.

The CD Server Run Job Service is placed after the CopyTo Service. The Run Job Service passes *pgm(C:\Windows\notepad.exe) desktop(yes)* to the remote Connect:Direct server via Sysopts. This causes the Windows Notepad application to run on the Connect:Direct server.

```
<process name="CopyToCD">
  <sequence>
    <operation name="CD Server Begin Session Service">
      <participant name="CDServerBeginSession"/>
      <output message="CDServerBeginSessionServiceTypeInputMessage">
        <assign to="LocalCDNodeName">SI50CD</assign>
        <assign to="RemoteCDNodeName">CDWIN</assign>
        <assign to="RemotePasswd">xxxxxxxx</assign>
        <assign to="RemoteUserId">cduser</assign>
        <assign to="UsingObscuredPasswd">NO</assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>

    <sequence name="Sequence Start">
      <operation name="CD Server CopyTo Service">
        <participant name="CDServerCopyTo"/>
        <output message="CDServerCopyToServiceTypeInputMessage">
          <assign to="RemoteFileName">cd.txt</assign>
          <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
          <assign to="." from="*"></assign>
        </output>
        <input message="inmsg">
          <assign to="." from="*"></assign>
        </input>
      </operation>

      <operation name="CD Server Run Job Service">
        <participant name="CDServerRunJob"/>
        <output message="CDServerRunJobServiceTypeInputMessage">
          <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
          <assign to="Sysopts">pgm(C:\Windows\notepad.exe) desktop(yes)</assign>
          <assign to="." from="*"></assign>
        </output>
        <input message="inmsg">
          <assign to="." from="*"></assign>
        </input>
      </operation>
```

```
      <operation name="CD Server End Session Service">
        <participant name="CDServerEndSession"/>
        <output message="CDServerEndSessionServiceTypeInputMessage">
          <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
          <assign to="." from="*"></assign>
        </output>
        <input message="inmsg">
          <assign to="." from="*"></assign>
        </input>
      </operation>
      <onFault>
        <operation name="CD Server End Session Service">
          <participant name="CDServerEndSession"/>
          <output message="CDServerEndSessionServiceTypeInputMessage">
            <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
            <assign to="." from="*"></assign>
          </output>
          <input message="inmsg">
            <assign to="." from="*"></assign>
          </input>
        </operation>

      </onFault>
    </sequence>
  </sequence>
</process>
```

Sample Business Process: Start a Connect:Direct Run Task

In this sample, shown in BPML, you modify your Sterling Integrator business process to start and wait on a program on the Connect:Direct server via a Run Task after the source file is copied. The program may be a program or script. The Connect:Direct Server adapter does not verify the validity of the submitted program, but it does wait for the submitted job to complete before moving to the next service in the business process. The program or script runs as a separate process.

The CD Server Run Task Service is placed after the CopyTo Service. The Run Task Service passes *pgm(C:\Windows\notepad.exe) desktop(yes)* to the remote Connect:Direct server via Sysopts. This causes the Windows Notepad application to run on the Connect:Direct server.

```
<process name="CopyToCD">
  <sequence>
    <operation name="CD Server Begin Session Service">
      <participant name="CDServerBeginSession"/>
      <output message="CDServerBeginSessionServiceTypeInputMessage">
        <assign to="LocalCDNodeName">SI50CD</assign>
        <assign to="RemoteCDNodeName">CDWIN</assign>
        <assign to="RemotePasswd">xxxxxxxx</assign>
        <assign to="RemoteUserId">cduser</assign>
        <assign to="UsingObscuredPasswd">NO</assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>

    <sequence name="Sequence Start">
      <operation name="CD Server CopyTo Service">
        <participant name="CDServerCopyTo"/>
        <output message="CDServerCopyToServiceTypeInputMessage">
          <assign to="RemoteFileName">cd.txt</assign>
          <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
          <assign to="." from="*"></assign>
        </output>
        <input message="inmsg">
          <assign to="." from="*"></assign>
        </input>
      </operation>

      <operation name="CD Server Run Task Service">
        <participant name="CDServerRunTask"/>
        <output message="CDServerRunTaskServiceTypeInputMessage">
          <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
          <assign to="SystemOpts">pgm(C:\Windows\notepad.exe) desktop(yes)</assign>
          <assign to="." from="*"></assign>
        </output>
        <input message="inmsg">
          <assign to="." from="*"></assign>
        </input>
      </operation>
```

```
      <operation name="CD Server End Session Service">
        <participant name="CDServerEndSession"/>
        <output message="CDServerEndSessionServiceTypeInputMessage">
          <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
          <assign to="." from="*"></assign>
        </output>
        <input message="inmsg">
          <assign to="." from="*"></assign>
        </input>
      </operation>
      <onFault>
        <operation name="CD Server End Session Service">
          <participant name="CDServerEndSession"/>
          <output message="CDServerEndSessionServiceTypeInputMessage">
            <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
            <assign to="." from="*"></assign>
          </output>
          <input message="inmsg">
            <assign to="." from="*"></assign>
          </input>
        </operation>

      </onFault>
    </sequence>
  </sequence>
</process>
```

Sample Business Process: Hide the Connect:Direct Password

In this sample, shown in BPML, you modify your Sterling Integrator business process by adding an Obscure Data - Process Data Values Service before the CD Server Begin Session Service to hide the value of the user password.

The first operation in the business process is Obscure Data - Process Data Values. This service works with the CD Server Begin Session Service so that the password for the remote Connnect:Direct User ID, cduser, is not revealed in the business process. The password is retrieved using the RemotePasswd parameter, which is set to revealObscured(cduser) in the Begin Session Service.

```
<process name="CopyToCD">
  <sequence>
    <operation name="Obscure Data - Process Data Values">
      <participant name="CDClientObscureParameter"/>
      <output message="ObscureParameterInputMessage">
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>

    <operation name="CD Server Begin Session Service">
      <participant name="CDServerBeginSession"/>
      <output message="CDServerBeginSessionServiceTypeInputMessage">
        <assign to="LocalCDNodeName">SI50CD</assign>
        <assign to="RemoteCDNodeName">CDWIN</assign>
        <assign to="RemotePasswd" from="revealObscured(cduser)"></assign>
        <assign to="RemoteUserId">cduser</assign>
        <assign to="UsingObscuredPasswd">YES</assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="BeginSessionResults" from="*"></assign>
      </input>
    </operation>

    <sequence name="Sequence Start">
      <operation name="CD Server CopyTo Service">
        <participant name="CDServerCopyTo"/>
        <output message="CDServerCopyToServiceTypeInputMessage">
          <assign to="RemoteFileName">cd.txt</assign>
          <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
          <assign to="." from="*"></assign>
        </output>
        <input message="inmsg">
          <assign to="." from="*"></assign>
        </input>
      </operation>
```

```
      <operation name="CD Server Run Task Service">
        <participant name="CDServerRunTask"/>
        <output message="CDServerRunTaskServiceTypeInputMessage">
          <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
          <assign to="SystemOpts">pgm(C:\Windows\notepad.exe)
desktop(yes)</assign>
          <assign to="." from="*"></assign>
        </output>
        <input message="inmsg">
          <assign to="." from="*"></assign>
        </input>
      </operation>

<operation name="CD Server End Session Service">
        <participant name="CDServerEndSession"/>
        <output message="CDServerEndSessionServiceTypeInputMessage">
          <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
          <assign to="." from="*"></assign>
        </output>
        <input message="inmsg">
          <assign to="." from="*"></assign>
        </input>
      </operation>

      <onFault>
        <operation name="CD Server End Session Service">
          <participant name="CDServerEndSession"/>
          <output message="CDServerEndSessionServiceTypeInputMessage">
            <assign to="SessionToken"
from="//BeginSessionResults/SessionToken/node()"></assign>
            <assign to="." from="*"></assign>
          </output>
          <input message="inmsg">
            <assign to="." from="*"></assign>
          </input>
        </operation>

      </onFault>
    </sequence>
  </sequence>
</process>
```

Appendix B

Copy Options

There are many copy options available when you use the Connect:Direct Server CopyTo Service.

When you using the Sterling Integrator Connect:Direct Server adapter to copy a file to a remote Connect:Direct server, coordinate the copy options with the Connect:Direct administrator.

Settings for Connect:Direct Server CopyTo Service

When you configure the Connect:Direct Server CopyTo service, you must specify settings for the following fields in the Graphical Process Modeler:

Field	Description	Supported Remote Connect:Direct Platforms
Config	Name of the service configuration. Required.	All platforms
BinaryMode	Specifies the mode for Connect:Direct File transfer. Optional. Valid values are: • Yes—simple binary mode • No—(default) - text mode • VB—a variable block binary transfer with Connect:Direct on z/OS	Yes—All platforms No—All platforms VB—z/OS platform

Field	Description	Supported Remote Connect:Direct Platforms
CheckpointInterval	Specifies the byte interval for checkpoint support, which allows restart of interrupted transmissions at the last valid checkpoint point, reducing the time it takes to retransmit the file. Optional. Valid value is number of bytes, in the format: nnnnnnnnn. Application stores checkpoint information for 30 days, after which it is automatically purged. If your database is corrupted, purge this checkpoint information by performing a cold restart. To do this, edit the adapter configuration Server Start Option parameter to Cold Start. Once you have performed the cold start, edit the adapter configuration to change the setting back to Warm Start. You can also purge the checkpoint information from the database manually.	All platforms
Compression	Specifies that the data is to be compressed, which reduces the amount of data transmitted as the file is copied from one node to another. The file will be automatically decompressed at the destination. Optional. Valid values are 1-9. Increasing value indicates higher attempt at compression. Values greater than 2 may not result in further compression.	All platforms

Field	Description	Supported Remote Connect:Direct Platforms
DCB	Specifies Data Control Block (DCB), a group of attributes specified as name-value pairs separated by commas. One, some, or all values may be included. Pattern is name=value with comma between, as in the following example: recordlength=200, blocksize=0, recordformat=FB, datasetorganization=PS, unittype=cart, expirationdate=06365, volumecount=99 Used only on z/OS platform. Optional. Valid attributes are: • recordlength • blocksize • recordformat • datasetorganization • expirationdate • volumecount • unittype Note: More DCB attributes are available but only these are supported in Application. Any other attribute will cause the copy to fail. For more information, see the Connect:Direct for z/OS user documentation.	z/OS platform
Disposition	Specifies how the file gets created on the remote Connect:Direct server. Optional. Valid values are: • New—Specifies that the CopyTo service will create the destination file. The copy fails if the file exists. • rpl—Specifies that the destination file name replaces any existing file or, if none exists, allocates a new file.	All platforms
LocalDocumentId	A valid document ID for an existing document in Application. When this field is left blank, the primary document provided to the business process is used. Optional.	All platforms
LocalFileNameLabel	Specifies a label for the name of the local file. This file name label is provided to the remote Connect:Direct node for informational purposes only. Optional.	All platforms

Field	Description	Supported Remote Connect:Direct Platforms
LocalFromCodePage	Specifies a code page supported by Java VM. Used in conjunction with the value of the LocalToCodePage parameter. The Connect:Direct Server adapter will apply a code page conversion to a document before transferring it to a remote Connect:Direct Server. This parameter is only valid with the following conditions: • Code page specified is supported by the local Java VM • Parameter LocalToCodePage is defined • Text mode file transfer (BinaryMode =No) Optional. Valid value is the name of a codepage supported by the local Java VM. For example: <assign to="LocalFromCodePage">Cp1251</assign> <assign to="LocalToCodePage">Cp1047</assign> This example will translate the local file from windows latin-1 to ibm ebcdic. See http://java.sun.com for a complete list of supported encodings.	All platforms
LocalStripBlanks	Specifies whether the Connect:Direct Server adapter will strip blanks from the end of records in a received remote file before creating a new document. This option is only valid for Text mode file transfers (BinaryMode = No). Optional. Valid value is Yes or No (default).	All platforms

Field	Description	Supported Remote Connect:Direct Platforms
LocalToCodePage	Specifies a code page supported by Java VM. Used in conjunction with the value of the LocalFromCodePage parameter. The Connect:Direct Server adapter will apply a code page conversion to a document before transferring it to a remote Connect:Direct Server. This parameter is only valid with the following conditions: • Code page specified is supported by the local Java VM • Parameter LocalFromCodePage is defined • Text mode file transfer (BinaryMode =No) Optional. Valid value is the name of a codepage supported by the local Java VM. For example: <assign to="LocalFromCodePage">Cp1251</assign> <assign to="LocalToCodePage">Cp1047</assign> This example will translate the local file from windows latin-1 to ibm ebcdic. See http://java.sun.com for a complete list of supported encodings.	All platforms
LocalXlate	Specifies if the Connect:Direct Server adapter is to perform ASCII to EBCDIC translation before copying a file to a remote Connect:Direct Server. This option is only valid for Text mode file transfers (BinaryMode = No). Optional. Valid value is Yes (default) or No.	All platforms
CDRecordType	Identifies to the remote Connect:Direct which class to process the service. For example: 1 Optional. For more information, see the Connect:Direct for z/OS user documentation.	z/OS platform
RemoteFileName	Name that should be given to the file that is copied to the remote Connect:Direct server. Required.	All platforms

Field	Description	Supported Remote Connect:Direct Platforms
SessionToken	Identifies an established session between two Connect:Direct nodes. Required. Valid value is an XML structure that includes the following elements: • SessionId • ProcessNumber • ProcessName • SubmitDateTime • RemoteCDNodeName • RemoteUserId • RemotePasswd • PlexClass • MaxRestartRetries • RestartRetryInterval	All platforms
Sysopts	Remote system operations to be implemented on the remote Connect:Direct node. Optional. For example (for copying to Connect:Direct Windows only): Datatype(text) xlate(yes) For more information, see your Connect:Direct documentation.	All platforms Format of Sysopts varies by platform.

Settings for Connect:Direct Server CopyFrom Service

There are many copy options available when you use the Connect:Direct Server CopyFrom Service.

When you configure the Connect:Direct Server CopyFrom service, you must specify settings for the following fields in the Graphical Process Modeler:

Field	Description	Supported Remote Connect:Direct Platforms
Config	Name of the service configuration. Required.	All platforms
BinaryMode	Specifies the mode for Connect:Direct File transfer. Optional. Valid values are: • Yes—simple binary mode • No—(default) - text mode • VB—a variable block binary transfer with Connect:Direct on z/OS	Yes—All platforms No—All platforms VB—z/OS platform
CheckpointInterval	Specifies the byte interval for checkpoint support, which allows restart of interrupted transmissions at the last valid checkpoint point, reducing the time it takes to retransmit the file. Optional. Valid value is number of bytes, in the format: nnnnnnnnn. Application stores checkpoint information for 30 days, after which it is automatically purged. If your database is corrupted, purge this checkpoint information by performing a cold restart. To do this, edit the adapter configuration Server Start Option parameter to Cold Start. Once you have performed the cold start, edit the adapter configuration to change the setting back to Warm Start. You can also purge the checkpoint information from the database manually.	All platforms
Compression	Specifies that the data is to be compressed, which reduces the amount of data transmitted as the file is copied from one node to another. The file will be automatically decompressed at the destination. Optional. Valid values are 1-9. Increasing value indicates higher attempt at compression. Values greater than 2 may not result in further compression.	All platforms
LocalDocumentName	Name of the document in Application to which the remote file should be copied. Optional.	All platforms

Field	Description	Supported Remote Connect:Direct Platforms
LocalFromCodePage	Specifies a code page supported by Java VM. Used in conjunction with the value of the LocalToCodePage parameter. The Connect:Direct Server adapter will apply a code page conversion to a document before transferring it to a remote Connect:Direct Server. This parameter is only valid with the following conditions: • Code page specified is supported by the local Java VM • Parameter LocalToCodePage is defined • Text mode file transfer (BinaryMode =No) Optional. Valid value is the name of a codepage supported by the local Java VM. For example: <assign to="LocalFromCodePage">Cp1251</assign> <assign to="LocalToCodePage">Cp1047</assign> This example will translate the local file from windows latin-1 to ibm ebcdic. See http://java.sun.com for a complete list of supported encodings.	All platforms
LocalStripBlanks	Specifies whether the Connect:Direct Server adapter will strip blanks from the end of records in a received remote file before creating a new document. This option is only valid for Text mode file transfers (BinaryMode = No). Optional. Valid value is Yes or No (default).	All platforms

Field	Description	Supported Remote Connect:Direct Platforms
LocalToCodePage	Specifies a code page supported by Java VM. Used in conjunction with the value of the LocalFromCodePage parameter. The Connect:Direct Server adapter will apply a code page conversion to a document before transferring it to a remote Connect:Direct Server. This parameter is only valid with the following conditions: • Code page specified is supported by the local Java VM • Parameter LocalFromCodePage is defined • Text mode file transfer (BinaryMode =No) Optional. Valid value is the name of a codepage supported by the local Java VM. For example: <assign to="LocalFromCodePage">Cp1251</assign> <assign to="LocalToCodePage">Cp1047</assign> This example will translate the local file from windows latin-1 to ibm ebcdic. See http://java.sun.com for a complete list of supported encodings.	All platforms
LocalXlate	Specifies if the Connect:Direct Server adapter is to perform ASCII to EBCDIC translation before creating a new document from the received remote file. This option is only valid for Text mode file transfers (BinaryMode = No). Optional. Valid value is Yes (default) or No.	All platforms
RemoteFileName	Name of the file that should be copied from the remote Connect:Direct server. Enter the legal characters in the file name. Required.	All platforms

Field	Description	Supported Remote Connect:Direct Platforms
SessionToken	Identifies an established session between two Connect:Direct nodes. Required. Valid value is an XML structure that includes the following elements: • SessionId • ProcessNumber • ProcessName • SubmitDateTime • RemoteCDNodeName • RemoteUserId • RemotePasswd • PlexClass • MaxRestartRetries • RestartRetryInterval	All platforms
Sysopts	Remote system operations to be implemented on the remote Connect:Direct node. Optional. For example (for copying from Connect:Direct Windows only): Datatype(text) xlate(yes) For more information, see your Connect:Direct documentation.	All platforms Format of Sysopts varies by platform.

Appendix C

Clustering Considerations

Connect:Direct Server Adapter Configuration

When you configure a Connect:Direct Server adapter in a single node instance of Sterling Integrator, the best practice is to use the same name for the Connect:Direct Server adapter Name and the Connect:Direct Server Node Name.

When you configure a Connect:Direct Server adapter in a multiple node instance of Sterling Integrator, the best practice is to set up one Group Name for the Connect:Direct Server adapters. For example, in a two node cluster, the Connect:Direct Server adapter Node Names are NODE1.CD and NODE2.CD. Both of these nodes are put in one group called GIS.CD. Provide GIS.CD as the Connect:Direct Server Adapter Node Name to your remote Connect:Direct nodes. You will also use GIS.CD as the LocalCDNodeName in the CD Server Begin Session Service in your business processes.

Note: For additional information about the Connect:Direct Server adapter and multiple node instances of Sterling Integrator, refer to the online Sterling Integrator documentation.

Appendix D

Certificate Wizard

The Certificate Wizard tool is a Web-deployed application that enables you to create the following files:

- Certificate Signing Requests (CSRs) - A file is sent by e-mail to a certificate authority to request an X.509 certificate.
- Key certificates - A combination of an ASCII-encoded certificate and an ASCII-encoded PKCS12 encrypted private key (key cert.txt).
- Trusted root files - The trusted root file (trusted.txt) contains a list of trusted sources that enable the certificate wizard to validate a key certificate and ensure a secure connection.

Create Directories for Secure+ Option Files

Keeping track of your certificates and CSR files can be challenging. To avoid confusion, create the following directory structure on your workstation and store your Connect:Direct for Windows Secure+ Option files there:

1. Create a directory on your C: drive and name it MyCDWinSecurePlusFiles.
2. Create the following subdirectories to describe the type of certificate or file that is stored in it as described below:

Subdirectory	Description
Certificate Wizard	Store your Certificate Wizard download file, CertWizard.V1300.Windows.zip, in this directory.
Private Key	Store your private key in this directory. You will create this key when you generate your certificate signing request.
CSR	Store your certificate signing request in this directory
CA Certificate	Store your signed CA certificate in this directory. Your CA sends this certificate to you after they receive and process your certificate signing request.

Subdirectory	Description
Key Certificate	Store your key certificate file in this directory. You generate this file in the Sterling Certificate Wizard on the Generate Key Certificate tab.
CA Root Certificate	Store your CA root certificate in this directory. This is the root certificate from your CA.
CDSA Root Certificate	Store the Connect:Direct Server adapter CA root certificate in this directory. This is the root certificate from the Connect:Direct Server adapter CA.

Create the following directory structure on your workstation and store your Connect:Direct Server adapter Secure+ Option files there:

1. Create a directory on your C: drive and name it MyCDSASecurePlusFiles.
2. Create the following subdirectories to describe the type of certificate or file that is stored in it as described below:

Subdirectory	Description
Private Key	Store your private key in this directory. You create this key when you generate your certificate signing request.
CSR	Store your certificate signing request in this directory
CA Certificate	Store your signed CA certificate in this directory. Your CA sends this certificate to you after they receive and process your certificate signing request.
Key Certificate	Store your key certificate file in this directory. You generate this file in the Sterling Certificate Wizard on the Generate Key Certificate tab.
CA Root Certificate	Store your CA root certificate in this directory. This is the root certificate from your CA.
CDWin Root Certificate	Store the Connect:Direct for Windows CA root certificate in this directory. This is the root certificate from the Connect:Direct for Windows CA.

Download and Install Sterling Certificate Wizard

You can use the same Sterling Certificate Wizard for Connect:Direct and Sterling Integrator, so you only need to install it once.

If you have already installed the Sterling Certificate Wizard, go to *Generate Certificate Signing Request (CSR)* on page 136.

Download Sterling Certificate Wizard

Use the following procedure to download the Sterling Certificate Wizard:

1. Log on to your Sterling Customer Center Web site.
2. Click Support on Demand, then Go in the Support on Demand box.
3. From the Support on Demand Product Support menu on the left navigation bar, click Sterling > Product Updates & Downloads > Sterling Certificate Wizard.
4. Download the CertWizard.V1300.Windows.zip file into the \MyCDServerSecurePlusFiles\Certificate Wizard directory by clicking the View/Download link for Sterling Certificate Wizard 1.3.00 Maintenance for Windows.

Extract Installation Files

To extract the files, double-click the CertWizard.V1300.Windows.zip file.

The following files are extracted:

File	Description
CertWizard.V1300.Win.exe	Installation file for Windows system
readme.txt	Contains third-party copyright information

Install Sterling Certificate Wizard

To install the Sterling Certificate Wizard:

1. Click Start and then click Run.
2. Click Browse.
3. Navigate to the directory that contains the CertWizard.V1300.Win.exe file.
4. Double-click CertWizard.V1300.Win.exe. The program returns to the Run dialog box.
5. Click OK. The installation setup begins.
6. At the Introduction screen, click Next.
7. In the License Agreement dialog box, read the license agreement, click I accept the terms of the License Agreement, and click Next.
8. Click Next to continue the installation.
9. Review the installation information and click Install to begin the installation.
10. After copying the files into the program folder, the installation program displays the Install Complete dialog box. Click Done to complete the installation.

Generate Certificate Signing Request (CSR)

You must create a CSR for both your Connect:Direct for Windows system and your Sterling Integrator Connect:Direct Server adapter.

Use the following procedure to generate CSRs using the Sterling Certificate Wizard:

1. Press Start > Programs > Sterling Certificate Wizard V1.3.00 > Sterling Certificate Wizard to start the Sterling Certificate Wizard.
2. On the Certificate Wizard Welcome page, click the Generate CSR tab.
3. Type your Connect:Direct node name in the Common Name box.

   Common Name is the only required entry on this page.
4. In the Country box, select your country.

   If the country you want is not in the list, select Add a New One from the drop-down list and type the 2-letter country code in the text box. The country code is not permanently added to the list.
5. In the State/Province box, select your country or province.
6. Type your city or locality in the City/Locality box.
7. Type your organization or company name in the Organization/Company Name box.
8. Type up to four organizational units in the Organization Unit(s) box. Press Enter to separate each value.
9. Type the email address for the contact at your site in the Email Address box.
10. Click Next.
11. Select 1024 as the length of the private key, from the Private Key Length drop-down list.
12. Type the passphrase to use for encrypting the certificate's private key in the Passphrase box. The passphrase should be 6-256 characters.

    Note: Write down this passphrase. You need this information to use the private key.
13. Retype the passphrase in the Confirm Passphrase box for verification.
14. Click Next.
15. In the Cipher drop-down list, select a cipher to encrypt the private key.
16. For the Key File Name, specify C:\My<*application*>SecurePlusFiles\Private Key\privkey.txt.

    <*application*> is CDWin for Connect:Direct for Windows or Connect:Direct Server adapter for Sterling Integrator.

    Note: The key file is your private key. You need to keep track of its name and location.
17. For the CSR File Name, specify C:\My<*application*>SecurePlusFiles\CSR\csr.txt.

18. Click Next. A summary screen displays the values you selected for the CSR.
19. Click Next. The CSR is created.

When you complete this procedure, you will generate two new files: a private key file and a CSR file.

Caution:	Never send your private key to your trading partner or anyone else. Keep it secured on your Connect:Direct Server in the C:\My<*application*>SecurePlusFiles\Private Key directory.

Send the CSR to the Certificate Authority (CA)

You must send CSRs for both your Connect:Direct for Windows system and your Sterling Integrator Connect:Direct Server adapter to their respective CAs. You can use the same CA for both systems.

Contact your CA to determine a method for sending them your CSR. They will need the following information:

- Protocol Type: SSL
- SSL Certificate Type: not Class 1 or Class 2
- Validity period of the certificate
- Number of servers requiring a certificate
- Technical contact information, including email address and phone number
- Server platform: Apache
- Organizational information
- Billing information
- Payment information

The Certificate Authority performs the following tasks:

1. Verifies your identify—it might require additional information from you for this purpose.
2. Processes the certificate request.
3. Provides you with the following:
   - A signed CA certificate. Save this file to C:\My<*application*>SecurePlusFiles\CACertificate.
   - A trusted root certificate. Save this file to C:\My<*application*>SecurePlusFiles\CA Root Certificate.You may need to download this from the CA Web site.

Store the Connect:Direct for Windows root CA file in C:\MyCDSASecurePlusFiles\CDWin Root Certificate directory.

Store the Connect:Direct Server adapter root CA file in C:\MyCDWinSecurePlusFiles\CDSA Root Certificate directory.

Generate Key Certificate File

You must generate Key Certificate files for both your Connect:Direct for Windows system and your Sterling Integrator Connect:Direct Server adapter. You cannot use the same Key Certificate file for both systems.

Use the following procedure to create a key certificate file:

1. Click the Generate Key Certificate tab.
2. In the Output Keycert/Keystore Format list box, select Standard.
3. Type C:\My<*application*>SecurePlusFiles\Private Key\privkey.txt in the Private Key File Name box, or click Browse to navigate to the file.
4. Type the passphrase associated with the private key in the Private Key Passphrase field.

   You created this passphrase when you generated your CSR in step 12 on page 136.
5. Type the full path, C:\My<*application*>SecurePlusFiles\CA Certificate, and the CA certificate file name in the Certificate File Name field and click Add, or click Browse to navigate to the file.
6. Select DES MD5 as the cipher in the Cipher for Encrypting Private Key drop-down list.
7. Select the CA Root must be present check box.
8. Clear the Include CA Root in Keycert check box.
9. Type C:\My<*application*>SecurePlusFiles\Key Certificate\keycert.txt in the Key Certificate File Name box.
10. Click Generate. A message dialog box is displayed when the key certificate file is generated successfully.
11. Click OK.
12. Click Exit to close the Sterling Certificate Wizard.

Appendix E

Monitoring Business Processes and Documents

The Sterling Integrator Admin Console enables you to view information about business processes that interact with remote Connect:Direct nodes. Correlation records are automatically maintained so that you can search for specific information (such as, business process IDs, document IDs, workflow IDs, and mailbox IDs). Each business process references a unique business process ID as its primary process identifier.

Tracking and Search Functions

The tracking and search functions available to track Sterling Integrator business processes, Connect:Direct processes, and Connect:Direct adapter activity are described in the following table:

Tracking Option	Description
Central Search	Use to search for live (active) business process instances that do not appear in the Current Processes. Search by Name, Status, or Date.
Current Processes	Lists the status of the ten most recent business process instances.
Current Activities	Search for Connect:Direct Server adapter activity by adapter configuration name or by when the activity registered within Sterling Integrator.
Advanced Search	
Business Processes	Search for active, archived or stored business processes. Search by business process instance ID, business process Name, State, or Date.
Documents	Search for active, archived or stored documents handled by a business process. Search by Time, Document ID, Sender or Receiver ID, Type, Status or Correlations.

Tracking Option	Description
Communication Sessions	Search for active, archived or stored communication sessions records. These records include the associated authentication, authorization, file transfer, or non-file transfer records, even if a document is not transferred and no data flow record is created. Search by Time, Communication Session ID, Process ID, End Point, Protocol and so forth.
Correlation	Search for active, archived or stored business processes by name-value pairs. This is a key tracking method in interoperability because you can search by values such as PNODE, SNODE, Connect:Direct Process Name and so forth.

When you find the business process you are interested in on any of these Monitor pages, you can obtain additional details by selecting the number in the ID column to open the Business Process Details page.

Business Process Detail

The Business Process Detail page is accessed from any page that contains the business process ID. This page provides a progress report about a specific business process instance. In addition, you can stop or restart the business process from this page.

Following is a partial list of the information you can obtain from this page:

- The business process definition (the BPML file)
- The current state of each step in a business process
- The date and time a business process started and ended
- The contents of the process data and the primary document at each step of the business process

Current Process Monitor

Selecting Business Processes > Current Processes opens the Monitor page with a list of the processes currently running in Sterling Integrator. A Green status indicates no errors or warnings occurred during processing. A Red status indicates errors or warnings encountered during processing. Use this page to:

- Review detailed processing information by clicking on the ID of the process
- View the business process definition by clicking on the Name of the process
- View the current state of a business process
- View the date and time a business process Started and Ended

Current Activities Monitor

Selecting Business Processes > Current Activities opens the Service Activity search page. The Service Activity page enables you to monitor activity of several adapters, including the Connect:Direct Server adapter. When you select an adapter to monitor, activity detail occurring on the adapter is displayed.

If the Connect:Direct Server adapter is used by a business process that has stopped running, you can use this feature to determine whether the adapter is preventing the business process from running.

The results of an activities search includes the following information:

- Session identifier
- Node name
- When the activity started and when it last updated

Correlation Search

Correlation searches are a key to relating a Connect:Direct process with a Sterling Integrator business process. Whereas Connect:Direct identifies a process with a Process Number and a Process Name, Sterling Integrator identifies its business processes with an Instance ID. The Correlation Search enables you to search for Sterling Integrator processes using Connect:Direct identifiers.

Note: Correlations are created to identify related Sterling Integrator and Connect:Direct processes.

The Connect:Direct Server adapter and related services automatically write Sterling Integrator correlation records to enable searches for business processes and documents containing certain correlation identifiers.

The Correlation Search page enables you to search for business process activity according to six Connect:Direct specific name-value pairs, including:

- CD_LocalFileName
- CD_RemoteFileName
- CD_ProcessName
- CD_ProcessNum
- CD_PnodeName
- CD_SnodeName

Note: Do not perform a correlation search by Process Number only. A Process Number is unique to a single Connect:Direct server, therefore you may see the same Process Number used for different processes - each associated with a different node.

Appendix F

Restarting Copy Interruptions

Automatic Retry for Interrupted or Failed Copy Transactions

The Wait service is used automatically by Sterling Integrator in the event of a failure of the remote Connect:Direct node that interrupts a business process, such as one that is performing a Connect:Direct copy operation.

A business process suspended by the Wait service needs to be resumed by the scheduled system process Schedule_BPExpirator. By default, the BPExpirator is scheduled to run every 15 minutes. The BPExpirator schedule can influence checkpoint restart for the adapter.

If Sterling Integrator stops responding during a copy transaction, and the recovery level is set to Auto-Resume, the business process resumes automatically at the next Sterling Integrator start up.

Checkpoint Restart

The Connect:Direct Server adapter includes parameters to govern checkpoint and restart behavior if either Sterling Integrator or the remote node fails. If the remote Connect:Direct server or the network fails during a copy operation, the Connect:Direct Server adapter goes into a retry mode using the values specified at configuration. The adapter waits for the configured amount of time and then resumes the copy.

Two values impact the amount of time the Connect:Direct Server adapter actually waits to resume copy. The first value is the Interval between Retry attempts (minutes) as specified in the Connect:Direct Server adapter configuration. The second value is the frequency defined by the scheduled system process Schedule_BPExpirator. The larger value governs the checkpoint restart.

For example, if the Interval between Retry attempts is set to 10 minutes, and the Schedule_BPExpirator is scheduled to run every 15 minutes, the retry occurs at the next scheduled 15 minute interval. Set Schedule_BPExpirator to a much lower number, such as one minute, to achieve the fastest restart.

Checkpoint restart is supported for both inbound and outbound file transfers in the following scenarios:

- PNODE Push
- PNODE Pull
- SNODE Receive
- SNODE Send

Checkpoint restart is only supported for documents stored in the file system or mailbox based documents.

Checkpoint restart can be enabled whether or not Secure+, compression, or any other communications session factor is enabled or disabled.

Restrictions

Checkpoint restart is not available in the following scenarios:

- Source or destination files are stored in a database
- Source or destination files are stored in the encrypted file system

Purging Checkpoint Data

Sterling Integrator stores checkpoint information for 30 days, after which it is automatically purged. If your database is corrupted, you must purge this checkpoint information by performing a cold restart.

To purge checkpoint data:

1. From the Business Processes menu, search for the adapter configuration.
2. Edit the configuration to set Server Start Option to Cold.
3. Save the changes and click Finish.
4. The Sterling Integrator adapter restarts. The checkpoint data is purged during startup.
5. Edit the configuration again to set Server Start Option to Warm to continue using Checkpoint Restart without a loss of information between multiple sessions.

Appendix G

Troubleshooting

Sterling Integrator and Connect:Direct are designed to work together, in a seamless and tightly integrated environment. However, as is the case with any application, occasions may occur when you need to troubleshoot certain components or functions.

This section provides general troubleshooting guidelines when configuring and using Sterling Integrator with Connect:Direct.

To troubleshoot general Connect:Direct functions, see the Connect:Direct documentation set for general troubleshooting information and instructions.

You may need to work with your Trading Partners or system administrators to troubleshoot the systems you are communicating with.

Verifying Connectivity

To verify connectivity between Connect:Direct and Sterling Integrator:

1. Check configurations on Connect:Direct and Sterling Integrator for compliance. In particular, look at the network maps on both systems.
2. Verify that the Connect:Direct nodes in question are active when a begin session is invoked.
3. Verify that perimeter services client connects to perimeter services server. If the client cannot connect, it causes the perimeter services-enabled Connect:Direct Server adapter to fail.

   Perimeter servers do not automatically reboot after a failure.

   To determine the status of the perimeter services client in Sterling Integrator:

   a. From the Sterling Integrator Operations menu, select Troubleshooter.

   b. Look for the Perimeter Servers area. It is usually at the bottom of the Troubleshooting page. This shows the state of the perimeter server clients which are defined in Sterling Integrator and whether they are on.

      Disconnected is displayed if no perimeter server is installed.

Exchanging Process IDs

If either Connect:Direct or Sterling Integrator cannot exchange process identifiers, the process correlation in the various monitor user interfaces does not work for the particular instance of a process. When this occurs, correct the identifiers and restart the process.

Business Process Permissions

If you receive permissions-related error messages, make sure that adequate permissions have been assigned.

When a external request is received by Sterling Integrator to execute a business process, the user/proxy user must have business process permissions for the specific business process that is to be executed. That is, the business process itself must have permissions enabled when it is created. In addition, the Sterling user account must have:

- General business process execution permission. This is acquired by assigning the Business Processes group to the user account.
- Permission for the specific business process to be executed.

  The business process will display in the drop down with the mailboxes in the user account configuration windows.

Using the Graphical Process Modeler

The following restrictions apply to using the Graphical Process Modeler:

- Do not attempt simultaneous COPY operations for the same node.
- Issue a Close Session for each open session when session is finished.

Logging Files

More information, including audit messages and error messages, can be found in Sterling Integrator log files. Log files are available through the Operations > System > Logs menu.

The cdinterop.log files record details for all adapter activity and business processes that involve the Connect:Direct Server and Requester adapters and the related Connect:Direct services.

A new cdintop.log is created each time the Sterling Integrator server is stopped. If it is not stopped during a given day, the log grows with each Connect:Direct transaction.

By default, the cdinterop.log file captures audit level messages, even when logging is not enabled. When the log is enabled, all transactions are recorded, including:

- Error messages
- Adapter startup and shutdown
- Adapter changes
- Security checks

Customizing the Connect:Direct Server Adapter Log Settings

You can enhance the logging for the Connect:Direct Server adapter using property files to reduce the footprint of the log files and processing overhead.

The log.properties file describes sets of properties required to define a logger used to log information to a file, including the cdintop.log. This log.properties file should not be edited. If you need to override log.properties settings for the cdintop.log, use the customer_overrides.properties file.

Caution: Overriding the log.properties settings for the cdintop.log can have a dramatic impact on performance and log volume

The customer_overrides.properties file is used to override property settings in other property files. Unlike the other property files and their associated .properties.in files, the customer_overrides.properties file is not changed during installation of Application upgrades or patches. To prevent having your customized settings overwritten, you should use the customer override property file whenever possible rather than editing the Application property files or .in files.

The customer_overrides.properties file is not part of the initial Application installation and must be created. It must be named **customer_overrides.properties**.

To override log.properties file settings for the cdintop.log:

1. In the *install_dir*/properties directory, locate (or create, if necessary) the customer_overrides.properties file.
2. Open the customer_overrides.properties file in a text editor.
3. Add the cdintop.log properties that you want to override to the log.properties file, using the following format:

   logService.*PROPERTY_NAME=PROPERTY_VALUE*

   logService—Name used to reference the log.properties file.

   PROPERTY_NAME—Name of the property as used in the log.properties file.

   PROPERTY_VALUE—The value you want to assign to the property.

For example, assume that you want to change the maximum number of cdintop.log files to 5. To do so, override the cdinteroplogger.maxnumlogs property value in the log.properties file by adding the following line to the customer_overrides.properties file:

```
logService.cdinteroplogger.maxnumlogs=5
```

4. Save and close the customer_overrides.properties file.
5. Stop and restart Application to use the new values.
6. Test your changes to ensure that the overrides give the desired results. If you have problems, contact Sterling Commerce Customer Support for assistance.

Configuration Settings

The following table describes properties used to configure the customer_overrides.properties file for the CDInterop logger:

Property	Description
logService.cdinteroplogger.logfilename	Specific name of the log file. Example: Application*installDir*/logs/cdinterop.log
logService.cdinteroplogger.rotatelogs	Flag indicating whether to rotate the log after it has reached its maximum size. Example: true
logService.cdinteroplogger.maxlogsize	Maximum size of logs of this type. Example: 100000
logService.cdinteroplogger.maxnumlogs	Maximum number of logs of this type. Example: 10
logService.cdinteroplogger.loglevel	A level value of the logger. Valid entries: ✦ NONE—Log nothing. ✦ CRITICAL—Log critical errors only. ✦ ERROR—Log errors only. ✦ WARN—Log errors and warnings. ✦ INFO—Log INFO and more severe. ✦ TIMING—Log errors, warnings, timing messages.
logService.cdinteroplogger.displayname	Display name for the logger. Example: Log.CDInterop
logService.cdinteroplogger.showsource	Flag indicating whether to show the java class that originated an error message. **Note:** This can have a dramatic impact on performance and log volume, so it should only be used to diagnose problems. Example: false

Turning on Logging

If the error is not in the existing logs, turn on the Sterling Integrator cdinterop.log to capture activity of the Connect:Direct Server adapter and the services:

1. Browse to Operation > System > Logs.
2. Scroll to the Environment section of the page.
3. Click the edit icon to the left of Connect:Direct Server and Requester Adapter and Services.
4. In the Environment window, select On next to Logging Level and click Save.
5. Attempt to recreate the problem.
6. View the cdinterop log for more informative entries.

Appendix H

Use Secure Point of Entry

Secure Point of Entry (SPOE) is a security mechanism for maintaining the privacy of sensitive user account information. Privacy is maintained by associating a pseudo-account with an authentic one. Remote Connect:Direct trading partners establish sessions using pseudo-accounts rather than authentic ones. In this way, sensitive user account information remains private. The cdinterop-spoe-policy.properties file describes settings for configuring the Secure Point-of-Entry (SPOE) for use with the Connect:Direct Server adapter for inbound requests from remote Connect:Direct PNODEs.

Sterling Integrator also supports Connect:Direct User Proxies as a PNODE whereby the business process can designate a RemoteUserId and not provide a RemotePassword.

Use the following procedure to configure SPOE with the Connect:Direct Server adapter:

1. *Enable SPOE Authentication from Remote Connect:Direct PNODEs* on page 151
2. *Map Connect:Direct User IDs to Sterling Integrator User Accounts* on page 152

Enable SPOE Authentication from Remote Connect:Direct PNODEs

SPOE policy may be modified while Sterling Integrator is running. Changes take effect a few seconds following the change committal step. To enable SPOE authentication:

1. Make a copy of the SPOE Policy property file:

```
$ cd <install_dir>/properties
$ cp cdinterop-spoe-policy.properties cdinterop-spoe-policy.properties.copy
```

2. Use a text editor to make the desired changes to the cdinterop-spoe-policy.properties.copy file:

```
$ vi cdinterop-spoe-policy.properties.copy
```

   Uncomment the `spoe.policy=yes` property.

3. Modify other settings in the cdinterop-spoe-policy.properties.copy file necessary for your situation.

   See the Sterling Integrator online documentation for more information about the cdinterop-spoe-policy.properties file.

4. Save the file.
5. Commit the changes:

```
$ cd <install_dir>/properties
$ cp cdinterop-spoe-policy.properties.copy cdinterop-spoe-policy.properties
```

Map Connect:Direct User IDs to Sterling Integrator User Accounts

After you enable SPOE authentication for the Connect:Direct Server adapter, configure the cdinterop-spoe-auth.properties file to map external Connect:Direct user IDs to Sterling Integrator user accounts.

Configuration Settings

The following table describes properties used to configure the cdinterop-spoe-auth.properties file in Sterling Integrator:

Syntax	Description
spoe-user-id	Specifies a unique remote user identifier. The remote user may be specified by an asterisk (*) to enable this definition to match any user. **Note:** The asterisk does not perform similar to a wildcard character or regular expression operator. It is a special keyword having the meaning "any user."
nodename	Specifies the name of the remote Connect:Direct PNODE node. The node name may be specified by an asterisk (*) to enable this definition to match any node. **Note:** The asterisk does not perform similar to a wildcard character or regular expression operator. It is a special keyword having the meaning "any node."
gis-user-id	Specifies an existing Sterling Integrator user account.

Each entry associates a SPOE username and remote Connect:Direct node name with a Sterling Integrator user account. Each entry in the file consists of a single line of the form:

```
spoe-user-id@nodename=gis-user-id
```

The @ joins the user identifier with the node name to form the SPOE remote user identifier. No space is permitted either before or after it. The = associates the SPOE remote user identifier with the Sterling Integrator user account. No space is permitted either before or after it.

Examples

A remote user id 'user1' is mapped to the gis 'user2' account:

```
user1@cd.logistics=user2
```

Any remote id from the cd.chicago node is mapped to the gis account 'chicago':

```
*@cd.chicago=chicago
```

The remote id 'anonymous' from the *any* node is mapped to the Sterling Integrator 'anonymous' account:

```
anonymous@*=anonymous
```

Any remote id from the *any* node is mapped to the Sterling Integrator 'guest' account:

```
*@*=guest
```

Add, Modify, or Delete SPOE User Accounts

SPOE user accounts may be added, modified, or deleted while Sterling Integrator is running. Changes take effect a few seconds following the change committal step.

To change the cdinterop-spoe-auth.properties file:

1. Make a copy of the cdinterop-spoe-auth.properties file:

```
$ cd <install_dir>/properties
$ cp cdinterop-spoe-auth.properties cdinterop-spoe-auth.properties.copy
```

2. Use a text editor to make the desired changes to the cdinterop-spoe-auth.copy file:

```
$ vi cdinterop-spoe-auth.properties.copy
```

3. Save the file.
4. Commit the changes:

```
$ cd <install_dir>/properties
$ cp cdinterop-spoe-auth.properties.copy cdinterop-spoe-auth.properties
```

Upload and Download Parameters in User and Proxy Repositories

Upload and download parameters can be used to designate where to store incoming files and retrieve outgoing files when sent by or requested by a remote node. These can be configured for local user accounts or (if SPOE authentication is implemented) for proxy accounts in the cdinterop-user-records.properties and cdinterop-proxy-records.properties files, respectively.

Upload and Download Parameters for Local Users

The cdinterop-user-records.properties file is a User Record Repository that allows the Connect:Direct Server adapter to identify a file and how to handle it based on a limited amount of information. This allows the Connect:Direct Server adapter to process files despite restrictions such as limited file name length.

Each entry in the cdinterop-user-records.properties file assigns a Sterling Integrator document path prefix to a file based on the Connect:Direct Server adapter that receives the request, and the combination of remote Connect:Direct PNODE and user ID where the request originated. A document path prefix is then assigned and combined with the target or inbound filename to form a fully-qualified path name.

Precedence rules specify processing order in the case of directory parameter conflicts.

If no entries are defined in the cdinterop-user-records.properties file, the Connect:Direct attempts to store or retrieve the file using the path provided in the message protocol.

Configuration Settings

The following table describes properties used to configure the cdinterop-user-records.properties file in Sterling Integrator:

Property	Description

directory.precedence	Specifies the processing order in cases where two or more directory parameters conflict. Example:
	`jsmith/download = /mailbox/inbox`
	`[cdsa-1]download = /mailbox/downloads`
	Valid values:
	user—Choose the definition that supplies the Sterling Integrator user account ID. In the example above, the first rule is chosen. Default.
	adapter—Choose the definition that supplies the Connect:Direct server adapter name. In the example above, the second rule will be chosen.

userid	An existing local Sterling Integrator user. If omitted, may be any Sterling Integrator user. Optional.

Property	Description
cdsa-name	Name of a Sterling Integrator Connect:Direct Server adapter. Syntax: [*cdsa-name*] If omitted, all presently defined CDSAs. Optional. **Note:** If omitted, separate the User ID from the upload/download keyword by a slash (/) character.
parameter-name	Specifies either the "download" or "upload" keyword. Keywords are not case-sensitive. Required. ◆ download—Designates that the parameter's value identifies the location where the incoming file is to be stored. Default (when no other definitions match the session's adapter or user account): /businessprocess/PO-Request ◆ upload - Designates that the parameter's value identifies the location from which the outgoing file is to be obtained.
gis-path-prefix	Path used to store the incoming document or retrieve the outgoing one. Valid values: ◆ /businessprocess/<*bp-name*> where <*bp-name*> is the name of a business process. Required. ◆ /mailbox/<*path*> where <*path*> specifies a target mailbox accessible from the virtual root of the Sterling Integrator account. Optional. If omitted, the virtual root is assumed. For examples, see *Upload and Download Process Examples* on page 159.

Syntax

The cdinterop-user-records.properties file may be modified while Sterling Integrator is running. Changes take effect a few seconds following the change committal step. To add or modify entries in this file:

1. Make a copy of the cdinterop-user-records.properties file:

```
$ cd <install_dir>/properties
$ cp cdinterop-user-records.properties cdinterop-user-records.properties.copy
```

2. Use a text editor to make the desired changes to the cdinterop-user-records.properties.copy file:

```
$ vi cdinterop-user-records.properties.copy
```

3. To add or modify entries in this file, use this syntax:

```
gis-userid / upload | download = gis-path-prefix
userid ([cdsa-name] | / ) upload | download = gis-path-prefix
```

   If cdsa-name is not specified, separate the User ID from the upload/download parameter name with a slash (/).

4. Save the file.
5. Commit the changes:

```
$ cd <install_dir>/properties
$ cp cdinterop-user-records.properties.copy cdinterop-user-records.properties
```

Parameter Examples

- `/mailbox/receipts` as a download parameter value—When a remote node connects to Connect:Direct Server adapter CDSA.DALLAS using the Sterling Integration user account purchasing, this download parameter value is used to compute the destination directory where the transmitted file will be stored:

```
purchasing[CDSA.DALLAS]download=/mailbox/receipts
```

- `/mailbox/outbox` as an upload parameter value—When a remote node connects to any Connect:Direct Server adapter using the Sterling Integrator user account purchasing, this parameter value is used to compute the source directory location of the file to be transmitted to the remote node:

```
purchasing/upload=/mailbox/outbox
```

- `/businessprocess/DelinquentAccounts` as an upload parameter value. When a remote node connects to C:D Server adapter CDSA-CHICAGO using any Sterling Integrator user account, this parameter value determines which business process to execute to produce the document's content to be sent to the remote node:

```
[CDSA-CHICAGO]upload=/businessprocess/DelinquentAccounts
```

- `/businessprocess/PO-Request` as the default download parameter value. It is used when no other definitions match for the session's adapter or user account:

```
download=/businessprocess/PO-Request
```

Upload and Download Parameters for Proxy Users

The cdinterop-proxy-records.properties file serves as Proxy Record Repository for the Connect:Direct Server adapter. If a proxied remote user ID (SPOE account) is enabled in the cdinterop-spoe-policy.properties file, an upload/download directory path for that proxied user can be configured in cdinterop-proxy-records.properties.

Configuration Settings

The following table describes properties contained in the cdinterop-proxy-records.properties file in Sterling Integrator:

Property	Description

external-id	An external, remote proxied user ID. It may be specified in any of the following ways:
	◆ address-form: *proxyid @nodename*
	where *proxyid* and *nodename* are specified. A match occurs only if the user name and node name from the request exactly match *proxyid* and *nodename*. Example:
	`john@company/upload=/mailbox/company/john/out`
	The upload path is prepended to the outbound target filename if `spoe-policy=yes` and the remote userid is "john" and the remote pnode name is "company."
	◆ domain-form: `*@`*nodename*
	where only *nodename* is specified. A match occurs only if the node name from the request exactly matches *nodename*. Example:
	`*@company/upload=/mailbox/company/out`
	The upload path is prepended to the outbound target filename if `spoe-policy=yes` and no rule is found for this remote userid, but one is found for the remote pnode name "company."
	◆ account-form: *userid* `@*`
	where only proxyid is specified. A match occurs only if the user name from the request exactly matches *userid*. Example:
	`john@*/upload=/mailbox/john/out`
	The upload path is prepended to the outbound target filename if `spoe-policy=yes` and a rule is found for remote userid "john," but no rule is found for the name of the remote pnode.
	◆ default-form: *@*
	This rule always matches any user name from any node name. Example:
	`*@*/upload=/mailbox/default/out`

parameter-name	Specifies either the "download" or "upload" keyword. Keywords are not case-sensitive. Required. ◆ download—Designates that the parameter's value identifies the location where the incoming file is to be stored. Default (when no other definitions match the session's adapter or user account): `/businessprocess/PO-Request` ◆ upload—Designates that the parameter's value identifies the location from which the outgoing file is to be obtained.

Property	Description
gis-path-prefix	Path used to store the incoming document or retrieve the outgoing one. Valid values: ◆ `/businessprocess/<bp-name>` where <*bp-name*> is the name of a business process. Required. ◆ `/mailbox/<path>` where <*path*> specifies a target mailbox accessible from the virtual root of the Sterling Integrator account. Optional. If omitted, the virtual root is assumed.

Syntax

The cdinterop-proxy-records.properties file may be modified while Sterling Integrator is running. Changes take effect a few seconds following the change committal step. To add or modify entries in this file:

1. Make a copy of the cdinterop-proxy-records.properties file:

```
$ cd <install_dir>/properties
$ cp cdinterop-proxy-records.properties cdinterop-proxy-records.properties.copy
```

2. Use a text editor to make the desired changes to the cdinterop-proxy-records.properties.copy file:

```
$ vi cdinterop-proxy-records.properties.copy
```

3. To add or modify entries in this file, use this syntax:

```
external-id / upload | download = gis-path-prefix
```

4. Save the file.
5. Commit the changes:

```
$ cd <install_dir>/properties
$ cp cdinterop-proxy-records.properties.copy cdinterop-proxy-records.properties
```

Upload and Download Process Examples

The following examples show how the parameters are used in two situations:

- *Connect:Direct as PNODE Initiates a Transfer TO Sterling Integrator* on page 159
- *Connect:Direct as PNODE Initiates a Transfer FROM Sterling Integrator* on page 160

Connect:Direct as PNODE Initiates a Transfer TO Sterling Integrator

In this example, the PNODE is a Connect:Direct Server named CD.CHICAGO. The SNODE is a Sterling Integrator Connect:Direct Server adapter named CDSA.DALLAS.

The Connect:Direct process contains the following:

```
TOGIS PROCESS
        SNODE=CDSA.DALLAS
        SNODEID=(cduser1,cduser1)

STEP1 COPY
        FROM (
                FILE=”payload.txt”
       )
        TO (
                FILE=”po-12558-a202”
                DISP=RPL
       )
PEND
```

The cdinterop-user-properties file contains the following entries:

```
cduser1 [CDSA.DALLAS] upload=/mailbox/out
cduser1 [CDSA.DALLAS] download=/mailbox/in
admin [CDSA.DALLAS] upload=/mailbox/upload
admin [CDSA.DALLAS] download=/mailbox/download
```

The Connect:Direct Server adapter computes the destination filename by appending the local filename `po-12558-a202` to the `cduser1 [CDSA.DALLAS] download` parameter value: Result: `/mailbox/in/po-122558-a202`

The Connect:Direct User Authorities for cduser1 contains the following Directory Restrictions:

Directory Restriction	
Upload	C:\Connect Direct\data\upload
Download	C:\Connect Direct\data\download

Connect:Direct computes the source filename by appending the local filename `payload.txt` to user `cduser1`'s `upload` parameter value:
Result: `C:\Connect Direct\data\upload\payload.txt`

Connect:Direct as PNODE Initiates a Transfer FROM Sterling Integrator

In this example, the PNODE is a Connect:Direct Server named CD.CHICAGO. The SNODE is a Sterling Integrator Connect:Direct Server adapter named CDSA.DALLAS.

The Connect:Direct process contains the following:

```
FROM GIS PROCESS
        SNODE=CDSA.DALLAS
        SNODEID=(cduser1,cduser1)

STEP1 COPY
        FROM (
                FILE=”po-12558-a202”
                SNODE
       )
        TO (
                FILE=”payload.txt”
                PNODE
                DISP=RPL
       )
PEND
```

The cdinterop-user-properties file contains the following entries:

```
cduser1 [CDSA.DALLAS] upload=/mailbox/out
cduser1 [CDSA.DALLAS] download=/mailbox/in
admin [CDSA.DALLAS] upload=/mailbox/upload
admin [CDSA.DALLAS] download=/mailbox/download
```

The Connect:Direct Server adapter computes the source filename by appending the local filename `po-12558-a202` to the `cduser1 [CDSA.DALLAS] upload` parameter value:
Result: `/mailbox/out/po-122558-a202`

The Connect:Direct User Authorities for cduser1 contains the following Directory Restrictions:

Directory Restriction	
Upload	C:\Connect Direct\data\upload
Download	C:\Connect Direct\data\download

Connect:Direct computes the destination filename by appending the local filename `payload.txt` to user `cduser1`'s `download` parameter value:
Result: `C:\Connect Direct\data\download\payload.txt`