Connect:Direct®
for Windows

Getting Started Guide

Version 4.4.01

Sterling Commerce
An IBM Company

Connect:Direct for Windows Getting Started Guide
Version 4.4.01

First Edition

Contents

About Connect:Direct for Windows

Connect:Direct for Windows is an enterprise solution for secure, automated file delivery between business applications. Its session management and extended recover features help assure data delivery in support of 24 hours a day, 7 days a week business operations.

Connect:Direct for Windows links technologies, moves all types of information, and manages high-performance transfers by providing easy-to-use automation, checkpoint/restart, and error recovery. Connect:Direct offers choices in communications protocols, hardware platforms, and operating systems. It provides the flexibility to move information from mainframes to midrange systems to desktop and LAN-based workstations.

Using Nodes to Transfer Data

Each data transfer involves a local and a remote node. The active Connect:Direct server is the local node and the remote node is the partner node. The two servers (local and remote) function together to perform the work. Either Connect:Direct node initiates the work. You can submit Processes from a remote node to run on your local Connect:Direct node.

When Connect:Direct establishes a session between the local and a remote node, one is the initiator of the session and the other serves as the partner and has a secondary function. The node that initiates the session has primary control, regardless of the direction of information flow. Connect:Direct must be installed on both the local node and the remote node.

The following figure illustrates the difference between primary control and local/remote nodes. Process monitors and statistics reports on the local Windows node show both Processes as they affect the local system. You can determine if the local node is the initiating or receiving node.
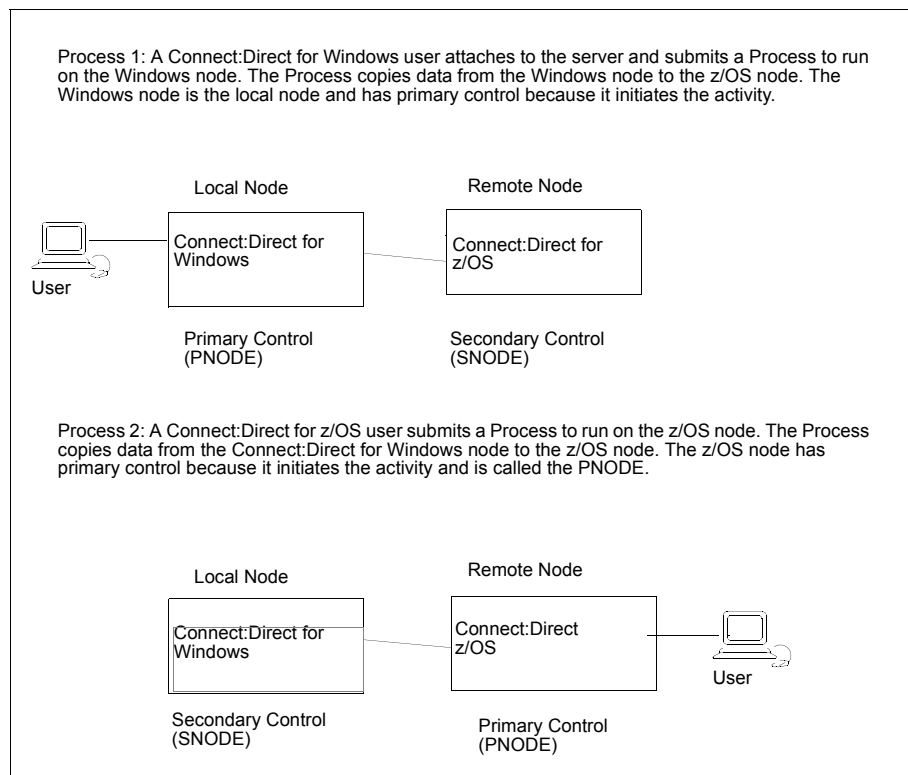
Planning to Use Connect:Direct for Windows

Before you use Connect:Direct for Windows, plan how you will use it to perform your work. Complete the following tasks to use Connect:Direct for Windows:

✦ Configure Connect:Direct for Windows

✦ Define the work to perform

✦ Perform and manage the work that is performed

For most tasks, you can decide the tool to use to create the component. Connect:Direct Requester is a graphical interface that makes it easy to configure Connect:Direct for Windows and create Connect:Direct Processes. Because you can use this tool to perform all functions necessary to use Connect:Direct for Windows, this document provides instructions on using Connect:Direct Requester to create and submit Connect:Direct Processes, view Process activity and output, and perform administrative tasks such as editing the network map, modifying initialization parameters, and defining user authorizations.

Configuring Connect:Direct for Windows

Before you begin using Connect:Direct for Windows, first configure your environment. To prepare to use Connect:Direct to submit Processes, perform the following tasks:

✦ Configure the Local Node—Configure a local definition for each server you install at the local site, define a user ID for each user who will access the local node, define user authorities for each user ID and if remote users need to access the local network, define remote user proxies. Use Connect:Direct Requester to configure the local node.

When you copy data from a local domain to a domain on a network, the Domain user ID and password must be the same on both domains and a trust between the two domains must exist.

✦ Configure the Network Map—Identifies the remote nodes that each local node can communicate with and the communications information needed to establish a connection. Use Connect:Direct Requester or the Configuration tool to configure the network map.

Defining the Work to Perform

After you determine what tasks to perform, you define Processes and work lists. A Process provides instructions, called *statements*, for transferring files, running programs, submitting Processes on the remote node, and altering the sequence of Process step execution. It also controls the execution of the Process. Use Connect:Direct Requester for Windows to define Processes.

You create Processes and store them in a file for repeated use. You can customize a Process when you submit it by temporarily changing its controlling parameters (such as the remote node) and by using symbolic substitution variables. You can submit Processes to any Connect:Direct node. The local node and a remote node work together to execute the Process.

If you want to define the work but you are not ready to submit it for execution, define a work list. A work list contains a sequential list of Process submit requests. It can contain ad hoc Processes that you can submit to the Connect:Direct server: Send/Receive File, Submit Process, Run Task, or Run Job. Using work lists can save you time and effort by automating routine or repetitive submission tasks. You can build a work list to periodically submit related work as a single work flow. Your work list can serve as a library of related or unrelated Processes.

Performing the Work

Once you define the Processes necessary to perform the work, you are ready to transfer files. You make requests through a computer that accesses the Connect:Direct server across a communications network. Files that you want to transfer must reside on or be accessible to the server.

The following events occur when you begin the file transfer process:

✦ The commands you issue are passed to the appropriate API.

✦ The API verifies that they are syntactically correct and contain all the required information to execute the request. It then packages and ships the commands to the server.

✦ Command processors on the server either execute the commands or pass them on to the server where the data transfer, statistics management, and other services take place.

✦ The Connect:Direct server packages the results of the command and routes them back to the originating workstation. You can use the management tools to display the results of the Process.

Use Browser User Interface, Connect:Direct Requester, or the Command Line Interface to control Processes.

Managing the Work

As Processes are submitted, the Transmission Control Queue (TCQ) holds information about Connect:Direct Processes that are currently executing or scheduled to execute in the future. The TCQ contains four logical queues: Execution, Wait, Timer, and Hold.

Connect:Direct places the Process in the appropriate queue based on Process control parameters that affect scheduling. Connect:Direct selects Processes in a priority-based manner for execution as sessions are available.

Connect:Direct for Windows provides tools to allow you to manage Processes. These tools include:

✦ Process Monitor—Use this tool to view Processes in the Transmission Control Queue (TCQ), release held Processes, change the status of a Process, and delete a Process.

✦ Process Notification Utility—Use this utility to change the notification method you defined when you installed Connect:Direct for Windows to notify users of Process execution.

✦ Windows Event Logging—Use this utility to log informational, warning, and error messages that are generated.

✦ Message Lookup—If you need to troubleshoot the meaning of an error message, use this utility to view more explanation about an error message.

✦ SNMP—If you want to use Microsoft Windows SNMP to capture messages, you must identify which messages you want to include and determine if messages are trapped or logged to the event log.

✦ CRC checking—If you want to enable CRC checking, a CRC is generated for the entire buffer, including the header. The SNODE calculates the CRC value and compares it to the CRC value in the TCP header. If the values do not match, the Process is terminated. When Secure+ Option is enabled during a session, CRC checking is disabled.

✦ CLI—The command line interface provides commands to access queues and manage Processes. These commands enable you to control Process execution, view Process status and results, and affect the Connect:Direct server. Issue these commands through or in a native command text format through the Applications Programming Interface (API).

✦ Connect:Direct Browser User Interface—Connect:Direct Browser User Interface allows you to build, submit, and monitor Connect:Direct Processes from an Internet browser, such as Microsoft Internet Explorer.

You can also perform Connect:Direct system administration tasks, such as viewing and changing the network map or initialization parameters, from Connect:Direct Browser. The specific administration tasks that you can perform depend on the Connect:Direct platform that your browser is signed on to and your security level.

Connect:Direct Browser is distributed on CD-ROM with Connect:Direct for z/OS, Connect:Direct for Windows, Connect:Direct for UNIX, Connect:Direct for HP NonStop, and Sterling Control Center. It can also be downloaded from the Sterling Commerce Web site. Connect:Direct Browser is installed on a Web server and can be accessed by administrators and users through a URL. The following example shows the page used to graphically build a Process:
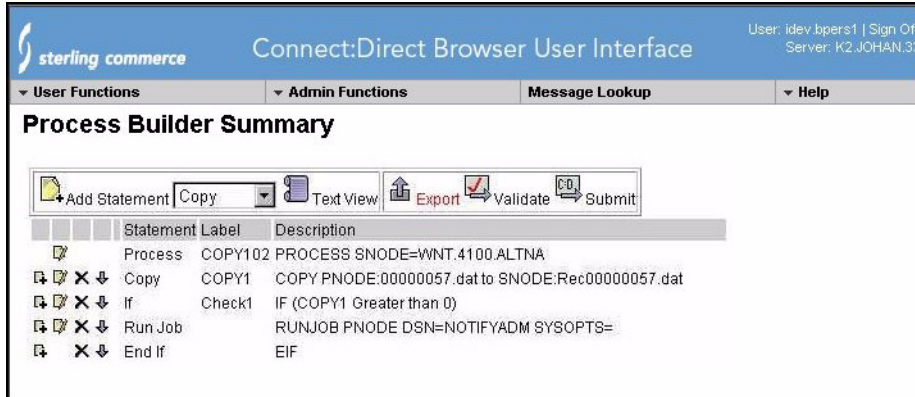
To learn more about Connect:Direct Browser, refer to the Connect:Direct Browser documentation.

✦ Transmission Control Queue—Connect:Direct stores submitted Processes in the Transmission Control Queue (TCQ). The TCQ is divided into four logical queues: Execution, Wait, Timer, and Hold. Processes are run from the Execution queue. Connect:Direct places a Process in the appropriate queue based on Process statement parameters, such as the **hold**, **retain**, and **startt** parameters.

Connect:Direct runs Processes based on their priority and when the Process is placed in the Execution queue. Higher priority Processes run ahead of Processes with a lower priority. You can access the queues and manage the Processes through Connect:Direct commands.

✦ File Agent—Connect:Direct File Agent provides unattended file management. File Agent monitors directories to detect new files. When File Agent detects a new file, it either submits a default Process or evaluates the file to determine which Process to submit. You create rules to submit different Processes based on the following properties:

　◆ Specific or partial file names

　◆ File size

　◆ System events

Create Processes used by File Agent on Connect:Direct; you cannot create them using File Agent.

To achieve optimum performance, configure File Agent to communicate with the Connect:Direct node where it is installed. File Agent can be installed on UNIX, Windows, and z/OS. For information, see the *Managing Files with Connect:Direct File Agent* in the *Connect:Direct for Windows System Guide*. The Connect:Direct File Agent Help contains instructions for configuring File Agent.

✦ Sterling Control Center —Centralized management system that provides continuous enterprise-wide business activity monitoring for Connect:Direct, Connect:Enterprise, and Gentran Integration Suite (GIS) servers. Sterling Control Center enables you to:

　◆ Manage multiple servers—group individual servers to allow a single view of system-wide activity, view processing status, suspend, release, and handle Connect:Direct Processes, and stop Connect:Direct servers.

◆ Monitor service levels—Allows you to view processing across Connect:Direct, Connect:Enterprise, and GIS servers and retrieve information about processing
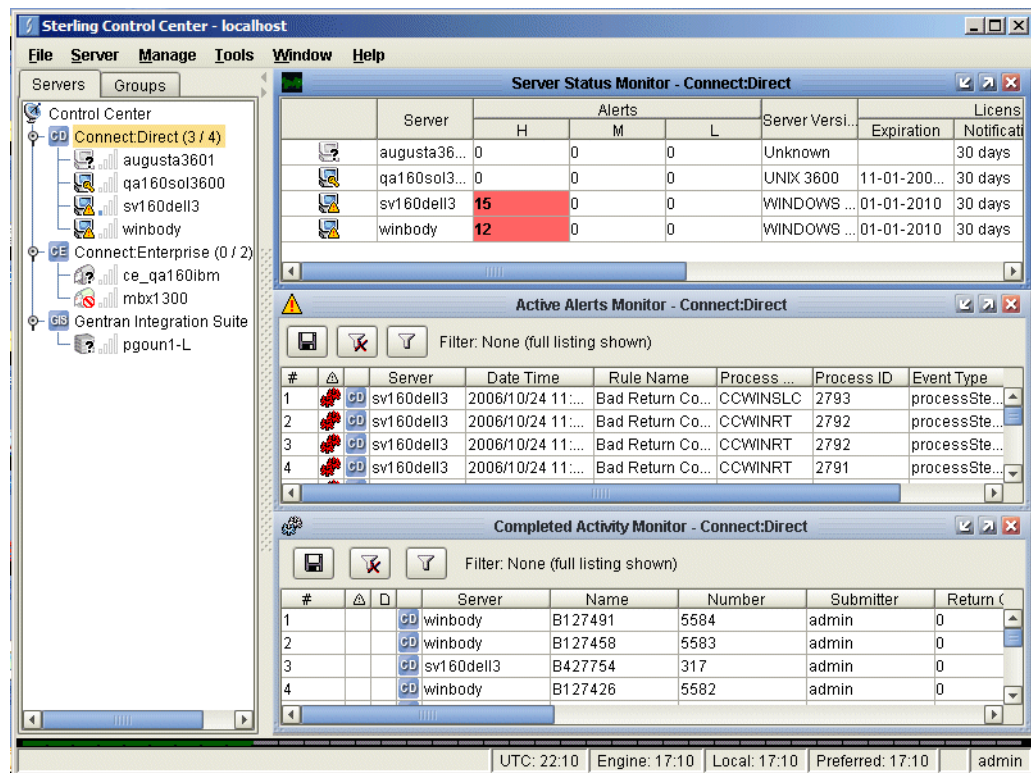
- Receive notice if a scheduled events occurs, define rules based on processing criteria and generate an alert, send e-mail notification, generate a Simple Network Management Protocol (SNMP) trap to an Enterprise Systems Manager (ESM), run a system command, or issue a Connect:Direct server command

- Monitor for alerts, such as a server failure or late-starting Process

- Create service level criteria (SLCs) that define processing schedules, monitor Processes, files within Processes, and file transfers for compliance with these schedules, and generate alerts when the schedules are not met

◆ Analyze operational metrics to document and analyze processing activity

◆ Create customized reports based on criteria you define

◆ Authenticate a user logging on to Sterling Control Center, using one of the following authentication methods: password validation, host name identification, Windows domain, and TCP/IP address

◆ Identify additional Connect:Direct servers that may need to be monitored based on communications with a currently monitored server using Guided Node Discovery

Sterling Control Center enhances productivity and improves the quality of service by:

◆ Ensuring that critical processing windows are met

◆ Reducing impact on downstream processing by verifying that expected processing occurs

◆ Providing proactive notification for at-risk business processes

◆ Consolidating information for throughput analysis, capacity planning, post-processing operational or security audits, and workload analysis

◆ Reducing the risk of errors associated with manual system administration, including eliminating individual server logon to view activity, and the need to separately configure each server for error and exception notifications

Sterling Control Center can be purchased as a separate product. Contact your Sterling Commerce representative to learn more.

Restarting Processes

Several facilities are provided for Process recovery after a system malfunction. Process recovery allows you to resume execution as quickly as possible and minimize redundant data transmission after a system failure. The following Connect:Direct facilities enable Process recovery:

✦ Process step restart—As a Process runs, the steps are recorded in the TCQ. If a Process is interrupted for any reason, the Process is held in the TCQ. When you release the Process to continue running, the Process automatically begins at the step where it halted.

✦ Automatic session retry—Two sets of connection retry parameters are defined in the remote node information record of the network map file: short-term and long-term. If you do not specify a value for these parameters in the remote node information record, default values are used from the local.node entry of the network map file. The short-term parameters allow immediate retry attempts. Long-term parameters are used after all short-term retries are attempted. Long-term attempts assume the connection problem cannot be fixed quickly and retry attempts occur after a longer time period, to save the overhead of connection retry attempts.

✦ Checkpoint/restart—This feature is available with both the **copy** statement and the **run task** statement. To activate the checkpoint/restart feature in the **run task** statement, specify a **restart=yes** parameter in the initialization parameters file.

Connect:Direct records the file positioning checkpoint information in the checkpoint/restart file at specified intervals during a **copy** operation. If a **copy** step is interrupted for any reason, it can be restarted at the last checkpoint position. You can code the **restart** parameter on the **run task** step or in the **runtask.parms** record in the initialization parameters file. If you add the **restart** parameter on the **run task** step, it overrides the initialization parameter. When you add **restart=yes**, Connect:Direct runs the program again. When you code **restart=no**, the Process skips the **run task** step when the Process is restarted. Both the PNODE and the SNODE must support checkpoint/restart.

✦ Intelligent session restart—When an error occurs on a node connection and multiple Processes are scheduled for the node, this feature permits a session retry on only the first Process submitted. The session retry is attempted on the first Process while all other Processes are placed in the Timer queue. After a session is established for the first Process, the other Processes are released so that they can be executed.

If a connection is lost during Process execution, one Process is placed in the Timer queue in RE or retry status using the short and long-term connection retry wait intervals and retry

counts. All other Processes that are executing on the node terminate and are placed in the Timer queue with RE status.

If a Process is submitted to a Connect:Direct node for which a session cannot be established, the Process is placed on the Timer queue. Any session retry attempt that is already underway will continue. If all attempts have already been exhausted, then nothing else is done.

If a connection to a remote Connect:Direct node is reestablished, the Process is restarted and establishes a connection with the remote node. The SMGR notifies the PMGR that a session has been established. Each Process in the TCQ Timer queue for this node is released, scheduled, and executed according to Process priority and session class.

If a connection cannot be reestablished with the remote node, all Processes for the remote node are placed in the Hold queue in HE (hold due to error) status.

✦ Short-term and long-term retry parameter definitions—Enables a Process, which could not run because a file that it called was unavailable, to be retried at a later time. If a file allocation error occurs when a Process is executing on either the local or the remote node, and the file allocation error is identified as a condition to retry, the Process is placed in the Timer queue. The Process is then retried using the short-term and long-term retry parameter definitions.

Connect:Direct for Windows Documentation

See *Connect:Direct for Windows Version 4.4.01 Release Notes* for a complete list of the product documentation.

About This Guide

Connect:Direct for Windows Getting Started Guide is for programmers and network operations staff who install, configure, and maintain the Connect:Direct for Windows version 4.4 product.

This guide assumes knowledge of the Windows operating system, including its applications, network, and environment. If you are not familiar with the Windows operating system, refer to the Windows library of manuals.

Task Overview

The following table identifies the information required to perform the tasks in this guide:

Task	For More Information, See
Preparing to install Connect:Direct for Windows	Chapter 2, *Preparing for the Installation*
Installing Connect:Direct for Windows	Chapter 3, *Installing Connect:Direct for Windows*
Uninstalling Connect:Direct for Windows	Chapter 3, *Installing Connect:Direct for Windows*
Automating product installation	Chapter 4, *Automating Connect:Direct for Windows Installations*

Chapter 2

Preparing for the Installation

Before you install Connect:Direct for Windows, make sure that all system hardware and software, including third-party software, are configured. Perform the following pre-installation tasks:

✦ Make sure that the system meets product hardware and software requirements

✦ Define users for Windows

✦ Configure and test TCP/IP or SNA connectivity, if necessary

✦ Install and configure SQL Server for database support, if necessary

✦ Install and configure SNMP, if necessary

✦ If you use NT Broadcast to send user notification messages, ensure that NT Broadcast is configured

✦ Complete installation worksheets

Product Requirements

Connect:Direct for Windows requires certain hardware and software. Refer to the *Connect:Direct for Windows Release Notes* Version 4.4.01 for product hardware and software requirements.

Requirements for Copying Files to and from Network Servers

When you are ready to create Processes, Connect:Direct allows you to share information across computers. All data does not have to be located on the Connect:Direct server. Observe the following requirements to enable copying files among network servers:

✦ Files to copy must reside on a file server can be accessed by Connect:Direct for Windows.

✦ You must provide a valid user ID and password for the file server where the files reside. Use a local node ID when you submit a Process on the local node; use a remote node ID when you submit a Process on a remote node. You can supply the information as part of the **Process** statement or the **submit** command or use the Login Connection Utility.

✦ If a Process has multiple **copy** steps, the local or remote node ID parameter must be appropriate for each file server from which, or to which you transfer a file because the parameters apply to the Process as a whole and not to individual **copy** steps.

✦ Specify the Universal Naming Convention (UNC) form of the file name if the file is not on a drive directly connected to the same Windows server as Connect:Direct. If the file is on the Windows server where Connect:Direct is installed, you can specify the drive letter.

The UNC name format is as follows:

```
\\servername\share point name\filename
```

✦ *servername*—name of the Windows server where data resides.

✦ *share point name*—name under which the remote Windows server shares the directory you want to access.

✦ *filename*—name of the file and any subdirectories, if necessary.

Configuring Windows User Privileges

Connect:Direct for Windows must be installed by a Windows administrator (for example, sysadmin). However, the ongoing administration of Connect:Direct for Windows requires only that the administrator be a member of the Windows users group and defined in the Connect:Direct for Windows User Authorities with administrative privileges based on the admin template.

After Connect:Direct for Windows is installed, attach to Connect:Direct for Windows as sysadmin and add users as Connect:Direct for Windows administrator (for example, cdadmin) with the user right, "Log on locally." Then, delete sysadmin from the Connect:Direct for Windows User Authorities.

Refer to the Microsoft Windows system documentation to set up an administrator account. Refer to *Connect:Direct for Windows System Guide* to configure User Authorities.

Customizing a Connect:Direct Log On Account

Connect:Direct for Windows is installed under the Local System account.

Caution: Enabling **Allow service to interact with desktop** when running Connect:Direct under the local System account is a security risk and may allow a user access to services that interact with the desktop.

To create a custom account for Connect:Direct, assign this account the following privileges:

✦ **Log on as service**—Allows a Windows service to run in the context of the specified user instead of in the context of the local system account.

✦ **Replace a process level token**—Allows Connect:Direct for Windows to submit Processes on behalf of logged on users.

✦ **Be a member of the Local Administrator Group**—To allow the node to update its entry in Active Directory, the account must also be a member of the Enterprise Admin group.

✦ **Secure+ directory**—Gives the account full permissions to the Secure+ directory.

Note: These privileges are stored locally, even if the computer is a member of a domain. As a result, privileges cannot be set on the domain controller and granted to all computers on the domain.

Once you create the account, assign it as the account for Connect:Direct. To identify the custom log on account:

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

2. Double-click the Connect:Direct server.

3. Click the **Log On** tab.

4. Select **This account** to identify the custom log on account.

5. Type the account name to use for logging on to Connect:Direct, or click **Browse** and double-click the user account to use.

6. Type the password on the **Password** box and confirm it in the **Confirm password** box.

7. Click **OK**.

Configuring Connectivity

Before you install Connect:Direct for Windows, configure connectivity for the TCP/IP or SNA environment.

TCP/IP Connectivity

To enable TCP/IP connectivity, configure each computer with a valid IP address, IP subnet, and IP gateway. If the communications partner is on another subnet or network and a firewall is between the communications partner and the Windows computer, verify that the Access Control Lists (ACLs) are correctly configured. Contact your firewall or security administrator for more information on configuring the ACLs for your firewall.

SNA Connectivity

If you plan to use SNA network communications connectivity with Connect:Direct for Windows, install and configure the SNA software before installing Connect:Direct for Windows. Use the worksheet, *SNA Configuration Worksheet* on page 37 to identify the parameters necessary to configure SNA.

In addition, create an active connection between the local and remote nodes. Connect:Direct for Windows requires the following information for the local and remote SNA networks in order to configure a peer- or host-based partner SNA connection:

✦ Network name
✦ Mode name (local system only)
✦ Control point name
✦ Node ID
✦ Network address (remote system only)
✦ LU name and LU alias name (these names may be the same value; Connect:Direct uses the LU alias name)

Note: Connect:Direct for Windows supports only independent LU6.2.

Refer to the *SNA Server/Host Configuration Worksheet* on page 38 when mapping SNA connection parameters between Connect:Direct for Windows and a host system.

Note: Consult the SNA product documentation or contact your SNA vendor for any questions about configuring the SNA communications software.

The Connect:Direct Workstation Online Connectivity tool is an SNA configuration tool available on the Connect Support Website at *http://www.sterlingcommerce.com* from the **Connect Support > Connect:Direct for Windows > Connectivity** section. This tool generates sample SNA configuration information to assist you in configuring your SNA software and configuring Connect:Direct for SNA connectivity. The Connect:Direct Workstation Online Connectivity tool only generates example independent LU6.2 Token Ring SNA configurations at this time. Refer to the *Connect:Direct for Windows Version Release Notes* for more information about accessing the Connect Support Website.

Installing and Configuring Database Software

The database logs Process statistics information, internal messages, and the Process control queue. Determine which software to use as the database software and, if necessary, install the software on the local computer, or a network drive or remote computer that is accessible from the locally installed Connect:Direct node.

Connect:Direct supports SQL Server Express and SQL server. SQL Server Express is provided with Connect:Direct for Windows and can be installed from the media. SQL Server must be downloaded and installed. If you plan to use Microsoft SQL Server as the database, set the SQL Server to start automatically in the Services option of the Control Panel.

Automating the Connect:Direct for Windows Installation

You can automate the installations using an initialization (INI) file. Implement automated installations by specifying a path to the INI file from the command line of the Windows setup. See Chapter 4, *Automating Connect:Direct for Windows Installations*, for information.

Completing the Connect:Direct Worksheets

To prepare for the installation, gather the information you need before you begin. Record installation information in *Connect:Direct for Windows Installation Worksheet* on page 35. After you complete the installation worksheet, use it as a guide to install Connect:Direct for Windows.

Complete the following worksheets:

✦ The *Connect:Direct for Windows Installation Worksheet* on page 35 to identify settings necessary for a basic installation.

✦ The *SNA Configuration Worksheet* on page 37, if you plan to configure SNA software.

✦ The *SNA Server/Host Configuration Worksheet* on page 38, if you plan to set up and configure an SNA connection between the host and the SNA server.

Installing Connect:Direct for Windows

Once you complete the installation worksheets, you are ready to install Connect:Direct for Windows.

When you perform the installation, you can install all Connect:Direct for Windows components or you can install selected components. Choose from the following components:

✦ Connect:Direct for Windows server—Performs the functions issued from the user interface. If you want a dedicated server, install only this component. It also includes the Command Line Interface (CLI), a tool that allows you to issue commands to the server.

✦ Connect:Direct for Windows Requester—A graphical user interface that makes it easy to configure Connect:Direct, create Processes, and submit commands to the server.

✦ Connect:Direct File Agent—A component that scans directories for the appearance of files. When a file is detected, Connect:Direct either submits a default Process to Connect:Direct or performs the actions specified by the rules. For more information, see *Managing Files Using Connect:Direct File Agent* in the *Connect:Direct for Windows System Guide*.

✦ Connect:Direct Secure+ Option—A separately purchased option that allows you to implement security into a Connect:Direct operation. Secure+ must be installed on both nodes to activate the security software.

✦ Software Developer's Kit (SDK)—A separately purchased option that allows programmers to customize the functions of Connect:Direct for Windows.

After you install Connect:Direct for Windows, TCP/IP information, database information, and notification method is defined in the initialization parameters. To change TCP/IP information, notification type, or the database, refer to *Connect:Direct for Windows System Guide*.

About the Connect:Direct for Windows Installation

Before you begin the installation, choose the installation type to meet your needs. For example, to install a standalone server, install only the Connect:Direct for Windows server software. To use a computer as a server and a workstation, install both the server software and Connect:Direct Requester. If you purchase Secure+ Option, use the custom installation to install both Connect:Direct for Windows and Secure+ Option.

Additionally, if you have a large network of computers where you need to install Connect:Direct for Windows, you can set up a silent installation. To configure a silent installation, install

Connect:Direct for Windows on one computer. Then use the initialization parameters file created during the installation to create a silent installation. Send the modified INI file to each computer on which to perform the silent installation.

Icons illustrate the selected installation type. The following table shows the icons and installation types:

Icon	Description
	The component is installed to the local drive.
	Selected features of the component are installed.
	The component is not installed.
	Adds an icon to the desktop of the selected computer. The component is only installed when the user clicks the program icon to run the program.
	The component is installed on the network.

Connect:Direct is installed in the C:\Program Files\Sterling Commerce\Connect:Direct v4.4.01*component* directory, where *component* is the component being installed. To install Connect:Direct for Windows in another location, select Custom setup and click **Change** in the setup panel. The remaining procedures use the default installation path.

Installing a Temporary or Permanent License Key File

The temporary and permanent license key file must be applied on the computer where Connect:Direct for Windows is installed.

To apply the temporary or permanent key file:

1. Copy the temporary license to C:\Program Files\Sterling Commerce\Connect Direct v4.4.01\server.

2. Rename the temporary key file to **license.key**.

Caution: Do not edit the *nnnnn*.txt file or the license.key file. Text editors may insert a carriage return or truncate lines, which will invalidate the key file.

---

3. To obtain a permanent key, run the CD System ID Utility. To run the CD System ID Utility:

   a. Click **Start>Programs>Sterling Commerce Connect:Directv4.4.01>CD System ID Utility**. The main window displays the CPU-ID and number of processors.

   b. To save the information, click **File>Save**.

   c. Type a name for the file and click **Save**.

   d. Click **File>Send email**.

e. Type requested information in the e-mail template and click **Send**.

You receive the permanent license key by e-mail in approximately 24 to 48 hours.

4. Make a copy of the key and keep it in a safe place.

5. To replace the temporary license key with the permanent one, copy the license to C:\Program Files\Sterling Commerce\Connect Direct v4.4.01\server. Rename it to **license.key**.

Installing Connect:Direct Server and Requester

To perform the Connect:Direct for Windows typical installation:

1. Insert the Connect:Direct for Windows CD into the CD-ROM drive or double-click the setup.exe file extracted from the file downloaded from ESD Portal. If the Autorun option is enabled, the installation automatically starts. If Autorun is disabled, start the program from the Run dialog box.

2. On the Welcome dialog, click **Next**.

3. Select **Typical** and click **Next**.

4. On the **Configure** dialog select **Default** to use the default settings for the server. Click **Next**.

5. On the **License Management** dialog box, click **Browse** and locate the license file you received from Sterling Commerce. Click **Next**.

The file is copied to C:\Program Files\Sterling Commerce\Connect:Direct v4.4.01\server.

6. On the **Configure SQL Server** dialog box, do the following and click **Next**.

a. Select the SQL server to use with Connect:Direct.

b. Select one of the following authentication methods for the connection:

• Windows authentication credentials of current user

• Server authentication. If you select this method, type the user ID and password to use for authentication.

7. From the **Ready to Install the Program** dialog box, click **Install**.

8. If you do not want to start the Requester when the installation is complete, deselect Launch Connect:Direct Requester.

9. Click **Finish**.

Installing Connect:Direct for Windows and Secure+ Option

Use this option to install Secure+ Option at the same time that you install Connect:Direct and Requester.

To perform a custom installation:

1. Insert the Connect:Direct for Windows CD into the CD-ROM drive or double-click the setup.exe file extracted from the file downloaded from ESD Portal.

2. If Autorun is enabled, the installation automatically starts. If Autorun is disabled, start the program from the Run dialog box.

3. On the Welcome dialog, click **Next**.

4. To install Secure+ Option as you install Connect:Direct, select **Custom**. Click **Next**.

5. To install Secure+ Option, click the icon next to Secure+ and identify the type of installation to perform. Click **Next**.

6. The default installation path for Connect:Direct for Windows is C:\Program Files\Sterling Commerce\Connect Direct v.4.4.01. To change the path, click **Change**. Choose the destination location and click **OK**.

7. If you install Secure+ Option, read the message and click **Next**.

8. On the **Configure Connect:Direct for Windows Server** dialog, select **Custom** and click **Next**.

9. The name of the computer where you are installing Connect:Direct for Windows is displayed. To use a different local node name, type the name in the field provided and click **Next**.

10. The **License Management** dialog box is displayed. Click Browse and select the license file provided by Sterling Commerce and click **Next**.

    The license file is copied to the C:\Program Files\Sterling Commerce\Connect Direct v4.4.01\server folder.

11. On the **Configure SQL Server** dialog box, do the following and click **Next**.

    a. Select the SQL server to use with Connect:Direct.

    b. Select one of the following authentication methods for the connection:

        • Windows authentication credentials of current user

        • Server authentication. If you select this method, type the user ID and password to use for authentication.

12. On the **Service Account Information** dialog box, the privileges of the Local system account are displayed. To specify a different account, type:

    ◆ **Service Account** name

    ◆ **Service Password**

    ◆ Verify the password

13. To configure TCP/IP as the connection method, type or select the following information and click **Next**:

    ◆ Node-to-Node IP Address

    ◆ Node-to-Node Port

    ◆ User Interface IP Address

    ◆ User Interface Port

14. If you installed SNA, configure SNA support:

    a. Select **Configure SNA**.

    b. Type the local LU name in the **Local LU Name** field.

    c. Type the network name or ID in the **Network Name (NET ID)** field.

    d. Type the mode name in the **APPC Mode Name** field.

    e. Click **Next**.

15. To use Active Directory, select **Register Client Connection Settings** and click **Next** on the **Register with Active Directory** dialog box.

16. To configure SNMP support, enable one or more of the following features and click **Next**:

    a. Select **Enable Connect:Direct SNMP Extension Agent** to enable the SNMP extension agent.

    b. To enable event logging, select **Enable SNMP Event Logging.**

17. To configure notification support, select one of the following options and click **Next**:

    ◆ To enable Windows broadcasting, select **NT Network Broadcast**.

    ◆ To enable SMTP, select **SMTP**.

18. To use a network map or user authorities from previous versions of Connect:Direct, click **Browse** and select the network map or user authority configuration file to import. Click **Next**.

19. Click **Install**. A message informs you that Connect:Direct for Windows is being installed.

20. Click **Finish**.

Upgrading Connect:Direct for Windows

To upgrade a previous installation of Connect:Direct:

1. Insert the Connect:Direct for Windows CD into the CD-ROM drive or double-click the setup.exe file extracted from ESD Portal. If Autorun is enabled, the installation automatically starts. If Autorun is disabled, start the program from the Run dialog box.

2. On the Welcome dialog, click **Next**.

3. Select **Typical** and click **Next**.

4. On the **Configure** dialog select **Upgrade** and click **Next**.

5. Select a node to upgrade in the **Installed Nodes** drop down box and click **Next**.

6. To keep the previous installation, enable Keep previous version and click **Next**.

7. Click **Install**.

8. The **Finish** dialog box has a check box to automatically start Connect:Direct Requester. If you do not want to start Connect:Direct Requester, deselect this option. Click **Finish**.

Modifying, Repairing, and Installing Connect:Direct for Windows Components

After you install Connect:Direct for Windows, you can change the features including repairing a component that is corrupt, removing a component, or installing an additional component. After you install Connect:Direct, future installations identify this as a second installation.

To add, remove, or repair a Connect:Direct component:

1. Insert the Connect:Direct for Windows CD into the CD-ROM drive or double-click the setup.exe file extracted from ESD Portal. If Autorun is enabled, the installation automatically starts. If Autorun is disabled, start the program from the Run dialog box.

2. On the **Welcome** dialog, click **Next**.

3. To install additional Connect:Direct for Windows components:

   a. Select **Modify** and click **Next**.

   b. Click **Next**.

   c. Select the components to modify and click **Next**.

   d. Click **Install**.

   e. Click **Finish**.

4. To repair an installed Connect:Direct for Windows component:

   a. Select **Repair.**

   b. Click **Next**.

   c. Select the components to modify and click **Next**.

   d. Click **Install**.

   e. Click **Finish** to complete the repair.

5. To remove an installed Connect:Direct for Windows component:

   a. Select **Remove** to uninstall a Connect:Direct component.

   b. Select the components to modify and click **Next**.

   c. Click **Next**.

   d. Click **Remove**.

   e. Click **Finish** after the components have been removed.

Installing Connect:Direct File Agent

When you install Connect:Direct File Agent, Java Runtime Environment (JRE) is automatically installed. To install File Agent:

1. Insert the Connect:Direct for Windows CD into the CD-ROM drive or locate the files you extracted from ESD Portal, and double-click the FileAgentInstall.exe.

2. From the **Introduction** dialog box, click **Next**.

3. To install File Agent in a selected location, click **Choose** and identify the location.

4. Click **Next**, then click **Install**.

5. When the installation is complete, click **Done**.

Uninstalling Connect:Direct for Windows

The Connect:Direct for Windows Uninstall program removes the application, its components, Connect:Direct Requester and Connect:Direct for Windows server, and program folder.

To uninstall Connect:Direct Server and all of the server utilities:

1. Click **Start/Programs/Settings/Control Panel/Add-Remove Programs.**

2. Highlight **Connect:Direct for Windows** and click **Remove**.

3. Click **Yes** to confirm the removal.

4. Click **Finish**.

5. Click **OK** to close the **Add/Remove Programs Properties** dialog box.

Adding Initialization Parameters to Support Firewall Navigation

If you communicate with a trading partner using a firewall, set two initialization parameters to support it. You assign a specific TCP/IP source port number or a range of port numbers with a particular TCP/IP address or addresses for outgoing Connect:Direct sessions. Setting these parameters allows controlled access to a Connect:Direct server if it is behind a packet-filtering firewall without compromising security.

To implement the firewall navigation:

1. Coordinate IP addresses and associated port assignments with your firewall administrator.

2. Add the following parameter to the Local Node Characteristics section of the initialization parameters file:

    ```
    tcp.src.ports=(valid IP address/optional subnet mask | valid IP address pattern,
    associated port number | associated range of port numbers | associated port
    number, associated range of port numbers)
    ```

3. Apply the new initialization parameter.

    A second parameter called tcp.src.ports.list.iterations is automatically added to the Local Node Characteristics section during installation and has a default value of 1.

Refer to the following table for a description and valid values for these parameters:

Parameter Name	Parameter Definition	Valid Values
tcp.src.ports	IP address or multiple addresses and the ports permitted for the address when going through a packet-filtering firewall.	Valid IP address with an optional mask for the upper boundary of the IP address range and the associated outgoing port number or range of port numbers for the specified IP address, for example:
		(199.2.4.*, 1000), (fd00:0:0:2015:*::*, 2000-3000), (199.2.4.0/255.255.255.0, 4000-5000),(fd00:0:0:2015::0/48, 6000, 7000)
		For more information on IP addresses, masks, and ports, see the *Specifying IP Addresses, Host Names, and Ports* appendix in the *Connect:Direct for Windows System Guide*.
		A wildcard character (*) is supported to define an IP address pattern. If the wildcard character is used, the optional mask is not valid.
tcp.src.ports.list.iterations	Specifies the number of times that Connect:Direct scans the list of available ports defined in tcp.src.ports to attempt a connection before going into a retry state.	A numeric value from 1–255. The default value is 1.
	This parameter is automatically added to the initialization parameter and is assigned a value of 1. If desired, change this value.	

4. Coordinate the specified port numbers with the firewall administrators.

Firewall Configuration Example

The following sample illustrates a configuration of the firewall navigation initialization parameter. An explanation of the configuration follows the example. Although the tcp.src.port parameter is shown as a multi-line parameter in the following example, Connect:Direct for Windows only supports single-line parameters.

```
tcp.src.ports=(199.2.4.*, 5000-5050),
   (199.2.4.7, 1376),
   (200.200.0.0/255.255.0.0, 2000-2100, 3000-3100),
   (138.16.17.*, 2000-2050, 3000-3050, 4001, 4005)
```

In this example, if Connect:Direct initiates a session with a remote node at the IP address 199.2.4.7, it will use only port 1376. A session 199.2.4.6 (or any other address beginning with 199.2.4) will use any port in the range 5000 to 5050.

A session to 200.200.4.10 uses a port from within the two ranges specified (2000 to 2100 or 3000 to 3100.) Additionally, because of the subnet mask specification, a session to any IP address beginning with 200.200 will choose a port from within the two ranges specified.

The port for a session to any address beginning with 138.16.17 is selected from one of the two ranges (2000 to 2050 or 3000 to 3050) or the two individual ports specified (4001 or 4005).

Automating Connect:Direct for Windows Installations

About Silent Installations

You can automate Connect:Direct for Windows installation and configuration for distribution throughout your enterprise by performing silent installations. Silent installations require no user responses during the installation routine. Configuration information is supplied by the initialization file that you define. Before you perform a silent installation, install Connect:Direct for Windows on a master node and configure a network map and user authorizations.

The Microsoft Installer Properties are the foundation of a silent installation. Properties can be set on the command line or by creating custom transforms. A transform is a collection of changes applied to an installation.

Transforms alter the installation database and can be used to customize a base installation package. Applying a transform to a base installation package adds or replaces data in the installation database.

Silent Installation Options

You can perform a default silent installation to install Connect:Direct server and Connect:Direct Requester, or you can use transforms to modify the settings of an installation package. The transforms included with this product enable, disable, and remove a feature from the Connect Direct for Windows.msi package. To change the silent installation setting, use a transform to enable or disable the desired feature.

Requirements for Silent Installation

Use the following list as a guide to the silent installation requirements for each node:

✦ To perform the default installation (server and Connect:Direct Requester), the node must have a license key.

✦ To install only Connect:Direct Requester or SDK, no license key is required.

✦ If the node uses special services, for example, Active Directory, SNMP, or SNA, a custom INI file is required. If no custom INI file is present, the default installation is performed.

Customize Initialization Information for a Silent Installation

The Connect:Direct server supports an INI file, which can specify the value of installation properties. If you plan to use the INI file to manage a silent installation, change the parameters of the INI file provided with Connect:Direct for Windows to specify site-specific information.

The Connect:Direct for Windows server initialization file (CD_SRVR.INI) is located on the CD in the /advanced folder. The Connect:Direct Requester and SDK installations do not use initialization files. To set the installation directory for an installation, specify the INSTALLDIR property in the command line.

To define site-specific parameter values in an INI file for each node where you install Connect:Direct for Windows using the silent installation, do the following:

1. Open the CD_SRVR.INI file using any text editor, such as Windows Notepad.

2. Define the site-specific initialization parameters for a node and save the file.

3. Repeat steps 1–2 for each server where Connect:Direct will be installed.

CD_SRVR.INI Parameter Values

Refer to the following table for available parameters defined in the CD_SRVR.INI file:

Parameter Name	Parameter Definition	Values
CD_SETUP_TYPE	The installation type: Default, Custom, or Upgrade.	Default	Custom	Upgrade
CD_SQL_AUTHENTICATION	SQL Authentication	
CD_SQL_USERID	Service account name to log on with.	
CD_SQL_PWD	Password to log on with.	
CD_NODENAME	Local node name, from 1–16 characters, including numbers, letters, @, #, $, -, underscore (_), and period (.).	If blank, the parameter defaults to the first 16 characters of the computer where the server is being installed.
CD_UPGRADE_NODE	The version of software and node to upgrade.	Version of software to update and the name of the node in the format Vx.xx.xx\nodename where x.x.xx is the version number
CD_UPGRADE_KEEPSCR_FLAG	Prevents the current version from being deleted before installing the new version.	1=enabled This variable applies only if CD_SETUP_TYPE=Upgrade

Parameter Name	Parameter Definition	Values
CD_LICENSE_FILE	Path name to the license file (license management key.)	_X_:\Program Files\Sterling Commerce\Connect Direct \v4.4.01	Any valid Windows directory
CD_HOST_IP	IP address of the host server.	Any valid IP address.
CD_HOST_PORT	Port number the Connect:Direct Windows, or user-written API programs will use to establish client sessions with the Connect:Direct server for outgoing communications.	A numeric value in the format _nnnn_, where _nnnn_ is a positive integer with a value from 0–65535. The default is 1364.
CD_API_IP	Host IP address. Any valid TCP/IP address may be specified.	Valid TCP/IP address. If blank, the IP is obtained from the destination computer's IP address in the TCP/IP stack.
CD_API_PORT	Port number that Connect:Direct for Windows or API program uses to establish client sessions with this Connect:Direct server. Specify the port when it differs from the default.	A numeric value in the format _nnnn_, where _nnnn_ is a positive integer with a value from 0–65535. The default is 1363.
CD_SNA_FLAG	Indicates whether SNA connectivity is supported.	1=enabled
CD_SNA_LUNAME	Local LU name to use during SNA communications or the name of the computer, if no LU name is specified.	Valid 1–8 character LU name or computer name up to 8 characters.
CD_SNA_NETID	The SNA network ID.	A valid 1–8 character network ID
CD_SNA_MODE	The SNA mode name.	ndm624K	a valid 1–8 character mode name
CD_SNMP_FLAG	Enables SNMP.	1=enabled
CD_EVENTLOG_FLAG	Enables SNMP Event log.	1=enabled
CD_ACTIVEDIR_FLAG	Registers the client IP address to active directory.	1=enabled
CD_NOTIFY_TYPE	Notification type to use.	NT Broadcast	SMTP
CD_NOTIFY_SMTP_HOST	If CD_NOTIFY_TYPE = SMTP, this field identifies the IP address of the SMTP host.	Host address in the format _nnn.nnn.nnn_
CD_NOTIFY_SMTP_PORT	If CD_NOTIFY_TYPE = SMTP, this field identifies the port used by the SMTP host.	Port number up to four characters. Default=25.

Chapter 4   Automating Connect:Direct for Windows Installations

Parameter Name	Parameter Definition	Values
CD_NOTIFY_SMTP_SENDER	If CD_NOTIFY_TYPE = SMTP, this field identifies the e-mail address to identify the sender of the message	Valid e-mail address
CD_NOTIFY_SMTP_AUTHENTICATE	If CD_NOTIFY_TYPE = SMTP, this field enables authentication. If this value is not set, the user ID and password are ignored.	1 = enabled
CD_NOTIFY_SMTP_USERID	If CD_NOTIFY_TYPE = SMTP, this field identifies the user ID to use to authenticate the server.	A valid user ID.
CD_NOTIFY_SMTP_PWD	If CD_NOTIFY_TYPE = SMTP, this field identifies the password to use to authenticate the server.	A valid user password.
CD_USERAUTH_FILE	Path and file name to the user authority file.	_X_:\Program Files\Sterling Commerce\Connect Direct \v4.4.01\ MyUserAuthSettings.cfg	Any valid Windows directory and user authority file name
CD_NETMAP_FILE	Path and file name of the network map file.	_X_:\Program Files\Sterling Commerce\Connect Direct \v4.4.01\mynetmap.map	Any valid Windows directory and network map file name
CD_SVC_ACCOUNT	Service user account.	
CD_SVC_ACCOUNT_PWD	Service user password.	
CD_SQL_SERVER	Name of a valid SQL server.	Valid SQL Server
CD_SQL_AUTHENTICATION	SQL authentication.	
CD_SQL USERID	SQL Server system administrator's user ID.	Valid SQL Server System administrator user ID
CD_SQL_PWD	SQL Server system administrator's password.	Valid 1–30 character SQL Server System administrator password

Customize Connect:Direct for Windows Configuration

After you install Connect:Direct for Windows on a master node, you can customize configuration information for distribution within your enterprise by using Connect:Direct Requester to configure the network map and user authorizations on the master node. You can then extract those files using

the Configuration Utility. For more information about using the Configuration Utility, refer to "Defining and Managing the Connect:Direct Network" in Help or in the *Connect:Direct for Windows System Guide*.

To apply the customized configuration files during a silent installation, set parameter values in the CD_SRVR.INI file as follows:

✦ To apply a customized network map file, set CD_NETMAP_FILE to the fully qualified path to a customized

✦ network map configuration file.

✦ To apply a customized user authorization file, set CD_USERAUTH_FILE to the fully qualified path to a customized User Authorization configuration file.

Run a Silent Installation

Setup.exe installs the Microsoft Installer, Visual C++ Runtime Libraries and other prerequisites on a system when they do not already exist. To complete the installation, Setup.exe reboots the system if required and resumes the installation after the computer has restarted.

Setup.exe can accept a limited number of command-line parameters. By using these parameters, you can pass parameters through Setup.exe to the included .msi file (MsiExec). To pass arguments to the .msi file, use the /v option. Once you specify this option, you can list any of the supported parameters that can be passed to Msiexec.exe.

If you don't want the Setup.exe to display a progress bar when it launches, use the /s command-line parameter. For example, if you enter Setup.exe /s, Setup.exe launches, but the user interface is not displayed. If you want the .msi setup to run silently as well, you'll need to pass the /qn command-line parameter through Setup.exe using the /v parameter—for example: Setup.exe /s /v/qn

Follow these special formatting rules when passing a parameter in this way. First, place a backslash (\) character before a quotation mark that resides within existing quotes. For example, the command line above contains the following: /v"C:\My Files\SecurePlusEnable.mst\". Because the path contains spaces, you must use quotes.However, since quotes are required around the complete argument, if you don't use the backslash before internal quotes, the command-line statement fails.

Do not put a space between the command-line option (/v) and the arguments you are passing. This rule is also illustrated in the above example.

Finally, if you are passing multiple parameters using the /v option, separate them with a space. For example, the following command enables Secure+ Option and specifies the license file:

Setup.exe /s /v"C:\My Files\SecurePlusEnable.mst\" CD_LICENSE_FILE=\"C:\My Files\license.key\""

To attach to the network and install Connect:Direct for Windows features from the network location in a silent installation:

1. Click Start > Run. The Run dialog box is displayed.

2. In the Open field of the Run dialog box, type a command similar to following example: Setup.exe /s /v/qn

This command installs all Connect:Direct for Windows components including Connect:Direct Requester and Secure+ Option.

Note: Setup.exe installs Connect:Direct for Windows in the default directory c:\Program Files\Sterling Commerce\Connect Direct Windows v[current version]. If you want to install Connect:Direct for Windows in a different directory, use the INSTALLDIR option on the command line. Enclose the pathname in quotes and terminate the path with a backslash, such as Setup.exe /v"INSTALLDIR=\"D:\Program Files\Sterling Commerce\Connect Direct v4.5.01\"" .

---

3. Computers in a Windows 2000 or XP Domain that use Active Directory can also automate installations using the software installation extension of the Group Policy Snap-In.

   The Windows installer uses an /M command line parameter to generate MIF files. In the following example, the CDNT.mif file is created to report success or failure: setup.exe /s /v/qn /M C:\Windows\CDNT.mif

<div align="right">

Appendix A

</div>

<div align="right">

Worksheets

</div>

Use the worksheets in this appendix to gather and record information needed for the installation.

Connect:Direct for Windows Installation Worksheet

Complete this worksheet before you install Connect:Direct for Windows.

1. What Connect:Direct software do you plan to install?

    ❑ Connect:Direct Requester

    ❑ Connect:Direct Server

    ❑ Connect:Direct Secure+ Option

2. Choose the installation directory, where *X* represents the drive mapped to your Windows directory.

    ❑ Accept the default installation directory - C:\Program Files\Sterling Commerce\Connect:Direct v4.4.01

    ❑ Change the installation directory

    ❑ New installation directory: _____

    ❑ Install on a network drive

    ❑ Place an icon on a desktop to install Connect:Direct the first time the application is opened.

3. Name the Connect:Direct node—Default local node name is the name of the Windows computer.

    Local node name: _____

    Note: To change the local node name after the product is installed, you must re-install Connect:Direct for Windows.

4. Identify the location of the license management file.

    License file location: _____

    Maximum number of sessions: _____

5. Identify the database software:

    ❑   SQL Server Express_____

    ❑   Microsoft SQL Server—Windows Authentication

        If SQL security is implemented, create a valid user ID and password and a CREATE TABLE privilege within the database.

        SQL Server Name:

        _____

        User ID: _____   Password:_____

    ❑   SQL Server with Mixed Mode Authentication

        If Integrated security is implemented, make sure the user group that the Connect:Direct installer belongs to has CREATE TABLE privilege in the Connect:Direct database.

        SQL Server Name: _____

6. Identify TCP/IP communication information.

        Node-to-Node IP Address: _____

        Node-to-Node Port: _____

        User Interface IP Address: _____

        User Interface Port: _____

7. Identify additional components, as necessary:

    ❑   APPC Connectivity - SNA

        LU Name: _____

        Net ID: _____

        Mode Name _____

    ❑   Process Notification

    ❑   NT Broadcast

    ❑   SMTP

        SMTP Settings:

        Host Address: _____

        Host port: _____ Default=25

        Sender: _____

    ❑   Load an Existing Network Map

        Fully-qualified pathname for the MAP.CFG: _____

    ❑   Load Existing User Authorities

        Fully-qualified pathname for the USER.CFG: _____

SNA Configuration Worksheet

Use this worksheet to identify the parameters necessary to configure SNA. Make copies of this worksheet for each SNA configuration. See Appendix B, (fix cross reference) for SNA Server configuration examples.

Local Node SNA Information

Connect:Direct Node Name:_____

LU Alias Name: _____

The LU Alias name is a user-defined name that references the LU name defined in the local SNA network. This value can be the same as the actual LU name.

Get the following information from your local SNA administrator.

LU Name: _____   Network Name: _____

Mode Name: _____   Control Point Name: _____

Node ID: _____

Remote Node SNA Information

Connect:Direct Node Name:_____

LU Alias Name: _____

The LU Alias name is a user-defined name that references the LU name in the remote SNA network. This value can be the same as the actual LU name. Obtain the following information from the SNA administrator of the remote system.

LU Name: _____   Network Name: _____

Control Point Name:_____   Node ID: _____

Network Address: _____

SNA Server/Host Configuration Worksheet

Complete the worksheet before you configure an SNA connection between the host and SNA server. For each parameter listed, record the parameter value mapped between SNA and VTAM. Use the alpha identifier in the first column to understand how the parameters are implemented in the network map in the example following this table.

	Windows/SNA	Parameter Value	Host/VTAM
[a]	Local Connect:Direct node name	= =	LOCAL.NODE
[b]	Remote Connect:Direct node name	= =	ADJACENT.NODE
[c]	Mode	= =	LOGMODE
[d]	Session Limits	= =	VTAM APPLID DSESSLIM
[e]	Max RU	= =	LOGMODE RU Size
[f]	Server Netname	= =	VTAMNETID (owner of PU)
[g]	Server CPNAME	= =	VTAM PU Name
[h]	Connection CPNAME	= =	VTAM SSCPNNAME
[i]	Connection Netname	= =	VTAM NETID (owner of PU)
[j]	Connection LOCALBLOCKNO	= =	VTAM PU DBLK
[k]	Connection LOCALNODENO	= =	VTAM PU IDNUM
[l]	Connection REMOTENETADDR	= =	Remote Network Address
[m]	Local LU Name (APPCLU)	= =	VTAM LU Name (must be independent)
[n]	APPCLU Netname	= =	VTAM NETID (owner of PU)
[o]	Remote Partner LU (APPCRLU)	= =	VTAM APPLID
[p]	APPRCLU Netname	= =	VTAM NETID (owner of APPLID)

z/OS Network Map Example

The following sample illustrates the use of the VTAM parameters (identified by the alpha characters) in an z/OS network map:

```
LOCALNODE=                              ADJACENT.NODE=(

(node name[b],                          (node name[a],
communications name[o],,                communications name[m],,
superuser password)                     LU62)
TCQ=(tcxdsn, tcqdsn))                    PARSESS=(max[d], default)
                                        ENVIRONMENT=NT
                                        LOGMODE=logmode entry name[c])
```

Refer to the platform-specific Connect:Direct Installation and Administration guides for network map information on other host platforms.

Windows Network Map Example

The following sample illustrates SNA parameters (identified by alpha characters) in a Windows network map:

```
CREATE_SNA_MODE Name(mode [c])
MAXRUsize (MaxRU [e]) MaxPacingSize(7) MaxNetSessLimit(8)

CREATE_SNA_COMMPATH Name(commpathname)
Transport(transport-type) Adapter(0) Address(000000000000)
NetId(netid[f]) PUName() LUName(LUName [m])
ProfileName() LULocAddr(0) Mode(mode[c]) LUSessLimit(8)

CREATE_REMOTENODE Name(remotenodename [b])
LRetry(10) LRetryTime(180) Sretry(10) SretryTime(10) SessPnodeMax(32)
SessSnodeMax(32) DefaultClass(1) RemoteOSEnv(z/OS) NetName(NetName[f])
PartnerName(PartnerName[o]) TPName(NNV2DTF) Mode(mode[c])
CommPath(commpathname)
```

VTAM 4.1 Example Definitions

This chapter provides sample SNA configuration and VTAM 4.1 definitions and instructions on accessing SNA configuration listings.

Sample SNA Configuration

This section illustrates a sample SNA configuration used to connect to Connect:Direct for z/OS.

You provide the following SNA resource definitions during the Microsoft SNA configuration. These values are derived from VTAM definitions supporting connections between Connect:Direct for z/OS and Connect:Direct for Windows. Contact the VTAM administrator for the values you need to specify during SNA configuration.

Windows	Parameter Value	z/OS
Remote LU Name	= M1CDXY2B	=APPLID
Local LU Name	= M1R01LUA	=LU NAME
Network Name	= CSDNET	=NETID
Mode Name	= NDM624K	=MODEENT
Remote Control Point Name	= CSDSA01	=SSCPNAME
Local Control Point Name	= M1RPU01	=PU NAME
Local Connect:Direct Node Name	= SS.DUB.USER1	=ADJACENT.NODE
Remote Connect:Direct Node Name	= CDNT0001	=LOCAL.NODE
Local Node ID	= 0716200D	=XID
Remote Network Address	= 4000 7000 6200	=MAC Address

VTAM 4.1 Sample Definitions

The following section contains definitions to use in configuring your SNA software. The relevant resource name entries are in bold.

XCA Token Ring: Switched Net Definitions

The following sample represents the Switched Net PU definitions for an XCA attached Windows SNA server.

```
****************************************************
*                                                  *
*XCA TR    DEFINITION                              *
*                                                  *
*                                                  *
*CHANGE LOG                                        *
*                                                  *
****************************************************
M1R01PU  VBUILD TYPE=SWNET,                               X
      MAXGRP=1,              MAXIMUM NUMBER OF UNIQUE GRPNM    X
      MAXNO=1               MAXIMUM NUMBER OF UNIQUE DIALNO
*
***
M1RPU01  PU    ADDR=01,                                  X
              PUTYPE=2,                                  X
              ISTATUS=ACTIVE,                            X
              DBLK=071,                                  X
              IDNUM=6200D,                               X
              PASSLIM=8,                                 X
              DLOGMOD=NDM624K,                           X
              MODETAB=DALLMTAB,                          X
              SSCPFM=USSSCS,                             X
              USSTAB=LSUSSTAB,                           X
              PACING=7,                                  X
              VPACING=7,                                 X
              DISCNT=(NO),                               X
              MAXDATA=521,                               X
              MAXPATH=2,                                 X
              MAXOUT=8
*
M1RPTH0D PATH  GRPNM=M1XG516D,                           X
              DIALNO=00111111111111D  DUMMY

*M1ROLUA LU LOCADDR=0, DLOGMODE=NDM6241C

*3270
*
M1R01LU2 LU  LOCADDR=2,DLOGMOD=D4A3290
M1R01LU3 LU  LOCADDR=3,DLOGMOD=D4A3290
*
*LU 6.2 ILU
*
```

XCA Token Ring: Independent LU Definition

Following is an illustration of the Independent LU definitions included as Cross Domain Resources:

```
***********************************************************************
*          VTAM 3.4 CDRSC DEFINITIONS FOR INDEPENDENT LU'S       *
*               6.2 ILU DEFINITION - XCA TR       ACCESS         *
*                                                                     *
*CHANGE LOG:                                                          *
*                                                                     *
***********************************************************************
M1R01CDS VBUILD TYPE=CDRSC
*
M1R01LUA CDRSC ISTATUS=ACTIVE,                                      X
         ALSLIST=M1RPU01,     ADJ LINK STATION                     X
         MODETAB=DALLMTAB,    LOGON MODE TABLE                     X
         DLOGMOD=NDM624K,     LOGON MODE TABLE ENTRY               X
         RESSCB=5             SESSION CONTROL BLOCKS
*
M1R01LUB CDRSC ISTATUS=ACTIVE,                                      X
         ALSLIST=M1RPU01,     ADJ LINK STATION                     X
         MODETAB=DALLMTAB,    LOGON MODE TABLE                     X
         DLOGMOD=NDM624K,     LOGON MODE TABLE ENTRY               X
         RESSCB=5             SESSION CONTROL BLOCKS
*
M1R01LUC CDRSC ISTATUS=ACTIVE,                                      X
         ALSLIST=M1RPU01,     ADJ LINK STATION                     X
         MODETAB=DALLMTAB,    LOGON MODE TABLE                     X
         DLOGMOD=NDM622K,     LOGON MODE TABLE ENTRY               X
         RESSCB=5             SESSION CONTROL BLOCKS
*
M1R01LUD CDRSC ISTATUS=ACTIVE,                                      X
         ALSLIST=M1RPU01,     ADJ LINK STATION                     X
         MODETAB=DALLMTAB,    LOGON MODE TABLE                     X
         DLOGMOD=NDM621K,     LOGON MODE TABLE ENTRY               X
         RESSCB=5             SESSION CONTROL BLOCKS
*
```

XCA Token Ring: Major Node Definition

The following sample illustrates the major node definitions for an XCA device:

```
    *********************************************************************
    *                                                                  *
    * XCA MAJOR NODE                                                    *
    *                                                                  *
    * CHANGE LOG:                                                       *
    *********************************************************************
    M1XCA516 VBUILD TYPE=XCA        XCA MAJOR NODE
    *
    M1XP5161 PORT  MEDIUM=RING,     TOKEN-RING                        X
                   SAPADDR=4,       SERVICE ACCESS POINT ADDRESS      X
                   ADAPNO=0,        ADAPTER NUMBER                    X
                   CUADDR=516       CHANNEL UNIT ADDRESS
    *
    M1XG516D GROUP DIAL=YES,        SWITCHED PERIPHERAL NODE          X
                   CALL=IN,         DIAL IN AS PER MCDATA             X
                   ISTATUS=ACTIVE   ACTIVATED AT GEN
    *
    M1XL516D LINE  ANSWER=ON        PU CAN DIAL IN
    *
    M1X516PD PU
    *
    ***
```

Sample Connect:Direct APPLDEF

The following sample illustrates the application definitions for Connect:Direct for z/OS:

```
    ZZAPPGLP VBUILD TYPE=APPL
    *********************************************************************
    *         C:D z/OS TEST LU 6.2 ILU APPL DEFINITION        *
    *                                                                  *
    *********************************************************************
    *
    M1CDXY2B APPL ACBNAME=M1CDXY2B,   VTAM APPLID                     X
                   APPC=YES,          LU 6.2 CAPABLE                  X
                   AUTH=(ACQ,VPACE),  VTAM AUTHORITY FOR THIS APP     X
                   AUTOSES=10,        # OF AUTO CONT WINNER ACTIVATES X
                   DDRAINL=ALLOW,     DRAIN ALLOWED FOR CNOS 0        X
                   DLOGMOD=NDMLM1K,   DEFAULT MODE TABLE ENTRY        X
                   DMINWNL=10,        MIN CONT WINNER FOR LOCAL LU    X
                   DMINWNR=10,        MIN CONT WINNER FOR REMOTE LU   X
                   DRESPL=ALLOW,      APPL WILL DO SESSION DEACTIVATES X
                   DSESLIM=20,        MAX # OF ALLOWED SESS FOR MODE  X
                   EAS=509,           APPROX # OF CONCURRENT SESSIONS X
                   MODETAB=DALLMTAB,  MODE TABLE NAME                 X
                   VPACING=7          DEFAULT RECEIVE PACING VALUE
    *
```

Sample Connect:Direct MODEENTS (Mode Definitions)

The following sample illustrates the mode definition entries for an independent LU:

```
**********************************************************************
*                                                                    *
*                    LU 6.2 WITH 4K RU'S                              *
*                                                                    *
**********************************************************************
NDM624K  MODEENT LOGMODE=NDM624K,                                    *
               TYPE=1,                                               *
               COS=NDMCOS1,                                          *
               FMPROF=X'13',                                         *
               TSPROF=X'07',                                         *
               PRIPROT=X'B0',                                        *
               SECPROT=X'B0',                                        *
               PSNDPAC=X'04',                                        *
               SRCVPAC=X'04',                                        *
               SSNDPAC=X'04',                                        *
               COMPROT=X'D0B1',                                      *
               RUSIZES=X'8989',                                      *
               PSERVIC=X'060200000000000000000300'                  *
*                       0 1 2 3 4 5 6 7 8 9 1011
**********************************************************************
*                                                                    *
*                    LU 6.2 WITH 2K RU'S                              *
*                                                                    *
**********************************************************************
NDM622K  MODEENT LOGMODE=NDM622K,                                    *
               TYPE=1,                                               *
               COS=NDMCOS1,                                          *
               FMPROF=X'13',                                         *
               TSPROF=X'07',                                         *
               PRIPROT=X'B0',                                        *
               PSNDPAC=X'04',                                        *
               SRCVPAC=X'04',                                        *
               SSNDPAC=X'04',                                        *
               SECPROT=X'B0',                                        *
               COMPROT=X'D0B1',                                      *
               RUSIZES=X'8888',                                      *
               PSERVIC=X'060200000000000000000300'                  *
*                       0 1 2 3 4 5 6 7 8 9 1011
**********************************************************************
*                                                                    *
*                    LU 6.2 WITH 1K RU'S                              *
*                                                                    *
**********************************************************************
NDM621K  MODEENT LOGMODE=NDM621K,                                    *
               TYPE=1,                                               *
               COS=NDMCOS1,                                          *
               FMPROF=X'13',                                         *
               TSPROF=X'07',                                         *
               PRIPROT=X'B0',                                        *
               PSNDPAC=X'04',                                        *
               SRCVPAC=X'04',                                        *
               SSNDPAC=X'04',                                        *
               SECPROT=X'B0',                                        *
               COMPROT=X'D0B1',                                      *
               RUSIZES=X'8787',                                      *
               PSERVIC=X'060200000000000000000300'                  *
*                       0 1 2 3 4 5 6 7 8 9 1011
```

Sample VTAM Start Options (ATCSTRxx)

The following sample represents the VTAM Start Option entries for NETID and SSCPNAME.

```
*********************************************************************
*                                                                 *
*                   z/OS VTAM START DEFINITION                *
*                                                                 *
*********************************************************************
HOSTSA=01,                                                       X
NODETYPE=NN,                                                     X
CONNTYPE=LEN,                                                    X
CPCP=YES,                                                        X
GWSSCP=YES,                                                      X
NETID=CSDNET,                                                    X
SSCPID=15015,                                                    X
SSCPNAME=CSDSA01,                                                X
LISTBKUP=DEFAULTS,                                               X
TNSTAT,NOCNSL,TIME=60,                                           X
PPOLOG=YES,                                                      X
XNETALS=YES,                                                     X
NCPBUFSZ=2048,                                                   X
HOTIOTRM=50,                                                     X
IOPURGE=5M,                                                      X
MSGLEVEL=V4R1,                                                   X
MAINTLVL=9311,                                                   X
IOBUF=(750,320,50,,30,100,3000),                                 X
CRPLBUF=(500,,0,,25,1),                                          X
LFBUF=(300,,0,,32,1),                                            X
LPBUF=(80,,0,,12,1),                                             X
SFBUF=(40,,0,,34,1),                                             X
SPBUF=(32,,0,,32,1),                                             X
BSBUF=(600,,0,,25,50),                                           X
XDBUF=(55,,0,,5,1)
```

Sample Connect:Direct for z/OS Network Map Entries

The following sample illustrates Connect:Direct for z/OS network map entries for Windows SNA software running Connect:Direct for Windows:

```
*****************************************************************
*                                                             *
*              Connect:Direct NETWORK MAP               *
*                                                             *
*****************************************************************
*                                                             *
*****************************************************************
* LOCAL NODE                                                  *
*****************************************************************
LOCAL.NODE    =  ((SS.DUB.USER1 M1CDXX2B,, SUPERUSR)        -
          TCQ=  (USER1.R210.TCX                             -
                USER1.R210.TCQ)                    )
*
ADJACENT.NODE = (PARSESS = (10  2)                         -
              (CDNT0001, M1R01LUA, LU62)              -
              ENVIRONMENT=NT                           -
              LOGMODE=NDM624K                     )
```

Accessing SNA Server Configuration Listing

Use the following Windows SNA Server command to display the configuration and redirect the information to a file:

```
snacfg /print>filename
```

The following sample illustrates the Microsoft SNA server configuration listing for a configured Windows server using the values listed in the VTAM Sample Definitions:

```
MODE #INTER /ADD                              \
  /SESSIONLIM:8                               \
  /CONWIN:4                                   \
  /CONLOSE:0                                  \
  /AUTOACT:0                                  \
  /AUTOPARTNER:No                             \
  /HIGHPRIORITY:Yes                           \
  /PACESENDCNT:7                              \
  /PACERECVCNT:7                              \
  /MAXSENDRU:1024                             \
  /MAXRECVRU:1024                             \
  /MAXSENDRU:1024                             \
  /MAXSENDRU:1024                             \
  /COMMENT:"Interactive"                      \

MODE #INTERSC /ADD                            \
  /SESSIONLIM:8                               \
  /CONWIN:4                                   \
  /CONLOSE:0                                  \
  /AUTOACT:0                                  \
  /AUTOPARTNER:No                             \
  /HIGHPRIORITY:Yes                           \
  /PACESENDCNT:7                              \
  /PACERECVCNT:7                              \
  /MAXSENDRU:1024                             \
  /MAXRECVRU:1024                             \
  /MAXSENDRU:1024                             \
  /MAXSENDRU:1024                             \
  /COMMENT:"Interactive"                      \

MODE #BATCH /ADD                              \
  /SESSIONLIM:8                               \
  /CONWIN:4                                   \
  /CONLOSE:0                                  \
  /AUTOACT:0                                  \
  /AUTOPARTNER:No                             \
  /HIGHPRIORITY:No                            \
  /PACESENDCNT:3                              \
  /PACERECVCNT:3                              \
  /MAXSENDRU:1024                             \
  /MAXRECVRU:1024                             \
  /MAXSENDRU:1024                             \
  /MAXSENDRU:1024                             \
  /COMMENT:"Batch"                                        \

MODE #BATCHSC /ADD                            \
  /SESSIONLIM:8                               \
  /CONWIN:4                                   \
  /CONLOSE:0                                  \
  /AUTOACT:0                                  \
  /AUTOPARTNER:No                             \
  /HIGHPRIORITY:No                            \
  /PACESENDCNT:3                              \
  /PACERECVCNT:3                              \
  /MAXSENDRU:1024                             \
  /MAXRECVRU:1024                             \
  /MAXSENDRU:1024                             \
  /MAXSENDRU:1024                             \
  /COMMENT:"Batch"                                        \

MODE BLANK /ADD                               \
  /SESSIONLIM:8                               \
  /CONWIN:4                                   \
  /CONLOSE:0                                  \
  /AUTOACT:0                                  \
  /AUTOPARTNER:No                             \
  /HIGHPRIORITY:No                            \
  /PACESENDCNT:3                              \
  /PACERECVCNT:3                              \
  /MAXSENDRU:1024                             \
  /MAXRECVRU:1024                             \
  /MAXSENDRU:1024                             \
  /MAXSENDRU:1024                             \
  /COMMENT:"8 Blank chars"                    \

                                                            Continued
```

```
MODE QPCSUPP /ADD                                      \
  /SESSIONLIM:64                                       \
  /CONWIN:32                                           \
  /CONLOSE:0                                           \
  /AUTOACT:0                                           \
  /AUTOPARTNER:Yes                                     \
  /HIGHPRIORITY:Yes                                    \
  /PACESENDCNT:7                                       \
  /PACERECVCNT:7                                       \
  /MAXSENDRU:1024                                      \
  /MAXRECVRU:1024                                      \
  /MAXSENDRU:1024                                      \
  /MAXSENDRU:1024                                      \
  /COMMENT:"5250 Mode"                                      \

MODE NDM624K /ADD                                      \
  /SESSIONLIM:20                                       \
  /CONWIN:10                                           \
  /CONLOSE:10                                          \
  /AUTOACT:0                                           \
  /AUTOPARTNER:No                                      \
  /HIGHPRIORITY:No                                     \
  /PACESENDCNT:7                                       \
  /PACERECVCNT:7                                       \
  /MAXSENDRU:4096                                      \
  /MAXRECVRU:4096                                      \
  /MAXSENDRU:4096                                      \
  /MAXSENDRU:4096                                      \
  /COMMENT:" "                                         \

SERVER CSD-PUBS /ADD                                   \
  /CPNAME:M1RPU01                                      \
  /NETNAME:CSDNET                                      \
  /COMMENT:""                                          \

LINK SNADLC1 /ADD                                      \
  /SERVER:CSD-PUBS                                     \
  /LINKTYPE:Token                                      \

CONNECTION TOKEN1 /ADD                                 \
  /SERVER:CSD-PUBS                                     \
  /COMMENT:"802.2 Connection"                          \
  /ACTIVATION:OnServerStartup                          \
  /CALLDIRECTION:Both                                  \
  /LOCALBLOCKNO:071                                    \
  /LOCALNODENO:6200D                                   \
  /CPNAME:CSDSA01                                      \
  /NETNAME:CSDNET                                      \
  /REMOTEBLOCKNO:                                      \
  /REMOTENODENO:                                       \
  /LINKSERVICE:SNADLC1                                 \
  /REMOTEEND:Host                                      \
  /CONNTYPE:802.2                                      \
  /XIDTYPE:Format3                                     \
  /REMOTENETADDR:400070006200                          \
  /REMOTESAPADDR:4                                          \

/MAXBTULEN:1929                                        \
  /RECEIVEACKTHRESH:2                                  \
  /NAKSENDLIMIT:8                                      \
  /RETRYLIMIT:10                                       \
  /XIDRETRIES:3                                        \
  /T1TIMEOUT:Default                                   \
  /T2TIMEOUT:Default                                   \
  /TITIMEOUT:Default                                       \
  /ACTIVATEDELAY:Default                              \
  /ACTIVATERETRYLIMIT:None                                 \

APPCRLU M1CDXY2B /ADD                                  \
  /CONNECTION:TOKEN1                                   \
  /NETNAME:CSDNET                                      \
  /LUNAME:M1CDXY2B                                     \
  /COMMENT:""                                          \
  /UNINTERPNAME:M1CDXY2B                               \
  /AUTOPARTNER:No                                      \
  /PARALLELSESS:Yes                                    \
```

Continued

Connect:Direct for Windows Getting Started Guide

```
APPCLLU M1R01LUA /ADD                          \
    /SERVER:CSD-NTSNA1                          \
    /LUNUMBER:0                                 \
    /NETNAME:CSDNET                             \
    /LUNAME:M1R01LUA                            \
    /COMMENT:""                                 \
    /AUTOPARTNER:No                             \
    /DEFAULTPOOL:No                             \
    /TPTIMEOUT:60                               \

APPCLLU M1R01LUA                               \
    /ADDPARTNER:M1CDXY2B,NDM624K,TOKEN1         \

APPCLLU M1R01LUB /ADD                          \
    /SERVER:CSD-NTSNA1                          \
    /LUNUMBER:0                                 \
    /NETNAME:CSDNET                             \
    /LUNAME:M1R01LUB                            \
    /COMMENT:""                                 \
    /AUTOPARTNER:No                             \
    /DEFAULTPOOL:No                             \
    /TPTIMEOUT:60                               \

APPCLLU M1R01LUB                               \
    /ADDPARTNER:M1CDXX2B,NDM624K,TOKEN1         \

USER USER1 /ADD                                \
    /DOMAIN:CSD-NTSNA1                          \
    /COMMENT:""                                 \

USER USER1                                     \
    /INSERT:M1R01LU2                            \

USER USER1                                     \
    /INSERT:M1R01LU3                            \

DIAGNOSTIC                                     \
    /AUDITLEVEL:10                                      \
```

Accessing Communications Server Configuration Listing

The SNA configuration listing for the IBM Communications Server is stored in a file with an extension of **acg**. The name for this file is defined when you install the Communications Server.

Glossary

A

Adjacent Node

An entry in the network map that defines a Connect:Direct node with which the local Connect:Direct node can communicate. The adjacent node is also referred to as a remote node.

Advanced Program-To-Program Communication (APPC)

The general facility characterizing the LU6.2 architecture and its various implementations in products.

Application Program Interface (API)

A Connect:Direct component that accepts commands and places them in an executable format.

C

Checkpoint Restart

Feature that eliminates the need to retransmit an entire file in the event of a transmission failure. If a copy procedure is interrupted, Connect:Direct restarts that copy at the last checkpoint.

Commands

Initiate and monitor activity within the Connect:Direct system.

Configuration Registry

A database of configuration information central to Windows operation. The Registry is the storage location for configuration settings for Windows applications. The Registry centralizes all Windows settings and provides security and control over system, security, and user account settings.

D

Domain Name Service (DNS)

A distributed database that provides a hierarchical naming system for identifying Internet hosts.

L

Local Node Record

The base record in a parameters file that defines the Connect:Direct server. It includes the most commonly used settings at a site and is the central node through which all communication is filtered. Depending upon how each remote node record is configured, trading partner node records can use settings that are defined in the local node record.

Logical Unit (LU) 6.2

A type of logical unit that supports general communication between programs in a distributed processing environment. LU6.2 is characterized by (a) a peer relationship between session partners, (b) efficient utilization of a session for multiple transactions, (c) comprehensive end-to-end error processing, and (d) a generic application program interface (API) consisting of structured verbs that are mapped into a product implementation.

N

Network Map (Netmap)

The file that identifies all valid Connect:Direct nodes in a network including a local node record and a remote node record for each trading partner. The network map also defines the rules or protocols used by each node when communicating with the local Connect:Direct node.

Node

Any site in a network from which information distribution can be initiated.

New Technology File System (NTFS)

A system that uses fixed disks to organize data. NTFS treats files as objects with user and system defined attributes.

P

Primary Node (PNODE)

The node that submits the Connect:Direct Process to the secondary node (SNODE). In every communication, you must have a PNODE and an SNODE.

Process

A series of statements that initiate Connect:Direct activity, such as copying files and running jobs.

Process Statements

Instructions for transferring files, running operating system jobs, executing programs, or submitting other Connect:Direct Processes. They are used to build a Connect:Direct Process.

R

Registry

See Configuration Registry.

Remote Node

An entry in the network map that defines a Connect:Direct node with which the local Connect:Direct node can communicate. The remote node is also referred to as an adjacent node.

Retry Interval

The interval at which retries are performed as a part of the checkpoint-restart feature.

S

Secondary Node (SNODE)

The Connect:Direct node that interacts with the primary node (PNODE) during Connect:Direct Process execution and is the noncontrolling node. Every Process has one secondary node and one primary node.

Statistics File

Holds Connect:Direct statistics records that document the history of a Process.

Statistics Facility

Records Connect:Direct activities.

Systems Network Architecture (SNA)

The description of the logical structure, formats, protocols, and operational sequences for transmitting information units through, and controlling the configuration and operation of, networks.

T

Transmission Control Queue (TCQ)

Holds information about Connect:Direct Processes that are currently executing or scheduled to execute in the future.

Index

A

Q

R

S

T

U

W