

IBM Sterling Connect:Direct for HP NonStop

Installation Guide

Version 3.6



This edition applies to the 3.6 Version of IBM® Sterling Connect:Direct® for HP NonStop and to all subsequent releases and modifications until otherwise indicated in new editions.

Before using this information and the product it supports, read the information in *Notices*, on page 143.

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Preface

The *IBM Sterling Connect:Direct for HP NonStop Installation Guide* is for network operations staff who install IBM® Sterling Connect:Direct® for HP NonStop. This manual describes installation prerequisites, planning considerations, and procedures for installing, verifying, upgrading, starting and stopping Sterling Connect:Direct for HP NonStop.

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

Chapter Overview

The organization of the *IBM Sterling Connect:Direct for HP NonStop Installation Guide* follows:

- ❖ Chapter 1, *About Sterling Connect:Direct for HP NonStop*, briefly describes Sterling Connect:Direct for HP NonStop.
- ❖ Chapter 2, *Planning the Installation*, provides the installation prerequisites and planning tasks you must complete to help you organize and prepare for the installation.
- ❖ Chapter 3, *Installing and Configuring Sterling Connect:Direct for HP NonStop*, provides instructions for installing Sterling Connect:Direct for HP NonStop.
- ❖ Chapter 4, *Starting and Stopping Sterling Connect:Direct for HP NonStop*, provides instructions for starting Sterling Connect:Direct for HP NonStop, changing initialization parameters, and stopping Sterling Connect:Direct for HP NonStop.
- ❖ Appendix A, *Defining HP NonStop as the SNA Primary Environment*, contains sample definitions for receiving connections for leased and switched lines and HP NonStop Environment Definitions worksheets. Additional connectivity considerations are also addressed.
- ❖ Appendix B, *Defining HP NonStop as the SNA Secondary Environment*, contains worksheets and sample definitions for sending connections between HP NonStop and IBM 370 nodes.
- ❖ Appendix C, *Defining TCP/IP Connectivity*, describes requirements for TCP/IP connectivity, support for multiple HP NonStop TCP stacks, and sample network definitions.
- ❖ Appendix D, *Defining ICE Connectivity*, describes the ICE software connectivity option.
- ❖ *Glossary*, defines Sterling Connect:Direct terms used in this manual.

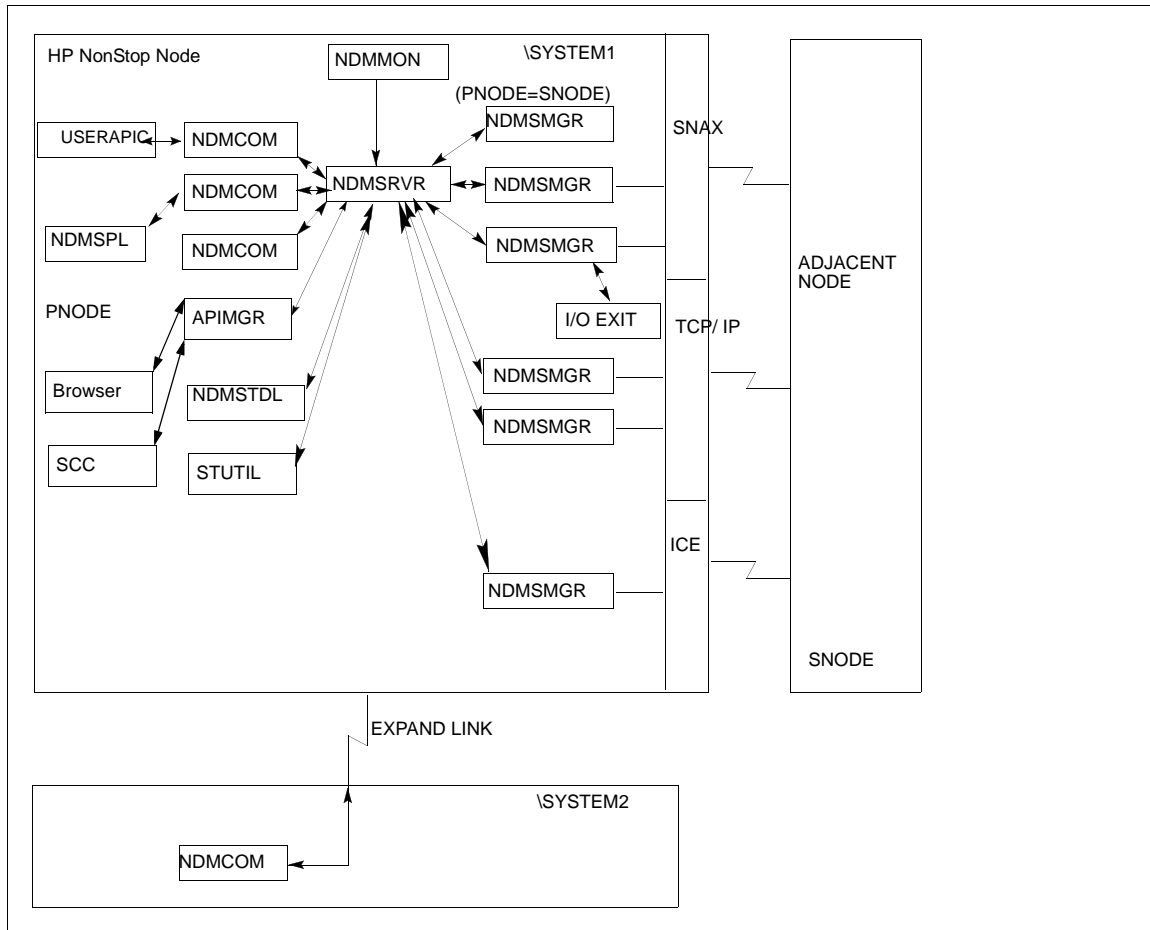
About Sterling Connect:Direct for HP NonStop

Sterling Connect:Direct links technologies and moves all types of information between networked systems and computers. It manages high-performance transfers by providing features such as automation, reliability, efficient use of resources, application integration, and ease of use. Sterling Connect:Direct software offers choices in communications protocols, hardware platforms, and operating systems. It provides the flexibility to move information among mainframes, midrange systems, desktop systems, and LAN-based workstations.

Sterling Connect:Direct for HP NonStop Components

Sterling Connect:Direct runs as an application on the Guardian operating system. The product components interact to execute the Process statements and commands submitted through the user interface.

The following figure illustrates the basic components of Sterling Connect:Direct for HP NonStop: Monitor (NDMMON), Server (NDMSRVR), User Interface (NDMCOM), Session Manager (NDMSMGR), API Manager (APIMGR), I/O Exits (I/O EXIT), Statistics Deletion Program (NDMSTDL), Statistics Utility Program (STUTIL), Application Programming Interface (USERAPIC), and Sterling Connect:Direct for HP NonStop Spooler Option (NDMSPL). Brief descriptions of each component follow the sample network configuration.



Component	Description
Monitor	The monitor (NDMMON) is a nonstop process that creates and monitors the Sterling Connect:Direct server (NDMSRVR) process. For NDMMON startup instructions, refer to the <i>IBM Sterling Connect:Direct for HP NonStop Installation Guide</i> .
Server	The Sterling Connect:Direct server (NDMSRVR) process manages: <ul style="list-style-type: none"> - Command requests - Communication with the session manager - Session establishment requests for TCP/IP Note: If the NDMSRVR process ends abnormally or the CPU executing the NDMSRVR process fails, NDMMON creates a new NDMSRVR process with the original NDMSRVR process name and parameters.
User Interface	NDMCOM is the user interface with NDMSRVR. Use NDMCOM, the command-line interface, to issue Sterling Connect:Direct commands and to change, configure, and display the Sterling Connect:Direct environment.

Component	Description
Session Manager	The Sterling Connect:Direct session manager (NDMSMGR) module establishes sessions and transfers data between the local and adjacent nodes. The application can be configured to start session managers at initialization, or you can start them manually using the MODIFY command. If you define dynamic LUs for TCP/IP connectivity, NDMSRVR starts session managers as needed. You cannot issue the MODIFY command to start dynamic session managers. The figure on the previous page shows six session managers, two of which are communicating across SNAX sessions, two across TCP/IP, and one across ICE. One session manager is using the PNODE=SNODE facility.
API Manager	The Sterling Connect:Direct API Manager (APIMGR) module provides an interface for browser(s) and Sterling Control Center. To define an API Manager, see the instructions on the INSERT NETMAP AMGR command in the <i>IBM Sterling Connect:Direct for HP NonStop Administration Guide</i> .
I/O Exits	I/O exit support enables the user-written programs to serve as application interfaces for Sterling Connect:Direct data transfers. I/O exits permit manipulation of data formats and database architectures not currently supported by Sterling Connect:Direct. For transfers (COPY), Sterling Connect:Direct supports direct access only to Enscribe and Spool files. I/O exit support enables user-written programs to access non-supported databases, such as SQL, and manipulate data during a COPY step.
Statistics Deletion Program	The statistics deletion program (NDMSTDL) ensures that sufficient space is available to write statistics records in the statistics files. NDMSTDL deletes records from the Sterling Connect:Direct statistics file based on user-specified deletion criteria and maximum percentage of file capacity. For instructions on using NDMSTDL, refer to <i>Optimizing Performance</i> in the <i>IBM Sterling Connect:Direct for HP NonStop Administration Guide</i> .
Statistics Utility Program	The statistics utility program (STUTIL) analyzes the statistics files to determine how much space is available. Sterling Connect:Direct returns this information to the server for determination on when to run NDMSTDL.
Application Program Interface	An Application Program Interface (API) is a user-written application that communicates with NDMCOM. Refer to the <i>IBM Sterling Connect:Direct for HP NonStop Management Programming Guide</i> for details on creating and using an API. NOTE: The sample program, USERAPIC, is provided as a template for writing a customized programmatic application.
Sterling Connect:Direct for HP NonStop Spooler Option	The Sterling Connect:Direct for HP NonStop Spooler option permits an installation to transfer spooler jobs automatically from an Sterling Connect:Direct for HP NonStop node to a file on an adjacent node. For the information you need to install, configure, and run the Sterling Connect:Direct for HP NonStop Spooler option, refer to <i>Sterling Connect:Direct for HP NonStop Spooler Option</i> in the <i>IBM Sterling Connect:Direct for HP NonStop Administration Guide</i> .

Automated Installation and Management System

The Automated Installation and Management System (AIMS) is a full-screen, block-mode interface for installing, configuring, and starting Sterling Connect:Direct.

Note: You must have a 6530 terminal or a 6530 emulation program to run AIMS.

AIMS is a menu-driven system that collects information about your node and the nodes you are communicating with and guides you through the installation. Performing the menu options in the displayed numerical order expedites installation. Each user-input screen has a Help feature, which describes the entry fields for the screen. Throughout the AIMS procedure, messages displayed on the bottom line of the screen inform you of the status of the procedure and indicate errors. For more information on AIMS, refer to *IBM Sterling Connect:Direct for HP NonStop Installation Guide*.

Sterling Connect:Direct for HP NonStop Concepts

This section introduces certain concepts and definitions important to understanding user operations.

Processes

The Process language provides instructions for transferring files, running programs, submitting jobs on the adjacent node, and altering the sequence of Process step execution. You can include one or more steps in a Process.

A Process consists of a Process definition statement (PROCESS statement) and one or more additional statements. Parameters further qualify Process instructions. For more information, including sample Processes, see the Processes web site at <http://www.sterlingcommerce.com/documentation/processes/processhome.html>.

Transmission Control Queue

The Transmission Control Queue (TCQ) controls Process execution as Sterling Connect:Direct operates. Sterling Connect:Direct stores submitted Processes in the TCQ which is divided into logical queues.

Sterling Connect:Direct places the Process in the appropriate queue based on Process statement parameters that affect scheduling. Examples of such parameters are the HOLD, RETAIN, and STARTT parameters.

Sterling Connect:Direct selects Processes in a first-in first-out manner for execution in Process class and priority as sessions are available. You can access the queues and manipulate the Processes through Sterling Connect:Direct commands.

Refer to *Queuing Processes* in the *IBM Sterling Connect:Direct for HP NonStop User Guide and Reference* for a discussion of the following topics:

- ❖ Understanding the Transmission Control Queue
- ❖ Managing Processes in the TCQ
- ❖ Scheduling Sterling Connect:Direct Activity

Network Map

The network map file defines the nodes with which Sterling Connect:Direct can communicate. The network map includes a local node record and one or more adjacent nodes, logical units (LUs), API managers (AMGRs), and logmode records.

The local node is the logical name for the node on which you installed Sterling Connect:Direct. An adjacent node is the node definition for a remote site. LUs provide communication between the HP NonStop system

(local node) and adjacent nodes. Logmode records define the session protocol for an SNA HP NonStop LU, and are only used when the local LU is configured as the primary LU (PLU).

In addition to creating explicit adjacent node records for the individual nodes with which you communicate, you can also define domain node adjacent node records for communications with large networks of Sterling Connect:Direct nodes, including Sterling Connect:Direct/Plex systems, in a TCP domain. These special-purpose adjacent node records simplify your network map and increase efficiency.

Defining Domain Nodes to Manage Inbound TCP/IP Connections

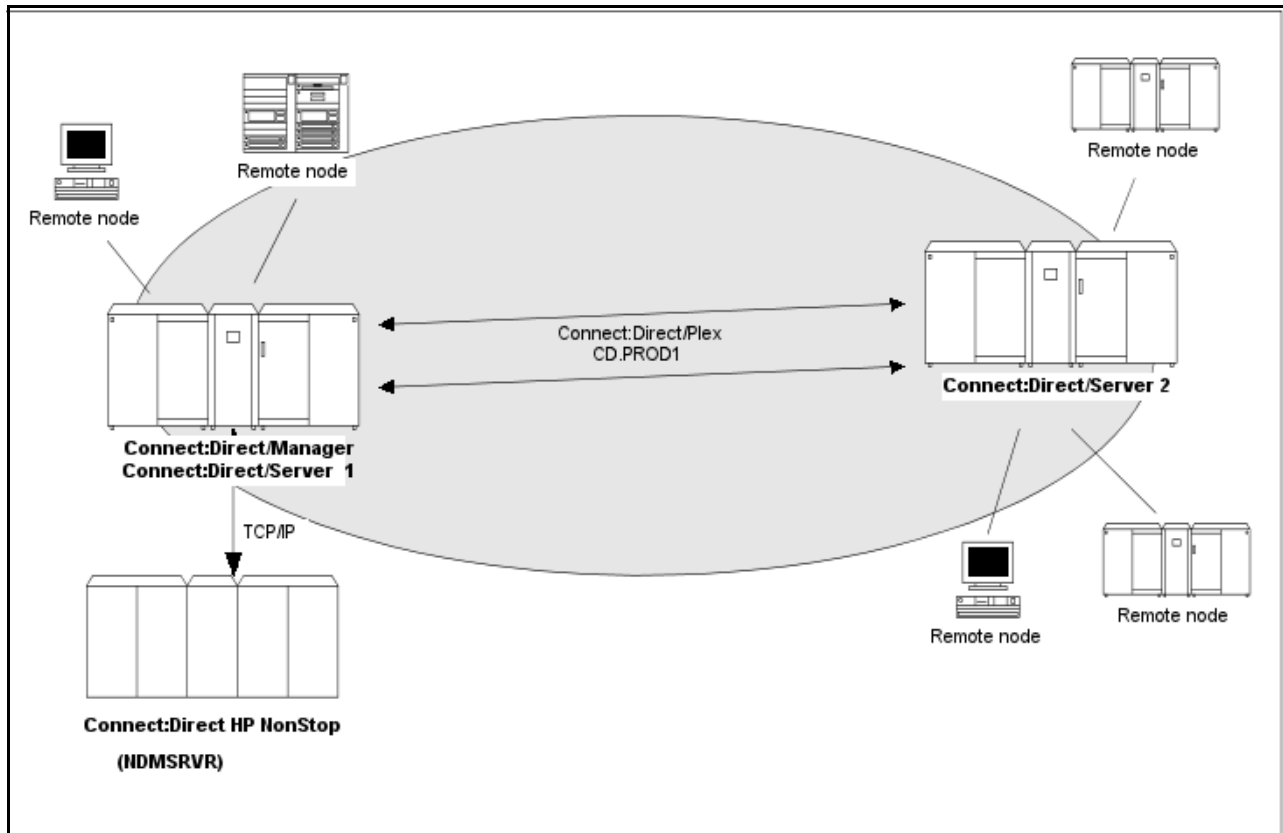
The domain node feature enables you to manage inbound connection requests to the Sterling Connect:Direct for HP NonStop node from IP addresses that are not explicitly configured in the network map, for example from multiple Sterling Connect:Direct/Server processes under the direction of the Sterling Connect:Direct/Plex Manager. Using the domain node feature, you can create an adjacent node entry of the type NDM.DOMAIN for any TCP/IP domain containing one or more Sterling Connect:Direct nodes and define a range of IP addresses instead of defining an adjacent node record for each remote connection. When the Sterling Connect:Direct server receives a connection request, it first attempts to match the originating IP address with a specific adjacent node entry in the network map. If this search fails, the server searches for adjacent nodes of the type NDM.DOMAIN and then uses the IPMASK parameter as a template to identify a node that best fits the mask's pattern. Without a domain node record, each Sterling Connect:Direct/Plex Server or remote node must have an adjacent node record in the Sterling Connect:Direct for HP NonStop network map to initiate connections to the local Sterling Connect:Direct for HP NonStop node.

The DOMAINSERVER and the NETMAPCHECK initialization parameters are associated with this feature. You must set the DOMAINSERVER global initialization parameter to Yes before you can define a domain node.

You can use the NETMAPCHECK initialization parameter and Sterling Connect:Direct Secure Plus to secure the TCP/IP sessions. See *Sterling Connect:Direct Secure Plus* in this chapter for more information about Sterling Connect:Direct Secure Plus and *Planning the Installation* in the *IBM Sterling Connect:Direct for HP NonStop Installation Guide* for a discussion about how the security options function in your environment.

Using Session Redirection for Outbound TCP/IP Connections

Sterling Connect:Direct for HP NonStop supports session redirection for outbound connections to a Sterling Connect:Direct/Plex system. As illustrated in the following figure, a Sterling Connect:Direct/Plex system is a Sterling Connect:Direct for z/OS system consisting of a Sterling Connect:Direct/Plex Manager and one or more Sterling Connect:Direct/Servers in a TCP/IP environment. Connection requests from the Sterling Connect:Direct for HP NonStop node to the Sterling Connect:Direct/Plex system are routed to the Sterling Connect:Direct/Plex Manager, which redirects the connection request to the appropriate, available Sterling Connect:Direct/Plex Server process. Redirecting communications sessions across multiple Sterling Connect:Direct Server processes simplifies the network map, facilitates load-balancing, and ensures continuous, efficient use of resources.



You can create adjacent node records either through AIMS or with individual network map commands. Use the following table as a guide to the tools and the parameters used to create adjacent node records:

Task	Reference
Planning your network map to use domain nodes and session redirection	<i>Defining Adjacent Node Records for TCP/IP Connections in Planning the Installation in the IBM Sterling Connect:Direct for HP NonStop Installation Guide</i>
Setting the DOMAINSERVER and NETMAPCHECK initialization parameters	<i>Setting Initialization Parameters in Installing and Configuring Sterling Connect:Direct for HP NonStop in the IBM Sterling Connect:Direct for HP NonStop Installation Guide</i>
Assessing your security options	<i>Defining Adjacent Node Records for TCP/IP Connections in Planning the Installation in the IBM Sterling Connect:Direct for HP NonStop Installation Guide</i>
Creating the worksheets for your adjacent node records in the network map	<i>Preparing to Define the Network Map through AIMS in Planning the Installation in the IBM Sterling Connect:Direct for HP NonStop Installation Guide</i>
Defining the network map through AIMS	<i>Configuring the Network Map in Installing and Configuring Sterling Connect:Direct for HP NonStop in the IBM Sterling Connect:Direct for HP NonStop Installation Guide</i>
Using individual commands, syntax, and parameters to define and maintain the network map	<i>Defining and Maintaining the Network Map in the IBM Sterling Connect:Direct for HP NonStop Administration Guide</i>

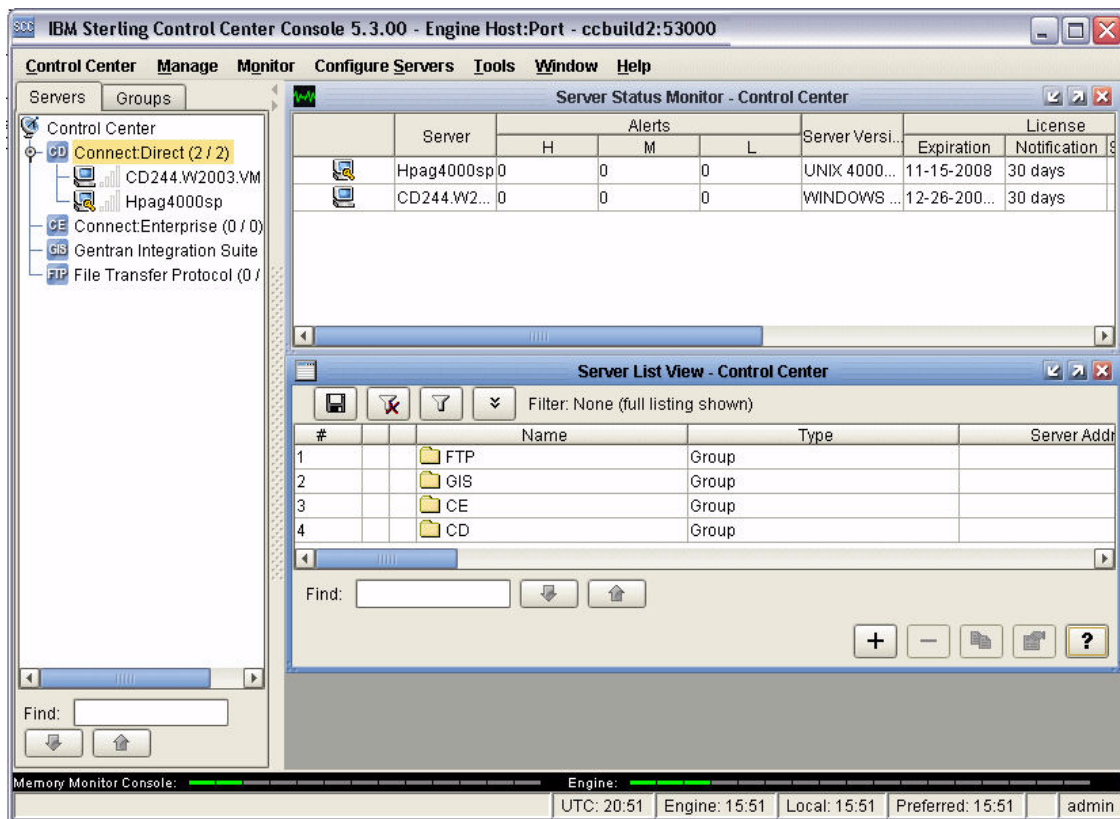
Sterling Connect:Direct Secure Plus

The certificate authentication and multiple cipher suites offered by Sterling Connect:Direct Secure Plus provide the confidence that your organization can use public networks knowing that data is being reliably transferred from a known source and can only be read by the intended recipient. To use Sterling Connect:Direct Secure Plus for communications with remote nodes, you must have node records in the Sterling Connect:Direct Secure Plus parameters file (SPNODES) that duplicate the adjacent node records in the Sterling Connect:Direct for HP NonStop network map. You can populate the Sterling Connect:Direct Secure Plus parameters file from entries defined in an existing network map using the Sync with NetMap function. For more information about populating the Sterling Connect:Direct Secure Plus parameters file (SPNODES) and configuring nodes for Sterling Connect:Direct Secure Plus, refer to the *IBM Sterling Connect:Direct Secure Plus for HP NonStop Implementation Guide*. For information about using Sterling Connect:Direct Secure Plus with domain nodes, see *Planning the Installation* in the *IBM Sterling Connect:Direct for HP NonStop Installation Guide*.

Sterling Control Center

Sterling Control Center is a centralized management system that provides operations personnel with continuous enterprise-wide business activity monitoring. Sterling Control Center lets you monitor these types of servers:

- ❖ Sterling Connect:Direct for z/OS
- ❖ Sterling Connect:Direct for UNIX
- ❖ Sterling Connect:Direct for Microsoft Windows
- ❖ Sterling Connect:Direct for HP NonStop
- ❖ Sterling Connect:Direct Select
- ❖ Sterling Connect:Direct for i5/OS (iSeries)
- ❖ IBM® Sterling Connect:Enterprise® for z/OS®
- ❖ Sterling Connect:Enterprise for UNIX
- ❖ IBM® Sterling B2B Integrator servers (including Sterling B2B Integrator clusters)
- ❖ FTP servers that use xferlog format



Sterling Control Center enables you to:

- ❖ Manage Sterling Connect:Direct for UNIX, Microsoft Windows, or z/OS servers. You can manage these types of configuration objects:
 - ◆ Functional authorities
 - ◆ Initialization parameters
 - ◆ Netmap nodes
 - ◆ Netmap modes
 - ◆ Netmap communication paths
 - ◆ Sterling Connect:Direct Secure Plus nodes
 - ◆ Sterling Connect:Direct Secure Plus key certificates
 - ◆ Sterling Connect:Direct Secure Plus trusted certificates
 - ◆ Sterling Connect:Direct Secure Plus cipher suites
 - ◆ User proxies

You can also compare versions of the above configuration objects for a given server, do searches on configuration objects, make templates to simplify the creation of new configuration objects, and do audits of changes to configuration objects. (For more on using Sterling Control Center to configure servers, see the *IBM Sterling Control Center Configuration Management Guide*.)

- ❖ Monitor multiple servers
 - ◆ Group individual servers into server groups for a single view of system-wide activity. Group server groups into larger groups, and display a list view of servers and server groups.
 - ◆ View status and statistics on active or completed processing

- ♦ Suspend, release, and handle Sterling Connect:Direct Processes on z/OS, Microsoft Windows, HP NonStop, and UNIX platforms
- ♦ Stop Sterling Connect:Direct servers on z/OS, Microsoft Windows, HP NonStop, i5/OS (iSeries), and UNIX platforms
- ♦ Pause and resume monitoring for a Sterling Connect:Direct server
- ❖ Monitor service levels
 - ♦ View information about active and completed Processes across servers within your network
 - ♦ Receive notification of data delivery events that occur or do not occur as scheduled
 - ♦ Define rules based on processing criteria that can generate an alert, send an e-mail notification, generate a Simple Network Management Protocol (SNMP) trap to an Enterprise Systems Manager (ESM), run a system command, or issue a Sterling Connect:Direct server command
 - ♦ Monitor for alerts about conditions such as a server failure or a Process that starts late
 - ♦ Create service level criteria (SLCs) that define processing schedules, monitor Processes and file transfers for compliance with the processing schedules, and generate alerts when schedules are not met
- ❖ Analyze key operational metrics through reports to document and analyze processing activity
- ❖ Create customized reports based on criteria you define, and schedule the reports to run and be delivered automatically by e-mail
- ❖ Validate user authenticity for console to engine connections using one or more of four authentication methods, including password validation, host name identification, Microsoft Windows domain, and TCP/IP address (or three methods in the case of the Web console, which does not support domain authentication)
- ❖ Identify additional Sterling Connect:Direct servers (through Node Discovery) that may need to be monitored based on communications with a currently monitored server

Sterling Control Center enhances operational productivity and improves 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

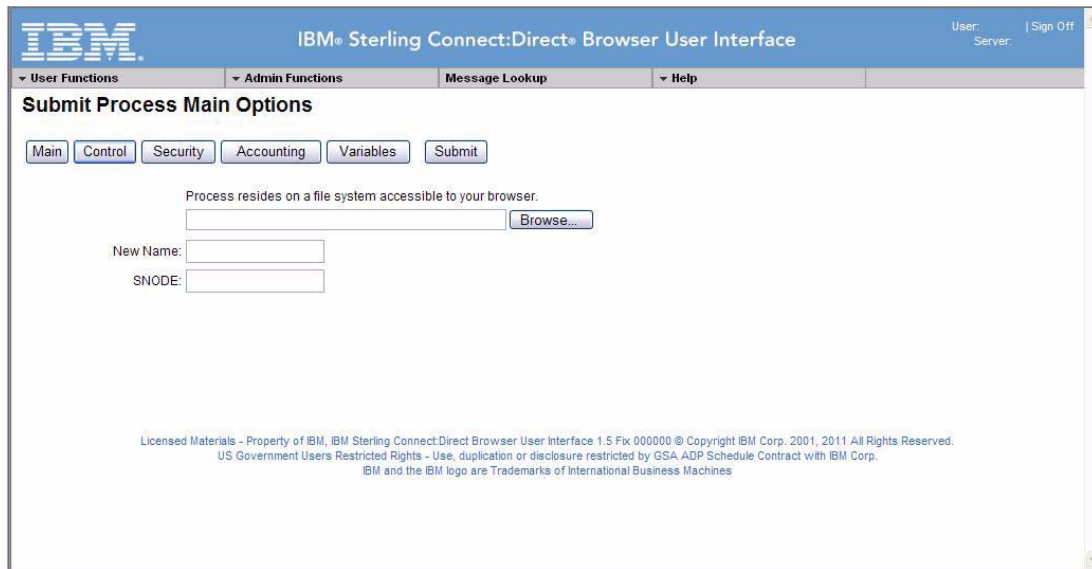
Sterling Control Center is available for purchase as a separate product. Contact your IBM representative to learn more about Sterling Control Center.

Sterling Connect:Direct Browser User Interface

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

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

Sterling Connect:Direct Browser User Interface 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 submit a Process:



Interfacing with Sterling Control Center or Sterling Connect:Direct Browser User Interface

Sterling Connect:Direct can interface with Sterling Control Center and Sterling Connect:Direct Browser User Interface. The TCP/IP API enables users of these other IBM applications to configure, control, and operate Sterling Connect:Direct from any host on a TCP/IP network. To set up a connection between Sterling Connect:Direct and Sterling Control Center or Sterling Connect:Direct Browser User Interface, you need to define two entities in the network map:

- ❖ An adjacent node with the TYPE parameter defined as NDM.API and the IPADDR parameter defined as the address of the external application client from which connection requests may be received.
- ❖ An API manager (AMGR) to handle communications sessions with the external application. The AMGR record is used to define the local TCP process and port number on which a LISTEN is to be posted to accept incoming connection requests.

After you have defined these components, you must identify the AMGRs you want to use to communicate with an adjacent node by using the RELATE NETMAP command. For more information on both the INSERT and RELATE NETMAP commands, refer to *Defining and Maintaining the Network Map* in the *IBM Sterling Connect:Direct for HP NonStop Administration Guide*. You can also perform these functions using the Automated Installation & Management System (AIMS) to set up the network map. For more information, refer to *Installing and Configuring Sterling Connect:Direct for HP NonStop* in the *IBM Sterling Connect:Direct for HP NonStop Installation Guide*.

Commands

You use commands to submit Sterling Connect:Direct Processes to the TCQ and to manipulate Processes in the queue by flushing, deleting, or suspending them.

The following command submits the Process called ONESTEP to the TCQ with a HOLD status of Yes:

```
SUBMIT FILE ONESTEP HOLD=YES
```

Other commands allow you to select and display statistics or perform administrative functions, such as maintain network maps, user authorities, and default types.

The command language consists of the following types of commands:

- ❖ User
- ❖ Administrator
- ❖ Environment
- ❖ Message

User and Administrator Commands

Issue user and administrator commands to perform the following tasks:

- ❖ Submit Sterling Connect:Direct Processes
- ❖ Monitor and control Process execution
- ❖ Perform administrative functions
- ❖ Examine Sterling Connect:Direct node definitions
- ❖ Display and update initialization parameters
- ❖ Stop Sterling Connect:Direct

Refer to the *IBM Sterling Connect:Direct for HP NonStop User Guide and Reference* for command syntax and parameter descriptions for user commands. Command syntax and parameter descriptions for administrator commands are in the *IBM Sterling Connect:Direct for HP NonStop Administration Guide*.

The following table lists the user and administrator commands and their functions:

Command	Function
CHANGE PROCESS	Modifies a Process in the TCQ.
DELETE PROCESS	Removes a nonexecuting Process from the TCQ.
DELETE NETMAP	Removes a node, LOGMODE, LU, AMGR, or relation entry from the network map.
DELETE SECURITY†	Removes a user record from the security file.
DELETE TYPE†	Removes a type record from the type file.
DELETE USER†	Removes a user record from the authorization file.
DISPLAY LOGGING	Displays or prints the settings for EMS and STATS, and the name of the collector process.
DISPLAY PARMS	Displays or prints current settings of the initialization parameters (from the NDMINIT file).
FLUSH PROCESS	Removes an executing Process from the TCQ.
INSERT NETMAP†	Adds a local node, an adjacent node, an LU, a LOGMODE, or an AMGR record to the network map.
INSERT NETMAP AMGR†	Adds an API manager, AMGR, to the network map, which enables connections to Sterling Control Center and the Sterling Connect:Direct Browser User Interface.
INSERT SECURITY†	Adds a security record to the security file for Secure Point of Entry.
INSERT TYPE†	Adds a type record to the type file.
INSERT USER†	Adds a user record to the authorization file.
LASTPNUMBER	Determines the number of the last Process submitted in the current NDMCOM session.
MODIFY†	Starts the trace facility and/or modifies other operational functions.

† Administrative commands

Command	Function
RELATE NETMAP [†]	Assigns specific LUs or AMGRs to an adjacent node record.
SELECT NETMAP	Displays or prints definitions of API Manager, node, LOGMODE, and LU entries in the network map file.
SELECT PROCESS	Displays or prints information about a Process in the TCQ.
SELECT SECURITY	Displays or prints records in the security file.
SELECT STATISTICS	Displays or prints statistics, messages, and /or commands in the statistics log.
SELECT TYPE	Displays or prints type records.
SELECT USER	Displays or prints user records in the authorization file.
STATUS	Displays the status of nodes and LUs, Processes in queues, and TCP listen ports.
STOP ALL [†]	Stops Sterling Connect:Direct operation.
SUBMIT	Submits a Process for execution.
SUSPEND PROCESS	Suspends an executing Process.
UPDATE LOGGING [†]	Modifies settings for EMS, STATS, and COLLECTOR.
UPDATE NETMAP [†]	Modifies settings for an API manager, node, LOGMODE, or LU record in the network map.
UPDATE PARM [†]	Alters operating parameters from the NDMINIT file. For more information on this command, see <i>IBM Sterling Connect:Direct for HP NonStop Installation Guide</i> .
UPDATE SECURITY [†]	Changes a security record in the security file.
UPDATE STATISTICS [†]	Dynamically changes the percentage setting, deletion criteria, and midnight housekeeping flag in the statistics facility (NDMSTDL).
UPDATE TYPE [†]	Changes a type record in the type file.
UPDATE USER [†]	Changes a user record in the authorization file.

[†] Administrative commands

Environment Commands

Use environment commands to change and define the Sterling Connect:Direct environment or to facilitate the use of NDMCOM. The following table lists the environment commands and their functions:

Command [†]	Function
!	Reexecutes a previous command line, without modifications.
DISPLAY STATINFO	Displays percentage setting, deletion criteria, midnight flag setting, last execution of NDMSTDL, and file information for the statistics files (STATFILE, STATSRCH, STATSRC0).
EDIT	Invokes the HP NonStop TEDIT editor.
ENVIRONMENT	Displays the current Sterling Connect:Direct environment, including defaults.
EXIT	Exits NDMCOM.

[†] Refer to the *Controlling the Environment* chapter in the *IBM Sterling Connect:Direct for HP NonStop User Guide and Reference* for command syntax and parameter descriptions for environment commands.

Command [†]	Function
FC	Changes and/or reissues previously typed commands.
HELP	Accesses the interactive Sterling Connect:Direct Help facility.
HISTORY	Displays up to the last 100 commands issued.
LIST	Displays the contents of an edit file.
LOGON	Logs on to NDMCOM.
OBEY	Executes a series of HP NonStop and Sterling Connect:Direct commands, except FC, contained in an edit file.
OBEYVOLUME	Defines the default volume used for expansion of the obey file name.
OPEN	Opens the NDMSRVR process.
OUT	Changes the default output file.
PRINTER	Defines the print file name.
PROCVOLUME	Defines the default volume used for expansion of the Process file name.
RUN	Executes any user-written or system programs without exiting NDMCOM.
SYMBOL	Builds, deletes, and displays symbolic substitution values for use in Sterling Connect:Direct.
TIME	Retrieves the current day, date, and time.
VERSION	Displays or prints the version, release, and maintenance level for the NDMCOM currently running.
VOLUME	Defines the current default volume.

[†] Refer to the *Controlling the Environment* chapter in the *IBM Sterling Connect:Direct for HP NonStop User Guide and Reference* for command syntax and parameter descriptions for environment commands.

Message Commands

Use Sterling Connect:Direct message commands to insert, delete, display, modify, and print messages. Refer to *Using Sterling Connect:Direct for HP NonStop* in the *IBM Sterling Connect:Direct for HP NonStop User Guide and Reference* for syntax and parameter descriptions for displaying and printing messages. Refer to *Modifying the Message File* in the *IBM Sterling Connect:Direct for HP NonStop Administration Guide* for syntax and parameter descriptions for modifying messages.

Flow of Sterling Connect:Direct for HP NonStop Operations

The following shows the processing flow for a SUBMIT command.

Note: In this discussion, the Sterling Connect:Direct Browser User Interface can be substituted wherever you see the command line interface, NDMCOM.

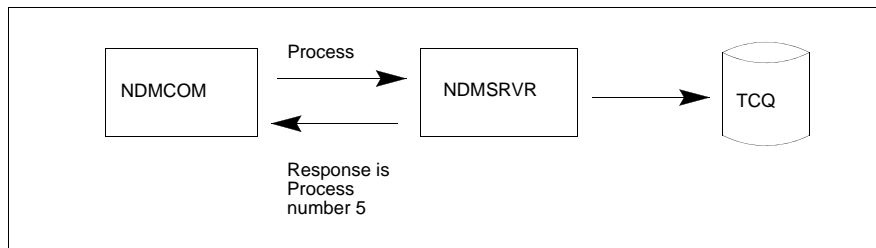
❖ The SUBMIT command is issued through NDMCOM.

```
CD.49.>SUBMIT FILE $VOL.SEND.FILE
```

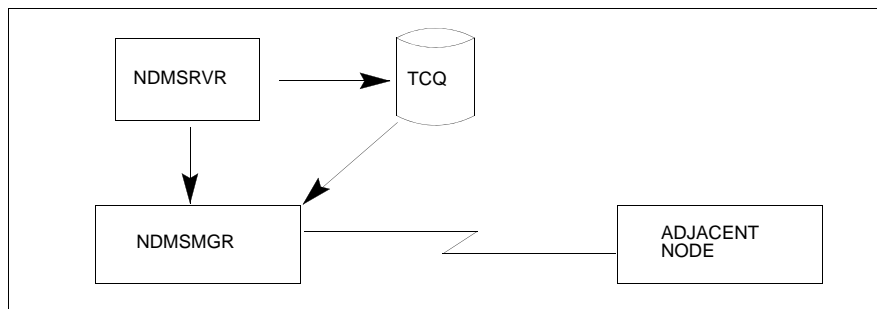
- ❖ The command submits the file, \$VOL.SEND.FILE. The file contains Process statements.

```
SEND    PROCESS  SNODE=MVS.NODE
STEP01  COPY     FROM (DSN=$SYS.TAN.TXT) -
        TO      (DSN=MVS.FILE SNODE)
```

- ❖ The Process is sent to the server. The server then places the Process on the TCQ, responds to NDMCOM with the Process number (PNUMBER), and routes the Process to an available session manager. In the following figure, the server returns a PNUMBER of 5 to NDMCOM.



- ❖ The session manager reads the Process from the TCQ and executes it.



- ❖ While the Process is queued, or during execution, you can display Process status by issuing the SELECT PROCESS command.

```
CD.50.>SELECT PROCESS PNUMBER=5
```

Refer to *Managing Processes* in the *IBM Sterling Connect:Direct for HP NonStop User Guide and Reference* for sample output from the SELECT PROCESS command.

- ❖ After Process execution, you can display the results of the operation by issuing the SELECT STATISTICS command. Refer to *Viewing System Files* in the *IBM Sterling Connect:Direct for HP NonStop User Guide and Reference* for sample output from the SELECT STATISTICS command.

```
CD.51.>SELECT STATISTICS PNUMBER=5
```

Planning the Installation

Installing Sterling Connect:Direct for HP NonStop is a two-part procedure that consists of defining the network connections and installing the product. This chapter describes the installation prerequisites and planning tasks you must complete to help you organize and prepare for the installation, which is described in Chapter 3, *Installing and Configuring Sterling Connect:Direct for HP NonStop*.

Installation worksheets to assist your planning efforts are provided in this chapter and in the appendixes.

Before You Begin

Before you complete the installation worksheets, perform the following tasks:

- ❖ Read the *IBM Sterling Connect:Direct for HP NonStop Release Notes* document for the latest product information, including additional installation requirements, updates to the installation procedure, product enhancements, maintenance updates, documentation changes, and hardware and software requirements. The information in this document can affect your installation procedures and definitions.
- ❖ Verify your hardware and software requirements.
- ❖ Verify that you have downloaded the current maintenance for Sterling Connect:Direct from the Customer Support Web site at www.sterlingcommerce.com.
- ❖ Review your security configuration to ensure compatibility with Sterling Connect:Direct before proceeding with the installation procedure. Refer to the *IBM Sterling Connect:Direct for HP NonStop Administration Guide* for a description of the security options.
- ❖ Review network definitions and network map requirements before installing Sterling Connect:Direct for HP NonStop. The worksheets in this chapter and those in specific appendixes assist you in gathering the required values and communicating them to administrators at other nodes.

Note: If you are defining a TCP/IP connection between Sterling Connect:Direct for HP NonStop and a remote node, refer to Appendix C, *Defining TCP/IP Connectivity*, but you do not need to complete a worksheet to define a TCP/IP connection.

Supported Connectivity

Sterling Connect:Direct for HP NonStop supports connectivity between HP NonStop systems and the following systems:

- ❖ Between HP NonStop and receiving i5/OS, and HP NonStop nodes using SNAX/XF leased or switched line configurations.
- ❖ Between HP NonStop and sending IBM nodes (z/OS, VM, and VSE) and nodes using SNAX/XF leased or switched line configurations. In this mode, the HP NonStop system is viewed by the IBM system as a receiving PU type 2.
- ❖ Between files on HP NonStop nodes using the Sterling Connect:Direct for HP NonStop PNODE=SNODE facility. Data is transferred to another file on your node or in an EXPAND network.
- ❖ Between HP NonStop and an z/OS node using ICE (LU0) software.
- ❖ Between HP NonStop and z/OS, Microsoft Windows, UNIX, i5/OS, OpenVMS, VSE, and other HP NonStop nodes using TCP/IP.
- ❖ Between HP NonStop and z/OS through Sterling Connect:Direct/Plex.

In addition, other Sterling Connect:Direct for HP NonStop systems must show at the maintenance levels defined in the *IBM Sterling Connect:Direct Compatibility and Connectivity* document.

Consult HP NonStop documentation appropriate for your operating environment for hardware and software requirements.

Configuring Sterling Connect:Direct for HP NonStop to Use the HP NonStop Parallel TCP Utility

Sterling Connect:Direct for HP NonStop is compatible with the HP NonStop Parallel TCP utility (PTCPIP), using the Standard Listening Model, while retaining compatibility with the conventional TCP/IP facility. PTCPIP offers the load-balancing capability available when running multiple conventional TCP stacks, while eliminating the need to work with multiple IP addresses. Refer to Chapter 3 of the *HP NonStop TCP/IP (Parallel Library) Configuration and Management Manual* for a description of all available listening models.

Using PTCPIP simplifies connectivity configuration. An HP NonStop node is presented to the network as a single TCP address, simplifying the configuration of connectivity with adjacent Sterling Connect:Direct nodes. It increases the efficiency of data transfers. During a COPY function, each session manager communicates with the network through the TCPMON process that is running in its local CPU. This eliminates the need to read and write from different CPUs encountered with conventional TCP, when the TCP stack is running in a different CPU. Load balancing is simplified when using the parallel TCP utility. Data traffic may be distributed across CPUs and across TCPMON processes by distributing your TCP LUs across the CPUs in your HP NonStop node.

If you want to use the HP NonStop Parallel TCP utility, you must configure the following items:

1. A TCPSAM process pair must be configured in the parallel TCP environment. To verify that at least one TCPSAM process is configured and running in the PTCPIP environment, type the following TACL command to obtain a list of all TCPSAM processes, where *SYSnn* is the subvolume of the current operating system image:

```
>STATUS *,PROC $SYSTEM.SYSnn.TCPSAM
```

Note: For IPv6 stacks, type **TCP6SAM** instead of TCPSAM.

2. A TCPMON process must be configured on every CPU for which a TCP LU (session manager) is defined in the Sterling Connect:Direct for HP NonStop network map. To verify that a TCPMON process is running on a CPU, type the following SCF command. This command displays a list of the TCPMAN (manager) process \$ZZTCP and all TCPMON (monitor) processes \$ZPTMn, where *n* is a CPU number:

```
1->LISTDEV PTCPIP
```

3. Round-robin filtering should not be enabled for the NDMSRVR server Process. Round-robin filtering is intended for applications with multiple listeners. Sterling Connect:Direct only uses one listener—the server process.
4. The PTCPIP stack must reside on the same HP NonStop node as Sterling Connect:Direct. Unlike conventional TCP stacks, it cannot be accessed remotely by Sterling Connect:Direct.
5. Modify the following initialization parameters in the NDMINIT file:
 - a. Identify the TCPSAM process in the TCPNAME parameter.
 - b. Identify the desired listening port in the PORTNUM parameter.
For example, set the parameters to:
TCPNAME \$ZSAM1
PORTNUM 1364
 - c. Remove all TCPLISTENnn parameters.
6. After you have completed the installation, start Sterling Connect:Direct for HP NonStop.
7. Type the following command to remove the TCPNAME parameters from all adjacent node and LU definitions.
CD.n.>UPD NET ADJ nodename TCPNAME DELETE
CD.n.>UPD NET LU luname TCPNAME DELETE
8. If the local IP address has changed, update the network maps of your business partners to reference your Sterling Connect:Direct for HP NonStop node using the IP address of the PTCPIP stack and the port number specified in the NDMINIT file.

Under the PTCPIP configuration, the NDMSRVR server process will issue a LISTEN on the specified port in the TCPSAM process. Inbound connection requests are directed to the server process, which then routes them to an available LU (session manager). The session manager establishes a TCP session through the local TCPMON process in the CPU in which the session manager is running. Outbound connection requests are initiated by each session manager through the TCPMON process running in its CPU.

Distribution Subvolumes and Files

Sterling Connect:Direct for HP NonStop includes the following subvolumes and files:

Note: File names will differ if you rename any of the default values in Option E of AIMS.

Subvolume	File Name	Description
NDMOBJ		Contains the object code that runs on D series releases of the NonStop Kernel operating system.
	CDLIB	Contains the Sterling Connect:Direct object library.
	NDMCOM	User interface.
	NDMMON	Creates and monitors the NDMSRVR and restarts it if it fails, ensuring NonStop operation.
	NDMMSG	The message display utility that displays message text when supplied with a message ID.
	NDMSMGR	Establishes sessions and transfers data between the local and adjacent nodes.
	NDMSRVR	Interacts between NDMCOM and the NDMSMGR to monitor the node, manage all user commands, the TCQ, and assign work to session managers.
	NDMSTDL	Program file that clears space from the statistics file when required.
	APIMGR	Communications manager executable for the TCP API interface
	NDMTRACE	The trace collector process to which session manager trace output can be directed (instead of a spool location, terminal, or disk file).
	SETPNUM	The batch utility which resets the last Process number value.
	NDMXLATE	Utility that permits you to define character translation tables and place them in the translate table library for use during file transfer operations.
	STUTIL	Determines the utilization of the statistics file.
NDMFILES		Contains Sterling Connect:Direct for HP NonStop nonexecutable data files.
	NDMCDL	Contains the object code for the Sterling Connect:Direct for HP NonStop command definition language. Sterling Connect:Direct for HP NonStop commands and statements are verified against this file.
	MSGFILE	KSDS file that contains Sterling Connect:Direct for HP NonStop messages.
NDMINSTL		Contains files used during installation.
	CDLIBRES	OBEY file with RUN commands to resolve the CDLIB user library references on the local system
	CNVCKPT	Sterling Connect:Direct for HP NonStop Process that is only used when you are upgrading from a previous version of Sterling Connect:Direct for HP NonStop and need to retain data in your original checkpoint file.

Subvolume	File Name	Description
	NDMFUPIN	Contains the following file definitions created during the initial installation: <ul style="list-style-type: none"> • AUTHFILE contains authorization information. • CKPTFILE contains checkpoint information used for restarting failed checkpointed transfers. • INFOFILE stores information recorded during the interface between NDM-SRVR and NDMSMGR. • NETFILE stores the network map information. • NETFILE0 specifies the alternate key file to NETFILE. • SECFILE contains Sterling Connect:Direct for HP NonStop security records for Process security resolution. • SECFILE0 specifies the alternate key file for SECFILE. • STATFILE contains statistics information. • STATSRCH contains the keys for searching and displaying statistics information from the STATFILE. • STATSRC0 contains the alternate key file for STATSRCH. • TCQFILE contains the Transmission Control Queue (TCQ) file. • TCQXFILE stores header information for TCQFILE. • TCQXFIL0 contains the alternate key file for TCQXFILE. • TYPEFILE contains Sterling Connect:Direct for HP NonStop type record definitions. • XLFILE contains translation tables.
	NDMXLIN	The text file for the NDMXLATE utility.
Obey Files		Supplementary files that you can edit and run as an alternative to installing Sterling Connect:Direct for HP NonStop using AIMS.
	OBEYNET	Serves as the network map template.
	OBEYUSER	Serves as a template for the INSERT USER command. Use this file to add users to the authorization facility.
	OBEYXLAT	Enables you to load translation tables.
	ONDMLOG	Contains the default LOGMODE entries for the network map file. LOGMODE records are only used when operating in SNA primary mode (SNA.P) in a receiving connection between HP NonStop and other nodes or in a peer-to-peer connection.
	TACLNDM	Contains the following two sets of TACL macros that provide greater functionality and flexibility in NDMCOM: NDMRUN, NDMS, and NDMA NDMSTART, CD, and NDMSTOP Each set of macros is executed from TACL either by issuing NDMRUN or NDMSTART. Both macros start NDMCOM; however, each offers different features. Macros are described in <i>Using Sterling Connect:Direct for HP NonStop</i> chapter in the <i>IBM Sterling Connect:Direct for HP NonStop User Guide and Reference</i> .
NDMAPI		Contains a header file, source code, and objects required for the Application Program Interface (API) feature of Sterling Connect:Direct for HP NonStop. Header files contain the function and literal definitions for use with a user-written application.
	NDMAPI	Object file containing all C control block functions. You must build the API written in C with this file.
	NDMAPIC	Source code that contains all the CB functions written in C. Compile this module to produce NDMAPI in order to change or add CB functions.
	NDMAPICH	Contains the #define statements for all control block keywords and the function declarations for C.

Subvolume	File Name	Description
	NDMAPIH	Header file for use with NDMAPIC, USERAPIC, or other user-written programs.
	NDMAPITH	Contains the DEFINE statements for all control block keywords and the function declarations for TAL.
	USERAPIC	Contains the source code for the sample C API.
	USERAPIN	Sample link script for the USERAPI module.
NDMAIMS		Contains the executable version of the AIMS feature.
	NDMAIMS	AIMS executable module invoked during the installation.
NDMSAMP		Contains sample programs for various Sterling Connect:Direct for HP NonStop applications.
	EXITCBDL	DDL source enables you to define the EXIT control block and the INFO control block. Both control blocks are used by the I/O Exit program to receive commands and send file information to Sterling Connect:Direct for HP NonStop.
	EXITCBH	C header file of the EXIT control block sourced in by IOEXITC.
	EXITCBT	TAL STRUCT template file of the EXIT control block sourced in by IOEXITT.
	IOEXITC	Source file for a sample I/O Exit written in C that reads or adds data for specified data files depending on the type of request (GET or ADD).
	MESSAGE	Contains a sample message that you can insert in the message file using the NDMMMSG program.
	RECEIVE	Sample Process that receives a file from another node.
	SEND	Sample Process that sends a file to another node.
NDMDSM		Contains files pertinent to Event Management Services (EMS).
	FLTSRC1	Sample filter source that passes all Sterling Connect:Direct for HP NonStop events.
	FLTSRC2	Sample filter source that passes Sterling Connect:Direct for HP NonStop events that are step starts and step ends.
	FLTSRC3	Sample filter source that passes Sterling Connect:Direct for HP NonStop events with a return code greater than zero.
	FLTSRC4	Sample filter source that passes all events for the Sterling Connect:Direct for HP NonStop spooler option.
	NDMC	DDL output of NDMDDL for C.
	NDMDDL	Source file for token definitions for Sterling Connect:Direct for HP NonStop. Field type definitions for all EMS tokens are in this file. Use this file to produce a data dictionary. <i>Do not modify NDMDDL.</i>
	NDMFLT1	Filter object file created from sample EMS filter FLTSRC1.
	NDMFLT2	Filter object file created from sample EMS filter FLTSRC2.
	NDMFLT3	Filter object file created from sample EMS filter FLTSRC3.
	NDMFLT4	Filter object file created from sample EMS filter FLTSRC4.
	NDMTACL	DDL output of NDMDDL for TACL.
	NDMTAL	DDL output of NDMDDL for TAL.

Subvolume	File Name	Description
	RUNDIST	Sample obey file for starting a printing distributor.
	STALTCOL	Sample obey file for starting an alternate collector.
	TEMPOBJ	TEMPSRC object file produced by the template compiler.
	TEMPSRC	Sample template source file.
	TEMPVIEW	Sample template for use with Viewpoint. TEMPVIEW packs pertinent information on a single line.
	TEMPVOBJ	TEMPVIEW object file produced by the template compiler. Add this file to the CONFTEXT to install templates during SYSGEN. Use this template with Viewpoint.
NDMSPL		Contains files used with the Sterling Connect:Direct for HP NonStop spooler option.
	NDMSPL	Contains the object code for the Sterling Connect:Direct for HP NonStop spooler option.
	ONDMSPL	Sample startup obey file.
	SPLPARAM	Sample obey file for setting parameters required by the NDMSPL.
	SPL2MVS	Template Sterling Connect:Direct for HP NonStop Process file that enables you to transmit spooler jobs to a z/OS node. SPL2MVS is the default template Sterling Connect:Direct for HP NonStop Process file for the Sterling Connect:Direct for HP NonStop spooler option.
	SPL2NT	Template Sterling Connect:Direct for HP NonStop Process file that enables you to transmit spooler jobs to a Microsoft Windows node.
	SPL2TAN	Process template for transmitting spool files to another HP NonStop node (or the local node if it's used for PNODE-SNODE COPYs).
	SPL2VMS	Template Sterling Connect:Direct for HP NonStop Process file that enables you to transmit spooler jobs to an OpenVMS node.
	SPL2VSE	Template Sterling Connect:Direct for HP NonStop Process file that enables you to transmit spooler jobs to a VSE node.
	SPL2400	Template Sterling Connect:Direct for HP NonStop Process file that enables you to transmit spooler jobs to an i5/OS node.
	SPL2UNIX	Template Sterling Connect:Direct for HP NonStop Process file that enables you to transmit spooler jobs to a UNIX node.
	SPLDEFPP	Sample SPOOLCOM input command file for defining the Sterling Connect:Direct for HP NonStop spooler option and its associated print locations to the spooler supervisor.
	SPLSUPUP	SPOOLCOM input command file for starting print processes and devices or restarting them when a print error occurs.

Defining the Sterling Connect:Direct for HP NonStop SNA Environment

This section assists you in determining the required SYSGEN and SCF definitions for connectivity.

If you are defining SNA communications lines, various definitions at the HP NonStop node depend on the HP NonStop Communications controller.

SNAX/XF Line Attributes

The following table lists the required SNAX/XF line attributes and their corresponding definitions as they relate to the type of controller. Type the appropriate values on the worksheets. Refer to your HP NonStop documentation if you require additional information.

Required SNAX/XF Line Attribute	6203/6204 Bit-Synchronous Controller	6100 CSS Using 6101, 6105, and 3605 Controllers	3840 Controller (SNAXLINK)
TYPE	58	58	58
SUBTYPE	0	1	2
RSIZE	4096	4096	4096
SMLDEV	\$SSCP	\$SSCP	\$SSCP
INTERRUPT	SNA^6203^INTERRUPT	SNA^CSS^INTERRUPT	SNA^3840^INTERRUPT

SNAX Line Attributes

The following table lists the required SNAX line attributes and their corresponding definitions as they relate to the type of controller:

Required SNAX Line Attribute	6203/6204 Bit-Synchronous Controller
TYPE	11
SUBTYPE	40
RSIZE	4096
INTERRUPT	BS^6203^INTERRUPT^XF

Complete the *Line, PU, and LU Definitions Worksheet*. The worksheet guides you through SYSGEN and SCF definitions for your connectivity. Use separate worksheets for each line, PU, and LU.

Sample line, PU, and LU definitions appear in the following appendixes:

- ❖ *Appendix A, Defining HP NonStop as the SNA Primary Environment*
- ❖ *Appendix B, Defining HP NonStop as the SNA Secondary Environment*

Line, PU, and LU Definitions Worksheet

SYSGEN Line Definitions

SNATS TYPE 58 Required for sending and receiving connectivity.

SDLCFX TYPE 11 Required for peer-to-peer connectivity.

SUBTYPE 0 1 2 (circle one for sending and receiving connectivity.)
40 is required for peer-to-peer connectivity.

(The value for SUBTYPE is dependent on the controller. Refer to the tables beginning on page 30 for required line attributes for each controller type.)

SMLDEV \$SSCP Required.

INTERRUPT (circle one)

SNA^6203^INTERRUPT
SNA^6204^INTERRUPT
SNA^CSS^INTERRUPT
SNA^3840^INTERRUPT
BS^6203^INTERRUPT^XF

(This value is dependent on the controller. Refer to the tables beginning on page 30 for required line attributes for each controller type.)

RSIZE 4096.

PRIMARY Required for receiving connectivity.

SECONDARY Required for sending connectivity.

FULL HALF (DUPLEX)

(Specify FLAGFILL and REJ if connectivity is peer-to-peer and duplex is FULL.)

TWS TWA Circle one for peer-to-peer connectivity only.

(Specify TWS for a full-duplex line. Specify TWA for a half-duplex line.)

ADDRESSIZE 1 Required for peer-to-peer connectivity.

MAXPUS _____

SPEED _____

SWITCHED Y or N (if N, omit)

FRAMESIZE _____

L2WINDOW _____

MAXLUS _____

SCF Entries Definitions for LU0 Connections

PU Definitions**ADDRESS** _____

(Expressed in hexadecimal (%hxx) or decimal format)

RECSIZE _____**MAXLUS** _____**WINDOW** _____**TYPE**

(13,2) is required.

LU Definitions**ADDRESS** _____

(Expressed in decimal format)

TYPE

(14,0) is required for *sending* connections.

TYPE

(14,2) is required for *receiving* connections.

RECSIZE _____**PUNAME** _____**PROTOCOL**

SNALU is required.

CHARACTERSET

ASCII is required.

Defining Adjacent Node Records for TCP/IP Connections

You have several options for creating entries in the network map for TCP/IP connections. In addition to creating individual adjacent node records for each stand-alone node with which your system communicates, you can also create domain node records to manage inbound connections that originate from a group of Sterling Connect:Direct/Plex Servers or nodes within a TCP domain that use dynamically assigned IP addresses. Domain node records simplify your network map by enabling you to define a range of IP addresses from which the Sterling Connect:Direct for HP NonStop node accepts connections instead of defining an adjacent node record and exact IP address for each node that initiates connections.

You can also use session redirection to route outbound TCP/IP connections to a Sterling Connect:Direct/Plex system through the Sterling Connect:Direct/Plex Manager to simplify your network map. This section provides information to help you determine whether domain nodes and session redirection will help you manage your TCP/IP connections, how to implement domain nodes, and considerations for choosing the security option that best suits your environment.

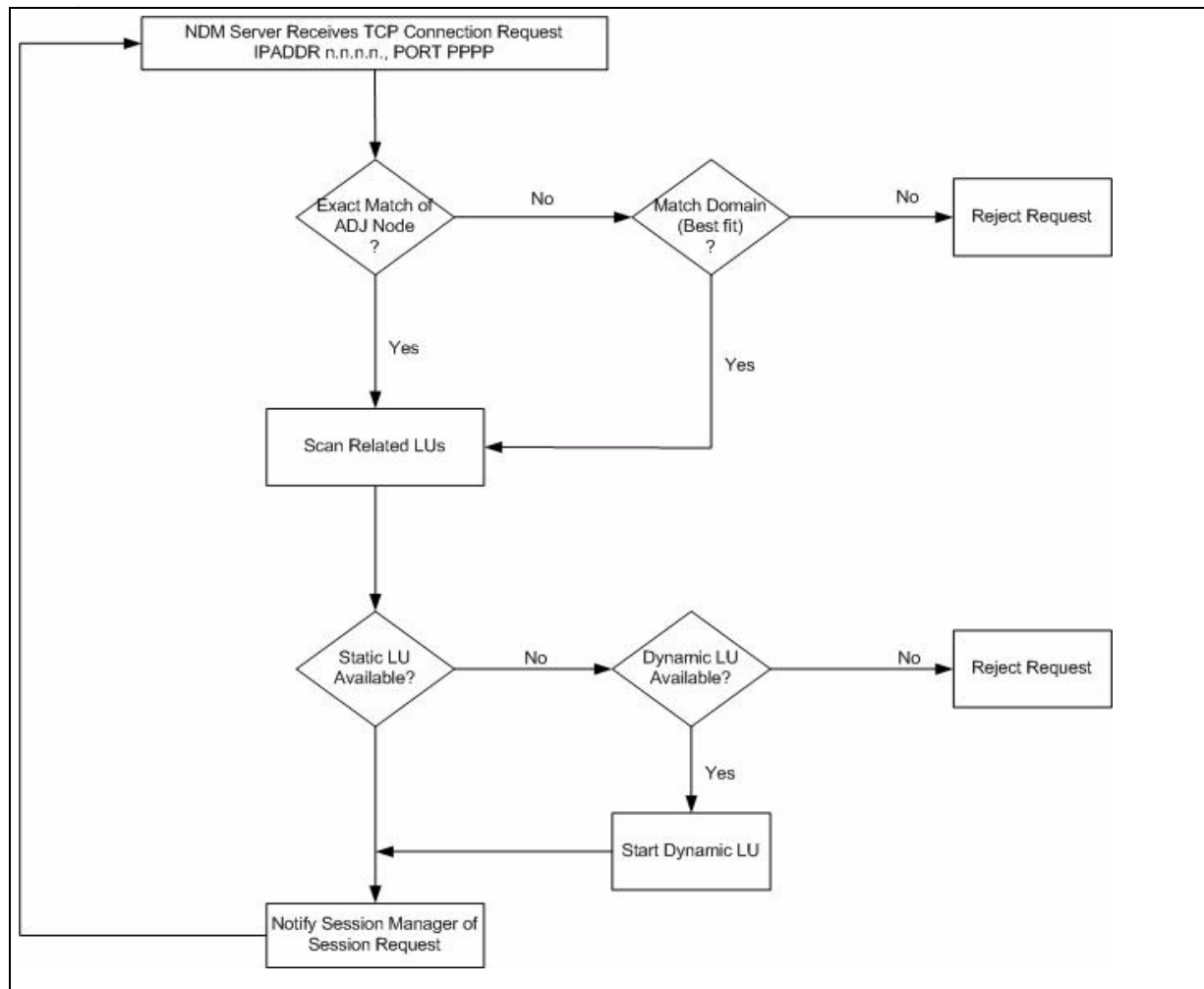
After you have reviewed the information in this section, see *AIMS Network Map Definition* on page 41 to prepare the information required to define adjacent node records for your network map.

Inbound TCP/IP Connection Requests

This section explains how using domain node records in the network map simplifies the task of administering inbound connections from a large number of nodes connecting over public networks. An overview of the processing flow of inbound TCP/IP requests provides the background for understanding the benefits of using domain nodes.

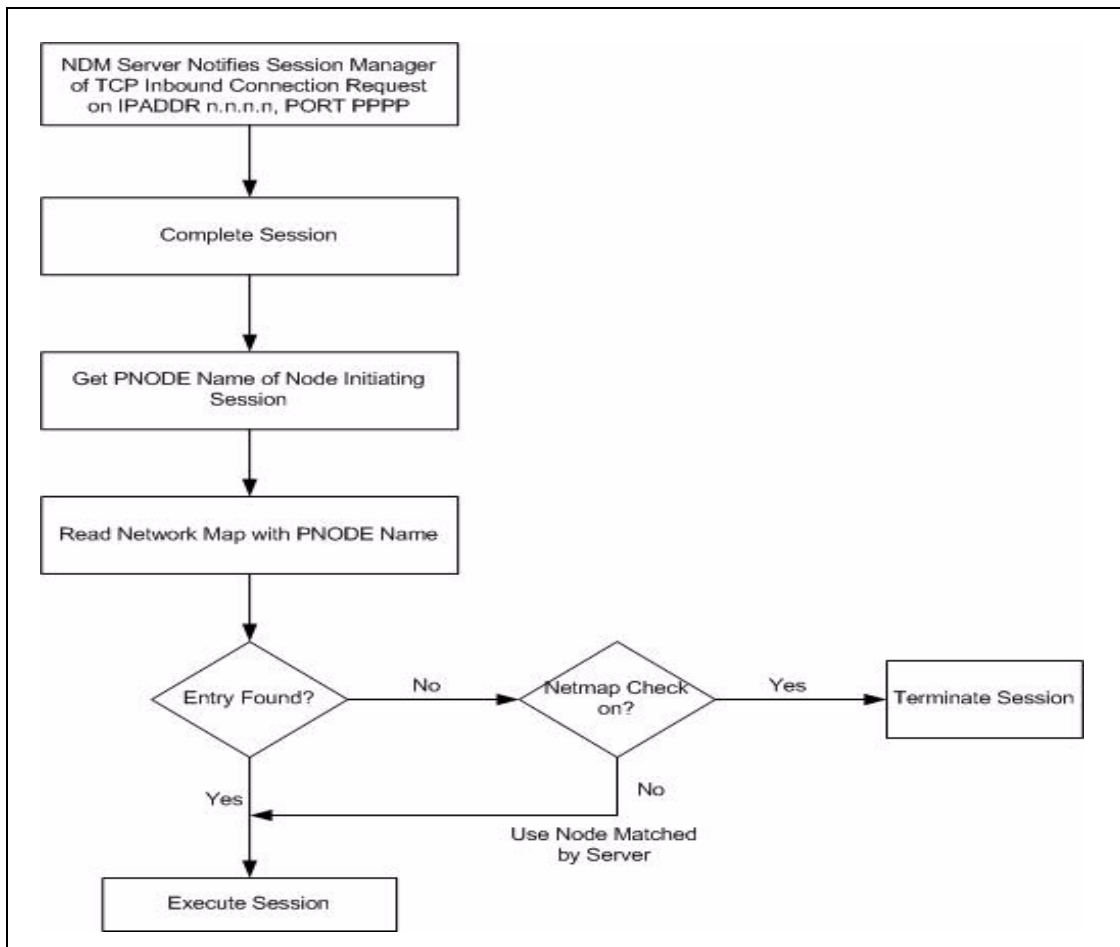
Processing Flow for Inbound TCP/IP Connection Requests

The following figure illustrates the processing flow of inbound TCP/IP connections up to the point that the Sterling Connect:Direct for HP NonStop Server process (NDMSRVR) notifies the Sterling Connect:Direct for HP NonStop Session Manager process (NDMSMGR) of the request. As the figure shows, when the Sterling Connect:Direct for HP NonStop server receives a connection request, it first attempts to match the originating IP address with a specific adjacent node entry in the network map. If this search attempt fails, the server searches for adjacent nodes of the type NDM.DOMAIN and then uses the IPMASK setting as a template to identify the node that best fits the mask pattern. Processing continues if the IP address of the inbound request is an exact match of an adjacent record in the network map or falls within a range of IP addresses defined in a domain node record; otherwise, the connection request is rejected.



Note: As the preceding figures shows, after the connection request, adjacent node records are read sequentially. A match will always be made with the first adjacent node record that contains the exact IP address of the originator, even if multiple node entries have the same IP address defined. Only LUs related to that entry are scanned for availability.

After the Server process notifies the Session Manager of the request, additional security checks against the network map are performed using the PNODE name of the node initiating the session, as shown in the following figure. If the PNODE name is verified by an explicit adjacent node record in the network map, then the session is executed. If the PNODE name is not verified and the NETMAPCHECK parameter is enabled, the session is terminated. However, if the PNODE name is not verified in an explicit adjacent node record and the NETMAPCHECK parameter is disabled, then the session is executed using the adjacent node record that corresponds to the IP address that the Server process matched to a domain node record.



These figures illustrate the efficiency of using domain node records to manage large numbers of Sterling Connect:Direct nodes in a TCP domain. Without domain node records, which specify a range of IP addresses, the IP address of each inbound connection request must match an adjacent node record in the network map; otherwise, the request is rejected. For connection requests from a Sterling Connect:Direct/Plex node with multiple Sterling Connect:Direct/Plex Servers, you can create an adjacent node record for the Sterling Connect:Direct/Plex Manager to validate the source of the request instead of creating an adjacent node record for every Sterling Connect:Direct/Plex Server, if network map checking is enabled.

Resolving Host Names in the Netmap

Sterling Connect:Direct for HP NonStop calls the TCP library function `gethostbyname()` to resolve host names found in the network map. For the host name resolution to work correctly, the proper TCP process and resolver file name must be defined to the application. The default TCP process name is `$ZTC0`, and the default resolver file name is `$$SYSTEM.ZTCPIP.RESCONF`. If you are using a non-standard name for one of these entities, it must be declared using a `DEFINE` value prior to starting Sterling Connect:Direct.

In the following example, `DEFINE` values, declared in the TACL environment prior to starting Sterling Connect:Direct, change the TCP process name and resolver file name to the specified values:

```

delete define =TCPIP^PROCESS^NAME
ADD DEFINE =TCPIP^PROCESS^NAME, FILE $ztcl
delete define =TCPIP^RESOLVER^NAME
ADD DEFINE =TCPIP^RESOLVER^NAME, FILE $$SYSTEM.ZTCPIP.RESCONF2
  
```

For more information on the use of these DEFINE names, refer to TCP/IP Configuration and Management manuals in the HP documentation library.

Defining Domain Node Records in the Network Map

You can define a domain node for a system as small as only two Sterling Connect:Direct Servers or as large as the entire TCP/IP network. The following table describes the tasks required to define domain node network map records for connection requests originating from multiple nodes in the same TCP domain and for connection requests from a Sterling Connect:Direct/Plex node with multiple Sterling Connect:Direct/Plex Servers.

Objective	Task
Define inbound connectivity for a group of nodes originating from the same TCP domain (IP address range)	<ul style="list-style-type: none"> • Set DOMAIN SERVER initialization parameter=Yes • Create one or more adjacent node records as follows: • ADJacent.node=name of domain node • TYPE=NDM.DOMAIN • IPADDRESS=IP address range, or domain, for connection requests from the Sterling Connect:Direct nodes • IPMASK= IP address range for Sterling Connect:Direct nodes • If the NETMAPCHECK parameter is enabled, create an adjacent node record with the node name for any node that will connect through the domain node definition. • Define and relate sufficient TCP LUs to the NDM.DOMAIN adjacent node entry to handle expected traffic. Because the IP address match is made through the domain node entry, only LUs related to that entry can be used to execute sessions.
Define inbound connectivity for a Sterling Connect:Direct/Plex node with multiple Servers (that is, multiple dynamic origination IP addresses on connection requests)	<ul style="list-style-type: none"> • Set DOMAIN SERVER initialization parameter=Yes • Create one or more adjacent node records for domain nodes as follows: • ADJacent.node=name of domain node • TYPE=NDM.DOMAIN • IPADDRESS=IP address range (domain) of the Sterling Connect:Direct/Plex Servers • IPMASK=IP mask that corresponds to Sterling Connect:Direct/Plex server IP addresses • If the NETMAPCHECK parameter is enabled, create an adjacent node record for the Sterling Connect:Direct/Plex Manager as follows to validate the name of the Sterling Connect:Direct/Plex node requesting the connection: • ADJacent.node=node name of Sterling Connect:Direct/Plex Manager • TYPE=NDM.zOS • IPADDRESS=IP address of Sterling Connect:Direct/Plex Manager • PORTNUM= • Define and relate sufficient TCP LUs to the NDM.DOMAIN adjacent node entry to handle expected traffic. Because the IP address match is made through the domain node entry, only LUs related to that entry can be used to execute sessions.

Sample Scenario: Defining Inbound Connectivity for Nodes in the Same TCP Domain

This sample scenario illustrates using domain nodes to manage inbound connection requests from multiple nodes in the same TCP domain and a domain node (General) that permits connections from any IP address. The network map for the sample Sterling Connect:Direct for HP NonStop system contains the following adjacent node records defined as domain nodes:

Adjacent Node	Host Name	IP Address	IP Mask
YC	yourcompany.com	192.168.1.0	255.255.255.0
PYC	payroll.yourcompany.com	192.168.0.0	255.255.128.0
AYC	accounts.yourcompany.com	192.168.0.0	255.255.0.0
General	0.0.0.0	0.0.0.0	0.0.0.0

The following three remote nodes initiate connections with the Sterling Connect:Direct for HP NonStop system:

Host Name	IP Address
manager.payroll.yourcompany.com	192.168.44.23
parts1.engineering.yourcompany.com	192.168.1.34
reception.management.theircompany.com	172.16.34.12

Inbound connection requests from the remote nodes are managed as follows:

- ❖ Connection requests from `manager.payroll.yourcompany.com` are routed through the PYC adjacent node because:
 - ♦ The 192.168 IP address segment of the `manager.payroll.yourcompany.com` remote node is an exact match to the 192.168 segment of `payroll.yourcompany.com`, which is required because of the 255.255 segment of the IP mask of the PYC adjacent node.
 - ♦ The 128 segment of the IP mask indicates that if the corresponding segment of the IP address is less than 128, the remote node is allowed to connect through this adjacent node.
 - ♦ The 0 segment in the last portion of the IP mask indicates that there does not have to be any type of match of the last portion of the IP address.
- ❖ Connection requests from `parts1.engineering.yourcompany.com` are routed through the YC adjacent node because:
 - ♦ The 192.168.1 segment of the IP address is an exact match, which is required by the corresponding portion of the IP mask (255.255.255) of the YC adjacent node.
 - ♦ The last segment of the IP address (34) of the remote node does not have to match at all because of the last segment of the IP mask is 0.
- ❖ Connection requests from the Sterling Connect:Direct `reception.management.theircompany.com` node are routed through the General adjacent node because:
 - ♦ No adjacent node record contains a close match to the IP address (172.16.34.12) of the remote node.
 - ♦ The IP mask of the General domain node indicates that it does not require an exact IP address.

Providing Security for Domain Nodes

Network map checking and Sterling Connect:Direct Secure Plus offer two approaches to validating connection requests and ensuring the privacy of data. The choice depends on the environments the domain nodes are used to manage. For example, when network map checking is enabled and the domain node records are created to manage inbound connections from Sterling Connect:Direct nodes in the same TCP domain, your network map must contain an adjacent node record with the PNODE name for every node that will connect through the domain node in addition to the domain node record; otherwise, the connection is rejected, as shown in the figure on page 34. Therefore, in this environment, it is more efficient to disable network map checking and rely on the certificates and the encryption settings defined for the domain nodes in Sterling Connect:Direct Secure Plus. As the sample scenario shows, you can define a domain node with IP address and IP mask of 0.0.0.0 to permit connections without an exact IP address as long as network map checking is disabled.

In contrast, when domain node records are created to manage inbound connections from a Sterling Connect:Direct/Plex node containing a number of Sterling Connect:Direct/Plex Servers that use dynamically assigned IP addresses, enabling network map checking is an efficient way to provide security. In this situation, you can create domain node records to specify the IP address range of the Sterling Connect:Direct/Plex Servers and validate all inbound connection requests by creating an adjacent node record for the Sterling Connect:Direct/Plex Manager that contains its PNODE name. If, however, you want the individual Sterling Connect:Direct/Plex Servers to initiate connection requests, you must create an adjacent node record in the network map for each one. You can also combine Sterling Connect:Direct Secure Plus with network map checking to enhance security. See the *IBM Sterling Connect:Direct Secure Plus for HP NonStop Implementation Guide* for details on configuring nodes to use Sterling Connect:Direct Secure Plus.

Using Session Redirection for Outbound TCP/IP Connection Requests to a Sterling Connect:Direct/Plex Node

Sterling Connect:Direct for HP NonStop supports session redirection for outbound connections to a Sterling Connect:Direct/Plex system. A connection requests from the Sterling Connect:Direct for HP NonStop node to the Sterling Connect:Direct/Plex system is routed to the Sterling Connect:Direct/Plex Manager, which redirects the connection request to the appropriate, available Sterling Connect:Direct/Plex Server process. Redirecting communications sessions across multiple Sterling Connect:Direct Server processes simplifies the network map, facilitates load-balancing, and ensures continuous, efficient use of resources. The following table describes the tasks required to set up session redirection.

Objective	Task
Define outbound connectivity to a Sterling Connect:Direct/Plex Manager	<ul style="list-style-type: none"> • Create an adjacent node record for Sterling Connect:Direct/Plex Manager as follows: • ADJacent.node=name of Sterling Connect:Direct/Plex Manager • TYPE=NDM.zOS • IPADDRESS=IP address of Sterling Connect:Direct/Plex Manager • PORTNUM= • PLEXCLASS=default server class value • Define and relate sufficient TCP LUs to the NDM.zOS adjacent node entry to handle expected traffic.

Defining Connectivity for a Network Configuration

Sterling Connect:Direct supports data transfer over the following communications protocols:

- ❖ TCP/IP
- ❖ LU0
- ❖ ICE

The HP NonStop administrator must complete worksheets for nodes that use LU0 in the network. The HP NonStop administrator then passes the worksheets to administrators at the adjacent nodes. Each administrator can then use the information on the worksheet to define network connections. The worksheets are designed to assist administrators in defining connectivity across platforms.

For ICE users, refer to Appendix D, *Defining ICE Connectivity*.

Defining an SNA Primary Environment

If you are defining an SNA primary node environment between HP NonStop and an i5/OS node or between HP NonStop nodes, complete the appropriate worksheet for your network:

- ❖ *HP NonStop Environment Definitions (for Connectivity Between HP NonStop and i5/OS Nodes Using LU0)* on page 106
- ❖ *HP NonStop Environment Definitions (for Connectivity Between HP NonStop Nodes Using LU0)* on page 107

Sample network definitions and worksheets are provided in Appendix A, *Defining HP NonStop as the SNA Primary Environment*.

Defining an SNA Secondary Environment

If you are defining an SNA secondary node connection between an IBM node and a HP NonStop node, the IBM administrator must complete the *IBM Environment Information* worksheet in Appendix B. The HP NonStop administrator can then use the information to complete the *HP NonStop Environment Information (for Connectivity Between HP NonStop and IBM 370 Nodes)* worksheet. For sample definitions and worksheets, refer to Appendix B, *Defining HP NonStop as the SNA Secondary Environment*.

HP NonStop-IBM 370 Connectivity Worksheets

If your HP NonStop connection to another node is sending (to an IBM node through SNAX) or peer-to-peer (through SNAX), the IBM node is responsible for network management and user interconnection functions. Therefore, various definitions for the HP NonStop node must conform to values specified at the IBM node. It is critical to coordinate the initial values and any subsequent changes with the administrators of both nodes. Ensure that the IBM administrator completes the *IBM Environment Information* worksheet and passes it to the HP NonStop administrator, who uses the values to set corresponding HP NonStop attributes as appropriate.

Preparing to Define the Network Map through AIMS

The network map is a file that contains network information used by Sterling Connect:Direct. The information includes the network name for the local node and adjacent nodes in the network. It also contains the rules or protocols the nodes adhere to when communicating.

Use the worksheet *AIMS Network Map Definition* to organize the Sterling Connect:Direct for HP NonStop network map definitions for your node and the nodes with which you communicate. Complete this worksheet before beginning the installation procedure. You can make a copy for each adjacent node, API manager, and LU you plan on adding to the network map.

AIMS Network Map Definition

Use this worksheet during the installation procedure to organize the definition of your network map for each adjacent node, API Manager, LU, or LOGMODE. If appropriate, review the environment worksheets for applicable network map values. Names for the local node, adjacent nodes, and LUs, and their types must correlate. Set Network Map Definitions using Options 1.4.1 through 1.4.4 in the AIMS tool.

LOCAL.NODE

 (Name of the Sterling Connect:Direct for HP NonStop local node)

ADJACENT.NODE

 (Name of the adjacent node you want to add to the network map)

APPLID

 (VTAM application identifier (APPLID) associated with the adjacent node name. This field only applies to z/OS, VM, and VSE nodes using SNA connectivity.)

PARSESS

 (Default class for Processes submitted to run on the adjacent node.)

ADJACENT NODE TYPE

 (Identifies the adjacent node as NDM.NonStop, NDM.VMS, NDM.400, NDM.UNIX, NDM.VM, NDM.VSE, NDM.NT, NDM.zOS, NDM.API, NDM.DOMAIN, PS, or PNODESNODE.)

ADJACENT NODE MAXRETRY

 (Specifies the number of attempts to connect to a session with the adjacent node. The default is 7. This value is overridden by LU MAXRETRY.)

NDM400.LIBRARY

 (Specifies the library name for Sterling Connect:Direct on an i5/OS node.)

HOST/IP ADDR 1

HOST/IP ADDR 2

HOST/IP ADDR 3

 (Symbolic host name or numerical IP addresses of adjacent nodes (maximum of 3) that are compared to the incoming IP address of the originating node to identify the PNODE. Specify IP addresses in nnn.nnn.nnn.nnn (IPv4), xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx (IPv6), or DNS format. Maximum of 3.)

TCPNAME

 (Specifies the TCP/IP process name for the adjacent node.)

IP MASK (only for NDM.DOMAIN type)

 (Defines an IP mask for the adjacent node using either IPv4 or IPv6 format)

PORT NUMBER

 (Specifies the communications port that Sterling Connect:Direct monitors for connection requests. The default is 1364.)

PLEXCLASS

 (Specifies the class representing a type of server in the Sterling Connect:Direct/Plex system to which you want to connect.)

CRC

 (Indicates whether the global setting for Cyclic Redundancy Checking (CRC) established in the Set Initialization Parameters Screen (Screen 2 of 4) can be overridden for this node.)

VOLUME _____

(Specifies the default Volume.Subvolume name for files received over this node.)

DESCRIPTION _____

(Provides a brief description of this adjacent node.)

ALLOC.RETRY.ADJ Error Codes _____

(Identifies the Sterling Connect:Direct message IDs from the adjacent node to treat as file allocation failures following the failure of a COPY step.)

LU _____

(Name of the LU you want to add to the network map)

LOGMODE _____

(Name of the LOGMODE entry associated with the LU.)

CPU _____

(Number of the HP NonStop central processing unit (CPU) where processing for this LU takes place.)

LU TYPE _____

(Identifies the communications protocol for this LU as SNA.P, SNA or SNA.S, PS, TCP.D, or TCP.S.)

LU MAXRETRY _____

(Specifies the number of attempts to connect to a session with the LU)

LU TIMEOUT _____

(Specifies the time Sterling Connect:Direct waits for an LU I/O to complete. The default is 3 minutes.)

PRIORITY _____

(Defines the priority of the LU in the CPU in which it runs. Enables you to facilitate load-balancing. Values range from 1 to 199. If left blank, the LU defaults to the server Process priority, minus one.)

TCPNAME _____

(Identifies one or more local TCP process names to use when initiating an outbound session. Process names can be system-qualified. This parameter facilitates load balancing outbound TCP traffic. Multiple entries provide for session retry attempts from a different TCP stack. The attempts are retried in the order listed.)

Set LOGMODE Definitions (Option 1.4.7-For SNA (SNA.Primary) Connections Only)

LOGMODE _____

(Name of the LOGMODE record)

RUSIZE _____

(Transmission buffer size or maximum length of data (request units) in bytes that are transmitted between LUs and the SNA application)

PSNDPAC _____

(Specifies the primary send pacing count)

SSNDPAC _____

(Specifies the secondary send pacing count)

SRCVPAC _____

(Specifies the secondary receive pacing count)

PSERVIC _____

(Represents the LU presentation services profile and usage field for this LOGMODE)

TYPE _____

(Specifies the type of NLD to send, nonnegotiable)

FMPROF _____

(Specifies the function management profile)

TSPROF _____

(Specifies the transmission services profile)

PRIPROT _____

(Specifies the primary protocol)

SECPROT _____

(Specifies the secondary protocol)

COMPROT _____

(Specifies the common protocol)

Verifying SNAX/XF or ICE Installation

If you are using SNAX/XF or ICE, confirm that the following software is generated and defined:

- ❖ Based on installation needs, verify that the SYSGEN (System Generation) restored the distribution subvolumes to at least one of the following subvolumes:
 - ♦ SNAX
 - ♦ ZSNAX
 - ♦ ZSNAXHLS
- ❖ Determine if SNAX/XF was installed during a SYSGEN by verifying that ZSNAX is in the DEFINES for HPNONSTOP^LIBRARY^CODE^FILES and that HPNONSTOP^PROCESS^CODE^FILES is in the CONFAUX (SYSGEN) file.
- ❖ Determine if SNAX/XF lines have been defined by executing an SCF command from TACL. Check for devices shown as Type 58 (SNAX lines). If SNAX has been generated, but the lines have not been defined, define the SNAX lines. Perform a SYSGEN, and then use CMI or SCF to add lines, PUs, and LUs to the system.

Installing and Configuring Sterling Connect:Direct for HP NonStop

The automated installation and management system (AIMS) automates the installation of Sterling Connect:Direct for HP NonStop. This chapter provides instructions on installing Sterling Connect:Direct for HP NonStop.

When installing and configuring Sterling Connect:Direct for HP NonStop, certain tasks must be performed before other tasks. Complete tasks in the following order:

- ❖ Unpack the installation files.
- ❖ Prepare AIMS for execution.
- ❖ Start AIMS.
- ❖ Set the AIMS environment.
- ❖ Install Sterling Connect:Direct for HP NonStop.
- ❖ Start Sterling Connect:Direct for HP NonStop.
- ❖ Load the network map.
- ❖ Load the default LOGMODE records.
- ❖ Verify the installation.

Unpack the Installation Files

The Sterling Connect:Direct for HP NonStop package application is distributed as a CD-ROM or as a file from the IBM Electronic Software Distribution Portal. The `cdhpnsvvrr.zip` file (where `vv` indicates the version number and `rr` the release modification number) contains the application files you extract and restore as the installation files. For information on extracting and uploading the application files, see the *IBM Sterling Connect:Direct for HP NonStop Release Notes*.

Prepare AIMS for Execution

The NDMAIMS module can be found in the NDMAIMS subvolume after unpacking the installation files.

AIMS is a menu-driven system that collects information about your node and the nodes you are communicating with and guides you through the installation of Sterling Connect:Direct for HP NonStop. The

first time you run AIMS, a key-sequenced file (AIMSENV) is created in the same volume and subvolume as NDMAIMS. AIMSENV contains the file names and last saved entries used by AIMS.

1. Type the following command to begin working in the same volume and subvolume as AIMS:

```
>vol $vol.ndmaims
```

2. To resolve the reference to the user library, CDLIB, type one of the following commands:
 - a. On MIPS systems, type:

```
>run ndmaims/lib $vol.ndmobj.cdlib/cdlib
```

- b. On Integrity systems, type:

```
>eld -change libname $vol.ndmobj.cdlib ndmaims
```

Note: Resolving the user library reference only needs to be done before using AIMS for the first time.

Start AIMS

Start AIMS by typing the following command:

```
RUN NDMAIMS
```

Note: Run AIMS from a HP NonStop 6530-type terminal or a PC with an emulation pack.

By default, AIMS will start with the main menu panel. To go directly to a submenu when starting AIMS, type the menu identifier in the RUN command.

For example, if you type the following command:

```
>RUN NDMAIMS 1.2
```

you will go directly to menu option 1.2, **Set Initialization Parameters**.

The Sterling Connect:Direct for HP NonStop AIMS Main Menu displays.

```

=====
02.08.2011          Connect:Direct HP NonStop          03:05:41 PM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> M          M A I N   M E N U          Quick Path -> T

                        T. AIMS Tutorial
                        E. Set the AIMS Environment
                        U. UTILITIES

                        1. Install Connect:Direct
                        2. Start Connect:Direct
                        3. Secure+ Administration

-----
F<n>=Options                                <F16>=Quick Path
SF1=Help                                     SF5=Print   SF16=Exit

```

Navigate AIMS

Menus and user-input screens have a **Quick Path** field in the upper-right corner of the screen that indicates the number for the next step in the installation procedure.

- ❖ To advance through AIMS, press **F16** to select the option displayed in the **Quick Path** field.
- ❖ To override the specified option, type a new value in the **Quick Path** field and press **F16**.
- ❖ AIMS uses the standard editing keys of the HP NonStop keyboard. Press **Tab** to move the cursor from field to field. Type **Shift + Tab** to move the cursor back a field. Use the cursor keys to move between input fields. The following keys are used in AIMS:

Key	Description
Function keys <F(n)>	Display options from your current menu.
<RETURN>	Moves the cursor to the next line (LF).
<SHIFT> <F1> (SF1)	Displays Help for your current screen.
<SHIFT> <F2> (SF2)	Saves the information you type in the user-input screen or executes a specified function, such as loading the Xlate file. Press <SHIFT> + F2 before proceeding to another screen to save the information you type.
<SHIFT> <F3> (SF3)	Returns to the previous screen.
<SHIFT> <F4> (SF4)	Returns to the Main Menu from menus and user-input screens, but not from Help screens and the tutorial.
<SHIFT> <F5> (SF5)	Prints the current screen. The printer is defined in Option E when you set the AIMS environment.

Key	Description
<SHIFT> <F16> (SF16)	Exits from AIMS, returning to the prompt from which you typed.
<F16> (F16)	Moves to the screen specified in the Quick Path field. From the Help and tutorial screens, returns you to the screen from where you selected Help or tutorial.
<NEXT PAGE>	Scrolls the text forward one screen at a time (primarily used in Help screens and the tutorial).
<PREV PAGE>	Scrolls the text backward one screen at a time (primarily used in Help screens and the tutorial).
	Note: Some keyboards have <PAGE UP> and <PAGE DOWN> keys instead of <NEXT PAGE> and <PREV PAGE>.

Get Help

Use the T option to get a summary of the installation tasks by reviewing the Tutorial.

Run User-Written or System Programs from AIMS

Option U enables you to run any user-written or system programs without exiting AIMS. To run any user-written or system programs, type the name of the utility or user program from the PROGRAM field on the Utilities screen as if you were at a TACL prompt. Press **SF2** to execute.

For example:

```
PROGRAM : edit
PROGRAM : tedit myfile;search xyz
PROGRAM : run fup dup afile,bfile
PROGRAM : run peruse
```

After execution of the command, a prompt directs you to *Press <ENTER> or <RETURN> to continue.*

Note: Do not specify runtime options or run TACL macros and routines from AIMS.

Set the AIMS Environment

After you start AIMS, you must set the AIMS environment and define the names of files used during installation. Modify default values as required by your environment.

1. From the Main AIMS panel, select **E** to display the AIMS Environment panel.

```

=====
08.03.2011          Connect:Direct HP NonStop          09:54:37 AM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> E      Set the AIMS Environment      Quick Path -> M

Printer                : $$.#AIMSOUT

Initialization Parameters File : $DSMSCM.NDMINSTL.NDMINIT

User Definitions Obey File   : $DSMSCM.NDMINSTL.ONDMUSER

Network Map Obey File       : $DSMSCM.NDMINSTL.ONDMNET

LOGMODE Obey File          : $DSMSCM.NDMINSTL.ONDMLOG

NDMFUPIN File             : $DSMSCM.NDMINSTL.NDMFUPIN

-----
                                     <F16>=Quick Path
SF1=Help SF2=Save SF3=Prev Option SF4=Main Menu SF5=Print SF16=Exit

```

2. If necessary, change the default AIMS file names by typing over the data displayed. Following is a description of the environment fields:

Entry Field	Description
Printer	Directs any screens selected for print to the designated spooler file. The default spooler file name is \$\$.#AIMSOUT.
Initialization Parameters File	Contains parameters that are processed during startup of Sterling Connect:Direct. The default file name is NDMINSTL.NDMINIT.
User Definitions Obey File	Specifies the file that contains security authorization for a default user (NDM.DEFAULT) and the installer. The default file name is NDMINSTL.ONDMUSER.
Network Map Obey File	Specifies the file that defines the network map values (LOCAL.NODE, ADJACENT.NODEs, LUs, AMGRs, LOGMODEs). The default file name is NDMINSTL.ONDMNET.
LOGMODE Obey File	Specifies the file that contains default LOGMODE records for the network map file. The default file name is NDMINSTL.ONDMLOG.
NDMFUPIN File	Specifies the file of FUP commands that set various data file attributes during file creation. The default file name is NDMINSTL.NDMFUPIN.

3. Press **SF2** to save the environment file definitions. Sterling Connect:Direct generates a message indicating that the AIMS environment is set.

Note: During installation, you can modify these values by typing Option E in the **Quick Path** field from any user-input screen.

Install Sterling Connect:Direct for HP NonStop

Once you set the AIMS environment variables, you are ready to install Sterling Connect:Direct for HP NonStop.

1. From the Main AIMS panel, select **1** to begin the Sterling Connect:Direct for HP NonStop installation. The Install Connect:Direct panel displays:

```

=====
06.03.2011          Connect:Direct HP NonStop          02:44:04 PM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 1          Install Connect:Direct          Quick Path -> 1.1

                        1. Restore Connect:Direct
                        2. Set Initialization Parameters
                        3. Set Default User Authorization
                        4. Set Network Map
                        5. Create Files

-----
F<n>=Options                      <F16>=Quick Path
SF1=Help                          SF3=Prev Option  SF4=Main Menu   SF5=Print      SF16=Exit

```

Note: Option 1.1, Restore Sterling Connect:Direct, is no longer used.

Set Initialization Parameters

Use Option 1.2 to set the initialization parameters. Initialization parameters point to files that provide information to the Sterling Connect:Direct server. These parameters are processed during startup and are required for execution. Default values are specified for many of the files; however, you must edit file names to conform to your environment. You defined the initialization parameters file name displayed on the screen when you set the AIMS environment.

You can display and save new initialization parameter files using the DISPLAY PARMS command. For more information about the DISPLAY PARMS command, see Chapter 7, *Viewing System Files*, in the *IBM Sterling Connect:Direct for HP NonStop User Guide and Reference*.

You can dynamically update the initialization parameters using the UPDATE PARM command. For more information about the UPDATE PARM command, see *Modifying Initialization Parameters with the UPDATE PARM Command* on page 87.

Complete the following procedure to set up initialization parameters:

1. Press **F2** and begin defining the initialization parameters. The first Set Initialization Parameters panel displays:

```

02.08.2011          Connect:Direct HP NonStop          03:15:03 PM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 1.2 Set Initialization Parameters      Quick Path -> 1.3

TCP PROCESS : $ZTC0          PORT NUMBER: 1364
PRTYDEF      : 10           LOG-SECURITY: NO
STATPERCENT  : 50
STATCRITERIA: 8D           TCQ          : WARM
STATMIDNITE  : ON           RUNTASKMSGID: SRTT010I      SRVTRACE :
SMNAME       : $SM          APINAME    : $AM             SMTRACE  :
QUIESCE      : YES         CKITVL     :                   APITRACE  :
LOG-TCP-CONN-RQ: YES      TCPBUFFSIZE: 31000
ALLOC-RETRY-MAX: 3        ALLOC-RETRY-INT: 00:05:00      WTRTRIES : 00:03:00
ALLOC-RETRY-LOC:

Init. Param. File: $DSMSCM.NDMINSTL.NDMINIT          (Page 1 of 4)
-----
<NEXT PAGE>=Next Page                                <F16>=Quick Path
SF1=Help SF2=Save SF3=Prev Option SF4=Main Menu      SF5=Print SF16=Exit

```

Following is a description of each entry field:

Entry Fields	Description
TCPNAME	Specifies the name of the TCP/IP Process running on HP NonStop. The name must be a valid HP NonStop Process name. If a value is not specified, Sterling Connect:Direct uses the default name of \$ZTC0.
PORT NUMBER	Specifies the communications port that Sterling Connect:Direct monitors for connection requests. The format is a number. The default is 1364.
PRTYDEF	Specifies the default priority for Processes submitted to Sterling Connect:Direct. If a priority is not specified on the PROCESS statement, Sterling Connect:Direct uses the default priority of 10 when placing the Process in the TCQ. Values range from 0 to 15.
LOG-SECURITY	Specifies whether to log the effective local userid under which an Snode Process runs. Valid values are YES - log security information NO - (default) do not log security information

Entry Fields	Description
STATPERCENT	Defines the maximum allowable percentage the statistics files are utilized before NDMSTD L is created. The numeric value ranges from 50 to 95; the default is 85%.
STATCRITERIA	Specifies the deletion criteria for records maintained in the statistics file. Valid values are nD, nH, or nM, where nD equals 1–31 days, nH equals 1–23 hours, and nM equals 1–59 minutes. The default is 8D.
TCQ	Specifies how the TCQ is initialized. If you specify WARM, Sterling Connect:Direct uses the TCQ as it exists. If you specify COLD, Sterling Connect:Direct reinitializes the TCQ when Sterling Connect:Direct is started. Any Processes left on the TCQ are lost, and new Process numbers begin with 1. WARM is the default.
STATMIDNITE	Specifies whether the server runs NDMSTD L each night at midnight. Valid values for this parameter are ON or OFF; the default is ON.
RUNTASKMSGID	Defines the MSGID logged at successful termination of a "waited" local RUN TASK step. SRTT010I is the default value.
SRVRTRACE	Turns on server trace bits. SRVRTRACE is only used for debugging. The default is OFF if not specified.
SMNAME	<p>Defines a constant prefix, for example, the default \$SM prefix, used to create session manager process names. The name is created by taking the value defined in the SMNAME initialization parameter (for instance, \$SM) and appending a numeric value to it: 0, 1, 2, ..., nnn up to the limit imposed by the maximum number of characters in a file name. The numeric suffix is generated as a hexadecimal string. If the server runs out of available names, it uses system-generated names.</p> <p>The following prefixes are reserved for use by the operating system:</p> <ul style="list-style-type: none"> • \$DM • \$SIM • \$X • \$Y • \$Z <p>In accordance with Guardian naming requirements, the first character after \$ must be an alphabetic character. The prefix may be as short as two characters (\$A) but no longer than four characters (\$xxx). If these restrictions are violated, the server defaults to \$SM as a prefix.</p> <p>If SMOUT (another initialization parameter on the next Set Initialization Parameters screen described below) is designated as a spooler file (\$S.#NDM), the trace file job name is created as \$S.#NDM.NDMxnT, where 'x' is the last character in SMNAME, 'n' is the numeric suffix appended as part of the session manager process name, and 'T' indicates a trace file.</p> <p>If SMOUT is designated as \$volume.subvolume, then the trace file name for session manager process \$xxxnn is \$volume.subvolume.NDMxnT.</p>

Entry Fields	Description
APINAME	<p>Defines a constant prefix, for example, the default \$AM prefix, used to create API Manager process names. The name is created by taking the prefix and appending a numerical suffix 0,1,2,...,nnn as API Managers are created (\$AM0, \$AM1 ... \$AMnnn). Process names are reused as API Manager processes are started and stopped.</p> <p>In accordance with Guardian naming requirements, the first character after \$ must be an alphabetic character. The prefix may be as short as two characters (\$x) but no longer than four characters (\$xxx). If these restrictions are violated the server defaults to \$AM as a prefix.</p> <p>If APIOUT (another initialization parameter on the next Set Initialization Parameters screen described below) is designated as a spooler file (\$S.#NDM), then the trace file job name is created as \$S.#NDM.NDMxnT, where 'x' is the last character in APINAME, 'n' is the numeric suffix appended as part of the API Manager process name, and 'T' indicates a trace file.</p> <p>If APIOUT is designated as \$volume.subvolume, then the trace file name for API Manager process \$xxxnn is \$volume.subvolume.NDMxnT.</p>
SMTRACE	Turns on session manager trace bits. SMTRACE is only used for debugging. The default is OFF if not specified.
QUIESCE	Specifies whether session managers are started when Sterling Connect:Direct is started. The default value is NO. If you specify YES, session managers are not initiated when Sterling Connect:Direct is started.
CKITVL	<p>Specifies the checkpoint interval or approximate number of bytes used for checkpointing. Valid values are nM (megabytes) or nK (kilobytes). The default is NONE.</p> <p>To specify checkpointing in a COPY statement, see the Processes web site at http://www.sterlingcommerce.com/documentation/processes/processhome.html.</p>
APITRACE	Turns on API Manager trace bits. APITRACE is only used for debugging. The default is OFF if not specified.
LOG-TCP-CONN-RQ	<p>Indicates whether TCP connection requests are to be logged. Valid values are Y/N. When YES, the application logs all inbound TCP connection requests and outgoing attempts to the STAT file in the following format:</p> <p>Date => 07.08.2008 Time => 10:35:23:88 MESSAGE - MSG Conn rcvd \NONSTOP.\$SAM2 port 17132 from fd:00::20a0:209:6bff:fe65:9a73 port 484</p>
TCPBUFFSIZE	Specifies the size of the data buffer passed between two nodes during a TCP session. This value is set to 30720 by default since this value gives the best throughput under most conditions. Before making changes to this value, ensure that you have run benchmarks to verify that throughput is improved.
ALLOC-RETRY-MAX	Specifies the maximum number of times a step is retried after an allocation failure occurs. Value values are 0–99, where 0 indicates that the Process is retried indefinitely. The default is 3.
ALLOC-RETRY-INT	Specifies the interval that a Process waits in the TIMER queue after encountering an allocation error, regardless if the error occurred on the local or remote node in the format hh:mm:ss. The default is 00:05:00 (five minutes).
WTRETRIES	Indicates the session retry interval. Set the value in the hh:mm:ss format. The default value is 00:03:00.
ALLOC-RETRY-LOC	Defines a list of local HP NonStop file system errors (nn) that are retried after an allocation failure occurs on a local HP NonStop file. The entries are delimited by any non-numeric characters. Valid range values are 2–9999, inclusive. Excluded values are 0, which represents a successful operation, and 1, which indicates an end-of-file.

Entry Fields	Description
Init. Param. File:	Displays the name of the file containing the parameters that are processed during startup of Sterling Connect:Direct.

2. Press **SF2** to save the initialization parameters file.
3. Press <PAGE DOWN> or <NEXT PAGE> to display the next Initialization Parameters panel:

```

=====
02.08.2011          Connect:Direct HP NonStop          05:35:56 PM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 1.2 Set Initialization Parameters      Quick Path -> 1.3

CMPRLEVEL : 4      WINDOWSIZE   : 15  MEMLEVEL     : 8      SENDNULLRECS: YES
EMS        : ON    STATS        : ON   COLLECTOR    : $0     EA SERVICE   : NO
CRC        : ON    CRC OVERRIDE : YES  NETMAPCHECK  : NO     SENDOPENFILE: WARN
OSS FILES  : YES   DOMAIN SERVER: YES  FILENAME EXT: NO    LOGCPUTIME   : YES
SMOUT      : $$.#SMOUT
APIOUT     : $$.#APIOUT
PRINTER    : $$.#SM
SPASCII    : $DSMSCM.CW36.SPASCII
NDMSTDL    : $DSMSCM.NDMOBJ.NDMSTDL
NDMSMGR    : $DSMSCM.NDMOBJ.NDMSMGR
APIMGR     : $DSMSCM.NDMOBJ.APIMGR
STUTIL     : $DSMSCM.NDMOBJ.STUTIL

Init. Param. File: $DSMSCM.NDMINSTL.NDMINIT              (Page 2 of 4)

<PREV PAGE>=Previous Page      <NEXT PAGE>=Next Page      <F16>=Quick Path

```

4. Modify the following fields as necessary for your environment:

Entry Fields	Description
CMPRLEVEL	Specifies the default compression level used on a particular node. Valid values are 1-9; 9 specifies the deepest compression level. The default level is 1.
WINDOWSIZE	Specifies the size of the floating window used for compression and decompression. Valid values are 9-15; 15 specifies the largest possible window size.
MEMLEVEL	Specifies the memory level used in compression. Valid values are 1-9; 9 specifies the highest amount of memory allocated. The default level is 4.
SENDNULLRECS YES NO	This option controls the default action of a SEND operation when the session manager reads an ESDS file and encounters a zero-length record. If NO, the default action is to bypass the record. If YES, the zero-length record is sent. NO is the default.
EMS	Controls whether Sterling Connect:Direct logs events to Event Management Service (EMS). Valid settings are OFF and ON. The default is OFF.
STATS	Controls whether Sterling Connect:Direct logs events to the Sterling Connect:Direct statistics file. Valid settings are OFF and ON. The default is ON.

Entry Fields	Description
COLLECTOR	Specifies the collector used for event-message generation. The collector is the primary collector for the system (\$0) or an alternate collector. The default collector is \$0.
EA SERVICE	Specifies whether to enable support for the Sterling External Authentication Server. Valid values are YES - support is enabled NO - (default) support is not enabled
CRC	Global setting for CRC checking for all PNODE processes. ON—Indicates that the CRC checking is performed for all PNODE processes. OFF—Indicates that the CRC checking is not performed for all PNODE processes.
CRC OVERRIDE	Determines if PROCESS statement, SUBMIT command, or Adjacent Node setting can override the global CRC parameter. YES—Global CRC setting can be overridden. NO—Global CRC setting cannot be overridden.
NETMAPCHECK	Determines if Sterling Connect:Direct for HP NonStop only accepts connections from nodes defined in the network map. YES—Only accepts connections from nodes defined in the network map. NO—Accepts connections from any Sterling Connect:Direct node.
SENDOPENFILE YES NO WARN	Determines how Sterling Connect:Direct for HP NonStop responds if it opens a file for transmission, but the file is open for update by an external application (for example, the file is still being created). You can override this parameter by using the SYSOPTS parameter, SET OPENFILEXMT=YES, in the FROM clause of your COPY statement. YES - Executes the COPY step and reports SCPA000I following a successful termination. NO - Terminates the COPY step immediately with SFLH951I, RC=8, FDBK=0. WARN - Executes the COPY step, but reports SFLH950I, RC=4, FDBK=0 12 (12 means the file was still open when Sterling Connect:Direct reached the file EOF). This is the default value.
OSS FILES	Determines if support for OSS files is to be included. YES—Supports OSS files. NO—Does not support OSS file.
DOMAIN SERVER	Determines if Sterling Connect:Direct for HP NonStop accepts connection requests from domains specified in domain nodes. YES—Accepts connection requests from domains specified by domain nodes. NO—Does not accept connection requests from domains specified by domain nodes.
FILENAME EXT	Determines if file name extensions from other platforms are to be concatenated with platform name to create a typekey in the TYPE file to set file attributes. YES—Uses file name extensions. NO—Does not use file name extensions.
LOGCPU YES NO	Enables or disables logging CPU usage statistics in the statistics file, including usage statistics for Sterling Connect:Direct Secure Plus activities such as handshake and encryption. If this parameter is specified, the usage statistics appear at the end of the MESSAGE-MSG record, for example, CPU S+ Handshake 0.04 secs, S+ Crypting 0.09 secs, total 0.13 secs. Use LOGCPU to assist with resource utilization planning. YES—Enables logging CPU usage statistics. NO—Disables logging CPU usage statistics. This is the default value.
SMOUT	Specifies the output file for the session manager. The default file name is \$\$.#NDM. Sterling Connect:Direct appends a unique identify to each SMOUT file name for each session being traced.

Entry Fields	Description
APIOUT	Specifies the output file for the API Manager.
PRINTER	Points to the valid HP NonStop spooler name used by NDMCOM for printed output. The default file name is \$\$.#NDM.
NDMSTDL	Points to the object file that automatically deletes statistics records if the statistics file passes the percentage of file full established by you. The default file name is NDMOBJ.NDMSTDL.
NDMSMGR	Points to the session manager object module. The default file name is NDMOBJ.NDMSMGR.
APIMGR	Specifies the location of the API Manager executable.
STUTIL	Points to the object file that determines the utilization of the statistics file. The default file name is NDMOBJ.STUTIL.
Init. Param. File:	Displays the name of the file containing the parameters that are processed during startup of Sterling Connect:Direct.

5. Press <PAGE DOWN> or <NEXT PAGE> to display the next Initialization Parameters panel:

```

11.21.2011          Connect:Direct HP NonStop          02:52:02 PM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 1.2 Set Initialization Parameters      Quick Path -> 1.3

MSGFILE   : $DSMSCM.NDMFILES.MSGFILE
NDMCDL    : $DSMSCM.NDMFILES.NDMCDL
AUTHFILE  : $DSMSCM.NDMFILES.AUTHFILE
CKPTFILE  : $DSMSCM.NDMFILES.CKPTFILE
INFOFILE  : $DSMSCM.NDMFILES.INFOFILE
NETFILE   : $DSMSCM.NDMFILES.NETFILE
SECFILE   : $DSMSCM.NDMFILES.SECFILE
STATFILE  : $DSMSCM.NDMFILES.STATFILE
STATSRCH  : $DSMSCM.NDMFILES.STATSRCH
TCQFILE   : $DSMSCM.NDMFILES.TCQFILE
TCQXFILE  : $DSMSCM.NDMFILES.TCQXFILE
TYPEFILE  : $DSMSCM.NDMFILES.TYPEFILE
XLFILE    : $DSMSCM.NDMFILES.XLFILE
SECURE+   : $DSMSCM.SECUREPL
Init. Param. File: $DSMSCM.NDMINSTL.NDMINIT          (Page 3 of 4)

<PREV PAGE>=Previous Page      <NEXT PAGE>=Next Page      <F16>=Quick Path
SF1=Help  SF2=Save  SF3=Prev Option  SF4=Main Menu  SF5=Print  SF16=Exit

```

6. Modify the following fields as necessary for your environment:

Entry Fields	Description
MSGFILE	Points to the file containing error messages used by Sterling Connect:Direct. The default file name is NDMFILES.MSGFILE.
NDMCDL	Points to the Command Definition Language (CDL) object module. The default file name is NDMFILES.NDMCDL.
AUTHFILE	Specifies the name of the file containing user authorization information. The default file name is NDMFILES.AUTHFILE.

Entry Fields	Description
CKPTFILE	Specifies the name of the file used for checkpoint-restart support. The default file name is NDMFILES.CKPTFILE.
INFOFILE	Specifies the name of the file used internally by the server and session manager processes. The default file name is NDMFILES.INFOFILE.
NETFILE	Specifies the name of the file containing network map information. The default file name is NDMFILES.NETFILE.
SECFILE	Specifies the name of the file containing user security information. The default file name is NDMFILES.SECFILE.
STATFILE	Specifies the name of the file containing statistics created by Sterling Connect:Direct. The default file name is NDMFILES.STATFILE.
STATSRCH	Contains the keys for searching the statistics file. The default file name is NDMFILES.STATSRCH.
TCQFILE	Stores Sterling Connect:Direct Processes. TCQFILE and TCQXFILE combine to create the TCQ. The default file name is NDMFILES.TCQHFILE.
TCQXFILE	Contains header information for the TCQFILE parameter. TCQXFILE and TCQFILE combine to create the TCQ. The default file name is NDMFILES.TCQXFILE.
TYPEFILE	Specifies the name of the file containing type file entries. The default file name is NDMFILES.TYPEFILE.
XLFILE	Points to the key-sequenced file containing translation tables.
SECURE+	Points to the file containing the Sterling Connect:Direct Secure Plus program. Identify this directory if you have purchased Sterling Connect:Direct Secure Plus.
Init. Param. File:	Displays the name of the file containing the parameters that are processed during startup of Sterling Connect:Direct.

7. Press <PAGE DOWN> or <NEXT PAGE> to display the next Initialization Parameters panel:

```

=====
02.09.2011          Connect:Direct HP NonStop          10:49:46 AM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 1.2 Set Initialization Parameters      Quick Path -> 1.3
                    TCP LISTEN PROCESSES AND PORTS

  1: $ZSAM1 1364          2:              3:
  4:                    5:              6:
  7:                    8:              9:
 10:                   11:             12:
 13:                   14:             15:
 16:                   17:             18:
 19:                   20:             21:
 22:                   23:             24:
 25:                   26:             27:
 28:                   29:             30:
 31:                   32:             33:
 34:                   35:             36:

Init. Param. File:  $DSMSCM.NDMINSTL.NDMINIT          (Page 4 of 4)

-----
<PREV PAGE>=Previous Page      <NEXT PAGE>=Next Page          <F16>=Quick Path
SF1=Help  SF2=Save  SF3=Prev Option  SF4=Main Menu      SF5=Print  SF16=Exit

```

8. Modify the TCPLIST Processes and ports as necessary for your environment. Following is a description of the field:

Entry Field	Description
TCPLISTENnn	<p>Specifies additional TCP processes and port numbers (1-36) on which the application posts listens for inbound TCP connection requests. The 20 character entries enable you to define this NDMINIT parameter. If specifying listens on more than one Parallel TCP/IP (PTCPIP) that share a common pool of ports, each listen must specify a different port number, even if the process names are not different.</p> <p>TCPLISTENnn \system.\$xxxxx pppp</p> <p>Where:</p> <p>nn = 1, 2, 3, ... , 36 (no 0 padding)</p> <p>\system.\$xxxxx = TCP Process name (system qualifier is optional)</p> <p>pppp = LISTEN port number, 1024-9999 inclusive</p>
Init. Param. File:	Displays the name of the file containing the parameters that are processed during startup of Sterling Connect:Direct.

9. Press **SF2** to save the initialization parameters file.

Set Default User Authorization

Option 1.3 creates an NDM.DEFAULT record in the authorization file (AUTHFILE). This record is a template for predefining user authority. It enables you to log on to Sterling Connect:Direct without being individually defined in the user authorization file. The DEFAULT.AUTHORITY parameter enables you to define user authority without specifying values for each command; however, specifying values for individual commands overrides the value specified in this parameter.

In addition, this option automatically creates a record that provides full authority to the user logged on and running AIMS.

These attributes are copied to each user defined by the NDM.DEFAULT record, which you can modify with USER commands. Refer to the *IBM Sterling Connect:Direct for HP NonStop Administration Guide* for the format and parameters for USER commands.

This option builds a record that defines the installer as the Sterling Connect:Direct system administrator. The installer is granted all privileges and assigned an A in the DEFAULT.AUTHORITY parameter, which permits execution of all Sterling Connect:Direct operations (PROCESS, USER, NETMAP, SUBMIT, TYPE, MODIFY, STATISTICS, STOP ALL, and SECURITY commands).

You can assign the following authority levels to Sterling Connect:Direct commands:

Authority Level	Description
A	All authority
G	Group authority
O	Owner authority
N	No—cannot perform function
Y	Yes—can perform function

Complete the following procedure to create an authorization file:

1. Press **F3**. The Default User Authorization panel displays:

```

=====
06.03.2011          Connect:Direct HP NonStop          02:34:47 PM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 1.3 Set Default User Authorization   Quick Path -> 1.4

                      USERID = NDM.DEFAULT
DEFAULT.AUTHORITY = O  UPDATE.STATISTICS = N        UPDATE.LOGGING = N
PROCESS CHANGE = O    DELETE = O    FLUSH = O    SELECT = O    SUSPEND = O
USER      DELETE = N   INSERT = N    SELECT = N   UPDATE = N
NETMAP   DELETE = N   INSERT = N    RELATE = N   SELECT = Y    UPDATE = N
TYPE     DELETE = N   INSERT = Y    SELECT = Y   UPDATE = Y
SECURITY DELETE = N   INSERT = N    SELECT = Y   UPDATE = N
STATISTICS = O      MODIFY = N    SUBMIT = N   STOP ALL= N

VOLUME      =                               ALIAS.CONVERT = N
PROCVOLUME  =
OBEYVOLUME  =
PHONE       =
NAME        =

      User Definitions Obey File:  $DSMSCM.NDMINSTL.ONDMUSER

                                     <F16>=Quick Path
SF1=Help  SF2=Save  SF3=Prev Option  SF4=Main Menu  SF5=Print  SF16=Exit

```

2. Define the default authority levels for each Sterling Connect:Direct commands. Modify default values as required for your environment. Following is a description of each field:

Entry Fields	Description
USERID	Displays the ID of the default user in the authorization file.
DEFAULT.AUTHORITY	Defines the default user authority without having to specify values for each command; however, specifying values for individual commands overrides the value specified in this parameter. Valid values are: A—All authority G—Group authority O—Owner authority N—No authority Fields that accept only Y (yes) or N (no) values are set to Y if the default authorization parameter is set to A. If the DEFAULT.AUTHORITY parameter is set to G, O, or N, then the fields accepting only Y or N are set to N.
UPDATE.STATISTICS	Specifies whether a user has the authority to update settings for statistics (CRITERIA, MIDNITE, and PERCENT). Valid values are Y and N.
UPDATE.LOGGING	Specifies whether you have the authority to update settings for event logging (EMS, STATS, and COLLECTOR). Valid values are Y and N.

Entry Fields	Description
PROCESS commands	Specifies level of authority for activities associated with Processes. Set the level of authority for CHANGE PROCESS, DELETE PROCESS, FLUSH PROCESS, SELECT PROCESS, and SUSPEND PROCESS. Valid values are: A—All authority G—Group authority O—Owner authority N—No authority
USER commands	Specifies the level of authority assigned to define and maintain local user records in the AUTHFILE. Set the level of authority for DELETE USER, INSERT USER, SELECT USER, and UPDATE USER. Valid values are: A—All authority G—Group authority N—No authority
NETMAP commands	Specifies the level of authority assigned to define and maintain node records. Includes DELETE NETMAP, INSERT NETMAP, RELATE NETMAP, SELECT NETMAP, and UPDATE NETMAP. Valid values are Y and N.
TYPE commands	Includes DELETE TYPE, INSERT TYPE, SELECT TYPE, and UPDATE TYPE. TYPE commands allow you to define and maintain type records. Type records define file attributes for new files. Valid values are Y and N.
SECURITY commands	Includes DELETE SECURITY, INSERT SECURITY, SELECT SECURITY, and UPDATE SECURITY. SECURITY commands allow you to define and maintain security records in the SECFILE for submitters of Processes at remote nodes. Valid values are Y and N.
STATISTICS command	Displays or prints statistics from the statistics log. Valid values are: A—All authority O—Owner authority N—No authority
MODIFY command	Enables you to request session manager and server traces or modify certain Sterling Connect:Direct operational functions. Valid values are Y and N.
SUBMIT COMMAND	Enables you to submit Processes. Valid values are Y and N.
STOP ALL command	Stops Sterling Connect:Direct operation. Valid values are Y and N.
VOLUME (optional)	Specifies the default volume for the NDM.DEFAULT record.
ALIAS.CONVERT	When set to Y for a specific ID in the USER file, enables all aliases of that ID to be treated as the owner at logon. This enables all aliases of an ID to be treated as a single user from a security standpoint without having to assign security to every alias in the USER file.
PROCVOLUME (optional)	Specifies the default PROCVOLUME for the NDM.DEFAULT record.
OBEYVOLUME (optional)	Specifies the default OBEYVOLUME for the NDM.DEFAULT record.
PHONE (optional)	Identifies the phone number of a user.
NAME (optional)	Identifies the name of a user.
User Definitions Obey File	Displays the name of the file containing security authorization for a default user (NDM.DEFAULT) and the installer.

Note: If you want to assign a system administrator other than the installer, edit the user definitions obey file defined in Option E on the Utilities (U) screen after executing this option.

3. Press **SF2** to create the user information and save the specified data to the user definitions obey file; however, the values typed are no longer displayed on the AIMS screen. Note that the user definitions obey file name displayed on the screen was defined in Option E, when you set the AIMS environment.

Configure the Network Map

Option 1.4 defines the nodes with which Sterling Connect:Direct can communicate. Use the information recorded in the *AIMS Network Map Definition Worksheet* in Chapter 2, *Planning the Installation*, to complete this task. This option builds the network map definitions that define the characteristics of the local HP NonStop node and the nodes with which it communicates.

Setting the network map requires completing the following tasks:

- ❖ Identifying the local node. The LOCAL.NODE field represents the logical node name for the node on which you installed Sterling Connect:Direct. Note that the Network Map Obey File name displayed on the screen was defined in Option E when you set the AIMS environment.
- ❖ Describing adjacent nodes. An adjacent node is the node definition for a remote node that is used when the local node requests the connection.

Note: AIMS automatically creates an adjacent node entry for the local node, using the same local node name as set in Option 1.4.1. A logical LU (named \$pnode.#snode) is also created. AIMS automatically relates these entries to permit PNODE=SNODE transmission, which enables you to move files in your local system.

- ❖ Describing the HP NonStop LUs used by Sterling Connect:Direct to communicate with adjacent nodes.
- ❖ Describing the API Managers used by Sterling Connect:Direct to link external Sterling Connect:Direct applications with adjacent nodes.
- ❖ Linking an adjacent node with its LU or API Manager.
- ❖ Describing LOGMODE definitions for the network map. Sterling Connect:Direct uses the LOGMODE records to build an NLD image and start a session with a secondary LU. If you are unfamiliar with building LOGMODE records, execute Option 2.4 to add default LOGMODE records.

You can create multiple adjacent nodes, API Managers, LUs, and LOGMODE entries by typing new data in the input fields and pressing **SF2**. Modifications to the network map are performed dynamically, either by issuing individual NETMAP commands or by editing the network map obey file. Refer to the *IBM Sterling*

Connect:Direct for HP NonStop Administration Guide for command format and parameters for modifying the network map. Complete the following procedure to activate option 1.4.1 and begin building the network map:

1. Press **F4** to begin building the network map. The Set Network Map panel displays:

```
=====
06.03.2011          Connect:Direct HP NonStop          02:35:31 PM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 1.4          Set Network Map          Quick Path -> 1.4.1

                          1. Enter Local Node Information
                          2. Enter Adjacent Node Information
                          3. Enter LU Information
                          4. Enter API Manager Information
                          5. Relate Adjacent Nodes with LUs
                          6. Relate Adjacent Nodes with APIMGRs
                          7. Enter LOGMODE Information

-----
                                  <F16>=Quick Path
SF1=Help          SF3=Prev Option   SF4=Main Menu    SF5=Print    SF16=Exit
```

- To enter local node information, press **F1** to select option 1.4.1. The Enter Local Node Information panel displays:

```

=====
08.03.2011          Connect:Direct HP NonStop          10:04:54 AM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 1.4.1  Enter Local Node Information   Quick Path -> 1.4.2

                                LOCAL.NODE           :

Network Map Obey File: $DSMSCM.NDMINSTL.ONDMNET

                                <F16>=Quick Path
SF1=Help  SF2=Save  SF3=Prev Option  SF4=Main Menu  SF5=Print  SF16=Exit

```

- Type the name of the local node and press **SF2**. The LOCAL.NODE field specifies the 1–16 alphanumeric character name of the local node.

The correct NETMAP command is generated and stored in the network map obey file.

Note: AIMS automatically creates PNODE=SNODE entries in the network map obey file after you execute this option. A PNODE=SNODE entry enables you to transmit files in your local system.

- Press **SF2** to save the specified data to the network map obey file. Bypass this screen by pressing F16.

Define Adjacent Node Information

The next step is to define adjacent node information for nodes that communicate with the local node. Complete the following procedure to activate option 1.4.2 and generate adjacent node definitions for the network map:

- Press **F2** to access option 1.4.2 and enter adjacent node information. The Enter Adjacent Node panel displays:

```

=====
02.09.2011          Connect:Direct HP NonStop          10:54:58 AM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 1.4.2 Enter Adjacent Node Information Quick Path -> 1.4.3
ADJACENT.NODE      :                               NODE TYPE      :
APPLID            :                               PLEX CLASS       :
PARSESS           :          MAXRETRY      : 7      DYNAMIC DNS     :
VOLUME           :                               CRC              :
HOST/IP ADDR 1    :
HOST/IP ADDR 2    :
HOST/IP ADDR 3    :
PORT NUMBER       :          IP MASK      :
TCPNAME          :
SOURCE ADDR 1     :
SOURCE ADDR 2     :
NDM.400 LIB NAME:                               SECURE          :
DESCRIPTION       :
ALLOC.RETRY.ADJ Error Codes:

Network Map Obey File: $DSMSCM.NDMINSTL.ONDMNET

<F16>=Quick Path
SF1=Help SF2=Save SF3=Prev Option SF4=Main Menu SF5=Print SF16=Exit

```

2. Supply the following information to describe the adjacent node:

Entry Fields	Description
ADJACENT.NODE	Specifies the 1–16 alphanumeric character name of an adjacent node you want to add to the network map. Adjacent nodes are the nodes with which you want to communicate.
APPLID	Specifies the 1–8 character host VTAM application identifier (APPLID) associated with the adjacent node. This field applies only to z/OS, VM, or VSE nodes. Although this field is not used for TCP/IP connection, it requires a value. Note: The APPLID specified for an IBM ADJACENT.NODE record in the HP NonStop network map must match the APPLID specified in the LOCAL.NODE record in the host network map.
PARSESS	Specifies the default class to use for Processes that run on the adjacent node. Each LU has an assigned default class value, which enables a Process to execute on an LU having a matching class value or on LUs with higher class values. A value in the CLASS parameter in the PROCESS or SUBMIT statement of a Process overrides any default class specified in this field. If you specify a class value of 1, a Process runs on the first available LU.
PLEXCLASS	Specifies the class representing a type of server in the Sterling Connect:Direct/Plex system to which you want to connect.

Entry Fields	Description
NODE TYPE	Identifies the adjacent node as one of the following types: <ul style="list-style-type: none"> • NDM.NONSTOP • NDM.VMS • NDM.NT • NDM.400 • NDM.VM • NDM.VSE • NDM.UNIX • PNODESNODE (or PS) • NDM.zOS • NDM.API • NDM.DOMAIN
EASERVER	Enables support for the Sterling External Authentication Server. YES enables support. NO turns off support.
MAXRETRY	Specifies the number of times to attempt connection to a session with the adjacent node or to attempt a Process that has failed because a session is unavailable. The valid range of values for this field is 1–99. The default is 7. The MAXRETRY parameter for the LU overrides the MAXRETRY parameter on the adjacent node record.
NDM400.LIB NAME	Specifies the library name for the Sterling Connect:Direct for i5/OS node. This alphanumeric parameter accepts 1–10 characters.
HOST/IP ADDR 1 HOST/IP ADDR 2 HOST/IP ADDR 3	Symbolic host name or numerical IP addresses of adjacent nodes (maximum of 3) that are compared to the incoming IP address of the originating node to identify the PNODE. Specify IP addresses in nnn.nnn.nnn.nnn (IPv4), xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx (IPv6), or DNS format. For more information on specifying IP addresses and host names, see the <i>Specifying IP Addresses, Host Names, and Ports</i> appendix in the <i>IBM Sterling Connect:Direct for HP NonStop Administration Guide</i> . Note: The “temporary addresses” feature of IPv6 causes problems in Sterling Connect:Direct for HP NonStop. If the outgoing address of the PNODE randomly changes, the SNODE will always fail the connection because the PNODE’s IP would never match the IP configured in the Netmap. See RFC 3041 for more information on temporary addresses.
IP MASK	Defines an IP mask for the adjacent node using either IPv4 or IPv6 format. For use only with NDM.DOMAIN node type.
TCPNAME	Identifies one or more local TCP Process names to use when initiating an outbound session. Process names can be system-qualified. This parameter facilitates load balancing outbound TCP traffic. Multiple entries provide for session retry attempts from a different TCP stack. The attempts are retried in the order listed.
PORT NUMBER	Identifies the communications port that Sterling Connect:Direct monitors for connection requests. The format is a number. The default is 1364, which is a well-known port number reserved for Sterling Connect:Direct on the Internet.
DYNAMIC DNS	Specifies that symbolic address resolution will be used for this adjacent node when the IP address of an inbound connection attempt cannot be matched to an existing IP address.
CRC	Indicates whether the setting for Cyclic Redundancy Checking (CRC) established in the Set Initialization Parameters Screen (Screen 2 of 4) can be overridden for this node (see <i>Set Initialization Parameters</i> on page 50). ON—Indicates that the CRC setting can be changed for this node. OFF—Indicates that the CRC setting cannot be changed for this node. Blank—Indicates that the default CRC setting will be used.

Entry Fields	Description
SECURE	Identifies the node name in the Sterling Connect:Direct Secure Plus file (SPNODES) containing the Sterling Connect:Direct Secure Plus parameters for connections over this node. Identify this directory if you have purchased Sterling Connect:Direct Secure Plus.
VOLUME	Specifies the default Volume.Subvolume name for files received over this node.
DESCRIPTION	Provides a brief description of this adjacent node.
ALLOC.RETRY.ADJ Error Codes	Identifies the Sterling Connect:Direct message IDs from the adjacent node to treat as file allocation failures following the failure of a COPY step. Allocation failures will be retried by the local node based on the ALLOC-RETRY-INT and ALLOC-RETRY-MAX parameters set on the Set Initialization Parameters Screen (Screen 1 of 4). See <i>Set Initialization Parameters</i> on page 50 for more information.
Network Map Obey File	Displays the file that defines the network map values (LOCAL.NODE, ADJACENT.NODEs, LUs, AMGRs, LOGMODEs). The default file name is NDMINSTL.ONDMNET.
Home Term	Specifies a home terminal other than the default (the server's home terminal). Use this parameter if the server's home terminal is \$VHS (which allows a maximum of 512 openers), and if a large number of LUs will run concurrently.

3. Depending on the node, supply the following information as required:
 - ❖ For a Sterling Connect:Direct for i5/OS node, supply the library name for Sterling Connect:Direct on the i5/OS.
 - ❖ For TCP/IP protocol, supply the symbolic host name or numerical IP address of the host running Sterling Connect:Direct and the number of the port that Sterling Connect:Direct monitors for connection requests.
4. Save the specified data to your network map obey file by pressing **SF2**. Bypass this screen by pressing **F16**.
5. Repeat this procedure as necessary to define multiple adjacent nodes.

Enter LU Information

Option 1.4.3 generates LU definitions for the network map. This option defines the SNAX or TCP/IP LUs used for communication between the local and adjacent nodes. Complete the following procedure to define LU information:

1. From the **Enter Adjacent Node Information** panel, press **F16** to open the Enter LU Information panel.

```

=====
08.03.2011          Connect:Direct HP NonStop          10:05:53 AM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 1.4.3      Enter LU Information      Quick Path -> 1.4.4

          LU           :
          LOGMODE      :
          CPU          :
          LU TYPE      :
          LU MAXRETRY   :
          LU TIMEOUT   : 3
          PRI          :
          TERM         :
          USE          :
          TCPNAME      :

Network Map Obey File: $DSMSCM.NDMINSTL.ONDMNET

                                     <F16>=Quick Path
SF1=Help SF2=Save SF3=Prev Option SF4=Main Menu SF5=Print SF16=Exit

```

2. Provide the following information for each LU:

Entry Fields	Description
LU	Specifies a 1–26 alphanumeric character name of an LU inserted in the network map. You can include system names. For SNA LUs, you must fully qualify the LU name, for example, \$L1.#L01.
LOGMODE	Specifies a 1–8 character LOGMODE entry associated with an LU. For secondary LU (SLU) sessions with IBM systems (any LUs defined as SNA secondary), specify a VTAM LOGMODE. For primary LU (PLU) sessions, specify a Sterling Connect:Direct LOGMODE. Ignore this field if LU TYPE=TCP.D or TCPS.
CPU	Specifies the HP NonStop central processing unit (CPU) where processing for this LU is initiated. Specify primary and backup CPUs by enclosing the grouping in parentheses. Values for this parameter range from 0 to 15 and are dependent on your HP NonStop system.
LU TYPE	Identifies the communications protocol for the LU. Valid values for this field are: SNA.P—Defines the LU as a primary LU (PLU) using SNA LU0. If you specify SNA.P, LOGMODE is a required field. SNA or SNA.S—Defines the LU as a secondary LU (SLU) using SNA LU0. If you specify SNA or SNA.S, LOGMODE is a required field. TCP.D—Identifies the LU as a dynamic LU using TCP/IP for connectivity. Dynamic LUs are started by Sterling Connect:Direct as needed and automatically stopped upon Process completion. TCP.S—Identifies the LU as a static LU using TCP/IP for connectivity. LU shuts down and restarts automatically following a Sterling Connect:Direct Secure Plus session.

Entry Fields	Description
LU MAXRETRY	<p>Specifies the number of times to attempt connection to a session with the defined LU or to attempt a Process that failed because a session is unavailable. The valid range of values for this field is 0–99; the field can also be blank.</p> <p>If the LU MAXRETRY field is blank and no Process is waiting execution in the TCQ, three attempts are made to connect to a session with the LU.</p> <p>If an error occurs during Process execution and the LU MAXRETRY field is blank, the number of attempts to connect to a session with the LU defaults to the value specified in the ADJACENT NODE MAXRETRY field. If you type 0 in this field, Sterling Connect:Direct retries indefinitely. The MAXRETRY parameter for the LU overrides the MAXRETRY parameter on the adjacent node record.</p>
LU TIMEOUT	<p>Specifies the time Sterling Connect:Direct waits for an SNA or TCP/IP I/O to complete. An error is generated if an SNA or TCP/IP I/O does not complete in the specified time frame. Valid values for this parameter range from 1 to 30 minutes; the default is 3 minutes.</p> <p>Note: The LU TIMEOUT value automatically increases to 30 minutes during file open processing. This increase provides additional time for tape mounts.</p>
PRI	<p>Defines the priority of the LU in the CPU in which it runs. Enables you to facilitate load-balancing. Values range from 1 to 199. If left blank, the LU defaults to the server Process priority, minus one.</p>
TERM	<p>Specifies the home terminal file to assign to the session manager.</p> <p>Use this parameter if you are using the Virtual Hometerminal System for Sterling Connect:Direct and you need more than 512 simultaneous sessions.</p> <p>If no TERM value is specified, the system will assign the home terminal of the server to the session manager.</p>
USE	<p>Specifies whether the LU is reserved for inbound, outbound, or any transmissions. Valid values for this field are:</p> <p>PNODE—Reserves the LU for inbound sessions.</p> <p>SNODE—Reserves the LU for outbound sessions.</p> <p>ANY—Defines the LU as available for inbound or outbound sessions. This is the default value.</p> <p>If you reserve at least one LU for SNODE sessions only, this will guarantee that session managers will always be available for incoming traffic regardless of how many PNODE sessions are submitted on the local system.</p> <p>If you reserve at least one LU for PNODE sessions, this will guarantee that session managers will be available for locally submitted processes regardless of how many SNODE sessions come in to the local system.</p> <p>This parameter is only valid for TCP.D and TCP.S communications protocols.</p> <p>Note: TCP/IP outbound session requests should only use the TCP/IP stacks and related LUs defined in the netmap for that adjacent node. TCP/IP stacks defined in the TCPLISTENx entries in the NDMINIT file should only be used to listen for incoming connection requests. If you use TCPLISTENx stacks for outbound connections, it will be impossible to restrict certain adjacent nodes to certain communication paths.</p>
TCPNAME	<p>Identifies one or more local TCP process names to use when initiating an outbound session. Process names can be system-qualified. This parameter facilitates load balancing outbound TCP traffic. Multiple entries provide for session retry attempts from a different TCP stack. The attempts are retried in the order listed.</p>
Network Map Obey File	<p>Displays the file that defines the network map values (LOCAL.NODE, ADJACENT.NODEs, LUs, AMGRs, LOGMODEs). The default file name is NDMINSTL.ONDMNET.</p>

3. Save the specified data to your network map obey file by pressing **SF2**. Bypass this screen by pressing **F16**.
4. Repeat this procedure to define multiple LUs and press **SF2** to save each LU definition.

If you are running Sterling Connect:Direct with any LUs defined as SNA, refer to *Enter LOGMODE Information* on page 73 to build LOGMODE records, or you can load the default LOGMODE records provided

with the product. Refer to the *Load the Default LOGMODE Records* on page 83 to review the default LOGMODE records.

Note: For SNA LUs, ensure that the LU is defined to a line through SCF prior to its insertion in the network map.

Enter API Information

Option 1.4.4 generates API Manager definitions for the network map. This option defines the TCP/IP connection between the AMGR used for communications between the adjacent node and the external application. Complete the following procedure to define AMGR information:

1. From the **Enter Adjacent Node Information** panel, press **F16** to open the Enter API mgr Information panel

```

=====
06.03.2011          Connect:Direct HP NonStop          02:36:22 PM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 1.4.4  Enter API mgr Information      Quick Path -> 1.4.5

                AMGR      :
                CPU       :
                PRI       :
                TCPNAME   :
                PORT NUMBER :
                TERM      :
                TIMEOUT    :

Network Map Obey File: $DSMSCM.NDMINSTL.ONDMNET

                <F16>=Quick Path
SF1=Help  SF2=Save  SF3=Prev Option  SF4=Main Menu  SF5=Print  SF16=Exit

```

2. Provide the following information for each AMGR:

Entry Fields	Description
AMGR	Specifies the 1–25 alphanumeric character name of the API Manager. This is a required field.
CPU	Specifies the HP NonStop central processing unit (CPU) where processing for this API Manager is initiated. Specify primary and backup CPUs by enclosing the grouping in parentheses. Values for this parameter range from 0 to 15 and are dependent on your HP NonStop system.
PRI	Defines the priority of the AMGR in the CPU in which it runs. Enables you to facilitate load-balancing. Values range from 1 to 199. If left blank, the API Manager defaults to the server Process priority, minus one.

Entry Fields	Description
TCPNAME	Identifies one or more local TCP process names to use when initiating an outbound session. This is a required field. Process names can be system-qualified. This parameter facilitates load balancing for outbound TCP traffic. Multiple entries provide for session retry attempts from a different TCP stack. The attempts are retried in the order listed.
PORT NUMBER	Specifies the communications port that Sterling Connect:Direct monitors for connection requests. This is a required field. The format is a number. The default is 1364.
TERM	Specifies the home terminal file to assign to the API manager. Use this parameter if you are using the Virtual Hometerminal System for Sterling Connect:Direct and you need more than 512 simultaneous sessions. If no TERM value is specified, the system will assign the home terminal of the server to the API manager.
TIMEOUT	Specifies the time Sterling Connect:Direct waits for TCP/IP I/O to complete. An error is generated if TCP/IP I/O does not complete in the specified time frame. Valid values for this parameter range from 1 to 30 minutes; the default is 3 minutes.
Network Map Obey File	Displays the file that defines the network map values (LOCAL.NODE, ADJACENT.NODEs, LUs, AMGRs, LOGMODEs). The default file name is NDMINSTL.ONDMNET.

Relate Adjacent Nodes with LUs

The next step in defining the network map is to relate the LUs to the adjacent nodes with which they communicate. Option 1.4.5 links adjacent nodes and the LUs they use to communicate. Multiple LUs are related to the same adjacent node. Complete the following procedure to activate option 1.4.4 and relate the LUs to the adjacent nodes:

1. Press **F16** to select option 1.4.5 and associate adjacent nodes with the LUs with which they communicate. The Relate Adjacent Nodes with LUs panel displays:

```

=====
08.03.2011          Connect:Direct HP NonStop          10:07:02 AM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 1.4.5      Relate Adjacent Nodes      Quick Path -> 1.4.6
                             with LUs

                                ADJACENT.NODE :
                                LU              :

Network Map Obey File: $DSMSCM.NDMINSTL.ONDMNET

                                <F16>=Quick Path
SF1=Help  SF2=Save  SF3=Prev Option  SF4=Main Menu  SF5=Print  SF16=Exit

```

2. Provide the name of an adjacent node and the name of the LU you want to relate to it. Following is a description of each entry field:

Entry Fields	Description
ADJACENT.NODE	Specifies the 1–16 alphanumeric character name of the adjacent node to relate to an LU.
LU	Specifies the fully qualified 1–25 alphanumeric character name of the LU to be related to an adjacent node, for example, \$LINE1.#LU03.
Network Map Obey File	Displays the file that defines the network map values (LOCAL.NODE, ADJACENT.NODEs, LUs, AMGRs, LOGMODEs). The default file name is NDMINSTL.ONDMNET.

You can only relate adjacent nodes to LUs of the same type. For example, you cannot relate an adjacent node with a TYPE parameter of PNODESNODE to an LU with a TYPE of SNA.S. The following table shows valid relationships between LUs and adjacent nodes:

Adjacent Node Type	LU Type (Protocol)			
	SNA.S	SNA.P	PNODE-SNODE	TCP.D/TCP.S.
z/OS	YES	YES (SNAX)	NO	YES
VM	YES	YES (SNAX)	NO	YES
VSE	YES	YES (SNAX)	NO	YES
OpenVMS	NO	NO	NO	YES
HP NonStop	YES	YES	NO	YES
i5/OS	NO	YES	NO	YES
PNODESNODE	NO	NO	YES	NO
UNIX	NO	NO	NO	YES
Microsoft Windows	NO	NO	NO	YES
Sterling External Authentication Server	NO	NO	NO	NO

Note: You can only relate the NDM.API type to API manager entries (AMGRs). To implement connections between Sterling Connect:Direct and Sterling Control Center or Sterling Connect:Direct Browser User Interface, use an AMGR definition.

3. Save the specified data to your network map obey file by pressing **SF2**. Bypass this screen by pressing **F16**.
4. Repeat this procedure as many times as necessary to relate multiple nodes to an LU or multiple LUs to an adjacent node.

Relate Adjacent Nodes with AMGRs

The next step in defining the network map is to relate AMGRs to the adjacent nodes with which they communicate. Option 1.4.6 links adjacent nodes and the AMGRs they use to communicate. Multiple AMGRs are related to the same adjacent node.

Complete the following procedure to activate option 1.4.6 and relate the LUs to the adjacent nodes:

1. Press **F16** to select option 1.4.6 and associate adjacent nodes with the AMGRs with which they communicate. The Relate API Nodes with API mgrs panel displays:

```

=====
08.04.2011          Connect:Direct HP NonStop          10:23:57 AM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 1.4.6  Relate API Nodes with API mgrs  Quick Path -> 1.4.7

                                ADJACENT.NODE :

                                APIMGR       :

                                Network Map Obey File: $DSMSCM.NDMINSTL.ONDMNET

                                <F16>=Quick Path
SF1=Help  SF2=Save  SF3=Prev Option  SF4=Main Menu  SF5=Print  SF16=Exit

```

2. Provide the name of an adjacent node and the name of the AMGR you want to relate to it. Following is a description of each entry field:

Entry Fields	Description
ADJACENT.NODE	Specifies the 1–16 alphanumeric character name of the adjacent node to relate to an LU.
APIMGR	Specifies the 1–25 alphanumeric character name of the API Manager.
Network Map Obey File	Displays the file that defines the network map values (LOCAL.NODE, ADJACENT.NODEs, LUs, AMGRs, LOGMODEs). The default file name is NDMINSTL.ONDMNET.

3. Save the specified data to your network map obey file by pressing **SF2**. Bypass this screen by pressing **F16**.
4. Repeat this procedure as many times as necessary to relate multiple nodes to an AMGR or multiple AMGRs to an adjacent node.

Enter LOGMODE Information

Option 1.4.7 defines the LOGMODE attributes used by an LU to build a bind image when Sterling Connect:Direct for HP NonStop is operating as an SNA primary node and is communicating with an i5/OS node or another HP NonStop node. The LOGMODE is not required if Sterling Connect:Direct is always the

SNA secondary node or if TCP/IP is the only connection used. If you do not require these records, or if you prefer to use the values provided in the ONDMLOG file provided with the product (Option 2.4), bypass this option by pressing **F16**.

To create individualized tables, complete the following procedure to activate option 1.4.7 and define the LOGMODE attributes used by an LU:

1. Press **F5** to select option 1.4.7 and enter LOGMODE information. The Enter LOGMODE Information panel displays:

```

=====
08.03.2011          Connect:Direct HP NonStop          10:09:46 AM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 1.4.7      Enter LOGMODE Information      Quick Path -> 1.5

LOGMODE      :
RUSIZE       : 8686
PSNDPAC      : 00
SSNDPAC      : 00
SRCVPAC      : 00
PSERVIC      : 00000000000000000000000000000000
TYPE         : 01
FMPROF       : 04
TSPROF       : 04
PRIPROT      : B1
SECPROT      : B1
COMPROT      : 7080

Network Map Obey File: $DSMSCM.NDMINSTL.ONDMNET

SF1=Help SF2=Save SF3=Prev Option SF4=Main Menu SF5=Print SF16=Exit
<F16>=Quick Path

```

2. Either press **F16** to bypass this panel and use the default settings or supply the following information:

Entry Fields	Description
LOGMODE	Specifies the 1–8 alphanumeric character name of the LOGMODE record.
RUSIZE	Specifies the transmission buffer size or the maximum length of data (request units), in bytes, Sterling Connect:Direct can transmit between the primary and secondary LUs in a session. The default, in hexadecimal, is 8686. Refer to <i>Compute RU Sizing</i> on page 75 for instructions on computing the RU size.
PSNDPAC	Specifies the primary send pacing count. Code any hexadecimal number in the range of 0 through 3F. The default value is 00.
SSNDPAC	Specifies the secondary send pacing count. Code any hexadecimal number in the range of 0 through 3F. The default value is 00.
SRCVPAC	Specifies the secondary receive pacing count. Code any hexadecimal number in the range of 0 through 3F. The default value is 00.
PSERVIC	Represents the LU presentation services profile and usage field for this logon mode. The default value, in hexadecimal, is 00000000000000000000000000000000.
TYPE	Indicates the type of NLD command represented by this LOGMODE entry. The default value is 01.

Entry Fields	Description
FMPROF	Represents the function management profile for this logon mode. The default value is 04.
TSPROF	Represents the transmission services profile for this logon mode. The default value is 04.
PRIPROT	Represents the primary LU protocol for this logon mode. The default value, in hexadecimal, is B1.
SECPROT	Represents the secondary LU protocol for this logon mode. The default value, in hexadecimal, is B1.
COMPROT	Represents the common LU protocols for this logon mode. The default value, in hexadecimal, is 7080.
Network Map Obey File	Displays the file that defines the network map values (LOCAL.NODE, ADJACENT.NODEs, LUs, AMGRs, LOGMODEs). The default file name is NDMINSTL.ONDMNET.

- To save the specified data to your network map obey file, press **SF2**.
- Repeat this procedure as necessary to define multiple LOGMODE records.

Compute RU Sizing

RU sizing is assigned on the host node through the RUSIZE entry in the LOGMODE table. The first two digits of the RUSIZE value (RUSIZE = X'abab') apply to the secondary logical unit (LU); the last two digits apply to the primary LU.

The formula to compute RUSIZE is $a \times 2^b$. The following table shows valid values for the RUSIZE parameter. For example, a primary and secondary RU size of 256 is expressed as RUSIZE=X'8585', or 8×2^5 .

a								
b	8*	9	A(10)	B(11)	C(12)	D(13)	E(14)	F(15)
0	8	9	10	11	12	13	14	15
1	16	18	20	22	24	26	28	30
2	32	36	40	44	48	52	56	60
3	64	72	80	88	96	104	112	120
4	128	144	160	176	192	208	224	240
5*	256	288	320	352	384	416	448	480
6	512	576	640	704	768	832	896	960
7	1,024	1,152	1,280	1,408	1,536	1,664	1,792	1,920
8	2,048	2,304	2,560	2,816	3,072	3,328	3,584	3,840
9	4,096	4,608	5,120	5,632	6,144	6,656	7,168	7,680
A(10)	8,192	9,216	10,240	11,264	12,288	13,312	14,336	15,360
B(11)	16,384	18,432	20,480	22,528	24,576	26,624	28,672	30,720
C(12)	32,768	36,864	40,960	45,056	49,152	53,248	57,344	61,440
D(13)	65,536	73,728	81,920	90,112	98,304	106,496	114,688	122,880
E(14)	131,072	147,456	163,840	180,224	196,608	212,992	229,376	245,760
F(15)	262,144	294,912	327,680	360,448	393,216	425,984	458,752	491,520

Create Data Files

Option 1.5 creates data files required to run Sterling Connect:Direct. These files include AUTHFILE, CKPTFILE, INFOFILE, MSGFILE, NDMCDL, NETFILE, SECFILE, STATFILE, STATSRCH, TCQFILE, TCQXFILE, TYPEFILE, and XLFILE. When you extracted the installation files, a file containing FUP control statements that defines all of your files in a subvolume named NDMFILES was also included. This option invokes FUP and defines and creates these files.

Complete the following procedure to activate option 1.5 and create data files:

1. Press **F16** to select 1.5. The Create Files panel displays:

```

=====
08.03.2011          Connect:Direct HP NonStop          10:12:26 AM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 1.5          Create Files          Quick Path -> 2

                                NDMFUPIN File   : $DSMSCM.NDMINSTL.NDMFUPIN
                                FUP Out File    : $S.#NDM.FUP

-----
                                <F16>=Quick Path
SF1=Help  SF2=Execute SF3=Prev Option SF4=Main Menu  SF5=Print  SF16=Exit

```

2. To change the subvolume for these files, edit the NDMFUPIN file and modify the specified subvolume. You can invoke the editor through Quick Path Option U.

Entry Fields	Description
NDMFUPIN File	Specifies the HP NonStop name for the file containing Sterling Connect:Direct file definitions.
FUP OUT File	Contains the output generated by FUP. The default file name is \$S.#NDM.FUP. If the file name is blank, Sterling Connect:Direct routes output to the user terminal.

The FUP Out file name is a default name that you can modify at this screen. This spooler file is used for the report generated by FUP as your files are defined. If you do not specify a value for the output file, FUP routes messages to your terminal.

3. To execute the HP NonStop FUP utility, press **SF2**. Bypass this screen by pressing F16. When AIMS is creating these files, your screen temporarily goes blank and enters conversational mode. Sterling Connect:Direct generates a message indicating that the NDMFUPIN Obey File is executing. Upon completion, a prompt directs you to *Press <ENTER> or <RETURN> to continue.*

Start Sterling Connect:Direct for HP NonStop

Option 2 starts Sterling Connect:Direct. The final portion of the installation procedure consists of the following tasks:

- ❖ Resolving library references in Sterling Connect:Direct executables
- ❖ Loading optional translation files in the Xlate file—See Chapter 6, *Defining Character Translation Tables*, in *IBM Sterling Connect:Direct for HP NonStop Administration Guide*.
- ❖ Starting the Sterling Connect:Direct server Process—NDMSRVR is created and monitored by a fault-tolerant program named NDMMON. When an abnormal end (ABEND) occurs on the NDMSRVR process or the CPU executing the NDMSRVR process fails, NDMMON creates a new NDMSRVR process, retaining the original name and parameters. The NDMMON process terminates when the NDMSRVR process is stopped with a Sterling Connect:Direct STOP ALL command or an HP NonStop STOP Process command. It is not required that you run NDMMON. NDMMON ensures fault-tolerant processing.
- ❖ Loading the optional NDM.DEFAULT user to the AUTHFILE—Obey File to add both the installer and the NDM.DEFAULT records in the AUTHFILE. After running the NDMSRVR process, load the default user to the authorization file and insert a record that defines the installer as the Sterling Connect:Direct system administrator and the NDM.DEFAULT record. See Chapter 2, *Defining and Maintaining Security*, in *IBM Sterling Connect:Direct for HP NonStop Administration Guide*.
- ❖ Loading network map definitions into the NETFILE
- ❖ Loading optional LOGMODE records provided with the product into the NETFILE. This step is only required if Sterling Connect:Direct for HP NonStop is used as an SNA primary node with i5/OS or another HP NonStop.

Note: Before continuing the installation, make sure you have identified the location of the initialization parameters file for this node. Settings defined in the parameter definitions called NDMSTDL, NDMSMGR, and STUTIL are resolved during the following procedure.

Complete the following steps to start Sterling Connect:Direct for HP NonStop:

1. Press **F2** to select the Start Connect:Direct option. The Start Connect:Direct panel displays:.

```

=====
08.03.2011          Connect:Direct HP NonStop          10:13:36 AM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 2          Start Connect:Direct          Quick Path -> 2.1

      1. Resolve Library References in Connect:Direct Executables
      2. Load the XLATE file
      3. Start the Connect:Direct Server
      4. Load the Default User Authorization
      5. Load the Network Map
      6. Load the Default LOGMODE records

-----
F<n>=Options          <F16>=Quick Path
SF1=Help              SF3=Prev Option   SF4=Main Menu   SF5=Print   SF16=Exit

```

2. Press **F1** to select option 1. This option enables you to map required Sterling Connect:Direct components to the executable files that use these components to run Sterling Connect:Direct. The Resolve User Library References panel displays:

```

=====
03.06.2011          Connect:Direct HP NonStop          10:14:15 AM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 2.1  Resolve User Library References  Quick Path -> 2.2

It is necessary to execute this step after installing or updating
any Connect:Direct object module(s), or fatal errors will result!.

NOTE:  1. All Connect:Direct Processes must be stopped
        2. The user executing NDMAIMS must have WRITE
           access to the Connect:Direct executables.

CDLIB           : $DSMSCM.NDMOBJ.CDLIB
NDMMON Object Name : $DSMSCM.NDMOBJ.NDMMON
Server Object Name : $DSMSCM.NDMOBJ.NDMSRVR
NDMCOM Object Name : $DSMSCM.NDMOBJ.NDMCOM
NDMMSG Object Name : $DSMSCM.NDMOBJ.NDMMSG
NDMXLATE Object Name : $DSMSCM.NDMOBJ.NDMXSPL
NDMSPL Object Name : $DSMSCM.NDMOBJ.NDMXSPL
CDLIBRES File    : $DSMSCM.NDMINSTL.CDLIBRES
Lib Res OUT File  : $S.#LIBOUT

                                                                    <F16>=Quick Path
SF1=Help  SF2=Execute SF3=Prev Option SF4=Main Menu  SF5=Print  SF16=Exit

```

3. Identify the location of the following files:

Entry Field	Description
CDLIB	Specifies the location of the Sterling Connect:Direct object library.
NDMMON Object Name	Specifies the location of the Monitor Program.
Server Object Name	Specifies the location of the Server Program.
NDMCOM Object Name	Specifies the location of the Command Interface Program.
NDMMSG Object Name	Specifies the location of the Message Utility Program.
NDMXLATE Object Name	Specifies the location of the Translation Program.
NDMSPL Object Name	Specifies the location of the print process module.
CDLIBRES File	Contains RUN commands (MIPS platforms) or ELD commands (HP Integrity platform) that update the user library reference in each Sterling Connect:Direct application module to point to the locally-installed CDLIB module.
Lib Res OUT File	Specifies the TAOL output file showing the resolution of the preceding objects.

4. To load the XLATE file, press **F2** to activate Option 2.2 and execute the Xlate facility to load any user-defined character translation tables into the file created. The Load optional Xlate Tables panel displays:

```

=====
08.03.2011          Connect:Direct HP NonStop          10:15:15 AM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 2.2          Load the Xlate File          Quick Path -> 2.3

                                NDMXLATE Object File: NDMOBJ.NDMXLATE

                                XLFILE                   : $DSMSCM.NDMINSTL.XLFILE

                                NDMXLIN                   : NDMINSTL.NDMXLIN

                                NDMXLATE Out File         : $$.#NDMAIMS.XLT

-----
                                                                <F16>=Quick Path
SF1=Help  SF2=Execute SF3=Prev Option SF4=Main Menu  SF5=Print  SF16=Exit

```

5. Provide the following information to identify the translation table to load:

Entry Fields	Description
NDMXLATE Object File	Specifies the object file name of the Xlate program.
XLFILE	Specifies the key-sequenced file to contain translation tables.
NDMXLIN	Specifies the text file containing the commands and data for the NDMXLATE utility to create translation tables in XLFILE.
NDMXLATE Out File	Contains output generated by the Xlate utility. The default file name is \$\$.#NDMAIMS.XLT. If the field is blank, Sterling Connect:Direct routes output to the user terminal.

6. Press **SF2** to execute the Xlate load program. Bypass this screen by pressing **F16**.
When AIMS is loading the Xlate file, the screen temporarily goes blank and enters conversational mode. Sterling Connect:Direct generates a message indicating that the Xlate load is executing.
7. When the translation file is loaded, press **Enter** when prompted.

8. Press **F16** to go to the next step and start the Sterling Connect:Direct Server. Option 2.3 starts the Sterling Connect:Direct server (NDMSRVR) process and the associated NDMMON process. The Start the Connect:Direct Server panel displays:

```

=====
08.03.2011          Connect:Direct HP NonStop          10:15:50 AM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 2.3  Start the Connect:Direct Server  Quick Path -> 2.4

      NDMMON Object Name      : NDMOBJ.NDMMON

      Server Object Name      : NDMOBJ.NDMSRVR

      Server Process Name     : $NDMS
      Initialization
      Parameters File Name    : $DSMSCM.NDMINSTL.NDMINIT

      SERVER Out File         : $$.#NDM

      NDMMON Process Name     : $MON

      NDMMON Primary CPU      :          Backup CPU:

-----
                                     <F16>=Quick Path
SF1=Help  SF2=Execute SF3=Prev Option SF4=Main Menu  SF5=Print  SF16=Exit

```

9. Specify values or accept the default values for the following parameters:

Entry Fields	Description
NDMMON Object Name (optional)	Specifies the Sterling Connect:Direct monitor program. If this field is blank, the server runs without the benefit of fault-tolerant operation.
Server Object Name	Specifies the object name of the Sterling Connect:Direct server program.
Server Process Name	Specifies the name of the NDMSRVR process.
Initialization Parameters File Name	Specifies the file containing the initialization parameters read by NDMSRVR.
SERVER Out File	Specifies the spooler file that contains NDMSRVR output.
NDMMON Process Name	Specifies the process name of the NDMMON monitor. Specify a value only when you are running NDMSRVR through NDMMON. If you omit the NDMMON Object Name, this field must be blank.
NDMMON Primary CPU	This parameter and the Backup CPU parameter start NDMMON as a NonStop process pair. Specify values only when you are running NDMSRVR through NDMMON.
Backup CPU	Starts NDMMON as a NonStop process pair. Specify values only when you are running NDMSRVR through NDMMON.

10. Press **SF2** to execute this option and start the Sterling Connect:Direct server. Bypass this screen by pressing **F16**.

Note: If Sterling Connect:Direct generates a message indicating AIMS is unable to start the server, verify that the server and NDMMON processes are not currently running. In addition, check your output file and EMS log (\$0) for any other messages. If you do not specify an output file, Sterling Connect:Direct routes messages to the EMS log or your home terminal.

11. Press **F16** to select Option 2.4 and load the Default User Authorization. The Load the Default User Authorization panel displays:

```

=====
08.03.2011          Connect:Direct HP NonStop          10:16:52 AM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 2.4          Load the Default User          Quick Path -> 2.5
                             Authorization

Server Process Name : $NDMS
User Definitions
Obey File           : $DSMSCM.NDMINSTL.ONDMUSER

NDMCOM Object Name  : NDMOBJ.NDMCOM

NDMCOM Out File     : $S.#NDMAIMS.DEFUSER

Password           :                (Password will not be displayed)

-----
SF1=Help SF2=Execute SF3=Prev Option SF4=Main Menu   <F16>=Quick Path
SF5=Print SF16=Exit

```

12. Provide the following information:

Entry Fields	Description
Server Process Name	Specifies the name of the executing NDMSRVR.
User Definitions Obey File	Contains the NDM.DEFAULT definition generated in Option 1.3.
NDMCOM Object Name	Specifies the object file of the Sterling Connect:Direct command interpreter.
NDMCOM OUT File	Contains output generated by this option. All steps performed by AIMS to load the default user are recorded in the specified OUT file. This includes the logon of NDMCOM, which records the password provided in this option. You can set the OUT file so that access is only permitted for the administrator. You can set the OUT file to the Process \$NULL, if it is set up for your HP NonStop system. If the field is blank, Sterling Connect:Direct routes output to the user terminal.
Password	Specifies the password of the user logged on and performing this installation. The password is not displayed on this screen.

13. Type your password to allow AIMS to identify your user ID as the administrator in the AUTHFILE.
14. Press **SF2** to load the installer and NDM.DEFAULT records.

Note: You must run NDMSRVR before you execute this option.

Your screen temporarily goes blank and enters conversational mode during this step. Sterling Connect:Direct generates a message indicating that the option is executing.

15. When the default records are loaded, press **Enter** when prompted.

Note: To ensure sufficient authority to load the network map, LOGMODEs, and translation tables, run this option before proceeding with the remaining AIMS options.

Load the Network Map

The next step in the installation procedure is loading the network map definitions. Option 2.5 loads the network map entries that you defined during the installation. Complete the following steps to load the network map:

1. Press **F16** to activate option 2.5 and begin loading the network map. The Load the Network Map panel displays:

```

=====
08.03.2011          Connect:Direct HP NonStop          10:17:25 AM
3.6.00             Automated Installation & Management System (AIMS)
=====
Current Option -> 2.5      Load the Network Map      Quick Path -> 2.6

Server Process Name   : $NDMS

Network Map Obey File: $DSMSCM.NDMINSTL.ONDMNET

NDMCOM Object Name    : NDMOBJ.NDMCOM

OUT File Name         : $$.#NDMAIMS.NETMAP

-----
                                     <F16>=Quick Path
SF1=Help  SF2=Execute SF3=Prev Option SF4=Main Menu  SF5=Print  SF16=Exit

```

- Use the default names or supply the following information:

Entry Fields	Description
Server Process Name	Specifies the name of the executing NDMSRVR.
Network Map Obey File	Contains the network map definitions generated in Options 1.4.1 through 1.4.5.
NDMCOM Object Name	Specifies the object file of the Sterling Connect:Direct command interpreter.
OUT File Name	Contains output generated by NDMCOM. The default file name is \$S.#NDMAIMS.NETMAP. If the field is blank, Sterling Connect:Direct routes output to the user terminal.

Note: You must run NDMSRVR before executing this option. Also, you must have NETMAP update authority; the installer automatically has this authority.

- Press **SF2** to load the network map definitions. Bypass this screen by pressing F16.
- When prompted, press **Enter** to continue.

Load the Default LOGMODE Records

The next step in the installation procedure is loading the LOGMODE records. Option 2.6 loads the LOGMODE records you defined and those provided with the product. Complete the following steps to load the LOGMODE records:

- Press **F16** to select option 2.6 and load the LOGMODE records. The Load the default LOGMODE Records panel displays:

```

=====
08.03.2011          Connect:Direct HP NonStop          10:18:06 AM
3.6.00      Automated Installation & Management System (AIMS)
=====
Current Option -> 2.6          Load the default          Quick Path -> Q
                             LOGMODE Records

      Server Process Name   : $NDMS

      LOGMODE Obey File     : $DSMSCM.NDMINSTL.ONDMLOG

      NDMCOM Object Name    : NDMOBJ.NDMCOM

      OUT File Name         : $S.#NDMAIMS.LOGMODE

-----
                                     <F16>=Quick Path
SF1=Help  SF2=Execute SF3=Prev Option SF4=Main Menu  SF5=Print  SF16=Exit

```

- To load the default LOGMODE records, press F16 or change the following values:

Entry Fields	Description
Server Process Name	Specifies the name of the executing NDMSRVR.
LOGMODE Obey File	Contains the default network map LOGMODE records.
NDMCOM Object Name	Specifies the object file of the Sterling Connect:Direct command interpreter.
OUT File Name	Contains output generated by NDMCOM. The default file name is \$\$.#NDMAIMS.LOGMODE. If the file name is blank, Sterling Connect:Direct routes output to the user terminal.

LOGMODE entries for iSeries and HP NonStop are defined in the LOGMODE Obey File as follows:

LOGMODE	RUSIZE	PSNDPAC	SSNDPAC	SRCVPAC
LOGAS400	8989	10	07	07
LOGTAN	8989	10	07	07

- To load the LOGMODE entries, press **SF2**.

Note: You must run NDMSRVR before you execute this option.

- When the LOGMODE record file is loaded, press **Enter** when prompted.

Verify the Installation

Perform the following steps to verify the installation:

- Press **SF16** to exit AIMS.
- Change to the volume where the NDMCOM object file resides.
- Type RUN NDMCOM at the TAOL prompt. If you changed the default server name, issue the command as RUN NDMCOM server-name.
- Execute Sterling Connect:Direct commands, such as SELECT USER and SELECT NETMAP, to ensure that the installation was successful.

Starting and Stopping Sterling Connect:Direct for HP NonStop

This chapter provides the information to perform the following tasks:

- ❖ Starting Sterling Connect:Direct for HP NonStop
- ❖ Changing initialization parameters
- ❖ Stopping Sterling Connect:Direct for HP NonStop

Starting Sterling Connect:Direct for HP NonStop

A fault-tolerant program named NDMMON creates and monitors the NDMSRVR Process. NDMMON provides for constant availability of the server. When an ABEND occurs on the NDMSRVR Process or the CPU executing the NDMSRVR Process fails, NDMMON creates a new NDMSRVR Process, retaining the original NDMSRVR Process name and parameters.

Sterling Connect:Direct for HP NonStop supports high-PIN processing for NDMMON and NDMSRVR.

The NDMMON Process only terminates when the NDMSRVR Process is stopped with a Sterling Connect:Direct STOP ALL command or an HP NonStop STOP PROCESS command.

Note: Refer to the *IBM Sterling Connect:Direct for HP NonStop User Guide and Reference* for instructions on starting NDMCOM.

Starting Sterling Connect:Direct for HP NonStop Manually

Issue the following command to start NDMMON and NDMSRVR outside of AIMS:

```
RUN NDMMON /IN ndmunitfile , OUT spooler-file-name ,  
TERM hometerm , NAME ndmmon-process-name , CPU number (primary),  
nowait/ backup CPU number|? ndmsrvr-process-name|?  
ndmsrvr-object-file|?
```

Following is a description of the NDMMON parameters:

Command	Description
srvipin	Specifies whether the NDMSRVR Process runs as a high- or low-PIN Process. The default is high-PIN. (Optional)
RUN NDMMON	Specifies the program that brings up NDMSRVR under NDMMON.
IN ndminifile	Specifies the file that contains initialization parameters read by NDMSRVR.
OUT spooler-file-name	Specifies the file that receives output from NDMSRVR and any process creation messages.
TERM hometerm	Specifies the home terminal of the application. Caution: It is strongly recommended that you explicitly declare an operations console or other permanent device to avoid possible interruption of the application in the event of a failure of the home terminal. The TERM parameter defaults to the local TACL if it is not specified; if the local TACL was dynamically started for a temporary TCP session under a terminal emulator, it will be stopped when the session stops.
NAME ndmmon-process-name	Specifies the name of the NDMMON Process.
CPU number	Specifies the number of the NDMMON primary CPU. This number is the number of any CPU on your system (from 0–15). If you do not specify this parameter, specify the default as the backup CPU number. When specifying this parameter, you must specify CPU and the number; however, the backup CPU is specified only by the number.
nowait	Specifies the HP NonStop Run command option that causes NDMSRVR to run in background mode.
backup CPU number	Specifies the number of the NDMMON backup CPU. This number is the number of any CPU on your system (from 0–15) or the default. If you set the parameter value to '?', any other cpu is used. ** <server-process-name> =\$NDMS ** <server-object-file> =NDMSRVR
ndmsrvr-process-name	Specifies the symbolic Process name for the new NDMSRVR Process. This name must be a valid HP NonStop Process name. Sterling Connect:Direct uses the default NDMSRVR Process name \$NDMS. If you set the parameter value to '?', the \$NDMS server process name is used.
ndmsrvr-object-file	Specifies the name of the file containing the object program to run. This name must be an existing program file name. Sterling Connect:Direct uses the default NDMSRVR. Partial file names are expanded using the current defaults for the system, volume, and subvolume. If you set the parameter value to '?', the NDMSRVR is used.

Starting Sterling Connect:Direct for HP NonStop Automatically

Startup commands for the HP NonStop system are typically in \$SYSTEM.STARTUP.CIIN. After the HP NonStop system is cold-started, the file executes automatically. Include Sterling Connect:Direct startup commands in the file to eliminate any additional operator intervention.

Note: To increase automation, set the value for QUIESCE in the NDMINIT file to NO, which starts the session managers automatically.

Modifying Initialization Parameters with the UPDATE PARM Command

Sterling Connect:Direct processes initialization parameters during startup. Initially, you set these parameters when you install Sterling Connect:Direct for HP NonStop. However, after installation, you can modify some of the parameters.

Use the UPDATE PARM command to dynamically alter the operating parameters from the NDMINIT file without restarting Sterling Connect:Direct for HP NonStop. When you restart the application, the operating parameters will be reset to their original values.

Note: To save the current operating parameters permanently to a file, issue the following NDMCOM command,

CD.5.>DISPLAY PARM OUT filename

For more information, see *Saving Changes to the Initialization Parameters File* in the *IBM Sterling Connect:Direct for HP NonStop User Guide and Reference*.

Format

Following is the UPDATE PARM command format:

UPDate PARM	CKITVL CRC CRCOVERRIDE DOMAINSERVER FILENAMEEXT LOGCPUTIME LOG-TCP-CONN-RQ NETMAPCHECK OSSFILES PRYDEF RUNTASKMSGID SENDNULLRECS SENDOPENFILE TCPBUFFSIZE
-------------	--

Required Parameters

The UPDATE PARM command has no required parameters.

Optional Parameters

Optional parameters for the UPDATE PARM command are as follows:

Parameter	Description
<u>CKITVL</u> =n	Specifies the default checkpointing interval or approximate number of bytes used for checkpointing. Valid values are nM (megabytes) and nK (kilobytes). The default is NONE. CKITVL=0K indicates that checkpointing is not used unless specified in the Sterling Connect:Direct Process. You must set the checkpoint interval (CKITVL) in increments of 56K for SNA LU0 connectivity. For details, refer to the Sterling Connect:Direct Processes web site at http://www.sterlingcommerce.com/documentation/processes/processhome.html .

Parameter	Description
CRC= <u>ON</u> OFF	Global setting for CRC checking for all PNODE Processes. ON—CRC checking is turned on. This is the default. OFF —CRC checking is not turned on.
CRCOVERRIDE= <u>YES</u> NO	Determines if PROCESS statement or ADJ NODE setting can override the global CRC parameter. YES—Can override global CRC parameter. This is the default. NO—Cannot override global CRC parameter.
DOMAINSERVER= <u>YES</u> <u>NO</u>	Determines if Sterling Connect:Direct can accept connection requests from domains specified in domain nodes. YES—Sterling Connect:Direct can accept connection requests from domains specified in domain nodes. NO—Sterling Connect:Direct cannot accept connection requests from domains specified in domain nodes. This is the default.
FILENAMEEXT= <u>YES</u> <u>NO</u>	File name extensions can be concatenated with platform name to create typekeys in the TYPE file to set file attributes. YES—File name extensions can be concatenated to set file attributes. NO—File name extensions cannot be concatenated to set file attributes. This is the default.
LOGCPUTIME= <u>YES</u> <u>NO</u>	Determines whether Sterling Connect:Direct logs usage statistics in the session statistics file, including statistics for Sterling Connect:Direct Secure Plus activities such as handshake and encryption. YES—Usage statistics are logged in the statistics file. NO—Usage statistics are not logged in the statistics file. This is the default.
LOG-TCP-CONN-RQ= <u>YES</u> NO	Indicates whether TCP connection requests are to be logged. Valid values are Y/N. When YES, the application logs inbound TCP connection requests and outgoing attempts to the STAT file in the following format: Date => 07.08.2008 Time => 10:35:23:88 MESSAGE - MSG Conn rcvd \NONSTOP.\$SAM2 port 17132 from fd:00::20a0:209:6bff:fe65:9a73 port 484 YES— enables logging of all inbound TCP connection requests and outgoing attempts.
NETMAPCHECK= <u>YES</u> <u>NO</u>	YES—Only accepts connections from nodes defined in the Netmap. NO—Accepts connections from any Sterling Connect:Direct node. This is the default.
OSSFILES= <u>YES</u> <u>NO</u>	YES—Include support for OSS files. NO—No support for OSS files included. This is the default.
PRTYDEF= <u>n</u>	Specifies the default priority for Processes submitted to Sterling Connect:Direct for HP NonStop. If you do not specify a priority on the PROCESS statement, Sterling Connect:Direct uses the default priority when placing the Process on the TCQ. Valid values are 0–15. Default value is 10 .
RUNTASKMSGID= <u>SRTT000I</u> <u>SRTT010I</u>	Defines the run task completion message. SRTT010I is the default.
SENDNULLRECS= <u>YES</u> <u>NO</u>	Controls the default action of a SEND operation when the session manager reads an ESDS file and encounters a zero-length record. If NO, the default action is to bypass the record. If YES, the zero-length record is sent.

Parameter	Description
SENDOPENFILE=YES NO <u>WARN</u>	Determines how Sterling Connect:Direct for HP NonStop responds if it opens a file for transmission, but the file is open for update by an external application (for example, the file is still being created). You can override this parameter by using the SYSOPTS parameter, SET OPENFILEXMT=YES, in the FROM clause of your COPY statement. YES - Executes the COPY step and reports SCPA000I following a successful termination. NO - Terminates the COPY step immediately with SFLH951I, RC=8, FDBK=0. <u>WARN</u> - Executes the COPY step, but reports SFLH950I, RC=4, FDBK=0 12. (12 means the file was still open when Sterling Connect:Direct reached the file EOF.)
TCPBUFFSIZE=n <u>30720</u>	Specifies the size of the data buffer passed between two nodes during a TCP session. This value is set to 8740 by default since this value gives the best throughput under most conditions. Before making changes to this value, ensure that you have run benchmarks to verify that throughput is improved. Valid values are 1024—31978. The value is set to 30720 by default.

Examples

The following command updates the TCPBUFFSIZE:

```
CD.4.>upd parm tcpbuffsize 16000
      SAPI210I: (RC=0, FDBK="0")
UPDate command successfully completed.
```

Editing the Initialization Parameters file

You can also change system settings by editing the initialization parameters file. Any changes made in the initialization parameters file take effect only after you stop and then start NDMSRVR. Ensure that any file names you specify correspond to the files created during installation. Fully qualify the file names if the files are on a different volume than the NDMINIT file.

Note: NDMINSTL.NDMINIT is the default file name of the initialization parameters file unless you change the name during installation.

The following table describes initialization parameters and the values set when you start Sterling Connect:Direct:

Initialization Parameter	Default Value	Description
ALLOC-RETRY-INT	00:05:00 (five minutes)	Specifies the interval that a Process waits in the TIMER queue after encountering an allocation error.
ALLOC-RETRY-LO C	None	Defines a list of the HP NonStop file system errors that are retried, after an allocation failure occurs on a local HP NonStop file. If this entry is not included in the NDMINIT file, allocation failures originating on the local node will not be retried. Valid values are <i>nn nn ... nn</i> , where <i>nn</i> is a HP NonStop file system error.

Initialization Parameter	Default Value	Description
ALLOC-RETRY-MA X	3	Specifies the maximum number of times to retry a step after an allocation failure occurs. Valid values are 0–99, where 0 indicates that the Process is retried indefinitely.
APIMGR	None	Specifies the location of the API Manager executable.
APINAME	\$AM	Defines a constant prefix, for example, the default \$AM prefix, used to create API Manager process names. The name is created by taking the prefix and appending a numerical suffix 0,1,2,...,nnn as API Managers are created (\$AM0, \$AM1 ... \$AMnnn). Process names are reused as API Manager processes are started and stopped. In accordance with Guardian naming requirements, the first character after \$ must be an alphabetic character. The prefix may be as short as two characters (\$x) but no longer than four characters (\$xxx). If these restrictions are violated the server defaults to \$AM as a prefix. If APIOUT is designated as a spooler file (\$S.#NDM), then the trace file job name is created as \$S.#NDM.NDMxnT, where 'x' is the last character in APINAME, 'n' is the numeric suffix appended as part of the API Manager process name, and 'T' indicates a trace file. If APIOUT is designated as \$volume.subvolume, then the trace file name for API Manager process \$xxxnn is \$volume.subvolume.NDMxnT.
APIOUT	None	Specifies the output file for the API Manager.
APITRACE	OFF (if not specified)	Turns on API Manager trace bits. Only used for debugging.
AUTHFILE	NDMFILES.AUTHFILE	Points to the AUTHFILE containing user authorization information.
CKITVL	None	Specifies the default checkpointing interval or approximate number of bytes used for checkpointing. Valid values are nM (megabytes) and nK (kilobytes). CKITVL=0K indicates that checkpointing is not used unless specified in the Sterling Connect:Direct Process. You must set the checkpoint interval (CKITVL) in increments of 56K for SNA LU0 connectivity. For details, the Sterling Connect:Direct Processes web site at http://www.sterlingcommerce.com/documentation/processes/processhome.htm .
CKPTFILE	NDMFILES.CKPTFILE	Points to the CKPTFILE containing the key to checkpoint-restart records.
CMPRLEVEL	1	Specifies the default compression level used on a particular node. Valid values are 1–9, with 9 being the highest compression level.
COLLECTOR	\$0	Specifies the collector used for event-message generation. The collector can be either the primary (\$0) or an alternate collector for the system.
CRC	ON	Global setting for CRC checking for all PNODE Processes. ON—CRC checking is turned on. OFF —CRC checking is not turned on.
CRC OVERRIDE	YES	Determines if PROCESS statement or ADJ NODE setting can override the global CRC parameter. YES—Can override global CRC parameter. NO—Cannot override global CRC parameter.
DOMAIN SERVER	NO	Determines if Sterling Connect:Direct can accept connection requests from domains specified in domain nodes. YES—Sterling Connect:Direct can accept connection requests from domains specified in domain nodes. NO—Sterling Connect:Direct cannot accept connection requests from domains specified in domain nodes.

Initialization Parameter	Default Value	Description
EMS	OFF	Controls whether Sterling Connect:Direct logs events to Event Management Service (EMS). ON—Sterling Connect:Direct does log events to EMS. OFF—Sterling Connect:Direct does not log events to EMS.
EASERVER	NO	Enables support for the Sterling External Authentication Server. YES enables support. NO turns off support.
FILENAME EXT	NO	File name extensions can be concatenated with platform name to create typekeys in the TYPE file to set file attributes. YES—File name extensions can be concatenated to set file attributes. NO—File name extensions cannot be concatenated to set file attributes.
INFOFILE	NDMFILES.INFOFILE	Points to the INFOFILE, used internally by the server and session manager processes.
LOGCPU TIME	NO	Enables/disables logging of CPU utilization in the Sterling Connect:Direct for HP NonStop. The utilization is recorded as an informational message in the statistics file at “step end” and “process end”.
LOG-TCP-CONN-RQ	None	Indicates whether TCP connection requests are to be logged. Valid values are Y/N. When YES, the application logs inbound TCP connection requests and outgoing attempts to the STAT file in the following format: Date => 01.11.2008 Time => 14:31:46.07 MESSAGE - MSG TCP Conn Req rcvd by \K2.\$ZTC0 port 6131 from 199.1.4.8 port 2240 YES— enables logging of all inbound TCP connection requests and outgoing attempts.
LOG-SECURITY	NO	Enables logging the effective local userid under which an Snode Process runs. YES logs security information. NO disabling the logging of security information.
MEMLEVEL	4	Specifies the memory level used in compression. Valid values are 1–9, with 9 being the highest amount of memory allocated.
MSGFILE	NDMFILES.MSGFILE	Points to the file containing error and help messages.
NDMC DL	NDMFILES.NDMCDL	Points to the Command Definition Language (CDL) object module and report definitions.
NDMSMGR	NDMOBJ.NDMSMGR	Points to the session manager object module.
NDMSTDL	NDMOBJ.NDMSTDL	Points to the object file that automatically deletes statistics records based on deletion criteria and a percentage setting.
NETFILE	NDMFILES.NETFILE	Points to the NETFILE containing network map information.
NETMAPCHECK	NO	YES—Only accepts connections from nodes defined in the Netmap. NO—Accepts connections from any Sterling Connect:Direct node.
OSS FILES	NO	YES—Include support for OSS files. NO—No support for OSS files included.
PORTNUM	1364	Identifies the communications port that Sterling Connect:Direct listens on for connection requests. The format is a number.

Initialization Parameter	Default Value	Description
PRINTER	\$\$.#NDM	Points to the valid HP NonStop spooler name used for output from print-enabled commands.
PRTYDEF	10	Specifies the default priority for Processes submitted to Sterling Connect:Direct for HP NonStop. If you do not specify a priority on the PROCESS statement, Sterling Connect:Direct uses the default priority when placing the Process on the TCQ. Valid values are 0–15.
QUIESCE	NO	Runs the session manager when Sterling Connect:Direct is started. If you specify YES, Sterling Connect:Direct does not start session managers when it is initiated.
RUNTASKMSGID	SRT010I	Defines the run task completion message. Valid values are SRTT000I and SRTT010I
SECFILE	NDMFILES.SECFILE	Points to the SECFILE containing security records added with the INSERT SECURITY command.
SECUREPL	None	The \$vol.subol where Sterling Connect:Direct Secure Plus configuration files are stored.
SENDNULLRECS	NO	This option controls the default action of a SEND operation when the session manager reads an ESDS file and encounters a zero-length record. If NO, the default action is to bypass the record. If YES, the zero-length record is sent.
SENDOPENFILE	WARN	Determines how Sterling Connect:Direct for HP NonStop responds if it opens a file for transmission, but the file is open for update by an external application (for example, the file is still being created). You can override this parameter by using the SYSOPTS parameter, SET OPENFILEXMT=YES, in the FROM clause of your COPY statement. YES - Executes the COPY step and reports SCPA000I following a successful termination. NO - Terminates the COPY step immediately with SFLH951I, RC=8, FDBK=0. WARN - Executes the COPY step, but reports SFLH950I, RC=4, FDBK=0 12 (12 means the file was still open when Sterling Connect:Direct reached the file EOF).

Initialization Parameter	Default Value	Description
SMNAME	\$SM	<p>Defines a constant prefix, for example, the default \$SM prefix, used to create session manager process names. The name is created by taking the value defined in the SMNAME initialization parameter (for instance, \$SM) and appending a numeric value to it: 0, 1, 2, ..., nnn up to the limit imposed by the maximum number of characters in a file name. The numeric suffix is generated as a hexadecimal string. If the server runs out of available names, it uses system-generated names. The following prefixes are reserved for use by the operating system:</p> <ul style="list-style-type: none"> • \$DM • \$SIM • \$X • \$Y • \$Z <p>In accordance with Guardian naming requirements, the first character after \$ must be an alphabetic character. The prefix may be as short as two characters (\$A) but no longer than four characters (\$xxx). If these restrictions are violated, the server defaults to \$SM as a prefix.</p> <p>If SMOUT (another initialization parameter on the next Set Initialization Parameters screen described below) is designated as a spooler file (\$S.#NDM), the trace file job name is created as \$S.#NDM.NDMxnT, where 'x' is the last character in SMNAME, 'n' is the numeric suffix appended as part of the session manager process name, and 'T' indicates a trace file.</p> <p>If SMOUT is designated as \$volume.subvolume, then the trace file name for session manager process \$xxxnn is \$volume.subvolume.NDMxnT.</p>
SMOUT	\$S.#NDM	<p>Specifies the location where Sterling Connect:Direct creates or sends the session manager output files to the spooler, such as \$DATA.NDM and \$S.#NDM.</p> <p>Note: Note: You cannot include destination suffix in this parameter.</p>
SMTRACE	OFF (if not specified)	Turns on session manager trace bits.
SRVTRACE	OFF (if not specified)	Turns on server trace bits.
STATCRITERIA	8D (8 days)	Specifies the deletion criteria for records maintained in the statistics file. NDMSTDL automatically deletes statistics older than the specified criteria. Valid values are nD nH nM, where nD equals 1–31 days, nH equals 1–23 hours, and nM equals 1–59 minutes.
STATFILE	NDMFILES.STATFILE	Points to the STATFILE containing statistics created by Sterling Connect:Direct.
STATMIDNITE	ON	Specifies whether the server runs NDMSTDL each night at midnight.
STATPERCENT	85%	Defines the maximum allowable percentage the statistics files are utilized before NDMSTDL runs.
STATS	ON	Controls whether Sterling Connect:Direct logs events to the Sterling Connect:Direct statistics file. Valid settings are OFF and ON. If EMS parameter is set to OFF, then the STATS parameter is set to ON automatically.
STATSRCH	NDMFILES.STATSRCH	Contains the keys for searching the STATFILE.
STUTIL	NDMOBJ.STUTIL	Points to the object file that determines the utilization of the statistics file.

Initialization Parameter	Default Value	Description
TCPLISTENnn	None	Used to define additional TCP processes and port numbers (1-36) on which the application post listens for inbound TCP connection requests. If specifying listens on more than one Parallel TCP/IP (PTCPIP) that share a common pool of ports, each listen must specify a different port number, even if the process names are not different. TCPLISTENnn \system.\$xxxxx pppp Where: nn = 1, 2, 3, ... , 36 (no 0 padding) \system.\$xxxxx = TCP Process name (system qualifier is optional) pppp = LISTEN port number, 1024-9999 inclusive Note: If the Parallel TCP/IP facility is to be used, please review the configuration requirements for PTCPIP in <i>Configuring Sterling Connect:Direct for HP NonStop to Use the HP NonStop Parallel TCP Utility</i> on page 24.
TCPNAME	\$ZTC0	Identifies the name of the TCP/IP Process running on HP NonStop. The name must be a valid HP NonStop Process name and cannot be system qualified.
TCPBUFFSIZE	30720	Specifies the size of the data buffer passed between two nodes during a TCP session. This value is set to 30720 by default since this value gives the best throughput under most conditions.
TCQ	WARM	Specifies how the TCQ is initialized. If you specify WARM, Sterling Connect:Direct uses the TCQ as it exists. If you specify COLD, Sterling Connect:Direct reinitializes the TCQ. Any Processes left on the TCQ are lost; new Process numbers begin with 1.
TCQFILE	NDMFILES.TCQFILE	Stores Processes. This file and TCQXFILE combine to create the TCQ.
TCQXFILE	NDMFILES.TCQXFILE	Contains header information for the TCQFILE parameter. This file and TCQFILE combine to create the TCQ.
TYPEFILE	NDMFILES.TYPEFILE	Points to the TYPEFILE containing type file definitions.
WINDOWSIZE	15	Specifies the size of the floating window used for compression and decompression. Valid values are 9–15, with 15 being the largest window size.
WTRETRIES	00:03:00 (3 minutes)	Indicates the interval to wait before attempting to restart a Process. Set the value in the hh:mm:ss format.
XLFILE	NDMFILES.XLFILE	Points to the key-sequenced file containing translation tables.

Overriding Initialization Parameters with TACL PARAM Commands

To override initialization parameters without changing the NDMINIT file, you can set TACL PARAMs prior to starting Sterling Connect:Direct.

For example, if you specified STATFILE \$VOL.NDMFILES.STATFILE in the initialization parameters file and later type PARAM STATFILE \$VOL.TEMPFILE.STATFILE from your terminal, Sterling Connect:Direct opens the statistics file on \$VOL.TEMPFILE when it opens the statistics file.

You can only use TACL PARAM commands if you start Sterling Connect:Direct for HP NonStop from the terminal where you type the PARAM command. You cannot log off that terminal or issue a CLEAR PARAM STATFILE or CLEAR ALL PARAM before startup. The CLEAR command or logging off erases previous PARAM commands.

To revert to the original parameter, specify STOP ALL I from NDMCOM and restart without the PARAM settings.

Note: Type PARAM from TACL to display the parameters that are currently set on that terminal.

Exceptions to TACL PARAM Commands

The following initialization parameters cannot be overridden by a TACL PARAM command and are specified only in the NDMINIT file:

- ❖ CKPTFILE
- ❖ SECFILE
- ❖ XLFILE
- ❖ TYPEFILE
- ❖ INFOFILE

Stopping Sterling Connect:Direct for HP NonStop

Use the STOP ALL command to stop Sterling Connect:Direct. Sterling Connect:Direct issues a message informing you of the pending shutdown except when you specify a forced shutdown.

Following is the STOP ALL command format:

STOP ALL	Force Immediate Quiesce Step
----------	---------------------------------------

Required Parameters

The STOP ALL command has no required parameters.

Optional Parameters

The optional parameters for the STOP ALL command are:

Optional Parameter	Description
Force	Stops Sterling Connect:Direct for HP NonStop immediately. The system produces a SAVEABEND file for each active NDMSMGR process and puts executing Processes in the Wait queue.
Immediate	Specifies to terminate all active transmissions immediately. Sterling Connect:Direct for HP NonStop writes the statistics record, closes the files, and shuts down.

Optional Parameter	Description
Quiesce	Specifies that all active transmissions run until the Process is complete. No new transmissions are started, and no additional Processes are accepted. Quiesce is the default. All interactive sessions are terminated except the issuer of the STOP ALL command. All Processes currently running must complete, and then the issuer of the command must sign off before the operation stops.
Step	Specifies that all active transmissions run until the Process step completes. When all transmissions stop, Sterling Connect:Direct writes the statistics records, closes the files, and shuts down. Processes resume execution when Sterling Connect:Direct is reinitialized.

Samples

The following command stops Sterling Connect:Direct for HP NonStop, produces a SAVEABEND file for each session manager, and places an executing Process in the Wait queue:

```
STOP ALL FORCE
```

Defining HP NonStop as the SNA Primary Environment

This appendix contains sample definitions for receiving connections for leased and switched lines and HP NonStop Environment Definitions Worksheets. Additional connectivity considerations are also addressed.

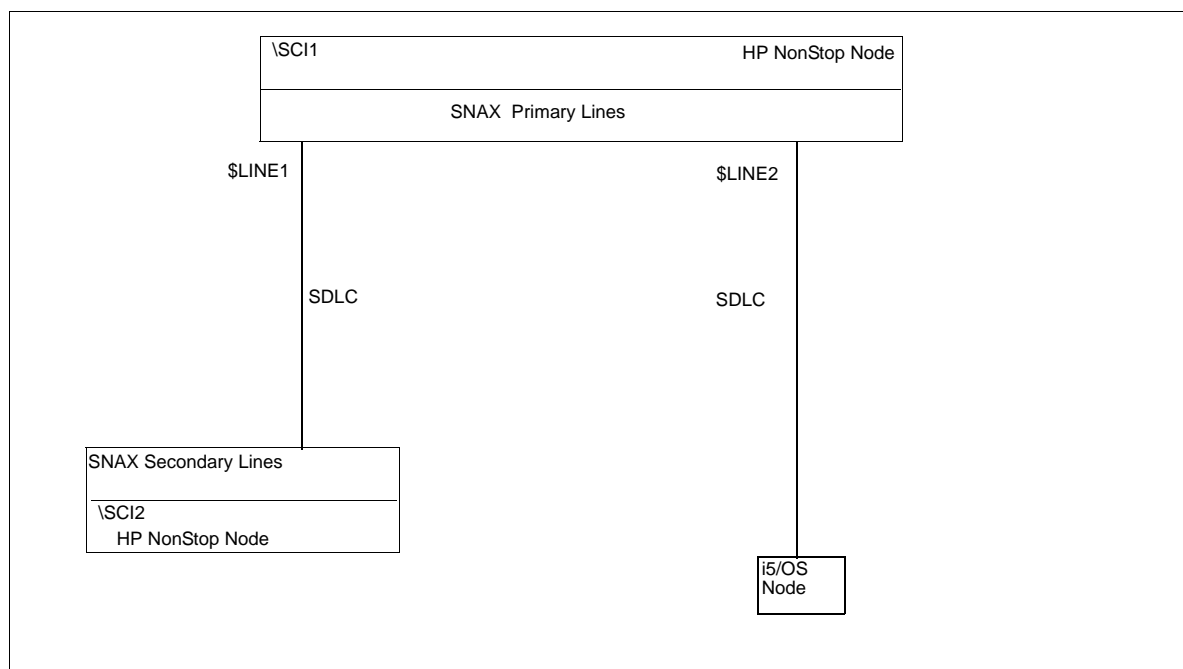
Supported receiving connections are as follows:

- ❖ HP NonStop to i5/OS (using LU0)
- ❖ HP NonStop to HP NonStop (using LU0)

To coordinate compatible definitions between the operating system environments, use the information in this chapter in conjunction with the appropriate worksheets discussed in Chapter 3, *Installing and Configuring Sterling Connect:Direct for HP NonStop*.

Receiving Connectivity for Leased Lines

The following figure shows a sample configuration for connectivity through synchronous data link controller (SDLC) leased lines between two HP NonStop nodes and between an HP NonStop node and an i5/OS node:



The SYSGEN and Subsystem Communication Facility (SCF) definitions for receiving connectivity over SDLC leased lines follow. They define the HP NonStop node connected to:

- ❖ An HP NonStop node through an SDLC leased line (\$LINE1)
- ❖ An i5/OS operating system through an SDLC leased line (\$LINE2)

Define HP NonStop Line Attributes

Communication lines on HP NonStop are defined in the peripheral paragraph located in the HP NonStop configuration (CONFTEXT) file. The CONFTEXT file contains system-specific information used by the HP NonStop INSTALL program to create an operating system image.

The following figure shows sample SNAX peripheral definitions for a bit-synchronous controller, followed by an explanation of the parameters. Modify the definitions as appropriate; however, the fields in **BOLD** are required and must not be modified.

The SNA^SSCP (\$SSCP) Process is a required Process for all types of SNAX lines. SNASVM, TYPE, and SUBTYPE have required values included in the following figure. RSIZE can be modified as required for your environment. Refer to the HP NonStop documentation if you require additional information.

```

SNA^SSCP          =SNASVM,
                  TYPE13,
                  SUBTYPE5,
                  RSIZE256 #;
SNA^PRIMARY^LEASED=SNATS,
                  TYPE58,
                  SUBTYPE0,
                  RSIZE4096,
                  SMLDEV$SSCP,
                  FRAME SIZE268,
                  FULL,
                  PRIMARY,
                  L2WINDOW7,
                  MAXPUS8,
                  MAXLUS32,
                  SPEED192,
                  INTERRUPTSNA^6203^INTERRUPT #;

CONTROLLERS:
SYNC1             3604          01,00          %020;
PERIPHERALS:
$SSCP            DUMMY.0,    DUMMY.1    SNA^SSCP
$LINE1           SYNC1.0,    SYNC1.1    SNA^PRIMARY^LEASED; ! HPNONSTOP
$LINE2           SYNC1.2,    SYNC1.3    SNA^PRIMARY^LEASED; ! 3174
$LINE3           SYNC1.4,    SYNC1.5    SNA^PRIMARY^LEASED; ! VAX
$LINE4           SYNC1.4,    SYNC1.5    SNA^PRIMARY^LEASED; ! AS/400

```

Below is a description of the fields in the SNA^SSCP (\$SSCP) Process:

Attribute	Description
SNATS TYPE 58	Specifies the device type for the SNAX line handler Process. The number 58 defines a SNAX line and is, therefore, a fixed value.
SUBTYPE	Specifies the device subtype for the SNAX line handler Process. The value is dependent on your controller. See the table on page 30 for required line attributes for each controller type.
RSIZE	Specifies the RU size supported by HP NonStop. The value is dependent on your controller. See the table on page 30 for required line attributes for each controller type.

Attribute	Description
SMLDEV \$SSCP	Specifies the name of the SNAX service manager Process that communicates with the line handler Process. The HP NonStop SSCP definition is required in the HP NonStop configuration file for the SNAX definitions to function properly.
FRAMESIZE	Specifies the SDLC frame size.
FULL	Specifies that the line uses full-duplex mode. Either HALF or FULL is acceptable.
PRIMARY	Specifies that the line contains PUs that act as primary SDLC stations while in session with other SDLC stations. PRIMARY is a required attribute.
L2WINDOW	Specifies the maximum number of information frames (I-frames) for the SDLC that are sent to or received from a remote station before a successful transmission occurs. The number is variable.
MAXPUS	Specifies the maximum number of PUs that are defined on a line. Valid values are 1–254.
MAXLUS	Specifies the maximum number of LUs that are assigned to a PU. Valid values are 1–255.
SPEED	Specifies the line speed in bits per second (BPS) divided by 100. Valid values are 1–32767.
INTERRUPT	Specifies the required name of the interrupt handler for the controller. See the table on page 30 for required line attributes for each controller type.

Define HP NonStop PUs and LUs

PUs and LUs on the HP NonStop node are dynamically assigned through SCF. The maximum number of PUs and LUs assigned is specified when communications lines are configured.

Sample SCF definitions for PUs and LUs used in Sterling Connect:Direct for HP NonStop communications follow. You can specify additional attributes as required by your environment.

```

First line (to HP NonStop).....
assume      line  $LINE1
add         line  $LINE1, charsetset ascii
add         pu    #P1,  type(13,2), reysize 265, maxlus 32,    &
                                address 1, window 7
add         lu    #102, type(14,2), puname #P1, protocol SNALU, &
                                reysize 265, address 2
add         lu    #103, type(14,2), puname #P1, protocol SNALU, &
                                reysize 265, address 3
add         lu    #104, type(14,2), puname #P1, protocol SNALU, &
                                reysize 265, address 4

assume      line  $LINE1
start,     sub all
Third line (to iSeries).....
assume      line  $LINE3
add         line  $LINE3, charsetset ascii
add         pu    #P1,  type(13,2), reysize 265, maxlus 32,    &
                                address 1, window 7
add         lu    #102, type(14,2), puname #P1, protocol SNALU, &
                                reysize 265, address 2
add         lu    #103, type(14,2), puname #P1, protocol SNALU, &
                                reysize 265, address 3
add         lu    #104, type(14,2), puname #P1, protocol SNALU, &
                                reysize 265, address 4

assume      line  $LINE3
start,     sub all

```

Description of Line Attribute

Following is a description of the line attribute:

Attribute	Description
CHARACTERSET ASCII	Specifies that no translation is to take place on this line.

Description of PU Attributes

Following is a description of the PU attributes:

Attribute	Description
PU	Specifies the name of the PU to add to the network. The 1-8 character PU name must begin with #.
TYPE (13,2)	Specifies the device and sub device types for the PU. Both values are required.
RECSIZE	Specifies the Path Information Units (PIU) size.
MAXLUS	Specifies the maximum number of LUs associated with this PU.
ADDRESS	Specifies the SDLC address for this PU. Express the value in hexadecimal (%hxx) or decimal format.
WINDOW	Specifies the maximum number of SDLC I-frames that are sent before confirming that the I-frames have been received with no errors. The value for WINDOW must correspond to the L2WINDOW value specified in the HP NonStop line definition.

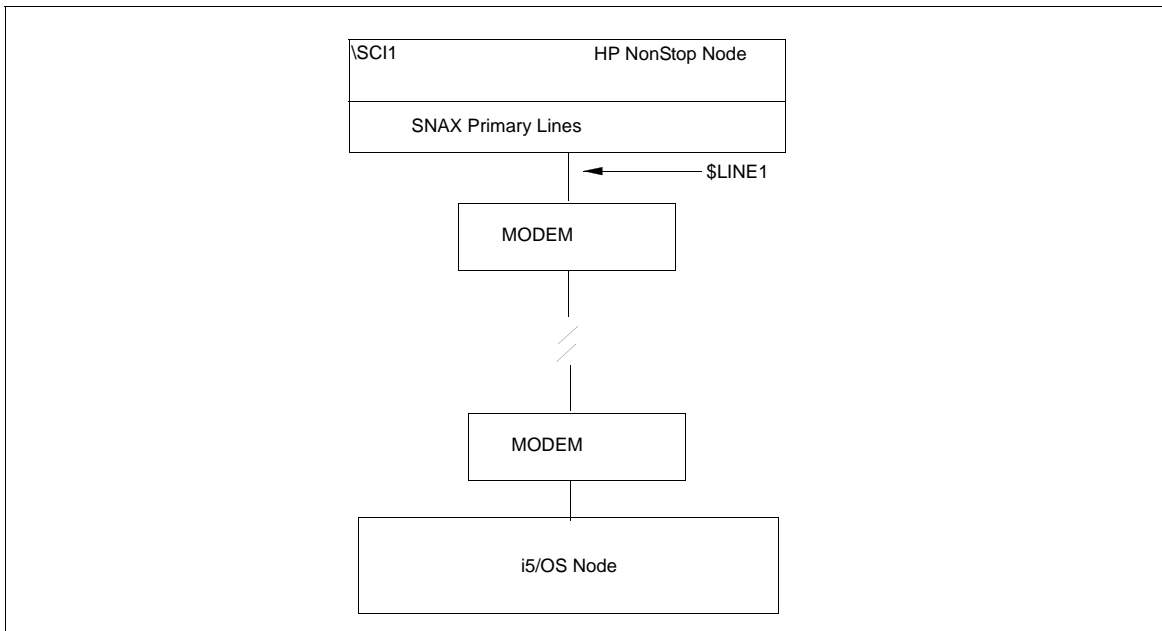
Description of LU Attributes

Following is a description of the LU attributes:

Attribute	Description
LU	Specifies the name of the LU added to the network. The LU name must be fully qualified, unless you have assumed a line. Refer to the HP NonStop CMI or SCF documentation if you require additional information.
TYPE (14,2)	Specifies the type. Both values are required.
PUNAME	Specifies the name of the PU associated with the LU.
PROTOCOL SNALU	Specifies that the SNA logical unit (SNALU) is the session protocol.
RECSIZE	Specifies the block size between SNAX and the controller.
ADDRESS	Specifies a value that identifies the LU in the environment. Express the value in decimal format.

Receiving Connectivity for Switched Lines (SDLC)

Following is a sample configuration for an SDLC switched line between a HP NonStop node and an i5/OS node:



The SYSGEN and SCF definitions for receiving connectivity over SDLC switched lines follow. They define the HP NonStop node connected with a switched line connection to an i5/OS node with a synchronous communications board ready to dial in to the HP NonStop node.

Define HP NonStop Line Attributes

Communication lines on HP NonStop are defined in the peripheral paragraph located in the HP NonStop configuration (CONFTEXT) file. The CONFTEXT file contains system-specific information used by the HP NonStop INSTALL program to create an operating system image.

In all cases, physical SNA connections must be established manually due to SNAX limitations.

The following figure shows sample SNAX peripheral definitions for a bit-synchronous controller, followed by an explanation of the parameters. Modify definitions as appropriate; however, fields in **BOLD** are required and must not be modified.

The SNA^SSCP (\$SSCP) Process is a required Process for all types of SNAX lines. SNASVM, TYPE, and SUBTYPE have required values included in the following figure. Modify RSIZE as required for your environment. Refer to the HP NonStop documentation if you require additional information.

```

SNA^SSCP          =  SNASVM TYPE    13,
                   SUBTYPE         5,
                   RSIZE             256 #;
SNA^PRIMARY^SWITCHED=SNATS TYPE    58,
                   SUBTYPE           0,
                   RSIZE             4096,
                   SMLDEV          $SSCP,
                   FRAMESIZE         524,
                   HALF,
                   SWITCHED,
                   PRIMARY,
                   AUTOACCEPT     ON,
                   SPEED           48,
                   L2WINDOW          7,
                   MAXPUS            8,
                   MAXLUS            32,
                   MDMLOSSFATAL  ON,
                   INTERRUPT         SNA^6203^INTERRUPT #;

CONTROLLERS:
  SYNC1  3604  01,00  %020;
PERIPHERALS:
  $SSCP  DUMMY.0,  DUMMY.1  SNA^SSCP;
  $line1 SYNC1.0,  SYNC1.1  SNA^PRIMARY^SWITCHED; ! LINE TO PC

```

Following is an explanation of the parameters in the SNAX peripheral definitions:

Attribute	Description
SNATS TYPE 58	Specifies the device type for the SNAX line handler Process. The number 58 defines a SNAX line and is, therefore, a fixed value.
SUBTYPE	Specifies the device subtype for the SNAX line handler Process. The value is dependent on your controller. See the table on page 30 for required line attributes for each controller type.
RSIZE	Specifies the RU size supported by HP NonStop. The value is dependent on your controller. See the table on page 30 for required line attributes for each controller type.
SMLDEV \$SSCP	Specifies the name of the SNAX service manager Process that communicates with the line handler Process. The HP NonStop SSCP definition is required in the HP NonStop configuration file for the SNAX definitions to function properly.
FRAMESIZE	Specifies the SDLC frame size.
HALF	Specifies that the line uses half-duplex mode. HALF is a required attribute.
SWITCHED	Enables modem control. SWITCHED is a required attribute.
PRIMARY	Specifies that the line contains PUs that act as primary SDLC stations while in session with other SDLC stations. PRIMARY is a required attribute.
AUTOACCEPT ON	Specifies whether a switched line receives incoming calls when the line is started. AUTOACCEPT ON is a required attribute.

Attribute	Description
SPEED	Specifies the transmission rate of the line divided by 100. SPEED is a required attribute and determined by modem speed.
L2WINDOW	Specifies the maximum number of information frames (I-frames) for the SDLC that are sent to or received from a remote station before a successful transmission occurs. This number is variable.
MAXPUS	Specifies the maximum number of PUs that are defined on a line. Valid values are 1–1254.
MAXLUS	Specifies the maximum number of LUs that are assigned to a PU. Valid values are 1–255.
MDMLOSSFATAL	Specifies that a loss of modem carrier detect is treated the same as a loss of data set ready, which greatly reduces the time needed to reset the connection when a session is discontinued.
INTERRUPT	Specifies the required name of the interrupt handler for the controller. See the table on page 30 for required line attributes for each controller type.

Define HP NonStop PUs and LUs

PUs and LUs on the HP NonStop node are dynamically assigned through SCF. The maximum number of PUs and LUs assigned is specified when communications lines are configured.

Sample SCF definitions for PUs and LUs used in Sterling Connect:Direct for HP NonStop communications follow. You can specify additional attributes as required by your environment.

```

assume    line    $LINE1
add       line    $LINE1, character set ascii
alter    line    $LINE1, maxpus 1
add      pu      #P1, type(13,2), recsize 521, maxlus 32, &
          address 1, window 7, puidblk %h017, &
          puidnum %h0EE14
add      lu      #102, type(14,2), puname #P1, protocol &
          SNALU, recsize 521, address 2
add      lu      #103, type(14,2), puname #P1, protocol &
          SNALU, recsize 521, address 3
add      lu      #104, type(14,2), puname #P1, protocol &
          SNALU, recsize 521, address 4
assume    line    $LINE1
start,   sub    all

```

Description of the Line Attribute

Following is a description of the line attribute in the SCF definition:

Attribute	Description
CHARACTERSET ASCII	Specifies that no translation is to take place on this line.

Description of PU Attributes

Following is a description of the PU attributes in the SCF definition:

Attribute	Description
PU	Specifies the name of the PU added to the network. The 1-8 character PU name must begin with #.
TYPE (13,2)	Specifies the device and sub device types for the PU. Both values are required.
RECSIZE	Specifies the Path Information Units (PIU) size.
MAXLUS	Specifies the maximum number of LUs associated with this PU.
ADDRESS 1	Specifies the SDLC address for this PU. Express the value in hexadecimal (%hxx) or decimal format.
WINDOW	Specifies the maximum number of SDLC I-frames that are sent before confirming that the I-frames have been received with no errors. The value for WINDOW must correspond to the L2WINDOW value specified in the HP NonStop line definition.
PUIDBLK	Specifies the block number for the PU. The acceptable range is %h000 to %hFFE.
PUIDNUM	Specifies a binary value that when used with PUIDBLK defines a PU in the network. The acceptable range is %h00000 to %hFFFFE.

Description of LU Attributes

Following is a description of the PU attributes in the SCF definition:

Attribute	Description
LU	Specifies the name of the LU added to the network. The LU name must be fully qualified, unless you have assumed a line. Refer to the HP NonStop CMI or SCF documentation if you require additional information.
TYPE (14,2)	Specifies the type. Both values are required.
PUNAME	Specifies the PU associated with this LU.
PROTOCOL SNALU	Specifies that the SNA logical unit (SNALU) is the session protocol.
RECSIZE	Specifies the block size between SNAX and the controller.
ADDRESS 2	Specifies a value that identifies the LU in the environment. Express the value in decimal format.

HP NonStop to i5/OS Connectivity Considerations

Because Sterling Connect:Direct for i5/OS is SNODE only for SNA LU0, you must define at least one LU for 3270 emulation to submit any Processes from an attached Sterling Connect:Direct for i5/OS node. This requires logging on to an HP NonStop node to submit the Process. You do not need the 3270 emulation LU if you are only submitting Processes from the HP NonStop node. A sample 3270 emulation LU definition follows:

```
add lu #105, type(14,2), puname #P1, protocol ITI, &
           recsize 80, address 2, devtype 3278-2, &
           character set ebcdic
```

The attribute `PROTOCOL ITI` specifies to use the LU for 3270 emulation.

For connectivity between HP NonStop and i5/OS, the network map parameter, `NDM400.LIBRARY`, is required.

HP NonStop Environment Definitions Worksheets

Use the following worksheets to gather the information necessary to define the receiving environment.

HP NonStop Environment Definitions (for Connectivity Between HP NonStop and i5/OS Nodes Using LU0)

The HP NonStop administrator completes this worksheet and passes it to the i5/OS administrator, who uses the values to set corresponding attributes as appropriate.

SYSGEN Line Definitions

LINE macro

DUPLEX HALF FULL (circle one)

(Corresponds to the DUPLEX parameter in the i5/OS line description.)

SCF Entries Definitions

PU Definition

ADDRESS Hex_____ Decimal_____

(Expressed in hexadecimal or decimal format. Corresponds to STNADR on the controller definition.)

LU Definitions

List all LUs defined for Sterling Connect:Direct for i5/OS

LU name	Address	LU name	Address
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(ADDRESS corresponds to LOCADDR in the SNUF device description on the i5/OS node.)

Sterling Connect:Direct for HP NonStop Network Map Definitions

LOCAL.NODE _____

ADJACENT.NODE _____

NDM400.LIBRARY _____

(Corresponds to the library name for Sterling Connect:Direct on the i5/OS node.)

HP NonStop Environment Definitions (for Connectivity Between HP NonStop Nodes Using LU0)

This worksheet is used by administrators of both HP NonStop nodes to ensure connectivity. Values on both HP NonStop nodes need to correspond.

See page 31 for a description of the HP NonStop parameters used when defining lines, PUs, and LUs.

SYSGEN Line Definitions

LINE macro

DUPLEX HALF FULL (circle one)

(Corresponds to the DUPLEX parameter in the i5/OS line description.)

SCF Entries Definitions

PU Definition

ADDRESS Hex_____ Decimal_____

[Expressed in hexadecimal (%hxx) or decimal format.]

LU Definitions

List all LUs defined for Sterling Connect:Direct for HP NonStop

LU name	Address	LU name	Address
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Sterling Connect:Direct for HP NonStop Network Map Definitions

LOCAL.NODE _____

(Corresponds to the ADJACENT.NODE parameter in the other network map.)

ADJACENT.NODE _____

(Corresponds to the LOCAL.NODE parameter in the other network map.)

LUs

LU name

LU name

LU name

Defining HP NonStop as the SNA Secondary Environment

This appendix contains worksheets and sample definitions for sending connections between HP NonStop and IBM 370 nodes.

Use the *IBM Environment Information* worksheet and *HP NonStop Environment Information (for Connectivity Between HP NonStop and IBM 370 Nodes)* worksheet, in conjunction with the information presented in this appendix, to coordinate compatible definitions between the operating system environments.

Summary of Required Definitions for Sending Connections

The following table provides a summary of required definitions and specifies where they are defined on the HP NonStop and IBM 370 nodes:

Required Definitions	Where Defined
Physical units (PUs)	IBM 370 Node IBM NCP GEN definitions VTAM channel-attached major node definition for SNAXLINK HP NonStop Node Subsystem Communications Facility (SCF) Maximum number specified in HP NonStop SYSGEN Configuration file peripheral paragraphs
Logical units (LUs)	IBM 370 Node IBM NCP GEN definitions VTAM channel-attached major node definition for SNAXLINK Maximum number specified in the network map HP NonStop Node Subsystem Communications Facility (SCF)
Unformatted Systems Services (USS)	IBM 370 Node VTAM USS table
Session Priority	IBM 370 Node VTAM Class of Service (COS) table
Session Protocol	IBM 370 Node VTAM LOGMODE table

Required Definitions	Where Defined
Network Map	IBM 370 Node VTAM Application Major Node (APPL) NETMAP local source
	HP NonStop Node INSERT NETMAP and RELATE NETMAP commands

Define the IBM 370 Environment

This section gives samples of the IBM NCP and VTAM definitions required for network connectivity between IBM 370 and HP NonStop nodes. The accompanying text discusses any required values or any values that must correspond at the HP NonStop node.

If you are using SNAXLINK to connect the HP NonStop system directly to an IBM channel, refer to *VTAM Channel-Attached Major Node Definition for SNAXLINK* on page 111.

NCP Definitions

Data transferred between an IBM 370 node and HP NonStop is routed through the Network Control Program (NCP).

Sample NCP definitions for sending connections between IBM and HP NonStop nodes follow.

G1L1	GROUP	LNCTL=SDLC, CLOCKNG=EXT, DIAL=NO, DATRATE=HIGH, DUPLEX=FULL, IRETRY=NO, NEWSYNC=YES, NRZI=NO, RETRIES=(5, 10, 2), SERVLIM=4, TYPE=NCP, USE=NCP	X X
L1L1	LINE	ADDRESS=(2, HALF), ATTACH=DIRECT, ANS=CONTINUE, CLOCKNG=EXT, DUPLEX=FULL, ISTATUS=ACTIVE, ETRATIO=30, LPDATS=NO, SERVLIM=10, MAXPU=8, SPEED=19200	X X X
PUL1P1	PU	ADDR=C1, PUTYPE=2, ISTATUS=ACTIVE, DISCNT=NO, PASSLIM=7, PACING=7, VPACING=7, SSCPFM=USSCS, MAXDATA=265, MAXOUT=7, USSTAB=NDMUSSTB, MAXLU=16, MODETAB=MODTAB1, DLOGMOD=TANMODE	X X X
N81LU02	LU	LOCADDR=2, ISTATUS=ACTIVE, PACING=5, VPACING=5	X
N81LU03	LU	LOCADDR=3, ISTATUS=ACTIVE, PACING=5, VPACING=5	X
N81LU04	LU	LOCADDR=4, ISTATUS=ACTIVE, PACING=5, VPACING=5	X
N81LU05	LU	LOCADDR=5, ISTATUS=ACTIVE, PACING=5, VPACING=5	X

NCP Line Definitions

VTAM uses the line definition to define the line that communicates with HP NonStop. CLOCKNG must always equal EXT, indicating to the NCP that the modem attached to the link supplies the clocking. By coding CLOCKNG=EXT, the generation procedure ignores any values that are specified for speed. Also, the value for NRZI is always NO.

VTAM USS Table Entry

On the PU level, point SNA LUs to a VTAM USS table (USSTAB) to avoid session and SNAX errors.

WARNING: To accommodate SNAX lines, do not code a message 10 entry. Pointing to a USS table with a message 10 entry results in the termination of Sterling Connect:Direct operations.

Sample VTAM LOGMODE table entries for IBM-to-HP NonStop sending connections follow.

```

NDMUSSTB USSTAB
LOGON    USSCMD  CMD=LOGON,FORMAT=PL1
         USSPARM  PARM=APPLID
         USSPARM  PARM=LOGMODE
         USSPARM  PARM=DATA
END      USSEND
         END
  
```

VTAM COS Table Entry

Define an IBM VTAM Class of Service (COS) table for use with Sterling Connect:Direct for HP NonStop so that file transfers use the lowest priority (0) on any session. In the following sample COS table, BATCH is the entry defined for use with Sterling Connect:Direct for HP NonStop. The entry name must also correspond to the COS entry in the VTAM LOGMODE table.

```

ISTSDCOS  COSTAB
          COS    VR=((0,1),(1,1),(2,1),(3,1),(0,0))
VR=((0,2),(1,2),(2,2),(3,2),(0,0))
VR=((0,0),(1,0),(2,0),(3,0),(0,0))
VR=((0,0),(1,0),(2,0),(3,0),(4,0))
VR=((0,0),(1,0),(2,0),(3,0),(0,0))
          END
          ISVTCOS  COS
          NJE      COS
          IBMINNJE COS
          BATCH    COS
          COSEND
  
```

Define the HP NonStop Environment

This section describes how communications lines, PUs, and LUs are defined at the HP NonStop node prior to Sterling Connect:Direct installation.

Prior to defining communications lines by editing the CONFTEXT file, review the HP NonStop documentation.

For more specific information on SNAXLINK, refer to the SNAX documentation. This manual also gives general information on the HP NonStop and the SNA environments.

Configure HP NonStop SNA Communication Lines

SNA communications lines are defined on HP NonStop in the peripheral paragraph located in the HP NonStop configuration (CONFTEXT) file. The CONFTEXT file contains system-specific information used by the HP NonStop INSTALL program to create an operating system image.

Note: For switched lines, physical SNA connections must be established manually due to SNAX limitations.

Lines must be defined and are required. Note that some of the attributes are altered dynamically through SCF, and others require a SYSGEN. Refer to the HP NonStop documentation to determine those attributes requiring a SYSGEN.

Because the line contains one or more SDLC secondary stations (PUs) that are polled by an SNA host, specify the **SECONDARY** attribute, which requires the attributes defined in the following table:

SNAX Line Attributes	Related IBM ACF/NCP Value
L2WINDOW n	Must equal MAXOUT value in PU macro.
MAXPUS n	Generally equal to but not less than the total MAXPUs in the LINE macro.
MAXLUS n	Generally equal to but not less than the sum total of MAXLUs for every PU on the HP NonStop line.

The following figure shows sample SNAX peripheral definitions for a bit-synchronous controller, followed by an explanation of the parameters. Fields in **BOLD** are required and cannot be modified. Specify additional attributes as required by your environment.

The SNA[^]SSCP (\$SSCP) Process is required for all types of SNAX lines. SNASVM, TYPE, and SUBTYPE have required values listed in the following figure. Modify RSIZE as required for your environment. Refer to your HP NonStop documentation for additional information.

Note: Switched line connections require the parameters **SWITCHED** and **AUTOACCEPT ON**. **SWITCHED** enables modem control, and **AUTOACCEPT ON** specifies whether a switched line receives incoming calls when the line is started.

```

SNA^SSCP      SNASVM,
               TYPE 13,
               SUBTYPE 5,
               RSIZE 256 #;
$!1 PSYNCO.0SNATS TYPE 58,
             SUBTYPE 0,
             RSIZE 4096,
             SMLDEV $SSCP,
             INTERRUPT SNA^6203^INTERRUPT,
             SECONDARY,
             L2WINDOW 7,
             MAXPUS 8,
             MAXLUS 32,
             FRAMESIZE 267,
             FULL,
             SPEED 192;

```

For details on specific attributes, see *SNAX Line Attributes* on page 30. Following is a description of the SNA^SCCP (\$SSCP) Process values:

Attribute	Description
SNATS TYPE 58	Specifies the device type for the SNAX line handler Process. The number 58 defines a SNAX line and is, therefore, a fixed value.
SUBTYPE	Specifies the device subtype for the SNAX line handler Process. The value is dependent on your controller.
RSIZE	Specifies the maximum RU size that HP NonStop supports. The value is dependent on your controller.
SMLDEV \$SSCP	Specifies the name of the SNAX service manager Process that communicates with the line handler Process. The HP NonStop SSCP definition must be present in the HP NonStop configuration file for the SNAX definitions to function properly.
INTERRUPT	Specifies the required name of the interrupt handler for the controller.
SECONDARY	Specifies that this line contains PUs that act as secondary synchronous data link controller (SDLC) stations while in session with other SDLC stations. SECONDARY is a required attribute.
L2WINDOW	Specifies the maximum number of information frames (I-frames) for the SDLC that are sent to or received from a remote station before a successful transmission occurs. This number is variable. This field must correspond to the value specified for the MAXOUT value in the IBM NCP GEN PU definition.
MAXPUS	Specifies the maximum number of PUs that are defined on a line. Valid values are 1–254. The valid value is greater than or equal to the total IBM NCP GEN MAXPU definition.
MAXLUS	Specifies the maximum number of LUs that are assigned to a PU. Valid values are 1–255. The valid value is greater than or equal to the total IBM NCP GEN MAXLU definition.
FRAMESIZE	Specifies the synchronous data link controller (SDLC) frame size. The valid value is two larger than the MAXDATA value defined in the IBM NCP GEN PU definition.
FULL	Specifies that the line uses full-duplex mode. Either HALF or FULL is acceptable; however, the value must correspond to the IBM NCP GEN line definition.
SPEED	Specifies the transmission rate of the line divided by 100. Note that this value is optional and used for informational purposes only. The IBM definition calculates speed.

Define HP NonStop Line

A sample SCF command string that defines the HP NonStop line for Sterling Connect:Direct for HP NonStop sending communications follows.

```
ADD LINE $L1, character set ascii
```

Attribute	Description
CHARACTERSET ASCII	Specifies that no translation is to take place on this line.

Define HP NonStop PUs

PUs on the HP NonStop node are dynamically assigned through SCF. You specified the maximum assignable number of PUs when you configured your communications lines.

A sample SCF command string that defines the PUs used in Sterling Connect:Direct for HP NonStop sending communications follows. Specify additional attributes as required by your environment.

```
ADD PU $L1.#P1, TYPE(13,2), RECSIZE 265, ADDRESS %hC1, WINDOW 7, &
MAXLUS 16
```

Attribute	Description
PU	Specifies the name of the PU added to the network. The 1-8 character PU name must begin with #.
TYPE (13,2)	Specifies the device and sub device types for the PU. Both values are required.
RECSIZE	Specifies a Path Information Units (PIU) size. This entry must correspond to the MAXDATA entry in the IBM NCP GEN PU macro.
ADDRESS	Specifies the synchronous data link controller (SDLC) address for this PU. Express the value in hexadecimal (%hxx) or decimal format. This entry must correspond to the ADDR entry in the IBM NCP GEN PU macro.
WINDOW	Specifies a maximum number of 7 SDLC I-frames that are sent before confirming that the I-frames have been received with no errors. This entry must correspond to the PASSLIM and MAXOUT entries in the IBM NCP GEN PU macro. It must also correspond to the L2WINDOW value specified in the HP NonStop line definition.
MAXLUS	Specifies the maximum number of 16 LUs associated with this PU. This entry must correspond to the MAXLU entry in the IBM NCP GEN PU macro. SNA LUs are assigned dynamically on HP NonStop through SCF LU definitions. The PU definition specifies the maximum number of LUs assigned.

Define HP NonStop LUs

A sample SCF definition for SNA LUs on HP NonStop follows.

```
ADD LU $L1.#L02, TYPE(14,0), PUNAME #P1, PROTOCOL SNALU, &
RECSIZE 4096, CHARACTERSET ASCII, ADDRESS 2
```

Attribute	Description
LU	Specifies the name of the LU added to the network. The LU name must be fully qualified, unless you have assumed a line. Refer to the HP NonStop SCF documentation if you require additional information.
TYPE (14,0)	Specifies the type. Both values are required.
PUNAME #P1	Specifies that #P1 is the PU associated with this LU.
PROTOCOL SNALU	Specifies that the SNA logical unit (SNALU) is the session protocol.

Attribute	Description
RECSIZE	Specifies the block size between SNAX and the controller. The maximum RECSIZE is 4096.
CHARACTERSET ASCII	A required attribute.
ADDRESS	Specifies the address of the LU in the local SNA environment. Express the value in decimal format. This value corresponds to one of the LOCADDR values as specified on the IBM node.

Starting a SNAX/VTAM Link

Starting a SNAX/VTAM link requires the following steps:

1. Start the lines, PUs, and LUs for the SNAX devices located throughout the HP NonStop network. Lines, PUs, and LUs must be activated through SCF in a particular order. Note that the PUs and LUs are in the starting state until activation of the IBM-defined PUs and LUs, when their status changes to Started.
2. At the IBM node, activate the IBM-defined PUs and LUs using the IBM VTAM VARY NET,ACT command.

HP NonStop Environment Definitions Worksheets

Use the following worksheets to gather the information necessary to define your sending environment.

IBM Environment Information

If your HP NonStop connection to another node is sending (to an IBM node through SNAX) or peer-to-peer (ICE), the IBM node is responsible for network management and user interconnection functions. Therefore, various definitions for the HP NonStop node must conform to values specified at the IBM node. It is critical to coordinate the initial values and any subsequent changes with the administrators of both nodes.

The IBM administrator completes this worksheet and passes it to the HP NonStop administrator, who uses the values to set corresponding HP NonStop attributes as appropriate.

Line Definition, NCP

CLOCKNG	Must be EXT.
DUPLEX	HALF or FULL
MAXPU	Must be NO.
NRZI	_____
SPEED	_____
SWITCHED	Y or N (if N, omit)

PU Definition, NCP

ADDR	_____
MAXDATA	_____
MAXLU	_____
MAXOUT	_____
PUTYPE	Must be 2. (For SNAX connections)

LU Definition, NCP for SNAX Connections

LOCADDR	_____
(Must be in decimal format.)	
LOCADDR	_____
(Must be in decimal format.)	
LOCADDR	_____
(Must be in decimal format.)	
LOCADDR	_____
(Must be in decimal format.)	

VTAM Channel-Attached Major Node Definition (for SNAXLINK only)

CUADDR _____

(IBM control unit address. Corresponds to IBMCUADDR in the HP NonStop SCF PU definition control unit address. Complete this field only if the controller is SNAXLINK.)

Network Map Definitions for the z/OS, VM, or VSE Nodes

LOCAL NODE _____

(Name of the z/OS, VM, or VSE local node.)

ADJACENT.NODE _____

(Adjacent node name defined for the HP NonStop node.)

APPLID _____

(VTAM application identifier (APPLID) associated with the z/OS, VM, or VSE node.)

PARSESS _____

(Default class for Processes submitted to run on the z/OS, VM, or VSE node.)

SNODE.LUs

LU name

LU name

LU name

HP NonStop Environment Information (for Connectivity Between HP NonStop and IBM 370 Nodes)

Use this worksheet in conjunction with the *IBM Environment Information* worksheet to ensure connectivity between IBM and HP NonStop nodes.

After the IBM administrator has returned the completed *IBM Environment Information* worksheet, the HP NonStop administrator uses the values to set the corresponding HP NonStop attributes as appropriate.

SYSGEN Line Definitions

SNATS TYPE 58	Required
SUBTYPE	0 1 2 (Circle one for receiving and sending connectivity.)
(This value is dependent on the controller.)	
SMLDEV \$SSCP	Required
INTERRUPT	(Circle one)
(This value is dependent on the controller.)	SNA^6203^INTERRUPT SNA^6204^INTERRUPT SNA^CSS^INTERRUPT SNA^3840^INTERRUPT BS^6203^INTERRUPT^XF
RSIZE	4096
SECONDARY	Required
FULL HALF	
(Corresponds to DUPLEX in the IBM NCP line definition.)	
MAXPUS	_____
(Corresponds to MAXPU in the IBM NCP line definition.)	
SPEED	_____
(Corresponds to SPEED in the IBM NCP line definition.)	
SWITCHED	Y or N (if N, omit)
(Corresponds to SWITCHED in the IBM NCP line definition.)	
FRAMESIZE	_____
(Corresponds to MAXDATA + 2 in the IBM NCP line definition.)	
L2WINDOW	_____
(Corresponds to MAXOUT in the IBM NCP PU definition.)	
MAXLUS	_____
(Corresponds to MAXLU in the IBM NCP PU definition.)	
IBMCUADDR	_____
(Corresponds to IBM control unit address. Complete this field only if the controller is SNAXLINK.)	

SCF Entries Definitions for LU0

PU Definitions

ADDRESS _____

[Expressed in hexadecimal (%hxx) or decimal format. Corresponds to ADDR (hex) in the IBM NCP PU definition.]

RECSIZE _____

(Corresponds to MAXDATA in the IBM NCP PU definition.)

MAXLUS _____

(Corresponds to MAXLU in the IBM NCP PU definition.)

WINDOW _____

(Corresponds to MAXOUT in the IBM NCP PU definition.)

TYPE (13,2) is required

LU Definitions

ADDRESS _____

(Must be in decimal format. Corresponds to LOCADDR (decimal) in the IBM NCP LU definition.)

ADDRESS _____

(Must be in decimal format. Corresponds to LOCADDR (decimal) in the IBM NCP LU definition.)

ADDRESS _____

(Must be in decimal format. Corresponds to LOCADDR (decimal) in the IBM NCP LU definition.)

ADDRESS _____

(Must be in decimal format. Corresponds to LOCADDR (decimal) in the IBM NCP LU definition.)

TYPE (14,0) is required for *sending* connections.

TYPE (14,2) is required for *receiving* connections.

RECSIZE 4096

PUNAME _____

PROTOCOL SNALU is required.

CHARACTERSET ASCII is required.

Sterling Connect:Direct for HP NonStop Network Map Definitions

LOCAL.NODE _____

(Corresponds to the ADJACENT.NODE parameter in the z/OS/ VM, or VSE network map.)

ADJACENT.NODE _____

(Corresponds to the LOCAL.NODE parameter in the z/OS, VM, or VSE network map.)

AMGR

(Corresponds to the API Manager name)

LU

(Corresponds to the SNODE.LUS in the z/OS, VM, or VSE network map.)

LU name**LU name****LU name**

Defining TCP/IP Connectivity

Sterling Connect:Direct connects to and transports data across a Transmission Control Protocol/Internet Protocol (TCP/IP) network. Implementation of this protocol provides TCP/IP connectivity between HP NonStop and UNIX, z/OS, VSE, OpenVMS, i5/OS, VM, Microsoft Windows, and other HP NonStop systems.

This appendix describes:

- ❖ Requirements for TCP/IP Connectivity
- ❖ TCP/IP for Sterling Connect:Direct for HP NonStop
- ❖ Support for Multiple HP NonStop TCP stacks
- ❖ Sample Network Definitions

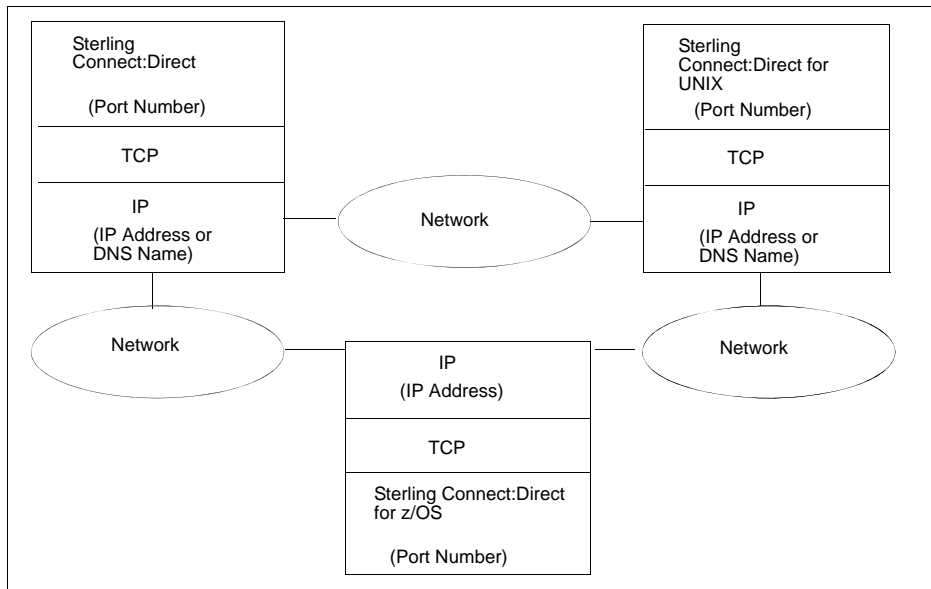
Requirements for TCP/IP Connectivity

Transmission to an IBM z/OS, UNIX, VSE, OpenVMS, i5/OS, VM, Microsoft Windows, or another HP NonStop system using TCP/IP protocol requires the HP NonStop TCP/IP product. The TLAM product requires a LAN-based CSMA/CD controller.

TCP/IP for Sterling Connect:Direct for HP NonStop

TCP/IP connections within a network are identified by a host name/IP address and well-known port number. The host name/IP address is a unique identifier for an application, like Sterling Connect:Direct. The well-known port number connects Sterling Connect:Direct to TCP. The host name/IP address and port number for adjacent nodes are defined in the network map.

The following figure shows connectivity options for a Sterling Connect:Direct TCP/IP connection, where Sterling Connect:Direct for HP NonStop, z/OS, and UNIX are interconnected.



LUs in the Sterling Connect:Direct for HP NonStop TCP/IP Environment

In the Sterling Connect:Direct TCP/IP environment, the session manager is the connection between the server and the adjacent node. As in the Sterling Connect:Direct SNA LU0 environment, you define LUs in the network map; however, in the TCP/IP environment, the name of the LU has no correlation to any defined device. Each LU, or session manager Process, is a separate connection to a node.

Note: The terms LU and session manager are used interchangeably in the Sterling Connect:Direct for HP NonStop TCP/IP environment.

You can define LUs as either static or dynamic. Static LUs are user-controlled and are quiesced and resumed with the MODIFY command.

Dynamic LUs are started by Sterling Connect:Direct as needed and automatically stopped upon Process completion. You cannot issue the MODIFY command to start dynamic session managers. If you define dynamic LUs, you are not required to monitor whether the LUs are active before a connection can occur. You control the number of session managers defined to each node and the CPUs in which the session managers run through network map definitions.

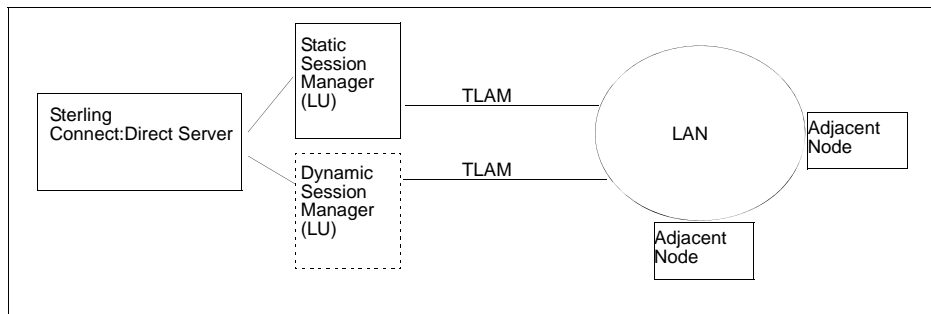
Flow of Operation

At startup, the server reads the initialization parameters file and opens the specified TCP/IP Process. The Sterling Connect:Direct server retries a failed TCP/IP connection one time, upon initialization. If the TCP/IP can not be opened, the connection is retried every three minutes until a connection is established.

The server monitors for connection requests on a single well-known port number that is known to the adjacent nodes. When the server (listener Process) receives a connection request or when you submit a Process, Sterling Connect:Direct attempts to route the request to a static LU. If no static LUs are available and the dynamic LUs relate to the specified adjacent node, Sterling Connect:Direct starts a session manager Process.

The session manager is then responsible for data transfer operations using the host name/IP address of the requester defined in the network map.

A sample configuration for a Sterling Connect:Direct TCP/IP connection follows:



Support for Multiple HP NonStop TCP Stacks

Sterling Connect:Direct for HP NonStop can use multiple, system-qualified TCP processes within a network of HP NonStop nodes to facilitate greater flexibility in load balancing.

NDMINIT Initialization Parameters for Multiple HP NonStop TCP Stacks

To handle inbound connection requests (SNODE Processes), up to 36 additional TCP listen process/port pairs can be defined in the NDMINIT file using the following parameters:

Parameter	Description
TCPLISTENnn	Defines a TCP process and port number on which the application posts LISTEN for incoming connection requests. Up to 36 TCPLISTENnn entries can be numbered with suffix values ranging from 1 to 36. For example: TCPLISTEN1 \$ZTC3 1364
LOG-TCP-CONN-RQ	Enables logging of all inbound connection requests and outgoing attempts to the statistics file. Valid values are: Yes—enable logging No—disable logging

TCPNAME Network Map Parameters

To handle outbound connection requests (PNODE Processes), the TCPNAME parameter can be defined in the LU and/or ADJ NODE records to control the TCP process used for initiating an outbound session.

The following parameter can be included when you add an ADJ NODE definition or when you add an LU definition.

Parameter	Description
TCPNAME (\system.\$xxxxx \$yyyyy \$zzzzz)	Defines any TCP processes running in the local HP NonStop network. Multiple Processes can be defined in the same command using the following syntax: TCPNAME (\system.\$xxxxx \$yyyyy \$zzzzz)

Sample Network Definitions

When installing Sterling Connect:Direct for HP NonStop for a TCP/IP connection, refer to the following sample network definitions.

SCF Startup File for a Standard TCP/IP Connection

The following figure shows a sample Subsystem Communications Facility (SCF) startup file for a standard TCP/IP connection. Note that the values used in the sample definitions are not necessarily the values you will assign to attributes in your environment. Specify additional attributes as required by your environment.

You can configure other files for a TCP/IP connection. Refer to the HP NonStop documentation for instructions.

```

#set #inlineprefix @
clear all
param tcpip^process^name $ztc0
param tcpip^host^file $system.ztcpip.hosts
== start mlman
mlman /name $zlmg, cpu 1, nowait/ 0
scf /inline/
@ == initialize tlam ethernet ports
@ allow all errors
@ allow all warnings
@
@ == start config
@ assume line $tcp1
@
@ == stop all ports
@ stop port *
@ stop line $tcp1
@ delete port *
@
@ add port #ip, type ethernet, address %h800, dataforwardtime 0.01, dataforwardcount
3
@ add port #arp, type ethernet, address %h806
@
@ start line $tcp1, sel not started
@ start port (#ip, #arp)
@ exit
== initialize tcpip
tcpip /name $ztc0, cpu 1, nowait, pri 180/
scf /inline/
@ == initialize subnets
@ allow all errors
@ allow all warnings
@
@ assume process $ztc0
@ alter, hostname "cyrcr"
@ stop subnet *
@ stop route *
@ == add subnets
@ add subnet #sub01, type ethernet, devicename $tcp1, ipaddress 199.1.4.8
@ == alter subnet #sub01, subnetmask %hffffffc00
@ alter subnet #loop0, ipaddress 127.1
@ == add routes
@ add route #rt0a, destination 199.1.6.0, gateway 199.1.4.1
@ alter, tcpendspace 12288
@ alter, tcprecvspace 12288
@ alter, udpsendspace 12288
@ alter, udprecvspace 12288
@ start subnet *
@ start route *
@ exit
== starts designated processes on the port
listener /name $lsn0, cpu 1, nowait, pri 162/
run $system.ztcpip.telnet /name $ztn0, cpu 1, nowait, pri 170/

```

Sample Network Map Definitions

The following figure shows Sterling Connect:Direct network map definitions for TCP/IP connections with z/OS, UNIX, and another HP NonStop node. The PORTNUM and IPADDR parameters on the adjacent node definitions and the TYPE parameter on the LU definitions are pertinent to TCP/IP connectivity.

```
*          LOCAL NODE*
INSERT NETMAP LOCAL.NODE=CD.TAN.TCP
*
*          ADJACENT NODES*
INSERT NETMAP ADJACENT.NODE=CD.MVS.TCP, TYPE=NDM.MVS &
          PARSESS=1, PORTNUM=1364 IPADDR=102.6.44.32, APPLID=dummy
INSERT NETMAP ADJACENT.NODE=CD.UNIX.TCP, PARSESS=1, &
          TYPE=NDM.UNIX PORTNUM=1364 IPADDR=UNIXSYS1
INSERT NETMAP ADJACENT.NODE=CD.TAN1.TCP, PARSESS=1,&
          TYPE=NDM.NONSTOP, PORTNUM=1364 IPADDR=132.1.4.63

*          LUS FOR COPIES BETWEEN ADJACENT.NODES*
INSERT NETMAP LU=$TCP.#TCPLU01, TYPE=TCP.D
INSERT NETMAP LU=$TCP.#TCPLU02, TYPE=TCP.D
INSERT NETMAP LU=$TCP.#TCPLU03, TYPE=TCP.S
*
*          LUS ASSIGNED TO SPECIFIC NODES*
RELATE NETMAP ADJACENT.NODE=CD.MVS.TCP, LU=$TCP.#TCPLU01
RELATE NETMAP ADJACENT.NODE=CD.UNIX.TCP, LU=$TCP.#TCPLU02
RELATE NETMAP ADJACENT.NODE=CD.TAN1.TCP, LU=$TCP.#TCPLU03
```

Defining ICE Connectivity

ICE software is an option for connectivity between a secondary HP NonStop node and a z/OS SNA environment. Sterling Connect:Direct supports two configurations of ICE:

- ❖ Intersystem Logon Propagation (ILP)
- ❖ Connection Manager (CM)

ICE establishes a session through a Connection Manager (CM) at each node. After a session is established, Sterling Connect:Direct transfers data using an LU0 connection through a Systems Network Logical Unit (SNALU) interface over an SDLC line.

If you choose to configure ICE without CM, you can use Intersystem Logon Propagation (ILP). ILP offers a simpler configuration, but CM is required in some circumstances. Consult your ICE software documentation to determine which configuration is best for your environment.

Sterling Connect:Direct can support both SDLC and Ethernet links with ICE.

Note: Sterling Connect:Direct does not support the ICE API that enables node type 2.1 connectivity.

This appendix provides sample network definitions as required for ICE connectivity between HP NonStop and z/OS nodes. Refer to the *ICE Administrator Manual* for complete configuration instructions for configuring the ICE process.

HP NonStop Definitions

This section provides sample HP NonStop definitions for ICE connectivity over an SDLC line. The first sample uses Intersystem Logon Propagation; the second sample uses Connection Manager.

Using Intersystem Logon Propagation

A sample input file (ADDICE) for configuring ICE with the Intersystem Logon Propagation (ILP) Option in a Sterling Connect:Direct for HP NonStop environment follows. Commands are executed through the Node Operator Facility (NOF), an ICE utility.

```

== Configure a primary node
assume process $ICC

== Define a logical line
add line line1, tndm $ICE, type SECONDARY, protocol sdlc,          &
                    idblk 111

== Define a logical PU that is associated with the logical line
== defined above.
add pu PU1, address 1, line line1, IDNUM 1

== Define a Connection Manager that is associated with the logical
== PU defined above.
add mode NONSTOP5, COSNAME #BATCH, COMPROT 7080, FMPROF 4, TSPROF 4, &
    PRIPROT B3, SECPROT B3, PSERVIC 000000000000000000000000,      &
    SSNDPAC 7, SRCVPAC 4, RUSIZE 1024, adaptive no

== Define local APPLs
add appl appl1, OPENNAME #APPL1, protocol SNALU, llu D1IR41I1, mode &
    NONSTOP05
add appl appl2, OPENNAME #APPL2, protocol SNALU, llu D1IR41I2, mode &
    NONSTOP05

== Define the remote task between the Connection Manager and the
== APPLID at the remote node.
add rlu NMVSD08,pu pu1 uss no, mode NONSTOP

START LINE LINE1
START PU PU1
STATUS APPL *

```

A description of the relationship between elements in the configuration follows:

- ❖ \$ICC is the Process name associated with ICE and corresponds to the high-level qualifier of the LU as defined in the Sterling Connect:Direct for HP NonStop network map.
- ❖ \$ICE is the HP NonStop line name. Define a different line for each line type that you intend to use (SDLC or Ethernet). In this sample, the line type is SDLC.
- ❖ PU1 is a logical PU name that associates the PU with the HP NonStop line name (\$ICE). Define one PU for each line type.
- ❖ You must define a mode entry to identify LOGMODE parameters used between Sterling Connect:Direct for HP NonStop and Sterling Connect:Direct for z/OS. Add this mode name to the ADD APPL and ADD RLU statements; it is also the LOGMODE name for the ICE LU in the Sterling Connect:Direct for HP NonStop network map.
- ❖ The APPL name APPL1 is a logical name. The OPENNAME #APPL1 corresponds to the sub device of the LU as defined in the Sterling Connect:Direct for HP NonStop network map. The protocol is always SNALU. The local LU (LLU) is an independent LU in the VTAM NCP definitions for z/OS. In this sample, D1IR41I1 is the LLU.

- ❖ You must define a remote task between Sterling Connect:Direct and the z/OS node to copy files from HP NonStop to z/OS.

Note: This definition is not required for ILP; it is only applicable for Connection Manager.

- ❖ You must define a remote LU to correspond to the APPLID of the Sterling Connect:Direct for z/OS node.

Using Connection Manager

A sample input file (ADDICE) for configuring ICE with the Connection Manager option in a Sterling Connect:Direct for HP NonStop environment follows. Commands are executed through the Node Operator Facility (NOF), an ICE utility.

```

== Configure a primary node
assume process $ICC

== Define a logical line
add line line1, tndm $ICE, type SECONDARY, protocol sdlc,          &
                    idblk 111

== Define a logical PU that is associated with the logical line
== defined above.
add pu PU1, address 1, line line1, IDNUM 1

== Define a Connection Manager that is associated with the logical
== PU defined above.
add cm CMACB1, pu PU1
add mode NONSTOP05, COSNAME #BATCH, COMPROT 7080, FMPPROF 4, TSPPROF 4, &
    PRIPROT B3, SECPROT B3, PSERVIC 000000000000000000000000,      &
    RUSIZE 1024, adaptive no

== Define local APPLs
add appl appl1, OPENNAME #APPL1, protocol SNALU, llu D1IR41I1, mode &
    NONSTOP05
add appl appl2, OPENNAME #APPL2, protocol SNALU, llu D1IR41I2, mode &
    NONSTOP05

== Define the remote LU between ILP and the APPLID at the
== remote node.
add rtask NMVSD08,cm cmacb1

START LINE LINE1
START PU PU1
STATUS APPL *
```

A description of the relationship between elements in the configuration follows:

- ❖ \$ICC is the Process name associated with ICE and corresponds to the high-level qualifier of the LU as defined in the Sterling Connect:Direct for HP NonStop network map.
- ❖ \$ICE is the HP NonStop line name. Define a different line for each line type that you intend to use (SDLC or Ethernet). In this example, the line type is SDLC.
- ❖ PU1 is a logical PU name that associates a CM to the HP NonStop line name (\$ICE). PU1 corresponds to the value specified in the definition of the remote CM for z/OS. Define one PU for each line type.
- ❖ The CM is a dedicated LU on the z/OS node that is used for session establishment. The CM name CMACB1 corresponds to the VTAM ACB name for the MVS CM.

- ❖ You must define a mode entry to identify LOGMODE parameters used between Sterling Connect:Direct for HP NonStop and Sterling Connect:Direct for z/OS. Add this mode name to the ADD APPL statement and to the LU entry in the Sterling Connect:Direct for HP NonStop network map.
- ❖ The APPL name APPL1 is a logical name. The OPENNAME #APPL1 corresponds to the sub device of the LU as defined in the Sterling Connect:Direct for HP NonStop network map. The protocol is always SNALU. The local LU (LLU) is an independent LU in the VTAM NCP definitions for z/OS. In this example, D1IR4111 is the LLU.
- ❖ You must define a remote task between Sterling Connect:Direct and the z/OS CM to copy files from HP NonStop to z/OS. NMVSD08 corresponds to the APPLID of the Sterling Connect:Direct for z/OS node.

Sample Line Definition

You can define lines at the HP NonStop node using SYSGEN or Configuration Utility Program (COUP). A sample SYSGEN definition for the ENVOYACP/XF line named \$ICE follows. Refer to the HP NonStop SYSGEN documentation when defining the line.

```
C3604^SDLC      = SDLCXF
                  TYPE 11,          SUBTYPE 40,
                  INTERRUPT          BS^6203^INTERRUPT^XF,
                  RSIZE              04105,
                  FRAMESIZE          2050,
                  REJ,               TWS,
                  FULL #;

$ICE  SYNC0.2,  SYNC0.3  C3604^SDLC;  ENVOYACP/XF lines
```

A sample COUP definition for the line named \$ICE follows:

```
INFO $ICE,DETAIL
NAME $ICE
MACRO SDLCXF
CONTROLLERNAME SYNC0
COUP FLAGS ( COUPED, STARTED )
TYPE 11
SUBTYPE 40
RSIZE 04105
UNIT ( 02, 03 )
PROCESS IMAGE $SYSTEM.SYS03.ZZPIM000
IOBJECT $SYSTEM.SYS03.BSPROCO
IOLIBRARY
INTERRUPT BS^6203^INTERRUPT^XF
MAXLOCALAREA 2048
LOCALPOOLPAGES 60
CSMLDEV 0
PROGRAM
PROGRAM1
PROG9370
PROG9367
IOWORDS 20480
IOPAGES 20
XPAGES 255
FRAMESIZE 2050
```

Continued

```

RECRNRRETRY
SENDRNRRETRY
NRM
ADDRESSSIZE 1
L1RETRY 3
L2RETRY 3
L2WINDOW 7
NOCONTCF
IDLERESPRR
BDCASTOFF
STATISTICSOFF
TWA
NOSWITCH
HALF
SWINCARRIER
ASCII
AUTOLOAD
RS232
PRIMARY
SUPR
TRNSOFFSET 0
TRNSLENGTH 0
THRESHOLD 500
XFERTIMER 0
T1TIMER 500
IDLETIMER 50
DSRTIMER 400
ADDRESS1 193
ADDRESS2 0
ADDRESS3 0
ADDRESS4 0
SPEED 96
RNRTIMER 0
DIALIN
NONETID
NOAUTOACCEPT
NRDYUNCTRL
MAXPUS 1
IBMSCNADDR 0
BURST 0
NOOPTION1
LINEBUFFERSIZE 20480
BUFFSIZE 20480
RETRIES 3
TIMEOUT 500
POLLINT 50
RNRRETRY
WINDOW 7
DRIVER
POLLCNT 0
PROTOCOL

```

Sample Startup File for ICE

The following figure shows a sample GOICE file, the startup file for ICE. The CMNAME parameter specifies the dedicated LU name used for CM-to-CM communication during session establishment. In this example, the value for the CMNAME parameter is D1IR4114.

Note: If you are configuring ICE with the ILP option, do *not* use the CMNAME parameter.

The RUN statement names the ICE Process as \$ICC. The name must correspond to the Process name defined in the ADDICE file.

Refer to the ICE administration documentation for parameter descriptions.

```
?tacl macro
clear all
param backupcpu 1
param cinittimer 120
param cmname D1IR41I4                (Only used with CM)
param collector $0
param config icetcl
param cpname ICE1
param datapages 8
param dynamicrlu yes
param genesis $gen
param maxrcv 4096
param loglevel info
param netname SCINET
param password xxxxxxxxxxxxxxxxxxxx
param retrysl 5
param secuserid super.super
param startup %1%
param timer1 20
param timer2 300
param usstable default
run ice/name $ICC,nowait,CPU 0,pri 180/
```

Sterling Connect:Direct for HP NonStop Network Map Definitions

The following table shows a sample Sterling Connect:Direct for HP NonStop network map definition of a z/OS adjacent node record configured for an ICE connection:

Definition	Value
Adjacent Node	DALLAS1
Node Type	NDM.MVS
MAXRETRY	7
APPLID	NMVSD08
LUList	\SYS.\$ICC.#APPL1 \SYS.\$ICC.#APPL2

The following table shows a sample Sterling Connect:Direct for HP NonStop network map definition of an LU configured for an ICE connection:

Definitions	Values
LU	\SYS.\$ICC.#APPL1
LU Type	SNA.S
Timeout Value	3
Adjacent Node	DALLAS1

z/OS Definitions

This section provides sample z/OS definitions for ICE connectivity over an SDLC line. Refer to z/OS and ICE documentation when defining the z/OS environment for ICE connectivity.

Sample VTAM NCP Definition for an ICE Connection

A sample VTAM NCP definition for an ICE connection follows. The independent LUs, D1IR41I1 and D1IR41I2 are used for Sterling Connect:Direct transfers. D1IR41I4 is *only* used for sessions between the z/OS and HP NonStop Connection Managers. D1IR4199 is used for ILP sessions between Sterling Connect:Direct for HP NonStop and Sterling Connect:Direct for z/OS.

```

D1IR4G  GROUP LNCTL=SDLC, *
          DUPLEX=FULL, *
          NRZI=NO, *
          PACING=7, *
          VPACING=7, *
          REPLYTO=1, *
          RETRIES=(7,4,5), *
          TYPE=NCP
*
D1IR4    LINE ADDRESS=(8,FULL), *
          ANS=CONTINUE, *
          CLOCKNG=EXT, *
          DUPLEX=FULL, *
          ISTATUS=ACTIVE, *
          ETRATIO=30, *
          MAXPU=2, *
          SERVLIM=10, *
          SRT=(,64), *
          SPEED=19200
          SERVICE ORDER=(D1IR41),MAXLIST=2
*
* * * * *
*
D1IR41  PU ADDR=01, *
          PUTYPE=2, *
          ANS=CONTINUE, *
          ISTATUS=ACTIVE, *
          PASSLIM=8, *
          DATMODE=FULL, *
          DISCNT=(NO), *
          MODETAB=DALLMTAB, *
          DLOGMOD=NONSTOP05, (4096K rusize) *
          SSCPFM=USSSCS, *
          RETRIES=(,1,4), *
          USSTAB=RSUSSTAB, *
          XID=YES, *
          MAXDATA=4129,HP NonStop gen words:2050 = 4100 bytes) *
          MAXOUT=7 (4100 + 29 = 4129)
*
* INDEPENDENT LUS
D1IR41I1 LU LOCADDR=0, ISTATUS=ACTIVE
D1IR41I2 LU LOCADDR=0, ISTATUS=ACTIVE
* for CM-CM communications only
D1IR41I4 LU LOCADDR=0, ISTATUS=ACTIVE, *
          DLOGMOD=CMMODE
* dependent LU for ILP only
D1IR4199 LU LOCADDR=2, ISTATUS=ACTIVE

```


Sterling Connect:Direct for z/OS Network Map Definitions

The following table shows a sample Sterling Connect:Direct for z/OS network map definition of a HP NonStop adjacent node record configured for an ICE connection:

Definition	Value
Adjacent Node	NONSTOP.ICE
PARSESS	2,1
SNODE.LUS	D1IR41I1 D1IR41I2

Sample HP NonStop Network Map Entry

Following is a sample HP NonStop network map entry.

```

=====
                S E L E C T   N E T W O R K   M A P
=====
Adjacent Node => QA.ZOS.V20100 <-- name of the z/OS Sterling Connect:Direct node
Node Type    => NDM.zOS
Maxretry     => 7
Applid       => M1CDD757 <-- dtf applid; matches the RLU entry above
LU List      => \CYCR.$ICC.#APPL2   \CYCR.$ICC.#APPL3
-----
LU           => \CYCR.$ICC.#APPL2 <-matches add appl stmt in ICE cnfg
LU Type      => SNA.S
Timeout Value => 3
Maxretry     => 5
Logmode      => NONSTOP05 <-- must match the add mode in ICE config
Adjacent Node => QA.ZOS.V20100
-----
LU           => \CYCR.$ICC.#APPL2 <-matches add appl stmt in ICE cnfg
LU Type      => SNA.S
Timeout Value => 3
Maxretry     => 5
Logmode      => NONSTOP05 <-- must match the add mode in ICE config
Adjacent Node => QA.ZOS.V20100
=====

```

Sample z/OS Network Map Entry

Following is a z/OS network map entry sample:

```

ADJACENT.NODE = (( TAN2.BGK) - <-- name of the HP NonStop node
PARSESS       = (2 1) - <-- 1st parm=# of snode.lus, 2nd=def. class
SNODE.LUS     = (M1IR51I2 M1IR51I3) <-- matches llus entries in the HP NonStop ICE config

```

Sample z/OS Resource Definitions

Following is an example of z/OS resource definitions:

```

1. LLU M1IR51I2 <- matches with resource in 'add APPL2' in ADDICE defs
NAME = M1IR51I2, TYPE = CDRSC
STATUS= ACTIV, DESIRED STATE= ACTIV
REAL NAME = ***NA***
MDLTAB=***NA*** ASLTAB=***NA***
ADJLIST = ***NA***
MODETAB=DALLMTAB USSTAB=***NA*** LOGTAB=***NA***
DLOGMOD=NONSTOP USS LANGTAB=***NA***
CAPABILITY-PLU ENABLED ,SLU ENABLED ,SESSION LIMIT NONE
CDRSC MAJOR NODE = M1CDSIND
ALSLIST = M1IRI1
DEVICE = ILU/CDRSC
I/O TRACE = OFF, BUFFER TRACE = OFF
ACTIVE SESSIONS = 0000000000, SESSION REQUESTS = 0000000000

2. LINE M1IRI
IST097I DISPLAY ACCEPTED
IST075I NAME = M1IRI, TYPE = LINE
IST486I STATUS= ACTIV, DESIRED STATE= ACTIV
IST087I TYPE = LEASED , CONTROL = SDLC
IST134I GROUP = G02SDLC, MAJOR NODE = NCP02G

3. PU M1IRI1
NAME = M1IRI1, TYPE = PU_T2.1
STATUS= ACTIV, DESIRED STATE= ACTIV
CP NAME = ICE1, CP NETID = CSDNET, DYNAMIC LU = NO
LINE NAME = M1IRI, LINE GROUP = G02SDLC, MAJNOD = NCP02G
I/O TRACE = OFF, BUFFER TRACE = OFF

4. DEPENDENT LU M1IRI198 - this must be subordinate to the z/OS pu,
                        but is otherwise not referenced in the
                        netmaps or the ICE config file

NAME = CSDNET.M1IRI198, TYPE = LOGICAL UNIT
STATUS= ACTIV, DESIRED STATE= ACTIV
MDLTAB=***NA*** ASLTAB=***NA***
MODETAB=DALLMTAB USSTAB=RSNAUSS LOGTAB=***NA***
DLOGMOD=NONSTOP5 USS LANGTAB=***NA***
CAPABILITY-PLU ENABLED ,SLU INHIBITED,SESSION LIMIT 00000001
LINE NAME = M1IRI, LINE GROUP = G02SDLC, MAJNOD = NCP02G
PHYSICAL UNIT = M1IRI1
DEVICE = LU
I/O TRACE = OFF, BUFFER TRACE = OFF
ACTIVE SESSIONS = 0000000000, SESSION REQUESTS = 0000000000

```

Sample ICE Configurations

Following are sample ICE configurations.

Sample STARTICE File

The following is an example of the startup macro STARTICE which invokes all ICE routines. Start it by typing STARTICE COLD from TACL.

```
?tacl routine
#OUTPUT THIS ROUTINE STARTS ICE. STOPS ANY CURRENT $GEN & $ICC, IF RUNNING
STOP $ICC
STOP $GEN
#FRAME
#PUSH :var1
#IF [#ARGUMENT/VALUE :var1/ KEYWORD/WORDLIST COLD COOL WARM/]
#IF [#ARGUMENT END]
#SET :var1 [#SHIFTSTRING [:var1]]
#OUTPUT Starting genesis
gogen [:var1]          <-- see GOGEN below
#OUTPUT Starting ice
goice [:var1]         <-- see GOICE below
#OUTPUT Starting nof
[#IF :var1 '=' "COLD" |then|
  run nof/in addice/   <-- run NOF process using ADDICE file below
]
#UNFRAME
```

Sample GOGEN File

Following is the GOGEN file referenced in the previous example. It starts the program module GENESYS.

```
?tacl macro
clear all
param backupcpu 1
param collector $0
param config genct1
param datapages 64
param startup %1%
run genesis/name $GEN,nowait,term $trm0.#a,cpu 0,pri 180/
```

Sample GOICE File

Following is the GOICE file referenced in the previous STARTICE example; it starts ICE.

```
?tacl macro
clear all
param backupcpu 1
param cinittimer 120
=====param cmname M1IR51I4 not used with ILP option
param collector $0
param config icectl
param cpname ICE1
param datapages 64
param dynamicrlu yes
param genesis $gen <-- name of the GENESYS process started above
param maxrcv 4115
param loglevel info
param netname csdnet
param password nnnnnnnnnnnnnnnnn - supplied by vendor
param retrys1 5
param secuserid super.super
param startup %1%
param timer1 20
param timer2 300
param usstable default
run ice/name $ICC,nowait,cpu 0,term $trm0.#a,pri 180/
```

Sample ADDICE File

The ADDICE file contains the basic configuration. These definitions must correspond to various other definitions in the VTAM and Sterling Connect:Direct environments.

```

=== THIS IS THE ADDICE FILE FOR STARTING WITHOUT CONNECTION MANAGER

== Open the ICE and GENESIS processes

assume process $ICC - this is the name of the ICE process started above

== SDLC line to NCP with as a SECONDARY station
add line line1, tndm $ICE, type SECONDARY, protocol sdlc

== NCP is the primary
add pu pul, address 1, line line1

== ADD MODE - this must match the LOGMODE referenced in the lu entry
==           in the HP NonStop netmap
ADD MODE nonstop05, COSNAME #BATCH, COMPROT 7080, FMPROF 4, TSPROF 4, &
PRIPROT B3, SECPROT B3, PSERVIC 000000000000000000000000, &
RUSIZE 1024, adaptive no

== Add the RLU's - this must match the dtf applid referenced in the
==           adjacent node entry for the MVS node in the HP NonStop netmap

add RLU M1CDD757, pu pul, uss no, mode nonstop05
== Add the appls - the ICE process name and the OPENNAME (see add ==
appl, below) form the lu entry in the HP NonStop
==           netmap. EX: $ICC.#APPL2. The llu entry matches the
==           snode lu parm in the MVS netmap entry. The mode
==           matches the addmode above
add appl APPL2, OPENNAME #APPL2, protocol SNALU, llu M1IR51I2,mode nonstop05
add appl APPL3, OPENNAME #APPL3, protocol SNALU, llu M1IR51I3,mode nonstop05

START LINE LINE1
START PU PUL

```

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A

Adjacent Node

An adjacent node is an entry in the Network Map that defines a Sterling Connect:Direct node with which the local Sterling Connect:Direct node can communicate. The adjacent node is also called a remote node.

AIMS

The automated installation and management system (AIMS) is a menu-driven system that guides you through the installation procedure for Sterling Connect:Direct.

Application Programming Interface (API)

The Application Programming Interface (API) is a Sterling Connect:Direct component that accepts commands and places them in an executable format.

API Manager

An API manager is a network map entity, that handles communications sessions between Sterling Connect:Direct and external applications on a TCP/IP network. After the API manager has been set up, users of these other IBM products can configure, control, and operate Sterling Connect:Direct from any host on a TCP/IP network.

AUTHFILE

The authorization file contains records of user attribute defaults. Each record defines the features of Sterling Connect:Direct that you can access.

B

Background Mode

The background mode enables you to execute NDMCOM using a disk file containing Sterling Connect:Direct commands as input. All Sterling Connect:Direct commands, except the FC command, are used in this mode.

C

CB Function

The CB (Control Block) function is a group of statements that performs a specific task and often returns a value to the statement that calls it.

C-string Control Block

The C-string control block (CB) is the data format that returns output generated by Sterling Connect:Direct Processes and commands to the API. A C-string control block consists of two or more fields.

C-string Control Structure

The C-string control structure groups one or more related C-string control blocks.

Checkpoint Restart

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

Command Line Interface

The command line interface is a Sterling Connect:Direct interface that enables you to submit Sterling Connect:Direct Processes and commands from your native command line environment.

Commands

Sterling Connect:Direct commands initiate and monitor activity within the Sterling Connect:Direct system.

Cyclic Redundancy Checking (CRC)

CRC is a method used to validate data integrity during data transfers between Sterling Connect:Direct nodes across a TCP/IP network. CRC can be controlled using any of the following options:

- ❖ A global initialization parameter
- ❖ An adjacent node definition
- ❖ A Process statement parameter
- ❖ A SUBMIT command parameter

D

Domain Server

Sterling Connect:Direct can be configured to handle inbound connection requests from a TCP domain, that is, a range of IP addresses, using the ADJ NODE record type NDM.DOMAIN. This allows the application to recognize connection requests from IP addresses that are not explicitly configured in the network map, as long as they fall within one of the defined domains.

Downstream Connection

See Receiving Connection.

Dynamic LUs

Sterling Connect:Direct starts dynamic LUs as needed and automatically stops them upon Process completion. Dynamic LUs are options when using TCP/IP.

E

EMS Filters

The EMS filters provide a programmatic method for selecting events for processing.

Environment Commands

These commands enable you to perform various Sterling Connect:Direct functions, such as displaying environment values and invoking TEDIT. Some environment commands allow you to set specific environment parameter values in NDMCOM. These values remain in effect only for the duration of the current session, unless they are changed by you or another user logs on to the same NDMCOM.

ERR Control Block

The ERR control block is the first control block of an error control structure (ERRCS). The beginning and ending fields are: `CB !ERR !` and `CBEND !ERR !`. The two other required fields in the ERR control block are: *N* (number) field and *T* (top message) field. *N* specifies the number of messages in the ERRCS; *T* specifies the number of the most important message.

Error Control Structure (ERRCS)

The error control structure (ERRCS) is a particular C-string control structure designed to identify the messages occurring when executing Sterling Connect:Direct Processes and commands.

Event Management Service (EMS)

Event management performs event-collection, logging, and distribution in the distributed systems management (DSM) environment.

F

FASTLOAD

This Sterling Connect:Direct function can reduce disk I/O overhead. It is used when the Sterling Connect:Direct node is the destination. With FASTLOAD, Sterling Connect:Direct passes data through SPI to FUP to load into a destination data file. The feature is particularly useful for key-sequenced files, but it is also supported for entry-sequenced and relative record files.

Field

A field is two null-terminated strings—key and data. Two or more fields make up a C-string control block.

I

I/O Exit Support

This support provides exit points for user-written programs to serve as application interfaces for data transfers.

Interactive Mode

This mode enables you to issue commands through NDMCOM and receive an immediate response.

L

Local Node

The local node is the Sterling Connect:Direct server.

M

Message Commands

The message commands allow you to display, add, delete, modify, and print Sterling Connect:Direct messages from the command interpreter (TACL).

Message Control Blocks

Message control blocks are part of an ERRCS. These blocks are sequenced as they occur. The fields in a message control block are CB ! En !, FDBK ! fb !, RC ! rc !, MSGID ! msgid !, and OK ! od ! (optional keyword ! optional data !).

N

NDMCOM

NDMCOM is the Sterling Connect:Direct user interface.

NDMMON

The monitor Process (NDMMON) ensures nonstop operation of Sterling Connect:Direct.

NDMSTDL

The statistics deletion program (NDMSTDL) ensures sufficient space is available to write statistics records in the statistics files. It deletes records from STATFILE and STATSRCH based on user-specified deletion criteria and maximum percentage of file capacity.

Network Map

The network map (netmap) is a file that identifies all valid Sterling Connect:Direct nodes in the network. One network map is associated with each Sterling Connect:Direct local node. The netmap has one entry for each of

the other Sterling Connect:Direct nodes to which the local Sterling Connect:Direct node communicates. The netmap entries also contain the rules or protocol that the nodes adhere to when communicating.

Node

A node is any site in a network from which information distribution is initiated.

P

Primary Node

The primary node (PNODE) is the Sterling Connect:Direct node on which the Process is submitted. The primary node is also referred to as the controlling node or initiating node, but is not necessarily interpreted as the sending node, because PNODE can be the receiver. In every Process, one PNODE and one SNODE are specified. The submitter of a Process is always the PNODE.

PNODE=SNODE Transmission

This transmission enables you to create a Process to send data to another file on your node. In this type of transmission, your node is both the PNODE and the SNODE.

Primary Logical Unit

The primary logical unit (PLU) is the logical unit that controls an LU to LU session. The PLU formats and sends an NLD request that begins a session.

Process (Source File)

A Process is a series of statements that initiate Sterling Connect:Direct activity, such as copying files, running jobs, and so on.

Process Statements

Process statements are instructions for transferring files, running operating system jobs, executing programs, or submitting other Sterling Connect:Direct Processes. You use Process statements to build a Sterling Connect:Direct Process.

R

Receiving Connection

The receiving connection is a connection between Sterling Connect:Direct and other nodes (i5/OS—TCP only) where the Sterling Connect:Direct node supports the primary functions of the data link and the HP NonStop LU functions as a primary LU (PLU).

Remote Node

A remote node is an entry in the network map that defines a Sterling Connect:Direct node with which the local Sterling Connect:Direct node can communicate. The remote node is also called an adjacent node.

Retry Interval

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

S

SECFILE

The security file (SECFILE) relates the node name and user ID assigned to an incoming Sterling Connect:Direct operation to a HP NonStop user ID.

Secondary Logical Unit

The secondary logical unit (SLU) is the logical unit that functions under the control of a PLU. The SLU accepts the incoming NLD request from the PLU.

Secondary Node

The secondary node (SNODE) is the Sterling Connect:Direct node that interacts with the primary node (PNODE) during Process execution. SNODE is also referred to as the participating (non controlling) or partner node. Every Process has one PNODE and one SNODE.

Secure Point of Entry

The secure point of entry enables Processes from other nodes to be written without the use of passwords.

Sending Connection

The sending connection is between HP NonStop and the IBM 370 nodes (z/OS, VM, VSE) where the IBM node supports the primary functions of the data link and the IBM LU functions as a primary LU (PLU).

Server

The server (NDMSRVR) is responsible for processing command requests, communicating with the session manager when work is placed in the transmission control queue, and accepting session establishment requests from remote nodes.

Session Manager

The session manager (NDMSMGR) is responsible for establishing communication sessions, performing standard session management functions, and executing Processes.

SNA (Systems Network Architecture)

A network architecture designed to provide compatibility among a wide variety of hardware and software products that enable you to build complex networks. It defines protocols, standards, and message formats to which different hardware and software products must conform.

SNA Primary

SNA primary defines the LU as a primary LU (PLU).

SNA Secondary

SNA secondary defines the LU as a secondary LU (SLU).

SNAX Passthrough

SNAX passthrough is a function of the SNAX line access software that permits interaction between a host application program and an SNA device connected to a HP NonStop system. The Sterling Connect:Direct for HP NonStop system, which is not a Sterling Connect:Direct node, appears to the host as a cluster controller.

SNODE

The secondary node (SNODE) is the node participating in Process execution initiated by another node (the PNODE).

Sterling Connect:Direct Commands

Sterling Connect:Direct commands use a command structure common to the rest of the Sterling Connect:Direct family of products. The commands are issued three ways: in interactive mode directly from the command line, in background mode by issuing the Sterling Connect:Direct OBEY command, or through an API.

Sterling Connect:Direct for HP NonStop Spooler Option

The Sterling Connect:Direct for HP NonStop spooler option is a Sterling Connect:Direct application that permits an installation to transfer output spooler jobs automatically from a Sterling Connect:Direct node to a disk file on an adjacent node.

Sterling Connect:Direct/Plex

Sterling Connect:Direct/Plex is a Sterling Connect:Direct for z/OS system consisting of a Sterling Connect:Direct/Manager and one or more Sterling Connect:Direct/Servers in a TCP/IP environment. Sterling Connect:Direct for HP NonStop can establish sessions with Sterling Connect:Direct/Plex.

Statistics File

The statistics file holds Sterling Connect:Direct statistics records that document the history of a Process.

Statistics Facility

The Sterling Connect:Direct statistics facility records Sterling Connect:Direct activities.

Static LUs

Static LUs are user-controlled and are quiesced and resumed with the MODIFY command. Static LUs are options when using TCP/IP.

T

Transmission Control Queue

The Transmission Control Queue (TCQ) holds information about Sterling Connect:Direct Processes that are currently executing or scheduled to execute in the future.

TCP/IP Option

TCP/IP is a connectivity option for Sterling Connect:Direct for z/OS, UNIX, OpenVMS, VSE, i5/OS, Stratus VOS, and Microsoft Windows, and HP NonStop nodes.

Type File

The type file contains records that define file attributes for new files.

U**Upstream Connection**

See Sending Connection.

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