SMSC-SMPP Integration Manual

Optional Feature for Release 6.1
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About This Manual

This document is about NuPoint Messenger Communication server SMSC-SMPP integration products. SMSC-SMPP products are optional feature software that allows a NuPoint Messenger server to integrate with a short message service center (SMSC). An SMSC is a “front-end” device in the mobile communications environment, sending and receiving messages to and from mobile stations.

Who Should Read This Manual?

This manual is for administrators who must install and configure SMSC-SMPP products on a NuPoint Messenger server.

What’s In This Manual?

Chapters contained in this manual are:

Chapter 1 — Introduction: A brief orientation to SMSC-SMPP.

Chapter 2 — Installing SMSC-SMPP: Instructions for installing SMSC-SMPP files on the NuPoint Messenger server.

Chapter 3 — Configuring SMSC Processes and Links: Instructions for the first of two parts of SMSC-SMPP configuration.

Chapter 4 — Configuring Mailboxes and Message Formats: Instructions for the second of two parts of SMSC-SMPP configuration.

Appendix A — Configuration Worksheets: Templates for recording configuration parameters.

What Related Documents Are Available?

For detailed reference on NuPoint Messenger server configuration and operating characteristics, refer to the following:

- NuPoint Messenger Installation and Service Manual
- NuPoint Messenger Reference and Configuration Manual

1 Introduction

This chapter describes SMSC-SMPP and relates it to elements of the mobile communications

environment. It also summarizes SMSC-SMPP components and operation.

What is SMSC-SMPP?

SMSC-SMPP implements a Short Message Peer-to-Peer (SMPP) interface between a NuPoint Messenger server and Short Message Service Center (SMSC). The SMPP interface is a mechanism to integrate the NuPoint Messenger server with SMSCs. SMPP allows a NuPoint Messenger server and SMSC to support the following features: Message Waiting Indicator (MWI) and Call Back Numbers (CBN). The features are key to providing full-service mobile communications.

MWI allows the NuPoint Messenger server and SMSC to alert a mobile subscriber that a message was recorded in the subscriber's mailbox. CBN allows the NuPoint Messenger server and SMSC to supply the subscriber with a call back number if the subscriber wishes to call back.

In this document, the term subscriber refers to a user at a mobile station (mobile phone) who has an account on both the SMSC and NuPoint Messenger server.

Note: SMSC-SMPP is based on SMPP version 3.3 (and is compatible with select SMSCs that support that interface). SMPP version 3.3 defines SMSC-to-NuPoint Messenger server communication via a TCP/IP over Ethernet connection.

Terms and Concepts

The following terms and concepts are used throughout this manual. Be sure to understand this information before attempting to use SMSC-SMPP.

Short Message Service Center

An SMSC is a networked device in the mobile communications environment (Figure 1-1). The SMSC provides a connection between mobile phones and voice processing systems or any message originating servers.

SMSCs have a transmitter and receiver to exchange messages with mobile phones through a wireless network. They also have hardware and software to exchange messages with networked components over a LAN. In the case of NuPoint Messenger server SMSC integration, the means of exchange is TCP/IP over Ethernet.

Voice/Fax Waiting Indicator

MWI is like enhanced paging services. The NuPoint Messenger server generates an MWI request whenever a new message is left in a subscriber mailbox that has the SMSMWI message waiting type assigned. The MWI request sent to the SMSC contains some or all of the following elements:

- Mailbox number
- Time and date of last message
- Source of last message (caller ID number)
- Current FCOS of mailbox

- Number of unplayed messages, number of saved messages
- Priority of messages (normal, urgent, and so forth)
- Type of last message (voice or fax)
- Request for delivery receipt
- Replace if present flag

Figure 1-1 Mobile Communications Environment

Call Back Number

CBN is required for paging services that provide a call back number. The NuPoint Messenger server generates a CBN request whenever a cut-through page is left for a subscriber whose mailbox has the SMSC pager system assigned. The CBN request sent to the SMSC contains some or all of the following information:

- Mailbox number
- Call back number
- Urgent flag
- Any of the information available for MWIs

Delivery Receipt

When the SMSC has completed its delivery attempts to the mobile phone, it sends a receipt to the NuPoint Messenger server indicating whether the message was delivered (success) or deleted (failure). The receipt triggers a message that is sent to the subscriber mailbox.

The CBN receipt message is:

> “Receipt for Call Back Number sent < date and time > the call back number was <CBN>.”

Message Formats

MWI and CBN messages follow well-defined formats. The NuPoint Messenger server administrator configures the message data to be seen by the SMSC and usually the subscriber (the SMSC might or might not alter the data).

The administrator configures message data by choosing from a series of NuPoint Messenger server mailbox variables and constants. Each variable and constant combination is considered a separate message element. A field separator automatically is inserted between each element. The format for a brief message might be, for example:

> Element 1 - Variable: num_unread
> Element 2 - Constant: “UNREAD”
> Element 3 - Variable: last_source
> Element 4 - Constant: “LAST CALLER”
> Field separator: 0x20
>
> Message: 33 UNREAD 4081235679 LAST CALLER

For details on message format, see Chapter 4, “Configuring Message Format and Mailboxes.”

SMSC-SMPP Components

Figure 1-2 is a high-level view of SMSC-SMPP. Key components are:

- SMSC_POLLER process — Manages TCP/IP communication with the SMSC.
- SMSC_MGR process — Builds MWI and CBN requests and sends them to the SMSC_POLLER for forwarding to the SMSC.
- SMSC_AGENT process — Receives MWI requests from the message waiting light administrator (MWLA). Looks up mailbox status information in the open account administrator (OAA) mailbox and builds output text. Sends the text to the SMSC_MGR for transmission via the SMSC_POLLER to the SMSC. Receives CBN requests from the message data base administrator (MDBA). Looks up mailbox status information in the OAA mailbox and builds output text. Sends the text to the SMSC_MGR for transmission via the SMSC_POLLER to the SMSC.
- SMSC_STAT process — Accumulates runtime statistics and builds a binary measurement file for each NuPoint Messenger module.
- SMSC_DEBUG process — Runs only when the SMSC Debug option is chosen from the NuPoint Messenger console Utility Menu. Displays real time status of SMSC-SMPP and supports testing and performance tuning.

Figure 1-2 SMSC-SMPP Components

2 Installing SMSC-SMPP

This chapter describes hardware and software requirements for SMSC-SMPP. It also describes how to load SMSC-SMPP files on the NuPoint Messenger server.

Before You Begin

Optional feature software on a 3.5-inch diskette is supplied. Before attempting to load files from the diskette, do the following:

- Create a backup copy of the diskette.
- Check that necessary hardware for SMSC-SMPP is installed on the NuPoint Messenger server. Necessary hardware includes an Ethernet card for each module used in the SMSC-SMPP integration.
- Check that the network connection between the NuPoint Messenger server and SMSC is configured correctly and operational.
- Check that NuPoint Messenger Release 6.1 or later software is installed on the NuPoint Messenger server.

Loading SMSC-SMPP Files

Currently, SMSC-SMPP integration products include:

- Voice/Fax Message Waiting Indicator (MWI) feature
- Call Back Number (CBN) feature

The MWI feature is considered base SMSC-SMPP software. Customers who want the CBN feature can install CBN in addition to MWI.

You install optional feature software with your NuPoint Messenger server online. To do so, follow the instructions in the procedure CP 5402, “Install Optional Feature With System Online.”

Configuration Overview

After loading SMSC-SMPP optional feature software, you can configure the NuPoint Messenger server SMSC integration. There are three steps involved:

- Configuring SMSC Processes and Links
- Configuring (Editing) Message Formats
- Configuring Mailboxes for SMSC Support

The first step is described in detail in Chapter 2. The second and third steps are described in Chapter 3. Following is a brief overview.

SMSC processes and links are mechanisms that implement SMSC integration. An SMSC process represents software configured and running at the remote SMSC. (Each instance of SMSC process represents a separate SMPP pathway.) SMSC links are internal connections established by SMSC-SMPP at the NuPoint Messenger server.

The first integration step is to identify (define) SMSC processes and links and to make associations between them. This step involves considerable input of parameters. For that reason, worksheets to plan SMSC process and link configuration are provided in Appendix A, “Configuration Worksheets.”

The second integration step is to configure the formats for messages contained in MWIs and CBNs. The MWIs and CBNs are sent from the NuPoint Messenger server to the SMSC.

As indicated in Chapter 1, you configure message formats by assembling mailbox variables and constants in a series. The variables and constants are called message elements. A field separator is placed between each element.

The third step for SMSC integration is to set the appropriate subscriber mailbox parameters to support MWI and CBN mechanisms.

The first two integration steps are done offline at the NuPoint Messenger console using the Resource Configuration Manager. The third step can be done through a network using the NP Mailbox Admin interface, or it can be done offline at the console using the Resource Configuration Manager.

3 Configuring SMSC Processes and Links

This chapter covers the first of three steps for NuPoint Messenger server SMSC integration. Specifically, it describes how to define SMSC processes and links and how to make associations between them. SMSC processes and links set up communication between the NuPoint

Messenger server and SMSC.

Note: The second and third integration steps are covered in Chapter 4, “Configuring Mailboxes and Message Formats.”

SMSC Processes and Links Overview

An SMSC process is an abstraction that represents real software configured and running at a remote SMSC. You can view each SMSC process as a separate SMPP pathway. The SMSC integration requires two or more SMSC processes, depending on traffic expected and redundancy desired.

In addition to SMSC processes, SMSC integration requires SMSC links. SMSC links are connections for internal communication within the NuPoint Messenger server (they are logical connections between two key runtime SMSC-SMPP processes, described later). As with SMSC processes, the number of SMSC links required for the integration depends on traffic expected and redundancy desired.

The initial step of SMSC integration is to define the SMSC processes and links and to make associations between them. You enter the information as part of NuPoint Messenger server offline configuration.

Note: SMSC process definitions are based primarily on SMSC software parameters. As a result, NuPoint Messenger server and SMSC administrators must cooperate to ensure that configuration information is shared and mutually understood.

Allocation of TCP Ports

Each NuPoint Messenger server module used in the integration must have an Ethernet card and TCP/IP software installed. You must determine how many modules and SMSC processes are required for the configuration and allocate TCP ports appropriately.

The TCP ports are used in either of two ways:

- The NuPoint Messenger server uses some TCP ports to exchange messages with the remote SMSC. Each of these TCP ports is assigned to a separate SMSC process.
- The NuPoint Messenger server uses other TCP ports for internal communication (SMSC links). Each of these TCP ports is assigned to a separate link.

You assign TCP ports to SMSC processes as part of the first SMSC integration step. You can configure up to six SMSC processes, and the default TCP port number for each is:

SMSC1: Port 5001	SMSC4: Port 5004
SMSC2: Port 5002	SMSC5: Port 5005
SMSC3: Port 5003	SMSC6: Port 5006

TCP ports used for SMSC links connect two key SMSC-SMPP runtime processes: SMSC_MGR and SMSC_POLLER. These TCP ports used internally are called poller ports (to avoid confusion with the TCP ports used externally). Poller ports are assigned to links during SMSC-SMPP configuration. You can configure up to eight links, and the default port number for each is:

Link1: Port 5011	Link4: Port 5014
Link2: Port 5012	Link5: Port 5015

Link3: Port 5013 Link6: Port 5016

The number of TCP and poller ports required depends on the number of SMSC process and link definitions. In turn, the number of SMSC process and link definitions depends on the configuration desired. In general, there are three types of configuration:

- Basic configuration.
- High-volume configuration.
- Load sharing and redundant configuration.

Basic Configuration

Basic configurations consist of one NuPoint Messenger server module and one SMSC process. The NuPoint Messenger server has one SMSC_MGR/POLLER transmitter for MWI and CBN requests and one SMSC_MGR/POLLER receiver for delivery results (Figure 3-1). The SMSC has corresponding transmitter and receiver processes.

For the basic configuration, four ports are required:

TCP Ports
5001: Used for TX link from NuPoint Messenger server to remote SMSC
5002: Used for RX link from NuPoint Messenger server to remote SMSC

Poller Ports
5011: Used for SMSC_MGR(TX) to communicate with SMSC_POLLER(TX)
5012: Used for SMSC_MGR(RX) to communicate with SMSC_POLLER(RX)

Figure 3-1 Basic Configuration

High-Volume Configuration

High-volume configurations can consist of several NuPoint Messenger server SMSC_MGR/POLLER transmitters for MWI and CBN requests but only one SMSC_MGR/POLLER receiver for delivery results (Figure 3-2). This configuration works well for systems where call volume is high or throughput is an issue.

Five ports are required in this example of high-volume configuration.

TCP Ports
5001: Used for TX link from NuPoint Messenger server to remote SMSC
5002: Used for RX link from NuPoint Messenger server to remote SMSC

Poller Ports
5011: Used for SMSC_MGR(TX1) link to SMSC_POLLER(TX1)
5012: Used for SMSC_MGR(TX2) link to SMSC_POLLER(TX2)
5013: Used for SMSC_MGR(RX) link to SMSC_POLLER(RX)

Figure 3-2 High-Volume Configuration

Load-Sharing and Redundant Configuration

Load sharing and redundant configurations consist of several NuPoint Messenger server modules (Figure 3-3). The first module has the primary Ethernet connection to the SMSC and another has the secondary connection. Both modules have one or more SMSC_MGR/POLLER transmitters for MWI and CBN requests. However, note that only one module (probably the first) has an SMSC_MGR/POLLER receiver for delivery results.

If the module with the SMSC_MGR/POLLER receiver goes out of service, the receiver “floats” to the other module. It only the Ethernet connection on the first module goes out of service, the other module's SMSC_MGR/POLLER transmitters continue to utilize the secondary Ethernet connection.

Five ports are required in this example of load-sharing configuration:

Module 1 - TCP Ports
5001: Used for TX link from NuPoint Messenger server to remote SMSC
5002: Used for RX link from NuPoint Messenger server to remote SMSC

Module 1 - Poller Ports
5011: Used for SMSC_MGR(TX1) link to SMSC_POLLER(TX1)
5012: Used for SMSC_MGR(TX2) link to SMSC_POLLER(TX2)

Module 2 - Poller Ports
5013: Used for SMSC_MGR(TX) link to SMSC_POLLER(TX)

Figure 3-3 Load-Sharing and Redundant Configuration

Configuring SMSC Processes

Before attempting to configure SMSC processes, record configuration information on the worksheets at the end of this manual (see Appendix A, “Configuration Worksheets”).

You configure SMSC processes at the NuPoint Messenger server console using the Resource Configuration Manager. Use the following pathway from the Main Menu to get to the SMSC Integration Menu:

S>R>R>G

The SMSC Integration Menu appears:

```
SMSC Integration
S)    Configure SMSC Processes
L)    Configure Links
X)    Exit
```

At the SMSC Integration Menu, you have three choices:

- Configure SMSC Processes — Defines SMSC processes that the NuPoint Messenger server can transmit MWIs and CBNs to or receive delivery results from. You can define up to six SMSC processes; however, you normally define two: one for transmit and one for receive.
- Configure Links — Defines SMSC links used internally by SMSC-SMPP. Each link

corresponds either to a transmit process which sends MWIs and CBNs to the SMSC or to a receiver process which gets delivery results from the SMSC. The results are deposited as receipts in a mailbox. Up to eight links can be defined; however, a normal configuration consists of one or more transmitters on each module of a system, but only one receiver for an entire system.

- Exit — Returns you to the previous menu.

From the SMSC Integration Menu, choose (S) to configure SMSC processes.

The SMSC Processes Menu appears:

```
SMSC Processes
(A)   Add a New SMSC
(C)   Copy a SMSC Process
(D)   Delete a SMSC Process
(E)   Edit a SMSC Process
(X)   Exit
```

At the SMSC Processes Menu, you have five choices:

- Add an SMSC Process — Creates a new SMSC process definition and assigns it the next available SMSC number. Propagates the new definition with default values.
- Copy an SMSC Process — Copies an existing SMSC process definition to a new definition. Assigns the new definition the next available SMSC number.
- Delete an SMSC Process — Deletes an existing SMSC process definition and renumbers those remaining in sequential order.
- Edit an SMSC Process — Allows you to edit an existing SMSC process definition.
- Exit — Returns you to the previous menu.

From the SMSC Processes Menu, choose (A) to add an SMSC process or (C) to copy an SMSC process. Then choose (E) to edit an SMSC process.

The SMSC Process Configuration Menu appears.

```
SMSC Process Configuration
(E)   SMSC Number =     [1]
(Z)   Protocol Type     =     [A]
(N)   SMSC Name   =     [SMSC1]
(T)   TCP Port    =     [5001]
(P)   Primary IP Address      =     [129.3.2.22]
(S)   Secondary IP Address    =     [129.3.2.22]
(V)   MWI Source ID     =     [2222222222]
(C)   CBN Source ID     =     [1111111111]
(A)   STM Source ID     = [3333333333]
(D)   Edit Protocol Details
(W)   Edit CBN Message
(Y)   Edit MWI Message
(Z)   Edit STM Message
(X)   Exit
```

The first eight choices let you edit general SMSC process parameters (process name, protocol type, and so forth). The remaining choices are:

- Edit Protocol Details — Takes you to the SMSC Process Protocol Details Menu, allowing you to edit parameters that relate to protocol details for SMSC processes.
- Edit CBN Message — Takes you to the Edit MWI, CBN, or STM Message Menu. From there you can edit a CBN message.

- Edit MWI Message — Takes you to the Edit MWI, CBN, or STM Message Menu. From there you can edit an MWI message.
- Edit STM Message — Reserved for future use.

Note: STM message support is not implemented in NuPoint Messenger server Release 6.1.

- Exit — Returns you to the previous menu.

Note: For detailed descriptions of general SMSC process parameters, refer to the configuration worksheets.

From the SMSC Process Configuration Menu, choose (D) to edit protocol details.

The SMSC Process Protocol Details Menu appears:

```
SMSC Process Protocol Details
(P)   Password    =     [MagicNum]
(I)   System Id   =
(S)   System Type =     [VMS]
(V)   Service Type      =     [ ]
(A)   Address Range     =     [ ]
(N)   Source NPI  =     [4]
(T)   Source TON  =     [3]
(D)   Destination NPI   =     [1]
(O)   Destination TON   =     [1]
(M)   ESM Class   =     [0]
(L)   MWI Protocol ID   =     [0]
(Q)   CBN Protocol ID   =     [0]
(U)   STM Protocol ID   =     [0]
(H)   Data Coding =     [48]
(Y)   Destination Prepend     =     [ ]
(Z)   Prepend Len =     [0]
(E)   Time-out Seconds  =     [4]
(R)   Transmit Retries  =     [3]
(X)   Exit
```

Note: For a detailed description of each SMSC process protocol details parameter, refer to the configuration worksheets.

After you configure SMSC processes, you can configure edit MWI or CBN message format. To do so, exit the Protocol Details Menu to return to the SMSC Configuration Menu.

For details on configuring message formats, see Chapter 4,”Configuring Message Formats and Mailboxes.”

Configuring Links

From the SMSC Integration Menu, choose (L) to configure links.

The Links Menu appears.

```
Links
(A)   Add a New Link
(C)   Copy a Link
(D)   Delete a Link
(E)   Edit a Link
(X)   Exit
```

At the Links Menu, you have five choices:

- Add a New Link — Creates a new link and assigns it the next available link number. Propagates the new link with default values.
- Copy a Link — Copies an existing link to a new link. The new link is assigned the next available link number.
- Delete a Link — Deletes an existing link and renumbers remaining links in sequential order.
- Edit a Link — Allows you to edit an existing link.
- Exit — Returns you to the previous menu.

From the Links Menu, choose (A) to add a new link or (C) to copy a link. Then choose (E) to edit a link.

The Edit Link Menu appears:

```
Edit Link
Link Number   01
(T)   Link Type               =[TX]
(A)   Active                        =[Y]
(M)   Active Module                 =[1]
(V)   MWI Enabled             =[Y]
(C)   CBN Active              =[Y]
(S)   STM Active              =[Y]
(I)   Poller Port             =[5011]
(N)   SMSC Name               =[SMSC1]
(O)   Number of MWI Agents    =[2]
(C)   Number of CBN Agents    =[1]
(E)   Number of STM Agents    =[2]
(D)   Link Debug Level        =[0]
(E)   Poller Debug Level            =[0]
(K)   Keep Alive Active       =[Y]
(X)   Exit
```

Note: For a detailed description of each link parameter, refer to the configuration worksheets.

4 Configuring Message Formats and Mailboxes

This chapter covers the second and third steps for NuPoint Messenger server SMSC integration. Specifically, it describes how to edit the format of MWI and CBN messages and STM messagesand how to set up mailboxes to support the integration.

Note: The first integration step is covered in Chapter 3, “Configuring SMSC Processes and Links.”

Message Format and Mailboxes Overview

You must configure the format of messages that pass from the NuPoint Messenger server to the SMSC in MWI and CBN requests.and STM requests. You enter the information as part of the NuPoint Messenger server offline configuration process for SMSC integration.

MWI and CBN and STMmessage format consists of three types of information:

- Message index — An identifier used by the SMSC to access entries in a table of predefined

messages. The range of valid index numbers is 1-140. The letter F is also a valid index entry, meaning the FCOS number of the subscriber mailbox is the message index.

- Message text — Composed of constants and variables (Table 4-1). Constants are always entered in double quotes, for example: “Unplayed,” “$U,” “Fax,””$F.” However, at the console constants are displayed without quotes, just as they appear on the display of the target mobile phone. Variables can be either alpha or numeric. Alpha and numeric fields are both left justified. As noted in the table, “fixed” alpha fields are right justified and spaced filled to the left.
- Field Separator — A single character that is automatically placed after each constant or variable. The field separator is entered in hexadecimal. The default field separator is 0x20, an ASCII space character. Enter FF if no field separator is used.

Table 4-1 Text Variables

Variable	Description
mailbox_num	Numeric, up to 20 characters
paging_num	Numeric, up to 20 characters
short_text	Alpha, up to 40 characters
fcos	Numeric, 3 characters
last_msg_time	Alpha, hh:mm
last_msg_date	Alpha: dd:mm:yy
last_source	Numeric, up to 20 characters
last_type	Alpha, 1 character (V = Voice, F = Fax)
num_unread	Fixed alpha, 4 characters
num_saved	Fixed alpha, 4 characters
num_unread_fax	Fixed alpha, 4 characters
num_saved_fax	Fixed alpha, 4 characters
num_urgent	Fixed alpha, 4 characters
num_receipts	Fixed alpha, 4 characters

Note: Fixed alpha fields are right justified and space filled to the left.

Defaults are provided for MWI and CBN messages. The defaults optimize use of the message formatting abilities of the SMSC.

The default CBN message is:

Field separator: 0x20
Message index: F
Message text:

Element 1 - Variable: paging_num

The default MWI message is:

Field separator: 0x20
Message index: F
Message text:

Element 1 - Constant: $T
Element 2 - Variable: last_msg_time

Element 3 - Constant: $D
Element 4 - Variable: last_msg_date
Element 5 - Constant: $A
Element 6 - Variable: last_source
Element 7 - Constant: “$L”
Element 8 - Variable: last_type
Element 9 - Constant: “$U”
Element 10 -Variable: num_unplayed
Element 11 - Constant: “$W”
Element 12 - Variable: num_saved
Element 13 - Constant: “$V”
Element 14 - Variable: num_voice
Element 15 - Constant: “$F”
Element 16 - Variable: num_fax
Element 17 - Constant: “$G
Element 18 - Variable: num_urgent

Note: By sending the FCOS number as the message index, the System Administrator can construct a wide variety of messages and send different formats to different subscribers based upon their FCOS.

Configuring MWI and CBNand STM Message Formats

You configure (edit) message formats at the NuPoint Messenger server console using the Resource Configuration Manager. Use the following pathway from the Main Menu to get to the SMSC Process Configuration Menu:

S>R>R>G>S>E

The SMSC Process Configuration Menu appears:

```
SMSC Process Configuration
(E)   SMSC Number =     [1]
(Z)   Protocol Type     =     [A]
(N)   SMSC Name   =     [SMSC1]
(T)   TCP Port    =     [5001]
(P)   Primary IP Address      =     [129.3.2.22]
(S)   Secondary IP Address    =     [129.3.2.22]
(V)   MWI Source ID     =     [2222222222]
(C)   CBN Source ID     =     [1111111111]
(A)   STM Source ID     = [3333333333]
(D)   Edit Protocol Details
(W)   Edit CBN Message
(Y)   Edit MWI Message
(Z)   Edit STM Message
(X)   Exit
```

The first eight choices let you edit general SMSC process parameters (process name, protocol type, and so forth). The remaining choices are:

- Edit Protocol Details — Takes you to the SMSC Process Protocol Details Menu, allowing you to edit parameters that relate to protocol details for SMSC processes.
- Edit CBN Message — Takes you to the Edit MWI, CBN, or STM Message Menu. From there you can edit a CBN message.
- Edit MWI Message — Takes you to the Edit MWI, CBN, or STM Message Menu. From there you can edit an MWI message.

- Edit STM Message — Reserved for future use. Takes you to the Edit MWI, CBN, or STM Message Menu. From there you can edit an STM message.

Note: STM message support is not implemented in NuPoint Messenger server Release 6.1.

- Exit — Returns you to the previous menu.

At the SMSC Process Configuration Menu, choose (W) or (Y) or (Z) to edit a CBN or MWI or STM message, respectively.

The Edit MWI, CBN, or STM Message Menu appears:

```
Edit MWI, CBN or STM Message
(A)   Add a New Element
(C)   Copy an Element
(D)   Delete an Element
(E)   Edit Field Separator
(I)   Edit Message Index
(S)   Edit Suppress Option
(X)   Exit
```

At the Edit MWI, CBN, or STM Message Menu, you have the following seven choices:

- Add a New Element — Adds a new formatting instruction to the list of elements.
- Copy an Element — Copies and adds an existing formatting instruction as the last element in the list.
- Delete an Element— Deletes an existing formatting instruction and renumbers the remaining instructions in sequential order.
- Edit Field Separator— Assigns a new hexadecimal value to the field separator. The default value is 0x20, or space.
- Edit Message Index — Assigns the message index number. The default value is 0.
- Edit Suppress Option — Enables or disables the message suppress option. Message suppress means suppress any fields after a zero data value is found in a used field.
- Exit — Return you to the previous menu.

Configuring Mailboxes

This section covers the mailbox setup that enables the NuPoint Messenger server to generate MWI or CBNor STM messages.

Part of mailbox configuration for SMSC integration involves setting one or more FCOS bits. Table 4-2 lists and describes the FCOS bits which relate to support of MWI or CBNor STM mechanisms.

Table 4-2 FCOS Bits Related to SMSC Integration

FCOS Bit	Description

172	Cut-through paging and messaging: If this bit is set, the NuPoint Messenger server tries to page the mailbox subscriber using the call back number (if any call back number was left by the caller). If the paging system is set for a standard pager, then the pager number of the subscriber is called and the call back number appears on the subscriber's pager. If the paging system is set for short messages, then a short message containing the CLI is sent to the subscriber's mobile phone.
173	Page receipt: If this bit is set, the mailbox subscriber receives a receipt for each paging sent to a standard pager or short message sent to the subscriber's mobile phone.
262	Store as telephone number: If this bit is set, the (Calling Line ID) CLI is stored as a telephone number (call back number) along with the voice/fax message. Even if the captured number matches an existing mailbox number, it is stored as a telephone number and not as a mailbox number. No existing mailbox match is attempted.
263	Store as mailbox number or telephone number: If this bit is set, the NuPoint Messenger server tries to determine whether the CLI number matches an existing mailbox. If so, the CLI number is stored as a mailbox number. If not, the CLI number is stored as a telephone number (call back number). If the CLI number captured automatically by the integration is overridden by the caller, then the CLI is stored as a telephone number regardless of whether or not it matches an existing mailbox.
264, 280	CLI outside caller ON/OFF: If these bits are set, the CLI outside caller interface is activated for the mailbox.
266	SMPP CBN: If this bit is set, the mailbox supports CBN.
267	SMPP STM: If this bit is set, the mailbox supports STM.
268	SMPP CBNand STM receipts: If this bit is set, the mailbox passes CBNand STM receipts to the subscriber.
271	Outstanding MWI messages: If this bit is set, the NuPoint Messenger server sends an SMPP cancel MWI to the SMSC on ML_OFF.
272	Outstanding CBN messages: If this bit is set, the NuPoint Messenger server sends an SMPP cancel CBN to the SMSC on ML_OFF.
280, 264	CLI outside caller ON/OFF: If these bits are set, the CLI outside caller interface is activated for the mailbox.

Note: CLI is an optional feature that complements both MWI and CBN. CLI allows the NuPoint Messenger server to automatically record a caller's number.

Configuring Mailboxes for MWIs

Do the following to configure a mailbox to support MWI: Set one of the Mail Waiting Light Fields (1, 2, or 3) to type 24 (SMS-MWI).

Configuring Mailboxes for CBNs

Do the following to configure a mailbox to support CBNs:

- Set FCOS bit 266 for SMPP CBN.
- Set FCOS bit 268 for CBNand STM receipts.

Configuring for Mailboxes for STMs

Do the following to configure a mailbox to support STMs:

- Set FCOS bit 267 for SMPP CBN.
- Set FCOS 268 for CBN and STM receipts.
- To activate the short message text capability of bit 172, set mailbox parameters as follows:

  Message waiting #1: 24
  Message waiting #2: 5
  Access page type: 5 (the same as in the SMSC link configuration)

  Pager number: 1234
  Post pager number: 1234
  Start time: 12:00 a.m.
  Stop time: 12:00 a.m.
  Pager try: 1
  Pager interval: 1
  Busy attempts: 1
  Busy interval: 1

Changing Triggers for MWI and CBN Messages

The NuPoint Messenger server can send MWIs or CBN messages for every mailbox access. It normally sends messages only if the caller deposits new mail. When there is mailbox activity with no new mail, some users might want to cancel undelivered messages; others might wish to send a MWI message updating the mobile phone.

Three options are available:

- To cancel any outstanding MWI messages for activity with no new mail, set mailbox FCOS bit 271.
- To cancel any outstanding CBN messages for activity with no new mail, set mailbox bit 272.
- To send an MWI to the user for activity with no new mail, set mailbox FCOS bit 271.

Appendix A - Configuration Worksheets

Use the following worksheets to record information before attempting offline configuration. The worksheets are divided into three sections:

- SMSC Process Configuration — General Parameters
- SMSC Process Configuration — Protocol Detail Parameters
- SMSC Link Configuration Parameters

Note: You might want to photocopy these pages, keeping the originals as templates.

SMSC Process Configuration - General Parameters

SMSC process configuration involves defining SMSC processes at the NuPoint Messenger

server. You can define up to six. General parameters for SMSC processes include: SMSC name, protocol type, TCP/IP port, primary and secondary IP address, MWI source ID, CBN source ID, and STM source ID.

SMSC Name

Description: The name of the SMSC process definition (up to 16 characters). The name helps the system administrator identify the SMSC process. The SMSC process name is also assigned to a link during link configuration.

Default: SMSC1-SMSC6

1.	4.
2.	5.
3.	6.

Protocol Type

Description: The type of protocol that the SMSC process supports. This information is used by the SMSC_MGR to know what protocol to run. The only protocol type currently supported by SMSC-SMPP is:

A : Aldiscon SMPP 3.3

Default: A

1.	4.
2.	5.
3.	6.

TCP Port

Description: The TCP/IP port that connects the NuPoint Messenger server with the remote SMSC. Each SMSC process must specify a different port. You must be sure that the assigned port numbers do not conflict with those assigned to other TCP/IP-based applications such as NP Net.

Default: 5001-5006

1.	4.
2.	5.
3.	6.

Primary IP Address

Description: The primary TCP/IP address of the SMSC.

Default: 129.3.2.22

1.	4.
2.	5.
3.	6.

Secondary IP Address

Description: The secondary or redundant TCP/IP address of the SMSC.

Default: 129.3.2.22

1.	4.
2.	5.
3.	6.

MWI Source ID

Description: An ASCII string (21-characters maximum) assigned by the SMSC system administrator for service-type mapping for Voice Mail Alerts. The string is often used as the SUBMIT_SM service_type (it can be sent to the mobile station by the SMSC as the source address). In addition, the string is often the number for mailbox access.

Default: 2222222222 (ten 2s)

1.	4.
2.	5.
3.	6.

CBN Source ID

Description: An ASCII string (21-characters maximum) assigned by the SMSC system administrator for service-type mapping for CBNs. The string is often used as the SUBMIT_SM source ID (it can be sent to the mobile station by the SMSC as the source address). In addition, the string is often the number for mailbox access.

Default: 1111111111 (ten 1s)

1.	4.
2.	5.
3.	6.

STM Source ID

Description: An ASCII string (21-characters maximum) assigned by the SMSC system administrator for service-type mapping for STMs. The string is often used as the SUBMIT_SM source ID (it can be sent to the mobile station by the SMSC as the source address). In addition, the string is often the number for mailbox access.

Note: STM message support is not implemented in NuPoint Messenger server Release 6.1.

Default: 3333333333 (ten 3s)

1.	4.
2.	5.
3.	6.

SMSC Process Configuration - Protocol Details

You must specify protocol details for each of the defined SMSC processes. Protocol detail parameters for SMSC processes include: password, system ID, service type, address range, source NPI, source TON, destination NPI, destination TON, ESM class, MWI protocol ID, CBN protocol ID, data coding, destination prepend, prepend data length, time-out seconds, and transmit retries.

Password

Description: The password used by the SMSC for security purposes. The password can be up to 9 characters and should be assigned by the SMSC system administrator (it is the same as BIND password).

Default: MagicNum

1.	4.
2.	5.
3.	6.

System ID

Description: The ID that identifies the NuPoint Messenger server to the SMSC. The system ID can be up to 16 characters and should be assigned by the SMSC system administrator (it is the same as BIND system_id).

Default: Centigram

1.	4.
2.	5.
3.	6.

System Type

Description: The ID that identifies the NuPoint Messenger server to the SMSC. The system type can be up to 13 characters and should be assigned by the SMSC system administrator (it is the same as BIND system_type).

Default: VMS

1.	4.
2.	5.
3.	6.

Service Type

Description: The service type that indicates the service associated with a message. The service type can be up to six characters and should be assigned by the SMSC system administrator (it is the same as SUBMIT_SM service_type).

Default: None

1.	4.
2.	5.
3.	6.

Address Range

Description: The address range is used in routing delivery results from the SMSC to the NuPoint Messenger server. The address range can be up to 41 characters and should be assigned by the SMSC system administrator (it is the same as BIND address_range). A null value means all addresses are valid for this SMSC connection.

Default: None

1.	4.
2.	5.
3.	6.

Source NPI

Description: The GSM Numbering Plan Indicator (NPI) for the source.
The NPI is 1 character and should be assigned by the SMSC system administrator (it is the same as SUMBIT_SM source_addr_npi).

Default: 4

1.	4.
2.	5.
3.	6.

Source TON

Description: The GSM Type of Number (TON) for the source. The source TON is 1 character and should be assigned by the SMSC system administrator (it is the same as SUBMIT_SM source_addr_ton).

Default: 3

1.	4.
2.	5.
3.	6.

Destination NPI

Description: The GSM Numbering Plan Indicator (NPI) for the destination. The destination NPI is 1 character and should be assigned by the SMSC system administrator (it is the same as SUBMIT_SM source_addr_npi).

Default: 1

1.	4.
2.	5.
3.	6.

Destination TON

Description: The GSM Type of Number (TON) for the destination. The destination TON is 1 character and should be assigned by the SMSC system administrator (it is the same as SUBMIT_SM source_addr_ton).

Default: 1

1.	4.
2.	5.
3.	6.

ESM Class

Description: The indication of message type for the deliver_sm command. The ESM Class is one character and should be assigned by the SMSC system administrator (it is the same as DELIVER_SM esm_class).

Default: 0

1.	4.
2.	5.
3.	6.

MWI Protocol ID

Description: The MWI Protocol ID is one character and should be assigned by the SMSC system administrator (it is the same as MWI Submit protocol ID).

Default: 0

1.	4.
2.	5.
3.	6.

CBN Protocol ID

Description: The CBN Protocol ID is one character and should be assigned by the SMSC system administrator (it is the same as CBN SUBMIT protocol ID).

Default: 0

1.	4.
2.	5.
3.	6.

Data Coding

Description: The GSM Data-Coding-Scheme is 1 character and should be assigned by the SMSC System Administrator (it is the same as SUBMIT_SM data_coding).

Default: 48

1.	4.
2.	5.
3.	6.

Destination Prepend

Description: This field is commonly used to prepend an area code to a mailbox number in systems with seven-digit dial plans. The field can contain either an ASCII string (408, 510, and so forth) or the name of one of the following mailbox fields: DEPARTMENT or EXTENSION. The field is prepended to the SUBMIT_SM destination address.

Default: <null data>

1.	4.
2.	5.
3.	6.

Prepend Data Length

Description: Prepend Data Length specifies the length of the prepend data. It allows the SMSC_MGR to take out the prepended data from the destination address of delivery receipts from the SMSC.

Default: 0

1.	4.
2.	5.
3.	6.

Time-out Seconds

Description: Time-out Seconds specifies the interval between retries on failed transmissions from the NuPoint Messenger server to the SMSC.

Default: 4

1.	4.
2.	5.
3.	6.

Transmit Retries

Description: Transmit Retries specifies the number of retries on each failed transmission between the NuPoint Messenger server and SMSC.

Default: 3

1.	4.
2.	5.
3.	6.

Link Configuration

Link configuration involves defining SMSC-SMPP internal connections and associating them with SMSC processes. You can define up to eight links. Link parameters include: Link type, active, active module, MWI active, CBN active, STM active, poller port, SMSC name, and link/poller debug level.

Link Type

Description: The link type is either TX or RX, depending on whether the link is used for transmitting CBNs or MWIs to the SMSC or for receiving delivery results from the SMSC.

Default: TX

1.	5.
2.	6.
3.	7.
4.	8.

Active

Description: Indicator that specifies whether the link is active (Y) or not (N).

Default: Y

1.	5.
2.	6.
3.	7.
4.	8.

Active Module

Description: The NuPoint Messenger server module on which this SMSC process runs. It can also be a float list for the RX link (for example: 1,3,4).

Default: 1

1.	5.
2.	6.
3.	7.
4.	8.

MWI Active

Description: Indicator that specifies whether MWI is active (Y) or not (N) on this link. If MWI is enabled, then this link must also be assigned the link type of TX.

Default: Y

1.	5.
2.	6.
3.	7.
4.	8.

CBN Active

Description: Indicator that specifies whether CBN is active (Y) or not (N) on this link. If CBN is enabled, then this link must also be assigned the link type of TX.

Default: Y

1.	5.
2.	6.
3.	7.
4.	8.

STM Active

Description: Indicator that specifies whether STM is active (Y) or not (N) on this link. If STM is enabled then this link must also be assigned the link type of TX.

Note: STM message support is not implemented in NuPoint Messenger server Release 6.1.

Default: Y

1.	5.
2.	6.
3.	7.
4.	8.

Poller Port

Description: The port number through which the SMSC processes communicate internally with the SMSC_POLLER process.

Default: 5011-5018

1.	5.
2.	6.
3.	7.
4.	8.

SMSC Name

Description: The name of the SMSC process definition which is assigned to this link. The name is defined in the SMSC Process Configuration Menu and can be up to 16 characters.

Default: SMSC1

1.	5.
2.	6.
3.	7.
4.	8.

Number of MWI Agents

Description: The number of SMSC_AGENT processes that will take MWI requests from MWLA, format them and send them to the SMSC. Range is
0-3. More agents mean increased output per minute.

Default: 2

1.	5.
2.	6.

3.	7.
4.	8.

Number of CBN Agents

Description: The number of SMSC_AGENT processes that will take CBN requests from MDBA, format them and send them to the SMSC. Range is
0-3. More agents mean increased output per minute.

Default: 2

1.	5.
2.	6.
3.	7.
4.	8.

Number of STM Agents

Description: The number of SMSC_AGENT processes that will take STM requests from MDBA, format them and send them to the SMSC. Range is 0-3. More agents mean increased output per minute

Note: STM message support is not implemented in NuPoint Messenger server Release 6.1.

Default: 2

1.	5.
2.	6.
3.	7.
4.	8.

Link Debug Level

Description: Specifies the granularity of CDR output from the SMSC_MGR and SMSC_AGENTs. The supported levels are:

0 - Off
1 - Fewer messages
2 - Most messages

Default: 0

1.	5.
2.	6.
3.	7.
4.	8.

Poller Level

Description: Specifies the granularity of CDR output from the SMSC_POLLER process. The supported levels are:

0 - Off
1 - Fewer messages
2 - Most messages

Default: 0

1.	5.
2.	6.
3.	7.
4.	8.

Keep Alive Active

Description: Specifies whether or not the link is checked periodically to determine that it is up.

Default: Y.

1.	5.
2.	6.
3.	7.
4.	8.