CBM 800 Configuration Management

Configuration management strategy

The network configuration management strategy is to offer solutions on a pre-configured basis. All components within these pre-defined configurations and components not included can be ordered separately.

Customer documentation provides information on installation, configuration, and upgrades for base functionality and software applications that run on the CBM.

Tools and utilities

The SWIM level of the CBM interface contains commands for listing available filesets and executing software configuration programs.

Configuration management procedures

For configuration management procedures, refer to the modules for specific CBM components.

CBMMTC procedures

The following table lists the names and locations of the procedures that use the commissioning tool.

CBMMTC procedures

Component	Procedure	Document
Date & Time	• “Changing the system date or time”	Security and Administration
Network Time Protocol	• “Commissioning or decommissioning Network Time Protocol”	Configuration Management
Passthru Users	• “Adding or removing Passthru users”	Security and Administration

CBMMTC procedures

Component	Procedure	Document
Password	• “Changing a user password”	Security and Administration
Time Zone	• “Changing the system time zone and daylight savings time parameters	Security and Administration
Add/remove maint users	• “Adding or removing Maint users”	Security and Administration

Configuring a CBM

Use this procedure to identify the tasks and procedures to configure a Core and Billing Manager (CBM) after initial installation.

Note: In this procedure, the term *Core* refers to the Computing Module (CM).

Overview

Installation

Installation of a CBM includes the following types of activities:

- installing hardware
- loading basic software, such as the hardware operating system and the CBM platform-level software, and any required patches
- configuring basic parameters, such as Core and OSS connectivity
- testing communications between the CBM, Core, and OSS
- taking a system image

Service agreements with Nortel Networks and third-party organizations will include loading base applications.

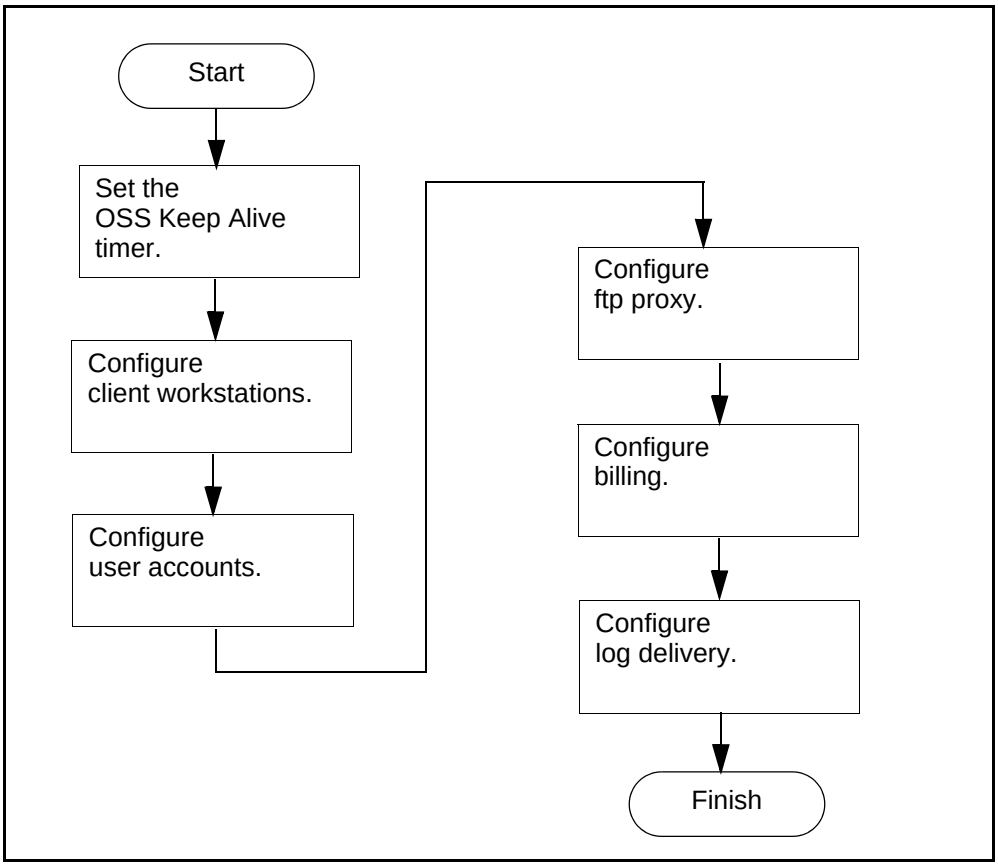
Configuration

After installation, configure the CBM to meet the requirements of your office. The configuration of your network, and your use of the CBM, determine the specific configuration activities you will need to complete. Configuration of the CBM requires the following information:

- the operations, administration, maintenance, and provisioning functions the CBM will support, such as the following functions:
  - billing
  - log delivery
- the parameters for network-level operations of the CBM, include the following operations:
  - connection monitoring from the OSS
  - user access to and through the CBM
  - requirements for secure and non-secure file transfer to and through the CBM

The following figure shows the high-level tasks to configure the CBM

Configuring the CBM



Set the OSS keep-alive timer

Most OSSs use a keep-alive timer or other mechanism to monitor and restore TCP connections to OSS devices. The value of the keep-alive timer helps determine the availability of the data feed from the CBM to the OSS. Make sure the value of the keep-alive timer supports your reporting needs. The default value of the keep-alive timer can be as long as two hours.

Configure the client workstation

The client workstation is UNIX-based workstation that contains client software, such as the log receiver tool.

- Users access client software on the client workstation from networked workstations, remote workstations, and other network devices.

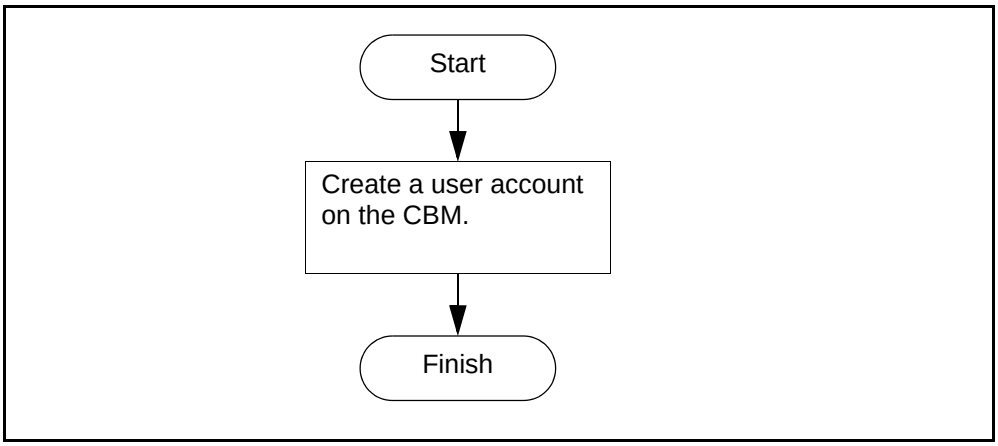
Configure user accounts

User accounts on the CBM are configured at the operating system level.

Tasks

The following figure shows the tasks to create user accounts.

Tasks to configure the user accounts



Procedures

The following table lists each task to configure user accounts and the procedures to perform the task.

Procedures to create user accounts

Task	Procedure	Location
Configure passthru access	Setting up users on a Sun server	ATM/IP Configuration Management or CBM Configuration Management
Maint Users	Adding or removing maint users	Security and Administration

Configure file transfer

The CBM supports secure and non-secure file transfer. The following table lists the applications available for each type of file transfer.

File transfer applications

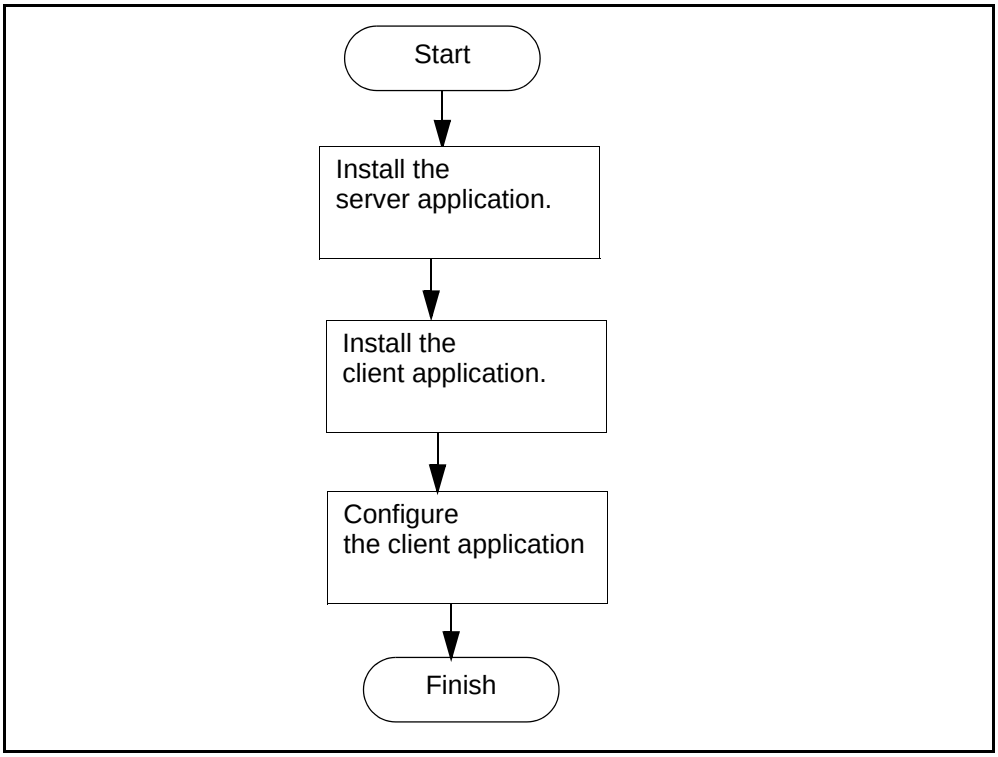
Application	Secure	Non-secure
Secure Core File Transfer (SCFT)	X	
File Transfer Protocol Proxy (FTP Proxy)		X

SCFT

Tasks

The following figure shows the high-level tasks to configure SCFT.

SCFT configuration tasks



Procedures

The following table lists each SCFT configuration task and the procedure to perform the task.

SCFT configuration procedures

Task	Procedure	Location
Install the server application	Installing a fileset	Installing the CBM (performed by Nortel Networks)
Install the client application	Installing the SCFT client application	Installing the CBM (performed by Nortel Networks)
Configure the client	Configuring the SCFT client application	Configuration Management

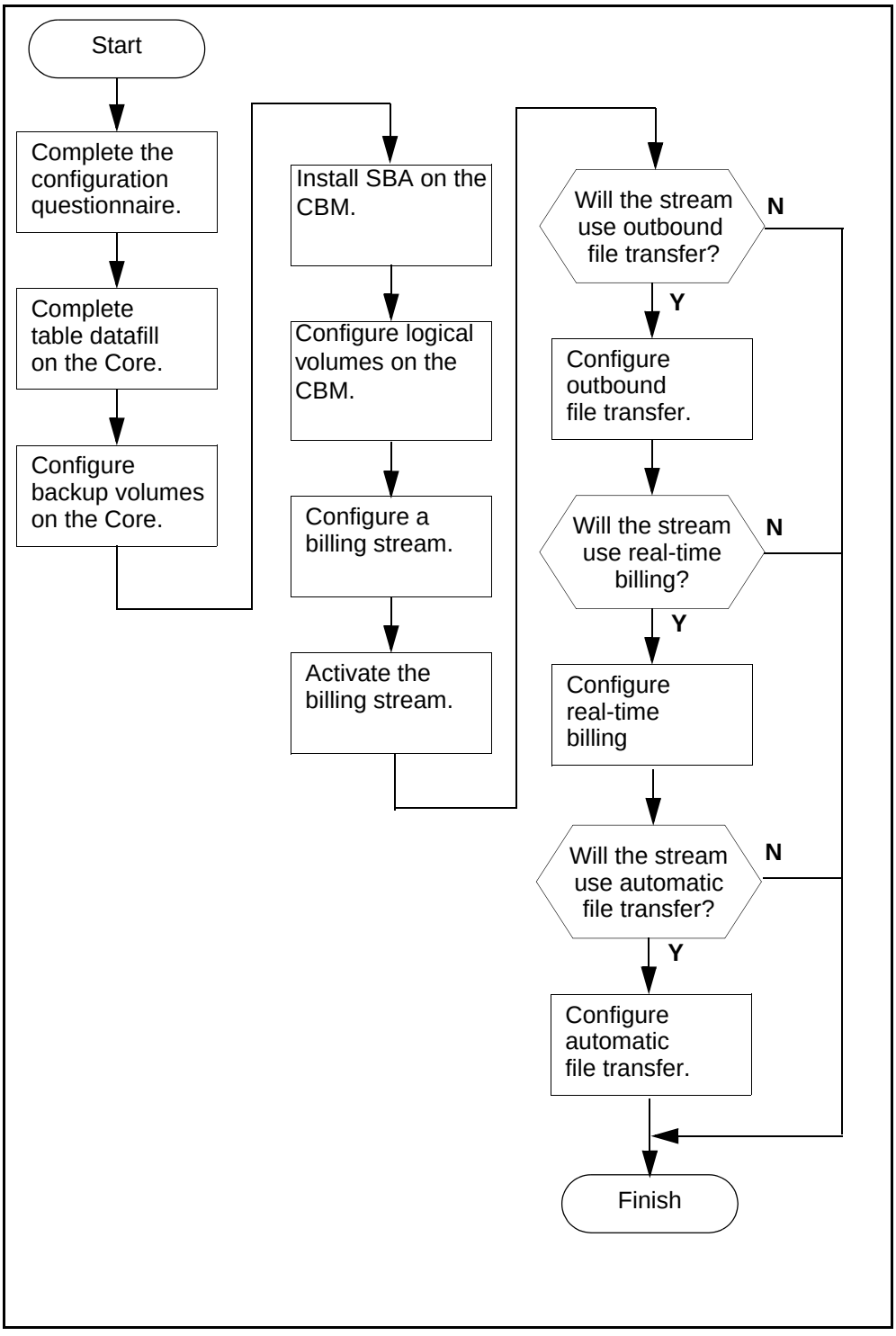
Configure billing

The CBM requires SuperNode Billing Application (SBA) to support billing.

Tasks

The following figure shows the high-level tasks to configure billing.

Billing configuration tasks



Procedures

The following table lists each billing configuration task and the procedure to perform the task.

Billing configuration procedures

Task	Procedure	Location
Complete the configuration questionnaire	Preparing for SBA installation and configuration	Accounting
Configure table datafill on the Core	Configuring the SBA on the Core	Accounting
Configure backup volumes on the Core	Configuring SBA backup volumes on the core	Accounting
Install SBA on the CBM	Installing an application on the CBM	ATM/IP Upgrades or Patching the CBM
Configure logical volumes on the CBM	Adding a logical volume for SBA through the command line	Accounting
Configure a billing stream	Configuring a billing stream on the CBM	Accounting
Activate a billing stream	Activating a billing stream on the core	Accounting
Configure outbound file transfer	Configuring the outbound file transfer schedule	Accounting
Configure real time billing	Configuring real time billing for a billing stream	Accounting
Configure automatic file transfer	Configuring AFT	Accounting

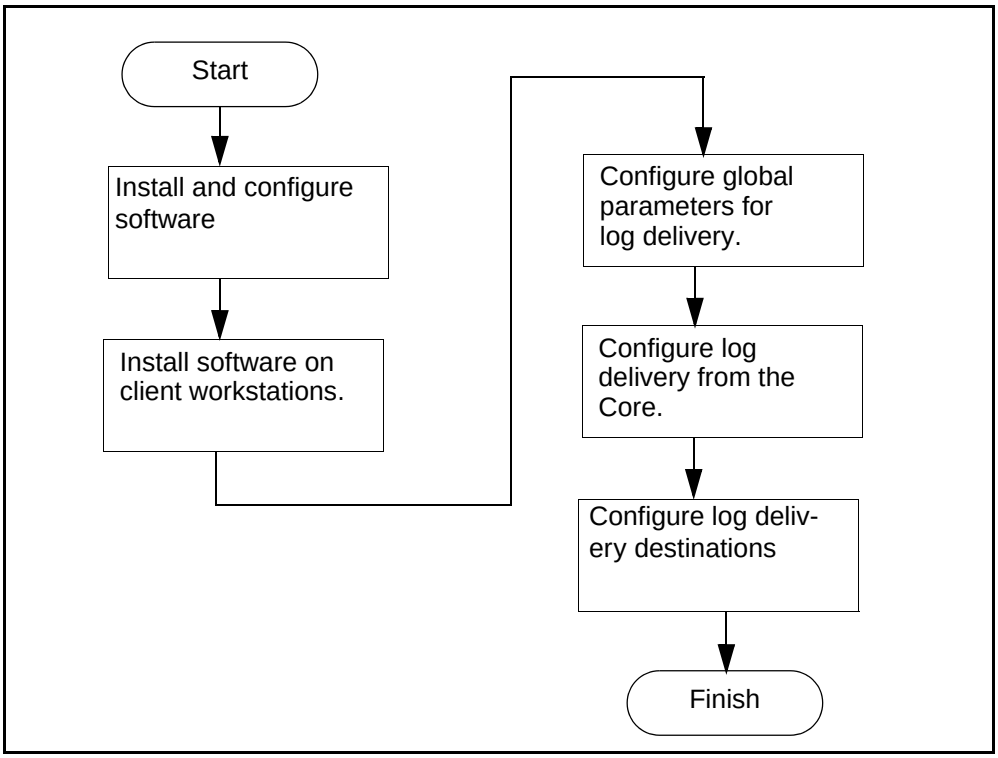
Configure log delivery

The CBM requires the Log Delivery application to manage log delivery.

Tasks

The following figure shows the high-level tasks to configure log delivery.

Log delivery tasks



Procedures

The following table lists each log delivery configuration task and the procedure to perform the task.

Log delivery configuration procedures

Task	Procedure	Location
Install and configure filesets on the CBM	Installing and configuring the log delivery application	Configuration Management
Install software on client workstations	Installing the logreceiver tool on a client workstation	Configuration Management
Configure global parameters for log delivery	Configuring log delivery global parameters	Configuration Management
Configure the log streams from the Core	Configuring a log stream	Fault Management
Configure log delivery destinations	Configuring log delivery destinations	Configuration Management

Installing and configuring the log delivery application

The following procedure outlines the steps that must be performed to install and configure the log delivery application on the CBM.

For full operation, the log delivery application requires installation of the following application filesets:

- Log delivery service
- Log delivery service client
- Generic data delivery

Prior to performing this procedure, ensure that there are no disk faults on the CBM.

Installing and configuring the log delivery application

1 Begin to install the Log Delivery application: log into the SDMCS 2000 Core ManagerCBM using the maint user ID and password.

2 Switch user to root using the root ID and password.

3 Use the following table to determine your next step.

If the filesets are	Do
on CD or DVD	insert the disk and continue with step 4
in a directory	retrieve the filesets from the directory, and continue with step 5

4 Access the Apply level of the CBM maintenance interface and display the list of filesets contained in the source location :

```
# cbmmtc apply <x>
```

where
<x> is the path of the source directory

5 Select the filesets required for the Log delivery application:

```
> select <fileset_number>
```

where
fileset_number is the number next to each of the following filesets:

- Log Delivery Service
- Log Delivery Service Client
- Generic Data Delivery
- Passport Log Streamer (only required for Succession offices where the CBM needs to communicate with the Preside MDM for fault data)

6 Install the filesets:

```
> apply
```

7 Confirm the apply command:

```
> y
```

Note: The Generic Data Delivery application is automatically brought into service

8 Begin to bring the Log delivery service application and the Passport Log Streamer application into service. Access the Application (Appl) level:

```
> appl
```

a Busy the application filesets:

```
> bsy <fileset_number>
```

where
fileset_number is the number next to the following application filesets:

- Log delivery service
- Passport Log Streamer (if installed)

b Return the application filesets to service:

```
> rts <fileset_number>
```

where
fileset_number is the number next to the application filesets you busied in the previous step

Once the application fileset is returned to service, the system retrieves any current log records. To view or store log records, see the procedure “Displaying or storing log records using log receiver” in the Fault Management document.

Note: If the application fileset has been out of service for an extended period of time, the system retrieves any older

log records that are available prior to any current log records. However, for Passport Log Streamer application, once it returns to service, the system retrieves only the current log records.

9 You have completed this procedure.

Configuring log delivery destinations

Purpose

Use this procedure to add an output log device. An output log device is a destination to which your system will forward user-defined streams of logs.

You can add any of the following log devices using the Log Delivery Application Commissioning Tool (logroute):

- a TCP device (a host IP and port on the network)
- a TCP-IN device (a remote IP and a CBM port number)
- a file device (a file on the CBM)

Note 1: You can configure up to 30 Log Delivery output devices.

Note 2: If you want to change any aspect of an existing device, including log routing entries, refer to the procedure Modifying a log device using logroute on page 25.

Note 3: If you want to delete an existing device, refer to the procedure Deleting a device using logroute on page 33.

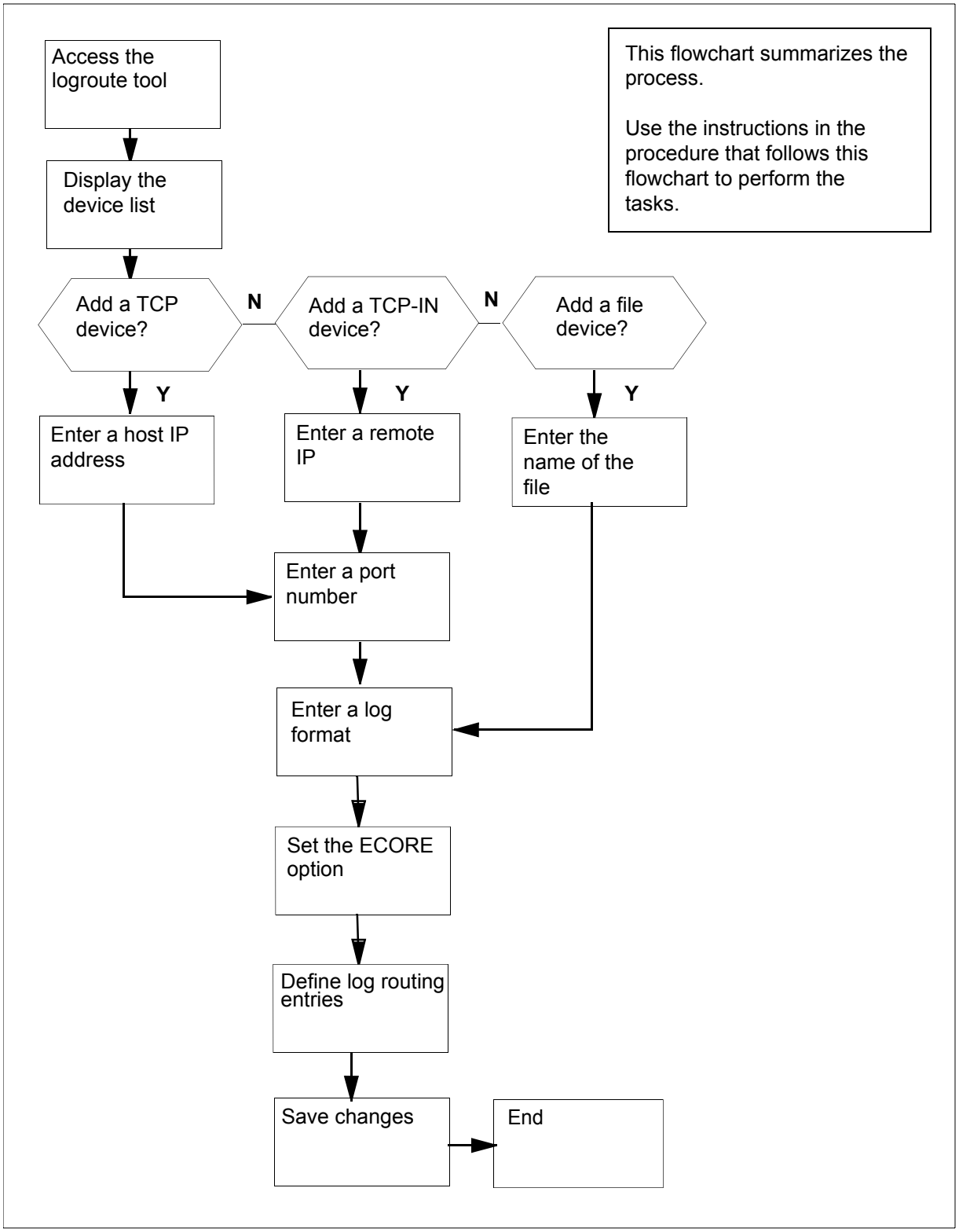
Note 4: If you want to modify global parameters (parameters that apply to all devices), refer to the procedure Configuring Log Delivery global parameters on page 45.

All devices can be accessed either locally or from a remote location (console). To access the devices from a remote console, refer to the procedure “Accessing a TCP or TCP-IN log device from a remote location” in the Fault Management document.

Task flow diagram

The following task flow diagram provides a summary of the process. Use the instructions in the procedure that follows the flowchart to perform the task.

Task flow for Configuring log delivery destinations



Configuring log delivery destinations

At any workstation or console

1 Log in to the CBM.

2 Access the logroute tool:

```
# logroute
```

The Logroute Main Menu screen appears.

```
                Logroute Main Menu


          1 - Device List
          2 - Global Parameters
          3 - CM Configuration File
          4 - Gdd Configuration
          5 - Help
          6 - Quit Logroute




Enter Option ==>
```

3 Display the device list:

```
> 1
```

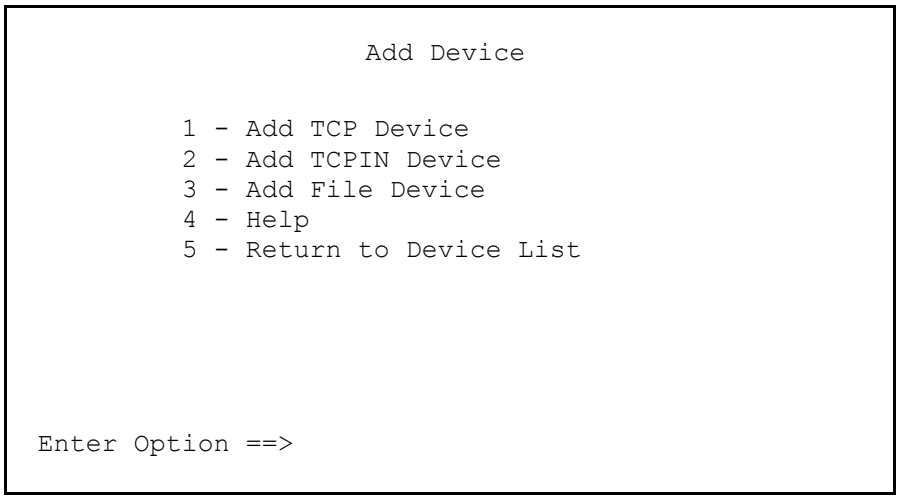
The Device List Menu screen appears.

```
                Device List Menu


          1 - View Device
          2 - Add Device
          3 - Delete Device
          4 - Modify Device
          5 - Help
          6 - Return to Main Menu




 Enter Option ==>
```

4 Begin to add a new log device:

```
> 2
```

The Add Device screen appears.



Note: If you want to view the devices currently configured, enter 1 and press the Enter key. Follow the on-screen instructions to display the details for the selected device.

5 Use the following table to determine your next step.

If you want to add a	Do
TCP device	step 6
TCP-IN device	step 9
file device	step 12

6 Start adding a TCP device:

> 1

Example response

```
                        TCP Device
 Enter ABORT to return to Add Device Screen

          1 - HOST IP      :
          2 - PORT         :
          3 - FORMAT       : STD
          4 - ECORE        : ON
          5 - Log Routing  :




 Enter host IP address <###.###.###.###> ==>
```

7 Enter a host IP address.

8 When prompted, enter a port number from the range displayed.

Continue with step 14.

9 Start adding a TCP-IN device:

> 2

Example response

```
                      TCP-IN Device
Enter ABORT to return to Add Device Screen

          1 - REMOTE IP      : any
          2 - PORT           :
          3 - FORMAT         : STD
          4 - ECORE          : ON
          5 - Log Routing    :




Enter remote IP address <###.###.###.###> or a for any ==>
```

10 Enter an authorized remote IP address. Enter **a** if you want to leave the default value of `any`.

11 When prompted, enter a CBM port number.

Continue with step 14.

12 Start adding a file device:

> 3

Example response

```
                          File
Enter ABORT to return to Previous Screen

         1 - FILENAME     :
         2 - FORMAT       : STD
         3 - ECORE        : ON
         4 - Log Routing  :









Enter file name  ==> /data/logs/
```

13 Enter the name of the file where the logs will be stored.

14 When prompted, enter the log format (STD, STD_OLD, SCC2, or SCC2_OLD).

Note 1: Enter STD or SCC2 if you want the following information to be displayed in all log reports (otherwise, enter STD_OLD or SCC2_OLD):

- user-defined office ID, same for all logs and streams
- the name of the node (ECORE) from which the log is generated
- the sequence number in dual (global and device) format

Note 2: The default format is STD.

15 When prompted, set the ECORE option to ON or OFF.

Note: Enter ON, if you want the log-generating node name to be displayed in all reports (the format must be STD or SCC2). Otherwise, enter OFF.

16 You are now prompted to define a log routing entry for the device that you are adding. Use the following table to determine your next step.

If you want to	Do
suppress logs (cause them not to be routed to this device)	enter **d**, and press the Enter key
un-suppress logs (cause them to be routed to this device)	enter **a**, and press the Enter key

Note: The rules you enter here only accommodate the set of logs defined in the procedure Specifying the logs delivered from the CM to the CBM on page 39. Logs suppressed at the CM cannot be unsuppressed for a specific device.

Response

```
Enter log identifier ("log_type", or "log_type
log_number") ==>
```

17 Enter a log type or a combination of log type and log number (separated by a space). The new entry is added to the log routing list on the screen.

Note 1: An example of a log type is “PM”. This entry will suppress or un-suppress all PM logs.

Note 2: An example of a combined log type and log number is PM 181. This entry will suppress or un-suppress the PM181 logs but leave the routing of other PM logs unchanged.

Note 3: You can also enter **all**, which will suppress or un-suppress all logs routed to this device.

Response

```
Wish to enter more Logrouting Details? (Y/N)[N]:
```

If you	Do
want to add more routing entries ***Note:*** The maximum number of log routing entries is 1024. If you have 1024 entries, and you want to add another one, you must replace one of the existing entries with the new entry.	enter **y**, and return to step 16
do not want to add more routing entries	enter **n**, and go to step 18

18 You are prompted to save the device details. Save the new device:

> y

The new device will be added to the system.

Response

```
Save data completed -- press return to continue
```

Press the Enter key to return to the Add Device screen.

Note: If you enter **n**, the system returns to the Device List Menu screen. No new device is added to the system.

19 Use the following table to determine your next step.

If you	Do
want to add more devices	go to step 5
do not want to add more devices	go to step 20

20 Return to the Device List Menu screen:

> 5

21 Return to the Logroute Main Menu screen:

> 6

22 Quit the logroute tool:

> 6

23 You have completed this procedure.

Modifying a log device using logroute

Purpose

Use this procedure to change any parameter of an existing log device, including the routing entries that suppress or un-suppress logs delivered to that device.

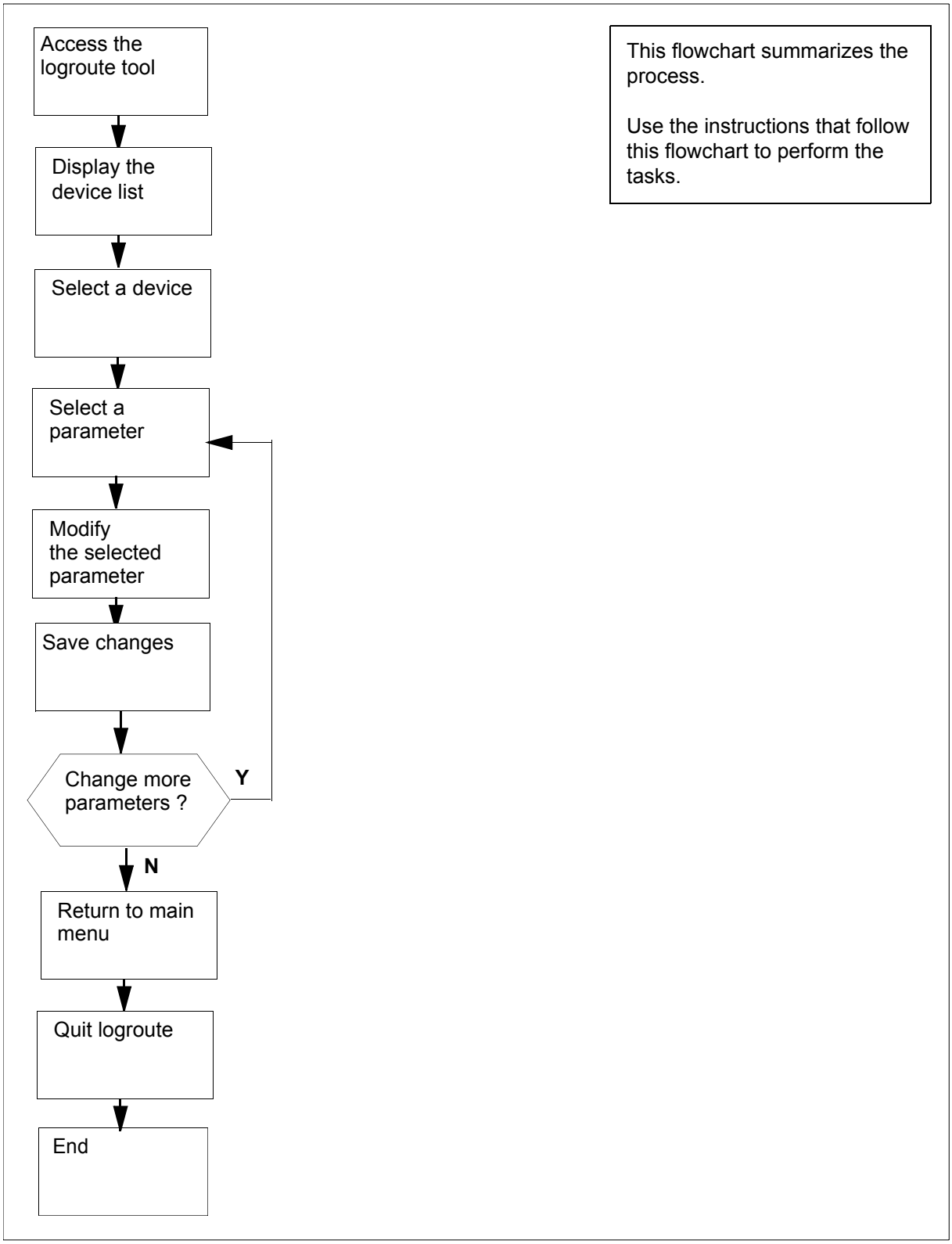
Note 1: The routing rules you enter for each device only accommodate the set of logs defined in the procedure Specifying the logs delivered from the CM to the CBM on page 39. Logs that are being suppressed at the CM cannot be un-suppressed for a specific device.

Note 2: If you want to modify global parameters (parameters that apply to all devices), refer to the procedure Configuring Log Delivery global parameters on page 45.

Task flow diagram

The following task flow diagram provides an overview of the process. Use the instructions in the procedure that follows the flowchart to perform the tasks.

Task flow for Modifying a log device using logroute



Procedure

Modifying a log device using logroute

At the VT100 console

1 Log in to the CBM.

2 Access the logroute tool:

```
# logroute
```

The Logroute Main Menu screen appears.

```
                Logroute Main Menu

          1 - Device List
          2 - Global Parameters
          3 - CM Configuration File
          4 - Gdd Configuration
          5 - Help
          6 - Quit Logroute



 Enter Option ==>
```

3 Display the device list:

```
> 1
```

The Device List Menu screen appears.

```
                Device List Menu

          1 - View Device
          2 - Add Device
          3 - Delete Device
          4 - Modify Device
          5 - Help
          6 - Return to Main Menu



 Enter Option ==>
```

4 Access the Modify Device Menu screen:

> 4

The system displays all currently configured devices.

Example response:

```
                Modify Device Menu

Enter ABORT to return to Device List Menu...
        Devices:                                  Type
        1 - /data/logs/niru1                      File
        2 - HOST: any            PORT: 8551       TCPIN
        3 - HOST: 47.135.213.86  PORT: 1027       TCP
        4 - HOST: any            PORT: 8556       TCPIN









Enter number of device to change ==>
```

5 Enter the number for the device that you want to modify.

The screen for the selected device is displayed.

Example of a TCPIN device screen (second device in the example above):

```
                TCP-IN Device

Enter ABORT to return to Modify Device Menu

        1 -  REMOTE IP             : any
        2 -  PORT                  : 8551
        3 -  FORMAT                : STD
        4 -  ECORE                 : ON
        5 -  Log Routing           :
             ADDREP ALL
             ADDREP TRK 101
             ADDREP TRK 100
             ADDREP TRK 102



Enter number of device parameter to change ==>
```

6 Enter the number for the parameter that you want to modify.

If the parameter that you selected is	Do
REMOTE IP, HOST IP, PORT, or FILENAME	step 7
FORMAT	step 8
ECORE	step 9
Log Routing	step 10

7 At the prompt, enter a new value for the selected parameter. Continue with step 16.

8 At the prompt, enter the new log format (from the range displayed).

Note: Enter STD or SCC2 if you want the following information to be displayed in all log reports:

- user-defined office ID, same for all logs and streams
- the name of the node (ECORE) from which the log is generated
- the sequence number in dual (global and device) format

Continue with step 16.

9 At the prompt, change the setting for the ECORE option (ON or OFF).

Note: If you enter ON, the name of the node from which the log is generated will be displayed in all log reports (for STD and SCC2 formats only).

Continue with step 16.

10 The system displays all existing logrouting entries for the selected device, and prompts you to add or delete an entry. Complete the following steps to add or delete a routing entry.

If you want to	Do
add an entry	enter **a**, and continue with step 11
delete an entry	enter **d**, and continue with step 14

11 At the prompt, enter one of the following values:

- **a** - if you want to un-suppress logs (cause them to be routed to the device)
- **d** - if you want to suppress logs (cause them not to be routed to the device)

Response

```
Enter log identifier ("log_type", or
"log_type log_number") ==>
```

12 Enter a log type or a combination of log type and log number (separated by a space). The new entry is added to the log routing list on the screen.

Note: For example, an entry of PM will suppress or un-suppress all PM logs. An entry of PM 100 will suppress or un-suppress the PM100 logs, but leave the routing of other PM logs unchanged.

Response

```
Wish to enter more Logrouting Details (Y/N) [N]:
```

13 If you want to suppress or un-suppress more logs, enter **y**, and go back to step 11. Otherwise, enter **n**, and continue with step 16.

14 Enter the number of the entry that you want to delete from the log routing list. The entry you specified is removed from the display.

Response

```
Wish to delete more Logrouting Details (Y/N)
[N]:
```

15 If you want to delete more entries, enter **y**, and repeat step 14.

If you do not want to delete any more entries, enter **n**, and continue with step 16.

16 When prompted, save your changes:

> y

Response

```
WARNING: Some log devices will be restarted. Do
you wish to proceed?
```

17 Confirm the save command:

> y

Response

```
Save data completed -- press return to continue
```

Press the Enter key to confirm the change.

Note: If you do not want to save your change, enter **n** and press the Enter key.

18 Use the following table to determine your next step.

If you	Do
want to make more changes for the selected device	step 6
do not want to make more changes for the selected device	step 19

19 Type **abort** and press the Enter key. The system returns to the Modify Device Menu screen.

If you want to modify another device, go back to step 5. Otherwise, continue with step 20.

20 Exit the Modify Device Menu screen:

```
> abort
```

21 Return to the Logroute Main Menu screen:

```
> 6
```

22 Quit the logroute tool:

```
> 6
```

23 You have completed this procedure.

Deleting a device using logroute

Purpose

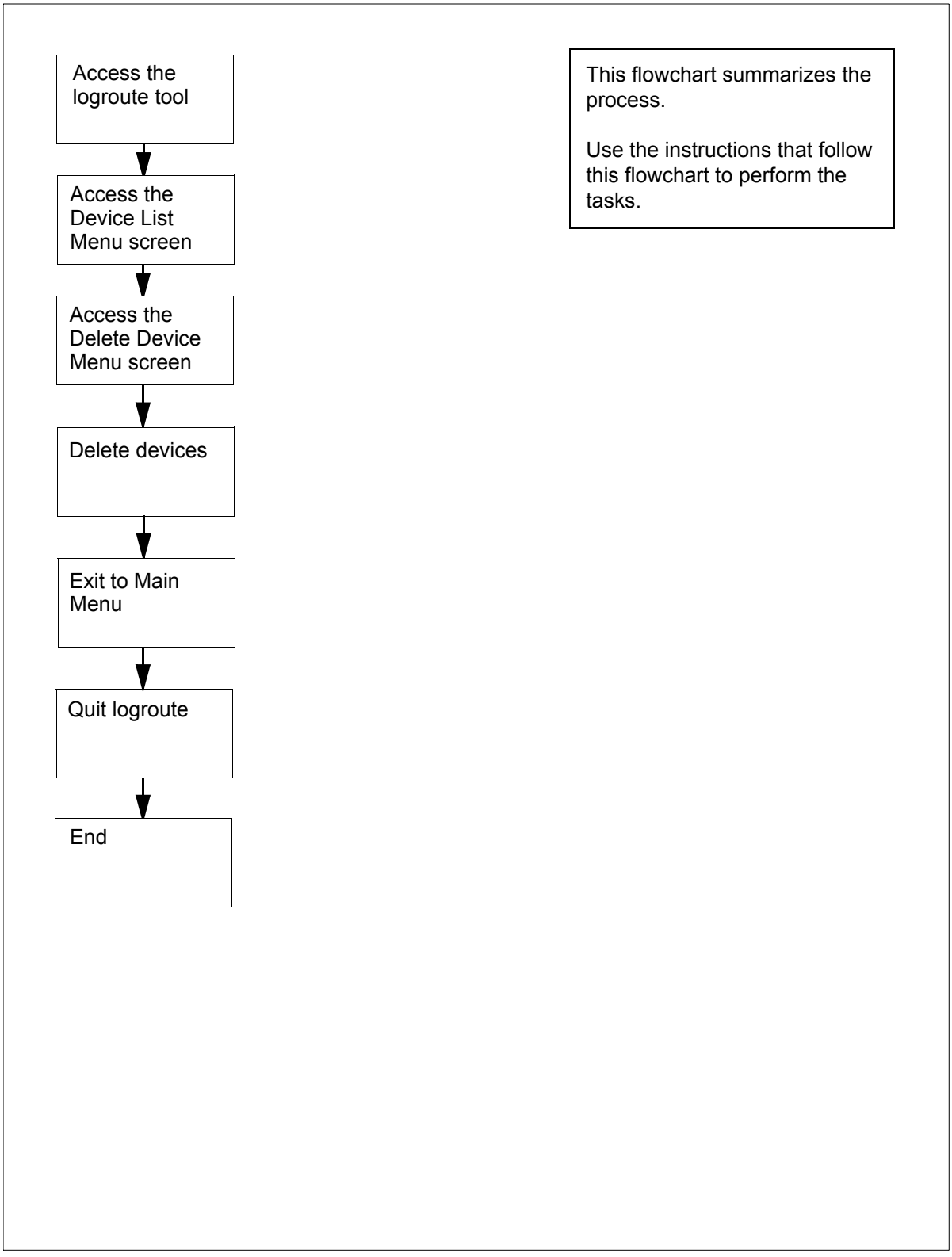
Use this procedure to delete a log device using the Log Delivery Application Commissioning Tool (logroute). This procedure allows you to delete any one of the following devices:

- a TCP device (an IP and port address on the network)
- a TCP-IN device (a port on the CBM)
- a file device (a file on the CBM)

Task flow diagram

The following task flow diagram provides an overview of the process. Use the instructions in the procedure that follows the flowchart to perform the tasks.

Task flow for Deleting a device using logroute



Procedure

Deleting a device using logroute

At the VT100 console

1 Log in to the CBM.

2 Access the logroute tool:

```
# logroute
```

The Logroute Main Menu screen appears.

3 Display the device list:

```
> 1
```

The Device List Menu screen appears.

```
                  Device List Menu


          1 - View Device
          2 - Add Device
          3 - Delete Device
          4 - Modify Device
          5 - Help
          6 - Return to Main Menu



Enter Option ==>
```

Note: If you want to view the devices currently configured, enter 1. Follow the on-screen instructions to display the details for the selected device.

4 Access the Delete Device Menu screen:

> 3

The system displays the list of configured devices and prompts you to enter the number of the device that you want to delete.

Example response

```
                  Delete Device Menu
Enter ABORT to return to Device List Menu
          Devices:                                  Type:
          1 - HOST: any           PORT: 8551        TCPIN
          2 - HOST: 10.102.4.4    PORT: 14450       TCP
          3 - /data/logs/faults                     FILE




 Enter device number to delete ==>
```

5 Enter the number of the device you want to delete.

Response

```
Device will be deleted permanently. Continue...
(Y/N)[N]:
```

6 Confirm that you want to delete the selected device:

> y

Response

```
Save data completed -- press return to continue
```

Note: If you do not want to delete the selected device, enter **n**, press the Enter key, and select a new device to delete.

7 Press the Enter key to confirm that you want to continue.

The device is removed from the list and you are prompted to enter the next device to be deleted.

8 Use the following table to determine your next step.

If you	Do
want to delete another device	step 5
do not want to delete another device	step 9

9 Return to the Device List Menu screen:

```
> abort
```

10 Return to the Logroute Main Menu screen:

```
> 6
```

11 Quit the logroute tool:

```
> 6
```

12 You have completed this procedure.

Specifying the logs delivered from the CM to the CBM

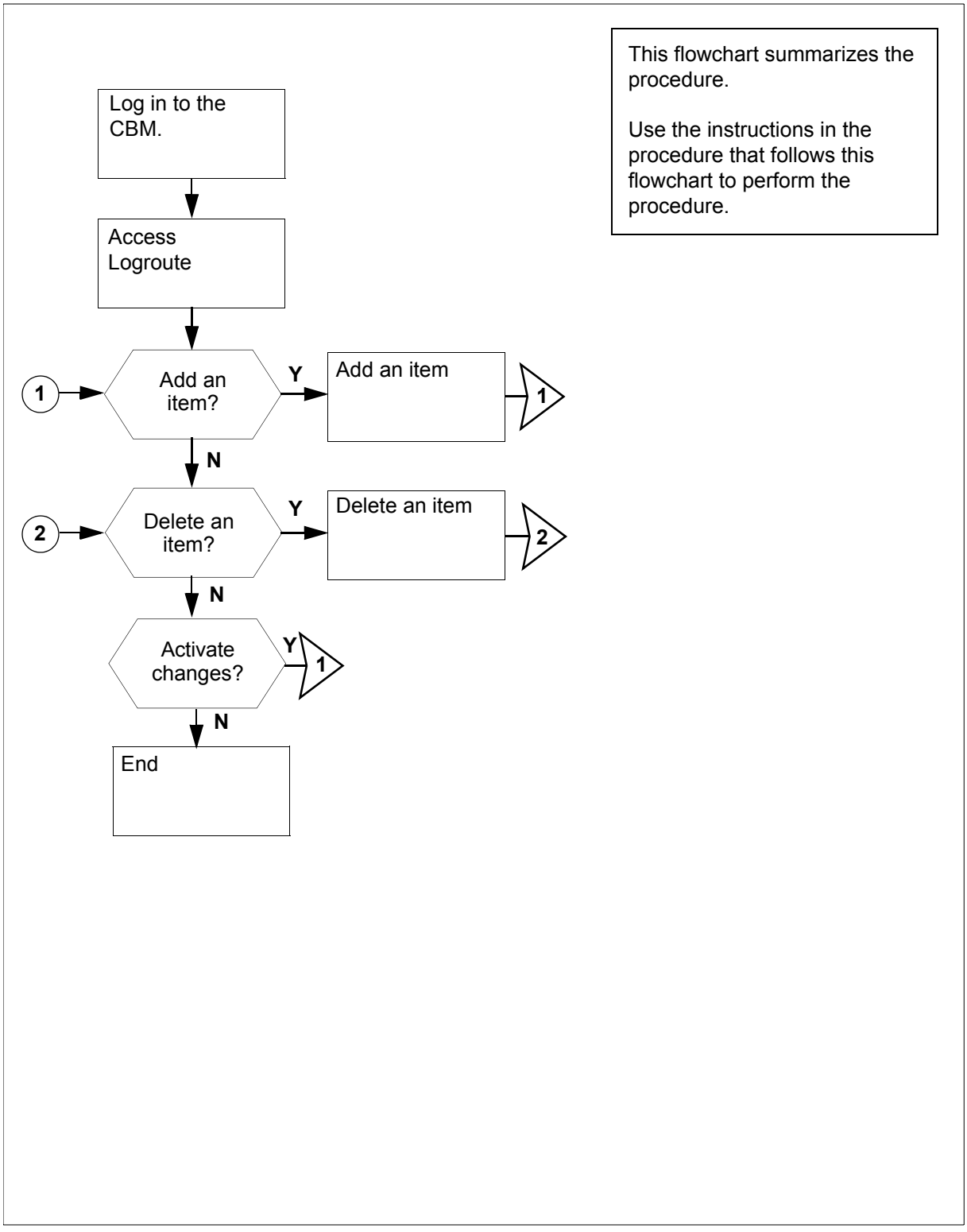
Purpose

Use this procedure to define which logs will be delivered from the computing module (CM) to the CBM. When the Log Delivery service is first installed, it receives all logs in the CM log stream by default. If you wish to modify the incoming CM log stream, use the CM Configuration File menu in the logroute tool to add or delete individual logs or log types.

Task flow diagram

The following task flow diagram provides an overview of the process. Use the instructions in the procedure that follows the flowchart to perform the tasks.

Task flow for Specifying the logs delivered from the CM the CBM



Procedure

Specifying the logs delivered from the CM to the CBM

At the VT100 console

1 Log in to the CBM.

2 Access the logroute tool:

```
# logroute
```

The Logroute Main Menu screen is displayed.

```
                Logroute Main Menu

          1 - Device List
          2 - Global Parameters
          3 - CM Configuration File
          4 - GDD Configuration
          5 - Help
          6 - Quit Logroute



Enter Option ==>
```

3 Access the CM Configuration File menu:

```
> 3
```

The CM Config File Menu screen is displayed.

```
                CM Config File Menu

          1 - View Config List
          2 - Add Report
          3 - Delete Report
          4 - Help
          5 - Return to Main Menu




Select Option ==>
```

4 Use the following table to determine your next step.

If you want to	Do
add routing report to the list	step 5
delete routing report from the list	step 10

5 Access the CM - Add Report screen:

> 2

The system displays the list of the current routing entries for the incoming CM log stream.

Example response

```
                    CM - Add Report
Enter ABORT to return to CM Config File Menu

           1 - DEL IOAUD 107









Warning: You must BSY and RTS the Log Delivery or the
Succession Log Delivery application for the CM configuration
to take effect.
```

6 Use the following table to determine your next step.

If you want to	Do
suppress logs (cause them to be removed from the incoming CM log stream)	enter **d**, and press the Enter key
un-suppress logs (cause them to be included in the incoming CM log stream)	enter **a**, and press the Enter key

Note: An entry of **n** (NOCMLOGS) will suppress all CM logs -- no CM logs will be delivered to your system.

Response

```
Enter log identifier ("log_type", or "log_type
log_number") ==>
```

7 Enter a log type or a combination of log type and log number (separated by a space).

Note 1: An example of a log type is “PM”. This entry will suppress or un-suppress all PM logs.

Note 2: An example of a combined log type and log number is PM 181. This entry will suppress or un-suppress the PM181 logs but leave the routing of other PM logs unchanged.

Response

```
Save Report details? (Y/N)[N]:
```

8 Save your changes:

> y

The new item is added to the list.

9 Use the following table to determine your next step.

If you	Do
want to add more entries to the list	step 6
do not want to add more entries to the list	step 14

10 Access the CM - Delete Report screen:

> 3

The system displays the list of the current routing entries for the incoming CM log stream.

Example response

```
                    CM - Delete Report
Enter ABORT to return to CM Config File Menu

           1 - DEL IOAUD 107
           2 - ADD PM 181









     Select report to delete ==>
```

11 Enter the number of the item you want to delete from the list.

Response

```
Report will be deleted permanently. Continue?
(Y/N)[N]:
```

12 Confirm the delete command:

```
> y
```

Response

The system displays the CM Delete Report screen with the following warning

```
Warning: You must BSY and RTS the Log Delivery
or the Succession Log Delivery application for
the CM configuration to take effect.
```

13 Use the following table to determine your next step.

If you	Do
want to delete more entries from the list	step 11
do not want to delete more entries from the list	step 14

14 Return to the CM Config File Menu screen:

```
> abort
```

15 Use the following table to determine your next step.

If you	Do
want to make more changes to the CM log stream list	step 4
do not want to make more changes to the CM log stream list	step 16

16 Return to the Logroute Main Menu screen:

```
> 5
```

17 Quit the logroute tool:

```
> 6
```

18 You have completed this procedure.

Configuring Log Delivery global parameters

Purpose

Use this procedure to configure the Log Delivery global parameters. The global parameters are set to default values at initial installation and should not require modification. If the global parameters do require modification, use this procedure to change the configuration. The online Log Delivery commissioning tool called logroute controls Log Delivery global parameters. The Log Delivery global parameters apply to all Log Delivery output devices and are separate from device-specific parameters.

Note: For information on configuring or modifying device-specific parameters, refer to one of the following procedures:

- Configuring log delivery destinations on page 15
- Modifying a log device using logroute on page 25

The logroute tool allows you to customize the following global parameters:

- log_office_id (office name)

  Note: This parameter is valid only for devices that have log format set to STD or SCC2.

- buffer size (number of logs)
- reconnect time-out value (seconds)
- lost logs threshold (number of lost logs before the system generates a design log)

  Note: This parameter is for Nortel Networks personnel only.

- incoming end of line character (ASCII code)
- outgoing end of line characters (ASCII code)
- start of log characters (ASCII code)
- end of logs characters (ASCII code)
- the number of days to keep log files

- maximum size of a log file (Mbyte)
- maximum size action

ATTENTION
Any settings changed by the Log Delivery application and the logroute tool will not affect Generic Data Delivery settings or the logs in the /gdd volume.

If the global parameters do require modification, the ranges and default for each parameter are as follows:

- log_office_id: values are NULL, CLLI, CORE-COMPAT, or up to 12-characters office name, default is CLLI

  The log_office_id parameter refers to the office name, which will be attached to all logs delivered to all devices that have log format set to STD or SCC2.

  If you enter NULL, the office name will not be attached to the logs.

  If you enter CLLI, the CLLI name of your system will be attached to all logs.

  If you enter CORE-COMPAT, the core's LOG_OFFICE_ID defined in table OFCVAR will be used for all logs. Until the first log arrives from the core, your system's CLLI will be used.
- buffer size (number of logs): range is 50 to 300, default is 150
- reconnect time-out value (secs): range is 1 to 3600, default is 15
- lost logs threshold: range is 1 to 300, default is 100 (-1 turns this option off)
- number of days to keep log files: range is 1 to 45, default is 5
- maximum size of a log file (Meg): range is 5 to 300, default is 40
- maximum size action: values are STOPDEV, CIRCULATE, and ROTATE

  The maximum size action parameter allows you to configure the action the system performs when the file reaches its maximum size. The STOPDEV value tells the file device to save the data in separate files every 12 hours. When the file created at each 12-hour rotation is full, the system stops writing log data to the file. The system loses any log data generated from the time the system stops writing to the file to the start of a new file at the next rotation.

  The ROTATE value tells the file device to save the data in separate files every 12 hours. When the file created at each 12-hour rotation is full, the system creates another file to continue saving any log

data. The system does not wait until the next 12-hour rotation to create a new file.

The CIRCULATE value tells the file device to save the data in separate files every 12 hours. When the file reaches its maximum size, the system saves the new log data by overwriting the earliest data in the file.

The remaining global parameters are represented by ASCII character codes. For more information on these parameters including their ranges, see the logroute help menu. The values for the global parameters represented by ASCII character codes are as follows:

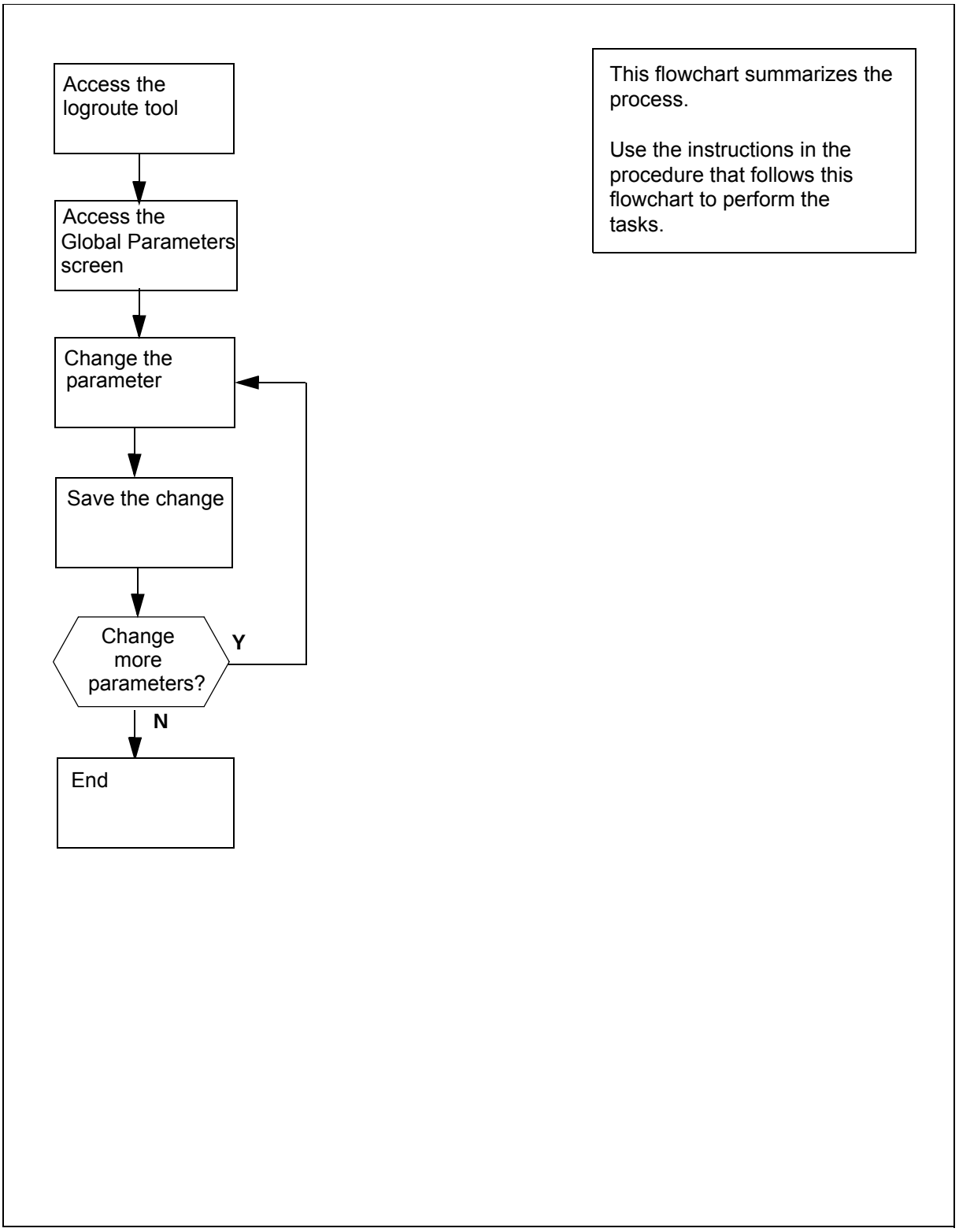
- incoming end of line character: default is 10 which corresponds to a line feed character (go to the next line)
- outgoing end of line characters: default is 10 13 which represents a line feed (go to the next line) followed by a carriage return
- start of log characters: default is 10 13 which represents a line feed (go to the next line) followed by a carriage return
- end of logs characters: default is 10 13 which represents a line feed (go to the next line) followed by a carriage return

Note: Any configuration changes take effect immediately. You do not have to busy and return the Log Delivery application to service for the changes to take effect.

Task flow diagram

The following task flow diagram provides an overview of the process. Use the instructions in the procedure that follows the flowchart to perform the tasks.

Task flow for Configuring Log Delivery global parameters



Procedure

Configuring Log Delivery global parameters

At the VT100 console

1 Log in to the CBM. Use the maint user ID and password, then switch user to root using the root ID and password.

2 Access the logroute tool:

```
# logroute
```

The Logroute Main Menu screen appears.

3 Access the Global Parameters screen:

```
> 2
```

Example response

```
          Global Parameters

1  - LOG_OFFICE_ID                    : CLLI
2  - Buffer size (number of logs)     : 150
3  - Reconnect timeout value (secs)   : 15
4  - Lost logs threshold (NT only)    : 100
5  - Incoming end of line character   : 10
6  - Outgoing end of line characters  : 10 13
7  - Start of log characters          : 10 13
8  - End of logs characters           : 10 13
9  - Number of days to keep log files : 5
10 - Maximum size of a log file (Meg) : 40
11 - Maximum size action              : STOPDEV
12 - Help
13 - Return to Main Menu


Enter Option ==>
```

Note: This display shows the default values for the Global Parameters menu.

4 Select the parameter that you want to change:

```
> <n>
```

where

<n>
is the menu number next to the global parameter you want to change

Example response for changing the buffer size

```
                    Global Parameters

1  - LOG_OFFICE_ID                        : CLLI
2  - Buffer size (number of logs)         : 150
3  - Reconnect timeout value (secs)       : 15
4  - Lost logs threshold (NT only)        : 100
5  - Incoming end of line character       : 10
6  - Outgoing end of line characters      : 10 13
7  - Start of log characters              : 10 13
8  - End of logs characters               : 10 13
9  - Number of days to keep log files     : 5
10 - Maximum size of a log file (Meg)     : 40
11 - Maximum size action                  : STOPDEV
12 - Help
13 - Return to Main Menu


Enter buffer size (range - 50 to 300) ==>
```

Note 1: The log and line delimiters (incoming and outgoing end of line characters, and start and end of log characters) must be entered as decimal or hexadecimal ASCII code.

Note 2: For a detailed description of each parameter, see the Help menu (option 12).

5 Enter a new value for the selected parameter.

6 The system prompts you to save the change. The following message is displayed:

```
Save Global Parameter details  [Y/N][N]:
```

If you	Do
want to save your change	enter **y**, press the Enter key, and continue with step 7
do not want to save your change	enter **n**, press the Enter key, and go to step 11

7 The system displays the following warning:

```
WARNING: All log devices will be restarted. Do
you wish to proceed.
```

If you want to	Do
complete the saving process	step 9
stop the saving process	step 8

8 Enter **n**.

The unchanged value appears on the Global Parameter screen.

Continue with step 11.

9 Enter **y**.

The system displays the following message:

```
Save data completed -- press return to continue
```

10 Press the Enter key again to confirm the change. The new value appears on the Global Parameter screen.

11 Use the following table to determine your next step.

If you	Do
want to change another global parameter	step 4
do not want to change another global parameter	step 12

12 Return to the Logroute Main Menu:

```
> 13
```

13 Quit the logroute tool:

```
> 6
```

14 You have completed this procedure.

Configuring the GDD parameter using logroute

Purpose

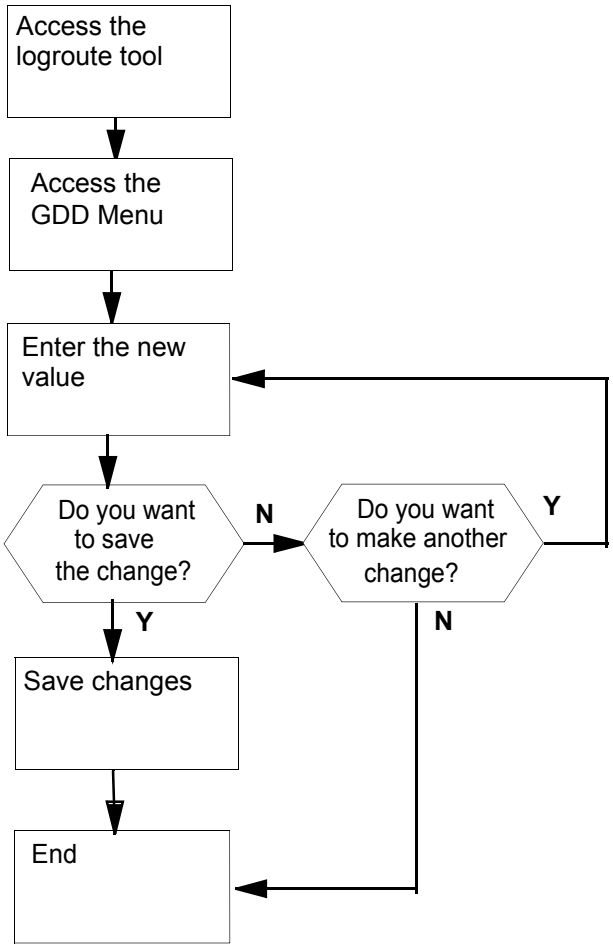
Use this procedure to configure the Generic Data Delivery (GDD) parameter. This parameter defines how many days the log files will be stored in the /gdd directory on the datavg volume.

Note: When the configured number of days is reached (maximum 30 days), the logs are rotated, and the oldest log file is replaced by the newest.

Task flow diagram

The following task flow diagram provides an overview of the process. Use the instructions in the procedure that follows the flowchart to perform the tasks.

Task flow for Configuring GDD parameter using logroute



This flowchart summarizes the process.

Use the instructions in the procedure that follows this flowchart to perform the tasks.

Configuring GDD parameter using logroute

At the VT100 console

1 Log in to the CBM.

2 Access the logroute tool:

`# logroute`

The Logroute Main Menu screen appears.

```
                    Logroute Main Menu


            1 - Device List
            2 - Global Parameters
            3 - CM Configuration File
            4 - Gdd Configuration
            5 - Help
            6 - Quit Logroute




  Enter Option ==>
```

3 Access the GDD Menu:

`> 4`

Example response

```
                         GDD Menu


     1 - Number of days to keep log files in /gdd:  30
     2 - Help
     3 - Return to Main Menu









  Enter Option ==>
```

4 Select the GDD parameter:

> 1

Response

```
Enter number of days (range 1 to 30) ==>
```

5 Specify how many days you want the log files to be stored in the /gdd directory. Enter the number (within the range) and press the Enter key.

Response

```
Save GDD Value [Y/N][N] :
```

If you	Do
want to save your change	step 7
do not want to save your change	step 6

6 Cancel your change:

> n

If you	Do
want to make another change	step 4
do not want to make another change	step 10

7 Save the GDD value:

> y

Response:

```
Warning: This would change the number of days to
store logs in /gdd. Log files older than the day
specified would be deleted.
```

8 Press the Enter key to confirm the change.

Response

```
Save data completed -- press return to continue
```

9 Press the Enter key to continue. The new value is displayed.

10 Return to the Logroute Main Menu screen:

> 3

11 Quit the logroute tool:

> 6

12 You have completed this procedure.

Commissioning or decommissioning Network Time Protocol (NTP)

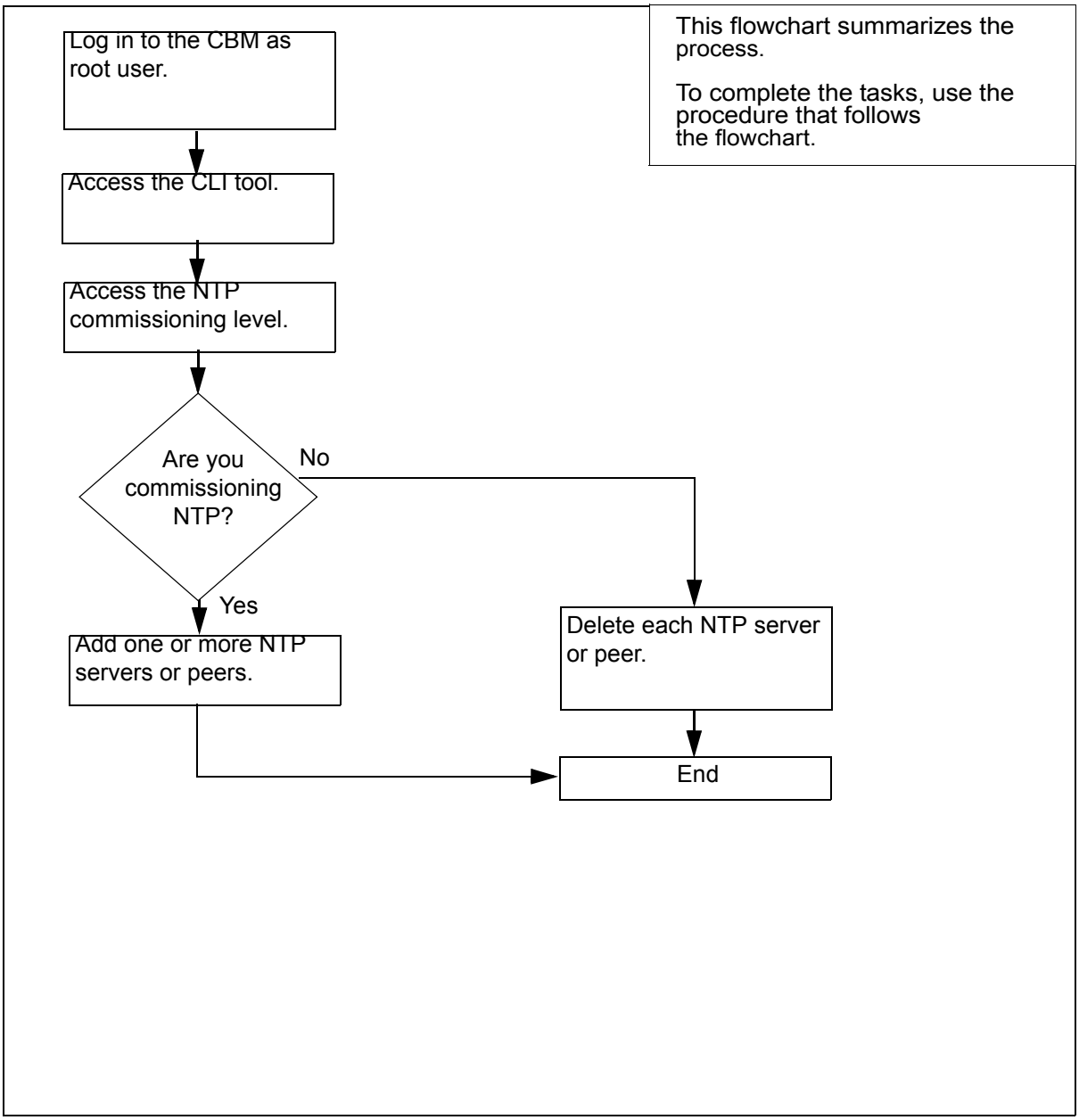
Purpose

Use this procedure to add or remove a Network Time Protocol (NTP) server or peer on the CBM.

Task flow diagram

The following task flow diagram summarizes the commissioning or decommissioning Network Time Protocol (NTP) process. To complete the tasks, use the instructions in the procedure that follows the flowchart.

Task flow for Commissioning or decommissioning NTP



Procedure

Commissioning or decommissioning NTP

At the local VT100 console

1 Log into the CBM as a root user.

2 Access the CLI tool:

```
# cli
```

3 Access the CLI configuration level:

```
> <#>
```

where

<#>
is the number next to the CLI configuration level.

4 Access the NTP configuration level:

```
> <#>
```

where

<#>
is the number next to the Network Time Protocol configuration selection.

If you are	Do
commissioning NTP	step 5
decommissioning NTP	step 7

5 Add an NTP server or peer:

```
> <#>
```

where

<#>
is the number next to the Configure the NTP daemon selection.

6 Enter the IP address of the server or peer.

Note 1: A peer can act as a server.

Note 2: You can add a maximum of three NTP servers or peers. If you attempt to add more than three, then the system will only recognize the three most recent NTP servers or peers.

7 Add or remove additional servers or peers, or exit.

If you want to	Then
add additional servers or peers	step 5
remove all NTP servers or peers	step 8
remove only selected NTP servers or peers	step 10
exit	step 12

8 Remove all NTP servers

> <#>

where

<#>
is the number next to the Unconfigure the NTP daemon selection.

9 When prompted, type **y** to confirm the deletion or **n** to cancel. Go to step 12.

10 Remove only selected NTP servers or peers

> <#>

where

<#>
is the number next to the Remove an NTP server selection.

Note: You can also delete an NTP server or peer using either its hostname or IP address.

11 When prompted, enter the hostname for the NTP server or peer which you want to delete.

If you want to	Do
remove an additional NTP server or peer	repeat this step
exit	go to step 12

12 When prompted, type **x** to exit the NTP configuration level.

13 When prompted, type **x** to exit the CLI configuration level.

14 When prompted, type **x** to exit the CLI tool.

15 Access the CBM RMI level to see the response.

```
# cbmmtc ntp
```

16 You have completed this procedure.

Adding or removing an NTP server or peer

Purpose

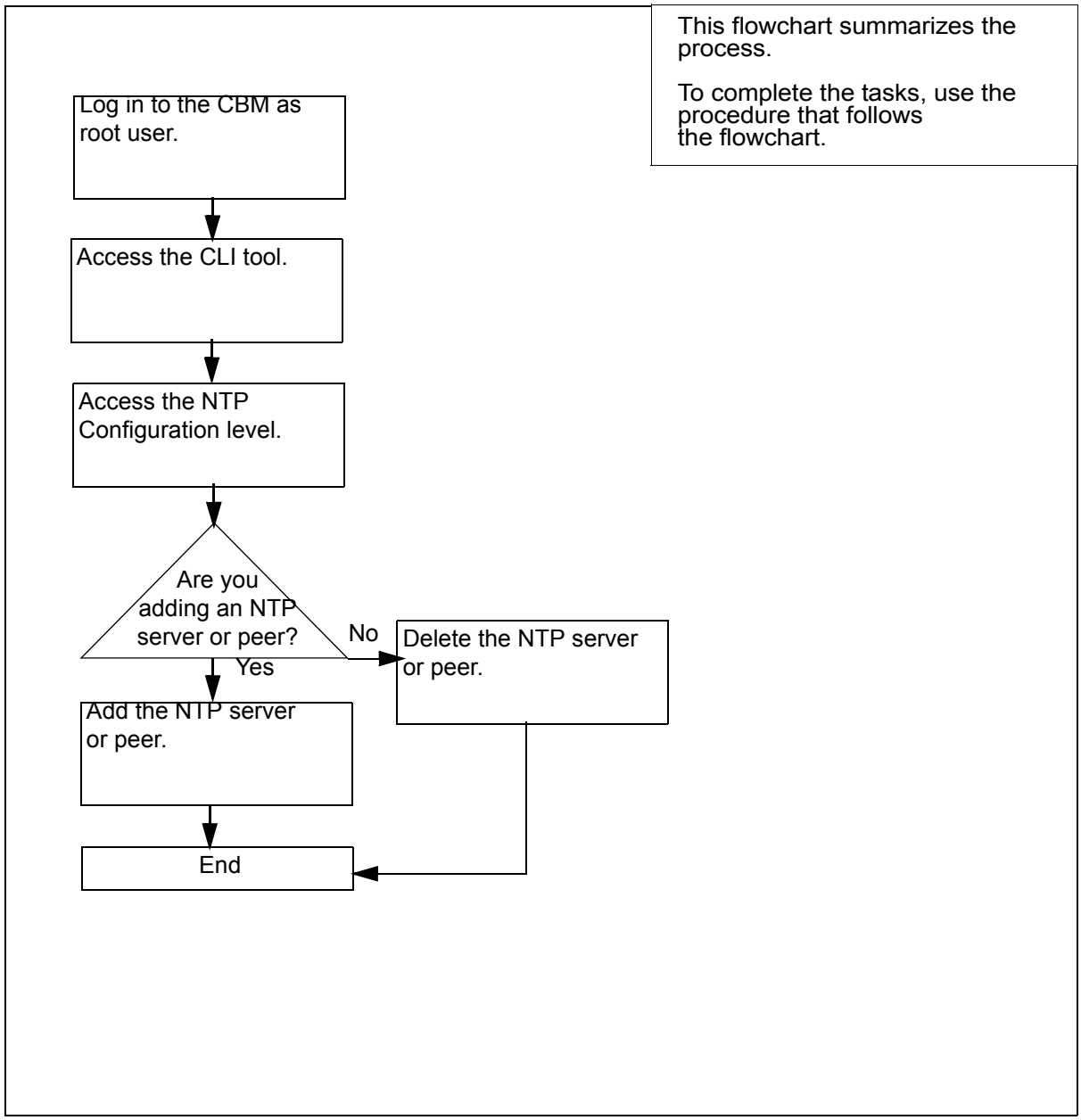
Use this procedure to add or remove a Network Time Protocol (NTP) server or peer.

Note: You can add up to three NTP servers or peers.

Task flow diagram

The following task flow diagram summarizes the software upgrade process. To complete the tasks, use the instructions in the procedures that follow the flowchart.

Task flow for adding or removing an NTP server or peer



Procedure

Adding or removing an NTP server or peer

At the local VT100 console

1 Log into the CBM as a root user.

2 Access the CLI tool

```
# cli
```

3 Access the CLI configuration level:

> <#>

where

<#>
is the number next to the CLI configuration selection.

4 Access the NTP configuration level:

> <#>

where

<#>
is the number next to the Network Time Protocol configuration selection.

If you want to	Do
add an NTP server or peer	step 5
remove all NTP servers or peers	step 8
remove only a selected NTP server or peer	step 10

5 Add an NTP server or peer:

> <#>

where

<#>
is the number next to the Configure the NTP daemon selection.

6 When prompted, enter the IP address for that server or peer.

If you want to	Do
add an additional NTP server or peer	repeat this step
exit	**x**

Note 1: You can add a maximum of three NTP servers or peers. If you attempt to add more than three, then the system will only recognize the three most recent NTP servers or peers.

Note 2: A peer can act as a server.

7 When prompted, enter the host name for the server or peer.

If you want to	Do
add an NTP server or peer	step 5
exit	step 12

8 Remove all NTP servers

> <#>

where

<#>
is the number next to the Unconfigure the NTP daemon selection.

9 When prompted, type **y** to confirm the deletion or **n** to cancel. Go to step 12.

10 Remove only selected NTP servers or peers

> <#>

where

<#>
is the number next to the Remove an NTP server selection.

Note: You can also delete an NTP server or peer using either its hostname or IP address.

11 When prompted, enter the hostname for the NTP server or peer which you want to delete.

If you want to	Do
remove an additional NTP server or peer	repeat this step
exit	go to step 12

12 When prompted, type **x** to exit the NTP configuration level.

13 When prompted, type **x** to exit the CLI configuration level.

14 When prompted, type **x** to exit the CLI tool.

15 Access the CBM RMI level to see the response.

```
# cbmmtc ntp
```

16 You have completed this procedure.

Installing the regular and secure file transfer software

The following procedures explain how to install file transfer software. Additional file transfer procedures, such as Transferring files from Core using SCFT are in the Administration and Security section, NN10358-511.

Application

Files can be transferred using either secure or regular mechanisms; the regular mechanism uses FTP Proxy, the secure method uses SSH Core File Transfer (SCFT) which is discussed in Installing SCFT.

Use the following procedure to install the FTP proxy server software.

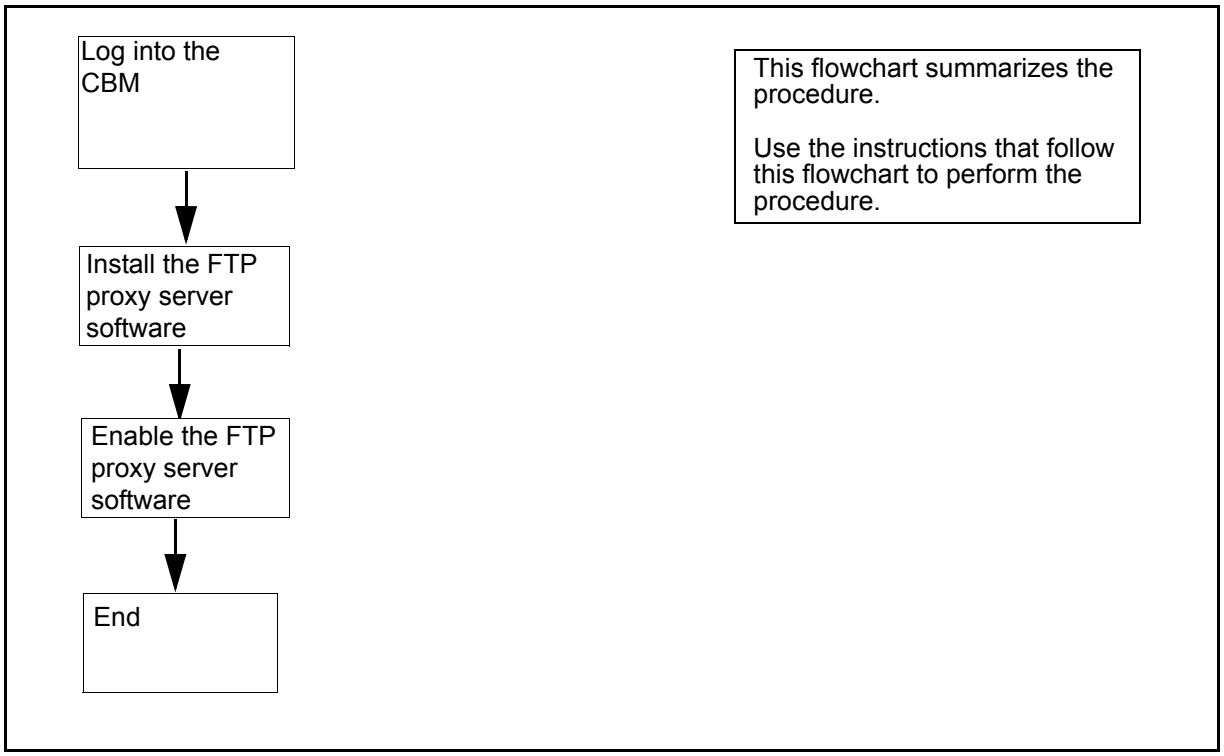
Action

The SWIM package provides the user interface (UI) for local CBM software installation and maintenance. You can access SWIM from the CBM maintenance interface (cbmmtc).

ATTENTION
Before you can perform an installation using SWIM, you must have the CBM base software installed on the CBM.

The following flowchart summarizes the installation procedure for the FTP proxy server software. To complete the procedure for installing the FTP proxy server software, perform the step-action procedures that follow the flowchart.

Summary of Installing the FTP proxy server software



Installing the FTP proxy server software

At the local or remote VT100 console

1 Log into the CBM.

2 Access the maintenance interface :

```
# cbmmtc
```

3 Access the SWIM level:

```
> swim
```

4 Choose the FTP Proxy server fileset:

If you the fileset is	Do
in a directory	step 5
on a CD	step 8

5 Apply the change:

```
# apply
```

6 Enter the source directory :

```
# source <directory_path>
```

where

<directory_path>
is the location of the FTPproxy server software.

Goto step 9.

7 Apply the change:

```
# apply
```

8 Enter the source directory :

```
# source /cdrom/cdrom/applications/cbm/bin
```

9 Install the FTP proxy server software.

The cbmmtc Main Menu screen, including the FTP proxy service, will appear.

10 You have completed this procedure.

Removing an FTP proxy server application

Use this procedure to remove an FTP proxy server when the FTP proxy application is not required on the CBM.

Removing an FTP proxy server

At the local or remote VT100 console

1 Log into the CBM as the maint user.

2 Access the maintenance interface by typing

```
# cbmmtc
```

and pressing the Enter key.

3 Select the filesets to delete by typing

```
> select <ftp_proxy_server_fileset>
```

and pressing the Enter key.

where

<ftp_proxy_server_fileset>
is the number associated with the fileset you want to remove

4 Delete the filesets by typing

```
> 8 or remove
```

and pressing the Enter key.

5 Confirm that you want to delete the filesets by typing

```
> y
```

and pressing the Enter key.

The system deletes the filesets, displaying a message when the removal is complete.

6 Exit from the maintenance interface by typing

```
> quit all
```

and pressing the Enter key.

7 Log out from the CBM by typing

```
> exit
```

and pressing the Enter key.

8 You have completed this procedure.

Installing the logreceiver tool on a client workstation

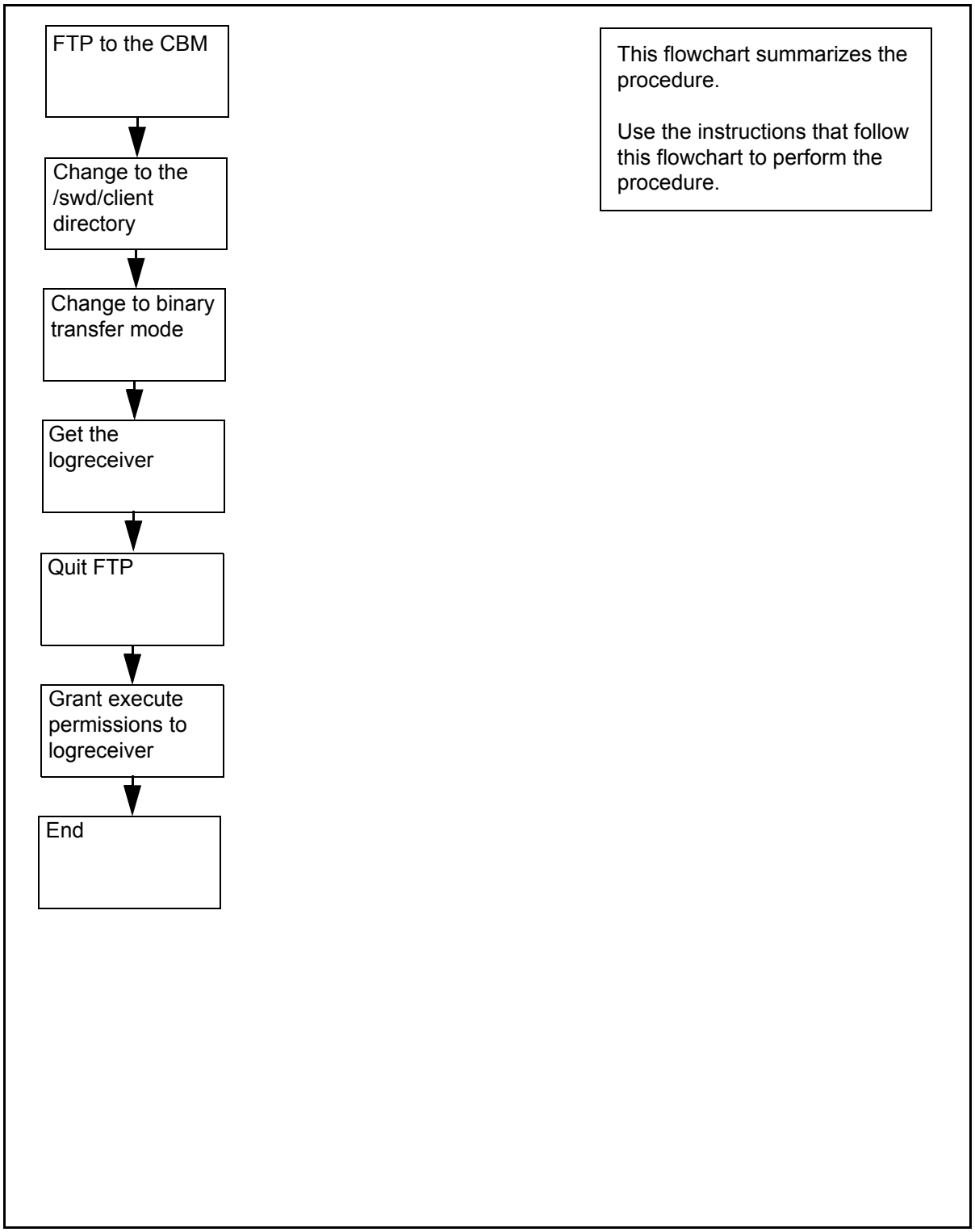
Application

Use this procedure to install the logreceiver tool on a client workstation. The procedure accesses the logreceiver software stored on the CBM to which the workstation can connect, and installs it in a specified directory location on the workstation.

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step action procedure that follows the flowchart to perform the procedure.

Summary of Installing the logreceiver tool on a client workstation



Installing the logreceiver tool on a client workstation

At the local or remote VT100 console

1 FTP to the CBM

```
# ftp <CBM_IP_address>
```

where

<CBM_IP_address>
is the IP address or node name of the CBM

2 Change the directory to /swd/client

```
ftp> cd /swd/client
```

3 Change the files transfer mode to binary

```
ftp> binary
```

4 Get the logreceiver tool

```
ftp> get logreceiver
```

5 Quit FTP

```
ftp> bye
```

6 Grant execute permissions to the logreceiver

```
# chmod +x logreceiver
```

7 You have completed this procedure.

Installing the CMFT on a client workstation

Purpose

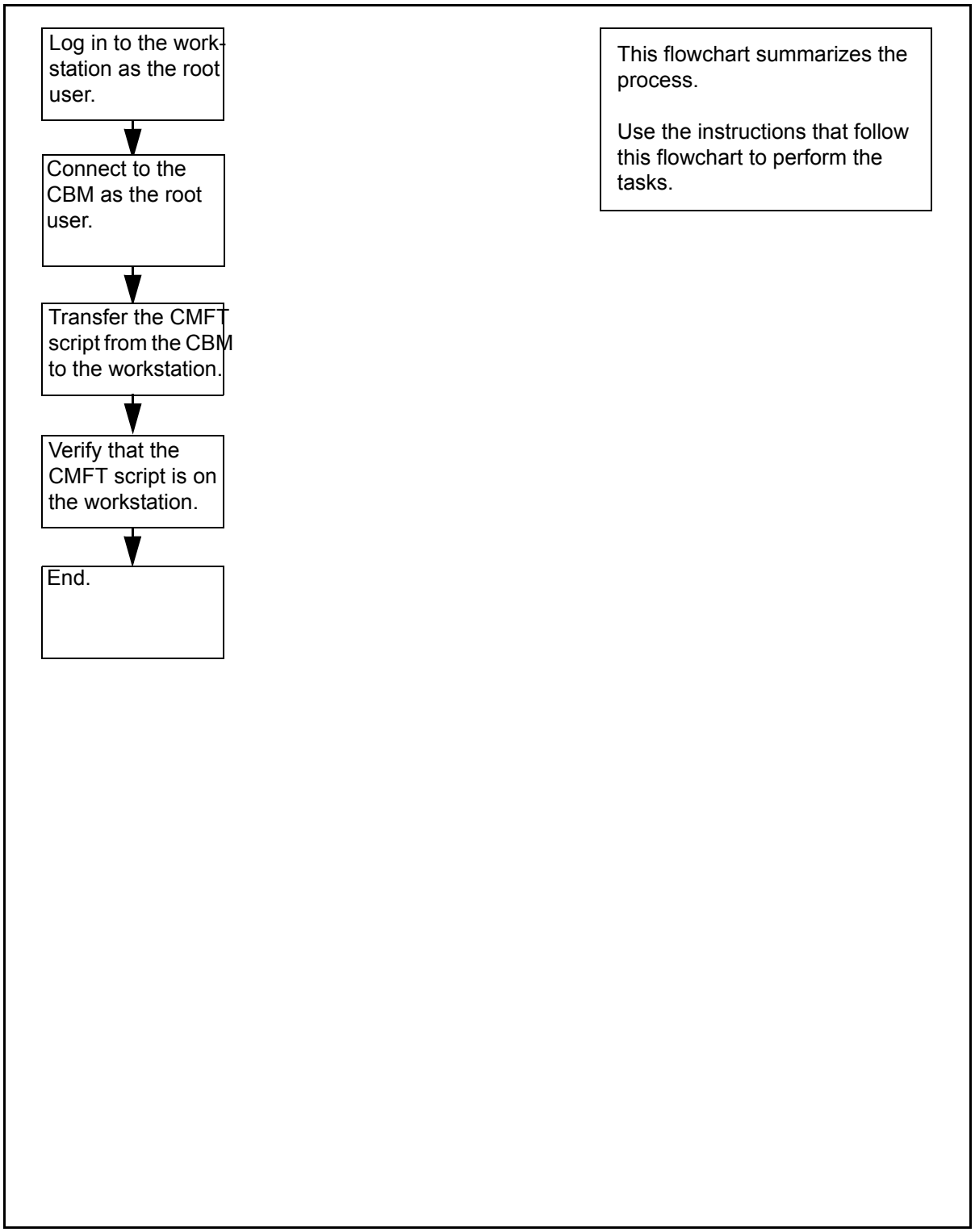
Use this procedure to install the Command Module File Transfer script (CMFT) on a client workstation. This procedure copies the CMFT from the Command Module (CM) to a specified directory location on the client workstation. The CMFT script allows you to use SCFT (SSH Core File Transfer) to transfer files to and from the CM. SCFT is discussed in NN10362-611, Administration and Security.

Note: SCP must be installed before you can install CMFT.

Task flow diagram

The task flow diagram that follows provides a summary of this process. Use the instructions in the procedure that follows the flowchart to perform the tasks.

Task flow for installing the CMFT on a client workstation



Procedure

Installing the CMFT on a client workstation

At the local or remote VT100 console

1. Log in to the client workstation as the root user.
2. Log in to the CBM as a root user
3. Get the CMFT script from the CBM:

   `> scp root@<cbm_ip_address>:/sdm/scft/cmft .`

   where

   <cbm_ip_address>
   is the CBM node name or ip address
4. Verify that you have successfully transferred the CMFT script

   `> ls -l cmft`

   Response

   The client workstation displays the CMFT script.
5. You have completed this procedure.

Installing SCFT

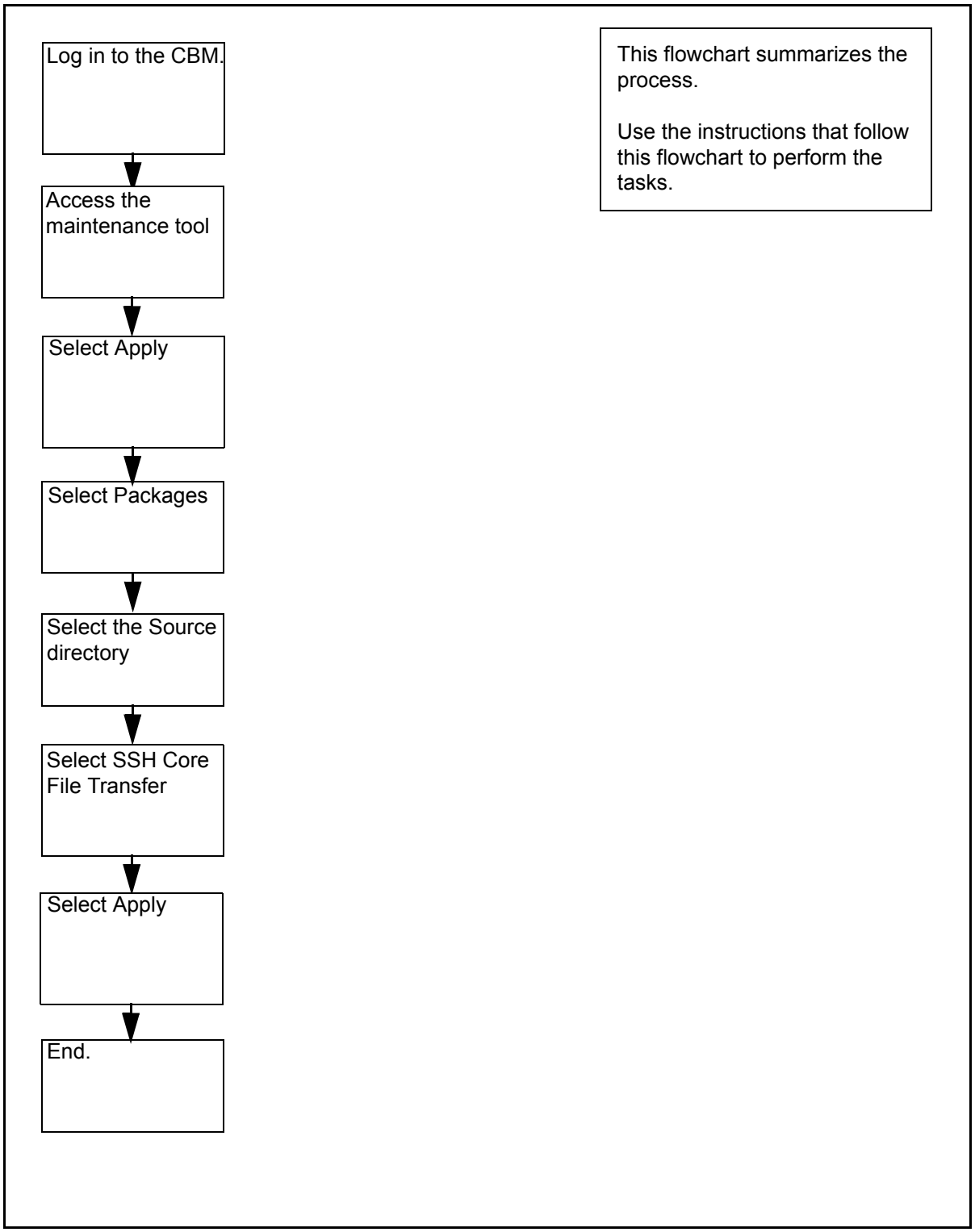
Purpose

Use this procedure to install SCFT (SSH Core File Transfer). SCFT allows you to use secure FTP to access the Core. SCFT usage is discussed in NN10362-611, Administration and Security.

Task flow diagram

The task flow diagram that follows provides a summary of this process. Use the instructions in the procedure that follows the flowchart to perform the tasks.

Task flow for installing SCFT



Procedure

Installing SCFT

At the local or remote VT100 console

1 Log in to the CBM. Use the maint user ID and password, then switch user (**su**) to root using the root ID and password.

2 Access the cbmmtc interface:

```
# cbmmtc
```

3 Go to the apply level of the cbmmtc interface:

```
# apply
```

4 Select **<n>**

where

<n>
is the number next to the SSH Core File Transfer selection

5 Select the default source for the directory path on the core: /data/swd/sdm

6 Apply this selection:

```
# apply
```

7 A dialog will prompt you to confirm your selection:

Do you wish to proceed?

Please confirm ("YES", "Y", "NO", or "N")

Type **Y** to confirm your selection.

The system will execute your request. A dialog will then confirm the successful execution of your selection.

8 You have completed this procedure.

Removing SCFT

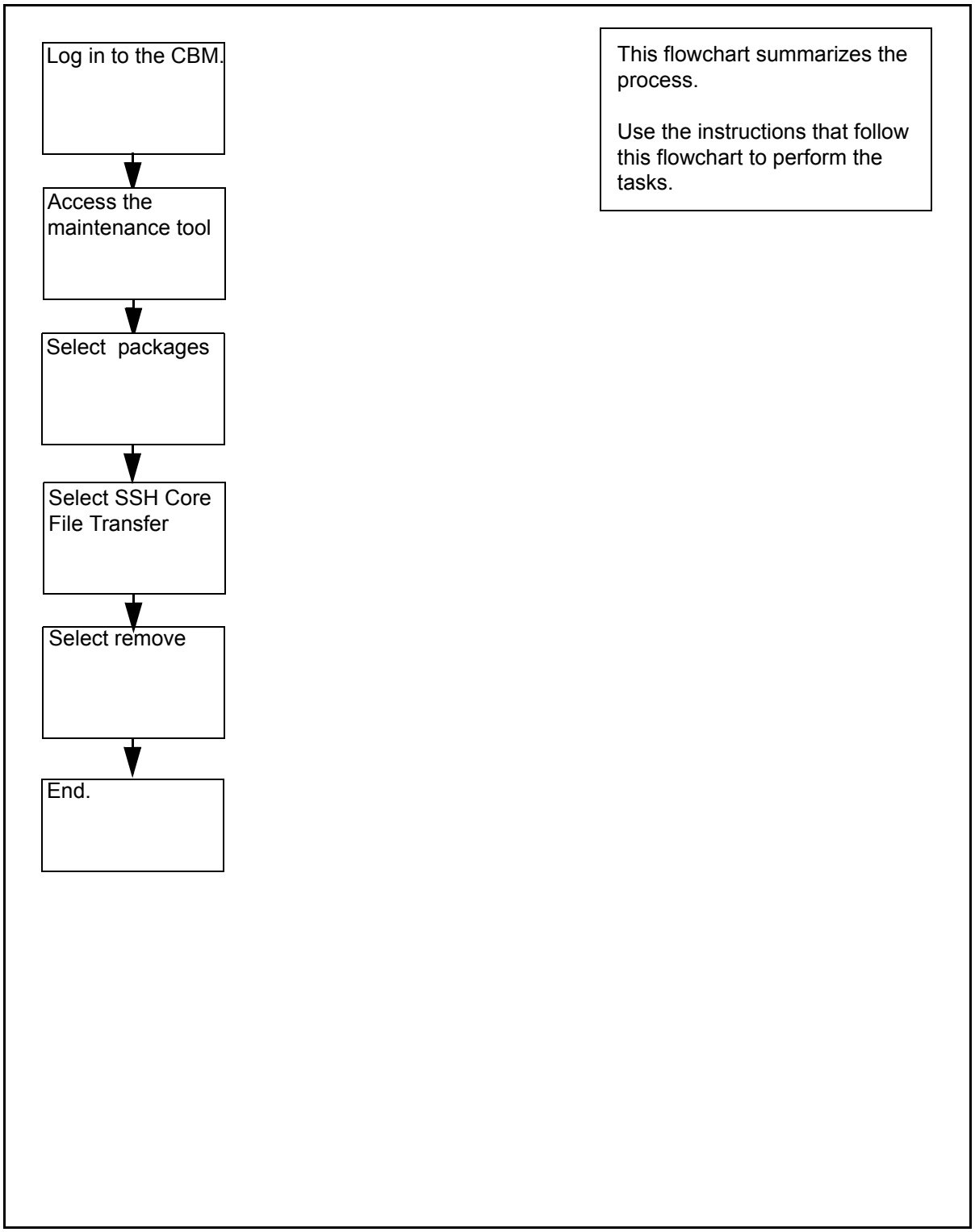
Purpose

Use this procedure to remove SCFT (SSH Core File Transfer). SCFT allows you to use secure FTP to access the Core. SCFT usage is discussed in NN10362-611, Administration and Security.

Task flow diagram

The task flow diagram that follows provides a summary of this process. Use the instructions in the procedure that follows the flowchart to perform the tasks.

Task flow for removing SCFT



Procedure

Removing SCFT

At the local or remote VT100 console

1 Log in to the CBM. Use the maint user ID and password, then switch user (**su**) to root using the root ID and password.

2 Access the cbmmtc interface:

```
# cbmmtc
```

3 Go to the apply level of the cbmmtc interface:

```
# apply
```

4 Select **<n>**

where

<n>
is the number next to the SSH Core File Transfer selection

5 Remove the selection:

```
# remove
```

6 A dialog will prompt you to confirm your selection:

Do you wish to proceed?

Please confirm ("YES", "Y", "NO", or "N")

Type **Y** to confirm your selection.

The system will execute your request. A dialog will then confirm the successful execution of your selection.

7 You have completed this procedure.

Configuring the SuperNode Billing Application

For information on how to install and configure the SuperNode Billing Application (SBA) refer to the SBA documentation.

Turning auto-recovery on

Purpose

Use this procedure to turn on real time billing (RTB) auto-recovery. Auto-recovery allows RTB to automatically recover from a billing transfer failure with the data and processing management system (DPMS) after exceeding the allowable number of retry attempts. Auto-recovery performs the following functions:

- sends a 10 MB test file to the DPMS to analyze the cause of the file transfer failure
- moves partial *.tmp* files on the DPMS to a partial file directory

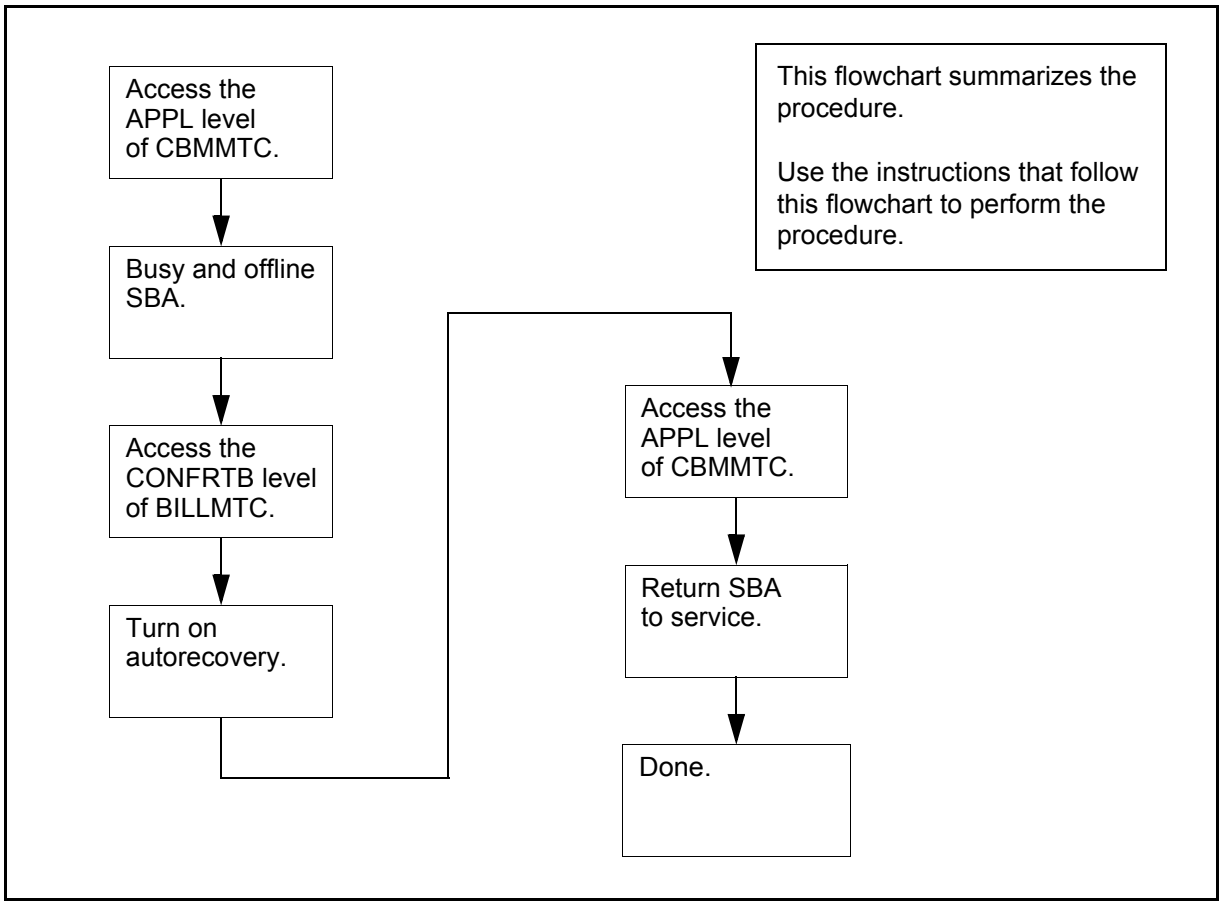
Procedure

The following flowchart summarizes this procedure.

Note: This procedure manually busies SuperNode Billing Application (SBA), which generates the following actions:

- SBA operates in backup mode.
- MAPCI displays a major SBACP alarm under the SDMBIL banner.

Summary of procedure



Turning on auto-recovery

At any workstation or console

1 Access the CBM.

2 Access the APPL level of the CBMMTC interface:

`> cbmmtc appl`

Response

CBMMTC accesses the APPL level

3 Use the Up and Down commands to scroll through the list of displayed applications and locate the SBA application.

4 Busy SBA:

`> bsy <n>`

where

<n> is the number of the SBA application

Response

CBMMTC displays the following prompt:

```
The application is in service.
This command will cause a service interruption.
Do you wish to proceed?
Please confirm ("YES", "Y", "NO", or "N"):
```

5 Confirm the command:

> y

Response

SBA changes state to ManB.

6 This is an optional step. Offline SBA:

> offl <n>

where

<n> is the number of the SBA application

Response

SBA changes state to OffL.

7 Quit the CBMMTC interface:

> quit all

Response

The display returns to the command prompt.

8 Access the BILLMTC interface:

> billmtc

Response

BILLMTC opens at the main level.

9 Access the Schedule level:

> schedule

Response

BILLMTC shows the Schedule level.

10 Access the RTB level:

> rtb

Response

BILLMTC shows the RTB level.

11 Access the CONFRTB level:

`> confrtb`

Response

BILLMTC shows the CONFRTB level.

12 Turn auto-recovery on:

`> autorec on`

Response

"auto-recovery has been turned on."

13 Quit the BILLMTC interface:

`> quit all`

The display returns to the command prompt.

14 Access the APPL level of the CBMMTC interface:

`> cbmmtc appl`

Response

CBMMTC accesses the APPL level

15 Use the Up and Down commands to scroll through the list of displayed applications and locate the SBA application.

16 If you placed SBA offline in step 6, busy SBA:

`> bsy <n>`

Where

<n> is the number of the SBA application

Response

SBA changes state to ManB.

17 Return SBA to service:

`> rts <n>`

where

<n> is the number of the SBA application

Response

SBA returns to service.

18 You have completed this procedure.

Turning auto-recovery off

Purpose

Use this procedure to turn off Real Time Billing (RTB) auto-recovery for all configured RTB destinations.

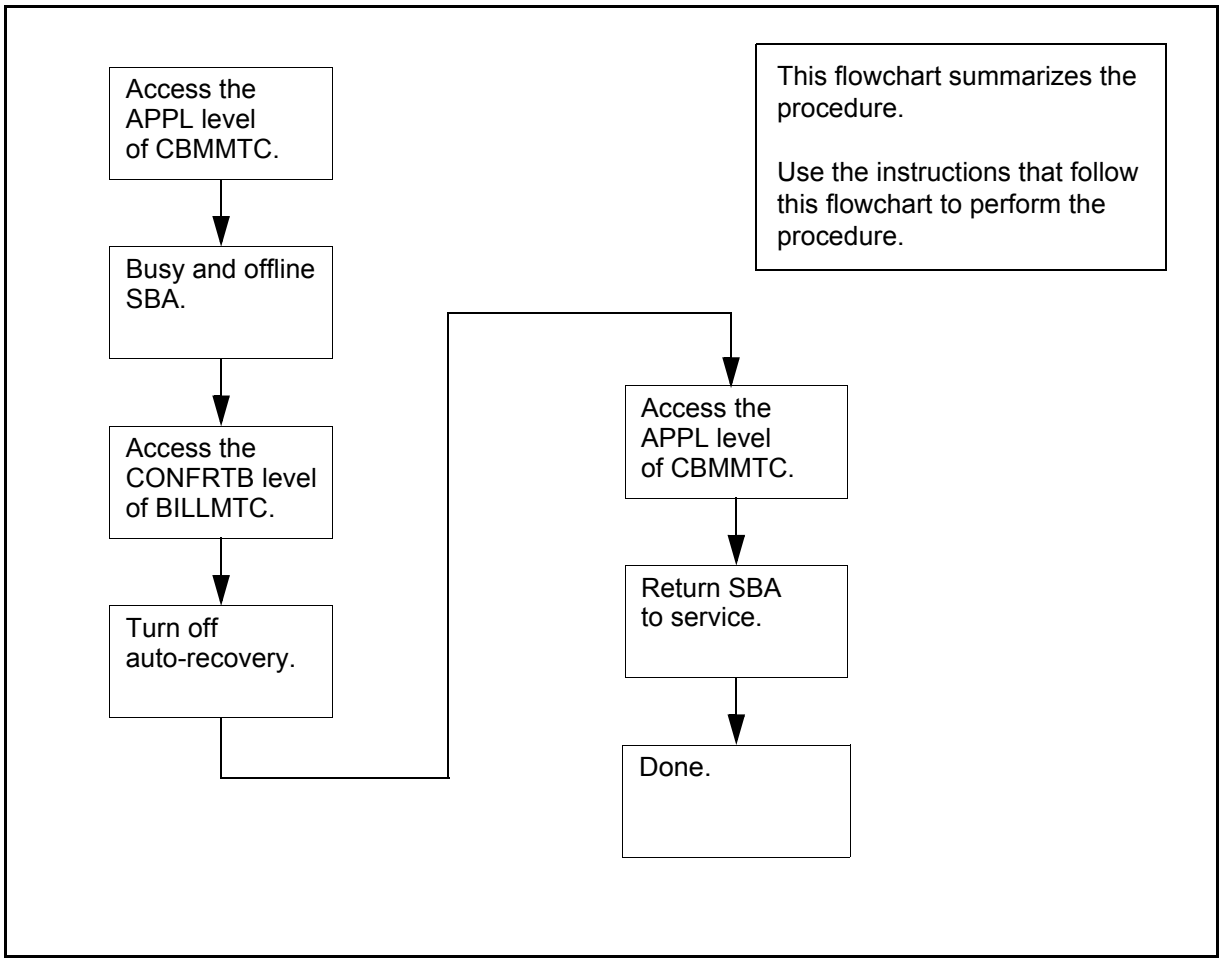
Note: This procedure manually busies SuperNode Billing Application (SBA), which generates the following actions:

- SBA operates in backup mode.
- MAPCI displays a major SBACP alarm appears under the SDMBIL banner.

Procedure

The following flowchart summarizes this procedure. Perform the steps that follow the flowchart to perform the procedure.

Summary of procedure



Turning off auto-recovery

At any workstation or console

1 Access the CBM.

2 Access the APPL level of the CBMMTC interface:

`> cbmmtc appl`

Response

CBMMTC accesses the APPL level

3 Use the Up and Down commands to scroll through the list of displayed applications and locate the SBA application.

4 Busy SBA:

`> bsy <n>`

where

<n> is the number of the SBA application

Response

CBMMTC displays the following prompt:

```
The application is in service.
This command will cause a service interruption.
Do you wish to proceed?
Please confirm ("YES", "Y", "NO", or "N"):
```

5 Confirm the command:

`> y`

Response

SBA changes state to ManB.

6 This is an optional step. Offline SBA:

`> offl <n>`

where

<n> is the number of the SBA application

Response

SBA changes state to OffL.

7 Quit the CBMMTC interface:

`> quit all`

Response

The display returns to the command prompt.

8 Access the BILLMTC interface:

```
> billmtc
```

Response

BILLMTC opens at the main level.

9 Access the Schedule level:

```
> schedule
```

Response

BILLMTC shows the Schedule level.

10 Access the RTB level:

```
> rtb
```

Response

BILLMTC shows the RTB level.

11 Access the CONFRTB level:

```
> confrtb
```

Response

BILLMTC shows the CONFRTB level.

12 Turn auto-recovery off:

```
> autorec off
```

BILLMTC turns off autorecovery for all configured RTB destinations.

13 Quit the BILLMTC interface:

```
> quit all
```

The display returns to the command prompt.

14 Access the APPL level of the CBMMTC interface:

```
> cbmmtc appl
```

Response

CBMMTC accesses the APPL level

15 Use the Up and Down commands to scroll through the list of displayed applications and locate the SBA application.

16 If you placed SBA offline (OffL) in step 6, busy SBA:

`> bsy <n>`

where

<n> is the number of the SBA application

Response

SBA changes state to ManB.

17 Return SBA to service:

`> rts <n>`

where

<n> is the number of the SBA application

Response

SBA returns to service.

18 You have completed this procedure.