# CS 2000 Core Manager Accounting

## Accounting management strategy

Accounting and billing processing is performed by the SuperNode Billing Application (SBA). The SBA provides customers with a robust billing platform that is consistent with the internal data server requirements of Bellcore's Automatic Message Accounting Data Networking System Specification (AMADNS) GR-1343.

The primary purpose of SBA is to receive records from the computing module-load (CM), perform processing, and route the records to files. The SBA can also be configured to send billing files to the operating company's downstream processor(s).

## Tools and utilities

The SBA continually runs in one of the following three automatic modes due to the integrity of billing data being requirement:

- normal
- backup
- recovery

At any time, you can post an active stream to determine in which automatic mode the stream is running. Any stream that drops from normal mode must pass through backup mode, and then through recovery mode, before it can return to normal mode.

***Note:*** Because the speed of the stream status transitions very rapidly and because of the timing of the manually-entered posts, you do not always see the progression from the normal, to backup, to recovery modes. For example, the stream can appear to go directly from the backup mode to the normal mode without going through the recovery mode. However, the stream does go through the recovery mode.

## Normal mode processing

WHen the CM-side of the SBA communication system receives a buffered billing record from the buffer system, it sends the buffered billing record to the CS 2000 Core Manager side of the SBA communication system. The CS 2000 Core Manager side of the SBA communication system passes the buffered billing record to the SBA stream for management. The SBA stream management routes the buffered billing record to the SBA File Manager, which writes the buffered billing record to an open file on the SBA-allocated portion of the CS 2000 Core Manager disk.

## Backup mode processing

The SBA goes into backup mode when any of the following conditions occur:

- the CS 2000 Core Manager and CM experience a loss of communication due to an error
- the CS 2000 Core Manager does not send an acknowledgement that the buffered billing record is successfully written to disk
- you enter the bsy command on the CM-side of SBA to busy the CS 2000 Core Manager
- you enter the bsy command on the CS 2000 Core Manager side of SBA to busy the SBA software
- you upgrade SBA software on the CS 2000 Core Manager
- the CS 2000 Core Manager experiences a critical alarm due to software errors
- the CS 2000 Core Manager disk volume is full

The SBA buffer system routes billing records it receives from amaproc to SBA auxiliary storage system when it is in backup mode. The auxiliary storage system writes each billing record to disk on the CM-side until communication is restored between the CM and the CS 2000 Core Manager. Once the communication is restored, SBA enters recovery mode.

## Recovery mode processing

When the SBA exits the backup mode, it enter the recovery mode. In the recovery mode, the buffer system routes both the active records (real-time) and the backed-up recovery records through the SBA communication system. The SBA File Manager writes the backed-up recovery records to two separate files. The first file is for the active records and the second file is for the records form the auxiliary storage.

## One-night processing

One-night processing (ONP) is performed when operating company personnel upgrade the CM software load. After the datafill is moved to the inactive side of the DMS, the ONP begins the Switch Active (SWACT) on the inactive side. When the SWACT starts the inactive side of the DMS, the SBA application opens a back-up file. The SBA File Manager writes to the file buffer that contains billing records that are not acknowledged or received by the SBA on the CS 2000 Core Manager. The SBA backup file is found and recovered by the other side which avoids any billing loss during a ONP.

***Note:*** ONP takes place on the CM side and does not require any SBA user action.

# Configuring SBA streams

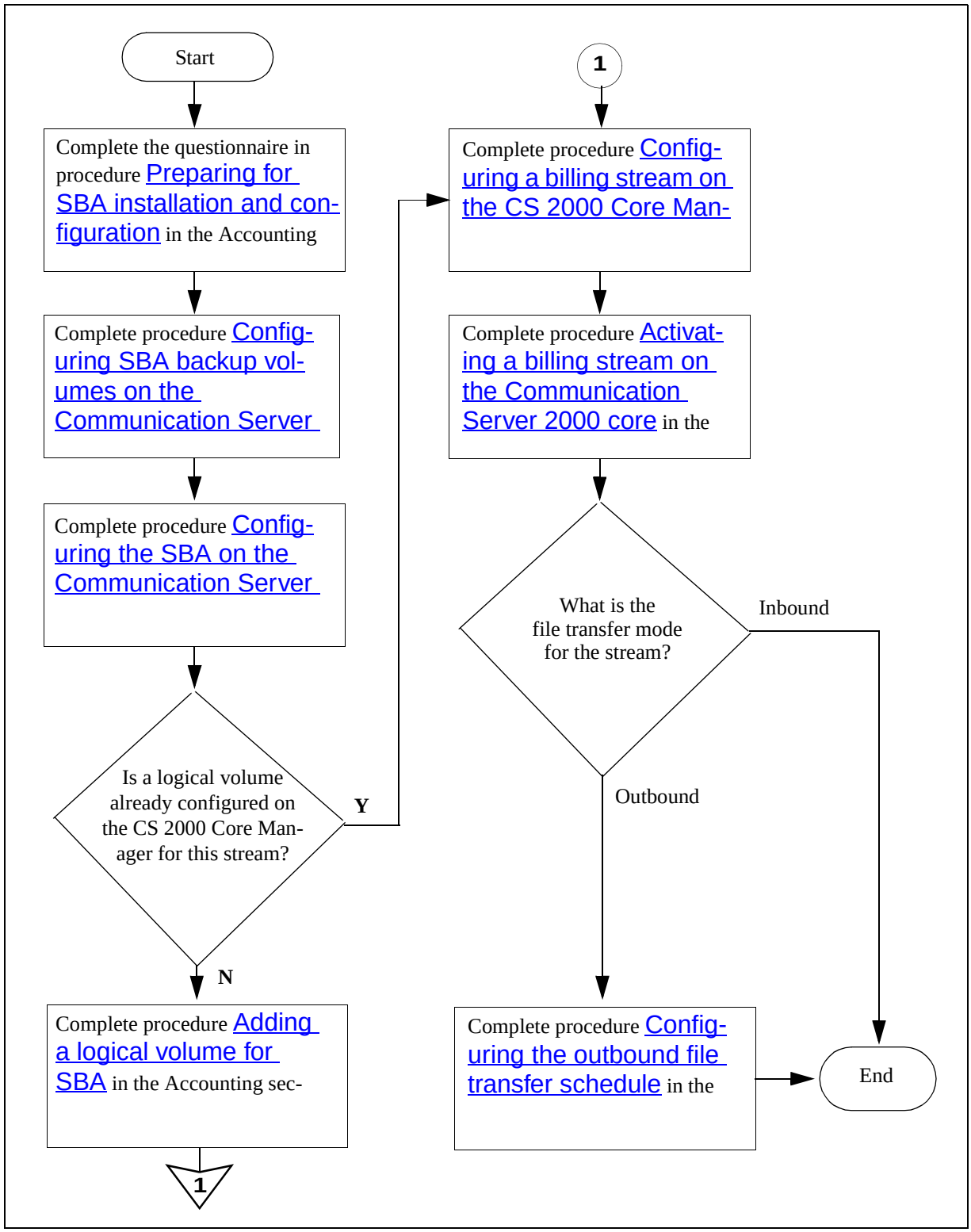
**ATTENTION**
Nortel Networks recommends that the links between the CS 2000 Core Manager and the Communication Server 2000 core be in service before you configure the SuperNode Billing Application (SBA).

**ATTENTION**
The option to set a billing stream to both is only intended to be a temporary path while you are performing maintenance and alarm clearing tasks. The option to set a billing stream to the both mode on a permanent basis is not supported.

**ATTENTION**
The SBA does not support configuring more than one billing stream at a time from multiple workstations. The last billing stream that is configured is the one that is saved.

Following is a high-level overview on how to configure SBA streams.

## Summary of configuring SBA streams



# Preparing for SBA installation and configuration

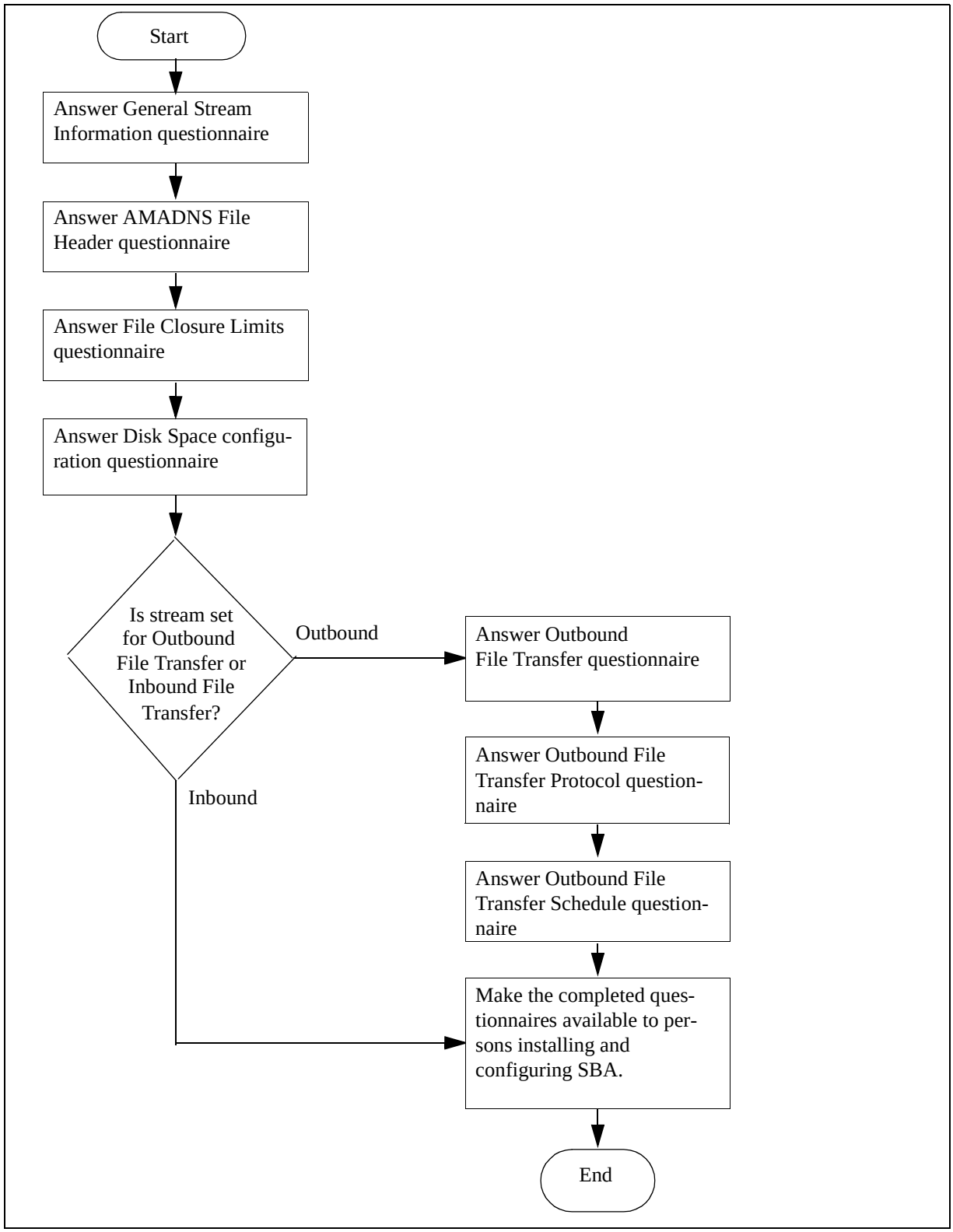
The following procedure contains a series of questionnaires that you need to complete before you install and configure the SuperNode Billing Application (SBA) on the CS 2000 Core Manager for the first time.

You may have been directed to this procedure from another procedure to complete or verify the information in one or more of the questionnaires, which include

- General stream information
- AMADNS filename and header values
- File closure limits
- Disk space requirements
- Outbound file transfer destinations
- Outbound file transfer protocol
- Outbound file transfer schedule

The following flowchart summarizes the questionnaires to complete for the SBA configuration.

## Summary of completing SBA configuration questionnaire



## General stream information

The following table contains a list of questions concerning general stream information. Record your answers in the spaces provided.

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 1 | What is the name of this stream? | The stream name on the SBA must match the name of the stream on the DMS Switch.<br><br>Type: String<br>Range: 1 to 4 characters.<br>Example: AMA<br>Not case sensitive<br><br>***Note:*** This name must match a stream name in the CM table CRSFMT. | stream_name |
| 2 | Is this a filter stream? | The filter stream parameter specifies whether the stream is a CM billing stream or a filtered stream<br><br>Type: Boolean<br>Range: Yes, No<br>Not case sensitive | filter_stream |
| 3 | What is the associated stream name? | This question applies only for filter streams.<br><br>The associated stream name parameter specifies the name of the CM billing stream with which the filtered stream is associated.<br><br>Type: String<br>Range: 1 to 4 characters<br>Example: AMA, OCC<br>Not case sensitive | associated_stream |

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 4 | What is the name of the Filter Criteria file? | This question is applicable only for filter streams.<br><br>The filter criteria file parameter identifies the name of the filter criteria file that contains the expression to be applied for the filtered stream.<br><br>Type: String<br>Range: 1 to 255 characters<br>Case sensitive | filter_criteria_file |
| 5 | What is the record format of this stream? | The stream record format on the SBA must match the record format of the stream on the DMS Switch. The only record formats supported by this product and release are BC (Bellcore AMA Format) and SMDR (Station Message Detail Recording).<br><br>Type: Enumeration<br>Range: BC, SMDR<br>Not case sensitive | record_format |

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 6 | What is the file format of this stream? | This is the format of the billing files that SBA will create on the CS 2000 Core Manager.<br><br>Type: Enumeration<br>Range: DNS, DIRP<br>Not case sensitive<br><br>***Note:*** Currently, the SDM does not support an SMDR stream in DIRP format. Although the SDM allows you to configure an SMDR stream in DIRP format, the command **sdmbctrl smdr on** from the Communication Server 2000 core produces the following error message: "The stream is not configured or not supported on the SDM." | file_format |
| 7 | What is the name of the logical volume on the CS 2000 Core Manager for storing the billing files for this stream? | The logical volume is the name of the directory where the billing files will be stored on the CS 2000 Core Manager CM for this stream.<br><br>Type: String<br>Range: 1 to 255 characters<br>Example: /sba/ama<br>Case sensitive | logical_volume_name |

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 8 | Will file transfers for this stream be initiated by the SBA (Outbound) or by the downstream destination (Inbound)? | Billing files always move from SBA to the downstream destination, but the file transfers can be initiated by SBA (this is called outbound) or by the downstream destination (this is called inbound).<br><br>If Outbound is chosen the SBA must be configured with additional file transfer information, so the outbound file transfer questionnaires must be completed. If Inbound is chosen, the outbound file transfer questionnaires are not needed.<br><br>Type: Enumeration<br>Range: Inbound, Outbound<br>Default: Outbound<br>Not case sensitive | file_transfer_mode |

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 9 | What is the desired state for the stream? | The state controls where the records are sent.<br><br>ON: records are sent only to the SBA.<br><br>OFF: records are sent only to an existing DIRP system.<br><br>BOTH: records are sent to both SBA and to an existing DIRP system.<br><br>***Note 1:*** To maintain the integrity of billing records, your system administration personnel may have implemented some code patches that prevent you from making certain state transitions (such as setting OFF a stream that is currently set ON).<br><br>***Note 2:*** The BOTH state is intended for startup verification of SBA processing against DIRP processing. Extended use of the BOTH state can result in SBA performance problems.<br><br>***Note 3:*** An MTX XA-Core system generating more than 175,000 CDRs per hour does not support BOTH or OFF mode.<br><br>Type: Enumeration<br>Range: On, Off, Both<br>Not case sensitive | sba_stream_state |

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 10 | Do you want the files renamed with close date? | This question is applicable only if the file format is DIRP.<br><br>Type: Boolean<br>Range: Yes, No<br>Default: No<br>Not case sensitive | files_renamed_with_close_date |
| 11 | Do you want the files closed for file transfer and writetape? | This question is applicable only if the file format is DIRP<br><br>Type: Boolean<br>Range: Yes, No<br>Default: No<br>Not case sensitive | files_closed_on_file_transfer |

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 12 | Do you want DIRP blocks closed based on time (applicable only for DIRP file format)<br><br>*This question appears only when file_type=DIRP and record_format=BAF or CDR250.* | This parameter specifies whether the DIRP blocks are to be closed after a defined elapsed time.<br><br>***Note 1:*** SBA block flushing does not support customized DIRP file formats that do not allow hex AA padding at the end of a block. This type of DIRP file expects CDRS to be of equal size, and each block ends with a special event record. Therefore, GSP and MCI CDR DIRP files are not supported.<br><br>***Note 2:*** It is recommended that block flushing be used with real-time transfer mechanisms such as Automatic File Transfer (AFT) and Real-Time Billing (RTB)<br><br>Type: Boolean<br>Range: Yes, No<br>Default: No<br>Not case sensitive | DIRP_blocks_closed_based_on_time |
| 13 | File DIRP block closure time limit (in seconds)<br><br>*This question appears only when you answer Yes to DIRP_ blocks_closed_based_on_time (question 12)* | This parameter specifies the maximum amount of time a DIRP block is kept open before it is closed.<br><br>Type: Boolean<br>Range: Yes, No<br>Default: No<br>Not case sensitive | DIRP_block_closure_time_limit |

## AMADNS filename and header values

The following table contains a list of configuration questions concerning AMADNS filename and header values. The values selected here will be used in the headers and names of the AMADNS files that SBA creates for this stream. Record your answers in the spaces provided.

***Note:*** The source component id and type are not configured per stream and their values will be used by every enabled AMADNS stream on this SBA.

| # | Question | Explanation | Answer |
|---|---|---|---|
| 14 | What is the destination component id for this stream? | Type: String<br>Range: 0000 - 4095<br>Default: 0000 | destination_id |
| 15 | What is the destination component type for this stream? | Type: String<br>Range: 01 - 15<br>Default: 01 | destination_type |
| 16 | What is the source component id for this SBA? | Type: String<br>Range: 0000 - 4095<br>Default: 0001 | source_id |
| 17 | What is the source component type for this SBA? | Type: String<br>Range: 01 - 15<br>Default: 02 | source_type |
| 18 | What is the standard file type for this stream? | Type: Number<br>Range: 1, 6 - 31<br>Default: 1 (BC), 11 (SMDR) | standard_file_type |
| 19 | What is the error file type for this stream? | Type: Number<br>Range: 1, 6 - 31<br>Default: 2 (BC), 12 (SMDR) | error_file_type |

## File closure limits

The following table contains a list of configuration questions concerning limits that control automatic closing of billing files by SBA. Note that the first of these settings that are reached, triggers the closing of the file. Record your answers in the spaces provided.

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 20 | Do you want the files for this stream to be closed after a defined elapsed time? | This controls whether SBA will close billing files based on how long the files have been open.<br><br>Setting this to Yes causes SBA to have a file open no longer than the answer in the following question (21).<br><br>Setting this to No disables automatic file closure based on time limit.<br><br>Type: Boolean<br>Range: Yes, No<br>Default: No<br>Not case sensitive | close_on_timer |
| 21 | The desired maximum time that a file can be open for this stream? | This controls the maximum time SBA will have a file open, but it is enabled only if Yes is the answer to the previous question (20).<br><br>Skip this question if the answer to the previous question (20) is No.<br><br>Type: Number<br>Units: Minutes<br>Range: 5 - 10,080<br>Default: 120 | file_close_time_limit |

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 22 | What is the maximum number of records generated each day for this stream? | This is used to calculate a recommended value for the maximum number of records per file and the maximum number of bytes per file.<br><br>Type: Number<br>Units: Records per day<br>Range: none | records_per_day |
| 23 | What is the maximum size of a record? | This is used to calculate a recommended value for the maximum number of bytes per file.<br><br>Type: Number<br>Units: Bytes per record<br>Range: none | bytes_per_record |
| 24 | What is the desired maximum number of records per billing file for this stream? | This controls the maximum number of records a billing file may contain before SBA will automatically close it.<br><br>The recommended value based on a target of 300 files a day will be calculated and provided as the default value, if the average number of records per day is non-zero.<br><br>Type: Number<br>Units: Records per file<br>Range:<br><br>BC 10,000-500,000<br><br>SMDR 1,000-500,000 | records_per_file |

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 25 | What is the desired maximum number of bytes per billing file for this stream? | This controls the maximum number of bytes a billing file may contain before SBA will automatically close it.<br><br>A recommended value may be calculated with the following formula:<br><br>Records per day for this stream * average record size / 300 = Bytes per file<br><br>Type: Number<br>Units: Bytes per file<br>Range:<br><br>BC1,000,000-20,000,000<br><br>SMDR 100,000-20,000,000 | bytes_per_file |
| 26 | What is the desired average record size? (not applicable if the number of records per day is 0) | This parameter specifies the maximum size of a record. The default value is 80, but depends on the record type and the record size as defined on the CM. This prompt appears when the Number of records per day parameter is set ot a value other than zero (0). | average_record_size |

## Disk space requirements

The following table contains a list of configuration questions related to CS 2000 Core Manager and DMS-switch disk space required by the SBA. Record your answers in the spaces provided.

Disk space sizing considerations discussed here use the DMS switch value Billable Busy Hour Call Attempts (BBHCA). This value is the total number of billing-record-generating calls that are processed within the busiest one hour window of your switch's typical 24-hour day.

For information on the BBHCA estimation factor and its use in calculating required disk space, refer to Calculation of CS 2000 Core Manager Disk Space Requirements and Calculation of DMS Switch Disk Space Requirements.

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 27 | How much disk space on the CS 2000 Core Manager is needed for the billing files for this stream? | If the CS 2000 Core Manager is unable to send the billing files to the downstream processor, they will accumulate on CS 2000 Core Manager disk space. The allocated CS 2000 Core Manager disk space should be minimally capable of holding at least 5 days of SBA billing files.<br><br>The recommended formula for calculating SBA-required disk space on the CS 2000 Core Manager is described in Calculation of CS 2000 Core Manager Disk Space Requirements.<br><br>Type: Number<br>Units: Megabytes<br>Range: NA<br>Default: none<br>Space is allocated in 16 Mb increments. | logical_volume_size |

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 28 | How much disk space is needed for backup of billing records on the DMS Switch for this stream? | If the DMS switch is unable to send the billing records to the CS 2000 Core Manager, they will be backed up to the switch disk space. The allocated DMS disk space should be capable of holding at least one day's accumulation of SBA billing records.<br><br>The recommended formula for calculating SBA-required disk space on the DMS switch is described in Calculation of CS 2000 Core Manager Disk Space Requirements.<br><br>Type: Number<br>Units: Megabytes<br>Range: NA<br>Default: none | dms_disk_space |

### Calculation of CS 2000 Core Manager Disk Space Requirements

The recommended formula for calculating megabytes of disk space needed for SBA billing streams is:

BBHCA (Billable busy hour call attempts) multiplied by the

average length of a call record in bytes, multiplied by

10 hours, multiplied by

Call-record retention days, divided by

1048576, divided by the desired disk utilization. 1048576 is the number of bytes in a megabyte. The desired disk utilization is a percentage that, for the purposes of this formula, is expressed as a decimal figure between 0.1 and 0.9.

This formula must be applied to each billing stream with the total of all streams representing the total megabytes of CS 2000 Core Manager disk space required.

The calculation of 10 hours multiplied by BBHCA is an experience-based factor that, in the absence of detail statistics, can be used to accurately estimate 24 hours of call traffic. If you know that the stream has a high BBHCA for more or less than 10 hours per day, adjust the formula accordingly.

**Calculation Example**
Assumptions:

BBHCA = 150,000

Average length of call records = 85 bytes

Call retention days = 10

Desired disk utilization = 60%

Calculation:

150,000*85*10*10/1048576/.6=2,026 Megabytes

### Calculation of DMS Switch Disk Space Requirements

Regardless of the recommended volume size determined in this procedure, XA-CORE users cannot configure a backup volume size greater than 2GB. For non-XA-CORE users the maximum volume size that can be configured is limited to the size of the physical disk.

The recommended formula for calculating the DMS disk space needed for an SBA billing stream is:

BBHCA (Billable busy hour call attempts) multiplied by

Average length of a call record in bytes, multiplied by

10 hours, multiplied by

Call-record retention days

This formula must be applied to each billing stream with the total of all streams representing the total DMS Switch disk space required.

The calculation of 10 hours multiplied by BBHCA is an experience-based factor that, in the absence of detail statistics, can be used to accurately estimate 24 hours of call traffic. If you know that the stream has a high BBHCA for more or less than 10 hours per day, adjust the formula accordingly.

**Calculation Example**
Assumptions:

BBHCA = 150,000

Average length of call records = 85 bytes

Call retention days = 2

Calculation:

150,000*85*10*2/(1024*1024) = 243 Megabytes of disk space

## Outbound file transfer destinations

The following table contains a list of stream configuration questions relating to transferring files from SBA to one or more destinations. This table specifically addresses configuration information concerning the destinations, IP addresses, user ids, passwords, and directories. The SBA uses this configuration information to log in, and to transfer the files to the downstream destination. Record your answers in the spaces provided.

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 29 | What is the destination to which the SBA is to transfer the billing files? | The combination of the values for stream name, file format type, and destination acts as the key to the schedule tuple.<br><br>The destination cannot contain unprintable characters or blanks.<br><br>Type: numeric String<br>Range: 1 to 15 characters<br>Default: none<br>Example: Eventure | destination |
| 30 | Which protocol is to be used to transfer billing files from the SBA? | FTPW uses the File Transfer Protocol<br><br>Type: Enumeration<br>Range: FTPW<br>Default: FTPW<br>Not case sensitive.<br><br>RFTPW (real time file transfer protocol wrapper) is used for the Real-Time Billing (RTB) application. RFTPW is supported only if the RTB application is configured.<br><br>***Note:*** If you configure RFTPW for a schedule tuple, then you must configure RTB for the corresponding stream. Use the procedure<br><br>Configuring real time billing for a billing stream in the Accounting section. | protocol |

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 31 | What is the IP address of the primary destination for this stream? | The primary destination is the IP address to which SBA will login and transfer the billing files.<br>Type: IP Address<br>Range: 0.0.0.0 - 255.255.255.255<br>Example: 47.202.35.189 | primary_destination |
| 32 | What is the Port for the primary destination? | The primary port is the port number associated with the primary IP address.<br>Type: numeric<br>Range: 21, 1025 - 65535<br>Default: 21<br>Example:1025 | primary_port |
| 33 | What is the IP address of the alternate destination for this stream? | The alternate destination is the IP address to which SBA will login and transfer the billing files if SBA encounters problems in connecting to the primary destination. If there is no alternate, make this entry identical to the primary IP address.<br>Type: IP Address<br>Range: 0.0.0.0 - 255.255.255.255<br>Example: 47.202.35.189 | alternate_destination |
| 34 | What is the Port for the alternate destination? | The alternate port is the port number associated with the alternate IP address.<br>Type: numeric<br>Range: 21, 1025 - 65535<br>Default: 21<br>Example:1025 | alternate_port |

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 35 | What is the login for the downstream destination for this stream? | This login is the user id of that SBA is to use to login to the downstream destination, to transfer the billing files.<br><br>Type: String<br>Range: 1 to 20 alphanumeric characters<br>(Do not use @, %, /)<br>Default: none<br>Example: amadns<br>Case sensitive. | remote_login |
| 36 | What is the password for the login ID in Question 24 for this stream? | This is the password that SBA is to use when it logs in to the downstream destination to transfer the billing files.<br><br>Type: String<br>Range: 1 to 20 alphanumeric characters<br>(Do not use @, %, /)<br>Default: none<br>Example: abracadabra<br>Case sensitive. | remote_password |
| 37 | What is the directory path on the downstream destination where the transferred billing files are to be stored? | This is the full path to the directory on the downstream destination where SBA is to transfer the billing files.<br><br>If this value is a period '.' the SBA FTP client will not issue a change working directory (CWD) command when a file transfer occurs.<br><br>Type: String<br>Range: 1 to 255 characters.<br>Example: /users/amadns/billing<br>Case sensitive. | remote_storage_ directory |

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 38 | What is the desired field separator character for this stream? | This is a single character that the SBA is to use to separate the components of billing file names when they are transferred to the downstream destination.<br><br>If the downstream destination is a Unix system, the recommended field separator is a '.' (period); this results in a file name such as 020001.030002.00001.01.2.<br><br>If the downstream destination is a VMS system, the recommended field separator is an '_' (underscore); this results in a file name such as 020001_030002_00001_01_2.<br><br>Type: Character<br>Range: any printable character<br>Default: '.' period<br>Case sensitive | field_separator |
| 39 | What is the desired filename extension for this stream? | This is the short character string that SBA is to append to the billing file names when it transfers them to the downstream destination.<br><br>If the downstream destination is a Unix system, it is recommended that there be no filename extension. If the downstream destination is a VMS system, the recommended filename extension is 'PRI'.<br><br>Type: String<br>Range: 0 to 3 characters<br>Default: blank (0 chars)<br>Case sensitive | file_extension |

## Outbound file transfer protocol

The following table contains a list of configuration questions relating to transferring files from SBA to the downstream destination. This table specifically addresses configuration information concerning limits, that control how the SBA reacts when it encounters problems in connecting to the downstream destination. Record your answers in the spaces provided.

| # | Question | Explanation | Answer |
|---|---|---|---|
| 40 | What is the maximum number of times SBA should attempt to complete a failed session with the downstream destination for this stream? | Type: Number<br>Range: 0 - 10<br>Default:3 | protocol_max_retries |
| 41 | After a session for this stream fails, what is the maximum time in seconds that SBA should wait before attempting re-connection to the downstream destination? | Type: Number<br>Units: Seconds<br>Range: 1 - 60<br>Default:1 | protocol_retry_wait_time |

## Outbound file transfer schedule

The following table contains a list of stream configuration questions relating to transferring files from SBA to the downstream destination. This table specifically addresses configuration information concerning when SBA initiates a connection to the downstream destination to transfer billing files. Record your answers in the spaces provided.

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 42 | Are scheduled file transfers to the downstream destination desired for this stream? | This controls whether SBA will automatically initiate file transfers to the downstream destination. If set to Yes, SBA automatically transfers files to the downstream destination at the times defined by the following three answers.<br><br>Even if this value is set to No, manual file transfers using the sendfile command can still be issued.<br><br>Type: Boolean<br>Range: Yes, No<br>Default: No<br>If No, use ‘0:00’ for Answers 43 and 44 and ‘120’ for Answer 45. | schedule_active |

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 43 | When should SBA start initiating file transfers to the downstream destination each day? | This defines the beginning of a window of time during each day when SBA is to initiate file transfers to the downstream destination. See the examples following this table for more information.<br><br>Type: Time of Day<br>Units: Hours:Minutes<br>Range: 00:00 - 23:59<br>Default: none | schedule_start_time |
| 44 | When should SBA stop initiating file transfers to the downstream destination each day? | This defines the end of a window of time during each day when SBA can initiate file transfers to the downstream destination. See the examples following this table for more information.<br><br>Type: Time of Day<br>Units: Hours:Minutes<br>Range: 00:00 - 23:59<br>Default: none | schedule_stop_time |

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| # | Question | Explanation | Answer |
|---|---|---|---|
| 45 | Within the daily time window defined in questions 43 and 44, how often should the SBA transfer files to the downstream destination? | This specifies the interval, in minutes, at which SBA is to initiate billing file transfers to the downstream destination. This interval is only active during the window of time specified by the start time (question 43) and stop time (question 44). See the examples following this table for more information.<br><br>Type: Number<br>Units: Minutes<br>Range: 5 - 1440<br>Default: 120 | schedule_interval |

The following are some examples that show different answers to questions for the start time (question 43), stop time (question 44), and the interval (question 45) and the resulting SBA file transfer times.

***Note:*** If your start time and stop time are identical, then SBA is setup for continuous outbound file transfer.

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| Start Time | Stop Time | Interval | SBA Actions | Resulting Transfers |
|---|---|---|---|---|
| 0:00 | 0:00 | 240 | The SBA transfers files every four hours, at the beginning of the hour, starting at midnight. | The SBA initiates file transfers at: 12:00 midnight, 4:00 am, 8:00 am, 12:00 noon, 4:00 pm and 8:00 pm |
| 22:10 | 2:00 | 30 | The SBA transfers files every thirty minutes at 10 minutes and 40 minutes after the hour, between 10:10 p.m and 2 a.m. | The SBA initiates file transfers at 10:10 pm, 10:40 pm, 11:10 pm, 11:40 pm, 12:10 am, 12:40 am, 1:10 am and 1:40 am |

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| Start Time | Stop Time | Interval | SBA Actions | Resulting Transfers |
|---|---|---|---|---|
| 3:15 | 3:15 | 300 | The SBA transfers files every five hours at 15 minutes after the hour, starting at 3:15 a.m. | SBA initiates file transfers at:3:15 am, 8:15 am, 1:15 pm, 6:15 pm and 11:15 pm. |

# Installing SBA on the CS 2000 Core Manager

This procedure describes how to install the SuperNode Data Manager Billing Application (SBA) on the CS 2000 Core Manager. It assumes that the CS 2000 Core Manager platform has already been installed.

## Application

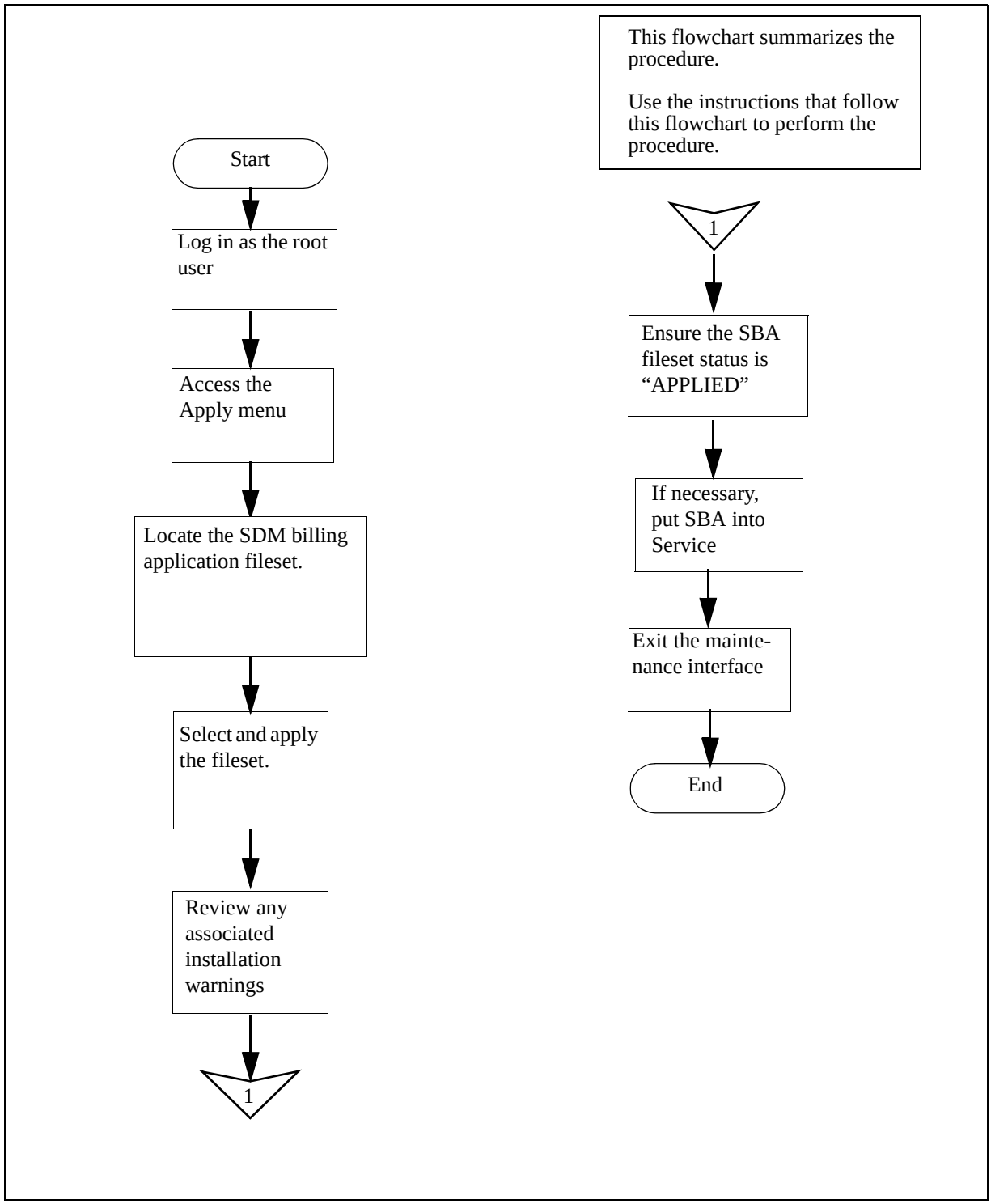
This procedure applies to users who need to perform an initial installation of SBA on the CS 2000 Core Manager.

In order to install SBA, you must have root access and maintenance access to the CS 2000 Core Manager, and be able to execute file transfer protocol (FTP) on the CS 2000 Core Manager. You can access the CS 2000 Core Manager through a terminal connection or by logging on to the CS 2000 Core Manager through a remote UNIX terminal.

## Action

The following flowchart lists the general steps involved in the installation process. The steps are detailed in text following this flowchart.

## Summary of installing the SBA software for the first time



# Installing SBA

***At the CS 2000 Core Manager***

**1** Log onto CS 2000 Core Manager using the root user ID and password.

**2** Access the maintenance interface by typing

```
# sdmmtc
```

and pressing the Enter key.

| If you are installing from | Do |
|---|---|
| tape | insert the CS2E0006 6.x (1 of 1) tape in slot 2<br>***Note:*** Wait until the tape drive stabilizes (yellow LED is off) before you proceed.<br>List the contents of the tape by typing apply 0 and pressing the Enter key. |
| a directory | list the contents of the directory by typing apply <directory path> |

**3** Select the SDM billing application fileset by typing

```
> select <#>
```

and pressing the Enter key.

where

**<#>**
is the number next to the SDM billing application fileset.

***Note:*** Use the up or down commands to scroll through the application list to locate the SDM billing application fileset.

**4** Apply the SDM billing application fileset by typing

```
> apply
```

and pressing the Enter key.

Response

```
Do you wish to proceed?
Please confirm (“YES”, “Y”, “NO”, or “N”):
```

5 Confirm the apply command by typing

**> y**

and pressing the Enter key.

The installation can take several minutes to complete. When the installation is complete, the CS 2000 Core Manager displays the list of filesets on the source device. If a “more...” prompt appears, press the Enter key.

***Note:*** If errors are indicated, check the log file specified and enter the load with corrective actions.

Following is an example of a warning from installing SBA:

**Example**

```
Warnings produced from installing SBA, if
any, are shown below

Press ENTER to continue.
```

6 Use the following table to determine your next step.

| If | Do |
|---|---|
| warnings are produced from installing SBA | record any warnings and report to your next level of support (see Installation warning examples) |
| no warnings are produced from installing SBA | press Enter, and proceed to step 7 |

7 Access the Details level by typing

**> details**

and pressing the Enter key.

8 Confirm that the status of SDM billing application fileset is “APPLIED”.

***Note:*** If necessary, use the up or down commands to scroll through the application list to view the filesets.

9 Access the application level by typing

**> appl**

and pressing the Enter key.

**10** Busy the SDM billing application by typing

**`> bsy <x>`**

and pressing the Enter key.

*Where*

<x> is the number next to the SDM billing application fileset

**11** Return the SDM billing application to service by typing

**`> rts <x>`**

and pressing the Enter key.

*Where*

<x> is the number next to the SDM billing application fileset.

**12** Exit the maintenance interface by typing

**`> quit all`**

and pressing the Enter key.

**13** You have completed this procedure.

## Installation warning examples

You can receive the following warnings during an SBA installation.

### Warning 1

```
WARNING: Executable base_mib_merge not found in the
bin directory

WARNING: Cannot restore the base mib values
```

### Explanation 1

To receive this warning, there must be a previous version of SBA. The management information base (mib) values from the previous version need to be entered again. Without the base_mib_merge executable, the values cannot be automatically converted to the new version.

### Warning 2

```
WARNING: The base mib command could not be used.

ACTION TO BE TAKEN: The mib executable needs to be
called directly for setting row 0 of
rcLogicalVolumeDir to /sba/ama.
```

### Explanation 2

To receive this warning, there must have been a previous version of SBA because there was a problem using the base_mib command

during installation. The customer needs to set the rcLogicalVolumeDir (row 0) to /sba/ama. After installation, the root user enters the following input from the shell prompt:

```
# cd /sdm/sba/NA100/bin
```

followed by

```
# ./base_mib set -r0 rcLogicalVolumeDir /sba/ama
```

**Warning 3**

```
WARNING: The mib command is unable to reach the
baf_mib executable. It needs to be called directly.
```

**Explanation 3**

The root user needs to access the baf_mib directly, as opposed to accessing through the mib command.

**Warning 4**

```
WARNING: Executable baf_mib_merge not found in the
bin directory

WARNING: Cannot restore the baf mib values
```

**Explanation 4**

To receive this warning there must have been a previous version of SBA. The mib values from the previous version need to be entered again. Without the baf_mib_merge executable, the values cannot be automatically converted to the new version.

# Configuring the SBA on the Communication Server 2000 core

Use the following procedure to configure the SBA application and backup disks on the Communication Server 2000 core.

**ATTENTION**

For XA-Core systems running on CSP16 or later, backup volumes can only be configured on IOP disks.Therefore, when configuring a stream on the core, ensure that the backup volumes for the stream are configured on IOP disks. This applies to all streams defined in table SDMBILL irrespective of whether they are turned ON. You can access IOP volumes through the diskut level of the CI prompt. IOP disks usually start with F02L or F17L (for example, F02LAMA, F17LAMA5). *To configure backup volumes on IOP disks, refer to procedure* Configuring SBA backup volumes on the Communication Server 2000 core *in the Accounting section.*

To determine if your system is an XA-core system running CSP16 or later, run the *imagename* command on the Communication Server 2000 core. The first line of the response begins with “XA”, and the line that begins with “LAYER:TL” indicates 16 or higher.

The following procedures are referenced in this procedure. Ensure you have access to these procedures if required.

- Preparing for SBA installation and configuration in the Accounting section.
- Configuring the outbound file transfer schedule in the Accounting section.
- Querying a billing stream in the Accounting section
- Configuring the SBA on the Communication Server 2000 core in the Accounting section

## Datafill requirements

Before you can configure SBA, you must enter the appropriate datafill in tables CRSFMT, CRSMAP, DIRPPOOL, DIRPSSYS, and SDMBILL to have your billing records sent to either CS 2000 Core Manager or DIRP logical volumes on the core, or both. The following table lists the

PCLs and corresponding NTPs that contain the datafill procedures for these tables.

**Location of datafill procedures by PCL**

| PCL | NTP reference |
|---|---|
| Local Exchange Carrier (LEC) | *297-8001-351 DMS-100 Family NA100 Customer Data Schema Reference Manual* |
| Local Exchange Carrier/ TOPS (LET) | *297-8021-351 DMS-100 Family NA100 Customer Data Schema Reference Manual Volume* |
| International | *297-9051-351 DMS-100 Family MMP Customer Data Schema Reference Manual* |

Use the procedures in the NTPs listed in the appropriate table when performing step 2 of this procedure.

**Billing formats supported**

The following table lists the billing formats supported by SBA. Refer to the appropriate NTP in the table before performing this procedure.

**Billing formats supported by SBA (Sheet 1 of 2)**

| Format | NTP reference |
|---|---|
| AMA | *297-1001-830 DMS-100 Family Bellcore Format Automatic Message Accounting Reference Guide* |
| Universal AMA | *297-9051-800 DMS-100 Family DMS-100 MMP AMA Reference Guide* |
| CDR-to-BAF | *297-2621-395 Digital Switching Systems UCS DMS-250 Billing Records Application Guide* |
| DMS-300 CDR (formats 09, 14 and 15) | *297-2301-119 Digital Switching Systems DMS-300 Call Detail Recording Description* |
| GSP CDR | *297-2651-119 Digital Switching Systems DMS-Global Services Platform Billing Records Reference Manual* |
| SMDR | *297-2071-119 North American DMS-100 Station Message Detail Recording Reference Guide* |

**Billing formats supported by SBA (Sheet 2 of 2)**

| Format | NTP reference |
|---|---|
| Sprint DMS-250 CDR | *297-2611-119 DMS-250 Call Detail Record Reference Manual* |
| UCS DMS-250 CDR | *297-2621-395 Digital Switching Systems UCS DMS-250 Billing Records Application Guide* |

### Configuring SBA on the Communication Server 2000 core

***At the MAPCI***

**1** Log onto the Communication Server 2000 core using your login id and password.

**2** Datafill tables CRSFMT, CRSMAP, DIRPPOOL and DIRPSSYS to have your billing records sent to either CS 2000 Core Manager or DIRP logical volumes on the core, or both. Refer to the appropriate NTP as described in Datafill requirements in this procedure.

**3** Use the following table to determine your next step.

| If you are defining | Do |
|---|---|
| multiple billing streams | step 4 |
| a single billing stream | step 5 |

**4** Set the NUM_CALLREC_STREAMS parameter in table OFCENG to a value that equals or exceeds the number of streams to be configured.

***Note:*** This parameter defines the highest number of billing streams that the switch supports.

**5** Configure two disk volumes for each stream on the Communication Server 2000 core for backup purposes. To configure disk volumes, refer to the procedure Configuring SBA backup volumes on the Communication Server 2000 core in the Accounting section. After you have configured the backup volumes, return to this procedure and go to step 6.

***Note 1:*** These volumes will be used in situations where the Communication Server 2000 core is temporarily unable to pass billing data to the CS 2000 Core Manager.

***Note 2:*** SBA does not support configuring more than one billing stream at a time from multiple workstations. The last billing stream that is configured is the one that is saved.

**6** Refer to the following table to determine your next step.

| If you | Do |
|---|---|
| are setting up a UCS DMS-250 CDR stream for BAF conversion | step 7 |
| are not setting up a UCS DMS-250 CDR stream for BAF conversion | step 24 |

**7** Set the EDGE_SWITCH office parameter, as follows:

**a** Access table OFCVAR by typing

```
> table ofcvar
```

and pressing the Enter key

**b** Position on office parameter EDGE_SWITCH by typing

```
> pos edge_switch
```

and pressing the Enter key

**c** Enter the change command by typing

```
> cha
```

and pressing the Enter key

**d** The system displays a prompt asking you to confirm whether you want to proceed with the change.

| If you | Type |
|---|---|
| want to proceed with the change | **y**, and press the Enter key. Go to step 7e. |
| do not want to proceed with the change | **n**, and press the Enter key. |

**e** At the system prompt, set the value to **Y** by typing,

```
> y
```

and pressing the Enter key.

**f** The system displays a prompt asking you to confirm the value.

| If you | Type |
|---|---|
| want to confirm the value | **y**, and press the Enter key. Go to step 8. |
| do not want to confirm the value | **n**, and press the Enter key. |

**8** Set the FCDR_CDR_WORD_LAYOUT office parameter to normal, as follows:

**a** Access table OFCENG by typing

```
> table ofceng
```

**b** Position on office parameter FCDR_CDR_WORD_LAYOUT by typing

```
> pos fcdr_cdr_word_layout
```

**c** Enter the change command by typing

```
> change
```

**d** The system displays a prompt asking you to confirm whether you want to proceed with the change.

| If you | Type |
|---|---|
| want to proceed with the change | **y**, and press the Enter key. Go to step 8e. |
| do not want to proceed with the change | **n**, and press the Enter key. |

**e** At the system prompt, set the value to normal by typing,

```
> normal
```

and pressing the Enter key.

**f** The system displays a prompt asking you to confirm the value.

| If you | Type |
|---|---|
| want to confirm the value | **y**, and press the Enter key. Go to step 9. |
| do not want to confirm the value | **n**, and press the Enter key. |

***Note:*** If the FCDR_CDR_WORD_LAYOUT office parameter is set to `readlr`, CDR records are not converted to BAF records, and a NOSC alarm appears on the banner at the APPL level of the CS 2000 Core Manager.

**9** Access table AMAPARM by typing

```
> table amaparm
```

and pressing the Enter key.

**10** Verify tuple “bafsuppr” is set to Y by typing

```
> pos bafsuppr
```

and pressing the Enter key.

**11** Change the value as follows:

**a** Type

```
> rwok on
```

and press the Enter key.

**b** Invoke the change command by typing

```
> cha
```

and pressing the Enter key.

**c** When prompted, confirm you want to proceed with the change by typing

```
> y
```

and pressing the Enter key.

**d** When prompted, set the value to Y by typing

```
> y
```

and pressing the Enter key.

**e** When prompted, confirm the value by typing

```
> y
```

and pressing the Enter key.

**12** Verify tuple “enableaudit” is set to Y by typing

```
> pos enableaudit
```

and pressing the Enter key.

| If the value is | Do |
|---|---|
| set to Y (yes) | step 14 |
| set to N (no) | step 13 |

**13** Change the value as follows:

**a** Type

```
> rwok on
```

and press the Enter key.

**b** Invoke the change command by typing

```
> cha
```

and pressing the Enter key.

**c** When prompted, confirm you want to proceed with the change by typing

```
> y
```

and pressing the Enter key.

**d** When prompted, set the value to Y by typing

```
> y
```

and pressing the Enter key.

**e** When prompted, confirm the value by typing

```
> y
```

and pressing the Enter key.

**14** Access table OFCENG by typing

```
> table ofceng
```

and pressing the Enter key.

**15** Verify that the billing template is set to AMAREC by typing

```
> pos fcdr_cdr_tmplt
```

and pressing the Enter key.

| If the value is | Do |
|---|---|
| AMAREC | step 17 |
| not AMAREC | step 16 |

**16** Change the value as follows:

**a** Type

```
> rwok on
```

and press the Enter key.

**b** Invoke the change command by typing

```
> cha
```

and pressing the Enter key.

**c** When prompted, confirm you want to proceed with the change by typing

```
> y
```

and pressing the Enter key.

**d** When prompted, set to the correct value by typing

```
> internalk_tmplt amarec
```

and pressing the Enter key.

**e** When prompted, confirm the value by typing

```
> y
```

and pressing the Enter key.

**17** Verify that CDR word layout is set to Normal by typing

```
> pos fcdr_cdr_work_layout
```

and pressing the Enter key.

| If the value is | Do |
|---|---|
| Normal | step 19 |
| not Normal | step 18 |

**18** Change the value as follows:

**a** Type

**> rwok on**

and press the Enter key.

**b** Invoke the change command by typing

**> cha**

and pressing the Enter key.

**c** When prompted, confirm you want to proceed with the change by typing

**> y**

and pressing the Enter key.

**d** When prompted, set to the correct value by typing

**> normal**

and pressing the Enter key.

**e** When prompted, confirm the value by typing

**> y**

and pressing the Enter key.

**19** Verify that CDR size is set to 128 by typing

**> pos fcdr_cdr_size**

and pressing the Enter key.

| If the value is | Do |
|---|---|
| 128 | step 21 |
| not 128 | step 20 |

**20** Change the value as follows:

**a** Type

**> rwok on**

and press the Enter key.

**b** Invoke the change command by typing

**> cha**

and pressing the Enter key.

**c** When prompted, confirm you want to proceed with the change by typing

```
> var_size 128
```

and pressing the Enter key.

**d** When prompted, set to the correct value by typing

```
> normal
```

and pressing the Enter key.

**e** When prompted, confirm the value by typing

```
> y
```

and pressing the Enter key.

**21** Ensure the predefined CDR templateID for the CDR2BAF application is present and activate the CTMPLT tool by typing

```
> ctmplt
```

and pressing the Enter key.

**22** Upgrade the new or changed template by typing

```
> upgrade
```

and pressing the Enter key.

**23** Verify that AMAREC is the active template by typing

```
> status
```

and pressing the Enter key.

**24** You have completed this procedure.

# Configuring a billing stream on the CS 2000 Core Manager

Use this procedure to configure a billing stream on the CS 2000 Core Manager, which consists of adding the billing stream. You can also use this procedure to change, or delete a billing stream.

***At any workstation or console***

**1** Log into the CS 2000 Core Manager.

**2** Access the billing maintenance level by typing

```
# billmtc
```

and pressing the Enter key.

**3** Access the CONFSTRM level by typing

```
> confstrm
```

and pressing the Enter key.

***Note:*** SBA does not support configuring more than one billing stream at a time from multiple workstations. The last billing stream that is configured is the one that is saved.

**4** Use the following table to determine your next step.

| If you are | Do |
|---|---|
| adding a billing stream | step 5 |
| changing the configuration of a billing stream | step 12 |
| deleting a billing stream | step 16 |

**5** Add a stream by typing

```
> add <stream_name>
```

and pressing the Enter key.

*Where*

**<stream_name>**
is the name of the billing stream you want to add

The CS 2000 Core Manager prompts you for input for each value in the following table.

***Note:*** Currently, the SBA only supports SMDR streams in DNS file format. The SBA does not support an SMDR stream in DIRP file format. TheCS 2000 Core Manager allows you to configure an SMDR stream in DIRP file format. However, when you try to activate the SMDR stream from the

Communication Server 2000 core (with DIRP file format) by using the command **sdmbctrl smdr on** or **sdmbctrl smdr both**, the command fails and the system displays the following error message: "`The stream is not configured or not supported on the SDM.`"

**(Sheet 1 of 2)**

| CONFSTRM: Add command prompts | Values |
|---|---|
| Stream name | stream_name (answer 1) |
| Is this a filtered stream | filter_stream (answer 2) |
| Associated stream (not applicable to CM billing streams; used for filtered streams) | associated_stream (answer 3) |
| Filter criteria file (not applicable to CM billing streams; used for filtered streams) | filter_criteria_file (answer 4) |
| Stream record format | record format (answer 5) |
| File format | file_format (answer 6) |
| Please specify the logical volume | logical_volume_name (answer 7) |
| File transfer mode | file_transfer_mode (answer 8) |
| Destination component Id (applicable only for DNS file format) | destination_id (answer 14) |
| Destination component type (applicable only for DNS file format) | destination_type (answer 15) |
| Source component Id (applicable only for DNS file format) | source_id (answer 16) |
| Source component type ((applicable only for DNS file format) | source_type (answer 17) |
| Customer standard header file type (applicable only for DNS file format) | standard_file_type (answer 18) |
| Customer error header file type (applicable only for DNS file format) | error_file_type (answer 19) |
| Files renamed with close date (applicable only for DIRP file format) | files_renamed_with_close_date (answer 10) |
| Files closed on file transfer and writetape (applicable for DIRP file format) | files_closed_on_file_transfer (answer 11) |

**(Continued) (Sheet 2 of 2)**

| CONFSTRM: Add command prompts | Values |
|---|---|
| Do you want DIRP blocks closed based on time (applicable only for DIRP file format) | DIRP_blocks_closed_based_on_time (answer 12 ) |
| File DIRP block closure time limit (in seconds) (applicable onlyl for DIRP file format) | DIRP block_closure_time_limit (answer 13) |
| Do you want files closed based on time | close_on_timer (answer 20) |
| File closure time limit (not applicable if you do not want files closed based on time) | file_close_time_limit (answer 21) |
| Maximum number of records per day | records_per_day (answer 22) |
| Average record size (not applicable if records per day is 0) | record_size (answer 26) |
| Maximum number of records per file | records_per_file (answer 24) |
| Maximum number of bytes per file | bytes_per_file (answer 25) |

**6** Verify that the values displayed are the correct values.

*Example response: CONFSTRM Add for a DNS file format*

```
Stream Name -> AMA2
Filter stream -> No
Stream Record Format -> BC
File Format Type -> DNS
Logical Volume Name -> /sba/ama2
File Transfer Mode -> OUTBOUND
Destination Component Id -> 2
Destination Component Type -> 3
Source Component Id -> 1
Source Component Type -> 2
Customer Standard Header File Type -> 1
Customer Error Header File Type -> 2
File Closed On Time Valid -> NO
File Closed On Time -> 10080
Number of Records Per Day -> 10080
Average Record Size -> 1000
Maximum number of records -> 10000
Maximum number of bytes -> 1000000

Commit? [Save] {Save Edit Abort}:
```

*Example Response: CONFSTRM Add for a DIRP file format*

```
Stream Name -> OCC
Is this a Filter stream -> NO
Stream Record Format -> CDR250
File Format Type-> DIRP
Please specify the logical Volume -> /sba/occ
File Transfer Mode -> OUTBOUND
Do you want the files renamed with close date ->
NO
Do you want the files closed for file transfer
and  writetape -> NO
Do you want DIRP blocks closed based on time ->
YES
File DIRP block Closure time limit (in seconds)
-> 2
Do you want Files closed based on time -> NO
Number of Records Per Day -> 1000000
Average Record Size -> 130
Maximum number of records per file -> 100000
Maximum number of bytes per file -> 20000000

Commit? [Save] {Save Edit Abort}:
```

*Example response: CONFSTRM Add for a filtered stream file*

```
Stream Name -> FLT1
Is this a Filter stream -> Yes
Associated Stream Name -> OCC
Filter Stream Criteria File ->
/sdm/cfdata/rtfilt/CDR.cdr
Stream Record Format -> CDR250
File Format Type -> DIRP
Logical Volume Name -> /sba/flt1
File Transfer Mode -> OUTBOUND
Files Renamed With Close Date -> NO
Files closed for file transfer and writetape ->
YES
Do you want DIRP blocks closed based on time ->
YES
File DIRP block Closure time limit (in seconds)
-> 2
Do you want files closed based on time? -> Yes
File Closure time limit -> 10
Number of Records Per Day -> 0
Average Record Size -> 80
Maximum number of records -> 500000
Maximum number of bytes -> 2000000

Commit? [Save] {Save Edit Abort}:
```

**7** Use the following table to determine your next step.

| If the values displayed are | Do |
|---|---|
| correct | step 10 |
| not correct | step 8 |

**8** Edit the displayed values by typing

**`> edit`**

and pressing the Enter key.

**9** Correct the values as necessary.

**10** Save the displayed values by typing

**> save**

and pressing the Enter key.

*Response*

```
Saving stream

Configuration of stream is now complete.

Press Return to continue.
```

**11** Press the Enter key to return to the CNFTSTRM level.

| If you | Do |
|---|---|
| want to add another billing stream | step 5 |
| do not want to add another billing stream | step 18 |

**12** Change the configuration for a particular billing stream by typing

**> change <stream_name>**

and pressing the Enter key.

*Where*

**<stream_name>**
is the name of the billing stream you want to change

**13** Follow the prompts on the screen to change the value of the desired fields.

***Note:*** Changing the file format between DIRP and DNS is not supported. You must delete the stream and re-add using the desired format.

**14** Save the displayed values by typing

**> save**

and pressing the Enter key.

*Response*

```
Saving stream

Configuration of stream is now complete.

Press Return to continue.
```

**15** Press the Enter key to return to the CONFSTRM level.

| If you | Do |
|---|---|
| want to change the configuration of another billing stream | step 12 |
| do not want to change the configuration of another billing stream | step 18 |

**16**

**ATTENTION**
You must turn off (deactivate) the billing stream from the CM before you can proceed to delete it.

Delete the billing stream by typing

```
> delete <stream_name>
```

and pressing the Enter key.

*Where*

**<stream_name>**
is the name of the billing stream you want to delete

**17** Confirm the delete command by typing

```
> yes
```

and pressing the Enter key.

| If you | Do |
|---|---|
| want to delete another billing stream | step 16 |
| do not want to delete another billing stream | step 18 |

**18** Exit the CONFSTRM level by typing

```
> quit
```

and pressing the Enter key.

**19** You have completed this procedure.

# Configuring a DMS-GSP CDR billing stream

Use this procedure to configure a DMS-GSP CDR billing stream.

### Configuring a DMS-GSP CDR billing stream

***At the CS 2000 Core Manager***

1 Complete procedure Configuring a billing stream on the CS 2000 Core Manager in the Accounting section before you continue with this procedure.

2 Set the typeOfCDR Mib to GSP by typing

```
>mib cdr set typeofcdr gsp
```

and pressing the Enter key.

***Note:*** If you change the typeOfCDR Mib value after the stream is turned on, you must BSY, then RTS the SBA application to activate the changes to the Mib.

3 You have completed the procedure.

# Activating a billing stream on the Communication Server 2000 core

Use the following procedure to activate a billing stream on the Communication Server 2000 core.

### Activating a billing stream on the Communication Server 2000 core

***At the MAPCI***

**1** Copy the values for the stream_name and sba_stream_state from Preparing for SBA installation and configuration in the Accounting section into the following table.

| Command to enter | First parameter | Second parameter |
|---|---|---|
| sdmbctrl | stream_name | sba_stream_state |

**2** Access the SDMBIL level by typing

**`>mapci;mtc;appl;sdmbil;post <stream_name>`**

and pressing the Enter key.

where

**<stream_name>**
is the stream name value entered in the table in step 1

**3**

**CAUTION**
**Possible loss of service**
If you change a billing stream that is set to *on* or *both* to *off*, billing to the CS 2000 Core Manager stops and billing records are no longer sent to the CS 2000 Core Manager for that billing stream.

If the DIRP system is unable to receive any billing records, all billing records generated while the billing stream is set to *off* are lost.

When you set the billing stream to *on*, you have chosen to send the billing records to the CS 2000 Core Manager only. When you set the billing stream to *both*, you have chosen to send the billing records to the CS 2000 Core Manager and to the Communication Server 2000 core.

**ATTENTION**

The option to set a billing stream to *both* only provides a temporary path while you are performing maintenance and alarm clearing tasks. The option to set a billing stream to the *both* mode on a permanent basis is not supported.

**ATTENTION**

MTX XA-Core systems generating more than 175,000 CDRs per hour do not support the *both* or *off* modes. Architectural limitations of DIRP and IOM/EIU file transfer prevent MTX core billing rates higher than 175,000 CDRs per hour.

Activate the billing stream by typing

```
> sdmbctrl <stream_name> <sba_stream_state>
```

and pressing the Enter key.

*where:*

**<stream_name>**
is the stream name value from step 2

**<sba_stream_state>**
is the SBA stream state (*both* or *on*) value from step 2

For example, the command **sdmbctrl ama on** sends billing records from the stream called AMA to the CS 2000 Core Manager. The stream is now running, and the CS 2000 Core Manager is receiving billing records and writing records to billing files.

***Note 1:*** The on state sends billing records to the CS 2000 Core Manager; the `both` state sends billing records to the CS 2000 Core Manager and the DIRP system on the Communication Server 2000 core. However, the CS 2000 Core Manager does not verify that the DIRP system is functioning properly. Also, when you use the `both` state, this causes a real-time impact to the Communication Server 2000 core.

***Note 2:*** Currently, the SBA only supports SMDR streams in DNS file format. The SBA does not support an SMDR stream in DIRP file format. TheCS 2000 Core Manager allows you to configure an SMDR stream in DIRP file format. However, when you try to activate the SMDR stream from the

Communication Server 2000 core (with DIRP file format) by using the command **sdmbctrl smdr on** or **sdmbctrl smdr both**, the command fails and the system displays the following error message: “`The stream is not configured or not supported on the SDM.`”

4 Verify that the billing records are being processed. To verify the records, refer toQuerying a billing stream in the Accounting section.

5 You have completed this procedure.

# Configuring the outbound file transfer schedule

Use this procedure to configure the outbound file transfer schedule, which consists of adding a schedule tuple for a particular billing stream. You can also use this procedure to change, or delete a schedule tuple for a billing stream.

This procedure assumes that the billing stream has already been configured and set to outbound file transfer mode. If you need to configure the billing stream, refer to procedure Configuring a billing stream on the CS 2000 Core Manager in the Accounting section.

***At any workstation or console***

**1** Log onto the CS 2000 Core Manager.

**2** Access the billing maintenance level by typing

```
# billmtc
```

and pressing the Enter key.

**3** Access the schedule level by typing

```
> schedule
```

and pressing the Enter key.

**4** Use the following table to determine your next step.

| If you are | Do |
|---|---|
| adding a schedule tuple | step 5 |
| changing a schedule tuple | step 13 |
| deleting a schedule tuple | step 17 |

**5** Add a schedule tuple for a billing stream by typing

```
> add
```

and pressing the Enter key.

**6** Enter the desired value for each of the parameters presented on the system (refer to the following table). Press the Enter key after entering each value.

| SCHEDULE: Add command prompts | Values |
|---|---|
| Enter stream | stream_name (answer 1) |
| Enter file_format_type | file_format (answer 6) |
| Enter destination | destination (answer 29) |
| Enter protocol | protocol (answer 30) |
| Enter primary_destination | primary_destination (answer 31) |
| Enter primary_port | primary _port (answer 32) |
| Enter alternate_destination | alternate_destination (answer 33) |
| Enter alternate_port | alternate_port (answer 34) |
| Enter start_time | schedule_start_time (answer 43) |
| Enter stop_time | schedule_stop_time (answer 44) |
| Enter interval | schedule_interval (answer 45) |
| Enter remote_storage_directory | remote_storage_directory (answer 37) |
| Enter remote_login | remote_login (answer 35)<br>***Note:*** Special characters work in all operating environments. However, due to differences within an operating company system, it is possible that a special character can cause an error: Use special characters only when necessary for outbound file transfer schedules. |
| Enter remote_password | remote_password (answer 36) |
| Enter maximum_retries | protocol_max_retries (answer 40) |
| Enter retry_wait_time | protocol_retry_wait_time (answer 41) |
| Enter file_extension | file_extension (answer 39) |
| Enter field_separator | field_separator (answer 38) |
| Enter active | schedule_active (answer 42) |

Example response

```
Stream: ‘AMA’
File_Format_Type: ‘DNS’
Destination: ‘OSS’
Protocol: ‘FTPW’
Primary_Destination: ‘47.32.45.67’
Primary_Port: ‘21’
Alternate_Destination: ‘47.32.67.86’
Alternate_Port: ‘21’
Start_Time: ‘00:00’
Stop_Time: ‘00:00’
Interval: ‘120’
Remote_Storage_Directory:
‘/home/amabilling/billingfiles’
Remote_Login: ‘amabilling’
Remote_Password: ‘******’
Timeout: ‘30’
Maximum_Retries: ‘3’
Retry_Wait_Time: ‘1’
File_Extension: ‘’
Field_Separator: ‘.’
Active: ‘Yes’

Valid actions are {‘Save’, ‘Edit’, ‘Abort’}.
Press Enter to accept ‘Edit’.
Enter Action:
```

**7** Verify that the values displayed are the correct values.

| If the values displayed are | Do |
|---|---|
| correct | step 10 |
| not correct | step 8 |

**8** Press the Enter key to edit the tuple.

**9** Enter the name of the field to change, or enter “all” and input the corrected information for the appropriate field or fields.

**10** Save the schedule tuple by typing

**`> save`**

and pressing the Enter key.

Response

```
Schedule tuple saved

Press Return to Continue
```

**11** Press the Enter key to return to the schedule level.

**12** Use the following table to determine your next step.

| If you | Do |
|---|---|
| want to add another schedule tuple | step 5 |
| do not want to add another schedule tuple | step 19 |

**13** Change the value of one or more fields in the schedule tuple for a particular stream by typing

**`> change <stream_name>`**

and pressing the Enter key.

*Where*

**<stream_name>**
is the name of the billing stream associated with the schedule tuple you want to change

**14** Follow the prompts on the screen to change the value of the desired fields.

***Note:*** The Stream name, File format, and Destination fields cannot be changed.

**15** When prompted, save the changed schedule tuple by typing

**`> save`**

and pressing the Enter key.

Response

```
Schedule tuple saved

Press Return to Continue
```

**16** Press the Enter key to return to the schedule level.

| If you | Do |
|---|---|
| want to change another schedule tuple | step 13 |
| do not want to change another schedule tuple | step 19 |

**17**

**ATTENTION**

When the schedule tuple for a stream has a corresponding RTB (real time billing) tuple with the same destination, you must delete the RTB tuple before you delete the schedule tuple. If required, refer to Configuring real time billing for a billing stream in the Accounting section to delete the corresponding RTB tuple prior to continuing with this procedure.

Delete the schedule tuple for the billing stream by typing

```
> delete <stream_name>
```

and pressing the Enter key.

*Where*:

**<stream_name>**
is the name of the billing stream associated with the schedule tuple you want to delete

**18** Confirm the detele command by typing

```
> yes
```

and pressing the Enter key.

| If you | Do |
|---|---|
| want to delete another schedule tuple | step 17 |
| do not want to delete another schedule tuple | step 19 |

**19** Exit the billing maintenance menu by typing

```
> quit all
```

and pressing the Enter key.

***Note 1:*** You can test the file transfer settings by executing a manual file transfer by using the **Sendfile** command and checking that the billing file is transferred to the correct directory of the downstream destination. You can find the **Sendfile** command at position 7 of the FILESYS level from the BILLMTC menu.

***Note 2:*** If you perform an action on the downstream server, for example, shut down the server, which makes the ftp service on the server unavailable to the CS 2000 Core

Manager, always delete the associated schedule tuple on the CS 2000 Core Manager first. If you do not delete the associated schedule tuple on the CS 2000 Core Manager, an FTPW alarm is generated on the CM. Refer to procedure “Clearing an FTPW alarm” in the Fault section to clear the alarm.

**20** You have completed this procedure.

# Configuring real time billing for a billing stream

Use this procedure to configure RTB for billing stream, which consists of adding RTB to a particular billing stream. You can also use this procedure to change the RTB configuration for a billing stream, or delete RTB from a billing stream.

This procedure assumes that the billing stream has already been configured and set to outbound file transfer mode and DIRP file format using procedure Configuring a billing stream on the CS 2000 Core Manager in the Accounting section. This procedure also assumes that a schedule tuple for the billing stream has already been configured using procedure Configuring the outbound file transfer schedule in the Accounting section.

***Note:*** Real time billing only supports RFTPW protocol and DIRP file format.

***At the CS 2000 Core Manager***

**1** Log onto the CS 2000 Core Manager as the root user.

**2** Access the billing maintenance level by typing

```
# billmtc
```

and pressing the Enter key.

**3** Access the schedule level by typing

```
> schedule
```

and pressing the Enter key.

**4** Access the RTB level by typing

```
> rtb
```

and pressing the Enter key.

**5** Access the CONFRTB level by typing

```
> confrtb
```

and pressing the Enter key.

**6** Use the following table to determine your next step.

| If you want to | Do |
|---|---|
| add RTB to a billing stream | step 7 |
| change the RTB configuration for a billing stream | step 10 |
| delete RTB from a billing stream | step 13 |

**7** Add RTB to a billing stream by typing

**`> add <stream_name> <file_format> <destination>`**

and pressing the Enter key.

*Where*

**<stream_name>**
is the name of the configured billing stream

**<file_format>**
is the file format of the configured stream.

**<destination>**
is the destination to which the SBA is to transfer the billing files.

***Note:*** Scheduled outbound file transfer and real time billing (RTB) allow for multiple destinations for a single billing stream.

Response

```
Please enter the RTBMaxConsecutiveFailures
(0...10 [3]
```

***Note:*** You are unable to abort from this command until a value is provided for the prompt above.

**8** Enter the desired maximum retry attempts before RTB raises a critical alarm and press the Enter key. The default value is 3.

Example response

```
You entered:

RTB Max Consecutive Failures: 5

Commit? [Save] {Save Edit Abort}:
```

**9** Save the information you entered by typing

**`> save`**

and pressing the Enter key.

| If you | Do |
|---|---|
| want to add RTB to another billing stream | step 7 |
| do not want to add RTB to another billing stream | you have completed this procedure |

**10** Change the RTB configuration for a billing stream by typing

**`> change <stream_name> <file_format> <destination>`**

and pressing the Enter key.

*Where*

**<stream_name>**
is the name of the configured billing stream

**<file_format>**
is the file format of the configured stream.

**<destination>**
is the destination to which the SBA is to transfer the billing files.

Response

```
Please enter the RTBMaxConsecutiveFailures
(0...10 [3]
```

***Note:*** You are unable to abort from this command until a value is provided for the prompt above.

**11** Enter the desired maximum retry attempts before RTB raises a critical alarm and press the Enter key. The default value is 3.

Example response

```
You entered:

RTB Max Consecutive Failures: 4

Commit? [Save] {Save Edit Abort}:
```

**12** Save the information you entered by typing

**`> save`**

and pressing the Enter key.

| If you | Do |
|---|---|
| want to change the RTB configuration for another billing stream | step 10 |
| do not want to change the RTB configuration for another billing stream | you have completed this procedure |

**13** Delete the RTB configuration from a billing stream by typing

**`> delete <stream_name> <file_format> <destination>`**

and pressing the Enter key.

*Where*

**<stream_name>**
is the name of the configured billing stream

**<file_format>**
is the file format of the configured stream.

**<destination>**
is the destination to which the SBA transfers the billing files.

Response

```
Are you sure you want to delete the RTB tuple?
(Y/N).
```

**14** Confirm the delete command by typing

**`> y`**

and pressing the Enter key.

| If you | Do |
|---|---|
| want to delete RTB from another billing stream | step 13 |
| do not want to delete RTB from another billing stream | you have completed this procedure |

# Querying the status of RTB for a billing stream

## Application

Use this procedure to query the status of the real-time billing (RTB) application for a particular billing stream. The status can be

- InSv (in service)
- SysB (system busy)
- ManB (manually busy)
- OffL

## Action

### Querying RTB status for a stream

***At any workstation or console***

**1** Log into the CS 2000 Core Manager.

**2** Access the billing maintenance interface by typing

```
# billmtc
```

and pressing the Enter key.

**3** Access the schedule level by typing

```
> schedule
```

and pressing the Enter key.

**4** Access the RTB level by typing

```
> rtb
```

and pressing the Enter key.

**5** Query the status of RTB configured for a particular billing stream by typing

```
> query <streamname>
```

and pressing the Enter key.

where

**streamname**
is the SBA billing stream configured with the RTB

The system displays the status of the RTB.

**6** You have completed this procedure.

# Returning RTB stream instance to service

## Application

Use this procedure to return real-time billing (RTB) stream instance to service from a ManB (manual busy) state

## Action

### Returning real-time billing to service

***At the CS 2000 Core Manager***

**1** Log into the CS 2000 Core Manager.

**2** Access the billing maintenance interface by typing

```
# billmtc
```

and pressing the Enter key.

**3** Access the schedule level by typing

```
> schedule
```

and pressing the Enter key.

**4** Access the RTB level by typing

```
> rtb
```

and pressing the Enter key.

**5** Return real-time billing for a stream to service by typing

> **rts <stream> <file_format> <destination>**

and pressing the Enter key.

*where*

**stream**
is the name of the stream

**file_format**
is the format of the files in the stream

**destination**
is the name of the destination that receives the stream

***Note:*** All parameters for this command are mandatory.

**6** You have completed this procedure.

# Configuring SBA backup volumes on the Communication Server 2000 core

Use this procedure either to configure new SBA backup volumes or to replace existing SBA backup volumes on the Communication Server 2000 core. The following table lists the disk drive backup volumes that you can configure for the BRISC and XA-core platforms.

| Platform | Backup volume(s) |
|---|---|
| BRISC | DDU or SLM |
| XA-core (for releases prior to CS2E03) | DDU or IOP |
| XA-core (for CS2E03 and higher) | IOP |

This procedure configures two backup volumes on DDU, IOP, or SLM disks on the Communication Server 2000 core for a particular billing stream.

The billing stream is aware that the replaced volumes exist and recovers files from both the swapped-out and swapped-in sets of volumes as part of the recovery process. However, the billing stream loses track of the swapped-out volumes when a switch of activity (SwAct) or a restart is performed on the Communication Server 2000 prior to the completion of the recovery of the files. You can correct this by performing the procedure “Recovering backup files from lost backup volumes” in the Security and Administration section.

**ATTENTION**
**Ensure the size for backup volumes is sufficient.**
Refer to Disk space requirements (Calculation of Communication Server 2000 core disk space requirements) in procedure Preparing for SBA installation and configuration in the Accounting section. The absolute minimum size for backup volumes is 30MB.

You can use this procedure to clear the following alarms by configuring and activating alternative backup volumes for a stream:

- BAK50
- BAK70
- BAK90
- NOBAK
- NOFL
- NOSTOR
- NOVOL

You can also use this procedure as a corrective action in response to repeated and excessive numbers that are captured by the following logs:

- SDMB320
- SDMB321
- SDMB820

Prior to starting this procedure you need to know the following:

- You need to configure additional back up storage to prevent a temporary problem that forces the SBA into long-term backup mode.
- You risk losing some billing records when you reconfigure or swap-out backup volumes of a stream that is in backup mode during the transition process.
- You must allow recovery to complete prior to a switch outage when you choose to swap out an active backup volume during an emergency situation. Otherwise, the billing stream does not recognize the swapped-out volumes.

  If you are using or migrating to a XAC16 system, your backup volumes must be on IOP volumes. If your current backup volumes are on SLM or DDU volumes and you are running a previous release, you must migrate to IOP volumes before upgrading to this release.

- The command to display IOP and SLM disk volumes is DISKUT;LV volume; the command to display DDU disk volumes is DSKUT;SV volume.

**ATTENTION**

When configuring two backup volumes on a DDU, IOP or SLM, you must configure each volume on a separate disk of the same disk type.

The following table lists the procedures for each backup volume type.

| For backup volume type | Use this procedure |
|---|---|
| DDU | Configuring DDU disk drive backup volumes on page 82 |
| IOP | Configuring IOP disk drive backup volumes on page 88 |
| SLM | Configuring SLM disk drive backup volumes on page 93 |

## Configuring DDU disk drive backup volumes

### *At the MAP*

**1** Post the billing stream by typing

```
> mapci;mtc;appl;sdmbil;post <stream_name>
```

and pressing the Enter key.

*Where*

**<stream_name>**
is the name of the billing stream

**2** Obtain the names of the existing backup volumes for the billing stream by typing

```
> dskut;sv <stream_name>
```

and pressing the Enter key.

*Where*

**<stream_name>**
is the name of the billing stream

***Note 1:*** SBA does not support configuring more than one billing stream at a time from multiple workstations. The last billing stream that is configured is the one that is saved.

***Note 2:*** DDU volume names can be up to eight alphanumeric characters in length for the CS 2000 Core Manager, with the first four characters reserved for the D000 and D001 prefixes, applied by Nortel Networks.

**3** Note the complete names of the backup volumes for future reference.

**4** Return to the MAPCI level by typing

```
> quit all
```

and pressing the Enter key.

**5** Display and record the size of the first volume and its number of free blocks by typing

```
> dskut;sv d000<xxxx>
```

and pressing the Enter key.

*Where*

**<xxxx>**
is the unique identifier of the volume name

6 Display and record the size of the second volume and its number of free blocks typing

```
> dskut;sv d001<xxxx>
```

and pressing the Enter key.

*Where*

**<xxxx>**
is the unique identifier of the volume name

7 Determine the required size for the new DDU disk drive backup volumes and note the required size for future reference.

***Note 1:*** DDU disk drives use 1024-byte blocks.

***Note 2:*** DDU volume names can be up to eight alphanumeric characters in length, with the first four characters reserved for the D000 and D001 prefixes, applied by Nortel Networks.

**a** Copy the dms_disk_space value from Preparing for SBA installation and configuration in the Accounting section (answer 28) into the following table.

| DMS disk space |
| --- |
| |

**b** Divide the value in the table in step 7a by 2, and record the value in the following table.

| Volume size (DMS disk space size divided by 2) in Megabytes |
| --- |
| |

**c** Multiply the value in the table in step 7b by 1024, and record the value in the following table.

| Block size (volume size multiplied by 1024) |
| --- |
| |

8 Determine the eight-character alphanumeric names of the two new backup volumes.

***Note:*** Note the names you have chosen for the new backup volumes along with their required sizes for future reference.

**9** Access the IOD level by typing

```
> mapci;mtc;iod
```

and pressing the Enter key.

**10** Locate the DDUs by typing

```
> listdev ddu
```

and pressing the Enter key.

**11** Note the DDU numbers and their respective IOC, CARD, and PORT locations for future reference.

***Note:*** Perform steps 12 through 20 for each DDU until you locate a DDU that contains enough disk space for the two new backup volumes.

**12** Begin to busy the DDU by typing

```
>ioc <ioc>
```

and pressing the Enter key.

*Where*

**<ioc>**
is the IOC controlling the respective DDU

**13** Display the DDU card by typing

```
> card <ddu_card>
```

and pressing the Enter key.

*Where*

**<ddu_card>**
is the DDU card number

**14** Complete the busy process by typing

```
> bsy
```

and pressing the Enter key.

**15** Confirm the DDU card number that you selected in step 13 indicates a status of ManB.

**16** Display the free space for this DDU by typing

```
> dskalloc <ddu_card>
```

and pressing the Enter key.

*Where*

**<ddu_card>**
is the DDU card number

***Note:*** Note the free space from the dskalloc command that is displayed for future reference.

**17** Use the following table to determine your next step.

| If you have | Do |
|---|---|
| located a DDU with sufficient disk space for the two new backup volumes | step 21 |
| not located a DDU with sufficient disk space for the two new backup volumes | step 18 |

**18** Return the DDU to service by typing

```
> rts
```

and pressing the Enter key.

**19** Return to the IOC level by typing

```
> quit
```

and pressing the Enter key.

**20** Repeat steps 12 through 17 until you locate a DDU with sufficient space for the two new backup volumes.

**21** Create a new logical volume by typing

```
> add <volume> <blocksize>
```

and pressing the Enter key.

*Where:*

**<volume>**
is the backup volume name

**<blocksize>**
is the volume size recorded in the table in step 7c.

***Note:*** For example, the command, **add D000AMA8 51200** prompts the system to create the logical volume D000AMA8

that consists of 51,200 1024-byte blocks (or 50 Megabytes) of available disk space.

**22** Verify the names of the volume identifiers by typing

```
> display
```

and pressing the Enter key.

**23** Verify the directory address by typing

```
> diradd <backup_volume>
```

and pressing the Enter key.

*Where:*

**<backup_volume>**
is the backup volume name

**24** Update the volume identifiers by typing

```
> update
```

and pressing the Enter key.

**25** Repeat steps 21 through 24 to create a second logical volume.

**26** Exit the disk administration level by typing

```
> quit
```

and pressing the Enter key.

**27** Return the DDU to service by typing

```
> mapci;mtc;iod;ddu <#>;rts
```

and pressing the Enter key.

*Where:*

**<#>**
is the DDU disk drive number (0 or 1) that you busied in step 14

**28** Return to the MAPCI level by typing

```
> quit
```

and pressing the Enter key.

**29** Access the billing level by typing

```
> appl;sdmbil
```

and pressing the Enter key.

**30** Configure the billing stream of the logical volumes you created in steps 21 and 25 once you receive confirmation that the files are successfully created by typing

```
> conf set <stream_name> <volume1> <volume2>
```

and pressing the Enter key.

*Where:*

**<stream_name>**
is the name of the billing stream

**<volume1>**
is backup volume 1

**<volume2>**
is backup volume 2

**31** Exit back to the command prompt by typing

```
> quit all
```

and pressing the Enter key.

***Note:*** You must alert all operating company personnel who work on the Communication Server 2000 core as to the names of the old and new backup volumes and the procedure you used to swap the volumes. These same personnel must be made aware that any restarts or switch of activity (SwAct) that occur before the billing stream returns to normal mode can cause a serious loss of billing records.

Also, it is imperative that the mode of the billing stream be closely monitored to ensure that it returns to normal mode without an intervening RESTART or SwAct. If such an intervening event does take place, refer to “Recovering backup files from lost backup volumes” in the Security and Administration section.

**32** You have completed this procedure.

## Configuring IOP disk drive backup volumes

### *At the MAP*

**1** Post the billing stream by typing

```
> mapci;mtc;appl;sdmbil;post <stream_name>
```

and pressing the Enter key.

*Where*

**<stream_name>**
is the name of the billing stream

**2** Obtain the names of the existing backup volumes for the billing stream by typing

```
> conf view <stream_name>
```

and pressing the Enter key.

*Where*

**<stream_name>**
is the name of the billing stream

***Note 1:*** SBA does not support configuring more than one billing stream at a time from multiple workstations. The last billing stream that is configured is the one that is saved.

***Note 2:*** IOP volume names on the IOP disks can be up to twelve alphanumeric characters in length for the IOP, with the first four characters reserved for the F02L and F17D prefixes, applied by Nortel Networks.

**3** Note the complete names of the billing stream's backup volumes for future reference.

**4** Return to the MAPCI level by typing

```
> quit all
```

and pressing the Enter key.

**5** Display and record the size of the first volume and its number of free blocks by typing

```
> diskut;lv f02l<xxxxxxxx>
```

and pressing the Enter key.

*Where*

**<xxxxxxxx>**
is the unique identifier for the volume

The system responds with information about the volume, which includes the total number of blocks for the volume. Divide this number by 2048 to get the number of megabytes allocated for the volume. Save this number for later reference; you will probably want to make new backup volumes which are at least as large as this.

**6** Display and record the size of the second volume and its number of free blocks typing

```
> diskut;lv f17l<xxxxxxxx>
```

and pressing the Enter key.

*Where*

**<xxxxxxxx>**
is the unique identifier for the volume

The system responds with information about the volume, which includes the total number of blocks for the volume. Divide this number by 2048 to get the number of megabytes allocated for the volume. Save this number for later reference.

**7** Confirm that you have noted in some manner similar to the following example the information you retrieved when performing steps 1 through 6 prior to proceeding to step 8.

***Note:*** Use steps 8 and 9 to determine the required capacities of the two new backup volumes that replace the existing backup volumes and to determine the naming convention.

**8** Determine the required size for the new IOP disk drive backup volumes and note the required size for future reference.

***Note:*** IOP disk drives use 512-byte blocks.

**a** Copy the dms_disk_space value from Preparing for SBA installation and configuration in the Accounting section (answer 28).

| DMS disk space |
| --- |
| |

**b** Divide the value in the table in step 8a by 2, and record the value in the following table.

| Volume size (DMS disk space size divided by 2) in Megabytes |
| --- |
| |

**9** Determine the twelve-character alphanumeric names you choose for the new backup volumes.

***Note 1:*** Note the names you have chosen for the new backup volumes along with their required sizes for future reference.

***Note 2:*** Use steps 10 through 11 to determine which IOP disks have enough available space to contain the two alternative backup volumes.

**10** Access the disk administration level by typing

```
> diskadm F17L
```

and pressing the Enter key.

**11** Determine the free disk space by typing

```
> dd
```

and pressing the Enter key.

**12** Note the following example, which is a response to the command you performed in step 11, choosing the F17L disk name.

```
Disk drive information for F17L

Date last formatted             :  1976/01/01 01:00:50.145 THU.
Date last modified              :  2001/09/26 11:22:38.587 WED.
Total space for volumes         :  4095 Mbytes
Total free space                :  1014 Mbytes
Size of largest free segment    :  1014 Mbytes
Total number of volumes         :  14

1 Block = 512 bytes
```

**13** Use the following table to determine your next step.

| If the size of the largest free segment is | Do |
|---|---|
| greater than the volume size in step 8b | step 14 |
| less than the volume size in step 8b | contact your next level of support |

**14** Create a new logical volume by typing

**`> cv <volume> <size> ftfs`**

and pressing the Enter key.

*Where*

**<volume>**
is the backup volume name

**<size>**
is the size (in megabytes) of the volume size recorded in the table in step 8b.

***Note:*** For example, the command, **cv AMA8 50 ftfs**, prompts the DMS to create the logical volume F17LAMA8 that consists of 50 megabytes (102,400 512-byte blocks) of available disk space.

**15** Exit the disk administration level at the prompt by typing

**`> quit`**

and pressing the Enter key.

**16** Repeat steps 10 through 15 to create a second logical volume on a separate IOP disk (that is, on F02L).

**17** Access the maintenance level on the MAP by typing

**`> quit all`**

and pressing the Enter key.

**18** Access the appl; sdmbil level by typing

**`> mapci;mtc;appl;sdmbil`**

and pressing the Enter key.

**19** Configure the billing stream of the logical volumes you created in step 14 by typing

```
> conf set <stream_name> <volume1> <volume2>
```

and pressing the Enter key.

*Where*

**<stream_name>**
is the name of the billing stream

**<volume1>**
is the first (1) backup volume

**<volume2>**
is the second (2) backup volume

***Note:*** SBA does not support configuring more than one billing stream at a time from multiple workstations. The last billing stream that is configured is the one that is saved.

**20** Exit back to the command prompt by typing

```
> quit all
```

and pressing the Enter key.

***Note:*** You must alert all operating company personnel who are associated with the DMS switch as to the names of the old and new backup volumes and the procedure you used to swap the volumes. These same personnel must be made aware of that any RESTARTs or SwActs that occur before the billing stream returns to normal mode can cause a serious loss of billing records.

Also, it is imperative that the mode of the billing stream be closely monitored to ensure that it returns to normal mode without an intervening RESTART or SwAct. If such an intervening event does take place, refer to “Recovering backup files from lost backup volumes” in the Security and Administration section

**21** You have completed this procedure.

## Configuring SLM disk drive backup volumes

***At the MAP***

**1** Post the billing stream by typing

```
> mapci;mtc;appl;sdmbil;post <stream_name>
```

and pressing the Enter key.

*Where*

**<stream_name>**
is the name of the billing stream

**2** Obtain the names of the existing backup volumes for the billing stream by typing

```
>conf view <stream_name>
```

and pressing the Enter key.

*Where*

**<stream_name>**
is the name of the billing stream

***Note 1:*** SBA does not support configuring more than one billing stream at a time from multiple workstations. The last billing stream that is configured is the one that is saved.

***Note 2:*** SLM volume names on the SLM disks can be up to eight alphanumeric characters in length for the CS 2000 Core Manager, with the first four characters reserved for the S00D and S01D prefixes, applied by Nortel Networks.

**3** Note the complete names of the backup volumes for future reference.

**4** Return to the MAPCI level by typing

```
> quit all
```

and pressing the Enter key.

**5** Display and record the size of the first volume and its number of free blocks by typing

```
> diskut;lv s00d<xxxx>
```

and pressing the Enter key.

*Where*

**<xxxx>**
is the unique identifier of the volume name

**6** Display and record the size of the second volume and its number of free blocks typing

```
> diskut;lv s01d<xxxx>
```

and pressing the Enter key.

*Where*

**<xxxx>**
is the unique identifier of the volume name

**7** Confirm that you have noted in some manner similar to the following example the information you retrieved when performing steps 1 through 6 prior to proceeding to step 8.

***Note:*** Use steps 8 and 9 to determine the required capacities of the two new backup volumes that replace the existing backup volumes and to determine the naming convention.

**8** Determine the required size for the new SLM disk drive backup volumes and note the required size for future reference.

***Note:*** SLM disk drives use 512-byte blocks.

**a** Copy the dms_disk_space value from Preparing for SBA installation and configuration in the Accounting section (answer 28).

| DMS disk space |
| --- |
| |

**b** Divide the value in the table in step 8a by 2, and record the value in the following table.

| Volume size (DMS disk space size divided by 2) in Megabytes |
| --- |
| |

**9** Determine the eight-character alphanumeric names you choose for the new backup volumes.

***Note:*** Note the names you have chosen for the new backup volumes along with their required sizes for future reference. Also, refer to the notes of step 2 for naming conventions.

**10** Busy SLM 0 by typing

```
> mapci;mtc;iod;slm 0;bsy
```

and pressing the Enter key.

**11** Access the disk administration level by typing

**`> diskadm S00D`**

and pressing the Enter key.

**12** Determine the free disk space by typing

**`> dd`**

and pressing the Enter key.

**13** Note the following example, which is a response to the command you performed in step 12, choosing the S00D disk name.

```
Disk drive information for S00D
Drive name:  S00D
Vendor Information              :  SEAGATE  ST31051N 9470
Date last formatted             :  1976/01/01 05:38:44.718
THU.
Date last modified              :  1998/04/23 17:46:59.754
THU.
Total space for volumes         :  1000 Mbytes
Total Free space                :  174 Mbytes
Size of largest free segment    :  174 Mbytes

1 Block = 512 bytes
```

| If the size of the largest free segment is | Do |
|---|---|
| greater than the volume size in step 8b | step 14 |
| less than the volume size in step 8b | contact your next level of support |

**14** Create a new logical volume by typing

```
> cv <volume> <volume_size> std
```

and pressing the Enter key.

*Where*

**<volume>**
is the backup volume name

**<volume_size>**
is the value configured in step 8b.

***Note:*** For example, the command, **cv AMA8 50 std**, prompts the DMS to create the logical volume S00DAMA8 that consists of 50 Megabytes (or 102,400 512-byte blocks) of available disk space.

**15** Exit the disk administration level at the prompt by typing

```
> quit
```

and pressing the Enter key.

**16** RTS the SLM 0 disk drives that you busied in step 10 to an InSv state by typing

```
> mapci;mtc;iod;slm 0;rts
```

and pressing the Enter key.

**17** Exit to the command prompt by typing

```
> quit all
```

and pressing the Enter key.

**18** Repeat steps 10 to 17 to create a second logical volume on a separate SLM disk (that is, on SLM 1, S01D).

**19** Access the appl; sdmbil level by typing

```
> mapci;mtc;appl;sdmbil
```

and pressing the Enter key.

**20** Configure the billing stream with the logical volumes you created in step 14 by typing

```
> conf set <stream_name> <volume1> <volume2>
```

and pressing the Enter key.

*Where*

**<stream_name>**
is the name of the billing stream

**<volume1>**
is the first (1) backup volume

**<volume2>**
is the second (2) backup volume

***Note:*** SBA does not support configuring more than one billing stream at a time from multiple workstations. The last billing stream that is configured is the one that is saved.

**21** Exit back to the command prompt by typing

```
> quit all
```

and pressing the Enter key.

***Note:*** You must alert all operating company personnel who are associated with the DMS switch as to the names of the old and new backup volumes and the procedure you used to swap the volumes. These same personnel must be made aware of that any RESTARTs or SwActs that occur before the billing stream returns to normal mode can cause a serious loss of billing records.

Also, it is imperative that the mode of the billing stream be closely monitored to ensure that it returns to normal mode without an intervening RESTART or SwAct. If such an intervening event does take place, refer to “Recovering backup files from lost backup volumes” in the Security and Administration section.

**22** You have completed this procedure.

# Retrieving billing files for a stream set to inbound file transfer mode

Use the following procedure to retrieve the billing files for a particular stream set for inbound file transfer, and to assure the SBA application will recognize the retrieval.

> ***Note:*** This procedure assumes that the billing stream has already been configured and set to inbound file transfer mode. If you need to configure the billing stream, refer to procedure Configuring a billing stream on the CS 2000 Core Manager in the Accounting section.

This procedure requires that the Secure File Transfer (SFT) application be installed, configured in DCE mode if desired, and enabled as described in procedure “Installing the SFT server software” in the Configuration Management section.

***At the downstream FTP client***

**1** Ftp into the CS 2000 Core Manager by typing

```
> ftp <CS 2000 Core Manager's ip address>
```

and pressing the Enter key.

**2** Change directory to the stream for which files are to be retrieved by typing

```
> cd ftpdir/<stream name>
```

and pressing the Enter key.

**3** Set the ftp session to retrieve the files in binary format by typing

```
> bi
```

and pressing the Enter key.

**4** List the files by typing

```
> ls
```

and pressing the Enter key.

> ***Note:*** Files with the extension of “.pri" are primary files, or files which have not yet been retrieved. Files with the extension of ".sec" are secondary files, or files that have been successfully retrieved at least once. Files with the extension of ".unp" are unprocessed files, and ".pro" indicates processed files for streams of DIRP file format.

**5** Retrieve the desired file by typing

**`> get <filename.extension>`**

and pressing the Enter key.

***Note:*** The mget command can retrieve multiple files. For example: "mget *.pri" will retrieve all files ending in ".pri". Ftp will prompt the user for each file unless "prompt off" is entered before the mget command. It is risky to enter the mget command because if the ftp session should be interrupted while retrieving files, the rename command will not get executed (which should follow the mget), therefore, it could result in duplicate files on the target machine.

**6**

**ATTENTION**

This step is imperative to the reliability of the SBA application. Without having the file marked as retrieved, it cannot be considered for removal when the disk reaches capacity and, in that case, can result in lost billing data.

**ATTENTION**

A root user can FTP into the CS 2000 Core Manager and retrieve the billing files from the closed NotSent and closedSent directories. Performing this will jeopardize the integrity of the billing system, since the files will not get marked closed sent and storage problems will occur.

Execute substep a for DNS, and substep b for DIRP.

**a** For DNS, if the file was primary, rename the file to have the ".sec" extension to indicate successful retrieval by typing

**`> rename <filename.pri> <filename.sec>`**

and pressing the Enter key.

This will mark the file secondary in the SBA application.

**b** For DIRP, if the file was unprocessed, rename the file to have the ".pro" extension to indicate successful retrieval by typing.

**`> rename <filename.unp> <filename.pro>`**

and pressing the Enter key.

**7** After all desired files are retrieved and renamed, exit ftp by typing

**> bye**

**8** You have completed this procedure.

# Adding a logical volume for SBA

This procedure provides instructions on how to add a logical volume for the SuperNode Billing Application (SBA).

### Adding a logical volume for SBA

***At the CS 2000 Core Manager***

**1** Log onto the CS 2000 Core Manager as root user.

**2** Access the storage level of the maintenance interface by typing

```
# sdmmtc storage
```

and pressing the Enter key.

**3** Copy the values for the logical_volume_name and logical_volume_size (answer 7 and 27, respectively) from Preparing for SBA installation and configuration in the Accounting section and complete the table below.

| Command to enter | First parameter | Second parameter |
|---|---|---|
| add lv | logical_volume_name (answer 7) | logical_volume_size (answer 27) |

**4** Enter the command from the table above using the values you copied from Preparing for SBA installation and configuration in the Accounting section by typing

```
> add lv <logical_volume_name>
<logical_volume_size>
```

and pressing the Enter key.

*Where*

<logical_volume_name> is the value for logical_volume_name and <logical_volume_size> is the value for logical_volume_size.

**5** Exit the maintenance interface by typing

```
> quit all
```

and pressing the Enter key.

**6** You have completed this procedure.

# Copying billing files to tape (backup)

Use this procedure to backup billing files of a particular stream on tape. You can use a 90M or 120M tape.

**ATTENTION**

When two applications, for example File Transfer Controller (FTC) and the Write command, attempt to access the same file, one of two exception conditions occurs: (1) The Write command backs up the file, but issues an error message stating that it has backup the file <filename> but is unable to change the state of the file. (2) If the FTC has already moved the file to the CloseSent state when the Write command tries to back it up, the Write command issues a message stating that it is unable to backup<filename>. In both cases, the Write command exits and does not continue accessing the file list.

***At the CS 2000 Core Manager***

**1** Insert a 90M or 120M tape into the DAT drive (either 0 or 1).

***Note:*** The “write” command calculates the number of tapes required based on a 90M tape (2GB). A 120M tape has a capacity of 4GB.

**2** Log in to the CS 2000 Core Manager.

**3** Access the billing maintenance level by typing

```
# billmtc
```

and pressing the Enter key.

**4** Access the Tape level by typing

```
> tape
```

and pressing the Enter key.

**5** Perform the backup by typing

```
> write <parameters>
```

and pressing the Enter key.

where

**parameters**
is any of the parameters listed in table Command parameters for AMADNS file format or table Command parameters for all file formats

***Note 1:*** When the SBA is running normally, the Write command can run at traffic levels of up to 1.2 million records in an hour. However, the Write command must not run when the SBA is operating in the recovery mode or when the traffic level is in excess of 750,000 records in an hour.

***Note 2:*** The Write command uses the CPIO utility to back up standard billing files. Each file copied requires a separate invocation of the CPIO utility and produces a separate archive.

The following table lists the Write command parameters for AMADNS file format. For the parameters for all other file formats, see table Command parameters for all file formats.

**Command parameters for AMADNS file format (Sheet 1 of 3)**

| Parameter | Value | Definition |
|---|---|---|
| <stream_name> | string | Indicates to back up the billing files in the specified stream. Examples include AMA and OCC. |
| -p | | Indicates to back up the “primary” billing files. |
| -s | | Indicates to back up the “secondary” billing files. |
| -a | | Indicates to back up the all billing files (primary and secondary), |
| -b | [hh[:mm[:ss]]][.mm[/dd[/[yy]yy]]] | Indicates to back up the billing files that have a creation timestamp equal to or later than the specified timestamp, but not later than the ETIME timestamp, if specified. |

**Command parameters for AMADNS file format (Sheet 2 of 3)**

| Parameter | Value | Definition |
|---|---|---|
| -e | [hh[:mm[:ss]]][.mm[/dd[/[yy]yy]]] | Indicates to back up the billing files that have a creation timestamp equal to or earlier than the specified timestamp, but not earlier than the BTIME timestamp, if specified. |
| -q | integer | Indicates to back up the billing files that have a sequence number that matches the specified sequence number, or are within the specified range of sequence numbers. |
| -r | integer | Indicates to back up the billing files that have the specified DNS priority level.<br>***Note:*** Currently, all DNS files have a priority of 2. |
| -y | 0 to 32 | Indicates to back up the billing files that have the specified file type. |
| -f | alphanumeric string | Indicates to only back up the specified billing file. |
| SENT or NOTSENT | sent or notsent | Indicates the file state the billing files are to be set to once they have been backed up.<br>***Note:*** If you do not specify this parameter, the system prompts you to specify whether you want to change the state of the files to ClosedSent. If you choose not to have the state changed, the backed up files will remain in the same state as before you performed the backup operation. |
| DAT0 or DAT1 | dat0 or dat1 | Indicates to back up the billing files on the specified DAT drive where the tape resides. |
| -n | | Indicates not to eject the tape after the billing files have been backed up. If you do not specify “noeject”, the tape will be ejected following the backup. |

**Command parameters for AMADNS file format (Sheet 3 of 3)**

| Parameter | Value | Definition |
|---|---|---|
| OVERWRITE or APPEND | overwrite or append | Indicates whether you want to overwrite any existing files on the tape with those you are currently backing up, or preserve any existing files on the tape and add those you are currently backing up. |

The following table lists the Write command parameters for all file formats except AMADNS. For the parameters for the AMADNS format, see table .

**Command parameters for all file formats (Sheet 1 of 2)**

| Parameter | Value | Definition |
|---|---|---|
| <stream_name> | string | Indicates to back up the billing files in the specified stream. Examples include AMA and OCC. |
| state | processed, unprocessed, primary, secondary, or all | Indicates to back up the billing files that have the specified state. |
| btime | [hh[:mm[:ss]]][.mm[/dd[/[yy]yy]]] | Indicates to back up the billing files that have a creation timestamp equal to or later than the specified timestamp, but not later than the ETIME timestamp, if specified. |
| etime | [hh[:mm[:ss]]][.mm[/dd[/[yy]yy]]] | Indicates to back up the billing files that have a creation timestamp equal to or earlier than the specified timestamp, but not earlier than the BTIME timestamp, if specified. |
| seqnum | integer | Indicates to back up the billing files that have a sequence number that matches the specified sequence number, or are within the specified range of sequence numbers. |
| prio | 1 to 4 | Indicates to back up the billing files that have the specified DNS priority level. |

**Command parameters for all file formats (Sheet 2 of 2)**

| Parameter | Value | Definition |
|---|---|---|
| ftype | 0 to 32 | Indicates to back up the billing files that have the specified file type. This parameter is not valid for DIRP file format. |
| fname | alphanumeric string | Indicates to only back up the specified billing file. |
| <new_file_state> | sent or notsent | Indicates the file state the billing files are to be set to once they have been backed up.<br>***Note:*** If you do not specify this parameter, the system prompts you to specify whether you want to change the state of the files to ClosedSent. If you choose not to have the state changed, the backed up files will remain in the same state as before you performed the backup operation. |
| DAT0 or DAT1 | dat0 or dat1 | Indicates to back up the billing files on the specified DAT drive where the tape resides. |
| NOEJECT | | Indicates not to eject the tape after the billing files have been backed up. If you do not specify “noeject”, the tape will be ejected following the backup. |
| OVERWRITE or APPEND | overwrite or append | Indicates whether you want to overwrite any existing files on the tape with those you are currently backing up, or preserve any existing files on the tape and add those you are currently backing up. |

The examples that follow illustrate the command parameters to back up all primary files in stream “baf1”.

Example for AMADNS file format

```
> write baf1 -p
```

Example for general file formats

```
> write baf1 state primary
```

The examples that follow illustrate the command parameters to back up all secondary files in stream “baf1” that were created between the specified time and date and the current time and date.

Example for AMADNS file format

```
> write baf1 -s -b 23:00.5/11/00
```

Example for general file formats

```
> write baf1 state secondary btime 23:00.5/11/00
```

The examples that follow illustrate the command parameters to back up all secondary files in stream baf1 between 10:00 and 12:00 noon of the current day.

Example for AMADNS file format

```
> write baf1 -s -b 10:00 -e 12:00
```

Example for general file formats

```
> write baf1 state secondary btime 1:00 etime
12:00
```

6 Once the backup successfully completes, press Enter to continue.

| If you | Do |
|---|---|
| want to perform another backup | step 5 |
| do not want to perform another backup | you have completed this procedure |

# Sending billing files from tape

Use this procedure to send billing files from a digital audio tape (DAT) to a downstream destination.

## Prerequisites

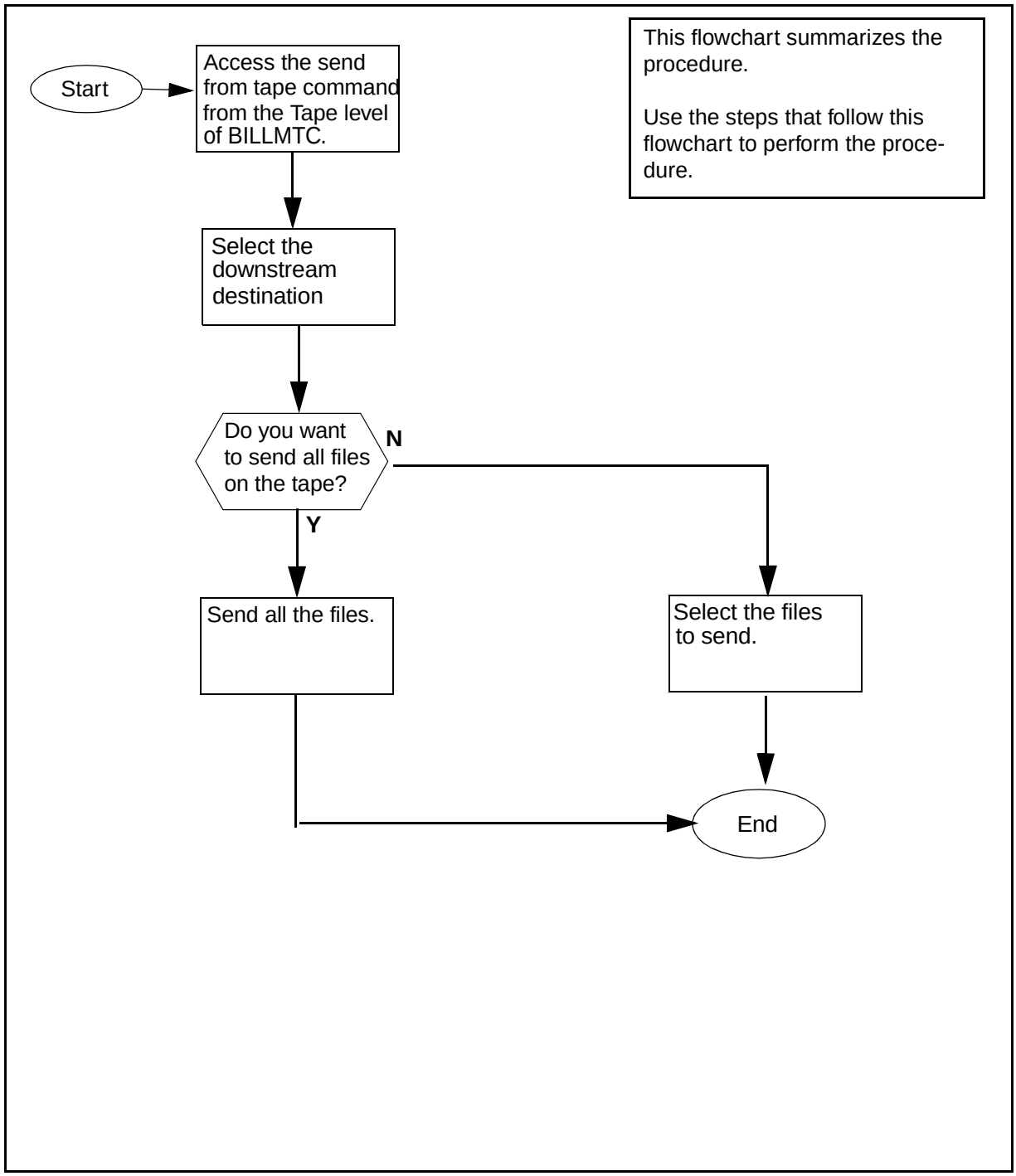
Before you begin this procedure, complete the following prerequisites:

- Make sure the DAT tape is in the DAT drive.
- Record the name of the DAT drive (DAT0 or DAT1).

## Summary flowchart

The following flowchart shows a summary of the steps to perform this procedure. Use the steps that follow this flowchart to perform this procedure

## Sending files from tape



## Sending billing files from tape

### *At the CS 2000 Core Manager*

**1** Log into the CS 2000 Core Manager.

**2** Access the SuperNode Billing Application (SBA) billing maintenance interface by typing

```
> billmtc
```

and pressing the Enter key.

**3** Access the tape level by typing

```
> tape
```

and pressing the Enter key.

**4** Send the files from a DAT tape to a downstream destination by typing

```
> send <dat_drive>
```

and pressing the **Enter** key.

*where*

<dat_drive> is the DAT0 or DAT1. This parameter is mandatory.

*Example*

To send files from the tape in DAT drive 0, type

```
> send dat0
```

and press the Enter key

***Note:*** DAT1 is the default DAT. If no DAT tape is specified, then default DAT1 is selected.

**5** Wait for SBA to display a list of possible destinations.

*Example of response*

```
>Possible destinations for the tape files:
0) stream=BAF1destination=HUBBARD
1) stream=BAF1destination=GIRARD
Select a destination for the tape files or ‘x’
to exit {0-1,x}
```

**6** Select the destination by typing the number of the destination and pressing the Enter key.

*Response*

SBA connects to the destination and prompts you to select the files to send.

*Example of response*

```
Connected to 47.239.65.99
Send all files on tape, or prompt for each file?
All files, Prompt, or eXit (A/P/X)?
```

| If you want to send | Do |
|---|---|
| selected files on the tape | step 7 |
| all files on the tape | type **A**, press the Enter key, and go to step 8 |

**7** Select the files to send.

**a** Start the selection process by typing

>**P**

and pressing the Enter key.

**b** Wait for SBA to display the name of a file on the tape

*Example of prompt*

```
Send file 020001.030002.0001.01.2?
Yes, No, eXit (Y/N/X)
```

| If you | Do |
|---|---|
| want to send the file | step 7c |
| do not want to send the file | type **N**, press the Enter key, and go to step 7d |

**c** Send the file by typing

>Y

and pressing the Enter key

SBA sends the file to the specified destination.

Example of response

```
02.0001.030002.0001.01.2 sent.
```

**d** SBA displays the name of the next file on the tape.

| If | Do |
|---|---|
| you want to send the file | step 7c |
| you do not want to send the file | type **N**, press the Enter key, and repeat step 7d |
| SBA has displayed the names of all the files on the step | step 8 |

**8** Wait for SBA to display the following message.

*Example of message*

```
End of tape
```

**9** You have completed this procedure.

# Adding or removing a maintenance user

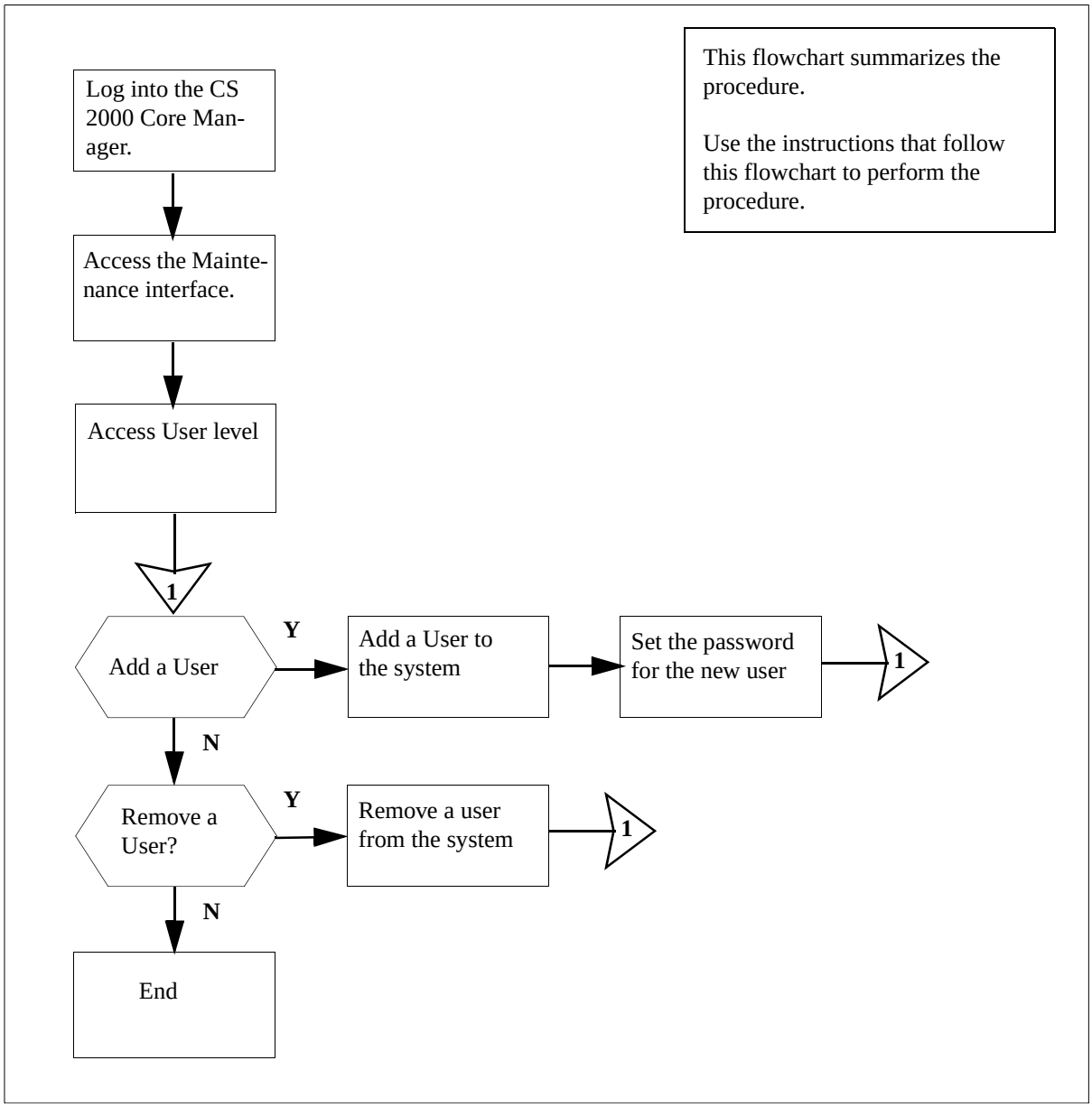
## Application

Use this procedure to add or remove a maintenance class user. This procedure must be performed by the root user.

## Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the task.

## Summary of Adding or removing a maintenance user




## Adding or removing a maintenance user

### *At the local or remote VT100 console*

**1** Log into the CS 2000 Core Manager as the root user.

**2** Access the maintenance interface by typing

```
# sdmmtc
```

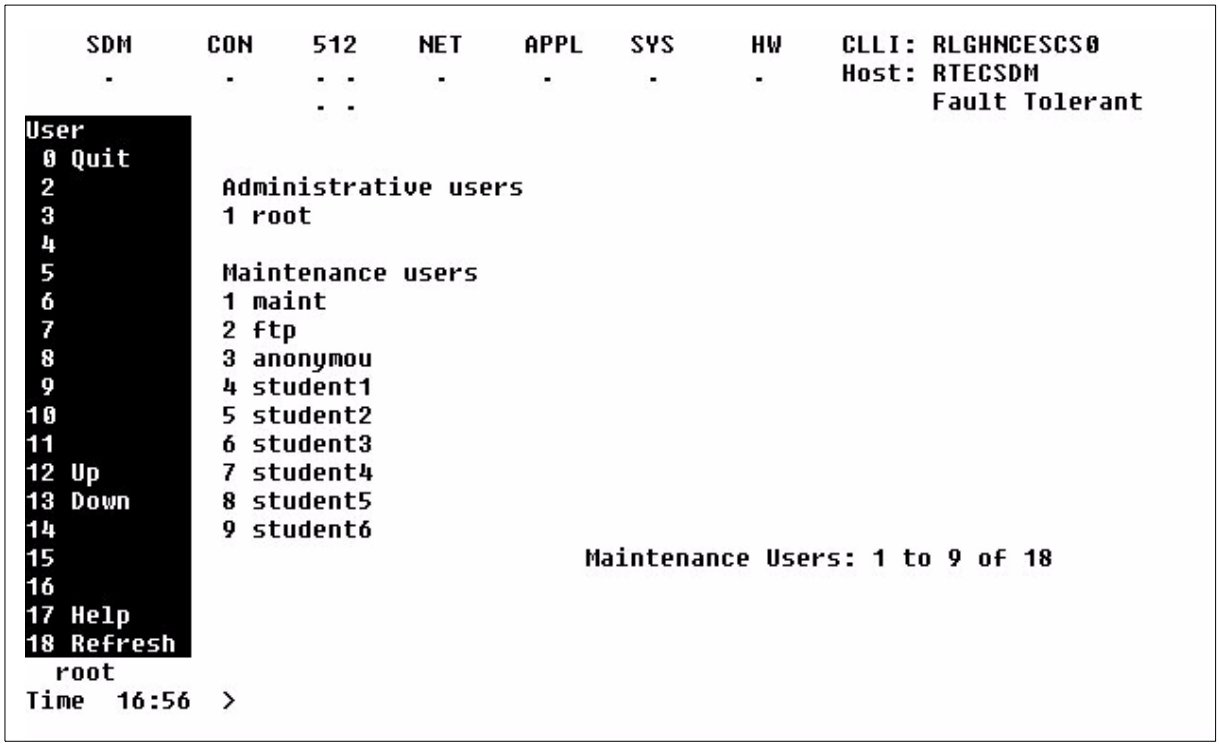
and pressing the Enter key.

**3** Display the user screen by typing

**`> user`**

and pressing the Enter key.

*Example response:*




**4** Use the following table to determine your next step.

| If you want to | Do |
|---|---|
| add a user | step 5 |
| remove a user | step 10 |
| finish adding/removing users | step 12 |

**5** Add a maintenance class user by typing

**> add <*userID*>**

and pressing the Enter key.

*where*

***userID***
is the userID of the new user

The User screen immediately displays the new userID.

***Note:*** To activate a user ID, you need to set the password.

**6** Set the password for the user you added by typing

**> change <*userID*>**

and pressing the Enter key.

*where*

***userID***
is the userID of the user you just added

***Note:*** If no userID is specified, the system will change the password of the root user.

**7** When prompted, enter the new password

***Note:*** The password must be at minimum, a six-character string containing at least one alphabetic character, and at least one numeric or special character. Although a password can contain more than eight characters, only the first eight characters are considered.

**8** When prompted, retype the password and press enter.

Press Enter again to continue. The system returns you to the User menu.

**9** Press Enter to continue.

| If you | Do |
|---|---|
| want to add another user | step 5 |
| do not want to add another user | step 12 |

**10** Remove a user by typing

**`> delete <userID>`**

and pressing the Enter key.

*where*

***userID***
is the userID of the user you are deleting

*Response:*

```
Are you sure you want to delete this user?
Do you wish to proceed?
Please confirm (YES, Y, NO, or N)
```

**11** Confirm you want to delete the user by typing

`> n`

and pressing the Enter key.

| If you | Do |
|---|---|
| want to delete another user | step 10 |
| do not want to delete another user | step 12 |

**12** Exit the maintenance interface by typing

**`> quit all`**

and pressing the Enter key.

**13** You have completed this procedure.

# Saving CM amadump records to a UNIX file

This procedure provides instructions on how to save the output of an amadump into a UNIX file on the CS 2000 Core Manager.

### Saving CM amadump records to a UNIX file

***At the MAPCI***

**1** Begin to save CM amadump records by typing

```
> record start onto <devtype>
```

and pressing the **Enter** key.

*Where*

**<devtype>** is sfdev device or any other similar device.

**2** Login to the CS 2000 Core Manager by typing

```
> sdmrlogin
```

and pressing the **Enter** key.

***At the CS 2000 Core Manager***

**3** Log into the CS 2000 Core Manager as root user.

**4** Access amadump and enter the streamname by typing

```
# amadump <streamname>
```

and pressing the **Enter** key.

*Where*

**<streamname>** is the name of a valid stream configured on the CS 2000 Core Manager and CM.

**5** Dump the records by typing

```
> dump <dump parameters>
```

and pressing the **Enter** key.

*Where*

**<dump parameters>** are the parameters called for when using the amadump sub-command, dump.

***Note:*** This process can take several minutes to perform, depending on the size of the streamname file.

6 Exit amadump once the dump sub-command is complete by typing

```
> quit
```

and pressing the **Enter** key.

7 Exit the CS 2000 Core Manager remote login session by typing

```
> exit
```

and pressing the **Enter** key.

8 End the save process by typing

```
> record stop onto <devtype>
```

and pressing the **Enter** key.

*Where*

**<devtype>** is device sfdev or any other similar device you specified in Step 1.

*The output is stored in the file you created on the device you specified in Step 1.*

9 You have completed the procedure.

# Retrieving, processing, and closing an SBA error file

An error file for each stream is generated when the SDM Billing Application (SBA) detects that the “declared” or “defined” length is greater than the actual length of the data buffer. The actual data in the buffers are corrupted, but pass the surface transmission tests when transferred through the DS512 links from the CM to the CS 2000 Core Manager. This is correct, because only the integrity of the data is checked when transferred from the CM to the CS 2000 Core Manager. The data stream arrives at the CS 2000 Core Manager exactly as it left the CM, therefore, no error is detected. Only when the SBA logic opens and starts to parse the data does it detect this error. Since the SBA cannot correct the problem at this point, it generates an SBA error file.

Use this procedure to retrieve, process, and close SBA error files when required.

## Retrieving SBA error files

You retrieve SBA error files the same way you retrieve any other SBA files. Refer to procedure “Configuring the inbound file transfer” in the Accounting section for more information.

## Processing SBA error files

You must manually process SBA error files in order to extract the AMA records. You can open an SBA error file using a “hex dump” or “octal dump” utility on a Unix machine. Refer to your local procedures for more information.

Once the output file is generated from the utility, you must manually parse through the data to determine where each AMA record begins and ends. Following is an example of this exercise using an SBA file without errors, with an interpretation of the data in the output file.

**Example of an output file for an SBA file without errors**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0000000 | 1c01 | 2000 | 1008 | 13ff | 3e96 | 05ec | 1342 | 06ec |
| 0000020 | 1391 | 7b66 | 001e | ef00 | 0210 | 0000 | 0068 | 0000 |
| 0000040 | aa40 | 653c | 119c | 036c | 0202 | 699c | 036c | 0202 |
| 0000060 | 699c | 0081 | 6c00 | 000c | 0200 | 000c | 0c0c | 0c00 |
| 0000100 | 0c0c | 0086 | 0c42 | 2627 | 7c14 | 3051 | 7c00 | 0000 |
| 0000120 | 003c | 0763 | 2c00 | 816c | 1430 | 507c | 0000 | 0001 |
| 0000140 | 4c01 | 0c30 | 913c | 0c72 | 0c00 | 1c03 | 1523 | 3000 |
| 0000160 | 0cff | ffff | ffff | ffff | ffff | ffff | ffff | 3090 |
| 0000200 | 000c | 000c | 0070 | 0000 | aa40 | 625c | 119c | 036c |
| 0000220 | 0202 | 699c | 036c | 0202 | 699c | 0081 | 6c00 | 000c |
| 0000240 | 0200 | 000c | 0c0c | 0c00 | 0c86 | 0c64 | 5919 | 2c0c |
| 0000260 | 0086 | 0c28 | 9792 | 9c14 | 3034 | 3c00 | 0000 | 177c |
| 0000300 | 5269 | 2c00 | 816c | 1430 | 313c | 0000 | 0020 | 7c01 |
| 0000320 | 0c40 | 902c | 1cff | 2c72 | 0c00 | 1c08 | 6043 | 0000 |
| 0000340 | 0cff | ffff | ffff | ffff | ffff | ffff | ffff | 3090 |
| 0000360 | 000c | 000c | 007e | 0000 | aa40 | 364c | 142c | 036c |
| 0000400 | 0202 | 699c | 036c | 0202 | 699c | 0081 | 6c00 | 000c |
| 0000420 | 0200 | 000c | 0c0c | 0c00 | 0c86 | 0c61 | 0908 | 4c80 |
| 0000440 | 0c84 | 2882 | 0c0c | 0086 | 0c67 | 9398 | 0c14 | 3040 |
| 0000460 | 0c00 | 0000 | 120c | 000c | 920c | 720c | 001c | 0860 |

The first column in the output file indicates the octal address, which is 7 characters. The remaining 8 columns are groups of 4 hex characters. Each row contains 32 hex characters of data, which relates to 16 bytes of data as each group of 2 hex characters represents a specific hex value.

The first 28 bytes of data (starting from 1c01 in the first row with octal address 0000000 to 0000 in the second row with octal address 0000020) represent the DNS file header. The next 4 bytes of data (0068 0000) represent the first Record Descriptor Word (RDW). The last 2 bytes of the RDW must always be binary zeros (i.e. 0000). The byte that follows the RDW is the beginning of an AMA record and must always be “aa”.

To calculate the length of an AMA record and determine where it ends. you use the base-10 value of the first 2 bytes (16-bit binary number) of the RDW. In the example, the first two bytes of the RDW are 0068. The length is in hex format, and you decode it as follows:

- Character #4, which is 8, is multiplied by 1 (8*1=8)
- Character #3, which is 6, is multiplied by 16 raised to 1 power (16*6=96)

- Character #2, which is 0, is multiplied by 16 raised to 2 power (256*0=0)
- Character #1, which is 0, is multiplied by 16 raised to 3 power (4096*0=0)

Adding the results, the length of the first AMA record in the example is 104 bytes (8+96=104). Start counting from the first two bytes of the RDW (0068), and count every two characters as 1 byte. The first AMA record ends with 000c in the row with octal address 0000200. A valid AMA records always ends with “c”.

Continuing with this example, you will see that the next RDW (0070 0000) immediately follows the end of the first AMA record. From this RDW, the length of the AMA record to follow calculates out to 112 bytes of data using the same formula as above, that is

- Character #4, which is 0, is multiplied by 1 (0*1=0)
- Character #3, which is 7, is multiplied by 16 raised to 1 power (16*7=112)
- Character #2, which is 0, is multiplied by 16 raised to 2 power (256*0=0)
- Character #1, which is 0, is multiplied by 16 raised to 3 power (4096*0=0)

The second AMA record ends with 000c in the row with octal address 0000360, and is followed by the next RDW (007e 0000). If you continue with this exercise, you will locate all the other AMA records in this file.

Perform the procedure that follows to process any of your SBA error files.

## Processing an SBA error file

### *On a Unix machine*

**1** Open your SBA error file using a “hex dump” or “octal dump” utility. Following is an example of an output file for an SBA error file.

### Example of an output file for an SBA error file

```
0000000   1c59   2202   3010   1352   0409   8464   1bb6   8464
0000020   1b10   1000   0001   0000   0290   2500   1010   000c
0000040   000c   0053   0000   aa00   625c   066c   036c   0916
0000060   601c   036c   0916   601c   0112   2c00   000c   0000
0000100   000c   0c0c   0c02   3c91   6c50   3000   0c0c   0080
0000120   0c65   5626   2c10   3352   4c00   0000   015c   0432
0000140   2c01   122c   1033   479c   0000   0006   0c01   0c30
0000160   978c   1cff   0c8c   0c00   0c00   4b00   00aa   0065
0000200   3c11   9c03   6c09   1660   1c03   6c09   1660   1c01
0000220   122c   0000   0c02   0000   0c0c   0c0c   000c   0c00
0000240   530c   5254   659c   1033   516c   0000   0002   2c05
0000260   552c   0112   2c10   3330   2c00   0000   235c   010c
0000300   4027   6c1c   004b   0000   aa00   653c   119c   036c
0000320   0916   601c   036c   0916   601c   0112   2c00   000c
0000340   0200   000c   1c0c   0c00   0c0c   0053   0c79   6364
0000360   1c10   3354   4c00   0000   000c   0345   2c01   122c
0000400   1033   325c   0000   0021   9c00   1c60   746c   1c00
0000420   4b00   00aa   0065   3c11   9c03   6c09   1660   1c03
0000440   6c09   1660   1c01   122c   0000   0c02   0000   0c1c
0000460   0c0c   000c   0c00   916c   7302   107c   1033   545c
0000500   0000   0000   0c02   222c   0112   2c10   3318   0c00
0000520   0000   365c   001c   4091   9c1c   0cff   ffff   ffff
0000540   ffff   ffff   ffff   ffff   3090   000c   000c   ffff
0000560   ffff   ffff   ffff   ffff   ff30   9000   0c00   0c00
0000600   1010   000c   000c   0000   0000   0000   0000   0000
0000620   0000   0000   0000   0000   0000   0000   0000   0000
*
0010054
```

**2** In your output file, locate the DNS header (first 28 bytes).

In the example, the DNS header starts with 1c59 in the first row, and ends with 2500 in the second row.

**3** In your output file, locate the RDW (4 bytes that follow the DNS header).

In the example, the RDW is 1010 000c.

**4** Verify the last 2 bytes of the RDW are binary zeros (0000).

| If the last 2 bytes of the RDW are | Do |
|---|---|
| binary zeros (0000) | step 7 |
| not binary zeros (0000) | step 5 |

In the example, the last 2 bytes of the RDW are 000c (not binary zeros).

**5** In your output file, scan row by row and locate the first “aa”, which possibly indicates the beginning of the first AMA record.

In the example, the first “aa” is located in the row with the octal address 0000040.

**6** Verify the 2 bytes that precede “aa” are binary zeros (0000).

| If the 2 bytes that precede “aa” are | Do |
|---|---|
| binary zeros (0000) | step 7 |
| not binary zeros (0000) | locate the next “aa”, and repeat this step |

In the example, the 2 bytes that precede “aa” are binary zeros.

**7** Determine the length of the AMA record by calculating the base-10 value of the first 2 bytes of the RDW.

In the example, the first 2 bytes of the RDW are 0053, and the calculation is as follows:

- Character #4, which is 3, is multiplied by 1 (3*1=3)
- Character #3, which is 5, is multiplied by 16 raised to 1 power (16*5=80)
- Character #2, which is 0, is multiplied by 16 raised to 2 power (256*0=0)
- Character #2, which is 0, is multiplied by 16 raised to 2 power (256*0=0)

**8** Using the result from your calculation, locate the end of the AMA record. Start counting from the first two bytes of the RDW, and count every two characters as 1 byte. You have identified your first AMA record.

In the example, the length of the AMA record is 83 bytes of data. Counting from the first two bytes of the RDW (0053), the first

AMA record ends with “0c” in the row with the octal address 0000160.

**9** Verify the 4 bytes of data that follow the end of your AMA record, which is the next RDW.

| If the last 2 bytes of the RDW are | Do |
|---|---|
| binary zeros (0000) | step 10 |
| not binary zeros (0000) | no other AMA records exist in your output file, and you have completed this procedure |

In the example, the next RDW is 004b 0000.

**10** Repeat steps 7 through 9.

**11** You have completed the procedure.

## Closing an SBA error file

You need to manually close error files if the MIB parameter “rcCloseFilesOnGetFiles” is set to no, and if “files closed on time” is set to no for your stream, otherwise error files will close automatically. To manually close error files, enter the command “closec”.

# Configuring an AFT session

## Application

The SuperNode Billing Application (SBA) Automatic File Transfer (AFT) application for the CS 2000 Core Manager sends unprocessed and active Automatic Message Accounting (AMA) billing stream files to a specified downstream collector in real time, one block at time.

**ATTENTION**

AFT is an optional application and not required for SBA.

**ATTENTION**

Before configuring AFT, ensure that the stream is not configured for any other file transfer mechanism. Combining AFT with other file transfer mechanisms can produce unexpected and unpredictable results. If the system is configured to use file transfer protocol (FTP) to send billing files downstream at scheduled intervals, AFT may nto transfer all files.

To use SBA AFT, you must have entered the following responses when configuring the billing stream.

| Field | Value | Explanation |
|---|---|---|
| Stream Name | **OCC** | The SBA AFT application supports only the OCC stream name. |
| Is this a Filter Stream | **NO** | |
| Stream Record Format | **CDR250** | The format of the records that the computing module (CM) sends to the CS 2000 Core Manager. The SBA AFT application supports only the CDR250 format. |
| File Format | **DIRP** | The format of the files from the CS 2000 Core Manager to the hard disk. The SBA AFT application only supports DIRP format. |
| File Transfer Mode | **OUTBOUND** | The value required for SBA AFT |
| Do you want the files renamed with close date | **NO** | Because SBA AFT is based on the creation time stamp, a value of NO is required. |
| Do you want the files closed based on time | **YES** | Recommended value for SBA AFT as a precautionary measure to ensure file rotation after a specific period of time |

During the configuration of a billing stream, the system displays the information in the table in the following format:

```
Stream Name [OCC]{}:OCC
Is this a Filter Stream [NO]{NO YES}:NO
Stream Record Format [] {SMDR BC CDR300 CDR250}:CDR250
File Format Type []{DNS DIRP}:DIRP
File Transfer Mode [OUTBOUND]{INBOUND OUTBOUND}:OUTBOUND
Do you want the files renamed with close date [NO]{NO YES}:NO
Do you want the files closed based on time [NO]{NO YES}:YES
```

For more information about configuring a billing stream, refer to “Configuring a billing stream” in the Accounting section.

## Action

Use the following procedure to configure an AFT session.

**Configuring an AFT session**

***At the BILLMTC RMI . . .***

**1** Access the Application (APPL) level by typing

```
> appl
```

and pressing the Enter key.

**2** Access the Automatic File Transfer (AFT) level by typing

```
> aft
```

and pressing the Enter key.

**3** Access the AFT Configuration (AFTCONFG) level by typing

```
> aftconf
```

and pressing the Enter key.

**4** Add a new AFT session by typing

```
> add <stream_name> <session_name> <destination> [RETRY
<retry_attempts>
```

*where:*

**<stream_name>** = OCC
**<session_name>** = a name for the AFT session
**<destination>** = the IP address of the destination to which the files are to be transferred
**<retry_attempts>** = the number of times the AFT retries to send a file if errors occur

Example response:

```
Added table entry for AFT session: <session_name>
```

***Note:*** The default stream set by the **set** command is not supported by the **add** and **list** commands at the AFTCONFG level.

**5** Exit the AFTCONFG level and return to the AFT level by typing

```
> quit
```

and pressing the Enter key.

**6** Start the AFT session by typing

```
> start <session_name>
```

*where:*

**<session_name>** = the name for the AFT session

*Example response:*

```
Started AFT session: <session_name>
```

**7** You have completed this procedure.

# Configuring the SBA AFT on the Communication Server 2000 core and CS 2000 Core Manager

Use the following procedure to configure the SuperNode Data Manager Billing Application (SBA) Automatic File Transfer (AFT) application and backup disks on the CS 2000 Core Manager and Communication Server 2000 core.

**ATTENTION**
Automatic File Transfer is an optional application, and is not required for SBA.

## Configuring SBA AFT on the Communication Server 2000 core

### *At the MAPCI*

1 Log onto the Communication Server 2000 core using your login id and password.

2 Enter datafill in tables CRSFMT, CRSMAP, DIRPPOOL, and DIRPSSYS to have your billing records sent to device independent recording package (DIRP)-formatted files. Refer to the *Customer Data Schema Reference Manual*, 297-8001-351 to datafill the tables. When complete, continue with step step 3.

3 Use the following table to determine your next step.

| If you are defining | Do |
|---|---|
| multiple billing streams | step 4 |
| a single billing stream | step 5 |

***Note:*** The SBA AFT application only supports Sprint CDR250 with OCC as the stream name.

4 Set the NUM_CALLREC_STREAMS parameter in table OFCENG to a value that equals or exceeds the number of streams to be configured.

***Note:*** This parameter defines the highest number of billing streams that the switch supports.

5 Configure two disk volumes per stream on the Communication Server 2000 core for backup purposes.

***Note 1:*** These volumes are used when the Communication Server 2000 core is temporarily unable to pass billing data to the CS 2000 Core Manager.

***Note 2:*** SBA does not support configuring more than one billing stream at a time from multiple workstations. The last billing stream that is configured is the one that is saved.

6 Copy the dms_disk_space value from Preparing for SBA installation and configuration in the Accounting section (answer 28) as shown in the following table.

| Communication Server 2000 core Disk Space |
| --- |
| dms_disk_space |

7 Divide the value in the table by 2 and record the value in the following table.

| Volume Size (Disk Space Size divided by 2) |
| --- |
| |

***Note:*** This is the size for each volume (in blocks).

**8** Access the CMMNT level to determine if the SLM disk used for the volume is set as the primary autoload device (AutoLdev) by typing

**`> mapci;mtc;cm;cmmnt`**

and pressing the Enter key.

*Example MAPCI response:*

```
CM   Sync   Act   CPU0   CPU1   Jam   Memory   CMMnt   MC   PMC
 0    no   cpu 0    .     flt   yes      .        .      .    .

Traps:    Per minute = 0     Total = 8

AutoLdev:  Primary = SLM 0 DISK   Secondary = SLM 1 DISK

Image Restartable = No image test since last restart

Next image test restart type = WARM

Last CMREXTST executed

System memory in kbytes as of 17:33:11
Memory (Kbytes): Used-236672 Avail=418688 Total=655360
```

**9** Refer to the following table to determine your next step.

| If you need to create a | Do |
|---|---|
| primary disk | step 11 |
| backup disk on the Communication Server 2000 core | step 10 |

**10** Create a backup volume on a SLM disk by typing

**`> autold slm <slm_number> disk`**

and pressing the Enter key.

*where:*

<slm_number> is the number of the SLM disk to set as the primary autoload device. This is the SLM disk that is not being used to create the new backup volume.

*Example command:*

**`> autold slm 1 disk`**

This command creates a volume on SLM 0.

*Example MAPCI response:*

```
New autoload route has been set.
```

***Note:*** To create a backup volume on a SLM disk, the SLM disk must be set as the secondary autoload device. If necessary, change the SLM disk from a primary to a secondary autoload device.

**11** Busy the SLM of the volume you created by typing

**`> iod;slm <slm_number>; bsy`**

and pressing the Enter key.

*where:*

<slm_number> is the SLM number of the volume you created

**12** Access the disk administration level by typing

**`> diskadm <x>`**

and pressing the Enter key.

*where:*

<x> is the disk name (S00D or S01D)

***Note 1:*** Volume names on the SLM disks can contain up to eight alphanumeric characters. The first four characters are the required name prefixes *S00D* and *S01D*. The remaining four alphanumeric characters uniquely identify the volumes.

***Note 2:*** To observe the available disk administration commands, type **help diskadm** and press the Enter key.

**13** Observe the free disk space by typing

**> dd**

and pressing the Enter key.

*Example MAPCI response:*

```
Disk drive information for S00D

Drive name  :S00D

Vendor Information :SEAGATE ST31051N 9470

Date last formatted:1998/01/01 05:38:44.718 THU

Date last modified :1998/04/23 17:46:59.754

Total space for volumes :1000 Mbytes

Total free space :174 Mbytes

Size of largest free segment:174 Mbytes

1 Block = 512 bytes
```

**14** Create a new logical volume by typing

**> cv <X> <Y> std**

and pressing the Enter key.

*where:*

<x> is the backup volume name
<y> is the volume size

*Example command:*

**> cv BAK1 50 std**

*Example response:*

```
Logical volume S00DBAK1 will be created.
1 block = 512 bytes and 50 blocks = 25K bytes.
```

**15** Exit the disk administration level at the prompt by typing

**> quit**

and pressing the Enter key.

**16** RTS the SLM to by typing

**> mapci;mtc;iod;slm 0; rts**

and pressing the Enter key.

**17** Copy the value for the stream_name (answer 1) from Preparing for SBA installation and configuration in the Accounting section to following table.

| Command to enter | Parameter |
|---|---|
| **mapci;mtc;appl;sdmbil;post** | stream_name *(answer 1)* |

**18** At the MTC menu prompt, type the command shown in the table in step 17 using the values that were copied from Preparing for SBA installation and configuration in the Accounting section by typing

**`> mapci;mtc;appl;sdmbil;post <x>`**

and pressing the Enter key.

*where:*

<x> is the name of the billing stream

**19** Copy the values for the stream_name (answer 1) from Preparing for SBA installation and configuration in the Accounting section and record the names of the backup volumes configured on the Communication Server 2000 core as shown in the following table.

| Command to enter | First parameter | Second parameter | Third parameter |
|---|---|---|---|
| **conf set** | stream_name *(answer 1)* | dms_backup_1 S00D_ _ _ _ | dms_backup_2 S01D_ _ _ _ |

**20** Configure the billing stream of the logical volumes you created in step 14 after you receive confirmation that the files are successfully created by typing

```
> conf set <x> <y> <z>
```

and pressing the Enter key.

*where:*

<x> is the name of the stream
<y> is the dms_backup_1 volume
<z> is the dms_backup_2 volume

***Note:*** SBA does not support configuring more than one billing stream at a time from multiple workstations. The last billing stream that is configured is the one that is saved.

*Example command:*

```
> conf set AMA S00Dbak1 S01Dbak2
```

The example command configures backup disks S00D and S01D as S00Dbak1 and S01Dbak2, respectively. Both disks are used as backup disks for the AMA billing stream.

**21** Refer to the following table to determine your next step.

| If you | Do |
|---|---|
| are setting up a UCS DMS-250 CDR stream for BAF conversion | step 22 |
| are not setting up a UCS DMS-250 CDR stream for BAF conversion | step 26 |

**22** Set the EDGE_SWITCH office parameter by typing

```
> table OFCVAR;pos EDGE_SWITCH;change y
```

and pressing the Enter key.

**23** Set the FCDR_CDR_WORD_LAYOUT office parameter to normal by typing

```
> table OFCENG;pos FCDR_CDR_WORD_LAYOUT;change normal
```

and pressing the Enter key.

***Note:*** If the FCDR_CDR_WORD_LAYOUT office parameter is set to `readlr`, CDR records are not converted to BAF records, and a NOSC alarm appears on the banner at the APPL level of the CS 2000 Core Manager.

**24** Ensure the predefined CDR templateID for the CDR2BAF application is present and activate the CTMPLT tool by typing

```
> ctmplt
```

and pressing the Enter key.

**25** Upgrade the new or changed template by typing

```
> upgrade
```

and pressing the Enter key.

**26** Copy the values for the stream_name and sba_stream_state (answers 1 and 9, respectively) from Preparing for SBA installation and configuration in the Accounting into the following table.

| Command to enter | First parameter | Second parameter |
|---|---|---|
| **sdmbctrl** | stream_name *(answer 1)* | sba_stream_state *(answer 9)* |

**27**

**CAUTION**

**Possible loss of service**

If you change a billing stream that is set to on or both to off, billing to the CS 2000 Core Manager stops and billing records are no longer sent to the CS 2000 Core Manager for that billing stream.

If the DIRP system is unable to receive billing records, all billing records generated while the billing stream is set to off are lost.

When the billing stream is set to on, the billing records are sent to the CS 2000 Core Manager only. When the billing stream is set to both, the billing records are sent to the both the CS 2000 Core Manager and the Communication Server 2000 core.

**ATTENTION**

The option to set a billing stream to both is intended only as a temporary path while you are performing maintenance and alarm clearing tasks. The option to set a billing stream to the both mode on a permanent basis is not supported.

Enter the following command, using the values that you recorded in step 26 by typing

```
> sdmbctrl <X> <Y>
```

and pressing the Enter key.

*where:*

<x> is the stream name
<y> is the SBA stream state

*Example command:*

***> sdmbctrl ama on***

*This command sends billing records from the stream called AMA to the CS 2000 Core Manager. The stream is now running and*

*the CS 2000 Core Manager is receiving billing records and writing records to billing files.*

***Note:*** The on state sends billing records to the CS 2000 Core Manager. The `both` state sends billing records to the CS 2000 Core Manager and the DIRP system. The CS 2000 Core Manager does not verify that the DIRP system is functioning properly. Using the `both` state impacts the real time on the Communication Server 2000 core.

**28** Verify that the billing records are being processed.

**29** Refer to the following table to determine your next step.

| If the billing stream transfer mode is set to | Do |
|---|---|
| outbound | Configuring the outbound file transfer schedule in the Accounting section |
| inbound | step 30 |

**30** You have completed this procedure.

Use the following procedure to configure SBA AFT on the CS 2000 Core Manager.

### Configuring SBA AFT on the CS 2000 Core Manager

***At the MAPCI . . .***

**1** Complete Configuring SBA AFT on the Communication Server 2000 core before you continue with Configuring SBA AFT on the CS 2000 Core Manager.

**2** After installing the SBA AFT fileset (Configuring SBA AFT on the Communication Server 2000 core), set the typOfCDR to SPRINT by typing

```
> mib cdr set typeOfCDR sprint
```

and pressing the ENTER key.

**3** You have completed this procedure.

# Querying a billing stream

## Application

Use this procedure to display the status and information for a specific SuperNode billing application (SBA) billing stream or all SBA billing streams.

The MAP displays the following information at the Query command:

- State values -- RBsy, InSv, SysB or Off for the primary substream. If applicable, a secondary, or recovery, substream is also displayed.
- Records within the open files -- the number of billing records in open files (records other than ClosedNotSent)
- ClosedNotSentFiles available -- The number of ClosedNotSent files on the stream's logical volume.
- Records within the ClosedNotSent files --the number of billing records contained in the ClosedNotSent files on the stream.
- Date of last file sent -- the last date and time that a ClosedNotSent file on the stream was made into a ClosedSent file.

## Prerequisites

None

## Action

### Querying a billing stream

***At the CS 2000 Core Manager***

**1** Log into the CS 2000 Core Manager using the root user identification and password.

**2** Access the billing maintenance interface by typing

```
# billmtc
```

and pressing the Enter key.

**3** Determine if you want to query a specific SBA stream or all of the SBA streams.

| If you | Do |
|---|---|
| want to query one SBA stream | step 4 |
| want to query all of the SBA streams | step 5 |

**4** Query an SBA billing stream by typing

```
> query <streamname>
```

where

**streamname**
is the SBA billing stream you want to query. Examples of a billing stream include AMA and OCC.

and pressing the Enter key.

**5** Query all of the streams by typing

```
> query all
```

and pressing the Enter key.

**6** You have completed this procedure.

# Searching and viewing billing records

**ATTENTION**
This procedure does not apply to CDR ailing records based on Edit templates. AMADUMP does not support CDR billing records based on Edit templates. AMADUMP only supports CDR billing records based on Active templates.

Use this procedure to search for and view billing records stored in AMADNS and DIRP file formats. You can display all the records, or you can create filters that allow you to display only records matching a specific search criteria. You view the results of amadump on your screen.

The AMADNS file format supports the AMA, UCS CDR, SMDR, and CDR2BAF records formats.

The DIRP file format supports the AMA, UCS CDR, Sprint CDR, and MCI Worldcom CDR record formats.

The UCS software on the Communication Server 2000 core supports user-defined Call Detail Record (CDR) templates for North American Universal Carrier Services (UCS). When activating these CDR templates on the switch, it is important that the CS 2000 Core Manager and Communication Server 2000 core clocks are in sync with each other. For more information about CDR template creation, refer to *297-2621-320, UCS DMS-250 Billing Server Application Guide*.

The CS 2000 Core Manager SBA AMADUMP uses the template information to search and display CDR records from billing files associated with UCS switches. The CS 2000 Core Manager SBA AMADUMP does not process billing files if the file creation timestamp of the CS 2000 Core Manager billing files is older than the timestamp of the active set of CDR templates on the switch. In this case, the active

set of templates may have been altered after the billing file was generated. To obtain timestamps, please refer to the following table.

**Obtaining a timestamp**

| If you want to obtain a timestamp | Do |
|---|---|
| for billing file creation | procedure Listing billing files in the Accounting section |
| on the active set of templates on the core | from the CI prompt, enter<br>> **ctmplt;status** |

**Searching and viewing billing records**

***At the CS 2000 Core Manager***

1 Log into the CS 2000 Core Manager as the root user.

2 Access the billing maintenance level by typing

```
# billmtc
```

and pressing the Enter key.

3 Access the tools level by typing

```
> tools
```

and pressing the Enter key.

4 Access the amadump level by typing

```
> amadump <streamname>
```

and pressing the Enter key.

*Where*

<streamname> is the name of the billing stream

**Example**

```
> amadump ama
```

**5** You can set the search criteria that can be used with the dump command using one or more of the following commands:

***Note:*** Entering each of these commands, provides you with a list of valid parameters for the command.

| command | purpose |
|---|---|
| filter | add one or more filters (maximum 20), which can be used with the dump command to search and display records - to define a filter, refer to section Guidelines for defining filters at the end of this procedure<br><br>***Note:*** Use the listfields command to obtain a list of possible field names when you are adding a filtered string. |
| numblk | set the block number from which to start the search<br><br>***Note:*** This applies to DIRP file format only. If the file format is AMADNS, the system reads the value but ignores it. |
| numsrch | set the maximum number of records to search for (1 to 500,000) |
| numout | set the maximum number of records to display (1 to 500,000) |

***Note 1:*** MTX XA-Core systems do not support volumes higher than 175,000 CDRs per hour.

***Note 2:*** When you set numblk, numsrch, and numout, their value is used in subsequent dump commands for the current session. However, if you specify numblk, numsrch, or numout as parameters with the dump command, you will override their value.

***Note 3:*** For UCS CDR, you can query and reset the parameters that are currently defined as follows:

Query the search parameters that are currently defined by typing

```
AMADUMP>> reinit -q
```

Reset the search parameters that are currently defined to their default value by typing

```
AMADUMP>> reinit -r
```

6 Display the billing records using the dump command and one or more of its parameters. The dump command syntax is as follows:

**AMADUMP>> dump <display mode> [sum] [numout <numout value>] [numsrch <numsearch value>] [numblk <numblock value>] [filter <filter string> or <%filter number>] [fname <file name>] [btime <start time>] [etime <end time>]**

***Note 1:*** You can use either the filename parameter or the time parameters, but not both.

***Note 2:*** The dump command can take up to a few hours to complete depending on the number of files to be scanned. For this reason, you must be selective when you specify the set of files to dump to prevent any unwanted delays.

| parameter | purpose |
|---|---|
| <display mode> {HEX, DETAILS, NODETAILS, NOSHOW}<br><br>***Note:*** This is a required parameter. | HEX displays billing records in their raw form<br><br>DETAILS displays billing records with individual fields and field names preceding the fields<br><br>***Note:*** Prior to executing the dump command with the details display mode, enter the following command if you want to display more records on the screen:<br><br>`AMADUMP>> set display compact`<br><br>This command enables compact display for the current session.<br><br>NODETAILS displays billing records with individual fields but no field names preceding the fields<br><br>NOSHOW displays billing records without record information |

| parameter | purpose |
|---|---|
| -s or sum | displays a summary of the dump, which contains filenames, total records in each file, total records matched (or selected) from each file, total of all the records in this particular dump, total records matched in this particular dump, and search criteria used. |
| -no <numout value> or numout <numout value> | specifies the maximum number of records to display (1 to 500,000) |
| -ns <numsearch value> or numsrch <numsearch value> | specifies the maximum number of records to search for (1 to 500,000) |
| -nb <numblock value> or numblk <numblock value> | specifies the block number from which to start the search.<br>***Note:*** This applies to DIRP file format only. If the file format is AMADNS, the system reads the value but ignores it. |
| -ft <filter string> or -ft <%filter number> or filter <filter string> or filter <%filter number> | specifies the filter to be used to search and display the records - to define a filter, refer to section Guidelines for defining filters at the end of this procedure |
| -fn <filename> or fname <filename> | specifies the file or files to be displayed<br>***Note:*** When you want to specify multiple files, enter the file list within double quotes and separate each file name by a space. |

| parameter | purpose |
|---|---|
| -b <start time> or btime <start time> | specifies the start date and time of the records to be searched and displayed |
| -e <end time> or etime <end time> | specifies the end date and time of the records to be searched and displayed<br><br>***Note 1:*** You can use the start and end time parameters individually or together.<br><br>***Note 2:*** The start and end time parameters are based on the creation date and time of the files. |

***Note 1:*** For AMADNS file format, you can use either hyphenated or non-hyphenated options, but not a combination of both. For DIRP file format, you can only use non-hyphenated options.

***Note 2:*** You can obtain the filename, and creation date and time of the files using the following command at the CS 2000 Core Manager prompt:

```
# listfile <streamname>
```

***Note 3:*** The start time, end time, and filter options are not supported for SMDR and CDR2BAF record formats.

***Note 4:*** The record count for the AMADUMP “sum” option and listfile commands may not match for SMDR and CDR file formats.

For SMDR, the AMADUMP record count includes all call records and extension records, whereas the listfile record count only includes call records.

For UCS CDR in DIRP format, the value of the RECORD_COUNT field in GER is one less than the total number of records (call records and event records) shown by AMADUMP summary.

***Note 5:*** If you want to scroll through all the records, type “s” when the “more” prompt appears on the screen rather than using the carriage return to see individual records.

***Note 6:*** The filename displayed in the GER record may be different from the filename used in the “dump” command.

AMADUMP always displays the filename stored in the GER record as it was created on the CS 2000 Core Manager (that is, like an active file).

Example:

AMADUMP>> dump details sum fname U0205100959470CC
.....
DIRPFNAME A0205100959470CC

**7** You have completed this procedure.

## Guidelines for defining filters

A filter allows you to search and display a sub-set of the billing records. A filter is a filter string that can specify logical and comparison operations between constants and variables. A constant can be an actual number (up to 19 digits), or a string in quotes, whereas a variable is a field name. You can obtain a list of available fields, which are used as variables in a filter string, using the listfields command.

***Note:*** Variables and string constants are case sensitive. A string contstant is anything enclosed in single quotes.

You can define a maximum of 20 filter strings, and refer to them as "%<filter number>" when you use the dump command to display the billing records.

The table below provides the operators for filters.

| Operator | Symbol |
|---|---|
| parenthesis | ( ) |
| Slice a variable | from <int> count <int>.<br>The from <int> starts indexing from 0. The count <int> returns a count of 0 to a variable size of 0.<br>***Note:*** The slice operation is a ternary operation (state of three) that only works on variables. The result of a slice is a temporary variable. |
| Multiplication | * |
| Division | / |
| Addition | + |
| Subtraction | - |

| Operator | Symbol |
|---|---|
| Greater than | > |
| Less than | < |
| Greater than or equal | >= |
| Less than or equal | <= |
| Equal to | = (for SMDR)<br>== (for OCC and AMA) |
| Not equal to | != or <> |
| And, Or (both logical and bit-wise) | &, \| (SMDR)<br>&&, \|\| (OCC and AMA) |

***Note 1:*** The operands are binary, except for the parenthesis, which holds other expressions.

***Note 2:*** For comparison operations, the result is either true (1) or false (0). A comparison is considered true if it evaluates to a value other than zero (0).

***Note 3:*** When a string constant is compared to a variable, it can only be used as a regular expression string. For example, string constants can only be used in an equality operation with the other operand being a variable.

***Note 4:*** For regular expressions, only “equal to” and “not equal to” operations are valid. All other characters are invalid.

**Filter syntax**

The filter command consists of different syntax for different data types. The data types are

- EBCDIC
- TBCD
- BCD
- BIN
- BIT
- BOOLEAN
- HEX

**Filter syntax for EBCDIC**
Use single or double quotes for EBCDIC digits.

**Example**
For BAF records:

```
AMADUMP>> filter add 4 RECCD ==’F0’
AMADUMP>> filter add 4 RECCD ==”F0”
```

**Example**
For CDR records:

```
AMADUMP>> filter add 4 STRUCTURE_CODE ==”00079C”
```

**Example**
For SMDR records:

```
AMADUMP>> filter add 4 “RECORD_CODE_SM =’D1’”
```

**Filter syntax for TBCD**
Use single or double quotes for TBCD digits. However, when you use a sub-set of TBCD digits in a filter string, you must use double quotes.

**Example**
For TBCD digits:

```
AMADUMP>> filter add 17 ANISP ==’5124599628’
AMADUMP>> filter add 17 ANISP ==”5124599628”
```

**Example**
For a sub-set of TBCD digits:

```
AMADUMP>> filter add 17 ANISP ==”51245996”
```

**Filter syntax for BCD**
Use single or double quotes for BCD digits. However, when you use a sub-set of BCD digits in a filter string, you must use double quotes.

**Example**
For BCD digits:

```
AMADUMP>> filter add 4 STRUCTURE_CODE ==’00001C’
AMADUMP>> filter add 4 STRUCTURE_CODE ==”00001C”
```

**Example**
For a sub-set of BCD digits:

```
AMADUMP>> filter add 4 STRUCTURE_CODE ==”00001”
```

**Filter syntax for BIN**
Use double quotes or no quotes for BIN digits. However, when you use a sub-set of BIN digits in a filter string, you must use double quotes.

**Example**
For BIN digits:

```
AMADUMP>> filter add 8 CALLDUR == 1310720
AMADUMP>> filter add 8 CALLDUR == “1310720”
```

**Example**
For a sub-set of BIN digits:

```
AMADUMP>> filter add 8 CALLDUR == “13107”
```

**Filter syntax for BIT**
Use single or double quotes for BIT digits. However, when you use a sub-set of BIT digits in a filter string, you must use double quotes.

**Example**
For BIT digits:

```
AMADUMP>> filter add 15 WBCKTS ==
‘1101000000000111111010011001111101’
AMADUMP>> filter add 15 WBCKTS ==
“1101000000000111111010011001111101”
```

**Example**
For a sub-set of BIT digits:

```
AMADUMP>> filter add 15 WBCKTS ==
“110100000000011111101001100111”
```

**Filter syntax for BOOLEAN**
Use only double quotes for BOOLEAN digits.

**Example**
For BOOLEAN digits:

```
AMADUMP>> filter add 17 VARLNGTH == “N”
```

### Filter syntax for HEX

Use double quotes for HEX digits, however do not use any quotes if you are entering the value in decimal equivalent.

**Example**

For HEX digits:

```
AMADUMP>> filter add 11 SCPBILL == “fe17700b”
AMADUMP>> filter add 11 SCPBILL == 4262948875
```

## Example of filter usage

The following example illustrates a dump of the AMA stream, selecting records where the call code is greater than 006, or the structure code is less than 00076. The dump command specifies the “or” logical relationshiop (||) that is to exist between the filters, and specifies the file name.

**Example**

```
> amadump ama
amadump>> filter add 5 CALL_CODE > ‘006C’
amadump>> filter add 6 STRUCTURE_CODE < ‘00076C’
amadump>> set display compact
amadump>> dump details sum filter “%5 || %6” fname
<filename>
```

# Activating or deactivating secondary file processing

Use the following procedure to activate or deactivate secondary file processing.

**ATTENTION**

You can activate or deactivate secondary file processing only when the SuperNode Billing Application (SBA) is either manually busy (ManB) or offline (Offl). Activation or deactivation takes effect when SBA is returned to service (RTS). Because busying the SBA places it into backup mode on the switch, be sure that adequate space is configured on the Communication Server 2000 core to prevent loss of billing.

**ATTENTION**

Data Process and Management System (DPMS) changes may be required to recognize and appropriately handle AMA records when secondary file processing is activated.

### Activating or deactivating secondary file processing

***At the CS 2000 Core Manager***

**1** Log into the CS 2000 Core Manager as the root user.

**2** Access the Maintenance level by typing

```
> sdmmtc
```

and pressing the Enter key.

**3** Access the Application level by typing

```
> appl
```

and pressing the Enter key.

**4** Busy the SuperNode Billing Application by typing

```
> bsy <x>
```

and pressing the Enter key.

*Where:*

**<x>** is the number next to the SDM Billing Application fileset

5 Quit the Maintenance level by typing

```
> quit all
```

and pressing the Enter key.

6 Access the Billing Maintenance level by typing

```
# billmtc
```

and pressing the Enter key.

7 Access the Application level by typing

```
> appl
```

and pressing the Enter key.

8 Access the Secondary File Processing (SFP) level by typing

```
> sfp
```

and pressing the Enter key.

Use the following table to determine your next step.

| If you want to | Type |
|---|---|
| verify whether secondary file processing is either activated or deactivated | > **query**, and press the Enter key. Use the **act** or **deact** command, as directed in this table, to either activate or deactivate secondary file processing. |
| activate secondary file processing | > **act**, and press the Enter key, then<br>> **y** or > **yes** to confirm, and press the Enter key.<br><br>Continue to step 9. |
| deactivate secondary file processing | > **deact**, and press the Enter key, then<br>> **y** or > **yes** to confirm, and press the Enter key.<br><br>Continue to step 9. |

9 Quit the Billing Maintenance level by typing

```
> quit all
```

and pressing the Enter key.

**10** Access the Maintenance level by typing

```
# sdmmtc
```

and pressing the Enter key.

**11** Access the Application level by typing

```
> appl
```

and pressing the Enter key.

**12** Return the SuperNode Billing Application to service by typing

```
> rts <x>
```

and pressing the Enter key.

*Where:*

**<x>** is the number next to the SDM Billing Application fileset

Secondary file processing is either activated or deactivated when SBA returns to service.

**13** You have completed this procedure.

# Listing billing files

Use this procedure to list all files currently stored for a specified SuperNode Billing Application (SBA) stream. You can specify additional criteria for listing files using optional parameters described in the table that follows this procedure.

### Listing billing files

***At the CS 2000 Core Manager***

**1** Log into the CS 2000 Core Manager.

**2** Access the billing maintenance interface by typing

**`# billmtc`**

and pressing the Enter key.

**3** Access the file system level by typing

**`> filesys`**

and pressing the Enter key.

**4** List the files currently stored in an SBA stream by typing

**`> listfile <stream_name> <optional_parameters>`**

and pressing the Enter key.

*where*

<stream_name> is the name of the billing stream. This parameter is mandatory.

<optional_parameters> is one or more of the optional parameters described in the table that follows this procedure

**Example**
To list all secondary files in the AMA stream, type

`> listfile ama state secondary` (general file formats)

or

`> listfile ama -s` (AMADNS file format)

**5** You have completed this procedure.

The following table describes <optional parameters> available for the listfile command.

| Parameter | Value | Definition |
|---|---|---|
| For AMADNS file format: | | |
| -a | | Lists all files (open, closedNotSent, and closedSent). |
| -b | hh[:mm[:ss]][.mm[/dd[/[yy]yy]]<br>examples:<br>8:00<br>1/12/03<br>12:00:00.2/23/03 | Further constricts the matching criteria for files. This parameter (begin time) states to list only the files that were created at this time and later. |
| -e | [hh[:mm{:ss]][.mm[/dd[/[yy]yy]]<br>examples:<br>8:00<br>1/12/03<br>12:00:00.2/23/03 | Further constricts the matching criteria for files. This parameter (end time) states to list only those files created before and up to, but not including, this time. |
| -f | file name | Specifies the file to list. The file name is in standard AMA format: [source component identifier].[destination component identifier].[file sequence number].[file type].[file sequence number restart indicator]. |
| -o | | Lists all open files. |
| -p | | Lists all primary files currently stored. |
| -q | integer | Further constricts the matching criteria for files. This parameter (sequence number) states to list only those files with a sequence number matching the value, or falling in the range of values stated by <value, value>. |
| -r <priority> | an integer between 1 and 4 representing DNS priority | States to list only the files with this priority. |

| Parameter | Value | Definition |
|---|---|---|
| -s | | Lists all secondary files. |
| -y <filetype> | an integer (0 to 32) | States to list only those files with this file type value. Default values are 1 for Standard AMA files and 2 for Error files. |
| For general file formats: | | |
| STATE (or state) <value> | PROCESSED, UNPROCESSED, PRIMARY, OPEN, or SECONDARY | Specifies which files in the stream are to be listed. For example, PROCESSED means all processed files are to be displayed. |
| BTIME (or btime) <date-time> | hh[:mm[:ss]][.mm[/dd[/[yy]yy]]<br>examples:<br>8:00<br>1/12/03<br>12:00:00.2/23/03 | Further constricts the matching criteria for files. BTIME (begin time) states to list only the files that were created at this time and later. |
| ETIME (or etime) <value> | [hh[:mm{:ss]][.mm[/dd[/[yy]yy]]<br>examples:<br>8:00<br>1/12/03<br>12:00:00.2/23/03 | Further constricts the matching criteria for files. ETIME (end time) states to list only those files created before and up to, but not including, this time. |
| SEQNUM (or seqnum) <value, value> | integer, integer<br>defines a range or integers that represent file sequence numbers | Further constricts the matching criteria for files. SEQNUM states to list only those files with a sequence number matching the value, or falling in the range of values stated by <value, value>. |
| FNAME (or fname) <filename> | file name | States to list only this one file with this file name. The exact file name must match the string entered. |

| Parameter | Value | Definition |
|---|---|---|
| FTYPE (or ftype) <filetype> | an integer (0 to 32) | States to list only those files with this file type value. Default values are 1 for Standard AMA files and 2 for Error files. |
| PRIO <priority> | an integer between 1 and 4 | States to list only the files with this priority. |

# Listing billing streams

Use this procedure to list the configuration information about a billing stream.

### Listing a billing stream

***At any workstation or console***

**1** Log into the CS 2000 Core Manager.

**2** Access the billing maintenance interface by typing

```
# billmtc
```

and pressing the Enter key.

**3** Access the configuration stream level by typing

```
> confstrm
```

and pressing the Enter key.

**4** Display the detail information about a stream by typing

```
> list <stream_name> or ALL
```

and pressing the Enter key.

*where*

<stream_name> is the name of the billing stream. Use this parameter to display the configuration information about the specified stream.

ALL indicates that you want to display the configuration information about all configured billing streams

**5** You have completed this procedure.

# Closing billing files

Use this procedure to manually close the current billing files. This procedure changes the state of the current files from open to closedNotSent.

### Closing billing files

***At the CS 2000 Core Manager***

**1** Log into the CS 2000 Core Manager.

**2** Access the billing maintenance interface by typing

```
# billmtc
```

and pressing the Enter key.

**3** Access the file system level by typing

```
> filesys
```

and pressing the Enter key.

**4** Close active billing files by typing

```
> closec <stream_name>
```

and pressing the Enter key.

*where*

<stream_name> is the name of the billing stream from which the files are to be closed

**Example**

```
> closec ama
```

**5** Refer to the following table to determine your next step.

| If the closec command | Do |
|---|---|
| returns a list of files it acted on | go to step 7 |
| does not return a file name | go to step 6 |

**6** List the primary files to verify that all files are closed. For instructions, refer to procedure Listing billing files in the Accounting section.

**7** You have completed this procedure.

# Sending billing files from disk

Use this procedure to transfer billing files from the CS 2000 Core Manager to one or more destinations.

***Note:*** This procedure applies only to billing streams configured for outbound file transfer (OFT) mode or real time billing (RTB).

## Sending billing files

### *At the CS 2000 Core Manager*

**1** Log into the CS 2000 Core Manager.

**2** Access the billing maintenance interface by typing

```
# billmtc
```

and pressing the Enter key.

**3** Access the file system level by typing

```
> filesys
```

and pressing the Enter key.

**4** Send the files downstream by typing

```
> sendfile <stream_name> <optional_parameters>
```

and pressing the Enter key.

*where*

<stream_name> is the name of the billing stream. This parameter is mandatory.

<optional_parameters> is one or more of the optional parameters described in the table that follows this procedure

***Note 1:*** The <stream_name> parameter must be first, but the order of the other parameters is not significant.

***Note 2:*** If you do not specify the destination (optional parameter), the files will be sent to all destinations for the stream.

**5** Refer to the following table to determine your next step.

| If the sendfile command | Do |
|---|---|
| is successful | go to step 7 |
| is not successful | go to step 6 |

6 If the system indicates that incorrect parameter values were entered, re-enter the command with the correct parameter values. Otherwise, observe the SDMB logs on the CM in logutil to determine why the sendfile command is not successful. If logs or alarms, or both are generated, refer to the Faults section for a corrective action procedure.

7 You have completed this procedure.

The following table describes <optional parameters> available for the sendfile command.

**(Sheet 1 of 4)**

| Parameter | Value | Definition |
|---|---|---|
| For AMADNS file format: | | |
| -d <destination> | alphanumeric string (up to 15 characters) | Specifies the name of the destination to which the billing files are sent. When the destination option is not specified, billing files are sent to all destinations under the same stream. |
| -b | hh[:mm[:ss]][.mm[/dd[/[yy]yy]]<br>examples:<br>8:00<br>1/12/03<br>12:00:00.2/23/03 | Further constricts the matching criteria for files. This parameter (begin time) states to send only the files that were created at this time and later. |
| -e | [hh[:mm{:ss]][.mm[/dd[/[yy]yy]]<br>examples:<br>8:00<br>1/12/03<br>12:00:00.2/23/03 | Further constricts the matching criteria for files. This parameter (end time) states to send only those files created before and up to, but not including, this time. |
| -f | file name | Specifies file to transmit. The file name is in standard AMA format: [source component identifier].[destination component identifier].[file sequence number].[file type].[file sequence number restart indicator]. |
| -p | | Sends all primary files. |

**(Sheet 2 of 4)**

| Parameter | Value | Definition |
|---|---|---|
| -q | integer | Further constricts the matching criteria for files. This parameter (sequence number) states to send only those files with a sequence number matching the value, or falling in the range of values stated by <value, value>. |
| -r <priority> | an integer between 1 and 4 representing DNS priority | States to send only the files with the specified priority. |
| -s | | Sends all secondary files. |
| -y <filetype> | 0 to 32 | States to send only those files with this file type value. Default values are 1 for Standard AMA files and 2 for Error files. |
| new_file_state | SENT or NOTSENT | Represents the new file state after it is sent. The default for this parameter is sent. A file with the state closedNotSent changes to closedSent once the file is transferred. If you enter notsent on the command line, the file state does not change to closedSent after the file is transferred. This is only applicable for files in the closedNotSent state (for example, primary or unprocessed). |
| For general file formats: | | |
| DEST <destination> | alphanumeric string (up to 15 characters) | Specifies the name of the destination to which the billing files are sent. When the destination option is not specified, billing files are sent to all destinations under the same stream. |
| STATE (or state) <value> | PROCESSED, UNPROCESSED, PRIMARY, or SECONDARY | Specifies which files in the stream are to be sent. For example, PROCESSED means that all processed files will be sent. |

**(Sheet 3 of 4)**

| Parameter | Value | Definition |
|---|---|---|
| BTIME (or btime) <date-time> | hh[:mm[:ss]][.mm[/dd[/[yy]yy]]<br>examples:<br>8:00<br>1/12/03<br>12:00:00.2/23/03 | Further constricts the matching criteria for files. BTIME (begin time) states to send only the files that were created at this time and later. |
| ETIME (or etime) <value> | [hh[:mm{:ss]][.mm[/dd[/[yy]yy]]<br>examples:<br>8:00<br>1/12/03<br>12:00:00.2/23/03 | Further constricts the matching criteria for files. ETIME (end time) states to send only those files created before and up to this time, but not including this time. |
| SEQNUM (or seqnum) <value, value> | integer, integer<br>defines a range or integers that represent file sequence numbers | Further constricts the matching criteria for files. SEQNUM states to send only those files with a sequence number matching the value, or falling in the range of values stated by <value, value>. |
| FNAME (or fname) <filename> | file name | States to send only this one file with this file name. The exact file name must match the string entered. |
| FTYPE (or ftype) <filetype> | an integer between 0 and 32 | States to send only those files with this file type value. Default values are 1 for Standard AMA files and 2 for Error files. |

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| Parameter | Value | Definition |
|---|---|---|
| PRIO (or priority) | an integer between 1 and 4 | States to send only the files with this priority. |
| new_file_state | SENT or NOTSENT | Represents the new file state after it is sent. The default for this parameter is sent. A file with the state closedNotSent changes to closedSent once the file is transferred. If you enter notsent on the command line, the file state does not change to closedSent after the file is transferred. This is only applicable for files in the closedNotSent state (for example, primary or unprocessed). |