

PLN-5051-004

**Product Computing-Module Load (PCL) Release Document
SDM0010 ReIDoc**

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NORTEL
NORTHERN TELECOM

About this document

When to use this document

The DMS-100 Family Software Product Computing Module Load Release Document (Release Document) is supplied for each software release. This Release Document provides software feature information for features new or changed in the new software load.

How to check the version and issue of this document

The version and issue of the document are indicated by numbers, for example, 01.01.

The first two digits indicate the version. The version number increases each time the document is updated to support a new software release. For example, the first release of a document is 01.01. In the *next* software release cycle, the first release of the same document is 02.01.

The second two digits indicate the issue. The issue number increases each time the document is revised but rereleased in the *same* software release cycle. For example, the second release of a document in the same software release cycle is 01.02.

How this document is organized

This document refers to feature numbers (featids) plus streams and releases. Streams and releases are made up of several features. Features are designed by BNR against a BNR featid.

The Release Document consists of cross reference tables and feature content sections.

Cross Reference Tables

The following cross reference tables appear in every Release Document

Table 1: New Features to Stream and Release Cross Reference

This table lists all features new to the release that are included in the Release Document. The stream and release are for each BNR featid .

Table 2: Documented Feature by Stream and Release

This table lists all documentation listed in the feature content section (indicated by 'Y'). The documentation is sorted first by stream and release and then by featid within the stream and release. This table indicates which sections are included in the Release Document. Features found in Table 2 may not be found in this table because there may not be any publishable sections available. For changed documentation (indicated by a 'C') the stream and release column indicates the stream and release the feature was first released in.

Table 3: Feature to Stream and Release Cross Reference

This table lists featid plus corresponding stream and release.

Table 4: Feature Title to Feature Cross Reference

This table lists all features by feature titles. This table should not be used as the basis for an exhaustive search, since the title does not always contain the keyword desired.

Table 5: Project to Feature Cross Reference

This table lists features sorted by project.

Table 6: History

This table lists new and changed features by feature ID, sections, stream, and release.

Feature Content Sections

The feature content sections contain the DMS-100 Family System documentation for features new or changed in the software release. Each office configuration is customized to meet Telco/Carrier requirements. The following sections include information necessary to determine that the system software changes have occurred since the last software release.

Note: Only features NEW or CHANGED in the release are included in the Release Document

Functional Descriptions (FN)

Summarizes the functions of the feature

Data Schema (DS)

Indicates major additions/changes to the Data Schema table

Logs (LG)

Indicates major additions/changes to the LOGs

Office Parameters (PARM)

Indicates major additions/changes to the PARMs

Operational Measurements(OM)

Indicates major additions/changes to the OM groups

Man-Machine interface (MM)

Indicates major additions/changes to the LOGs

Service Order (SO)

Indicates major additions/changes to SERVORD

Automatic Message Accounting (AM)

Indicates major additions/changes to the AMA

Table 1: New Features to Stream and Release Cross Reference

Featid	Title	Stream and Release
		DDMS10
AF7649	DDMS CATALOG SERVER	
AF7650	EXTERNAL VIEW SERVER/SCHEMA SERVER	
AF7652	TRAVER GUI FOR GUIDE	
AF7654	FINDREF FUNCTIONALLITY IN GUIDE	
AF7655	MARCH INTERFACE TO DDMS	
		ETA10
SD1005	ETA PHASE II	
		PLAT10
SD1002	SDM SUPPORT FOR SDM ON-LINE UPGRADE VIA	
		SBA010
AF7546	SBA ARCHITECTURE EVOLUTION	
AF7547	AMADNS DECOUPLING FROM BASE BILLING	
		SWD02
SD1003	SDM S/W INVENTORY MANAGER	
		TL10
AF7463	SBA CM-SIDE BILLING ENHANCEMENTS	

Table 2: Documented Feature by Stream and Release

Stream and Release	Featid	FN	LG	DS	MM	OM	SO	AM
DDMS10	AF7649	Y						
	AF7650	Y						
	AF7652	Y						
	AF7654	Y						
	AF7655	Y	Y		Y			
ETA10	SD1005	C						
PLAT10	SD1002	C	C		C			
SBA010	AF7546	Y	Y	Y	Y			
	AF7547	Y	Y	Y				
SWD02	SD1003	Y			Y			
TL10	AF7463	Y						

Table 3: Feature to Stream and Release Cross Reference

Featid	Title	Stream and Release
AF7463	SBA CM-SIDE BILLING ENHANCEMENTS	TL10
AF7546	SBA ARCHITECTURE EVOLUTION	SBA010
AF7547	AMADNS DECOUPLING FROM BASE BILLING	SBA010
AF7649	DDMS CATALOG SERVER	DDMS10
AF7650	EXTERNAL VIEW SERVER/SCHEMA SERVER	DDMS10
AF7652	TRAVER GUI FOR GUIDE	DDMS10
AF7654	FINDREF FUNCTIONALLITY IN GUIDE	DDMS10
AF7655	MARCH INTERFACE TO DDMS	DDMS10
SD1002	SDM SUPPORT FOR SDM ON-LINE UPGRADE VIA	PLAT10
SD1003	SDM S/W INVENTORY MANAGER	SWD02
SD1005	ETA PHASE II	ETA10

Table 4: Feature Title to Feature Cross Reference

Title	Feature ID
AMADNS DECOUPLING FROM BASE BILLING	AF7547
DDMS CATALOG SERVER	AF7649
ETA PHASE II	SD1005
EXTERNAL VIEW SERVER/SCHEMA SERVER	AF7650
FINDREF FUNCTIONALLITY IN GUIDE	AF7654
MARCH INTERFACE TO DDMS	AF7655
SBA ARCHITECTURE EVOLUTION	AF7546
SDM SUPPORT FOR SDM ON-LINE UPGRADE VIA	SD1002
TRAVER GUI FOR GUIDE	AF7652

Table 5: Project to Feature Cross Reference

Project	Featid	Title
BILLINGRP	AF7546	SBA ARCHITECTURE EVOLUTION
	AF7547	AMADNS DECOUPLING FROM BASE BILLING
DDMSBASE	AF7649	DDMS CATALOG SERVER
	AF7650	EXTERNAL VIEW SERVER/SCHEMA SERVER
	AF7652	TRAVER GUI FOR GUIDE
	AF7654	FINDREF FUNCTIONALLITY IN GUIDE
	AF7655	MARCH INTERFACE TO DDMS
GLTRTP	AF7463	SBA CM-SIDE BILLING ENHANCEMENTS
SNOAMP	SD1002	SDM SUPPORT FOR SDM ON-LINE UPGRADE VIA
	SD1003	SDM S/W INVENTORY MANAGER
	SD1005	ETA PHASE II

Table 6: History

Featid	Sect	New	Changed
AF7463	FN	TL10	
AF7546	FN	SBA010	
	LG	SBA010	
	DS	SBA010	
	MM	SBA010	
AF7547	FN	SBA010	
	LG	SBA010	
	DS	SBA010	
AF7649	FN	DDMS10	
AF7650	FN	DDMS10	
AF7652	FN	DDMS10	
AF7654	FN	DDMS10	
AF7655	FN	DDMS10	
	LG	DDMS10	
	MM	DDMS10	
SD1002	FN	PLAT07	PLAT10
	LG	PLAT07	PLAT10
	MM	PLAT07	PLAT10
SD1003	FN	SWD02	
	MM	SWD02	
SD1005	FN	ETA04	ETA10 ETA10 ETA10

Functional Description List of Features

af7463
af7546
af7547
af7649
af7650
af7655
sd1002
sd1003
sd1005

1. Functional description (FN)

1.1 Feature title

SDM CM-Side Billing Enhancements.

1.2 Feature synopsis

This feature provides more enhancements that have been determined to increase the functionality of the CM side of the SDM billing system.

1.3 Functional overview

This feature corrects an OAMP status display problem that existed in previous releases. Now the status displayed reflects the correct status of the system.

This feature also provides various robustness enhancements on the CM side of the SDM Billing Application. The robustness enhancements are internal changes that do not impact any external customer interfaces.

1.4 Feature description

This feature addresses incorrect status display of SBA. In the CM MAPCI user interface, level MTC;APPL;SDMBIL, when a stream is POSTed, sometimes the status for the stream displays InSV for Inservice when the system is actually still recovering files for the stream. The status will be changed to Rcvy for Recovery.

All the other enhancements of this feature are internal changes that do not impact any external user interfaces. These enhancements will continue to increase the basic stability and expendability of the CM side of the SBA application. For completeness, they are listed here:

- When CM finish sending all the recovery stream files to SDM, it needs to send a new ResetStop message to SDM.

- When CM side changes the status of a stream from BOTH to OFF, it needs to send a new message ResetOff to SDM and waiting for ACK before it really turns the stream off. The SDM side can clean things up when it receives this message.
- Correct backup file names that become corrupted when a backup file is forcefully deleted from a volume on the CM. This was found internally because only designers would do such things in the testing.
- Suspend the near real time timer when the stream suspends sending any additional data messages due to the maximum number of data messages buffered on the SDM (set to 20 now) has been reached, which means the SDM is not able to handle more data messages.
- Enhance the BUFMON tool which is used internally by designers.

1.4.1 Message Protocols

Communication between the SDM and CM is internal to the SDM Billing Application.

1.5 Supplementary information: Engineering/Hardware

1.5.1 Engineering hardware information

There are no new hardware requirements introduced by this feature.

1.6 Supplementary information: DDOC sections

1.6.1 Logs (LG)

There are no log changes introduced by this feature.

1.6.2 Data schema (DS)

There are no table changes introduced by this feature.

1.6.3 Service orders (SO)

Not Applicable.

1.6.4 Man machine interface (MM)

Not Applicable.

1.6.5 Operational measurements (OM)

Not Applicable.

1.6.6 AMA/Billing information (AM)

Not Applicable.

1.7 Feature impact

1.7.1 Interactions

Communication protocol changes are required on the SDM side of the Billing Application to support this feature. This protocol is internal to the SBA system.

1.7.2 Restrictions/limitations

None.

1.8 Definitions & abbreviations

CM - Computing Module

OAMP (OAM&P) - Operations, Administration, Maintenance, and Provisioning

SBA - SDM Billing Application

SDM - Supernode Data Manager

1.9 References

AF6522 SDM Billing Communication Framework

AF6523 Billing Buffering System to Support SDM Billing Platform

AF6524 SDM Billing Auxiliary Storage

AF6525 AMADNS OAM&P

AF6912 SDM Billing Enhancements

AF7313 CM-Side Performance Enhancements

AF7314 CM-Side Billing Enhancements

2. AF7546 Functional description (FN)

2.1 Feature title

AF7546 Supernode Billing Application (SBA) Architecture Evolution

2.2 Feature synopsis

The original requirements for SBA described a billing solution that provided:

1. Billing capacity relief for SuperNode (DMS, GSM, and MTX, etc.) switches
2. Near real time delivery of billing to the customer's revenue accounting office (RAO) (Near real time delivery is a minimum of five minutes from call completion.)
3. Processing of multiple record formats
4. Specialized preprocessing of records or groups of records that will enable screening/filtering of billing records routed to the RAO.
5. The ability to route records to multiple downstream destinations within an OSI teleprocessing network.

The initial response to the requirements was the SuperNode Billing Application (SBA), SBA08. That version of the product provided billing capacity relief for the DMS100/200 and near real time delivery of BAF records to a customer's RAO.

In SBA010, the billing application base is de-coupled from the Bellcore AMA Format (BAF)/AMA Data Networking System (AMADNS) software with which it has been merged since SBA08. This allows applications using non-BAF record formats and non-FTP transmission protocols to be built onto the base platform. The base platform is also enhanced to support up to sixteen streams of billing records with one destination per stream. In addition to providing many user-tailor-able features that enhance data integrity and data tracking, the platform design also provides a robustness that will easily accommodate future billing specialized processing applications (BSPAs).

2.3 Functional overview

AF7546 provides developers in all DMS markets with a billing platform capable of performing real-time processing on billing records without use of DMS resources.

The SBA platform:

- Provides Computing Module (CM) to (Supernode Data Manager) SDM connectivity and an application protocol that reliably moves billing records from the CM to the SDM,
- Supports up to sixteen billing streams with one destination per stream,
- Supports AMADNS and DIRP file formats,
- Provides billing application design teams a place holder for their billing streams and formats,
- Provides reliable File Transfer Protocol (FTP) transmission capabilities,
- Provides billing application design teams with a place holder for their preferred file transfer mechanism,
- Provides an enhanced user interface that supports more than one billing stream,
- Provides a flexible mechanism for scheduling file transfers through the user interface rather than the Management Information Base (MIB) interface,
- Enhances the AMADUMP tool to display any type of formatted billing record provided the applicable record parsing engine is developed by the application design team,
- Provides abstracted portions of the (MIB) so that common MIB parameters are contained in a base MIB and application-specific parameters are contained in their respective MIB's
- Provides the ability for application teams to register their logs and alarms with the platform. The SBA platform provides a logging mechanism that sends SBA logs to the CM and allows for alarms to be viewed on the CM at the SDBIL level.
- Provides an SBA installation process that is fully compatible with the SDM Split-Mode Feature

This feature provides an architecture that can be extended by other billing application teams. However, only BAF records with the AMADNS file format is supported for DMS100/200 customers in the SBA010 release. In addition, only the FTP transmission protocol is supported for DMS100/200 customers.

2.3.1 Background

With AMADNS, Bellcore introduced a new teleprocessing standard to replace the existing AMA Teleprocessing System (AMATPS) standard. Nortel developed the SuperNode Billing Application in the SBA08 release to increase DMS teleprocessing products' capacity, power and interfaces in support of the AMADNS standard. The SuperNode Billing Application enabled Nortel to provide operating companies with a robust billing platform that is architected for consistency with Bellcore's AMADNS.

The SuperNode Billing Application features:

Open-systems-interface teleprocessing which facilitates higher data transmission rates thus supporting larger volumes of data

Near-real-time BAF record delivery which makes call records available for delivery from the SDM within 5 minutes of call completion

Enhanced switch capacity which results in the off-loading of billing-related processing from the DMS to the SDM.

The SuperNode Billing Application significantly increases the billing capacity of SuperNode and provides a flexible architecture consistent with the AMADNS standard.

The SuperNode Billing Application provides a distributed, high capacity, scalable billing system that enhances the functionality of all SuperNode switch types. The SuperNode Billing Application supports open system interfaces and file transfer protocol (FTP), and has the processing capacity to overcome scale-ability problems inherent in current CM-based and adjunct-based billing systems.

For more information on the SBA product as delivered in the previous releases, refer to the SBA08 SBA Product Specification (FMDOC SBAPSPEC.AA03).

2.4 Feature Description

2.4.1 Billing Record Streams

In SBA, records are moved in components called streams until they are placed in DIRP or AMADNS billing files in SDM disk storage. Streams are named in the datafill of Tables SDBILL and CRSFMT. There are multiple streams on the SDM but for this release, only one file format type (DIRP or AMADNS) is active per stream at one time.

The SBA base software does not contain any reference to specific record formats. In the SBA010 release, BAF/AMADNS and CDR/DIRP record formats and file types will be developed on top of the SBA base software. The base maintains the independence of stream file transfers and is written in a way that allows for other development groups to add other formats easily.

2.4.2 Stream Configuration

A stream can be configured via the user interface command ConfigStr. This command alters MIB-stored parameters that specify characteristics of the stream including logical volume utilization and occupancy, alarm thresholds, and closing of files.

For each stream configured, the following requirements must be met:

1. The exact stream name specified in table SDMBILL must be used in the appropriate Management Information Base (MIB) elements.
2. The software for the specified stream format (BAF or CDR) must be loaded in the system.
3. A logical volume (collection of physical disks to be used for stream buffers) must be configured in the MIB, and allocated in DATAVG.

2.4.3 File Transfer Scheduling

File Transfer scheduling is enhanced in the following ways:

- This feature provides a user-friendly interface to the file transfer. The file transfer schedule is accessed from the user interface RMI rather than from the MIB interface.
- Allows the scheduling of file transfers on a per billing stream and per file format basis. Note that a scheduled file transfer can be active or inactive, with active schedules causing file transfers to occur. Also, only primary files, that is, files that have not been transferred to a desired location, can be scheduled for transfer.
- Provide the ability to define a different file transfer schedule interval for each tuple in the schedule.

2.4.3.1 Scheduling Interface

This section contains a table representing the File Transfer Schedule and examples and notes that illustrate the effects that the given datafills have on the file transfers of billing records.

Table 1 Schedule Table Fields and Example Datafill

Field Name	Tuple 1	Tuple 2
StreamName	AMA	CDR10
File Format	AMADNS	AMADNS
File Transfer Protocol	FTP	FTP
Primary Destination (IP Address)	47.303.111	47.606.111
Active Status	Active	Inactive
Start Time	10:00	00:00
Stop Time	22:00	00:00
File Transfer Interval (minutes)	15	60
RegistrationID	14	8
File Criteria	primary	primary
Secondary Destination (IP Address)	47.303.222	47.606.222
Remote Store Directory	/usr/billing/data/AMA	/usr/billing/data/cdr
Destination Login ID	admin	admin
Destination Login Password	xxxxxxx	xxxxxxx
File Transfer Control Timeout (seconds)	300	300
File Transfer Max Consecutive Retries	3	6
File Transfer Retry Wait Time	20	20
Field Separator	-	
Filename Extension	pri	pri
MIB Row Number	1	

Refer to Table 1 when reading the following notes:

1. Each stream can have only one tuple. Each tuple can have either an ACTIVE or INACTIVE STATUS.
2. Tuple 1 causes file transfers of AMA billing records (with file format of AMADNS) to the indicated primary destination to occur at 15 minute intervals, beginning at 10:00 a.m. and ending at 10:00 p.m. Note that the ACTIVE STATUS field is set to ACTIVE. If the tuple were INACTIVE, it would not cause file transfers.
3. Because Tuple 2 has a file transfer interval of 0 and the start and stop time are the same, no files will be transferred even with the ACTIVE STATUS field is set to ACTIVE.
4. Tuple 3 is datafilled to cause file transfers of CDR billing records (with file format of AMADNS) to the indicated primary destination once every 60 minutes, starting at 00:00. Since the stop time is the same as the start time, the billing records will perpetually be transferred at 60 minute intervals. No files will be transferred until the ACTIVE STATUS field is set to ACTIVE.,
5. The Field Separator field of tuple 1 is datafilled with '-.' This replaces the '.' used in AMADNS file names transmitted downstream as a result of this tuple. This parameter does not effect the names of files on the SDM. If the Field Separator were set to '_' the file stored on the SDM as 020001.030002.00001.02.1 will be transmitted as 020001_030002_00001_02_1 to the downstream location.
6. The File name Extension field adds a file name extension to the transmitted file. The extension can be up to 3 characters in length. The extension separator '.' is assumed. If this field set to 'pri' the file stored on the SDM as '020001.030002.00001.02.1' will be transmitted as '020001.030002.00001.02.1.pri' to the downstream location.

2.4.4 File Status Terminology

In the previous releases of SBA, the transmission status of a specific file was indicated by the directory it was located in: files in the **PRIMARY** directory (“primary files”) were awaiting FTP transmission to the customer’s downstream site; files in the **SECONDARY** directory (“secondary files”) were copies of files that had been successfully FTP’d to the customer’s downstream site. When the accumulating secondary files forced available disk storage below a user-specified threshold, the SBA purged the oldest secondary files.

In public carrier networks using AMATPS, the equivalent terms for primary and secondary were **UNPROCESSED** and **PROCESSED**.

In SBA010 all files assembled in the SDM will be marked as either **NOT SENT** and **SENT**.

2.4.5 Workflow Descriptions

For the following workflow descriptions, refer to “Figure 1 SBA Overview” and “Figure 2 Stream-Specific Processing”. Note that the subsystems and components labeled with reverse numbers are described in SBA Subsystems and Component Descriptions.

Figure 1 SBA Overview

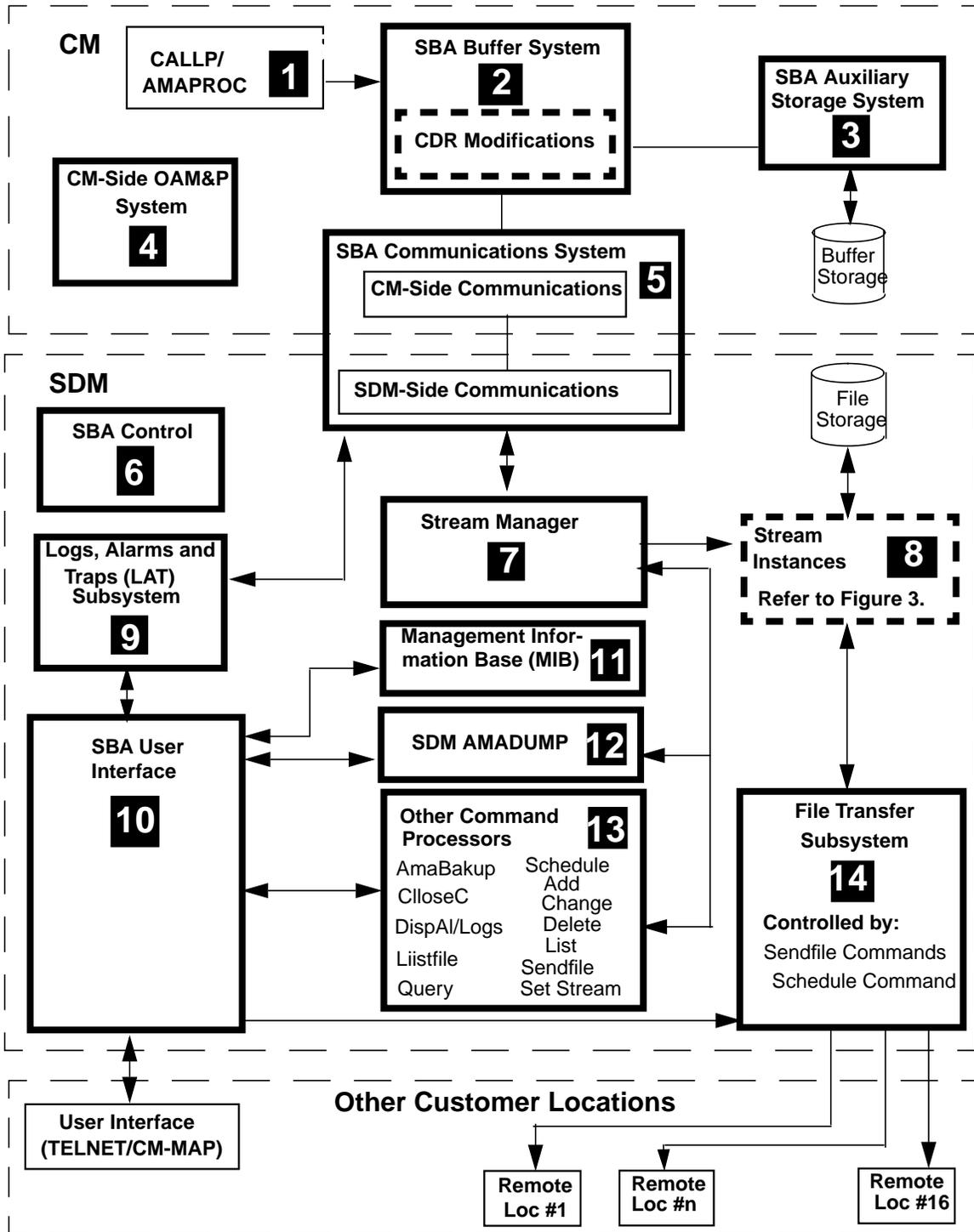
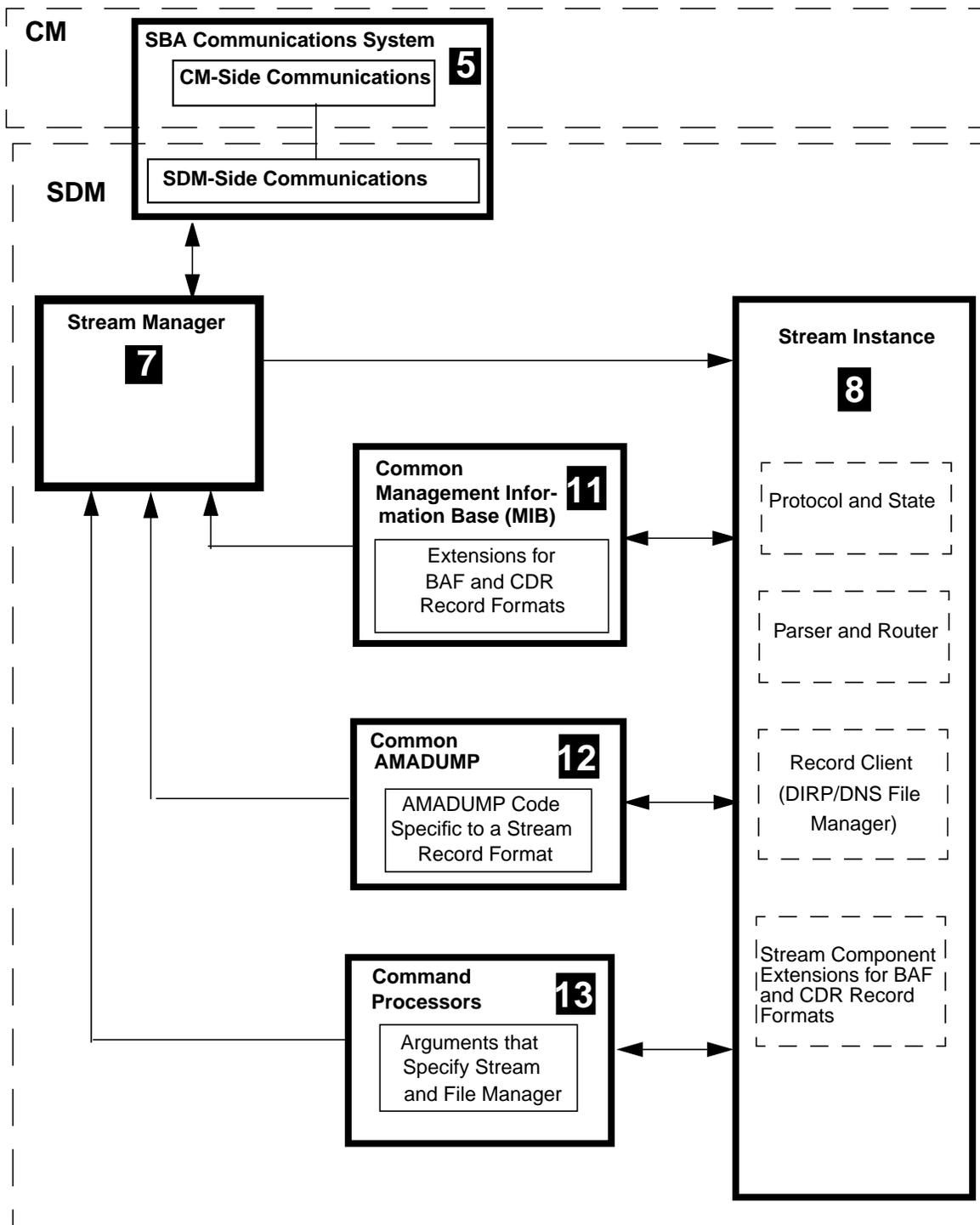


Figure 2 Stream-Specific Processing



2.4.5.1 CM-Side Workflow

The SBA Buffer subsystem receives billing records from CALLP/AMAPROC, buffers them, then passes them to the Communications subsystem for transmission to the SDM.

If the Buffer subsystem detects that a condition in the SDM or Communications subsystem will not allow SDM to process the records, the Buffer subsystem routes the records to the SBA Auxiliary Storage subsystem which then stores the records in non-volatile (disk) storage.

When it receives direction from the Buffer subsystem, it routes the stored records to the Buffer subsystem as a recovery stream.

The CM-Side of the Communications subsystem receives stream-differentiated buffers from the Buffer subsystem and passes them to the SDM-Side of the Communications subsystem using UDP.

In addition to the routing of billing records and their associated acknowledgments, the Communications subsystem also routes logs and alarms and their associated acknowledgments between the SDM-side Logs, Alarms, and Traps (LAT) subsystem and the CM-Side OAM&P subsystem.

2.4.5.2 SDM-Side Workflow

The SDM-Side of the Communications subsystem receives stream-differentiated buffers and passes them to the appropriate stream instances.

A stream instance contains certain components:

- a protocol/state component which receives the buffers from the CM,
- a parser/route component which parses the billing records from the buffer, and
- a file manager component which stores the records into files and places them on the disk.

The Stream Manager component maintains the states of the stream instances. It also initially interfaces to the appropriate stream instance to process requests for records on behalf of the File Transfer subsystem, the AMADUMP command, and other command processes.

The File Transfer subsystem provides the interface between SBA and the remote customer locations. It handles the file transmission and transmission scheduling.

The SBA User Interface, also known as the Remote User Interface (RMI) is similar to that provided by SDM. Through the RMI, the user can schedule file transmissions, list and send files, set the stream context for subsequent commands, query a stream, close a current file, view/set MIB parameters, and configure a stream.

2.4.5.3 Customer Premises Workflow

The remote locations receive records sent by the File Transfer subsystem, differentiated by selection criteria and stream. SBA allows only one remote location per stream.

The user interface is a map-like interface that the customer accesses via TELNET. The user's **root** or **maint** sign-on determines which commands and command parameters are available.

2.4.5.4 Application Interfaces to the Billing Platform

The primary application interface to Billing Platform is through the Stream Instance **8**. It includes the appropriate components to:

- Receive messages from the CM
- Extract billing records from the messages
- Send acknowledgments to the CM for records safely retrieved
- Storing the billing records in the file format configured for the stream
- Managing the creation, deletion and changes to the files
- Providing other SBA components with access to files and other stream data

Individual applications also have interfaces to, and non-executable components in, the MIB **11** and SDM AmaDump **12**. For additional details, refer to the appropriate sections below.

2.4.6 SBA Subsystem and Component Descriptions

For the following descriptions, refer to the reverse number keys,

1 AMAPROC

AMAPROC and CALLP build records for calls and send the records to the SBA Buffer subsystem. AMAPROC is invoked by billing software on the CM.

This description is included here for overview purposes only. Any changes to this function for SBA010 will be documented in FMDOC AF7463.AA01.

2 SBA Buffer Subsystem

The SBA Buffer subsystem stores billing records generated at the CM for transmission to the SDM. In normal mode, it dumps all full buffers to the communications client.

The SBA Buffer subsystem triggers *back up mode* when it detects any of the following:

- All of its allocated buffers are full
- Volatile storage contains more than 9000 records
- The SDM has not acknowledged receipt of full buffers within 3 minutes

When the outage that forced backup mode is resolved, the Buffer subsystem triggers transition to recovery mode, to allow recovery of data backed up in auxiliary storage. In recovery mode, the SBA Buffer subsystem processes both *Active Buffers* and *Recovered Buffers*.

This description is included here for overview purposes only. Any changes to this function for SBA010 will be documented in FMDOC AF7463.

3 Auxiliary Storage Subsystem

In backup mode, the auxiliary storage subsystem receives billing records from the SBA buffer subsystem; in recovery mode, it passes billing records to the SBA Buffer subsystem.

This description is included here for overview purposes only. Any changes to this function for SBA010 will be documented in FMDOC AF7463.

4 CM-Side OAM&P Subsystem

The CM-Side OAM&P System provides support for the CM-side SBA functions and the SDM-side SBA logs, alarms and traps.

This description is included here for overview purposes only. Any changes to this function for SBA010 will be documented in FMDOC AF7463.

5 SBA Communications Subsystem

This component of the system handles the two-way communications between the CM and other components of SBA.

6 SBA Control

Because the SuperNode Billing Application is optional software for the SDM, it requires its own installation and control functionality within the SDM operational environment. SBA Control provides this functionality by monitoring and controlling SBA daemon processes. As part of its function, SBA Control enables user control (BSY/RTS) of the SBA from the user interface **sdmmtc** level. Primary functions of SBA Control are:

- Register with **SAM** and provide a level of control from the SDM maintenance level by responding to BSY, RTS etc. commands
- Control processes in the SDM SBA system (start-up/shutdown)
- Restart failed processes according to predefined algorithms.

SBA Control has not changed for SBA010. For detailed information refer to "FMDOC of SuperNode Billing Application Product Specification for SBA008" .

7 Stream Manager

The Stream Manager controls the individual streams. It is responsible for creating and deleting the streams as well as routing messages from the Communications component to the appropriate stream. Finally, it provides a single point of contact for the user commands to gain access to a particular stream.

8 Stream Instances

This component represents a stream of billing data. There may be more than one of these entities active at one time in the SBA. It is responsible for the following:

- receiving messages from the CM
- extracting billing records from the messages
- acknowledging the CM for records safely retrieved
- storing the billing records in the appropriate file format as configured for the stream
- managing the creation, deletion and changes to the files
- providing other SBA components with access to files and other stream data

Each instance has components of the following:

Protocol and State Message Receiver - receives messages and passes buffers. The *SBA base portion* handles protocols and manages state transition.

The *stream specific portion* extends the message set and overrides base handling of protocol.

Parser/Router - receives buffers and parses records. The *SBA base portion*:

- Allows record clients (BSPAs or File Manager) to register for records
- Sends applicable records to registered clients and verifies transmission
- Validates buffers

The *stream specific portion* creates records from buffers, validates them and defines and matches selection criteria.

Record Client -manages the files. The *SBA base portion* registers with Parser/Router, and receives and acknowledges records

The *file manager portion* of the base:

- Opens file, writes record, closes file
- Provides files to clients and handles file state
- Manages the volume on the disk and handles logs and alarms for the subsystem

The commands, Sendfile and Amabakup, and the File Transfer subsystem can move files to a new state by interfacing with the File Manager when they have finished with a file.

The *DIRP file manager portion* of the base names files, specifies 2K-block size, and specifies file structure and DIRP-specific event records.

The *DIRP stream specific portion* (the application for DIRP processing) provides optional and or required extensions.

9 SDM-Side Logs, Alarms, and Traps (LAT) Subsystem

The Logs, Alarms and Traps component of SBA takes the logs and alarms from all components in the SBA's SDM side and sends them to the CM for reporting through LOGUTIL.

The logs are sent to the CM as SDMB logs; the alarms are raised in the mapci;mtc;appl;sdmbil level. If a communications problem prevents their delivery to the CM, the logs and alarms can be viewed in the billmtc level.

For SBA010:

- A stream cannot issue an alarm unless it is registered with the LAT subsystem for one of the nine alarm slots
- SBA logs displayed on the SDM will indicate the stream with which they are associated.

10 SBA User Interface

There are several existing commands that are supported with this release. However, with the addition of the multiple streams support, the user commands have been enhanced. All of the existing commands with the exception of DispLogs and DispAl are enhanced to accept a stream parameter. In addition, new commands are provided. Refer to the MM section for syntax and display details.

11 Management Information Base (MIB) Subsystem

This component is based on the AMADNS standard. It provides storage of configuration and run-time data for the entire SBA system. It is equivalent to datafill on the CM.

For SBA010, the following modifications have been made:

SBA08 MIB base elements have been changed and deleted. New elements have been added for SBA010.

The MIB base is partitioned to allow format applications (such as BAF and CDR) to define and use their own application-specific MIB. This allows a change to a CDR-related MIB value, for example, to be in effect for all CDR streams.

12 SDM AMADUMP

AMADUMP is an SDM tool that is functionally similar to the AMADUMP on the CM. It allows users to filter and view billing records from both standard AMA files and DIRP formatted files. The output can further be refined by limiting the maximum number of records to search and display. In the case of DIRP formatted files, AMADUMP allows users to specify the start block of the record from which to begin the search.

For SBA010, AMADUMP is enhanced to be format independent which allows new structures to be added by extending AMADUMP's existing databases. Billing platform executables allows new record formats to be added by adding new databases.

The MM section contains user interface details. These include commands to add filters, specify numout, numsearch and numblock values, specify the range of files or time period and dump the records.

13 Common Command Processors

This represents other commands available in the RMI. See AF7546MM for details on these commands and their syntax.

14 File Transfer Subsystem

The file transfer subsystem contains a file transfer controller, which transfers files to remote customer locations, and a schedule manager which maintains the schedule for automatic file transfers.

Scheduled transfers can be specified by time of day, time interval, stream name, file format type (AMADNS or DIRP), and protocol type. (The platform provides the FTP protocol, but protocols supplied by platform applications can be specified.)

Following are semantics of a completed file transfer event:

- A file transfer event resolves at run-time to a list of files.
- The file transfer subsystem registers for files that it transfers with the stream. Once a file is transferred, the stream's File Manager will change the state of the file to indicate that it has been transferred.
- A file is considered transmitted and is reported as such to the File Manager when
 - all bytes have been transmitted downstream and acknowledged in some way appropriate to the underlying protocol,
 - the downstream file has the same name as the SDM copy, and
 - a message has been sent to and received by the File Manager.
- An event is considered to be complete when all files in the list to which it resolves have either been sent or have experienced the maximum number of retry attempts (as datafilled in the MIB).

2.5 Message Protocols

Communication between the CM and SDM is a proprietary protocol based on TCP/IP; this communication has no customer interface.

The SBA platform provides FTP transmission between SBA and the customer's remote locations. This feature also provides facilities for an application design team to implement a different protocol.

2.6 Supplementary information: Engineering/Hardware

2.6.1 Engineering hardware information

Refer to FMDOC SDMEI.AA07, the SDM product Engineering Information document.

2.7 Supplementary information: DDOC sections

2.7.1 Logs (LG)

SBA-related logs and alarms are display-able via the switch utility LOGUTIL or the SDM Remote Maintenance Interface (RMI). Refer to PLS DOC AF7546LG.AA03 for the details on the following:

2.7.1.1 New Logs

LOG NAME	LOG NUMBER	SYSTEM (SOS/UNIX)
SDMB	365	Stream-creation related
SDMB	390	Schedule related

2.7.1.2 Modified Logs

LOG NAME	LOG NUMBER	SYSTEM (SOS/UNIX)
SDMB	355	
SDMB	360	
SDMB	375	
SDMB	655	
SDMB	660	
SDMB	675	

2.7.2 Data schema (DS)

Refer to AF7546DS.AA03 for details of the MIB parameters and their descriptions).

2.7.3 Service orders (SO)

Not applicable

2.7.4 Man machine interface (MM)

Below is a list of SBA commands in the billing RMI and a brief description of each. See AF7546MM for command details and syntax.

- AmaBakup:

This is an existing command that is enhanced to allow the user to initiate a backup of billing data files from a particular stream to DAT (Digital Audio Tape) tape. There is a new option available for this command as well.

- AmaDump:

AMADUMP is an SDM tool that is functionally similar to the AMADUMP and CDRSEARCH on the CM. It allows users to filter and view billing records from both standard AMA files and DIRP formatted files. The output can further be refined by limiting the maximum number of records to search and display. In the case of DIRP formatted files, AMADUMP allows users to specify the start block of the record from which to begin the search.

- CloseC:

This is an existing command that is enhanced which allows the user to close the current open file or files for a particular stream.

- ConfigStr:

This is a new command which allows the user to configure a stream in a “user-friendly” way rather than having to use the MIB command directly.

- DispAl:

This is an existing command which has not been changed by this feature. It displays all the currently stored alarms on the SBA system. Refer to the Application Guide from SBA09 for details.

- DispLogs:

This is an existing command which has not been changed by this feature. It displays all the currently stored logs on the SBA system. Refer to the Application Guide from SBA09 for details.

- FTMode:

This is a new command that allows the user to configure the SBA file transfer component as either inbound or outbound. The File transfer component for a particular stream can only support inbound OR outbound file transfers at any given time, for a given stream. (Transfers are on a per-stream basis, not per-system.)

- ListFile:

This is an existing command that is enhanced which allows the user to list the files that are currently stored in a particular stream.

- MIB:

This is an existing command that is enhanced that allows the user to display the value of a configurable piece of data for a particular application specific MIB or the base MIB. It also allows the user to change the value of a configurable piece of data for a particular application specific MIB or the base MIB.

- Schedule:

This is a new command level which provides a set of sub-commands which allow the user to add, change, list or delete automatic file transfer scheduled events.

- SendFile:

This is an existing command that is enhanced which provides a mechanism to manually trigger the transmission of a file or set of files from a particular stream to the down stream processor.

- Set Stream:

This is a new command which allows the user to set a stream as a context for the next command(s) they wish to enter. In this release it is required that each command has a stream associated with it. Therefore, this command saves the user from typing the stream name in every time they invoke a command when they are just working with a particular stream.

- Query:

This is a new command which allows the user to display the state of a particular stream or all streams.

2.7.5 Operational measurements (OM)

Not applicable

2.7.6 AMA/Billing information (AM)

Not applicable

2.8 Feature impact

2.8.1 Interactions

Feature AF7547 provides the implementation of the BAF stream that is built on the SBA platform provided by this feature.

Feature AF7463 provides enhancements to the CM-side of SBA.

2.8.1.1 Logs

The logs are stored in the Managed Information Base (MIB) until they are acknowledged by the CM. If the CM and SDM cannot communicate, MIB storage overflow may force some logs to be sent to the SDM base group log API. Overflow processing dictates that the oldest non-alarm related logs be sent to the SDM base group log API; these logs are not automatically sent to the CM. As soon as communication is restored, all logs in the MIB will be sent to the CM.

2.8.1.2 Installation Dependencies

The routing for billing records in a stream must be selected using the `SDMBCTRL` command as follows on the CM map display:

MAPCI -> MTC -> APPL -> SDMBIL ->

SDMBCTRL AMA **BOTH** (route to both SBA Buffer system and DIRP Buffer system)

ON (route only to SBA Buffer system)

OFF (route to neither)

Logical volumes for the SBA Auxiliary Storage subsystem must be configured for each stream according to the guidelines set forth in SBA08. These volumes need to be in place to back up billing records on the CM in case the SBA system goes into Backup Mode.

2.8.1.3 Sendfile Command Interactions

In addition to regularly scheduled file transfer of billing records, files of billing records can also be transferred via the manual Sendfile command. The Sendfile command is available from the RMI (Remote Machine Interface). When manual and scheduled file transfers are to the same destination, interactions can occur.

SBA allows the craftsperson to choose whether to use Sendfile to change the state of the Sendfile file from closed-not-sent to closed-sent. The parameter that allows the craftsperson to control the state of the file is SENT or NOTSENT. If a craftsperson does not want to re-send a file via the scheduled file transfer, he uses the SENT argument with the Sendfile command. The file's state will then change to show that it has been sent. If the craftsperson wants to re-send the file with the scheduled file transfer, he would enter the NOTSENT argument with the Sendfile command. The file's state would then indicate that it had not been sent and the file would be transferred again via the scheduled file transfer. The default for the Sendfile command is to change the state of the file to show that it has been sent to the downstream processor. See AF7546MM for details of the Sendfile command

2.8.2 Restrictions/limitations

2.8.2.1 AMADUMP

AMADUMP on the SDM is not an exact replica of the AMADUMP on the CM. It has some functionality borrowed from CDR Search (DMS-250).

2.8.2.2 LAT

Because the nine alarm slots are allocated on a first-come-first-served basis, streams may not be able to secure a slot and will therefore be unable to raise alarms.

2.8.2.3 Streams

- Only one file format type, AMADNS or DIRP, can be active for a stream at one time.
- The DMS100/200 market the AMA streams is restricted to BAF record formatting and AMADNS file formatting.

2.8.2.4 Logs

- Logs might be sent to the SDM base groups customer log interface instead of to the CM, if any of the following conditions apply:
 - There is a problem with communications to the CM preventing logs and alarms from being sent to the CM
 - The Log and Alarm process cannot communicate with the communications process on the SDM.
- It is possible that an alarm could be raised and lowered, without detection, during an SDM-to-CM communications outage.

2.8.2.5 File Transfer

- For the DMS100/200 market, only the FTP protocol can be used to transfer billing files to the downstream collector.
- Transfer events initiated by the user interface should not be depended upon to complete if the user interface is terminated.
- When the Schedule command is used to schedule a stream transfer, the file format type selection is limited to whatever was configured via the Configstr command
- Only primary files, that is, files which have not been transferred to a desired destination, can be scheduled for a file transfer.
- If a file transfer is interrupted just after renaming a file to indicate that it is processed but before the File Manager has been notified, the effect to the downstream processor is that the file has been transferred, but to the SDM, it has not. The file will be re-transmitted later.
- Transfer events will not occur for a period coinciding with downtime of the system. The event will occur on schedule when the system is next running.
- The number of File Transfer processes or threads allowed at any one time is restricted via a datafill parameter in the MIB. Its default value is 10.
- Developers adding support for new protocol implementations must contact the SBA base code owner to obtain a protocol ID. This is a one-time requirement per development of a particular protocol.
- Though the Schedule Manager can cause an orderly shutdown of scheduled file transfers, it is still inadvisable to schedule file transfer events to closely precede split-mode or other shutdowns. In all cases, completely transferred files will be recorded as such by the File Manager, but because the completion time of any file transfer is unknown, any file transfers in progress must be stopped at a shutdown signal. When the file is finally transferred, the transfer process must start over from the beginning. In the case of large files or a large number of files, this interruption could be unacceptable; the solution is to complete major transfers where possible before signaling for shutdown.
- Events are not guaranteed to complete under some circumstances, nor does the completion of an event guarantee the transfer of all files to which it resolves. Automated recovery of such conditions is not provided for in this release.

- Overlap of files sent can occur. For example, it is possible that, say, files A, B, C, and D are sent to destination 1 by the scheduled file transmission and files C, D, E, and F are sent to destination 1 by executing the manual Sendfile command at approximately the same time. In this case, files C and D are sent to destination 1 twice. This situation is referred to as Sendfile - with duplicates.

2.9 Definitions & abbreviations

AMA

Automatic Message Accounting. One of the **billing streams** that originate in CALLP and AMAPROC, in the switch CM. The stream name is datafilled in Tables CRSFMT and SDMBILL.

AMADNS

AMA Data Networking System. One of the **file formats** that the SBA uses in SDM (disk) storage.

AMAPROC

The main billing process on the CM. Its function is to produce billing records of various types for the call processing system.

BAF

Bellcore AMA Format.

“Billing Base”

Used in developer documentation, within the SuperNode Billing Application context, to refer to the SBA010 de-coupled billing platform. (See *Billing Platform*, below.)

CDR

Call Detail Recording. One of the **billing streams** that originate in CALLP and AMAPROC, in the switch CM. CDR can also refer to a **record format** that is commonly used in carrier network switches.

DIRP

Device Independent Recording Package. One of the **file formats** that the SBA uses in SDM (disk) storage.

Billing Platform

The SBA010 de-coupled billing platform on which billing applications that use non-BAF record formats and non-FTP transmission protocols can be built.

MIB

Management Information Base. Configuration and other run-time information that is globally available to the billing platform and platform applications. The MIB includes user command and application programming interfaces.

RMI

Remote Maintenance Interface.

SBA

SuperNode Billing Application.

SDM

SuperNode Data Manager.

SNMP

System Network Management Protocol.

Stream

Within the SuperNode Billing Application context, refers to a container in which records are collected and routed until they are transferred to a customer location by the File Transfer System.

2.10 References

2.10.1 CSP08 and SBA08 Feature Documents

AF6938 - DPMS Agent, PLS FMDOC, PLS DOC
AF6939 - MIB Support, PLS FMDOC, PLS DOC
AF6941 - SBA Control, PLS FMDOC, PLS DOC
AF6942 - Persistent Store System, PLS FMDOC, PLS DOC
AF6944 - Stream Enhancements, PLS FMDOC, PLS DOC
AF6999 - DAT Backup, PLS FMDOC, PLS DOC
AF7010 - SDM Billing Logs and Alarms HLD in PLS FMDOC
AF6522 SDM Billing Communication Framework, PLS FMDOC
SBILCORE, SDM Core Components, PLS FMDOC, PLS DOC
SDESWKBK, chapter titled iter1, PLS FMDOC
AF6525 AMADNS OAM&P, PLS FMDOC, PLS DOC
AF6912 SDM Billing Enhancements, PLS FMDOC, PLS DOC
AF6522 SDM Billing Communication Framework, PLS FMDOC
BILLARCH, SDM Billing Architecture Workbook, BILLARCH, PLS FMDOC

2.10.2 CSP09 and SBA09 Feature Documents

AF7313 - CM-Side Performance Improvements
AF7314 - CM-Side Enhancements
AF7353 - SDM-Side Performance Improvements

2.10.3 CSP10 and SBA010 Feature Documents

AF7463 - CM-Side Enhancements
AF7547 - AMADNS De-coupling from Base Billing

2.10.4 Other Documents

Log User Guide, LOGUG, PLS FDOC95, Nortel
GR-1343-CORE "Generic Requirements for the Automated Message Accounting Data Networking System (AMADNS)", Issue 2 (Sept. 1996), Bellcore

3. AF7547 Functional description (FN)

3.1 Feature title

AF7547 BAF (Bellcore AMA Format) / AMADNS (Automatic Message Accounting Data Networking System) De-coupling from Base Billing

3.2 Feature synopsis

In this release of the Supernode Billing Application (SBA), the billing application base is de-coupled from the BAF/AMADNS software with which it has been merged since SBA08. This allows applications using non-BAF record formats and non-FTP transmission protocols to be built onto the base platform. This de-coupling effort is being accomplished under feature AF7546.

Feature AF7547 builds on top of the base platform provided with AF7546. AF7547 provides functionality required for AMA stream instantiation. Note that the billing records in the AMA stream are formatted using the BAF format.

3.3 Functional overview

Once the AMA stream is configured in SBA (see Stream Configuration below) and a message is received for the stream from the CM, this feature provides the functionality which creates the AMA stream.

This Functional Description describes the stream specific qualities of the components of the SBA system.

3.4 Feature description

3.4.1 Billing Record Streams

In SBA, records are moved in components called streams until they are placed in DIRP or AMADNS billing files in SDM disk storage. Streams are named in the datafill of Tables SDMBILL and CRSFMT. In SBA010, only one file format type (DIRP or AMADNS) can be active per stream at one time.

The SBA base software developed in AF7546 does not contain any reference to specific streams or record formats. This feature describes the functionality required to create the AMA stream on top of the SBA base software.

3.4.2 Stream Configuration

An AMA stream can be configured in SBA using the billing RMI command *ConfigStr*. This command alters MIB-stored parameters that specify characteristics of the stream including logical volume utilization and occupancy, alarm thresholds, and closing of files.

The following requirements must be met:

1. The exact stream name specified in table SDMBILL must be used in the appropriate MIB elements.
2. The software that supports the format of the stream must be loaded in the system.
3. A logical volume (collection of physical disks to be used for the billing files) must be configured in the MIB and allocated in DATAVG.
4. The file type must be specified as AMADNS.

Once the AMA stream is successfully configured, when the Computing Module (CM) sends the first message for that stream the SBA will create the AMA stream (stream instance).

3.4.3 Workflow Description

The following workflow description includes processing performed by both the base billing platform and BAF-specific components. In the reference graphics, “Figure 1 SBA System Overview” and “Figure 2 Stream-Specific Processing” the boxes representing unaltered portions of the platform are filled in gray. Boxes representing BAF-specific components, or BAF-altered components of the platform, are filled in white.

Figure 1 SBA System Overview

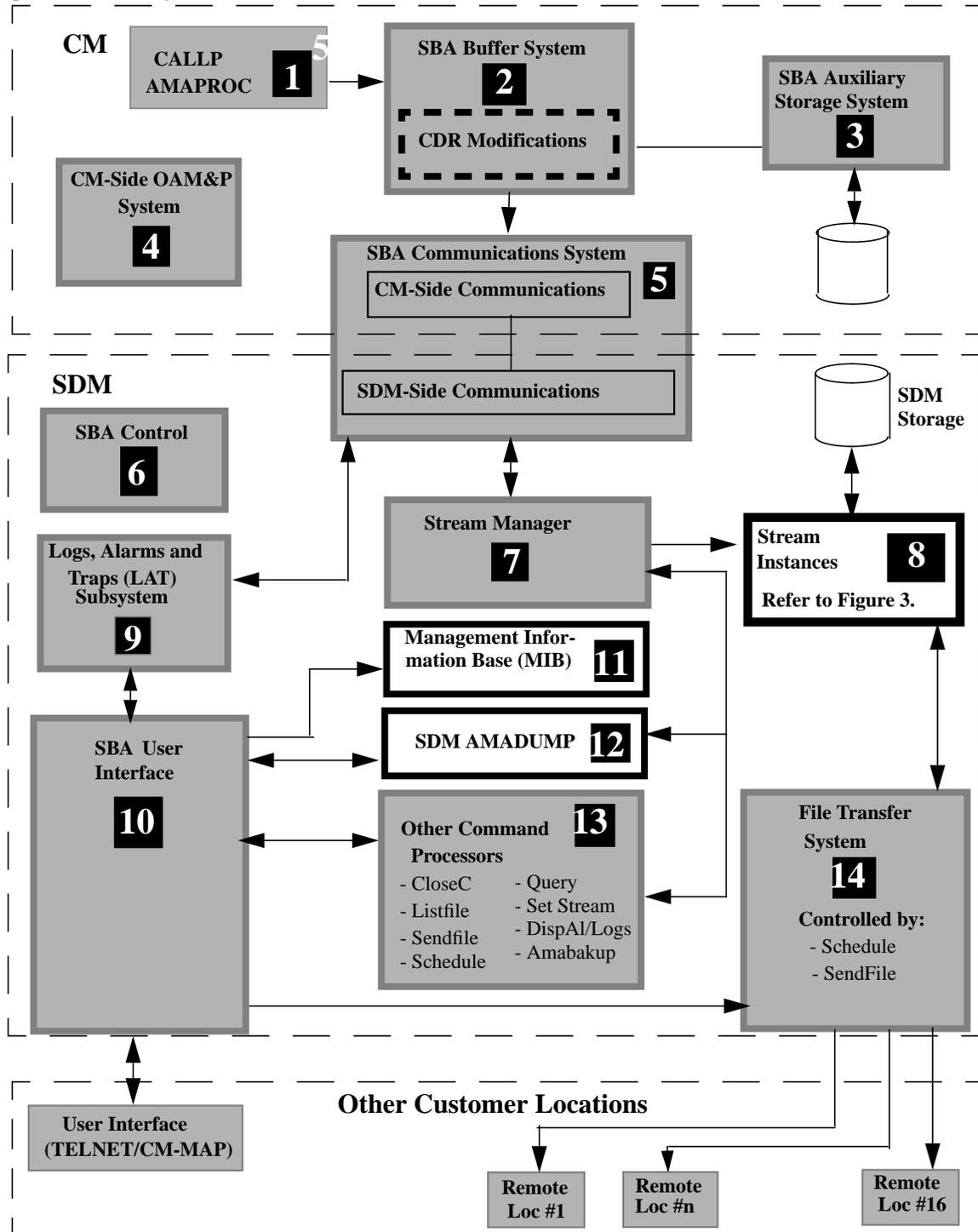
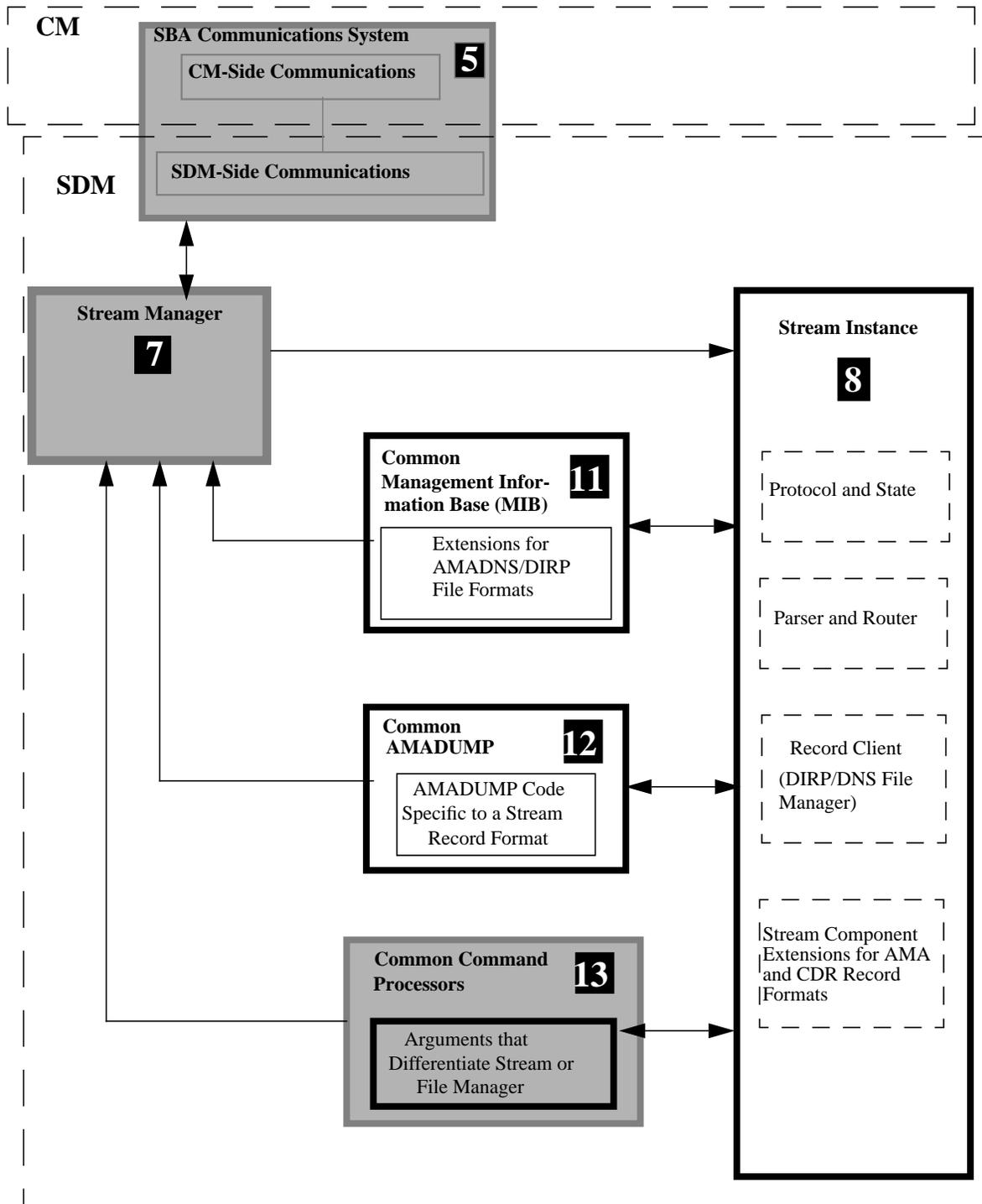


Figure 2 Stream-Specific Processing



3.4.3.1 CM-Side Workflow

The SBA Buffer subsystem receives billing records from CALLP/AMAPROC, buffers them, then passes them to the Communications subsystem for transmission to the SDM.

If the Buffer subsystem detects that a condition in the SDM or Communications subsystem will not allow the SDM to process the records, the Buffer subsystem routes the records to the SBA Auxiliary Storage subsystem. The Storage subsystem stores the records in non-volatile storage that is configured on a stream basis.

The CM-side of the Communications subsystem receives stream-differentiated buffers from the Buffer subsystem and passes them to the SDM-side of the Communications subsystem using UDP.

3.4.3.2 SDM-Side Workflow

The SDM-side of the Communications subsystem receives stream-differentiated buffers and passes them to the Stream Manager component. If this is the first message that a stream has received, the Stream Manager component creates the stream instance. Otherwise, the Stream Manager passes the buffer to the stream instance.

A stream instance contains certain components:

- a protocol/state component which receives the buffers from the CM,
- a parser/router component which parses the billing records from the buffer, and
- a file manager component which stores the records into files and places them on the disk.

The SBA User Interface, also known as the Remote User Interface (RMI) is similar to that provided by SDM. Through the RMI, the user can schedule file transmissions, list and send files, set the stream context for subsequent commands, query a stream, close a current file, view/set MIB parameters, and configure a stream. Several of these commands require a stream or file format parameter.

Refer to PLS DOC AF7546FN.AA03 for detailed information regarding all of the SBA components.

3.4.3.3 SBA Component Descriptions

The following descriptions are meant to clarify the stream-specific qualities of the SBA components. For more generic and comprehensive descriptions refer to PLS DOC AF7546FN.AA03.

2 SBA Buffer Subsystem

The SBA Buffer subsystem stores billing records generated at the CM for transmission to the SDM. The buffers are stream differentiated in the Buffer subsystem. In normal mode, the Buffer subsystem dumps all full buffers to the Communications subsystem.

When the SBA Buffer subsystem triggers Backup Mode, the buffers are sent to the Auxiliary Storage subsystem where the buffers are stored in space configured per stream. When the outage that forced Backup Mode is resolved, the Buffer subsystem triggers Recovery Mode. In Recovery Mode the Buffer subsystem processes both active and recovered buffers per stream.

3 Auxiliary Storage Subsystem

Buffers are stored by the Auxiliary Storage subsystem when the system is in Backup Mode. The buffers are stored in space that is configured on a stream basis.

7 Stream Manager

The Stream Manager controls the individual streams. Once a stream is configured on the SDM, the Stream Manager creates it as soon as a message is received for the stream from the CM. The Stream Manager is also responsible for routing messages to the appropriate stream from the Communications subsystem and for providing an interface for the user commands to gain access to a stream. Finally, the Stream Manager is responsible for deleting a stream when it is triggered to do so.

8 Stream Instances

This component represents a stream of billing data. For example, the AMA stream with the AMADNS file format type is a stream instance. There may be more than one stream instance active at one time in the SBA. It is responsible for the following:

- receiving messages from the CM

- extracting billing records from the messages
- acknowledging the CM for records safely retrieved
- storing the billing records in the appropriate file format as configured for the stream
- managing the creation, deletion and changes to the files
- providing other SBA components with access to files and other stream data

For the AMA stream instance, there is an instantiation of each of the following:

Protocol and State Message Receiver - receives messages and passes buffers.

Parser/Router - receives buffers and parses records.

Record Client - This is the file manager component. It:

- Opens file, writes record, closes file
- Gives file to applications and manages file state changes
- Manages the volume on the disk and handles logs and alarms for the subsystem

9 SDM-Side Logs, Alarms, and Traps (LAT) Subsystem

For SBA010 logs will indicate the stream with which they are associated.

Refer to PLS DOC AF7546FN.AA03 for details.

10 SBA User Interface

In SBA010 all of the existing commands with the exception of DispLogs and DispAI are enhanced to accept a stream parameter. In addition, new commands are provided.

Refer to the AF7546MM section for syntax and display details.

11 Management Information Base (MIB) System

The MIB provides storage of configuration and run-time data for the entire SBA system. The MIB can be accessed directly by all SBA components.

AF7546 partitioned the MIB to allow billing applications to define their own application-specific MIB. AF7547. The BAF application HLD (AF7547.AA02) in PLS FMDOC defines the BAF MIB.

12 SDM AMADUMP

AMADUMP allows users to filter and view billing records from both standard AMA files and DIRP formatted files. AMADUMP is enhanced by AF7546 to be format independent which allows new structures to be added by extending AMADUMP's existing databases. Billing platform executables allow new record formats to be added by adding new databases. Therefore, a BAF-specific database exists for viewing BAF billing records from AMADNS formatted files.

14 File Transfer System

The file transfer subsystem developed by AF7546 contains a file transfer controller subsystem which transfers files to remote customer locations and a schedule manager subsystem which maintains the schedule for automatic file transfers and holds the information needed for manual transfers.

Scheduled transfers are specified by time of day, time interval, stream name, file format type (AMADNS or DIRP), and protocol type.

3.5 Message Protocols

Communications between the CM and SDM is a proprietary protocol based on TCP/IP. Communication between SBA and customer remote locations for the AMA stream with an AMADNS file format is File Transfer Protocol (FTP).

3.6 Supplementary information: Engineering/Hardware

3.6.1 Engineering hardware information

Refer to FMDOC SBAEI.AA01 for SBA010 engineering information.

3.7 Supplementary information: DDOC sections

3.7.1 Logs (LG)

Not applicable.

3.7.2 Data schema (DS)

Not applicable.

3.7.3 Service orders (SO)

Not applicable.

3.7.4 Man machine interface (MM)

Not applicable.

3.7.5 Operational measurements (OM)

Not applicable.

3.7.6 AMA/Billing information (AM)

Not applicable.

3.8 Feature impact

3.8.1 Interactions

- Feature AF7546 provides the SBA platform on which this feature is built upon.
- Feature AF7463 provides enhancements to the CM-side of SBA in this release.

3.8.1.1 Installation Dependencies

The routing for billing records in a stream must be selected using the SDMBCTRL command as follows on the CM map display:

MAPCI -> MTC -> APPL -> SDMBIL ->

SDMBCTRL AMA BOTH (route to both SBA Buffer system and DIRP Buffer system)

ON (route only to SBA Buffer system)

OFF (route to neither)

Logical volumes for the SBA Auxiliary Storage subsystem must be configured for each stream according to the guidelines set forth in SBA08. These volumes need to be in place to back up billing records on the CM in case the SBA system goes into Backup Mode.

3.8.2 Restrictions/limitations

- For the DMS100/200 market, only the BAF formatted records in the AMA stream can be configured with the AMADNS file format.

3.9 Definitions & abbreviations

AMA

Automatic Message Accounting. One of the **billing streams** that originate in CALLP and AMAPROC, in the switch CM. The stream name is datafilled in Tables CRSFMT and SDMBILL.

AMADNS

AMA Data Networking System. One of the **file formats** that the SBA uses in SDM (disk) storage.

AMAPROC

The main billing process on the CM. Its function is to produce billing records of various types for the call processing system.

BAF

Bellcore AMA Format.

“Billing Base”

Used in developer documentation, within the SuperNode Billing Application context, to refer to the SBA010 de-coupled billing platform. (See *Billing Platform*, below.)

CDR

Call Detail Recording. One of the **billing streams** that originate in CALLP and AMAPROC, in the switch CM. CDR can also refer to a **record format** that is commonly used in carrier network switches.

DIRP

Device Independent Recording Package. One of the **file formats** that the SBA uses in SDM (disk) storage.

Billing Platform

The SBA010 de-coupled billing platform on which billing applications that use non-BAF record formats and non-FTP transmission protocols can be built.

MIB

Management Information Base. Configuration and other run-time information that is globally available to the billing platform and

platform applications. The MIB includes user command and application programming interfaces.

RMI

Remote Maintenance Interface.

SBA

SuperNode Billing Application.

SDM

SuperNode Data Manager.

SNMP

System Network Management Protocol.

Stream

Within the SuperNode Billing Application context, refers to a container in which records are collected and routed until they are transferred to a customer location by the File Transfer System.

3.10 References

3.10.1 CSP08 and SBA08 Feature Documents

AF6938 - DPMS Agent, PLS FMDOC, PLS DOC

AF6939 - MIB Support, PLS FMDOC, PLS DOC

AF6941 - SBA Control, PLS FMDOC, PLS DOC

AF6942 - Persistent Store System, PLS FMDOC, PLS DOC

AF6944 - Stream Enhancements, PLS FMDOC, PLS DOC

AF6999 - DAT Backup, PLS FMDOC, PLS DOC

AF7010 - SDM Billing Logs and Alarms HLD in PLS FMDOC

AF6522 SDM Billing Communication Framework, PLS FMDOC

SBILCORE, SDM Core Components, PLS FMDOC, PLS DOC

SDESWKBK, chapter titled iter1, PLS FMDOC

AF6525 AMADNS OAM&P, PLS FMDOC, PLS DOC

AF6912 SDM Billing Enhancements, PLS FMDOC, PLS DOC

AF6522 SDM Billing Communication Framework, PLS FMDOC

BILLARCH, SDM Billing Architecture Workbook, BILLARCH, PLS
FMDOC

3.10.2 CSP09 and SBA09 Feature Documents

AF7313 - CM-Side Performance Improvements

AF7314 - CM-Side Enhancements

AF7353 - SDM-Side Performance Improvements

3.10.3 CSP10 and SBA010 Feature Documents

AF7463 - CM-Side Enhancements

AF7547 - AMADNS De-coupling from Base Billing

3.10.4 Other Documents

SDM Fault Tolerant (SDM/FT) Product Specification (sdmftpsa.aann)

Log User Guide, LOGUG, PLS FDOC95, Nortel

GR-1343-CORE "Generic Requirements for the Automated Message
Accounting Data Networking System (AMADNS)", Issue 2 (Sept.
1996), Bellcore

4. Functional description (FN)

4.1 Feature title

4.2 Feature synopsis

The Catalog Server is a set of libraries which provide a Shared Memory based, Faster and Mutli-User access to the DDMSCATALOG Table. For more details on this feature, refer to the High Level Design of DDMS10 Catalog Server stored under ActId AF7649 in PLS FMDOC. This FN Section has been retained for reasons of consistency.

4.3 Functional overview

Please refer to the HLD (AF7649 in PLS FMDOC).

4.4 Feature description

Please refer to the HLD (AF7649 in PLS FMDOC).

4.4.1 Message Protocols

No external Protocols are affected by this feature.

4.5 Supplementary information: Engineering/Hardware

4.5.1 Engineering hardware information

This feature does not have any specific hardware requirements. Please see the DDMS Architecture Document (AF6976 in PLS FMDOC) and the SDM/FT Product Specification (SDMFTPSA in PLS FMDOC) for more information.

4.6 Supplementary information: DDOC sections

4.6.1 Logs (LG)

All DDMS logs are defined in the LG section for AF6978 (AF6978LG in PLS DOC). The logs issued by this feature are listed in the DD section of this feature.

4.6.2 Data schema (DS)

NOT APPLICABLE.

4.6.3 Service orders (SO)

NOT APPLICABLE.

4.6.4 Man machine interface (MM)

NOT APPLICABLE.

4.6.5 Operational measurements (OM)

NOT APPLICABLE.

4.6.6 AMA/Billing information (AM)

NOT APPLICABLE.

4.7 Feature impact

4.7.1 Interactions

None.

4.7.2 Restrictions/limitations

Please refer to the HLD (AF7649 in PLS FMDOC).

4.8 Definitions & abbreviations

- DDMS
DMS Data Management System.
- SN CM
SuperNode Compute Module.

4.9 References

- High-level design
AF7649 in PLS FMDOC.
- DDMS Architecture document
AF6976 in PLS FMDOC.
- SDM/FT Product Specification
SDMFTPSA in PLS FMDOC.

5. Functional description (FN)

5.1 Feature title

External View Server / Schema Server

5.2 Feature synopsis

External View Server is a DDMS process to rapidly convert schema from Logical to External view for consumption by the customer. It also converts schema from External view to Logical view for consumption by DDMS subsystems. The Schema server is a component of the External View server that will be used independently. Its function is to provide schema information rapidly. It interacts with CM via TAI to gather schema for all tables and types and keeps this information in sync by subscribing for Schema Change Notifications.

For details on this feature, please refer to the high-level design stored as AF7650 in PLS FMDOC. This FN section has been retained for reasons of consistency.

5.3 Functional overview

Please see the HLD (AF7650 in PLS FMDOC).

5.4 Feature description

Please see the HLD (AF7650 in PLS FMDOC).

5.4.1 Message Protocols

No external protocols are affected by this feature.

5.5 Supplementary information: Engineering/Hardware

5.5.1 Engineering hardware information

This feature does not have specific hardware requirements. Please see the DDMS Architecture document (AF6976 in PLS FMDOC) and the SDM/FT Product Specification (SDMFTPSA in PLS FMDOC) for information.

5.6 Supplementary information: DDOC sections

5.6.1 Logs (LG)

All DDMS logs are defined in the LG section for AF6978(AF6978LG in PLS DOC). The logs issued by this feature are listed in the DD section of this feature.

5.6.2 Data schema (DS)

Not Applicable.

5.6.3 Service orders (SO)

Not Applicable.

5.6.4 Man machine interface (MM)

Not Applicable.

5.6.5 Operational measurements (OM)

Not Applicable.

5.6.6 AMA/Billing information (AM)

Not Applicable.

5.7 Feature impact

5.7.1 Interactions

None.

5.7.2 Restrictions/limitations

Please see the HLD (AF7650 in PLS FMDOC).

5.8 Definitions & abbreviations

- DDMS - DMS Data Management System
- SN CM - SuperNode Compute Module

5.9 References

- High Level Design - AF7650 in PLS FMDOC.
- DDMS Architecture document - AF6976 in PLS FMDOC.

6. Functional description (FN)

6.1 Feature title

MARCH Interface to DDMS

6.2 Feature synopsis

The SDM ASCII MAPCI/CI Gateway Application (SAM Gateway) provides a TCP/IP interface to the CM/CI that enables remote OSS applications to access CM Servord functionality. The SAM Gateway consists of two parts:

1. A Telnet to DCE/RPC gateway resident on a remote host. This provides a Gateway between one or more OSS Telnet sessions and the DCE/RPC transport used by the DDMS Comms Router on the SDM.
2. A CM/CI passthru interface resident on the SDM, packaged as part of the OSSAPS software. This is responsible for maintaining one or more connections to CM/CI and implementing operation level security based on DCE user identity. It communicates with remote OSS applications via the DDMS Common Software Layer (AF6985) and the DDMS Comms Router (AF6986).

6.3 Functional overview

Please refer to the HLD (AF6755 in PLS FMDOC).

6.4 Feature description

Please refer to the HLD (AF6755 in PLS FMDOC).

6.4.1 Message Protocols

No external protocols are affected by this feature.

6.5 Supplementary information: Engineering/Hardware

6.5.1 Engineering hardware information

This feature does not have specific hardware requirements. Please refer to the DDMS Architecture document (AF6976 in PLS FMDOC) and the SDM/FT Product Specification (SDMFTPSA in PLS FMDOC) for information.

6.6 Supplementary information: DDOC sections

6.6.1 Logs (LG)

All DDMS logs are defined in the LG section for AF6978 (AF6978LG in PLS DOC). The logs issued by this feature are listed in the DD section of this feature.

6.6.2 Data schema (DS)

NOT APPLICABLE.

6.6.3 Service orders (SO)

NOT APPLICABLE.

6.6.4 Man machine interface (MM)

NOT APPLICABLE.

6.6.5 Operational measurements (OM)

NOT APPLICABLE.

6.6.6 AMA/Billing information (AM)

NOT APPLICABLE.

6.7 Feature impact

6.7.1 Interactions

The telnet interface, resident on the SAM gateway server, is used by OSS clients to access CM/CI functionality. This interface interacts with the GUIDE daemon process, which it uses for its DCE login session management and DDMS communications transport. The passthru interface, resident on the DDMS, interacts with the Common Software Layer (AF6985) when communicating with OSS clients via the DDMS Comms Router (AF6986).

6.7.2 Restrictions/limitations

Please refer to the HLD (AF6755 in PLS FMDOC).

6.8 Definitions & abbreviations

- DCE
Distributed Communications Environment.
- DDMS
DMS Data Management System.
- GUIDE
Graphical User Interface for Design Engineering.
- MARCH
Bellcore Operations Support System.
- OSS
Operations Support System. (e.g MARCH).
- RPC
Remote Procedure Call.
- SN CM
SuperNode Compute Module.
- SAM Gateway
SDM ASCII MAPCI/CI Gateway.
- SDM
Super Node Data Manager.

6.9 References

- High-level design
AF7655 in PLS FMDOC .
- DDMS Architecture document
AF6976 in PLS FMDOC .

- **SDM ASCII MAPCI/CI Gateway Application Product Specification**
SAMPSPEC in PLS FMDOC.
- **SDM/FT Product Specification**
SDMFTPSA in PLS FMDOC.

7. Functional description (FN)

7.1 Feature title

SDM SUPPORT FOR SDM ON-LINE UPGRADE VIA SPLIT MODE

7.2 Feature synopsis

This activity introduces all the changes required to the SDM side platform software to support Motorola Series FX 1.2 on-line upgrade using split mode. These software changes will enable a procedure to upgrade the SDM O/S or CPU module without incurring excessive down-time.

This feature works in conjunction with OP1001.

7.3 Functional overview

Please refer to the High Level Design documentation for the requirements and functional description of this feature. The high level design document can be found in **FMDOC: SDMSPLIT**.

7.4 Supplementary information: Engineering/Hardware

7.4.1 Engineering hardware information

7.5 Supplementary information: DDOC sections

7.5.1 Logs (LG)

7.5.2 Data schema (DS)

7.5.3 Service orders (SO)

7.5.4 Man machine interface (MM)

7.5.5 Operational measurements (OM)

7.5.6 AMA/Billing information (AM)

7.6 Feature impact

7.6.1 Interactions

7.6.2 Restrictions/limitations

7.7 Definitions & abbreviations

7.8 References

8. Functional description (FN)

This is the Functional Description (FN) document for the Software Inventory Manager (SWIM) project for inclusion in SDM10 of the SDMBASE software on the SuperNode Data Manager (SDM) platform.

8.1 Feature title

The title of this feature is the Software Inventory Manger (SWIM) and has the Activity Identifier SD1003. This FN document is located in the PLS DOC system under the module name “SD1003” and was authored by Rich Houle.

8.2 Project Team

The project team consists of the following persons:

Table 1 Core Team Members

Name	Role	Points of Involvement	Agreement? Y/N
Ron Breault	Design Manager	All points	yes
Rich Houle	Design Prime	All points	yes
Sean Munro	Peer Designer	All points	yes
John Muir	Peer Designer	HLD and DD reviews, Code Inspections	yes

Table 2 Extended Team Members

Name	Role	Points of Involvement	Agreement?
Sean Kormilo	Code Inspector	HLD and DD reviews, Code Inspections	
Gunnar Foerstel	Verification prime	FN, HLD, MM, LG, DT reviews	yes

Table 2 Extended Team Members

Name	Role	Points of Involvement	Agreement?
Anna Glieca	Customer Documentation	FN, MM, LG reviews	yes
Dan Bond	PAT	FN, and HLD reviews	yes
Kamal Foudil-Bey	Capacity Engineering Prime	HLD and EI reviews	yes
Paul Smith	PLM	FSD/PSA and FN reviews	yes
Tenney Woo	PLM	FSD/PSA and FN reviews	

Table 3 Other Resources

Name	Role	Points of Involvement	Agreement?
Joyce Wang	Technology Consultant	On demand	
Keith Raker	Technology Consultant	On demand	yes
Keith Wiggins	Loadbuild Prime	On demand	
Keith Wiggins	Lab Prime	On demand	
John Watts	PRS Prime	On demand	
Phil Roberts	PLM		
Helen-KF Ma	PLM		yes
Dave Sproule	PLM		

8.3 Feature Synopsis

The SDM10 version of SWIM will provide the following advantages to the user:

- simplifies the installation and upgrade of SDM software by eliminating the user interaction with the AIX system management interface tool (SMIT) and
- keeps information that can be used to help in problem determination if difficulty is experienced during software maintenance activities on the SDM. The information kept will include history information (which fileset was applied when, which fileset was committed when, which fileset was removed when...), the version/state of filesets on the SDM, and detailed action information (e.g., warnings during application of the filesets).

SWIM will not have any concept of NCL or MNCL built into it in this version. The NCL (Non-CM Load) and MNCL (Maintenance Non-CM Load) are in fact customer tapes which contain AIX filesets. SWIM will understand the concept of filesets and all functions that it supports will be at the fileset level.

It is important to note that the 'maint' user on the SDM may only use a 'restricted' version of SWIM. This restricted version will allow the user access to the history, version/state, and detailed action information only. This will prevent the 'maint' user from performing functions that are reserved for the 'root' user. The 'root' user will be the only one able to apply, remove, or commit filesets to the SDM.

8.4 Functional overview

This functional overview is meant to be a high-level description of the functional capabilities of SWIM for SDM10. More detail about SWIM functions can be found in the section “ These logs will be called the SWIM logs and will be persistent for a period of two months. The SWIM logs will be removed after a period of time by SWIM to ensure that they don't consume too much space on the hard disk.”.

The following functions are all performed within the 'sdmmtc' tool (also referred to as the remote maintenance interface (RMI)) on the SDM. No use of the AIX SMIT interface is required.

8.4.1 Help Information

The user will be able to obtain information that will describe what each SWIM function does.

8.4.2 Preferences

The user may set a variable to assist during the software maintenance activities. The user will be able to set the directory (or device) that will be the default location for their SDM filesets (e.g., /home/swd OR /dev/rmt0).

8.4.3 Apply SDM filesets

SWIM will provide the capability to apply SDM filesets (e.g., Secure File Transfer, Enhanced Terminal Access, corrective content for ER2, or all corrective content contained on an MNCL tape) on the SDM without using the SMIT user interface.

The functionality of ‘apply’ encompasses the following:

- The user can change the location of the SDM filesets from the default device. The SWIM prompt for the device will list the available tape drives.
- installation of a new fileset on an SDM. For example, if the user has an SDM that has been commissioned with an SDM10 load but they did not install the ETA product, they may install the ETA product using SWIM by inserting their NCL customer tape into the SDM DAT drive and selecting the ‘Apply’ function, which will present the list of filesets that can be applied from that customer tape. The user can then select the ETA fileset and apply it.
- application of corrective content on an SDM. For example, if the user has an SDM that is commissioned with an SDM10 load and an MNCL customer tape (filesets containing corrective content) is released, the user may use the ‘Apply All’ function which will apply all applicable filesets from the MNCL to the SDM10 load.
- selective application of corrective content on an SDM. The user may pick particular filesets (containing corrective content) to be applied from the list of filesets displayed by SWIM in the Apply menu.

When an SDM fileset containing corrective content is applied, the previous version of the fileset (the one that is currently installed) will be preserved on the system just in case the new version is not suitable (see “8.4.4 Remove SDM filesets”).

It should be noted that SWIM can not be used until the SDM has been commissioned. It is also important to note that SWIM will allow the user to execute configuration scripts that the developer has written. It is clearly within the developer’s purview to ensure that any previous version of the application is suspended.

8.4.4 Remove SDM filesets

SWIM will provide the capability to remove filesets from the SDM. The user can select from the list of applied filesets which to remove.

The user may use the ‘remove’ function as follows:

- removal of an SDM product. For example, if the user has no need for a fileset on the SDM, they may remove the fileset and all updates to it using SWIM. The user may be prompted to remove dependant filesets or discontinue the action.

- removal of corrective content. If the user has applied corrective content which is in some way defective, they may revert to the previous version by removing the defective fileset. The user will be warned by SWIM that the removal of corrective content should only be performed on the advice of TAS personnel. The user may be prompted to remove dependant filesets or discontinue the action.
- removal of archived filesets. In order to free disk-space, the user may remove archived filesets. This action is equivalent to Committing filesets with the SMIT software.

The 'remove' function of SWIM does not support partial removal of a fileset.

8.4.5 Auto-Removal of archived filesets

SWIM will automatically remove archived filesets when there are more than two archived versions installed on the SDM. If there are three versions of a particular fileset installed on the SDM, and the user applies a new patch, then the oldest archived version of that fileset will be removed from the system in order to reclaim some disk space.

8.4.6 Version and state information

The user may retrieve information at any time regarding the version (e.g., 10.0.18.0) and state of each fileset stored on the SDM using SWIM.

It is important to note that there is not 'Removed' state for a fileset. If a fileset has been removed, there will be no state maintained in SWIM for that fileset.

Table 2 shows a list of the possible states that the filesets installed on the SDM can be in.

Table 2 SWIM fileset States

SWIM State	Description
APPLIED	The software is currently being used by the SDM. If a previous version of the fileset exists in the Archived state, this fileset may be removed to restore the previous version.
APPLYING	SWIM is currently installing the fileset.
FAILED	The fileset application failed and the fileset should be reinstalled before being used.
ARCHIVED	The fileset is stored in the archives, and can be restored.
REMOVING	This fileset is being removed.

8.4.7 History information

The user will have access to history information indicating the following:

- apply action attempted;

- remove action attempted;
- auto-removal action attempted;
- details of each of the above actions (date, time, fileset versions, error messages, progress messages);
- any changes to the preference information.

The history information will be persistent as long as the user wishes.

8.4.8 Detailed action information

The user will be able to access information regarding the details of their apply or remove actions. Each time the user attempts these actions there will be a log generated containing the details of the action (including warning and progress messages).

These logs will be called the SWIM logs and will be persistent for a period of two months. The SWIM logs will be removed after a period of time by SWIM to ensure that they don't consume too much space on the hard disk.

8.5 Feature description

SWIM is best described by specifying the way that the user will interact with it and what responses they will get. This approach to specifying the system requirements is called the 'use case approach'.

The way to read the use case is as follows:

- the first line of each use case indicates the use case id and a brief description of the interaction between the user and SWIM.
- the precondition field defines any assumptions of the state of the SDM and SWIM before the user interacts with it.
- the action field gives more detail of how the user interacts with SWIM.
- the result field describes what results the user receives from SWIM.

UC 1. The user accesses the SWIM commands remotely.

Precondition:

- if the user wishes to perform restricted software maintenance commands (apply, remove, and setting preferences), they must be logged into the SDM with 'root' privileges.
- if the SDM is split, then the user will only have full SWIM functionality available if the user is connected to the SYSNEW side. Otherwise the user has read-only privileges.

Action:

- the user accesses the SDM through remote facilities (ETA, telnet, dialup...).

- the user runs the 'sdmmtc' tool from the UNIX command line.
- navigate to the SWIM menu level.
- perform software maintenance commands.

Result:

- SWIM works the same regardless of whether they are accessing the SDM locally or remotely.

UC 2. The user requests help for the SWIM commands.**Precondition: None.****Action:**

- the user runs the 'sdmmtc' tool from the UNIX command line.
- navigate to the SWIM menu level.
- the user types 'help' by itself.
- the user types any word not recognized as a command, followed by the command for which help is requested. e.g.: '? change', or 'help change', 'asdf change'.

Result:

- once the 'Help' command has been executed, the screen will display SWIM command and argument information to the user.
- if the user has supplied a specific command name as an argument to the 'Help' command (or any other arbitrary text), only the help text for that command will be displayed.

UC 3. The user sets their SWIM preferences.**Precondition:**

- the user is logged into the SDM with 'root' privileges.
- if the SDM is split, then the user is connected to the SYSNEW side.

Action:

- the user runs the 'sdmmtc' tool from the UNIX command line.
- navigate to the SWIM menu level.
- select the 'Options' menu.
- use the 'Change' command to set the default device/directory where install and patch images will reside. The user may choose between a tape device, or a directory on the local file system.

Result:

- each of the above preferences will be defaulted by SWIM when installed.
- each change that the user makes to the preferences will be saved to a preferences file.

UC 4. The user retrieves information about the current version and state of the filesets installed on the SDM.

Precondition: None.

Action:

- the user runs the 'sdmmtc' tool from the UNIX command line.
- navigate to the SWIM menu level.
- view the displayed information indicating the name of all SDM filesets currently installed, their versions, and their state.

Result:

- the SWIM top level menu will reflect the current version and state of all filesets installed on the SDM.
- the user may enter a search term which may reduce the number of filesets displayed.

UC 5. The user retrieves software maintenance history information.

Precondition: None.

Action:

- the user runs the 'sdmmtc' tool from the UNIX command line.
- navigate to the SWIM menu level.
- select 'History' menu.
- view the displayed information indicating (in chronological order) the history of the SDM filesets and changes to the preferences.

Result:

- the SWIM 'History' menu will display the history information. Note that if this is the first time SWIM has been run, the history information will be empty.
- the user may scroll the history information up and down for ease of viewing.

UC 6. The user applies a fileset to their SDM.**Precondition:**

- the user is logged into the SDM with 'root' privileges.
- if the SDM is split, the user must be connected to the SYSNEW side.
- the SDM fileset must be available either on digital audio tape (DAT) in the form of a customer tape or,
- the SDM fileset is available on the SDM hard disk.

Action:

- the user runs the 'sdmmtc' tool from the UNIX command line.
- navigate to the SWIM menu level.
- type 'Apply' to enter the Apply menu level, the default directory is read and the list of software installed and available for installation is displayed on screen.
- the user may scroll up and down this list with the Up and Down commands.
- the source of the installable filesets is shown in the header at the top of the screen. If the device/directory could not be read then a message is displayed on screen to inform the user to select another tape.
- select the 'Source' command to read from a different device/directory where the filesets reside. The user may select the default, or type in a new device/directory. The available tape drives will be displayed in the prompt.
- select the 'Apply All' command to apply all applicable filesets (containing corrective content) to the SDM.
- use the 'Select' command to select filesets, and then the 'Apply' command to apply those filesets to the SDM. This method allows the user to install new SDM filesets or to apply corrective content.
- if the SDM filesets were not applied successfully, the user may view the information gathered during the attempted apply in the SWIM log files which are stored in the SWIM directory.

Result:

- if the 'Apply' is successful then the SDM fileset(s) will be applied. All SDM filesets shown at the SWIM menu level will show the version and state of the currently applied fileset. If the 'Apply' included corrective content, then the previous version of the fileset will be backed up on the SDM.
- if the selected filesets have requisite filesets, the requisite filesets will be applied before the selected filesets.

- the user will be notified of the filesets which require additional configuration to complete their application through the 'Config' command menu.
- if the 'Apply' has been unsuccessful then the SDM fileset will not be applied.
- entries will be made in the SWIM history file. The entries made will indicate that an installation attempt took place and the detailed information gathered during the installation.
- an entry will be made in the detailed action information log (SWIM log) in a specific directory.

UC 7. The user executes a configuration script.

Precondition:

- the user is logged into the SDM with 'root' privileges.
- if the SDM is split the user must be connected to the SYSNEW side.
- if the user has just completed an Apply of a patch or installation, the system may have displayed a message telling the user of a need to execute configuration scripts for the applied filesets.

Action:

- the user runs the 'sdmmtc' tool from the UNIX command line.
- navigate to the SWIM menu level.
- type 'Config' to enter the Config menu level and show a list of configuration scripts which are available for execution, and the state of the configuration script. Scripts which have not been executed are in the *Unconfigured* state. Scripts which have been executed and completed without errors are in the *Passed* state. Scripts which have been executed but resulted in an error are in the *Failed* state.
- select the 'Config All' command to execute all of the scripts which are in the *Unconfigured* or *Failed* states as shown on the RMI screen.
- select the configuration scripts which the user wishes to execute with the 'Select' command. After the selection, the user can execute those commands by executing the 'Config' command.

Result:

- if the script executes successfully, then the script is set to the Passed state.
- if the script execution fails, then the script is set to the Failed state.
- any error or warning messages will have been given to the user by the script.

UC 8. The user removes a fileset from their SDM.**Precondition:**

- the user is logged into the SDM with 'root' privileges.
- if the SDM is split the user must be connected to the SYSNEW side.

Action:

- the user runs the 'sdmmtc' tool from the UNIX command line.
- navigate to the SWIM menu level.
- scroll up and down to find the filesets which the user wishes to remove.
- select the 'Remove' command to remove the filesets. The filesets are numbered in the list. For example, to remove the filesets which are numbered 1 and 10, the user would enter 'Remove 1 10'.
- the user is warned if the removal of a fileset causes the removal of any other filesets due to dependencies.
- when removing all of the versions of a particular fileset from the SDM (removal of a product), the user is warned that the action should only be done on the recommendation of TAS personnel.

Result:

- if successful, the fileset will be removed and the previous version will be restored (Note, if the product is removed entirely, there will be no restored version on the SDM).
- a warning is given if the selected filesets are requisite filesets, since the filesets which require this fileset will be removed before the selected filesets.
- if unsuccessful, the fileset will not be removed.
- an entry in the SWIM history will be made indicating that a removal has been attempted.
- an entry will be made in the detailed action information log (a SWIM log file).

8.6 Supplementary information: DDOC sections**8.6.1 Logs (LG)**

N/A.

8.6.2 Data schema (DS)

N/A.

8.6.3 Service orders (SO)

N/A.

8.6.4 Man machine interface (MM)

A Man Machine interface document will be provided here.

8.6.5 Operational measurements (OM)

N/A.

8.6.6 AMA/Billing information (AM)

N/A.

8.7 Definitions & abbreviations

Table 3 Acronyms

Acronym	Definition
AIX	AIX UNIX (Advanced Interactive Executive)
DAT	Digital Audio Tape
ER2	Event Reporting (an SDM product)
ETA	Enhanced Terminal Access (an SDM product)
MNCL	Maintenance Non-CM Load
NCL	Non-CM Load
TAS	Technical Assistance Service
OS	Operating System
RMI	Remote Maintenance Interface
SDM	SuperNode Data Manager
SDM10	SuperNode Data Manager software version 10
SFT	Secure File Transfer (an SDM product)
SMIT	AIX system management interface tool
SWIM	Software Inventory Manager

9. Enhanced Terminal Access Phase II Functional Description (FN)

9.1 Feature title

SDM Enhanced Terminal Access Phase II (ETA Phase II)

9.2 Feature synopsis

This feature is an enhancement for the Enhanced Terminal Access (ETA) feature of SDM07 (SD0707). The SDM07 feature provides GUI-based secure ASCII character access (i.e. CI, MAP, unix shell or command) to the CM and/or the SDM from a remote machine across the Telco TCP/IP Wide Area Network (WAN). The main purpose of the new feature is to increase the usability of the current GUI ETA.

Another main purpose of this feature is to provide a text-based character access to the CM or the SDM from a remote machine across the telco WAN.

9.3 Target Audience

This document is intended for:

- SDM Architecture Team
- SDM Platform PLM
- SDM Verification
- SDM Documentation
- SDM Customer Care Team

9.4 Functional overview

One deliverable of this feature is new GUI ETA client. This GUI client will be backward compatible. It provides a set of enhancements to the current ETA program in the areas of: (1) ETA client invocation; (2) ETA client GUI appearance; and (3) ETA messaging.

Another deliverable of this feature is an ASCII Terminal Access (ATA) client which provides text-based character access to the CM or the SDM from a remote machine.

9.5 Feature description

This section provides a description of the functionality that will be effectively delivered by the SD1005 feature.

9.5.1 ETA client invocation

9.5.1.1 Command line parameters

The current ETA allows a customer to invoke the ETA client program with a limited set of command line arguments, such as, big font. The arguments will be expanded to include the following options:

- cli, to specify the target CLI name
- session, to specify SDM or CI/MAP session
- help, to display the help information on ETA program

The command line options will enable a customer to start a SDM or CI/MAP session directly without going through the DCE Login window and the ETA Main window. In addition, help information will be provided.

9.5.1.2 Minimal mouse clicks

To reduce the number of mouse clicks before a customer can start a SDM or CI/MAP session, this feature will capture the NORTEL copyright warning and the ETA version information under the help pulldown menu and will no longer ask the customer to click on the NORTEL copyright window. The NORTEL copyright window will appear on the customer's workstation screen when the ETA client program is invoked and disappear after 10 seconds.

9.5.2 ETA client GUI appearance

9.5.2.1 Keyboard searching through the CLI list box

The CLI list box on the ETA main window can potentially contain hundreds of switch names. The keyboard binding for searching through the CLI list box functionality will assist the customer to quickly locate the desirable switch name(s) by typing some keyboard letters.

9.5.2.2 Select a switch by typing the full switch name

There will be a text input field on the ETA main window to allow the customer to select a switch by typing the CLLI name.

9.5.2.3 Keep the selected characters highlighted when copying

The current ETA provides the copy and paste functionality for the ETA session window. However the highlight disappears once the mouse click is released. This feature will ensure that the selected characters remain highlighted when copying.

9.5.2.4 Allow re-size the ETA session window frame

The current ETA maintains a fixed size of text edit area and does not allow the customer to re-size the ETA session window frame. This feature will relax the restriction by providing a variable size of text edit area for the ETA session window. The maximum number of characters that each line can display will depend on the monitor screen size and the selected font size.

9.5.2.5 Label each ETA session window with both the session information and the CLLI name

Labelling each ETA session window with both the session information and the CLLI name will allow a customer to distinguish the ETA session windows that are currently open. Furthermore, this will provide a convenient way for the customer to switch window focus and de-iconize the ETA session windows.

9.5.2.6 Remove the “ghost” cursor bar on MAPCI or RMI display

Currently, a “ghost” cursor bar may appear on the top left corner of the ETA session window when displaying MAPCI or RMI. This feature will ensure a clean MAPCI or RMI appearance.

9.5.2.7 Dynamically switch window/font sizes

The current ETA allows a customer to specify the default or large window and font size of ETA session window at the ETA invocation time. This feature will enable the customer to dynamically select different window/font sizes, such as, tiny, small, medium, large, and huge for the ETA session window. The tiny font is 8 points, the small font is 10 points, the medium font is 12 points, the large font is 14 points, and the huge font is 18 points.

9.5.2.8 Cascade the ETA session windows

The current ETA displays every ETA session window from the same location and results in the overlap of multiple ETA session windows. This feature will cascade the ETA session windows. No window will be displayed out of the screen.

9.5.2.9 Capture the ETA version and Nortel copyright information in the help menu

The current ETA provides “On Help” and “On Context” entry in the help menu. This feature will add ETA version and Nortel copyright information to the help menu.

9.5.2.10 Wrap lines to fit

This feature will allow a user to turn on/off the wrap lines to fit option on both the ETA main window and ETA session window. The default is to turn on the wrap lines to fit option.

9.5.2.11 No character loss

This feature will resolve the character loss problem during heavy load.

9.5.3 ETA messaging

This feature will ensure that any error message will clearly specify what happened, where the error occurred, and the reason.

9.5.4 Character access from remote ATA client

9.5.4.1 ATA client functionality

The ATA client provides the following functionality:

- Lists all the CLLI names in the DCE cell. This information is obtained from the DCE Directory server (CDS).
- Open a SDM or CM terminal session from a remote machine over the network. Commands can be invoked from the terminal session, just as if from a locally connected terminal.
- The ATA client will run on HP-UX 10.20 or later, SUN Solaris 2.4 or later. Windows 95TM and Windows NTTM will be supported in future releases.

9.5.4.2 Authentication

The identity of the user is determined by a login to the DCE security system. This feature provides integrated DCE login mechanism under which the user needs to login to DCE only once. Using `dce_login`, the user will be required to enter a DCE principal name and password. If the client is started without first doing a `dce_login`, the ATA client will prompt the user for his DCE principal name and password. This login procedure is imposed for security check on the user before any SDM or CM access is granted. If login fails, the user will be denied from using the ATA client. Using the DCE security mechanism, the `userid` and password can be sent across the network in an encrypted way.

Depending on the settings of the DCE security server policies, the DCE credentials obtained from the login will expire after a few hours. When that occurs the user has to re-enter the password to refresh the credentials. The ATA client will prompt for a password when a “list” or “open” command is issued but before the credential expires. As long as the login context is valid, the user does not have to login every time a SDM or CM session is started.

9.5.4.3 Authorization

DCE Security will be used to provide client authentication and to secure the communication with the DCE Security Server. The CM access restriction will be defined by the CM `PRIVCLAS` command. The SDM access restriction will be provided by the AIX operating system based on the SDM `userid` profile.

9.5.4.3.1 Access to SDM commands

A terminal session is started on the SDM for the user at the remote ATA client by issuing the “open” command with the CLI name of the switch and the type of access as “SDM”.

The application that is started on the SDM depends on the settings of the DCE Extended Registry Attribute (ERA) associated with the principal account for the user in the DCE Security Registry. The `sdm_userid` ERA will be used to capture the SDM `userid` (root, maint). A client can access to the SDM commands if it has the `sdm_userid` ERA. The ETA server will ask the DCE Security Server to check if the client has the `sdm_userid` ERA, and if it does, the ERA will be used to index the `/etc/passwd` file on the SDM to get the target application. From that point on, the Unix `userid` and group will determine the access permissions for the executed command.

9.5.4.3.2 Access to CM commands

A terminal session is started on the CM by issuing the “open” command with the CLI name of the switch and the type of access as “CM”.

Access will be granted on the CM if the DCE Security Registry contains a CM userid and password that is valid for the CM connected to the SDM. When the DCE security administrator creates a DCE userid, he will be able to associate one or more pairs of CM userids and passwords with that user's principal using DCE Extended Registry Attributes (ERAs).

When the ETA server receives a request for a CM session, it will open a telnet session to the CM (using the CM address in the SDM's `/etc/hosts` file). It will use a pair of the CM userids and passwords stored in the principal's ERA's to login on the CM.

After a CM session is open, the CM access permissions as defined by the PERMIT and PRIVCLASS commands take effect.

For CM access sessions to work, a CM userid with a password that matches the information stored in the ERA must have been created using the CM PERMIT command on all the CMs that the user needs to work on.

CM userids and passwords are not created nor stored by the SDM.

9.5.4.4 Modes of operation

The ATA client can be executed in two ways.

In one way, it can be started without any command line arguments. The user can issue "list" command to display the available switch CLI names in the DCE cell. The user can issue "open" command followed by the CLI name and the session type (SDM or CM) to access to the SDM or CM.

In another way, the user can start the ATA client with command line arguments to access the SDM or CM in one step. In this case, the CLI name and the session type (SDM or CM) have to be specified.

9.5.4.5 Use with firewalls

By default, ATA client uses arbitrarily selected ports for the TCP/IP socket connection. Because of the need to cross a firewall, an option is provided to specify a port range and this option is handled by the ATA install script. The port range is used to find an available port for reverse connection from the ETA server.

9.5.5 Interfaces

Refer to reference [1].

9.5.6 Message Protocols

N/A.

9.6 Supplementary information: Engineering/Hardware

9.6.1 Engineering hardware information

This feature requires Ethernet LAN connectivity.

9.7 Supplementary information: DDOC sections

9.7.1 Logs (LG)

N/A.

9.7.2 Data schema (DS)

N/A.

9.7.3 Service orders (SO)

N/A.

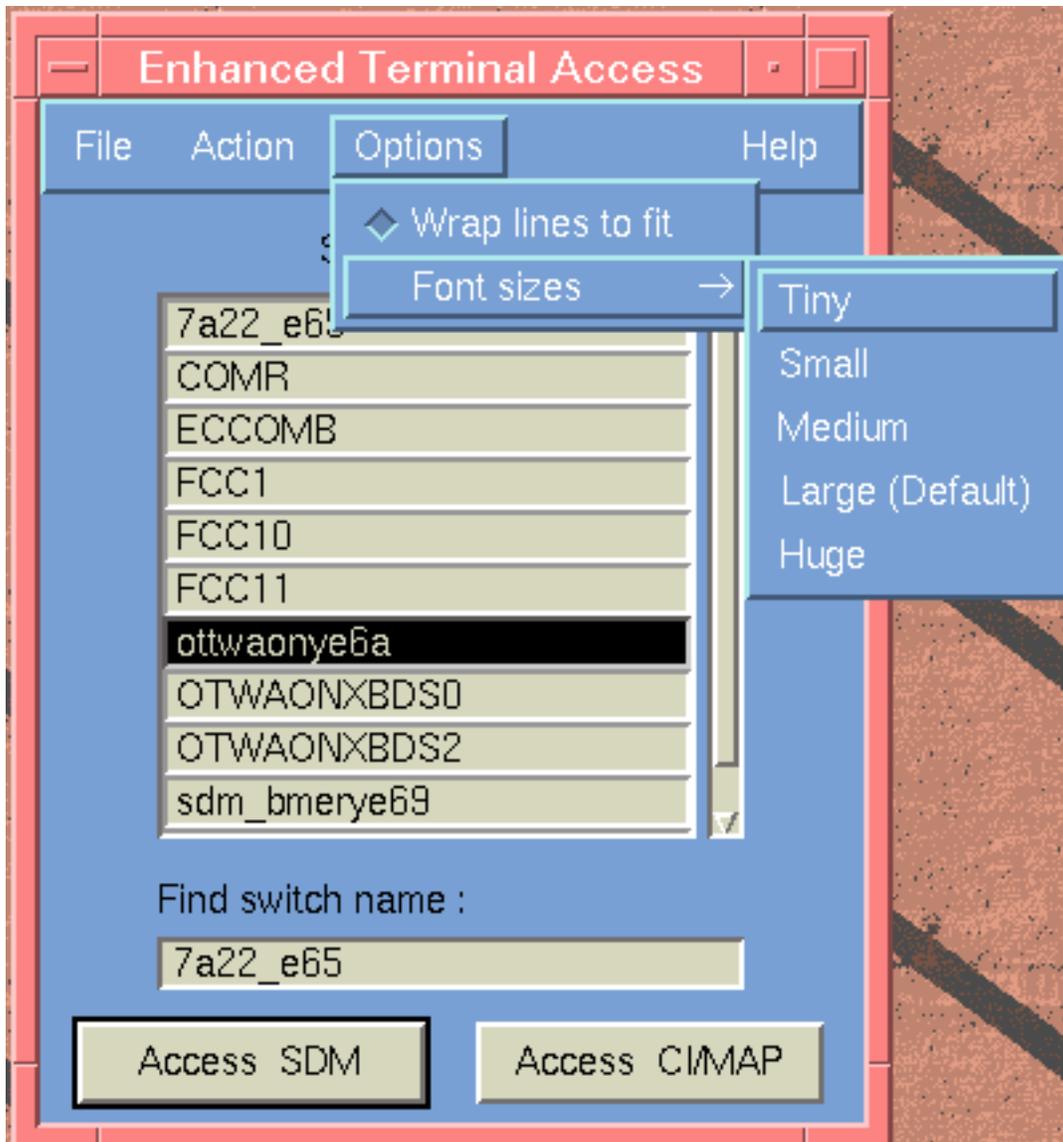
9.7.4 Man machine interface (MM)

This section captures all the new GUI windows and the ATA client interface.

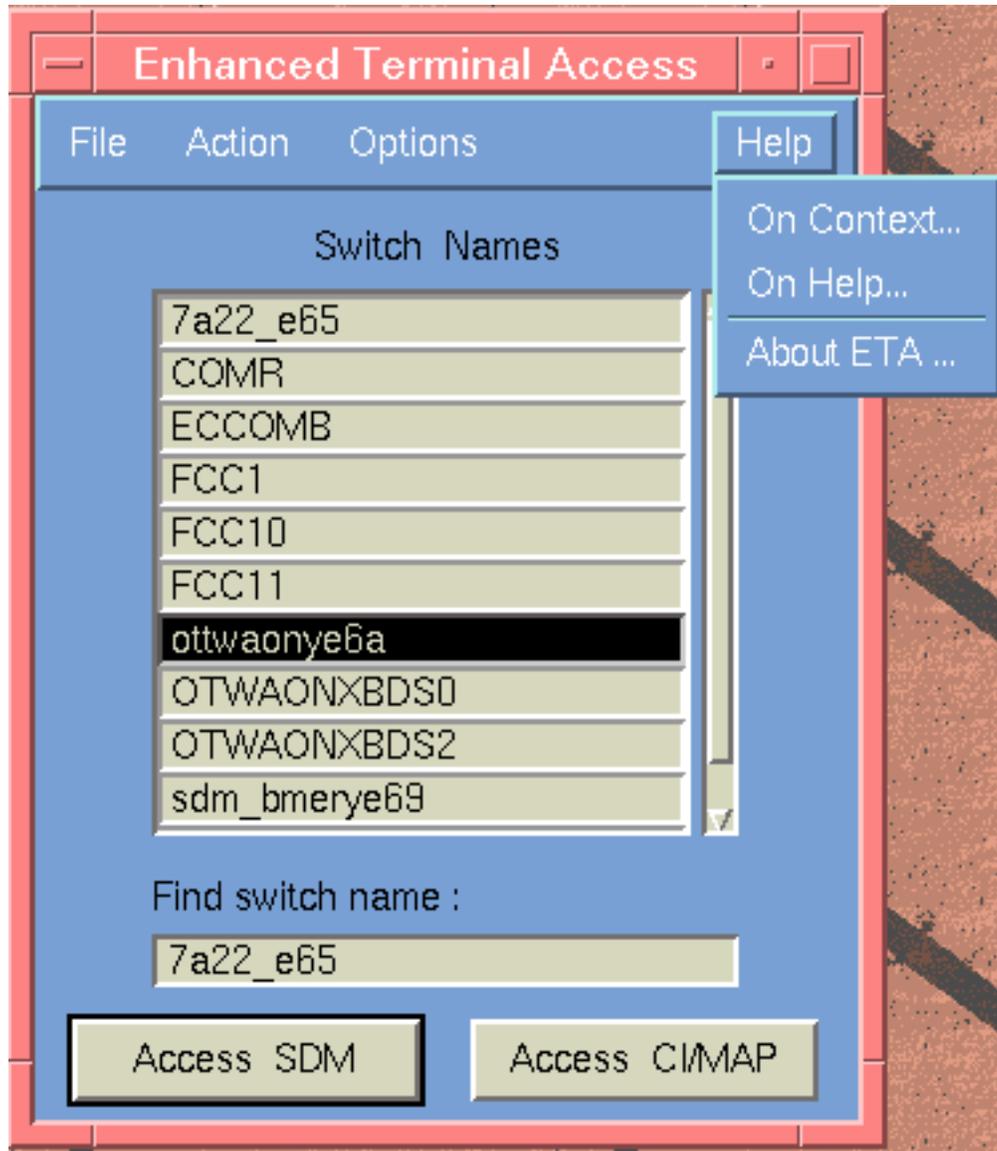
9.7.4.1 ETA copyright window



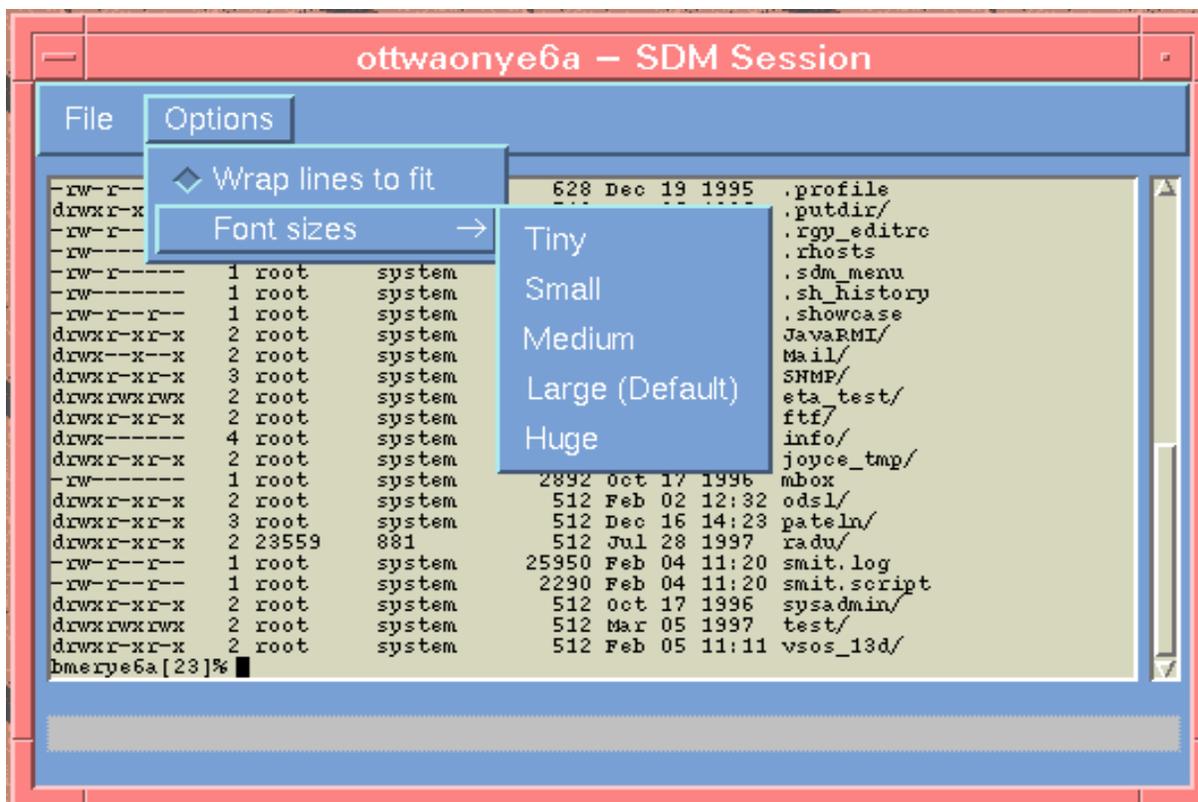
9.7.4.2 ETA main window with option pull down menu



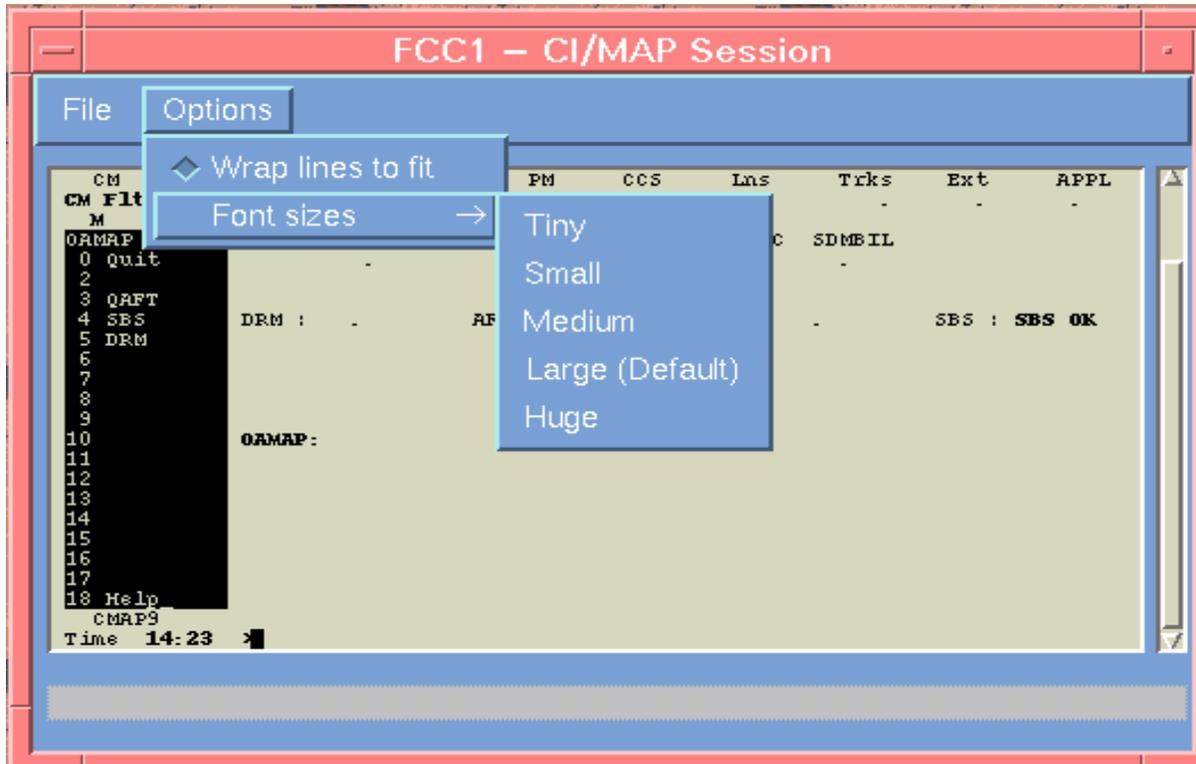
9.7.4.3 ETA main window with help pull down menu



9.7.4.4 ETA SDM session window with option pull down menu



9.7.4.5 ETA CM session window with option pull down menu



9.7.4.6 ATA client interface

The ATA client is to be executed on the following platforms in this release:

- Hewlett Packard series 700 or 800 workstation running HP-UX 10.20 or later.

— Sun Sparc workstation running Solaris 2.4 or later.

9.7.4.6.1 Client configuration

Before users may access SDM ETA servers using the ATA client, the DCE cell administrator must create and configure DCE user accounts for each of them. This is accomplished using the scripts located in the /sdm/bin directory on the client machine.

9.7.4.6.2 Client startup

The ATA client and the DCE client software must be installed on the client machine. The client machine must be configured inside the DCE cell. There are two ways to run the ATA client.

- Start the client without command line arguments

The client will prompt for the user's DCE principle name and password. After the user is authenticated, an "ata>" prompt will be displayed, waiting for the user to issue commands.

Table 4 ATA commands for interactive mode

Command	Description
list	display all the available CLLI names in the DCE cell
open <switch_cli_name> SDM CM	open a connection to the SDM or CM
exit	terminate the ATA program
quit	same as exit
?	display usage information

The user can issue a "list" command to display all the available CLLI names in the DCE cell. The user can choose a CLLI name from the list and issue an "open" command followed by the selected CLLI name and a session type as "SDM" or "CM". If the remote server is running and everything is ok, an SDM or CM session will be established.

Sample output:

```
/sdm/bin % ata
Enter Principal Name: jian
Enter Password:
ata> list
CLLI-bmerye79 FCC1 OTWAONXBDS0 sdm_bmerye69
COMR FCC2 ottwaonye6a
ata> open FCC1 sdm
There are 5 local logins.
```

There is 1 ETA login to the SDM.
There are no ETA logins to the CM.

Current SDM status:
SDM CON LAN APPL SYS HW
I S . I . .

```
# exit
logout
ata> open FCC1 cm
CMAP10 Logged in on 1998/06/19 at 11:07:24.
```

```
*****
**                                     **
**      This is a private database.      **
**      All activity is subject to monitoring.      **
**      Any UNAUTHORIZED access or use is PROHIBITED, and      **
**      may result in PROSECUTION.      **
**                                     **
*****
```

```
1998/06/12 16:22 rtcna10bg bfcc1 Sanitized 06/12/98
>logout
BYE BYE
CMAP10 Logged out on 1998/06/19 at 11:07:32.Connection closed.
ata>
```

- Start the client with command line arguments
 - a. ata -list

The user can run the client with "-list" option to display all the available CLI names in the DCE cell, the DCE principle name and password will be prompted for authentication.

Sample output:

```
/sdm/bin % ata -list
Enter Principal Name: jian
Enter Password:
CLLI-bmerye79 FCC1 OTWAONXBDS0 sdm_bmerye69
COMR FCC2 ottwaonye6a
```

- b. ata -cli <switch_cli_name> -session SDM | CM

The user can start the client with the CLI name and session type as the command line arguments to access the SDM or CM, the DCE principal name and password will be prompted for authentication.

Sample output1 (access to SDM):

```
/sdm/bin % ata -cli FCC1 -session SDM
Enter Principal Name: jian
Enter Password:
```

```
There are 5 local logins.
There is 1 ETA login to the SDM.
There are no ETA logins to the CM.
```

```
Current SDM status:
SDM  CON  LAN  APPL  SYS  HW
.  .  .  .  .  .
```

#

Sample output2 (access to CM):

```
/sdm/bin % ata -cli FCC1 -session CM
Enter Principal Name: jian
Enter Password:
CMAP10 Logged in on 1998/06/19 at 11:15:23.
```

```
*****
**                                     **
**      This is a private database.      **
**      All activity is subject to monitoring.      **
**      Any UNAUTHORIZED access or use is PROHIBITED, and      **
**      may result in PROSECUTION.      **
**                                     **
*****
```

```
1998/06/12 16:22 rtcna10bg bfcc1 Sanitized 06/12/98
>
```

c. ata -help

Display the above usage information.

Sample output:

```
/sdm/bin % ata -help
Usage: ata [-cli switch_cli_name -session SDM | CM]
       ata [-list]
```

9.7.5 Operational measurements (OM)

N/A.

9.7.6 AMA/Billing information (AM)

N/A.

9.8 Feature impact

9.8.1 Interactions

This feature will not introduce new Interactions.

9.8.2 Restrictions/limitations

- This feature will not introduce new restrictions/limitations.

9.9 Definitions & abbreviations

- ASCII: American Standard Code For Information Interchange
- Bsy: Busy
- CI: the CM Command Interpreter
- CLI: Common Language Location Identifier, in the context of this feature the CLI will refer to the Telco “name” of the switch.
- CM: Compute Module
- DCE: Distributed Computing Environment
- DMS: Digital Multiplex System
- ETA: Enhanced Terminal Access
- GUI: Graphical User Interface
- InSv: In Service
- IP: Internet Protocol
- LAN: Local Area Network
- MAP: Maintenance and Administration Position
- PLM: Product Line Management
- RPC: Remote Procedure Call (between two different machines)
- RTS: Return to Service
- SDM: SuperNode Data Manager
- TCP: Transmission Control Protocol

- WAN: Wide Area Network
- WS: Workstation

9.10 References

- [1] Enhanced Terminal Access Functional Description, *SD0707FN*
- [2] Enhanced Terminal Access Design Description, *SD0707DD*
- [3] SDM Enhanced Terminal Access Phase II Feature Specification Document

Logs List of Features

af7546

af7547

af7655

sd1002

10. AF7546 Log changes (LG)

10.1 Summary

Table 5

LOG NAME	LOG NUMBER	NEW/MOD DELETED	SYSTEM (SOS/UNIX)
SDMB	355	MOD	
SDMB	360	MOD	
SDMB	365	NEW	
SDMB	366	NEW	
SDMB	375	MOD	
SDMB	390	NEW	
SDMB	655	MOD	
SDMB	660	MOD	
SDMB	675	MOD	

The (Billing) Stream is added to logs SDMB 360, 375, 390, 660, and 675. Because SBA10 supports both inbound¹ and outbound file transfers, additional text is added to indicate the file transfer mode. Inbound file transfer is indicated by IFT. Outbound file transfer is indicated by OFT.

¹Inbound file transfers are initiated when the downstream processor accesses the SDM remotely to “pull” the desired billing records to itself. Outbound file transfers are initiated through either scheduled file transfers or the manual Sendfile command, the SBA “pushes” the desired billing records from the SDM to the downstream processor.

10.2 Log report: SDMB355 TBL SDM Billing Disk

10.2.1 Problems writing records (per stream)

10.2.1.1 Example

** SDMB355 AUG19 17:51:24 1234 TBL SDM Billing Disk
STREAM= <stream>: UNABLE TO WRITE RECORDS TO FILE

10.2.1.2 Overview

This is associated with the raising alarm DSKWR. It indicates that there is some disk problem preventing the writing of records.

10.2.1.3 Format

SDMB355 AUG19 17:51:24 1234 TBL SDM Billing Disk
STREAM=<stream>: UNABLE TO WRITE RECORDS TO FILE

10.2.1.4 Field description

Field name: stream
Field optionality: mandatory, variable
Type: Text
Size: Variable
Value(s): Variable
Descriptions: Identifies the stream on which the problem occurred
NTP table reference: N/A

10.2.1.5 Action to be taken

Contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

10.2.2 Problems writing to disk

10.2.2.1 Example

SDMB355 AUG19 17:51:24 1234 TBL SDM Billing Disk
DISK WRITE FAILURE: CLOSING CURRENT FILE

10.2.2.2 Overview

This is generated when the Record Client/FileManager is unable to write to the disk.

10.2.2.3 Format

SDMB355 AUG19 17:51:24 1234 TBL SDM Billing Disk
DISK WRITE FAILURE : <details>

10.2.2.4 Field description

Field name: details
Field optionality: mandatory, variable
Type: Text
Size: Variable
Value(s): Variable
Descriptions: Additional information on problem
NTP table reference: N/A

10.2.2.5 Action to be taken

Contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

10.2.3 Critical Disk Utilization

10.2.3.1 Example

*** SDMB355 AUG19 17:51:24 1234 TBL SDM Billing Disk
STREAM= <stream>: CRITICAL: DISK UTILIZATION

10.2.3.2 Overview

This is associated with the raising alarm LODSK described in the mm. It indicates that the disk utilization has risen above the critical threshold specified in the MIB in parm .

10.2.3.3 Format

*** SDMB355 AUG19 17:51:24 1234 TBL SDM Billing Disk
STREAM=<stream>: CRITICAL: DISK UTILIZATION

10.2.3.4 Field description

Field name: stream
Field optionality: mandatory, variable
Type: Text
Size: Variable
Value(s): Variable
Descriptions: Identifies the stream on which the problem occurred
NTP table reference: N/A

10.2.3.5 Action to be taken

Contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

10.2.4 Major Disk Utilization

10.2.4.1 Example

** SDMB355 AUG19 17:51:24 1234 TBL SDM Billing Disk
STREAM= <stream>: MAJOR: DISK UTILIZATION

10.2.4.2 Overview

This is associated with the raising alarm LODSK described in the mm. It indicates that the disk utilization has risen above the major threshold.

10.2.4.3 Format

** SDMB355 AUG19 17:51:24 1234 TBL SDM Billing Disk
STREAM=<stream>: MAJOR: DISK UTILIZATION

10.2.4.4 Field description

Field name: stream
Field optionality: mandatory, variable
Type: Text
Size: Variable
Value(s): Variable
Descriptions: Identifies the stream on which the problem occurred
NTP table reference: N/A

10.2.4.5 Action to be taken

For more information refer to *The SBA Application Guide*, NTP 297-5051-300.

10.2.5 Minor: Disk Utilization

10.2.5.1 Example

* SDMB355 AUG19 17:51:24 1234 TBL SDM Billing Disk
STREAM= <stream>: MINOR: DISK UTILIZATION

10.2.5.2 Overview

This log is associated with the raising alarm LODSK described in the mm. It indicates that the disk utilization has risen above the minor threshold.

10.2.5.3 Format

* SDMB355 AUG19 17:51:24 1234 TBL SDM Billing Disk
STREAM=<stream>: MINOR: DISK UTILIZATION

10.2.5.4 Field description

Field name: stream

Field optionality: mandatory, variable

Type: Text

Size: Variable

Value(s): Variable

Descriptions: Identifies the stream on which the problem occurred

NTP table reference: N/A

10.2.5.5 Action to be taken

For more information refer to *The SBA Application Guide*, NTP 297-5051-300.

10.3 Log report: SDMB360

10.3.1 Example

```
SDMB360 AUG19 17:51:24 1234 TBL SDM BILLING COMMS  
STREAM= <stream>: OFT - CONNECTION TO FILE CLIENT  
UNAVAILABLE.
```

As shown in this example, the STREAM field is new, as is the text indication of OFT. In an earlier release, the text description read: 'CONNECTION TO PSS UNAVAILABLE.'

10.3.2 Overview

This log is generated when the connection to the File Client is lost and cannot be restored and is associated with the alarm SBAIF.

10.3.3 Format

```
SDMB360 <date> <time> <seq #> TBL SDM BILLING COMMS  
STREAM= <stream>: OFT - CONNECTION TO FILE CLIENT  
UNAVAILABLE
```

10.3.4 Field description

Field name: stream
Field optionality: mandatory, variable
Type: Text
Size: 4 characters
Value(s): Variable
Descriptions: Identifies the stream on which the problem occurred
NTP table reference: N/A

The new indication of file transfer mode (IFT or OFT) is part of the description text. PSS is changed to File Client.

10.3.5 Action to be taken

Contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

10.4 Log report: SDMB365

10.4.1 Example

The following shows a typical example of log report SDMB365

```
SDMB365 AUG22 17:51:24 5703 TBL SDM BILLING  
STATUS=CDR1:Unable to create stream
```

10.4.2 Overview

The SDMB365 log is a software error log indicating a serious problem on the SDM that prevents creation of the named stream.

10.4.3 Format

```
SDMB365 <mmdd hh:mm:ss ssdd>TBL SDM BILLING  
STATUS=<stream>: <status>
```

10.4.4 Field description

STREAM

Field name: stream
Field optionality: mandatory, variable
Type: String
Value(s): ALL or <stream>
Descriptions:

ALL - for system wide logs not applicable to a specific stream

<stream> - a stream that exists on the switch.

STATUS

Field name: Status
Field optionality: mandatory, variable
Type: String
Size: 42 Character
Value(s):

See the following list of possible logs. The status is the string that explains the reason for the log.

10.4.5 Possible SDMB365 Logs

This is a list of possible SDMB365 logs. The bullet text is the status string followed by an explanation of the log.

- Unable to create stream.

Explanation: This log is only generated when a new version of the SBA product doesn't support a stream format on an active stream that was present in a previous load.

10.4.5.1 Action to be taken

For the "Unable to create stream" log, revert back to the previous version of SBA that was running. If the support for the stream format was intentionally taken out in the new release, then the stream should be turned off before installing the new version. If the new version is supposed to support all existing streams, then the telco should contact Nortel (or whoever is responsible for delivering the software) for the latest appropriate software.

10.5 Log report: SDMB 366

10.5.1 Example

The following shows a typical example of log report SDMB366

```
SDMB366 AUG22 17:51:24 5703 TBL SDM BILLING  
STREAM = ALL: SBA STARTUP FAILURE: BAF could not be initialized
```

10.5.2 Overview

The SDMB366 log is a software error log indicating trouble on the SDM.

10.5.3 Format

```
SDMB366 <mmdd hh:mm:ss ssdd>TBL SDM BILLING  
STREAM = ALL: SBA STARTUP FAILURE: <err msg>
```

10.5.4 Field description

1. Err msg

Field name: Err msg

Field optionality: mandatory, variable

Type: String

Size: 42 Character

Value(s):

The status is the string that explains the reason for the log - it is defined by the applications that build on top of the SBA Base.

10.5.5 Possible SDMB366 Logs

This is an example of possible SDMB366 logs - the exact messages are defined by the applications that build on top of the base SBA. The bullet text is the err msg string followed by an explanation of the log.

- BAF was not initialized.

Explanation: This log would only be generated when the stream record format application code in the SBASstreams process could not be initialized. It is possible the SBA could not process streams of that format type..

10.5.6 Action to be taken

Contact next level of support. It is possible that, if the installed SBA supports multiple stream record formats, streams of the unlogged formats can still be processed.

10.6 Log report: SDMB375

Explanation

The SDMB subsystem generates this log when a problem occurs during the transfer of a file to the Data Processing Management System (the customer's remote location). This log is associated with the alarm file transfer protocol (FTP). The error text is dependent upon the nature of the actual error and reflects what result was returned from the FTP process.

Note: All logs (shown here), with minor alarms, may be escalated to critical status for the circumstance in which the File Transfer system has exhausted all possible retries (as specified by the schedule parameter

SessionFtpMaxConsecRetries).

Format

* SDMB375 <date> <time> <seq #> TBL SDM BILLING FILE
TRANSFER STREAM= <stream>: OFT - <specific error>.

Examples

Example 1

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER **STREAM= <stream>: OFT** - REQUESTED ACTION NOT
TAKEN: <COMMAND>. INSUFFICIENT STORAGE SPACE IN
SYSTEM.

Action

Contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 1a

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER **STREAM= <stream>: OFT** - REQUESTED FILE ACTION
ABORTED: <COMMAND>. EXCEEDED STORAGE ALLOCATION ON
DOWNSTREAM DPMS.

Action

Contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 1b

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER **STREAM= <stream>: OFT** - UNABLE TO FORK CHILD
PROCESS.

Action

Contact your next level of support. For more information on this, refer to
The SBA Application Guide, NTP 297-5051-300.

Example 1c

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER **STREAM= <stream>: OFT** -UNABLE TO OPEN
PSEUDO TERMINAL MASTER.

Action

Contact your next level of support. For more information on this, refer to
The SBA Application Guide, NTP 297-5051-300.

Example 1d

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER **STREAM= <stream>: OFT** - UNABLE TO SET STREAM
ID IN CHILD PROCESS.

Action

Contact your next level of support. For more information on this, refer to
The SBA Application Guide, NTP 297-5051-300.

Example 1e

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER **STREAM= <stream>: OFT** - UNABLE TO OPEN
PSEUDO TERMINAL SLAVE.

Action

Contact your next level of support. For more information on this, refer to
The SBA Application Guide, NTP 297-5051-300.

Example1f

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER **STREAM= <stream>: OFT** - UNABLE TO SET STDOUT
OF CHILD PROCESS TO PSEUDO TERMINAL SLAVE.

Action

Contact your next level of support. For more information on this, refer to
The SBA Application Guide, NTP 297-5051-300.

Example 1g

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER **STREAM= <stream>: OFT** - UNABLE TO SET STDERR
OF CHILD PROCESS TO PSEUDO TERMINAL SLAVE.

Action

Contact your next level of support. For more information on this, refer to
The SBA Application Guide, NTP 297-5051-300.

Example 1h

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER **STREAM= <stream>: OFT** - REQUESTED ACTION
ABORTED: <COMMAND>. LOCAL ERROR IN PROCESSING.

Action

Contact your next level of support. For more information on this, refer to
The SBA Application Guide, NTP 297-5051-300.

Example 1i

SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE TRANSFER
STREAM= <stream>: OFT - REQUESTED ACTION ABORTED:
<COMMAND>. LOCAL ERROR IN PROCESSING.

Action

Contact your next level of support. For more information on this, refer to
The SBA Application Guide, NTP 297-5051-300.

Example 2

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER **STREAM= <stream>: OFT - DPMS FTP SERVICE NOT
AVAILABLE WHILE ATTEMPTING CONNECTION.**

Action

There are many reasons why this could happen. Contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 2a

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER **STREAM= <stream>: OFT - DPMS FTP CONNECTION
CLOSED.**

Action

There are many reasons why this could happen. Contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 3

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER **STREAM= <stream>: OFT - NOT LOGGED IN WHILE
EXECUTING COMMAND: <COMMAND>.**

Action

Verify FTP. If it doesn't work, contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example3b

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER **STREAM= <stream>: OFT - LOGIN INCORRECT WHILE
ATTEMPTING CONNECTION TO DOWNSTREAM DPMS.**

Action

Verify FTP. If it doesn't work, contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 3c

```
* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER STREAM= <stream>: OFT - Error:<error text>.
Command:<command>.
```

Action

Verify FTP. If it doesn't work, contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 4

```
* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER STREAM= <stream>: OFT - REQUESTED FILE ACTION
NOT TAKEN: <COMMAND>FILE UNAVAILABLE.
```

Action

The file or directory could have its read access deactivated or could have been deleted without AMA Manager's knowledge. Contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 4a

```
* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER STREAM= <stream>: OFT - REQUESTED FILE ACTION
NOT TAKEN: <COMMAND>.DIRECTORY DOES NOT EXIST OR
NOT WRITEABLE.
```

Action

The file or directory could have its read access deactivated or could have been deleted without AMA Manager's knowledge. Contact your next level of support. Verify FTP. If it doesn't work, contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 5

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE TRANSFER **STREAM= <stream>: OFT** - COMMAND '<COMMAND>' NOT IMPLEMENTED AT DOWNSTREAM DPMS.

Action

This error should never be encountered. Check the version of FTP on the DPMS or contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 5a

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE TRANSFER **STREAM= <stream>: OFT** - SYNTAX ERROR, COMMAND NOT RECOGNIZED: <COMMAND>.

Action

This error should never be encountered. Check the version of FTP on the DPMS or contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example5b

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE TRANSFER **STREAM= <stream>: OFT** - SYNTAX ERROR IN PARAMETERS OR ARGUMENTS: <COMMAND>

Action

This error should never be encountered. Check the version of FTP on the DPMS or contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 5c

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE TRANSFER **STREAM= <stream>: OFT** - BAD SEQUENCE OF COMMANDS: <COMMAND LIST>.

Action

This error should never be encountered. Check the version of FTP on the DPMS or contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 5d

* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE TRANSFER **STREAM= <stream>: OFT** - COMMAND NOT IMPLEMENTED FOR THAT PARAMETER: <COMMAND>.

Action

This error should never be encountered. Check the version of FTP on the DPMS or contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 5e

```
* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER STREAM= <stream>: OFT - UNKNOWN FTP RETURN
CODE <NUMBER>ENCOUNTERED FOR
COMMAND:<COMMAND>.
```

Action

This error should never be encountered. Check the version of FTP on the DPMS or contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 6

```
* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER STREAM= <stream>: OFT - NEED ACCOUNT FOR
LOGIN TO DOWNSTREAM DPMS.
```

Action

Create a UNIX account for this login id on the downstream DPMS or contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 7

```
* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER STREAM= <stream>: OFT - CAN'T OPEN FTP
CONNECTION TO DOWNSTREAM DPMS
```

Action

There may not be any ports available on the DPMS for communication. Contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 8

```
* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER STREAM= <stream>: OFT - NEED FTP ACCOUNT FOR
STORING FILES ON DOWNSTREAM DPMS
```

Action

The DPMS Agent is not designed to support the use of FTP specific accounts, only unix accounts. Contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 9

```
* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER STREAM= <stream>: OFT - REQUESTED ACTION
ABORTED: <COMMAND>. PAGE TYPE UNKNOWN.
```

Action

This can happen between incompatible versions of FTP. Check version of FTP on the DPMS or contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

Example 10

```
* SDMB375 AUG19 17:51:24 1234 TBL SDM BILLING FILE
TRANSFER STREAM= <stream>: OFT - REQUESTED ACTION NOT
TAKEN: <COMMAND> FILE NAME NOT ALLOWED.
```

Action

The file name may already exist on the downstream with write privileges disabled. Contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

10.7 Log report: SDMB390

10.7.1 Format

SDMB390 <date> <time> <seq #> TBL SDM BILLING FILE
TRANSFER SCHEDULE STREAM= <stream> Error text.

10.7.2 Overview

This NEW log is generated when Schedule related trouble occurs. It is associated with the AlarmIF.

10.7.3 Example

SDMB390 AUG19 17:51:24 1234 TBL SDM BILLING FILE TRANSFER
SCHEDULE STREAM= <stream> Unable to activate file transfer
schedule. Unable to register with File Client.

This text description is generated in the scenario where the Schedule Manager is RTSd, one or more schedule tuples are entered and Activated, the Schedule Manager is shutdown for some reason (such as BSY, SWACT, etc.), and then Returned To Service (RTS). As part of being RTSd, the Schedule Manager must re-register with the File Client for each Activated schedule tuple (the Active field of the schedule tuple is set).

Generation of this alarm in this scenario triggers generation of a critical alarm (SBAIF).

10.7.4 Field description

Field name: stream
Field optionality: mandatory, variable
Type: Text
Size: 4 characters
Value(s): Variable
Descriptions: Identifies the stream on which the problem occurred
NTP table reference: N/A

This Trouble log is generated when File Transfer Schedule problems are encountered.

10.7.5 Action to be taken

This Trouble log is generated when File Transfer Schedule problems are encountered. This is a serious problem. Contact the next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

10.7.6 Post-analysis

N/A

10.7.7 Internal

N/A

10.7.8 OM register

N/A

10.8 Log report: SDMB655

10.8.1 File State Change

10.8.1.1 Example

SDMB655 AUG19 17:51:24 1234 INFO SDM Billing Disk
STREAM = <stream>:: File <file name> has moved from <previous
state> to <new state>

10.8.1.2 Overview

This log notifies of a file state change. The states of files are

- Init - state prior to opening
- Open - records are currently being written to file
- Closed Not Sent - the file is closed but not sent to the RAO.
- Closed Sent - the file has been sent downstream

10.8.1.3 Format

SDMB655 AUG19 17:51:24 1234 INFO SDM Billing Disk
STREAM=<stream>: File <file name> has moved from <state> to <
state>

10.8.1.4 Field description

Field name: stream

Field optionality: mandatory, variable

Type: Text

Size: 4 characters

Value(s): Variable

Descriptions: Identifies the stream on which the problem occurred

NTP table reference: N/A

Field name: state

Field optionality: mandatory/optional, variable/constant

Type: Text

Size: 16

Value(s): Variable

Descriptions: Identifies the stream on which the problem occurred

NTP table reference: N/A

10.8.1.5 Action to be taken

None.

10.8.2 Now Able to Write to Records to File

10.8.2.1 Example

SDMB655 AUG19 17:51:24 1234 INFO SDM Billing Disk
STREAM= *<stream>*: NOW ABLE TO WRITE RECORDS TO FILE

10.8.2.2 Overview

This is associated with the lowering of alarm DSKFL described in the mm. It indicates that the disk problem causing the alarm has been fixed.

10.8.2.3 Format

SDMB355 AUG19 17:51:24 1234 TBL SDM Billing Disk
STREAM=*<stream>*: NOW ABLE TO WRITE RECORDS TO FILE

10.8.2.4 Field description

Field name: stream
Field optionality: mandatory, variable
Type: Text
Size: 4 characters
Value(s): Variable
Descriptions: Identifies the stream on which the problem occurred
NTP table reference: N/A

10.8.2.5 Action to be taken

None.

10.8.2.6 Post-analysis

None.

10.8.3 Below Critical Disk Utilization

10.8.3.1 Example

SDMB655 AUG19 17:51:24 1234 INFO SDM Billing Disk
STREAM= *<stream>*: BELOW CRITICAL DISK UTILIZATION

10.8.3.2 Overview

This is associated with the lowering of alarm LODSK described in the mm. It indicates that the disk utilization has dropped below the critical threshold.

10.8.3.3 Format

SDMB655 AUG19 17:51:24 1234 INFO SDM Billing Disk
STREAM=<*stream*>: BELOW CRITICAL DISK UTILIZATION

10.8.3.4 Field description

Field name: stream
Field optionality: mandatory, variable
Type: Text
Size: 4 characters
Value(s): Variable
Descriptions: Identifies the stream on which the problem occurred
NTP table reference: N/A

10.8.3.5 Action to be taken

None.

10.8.4 Below Major Disk Utilization

10.8.4.1 Example

SDMB655 AUG19 17:51:24 1234 INFO SDM Billing Disk
STREAM= <*stream*>: BELOW MAJOR DISK UTILIZATION

10.8.4.2 Overview

This is associated with the lowering of alarm LODSK described in the mm. It indicates that the disk utilization has dropped below the major threshold.

10.8.4.3 Format

SDMB655 AUG19 17:51:24 1234 INFO SDM Billing Disk
STREAM=<*stream*>: BELOW MAJOR DISK UTILIZATION

10.8.4.4 Field description

Field name: stream
Field optionality: mandatory, variable
Type: Text
Size: 4 characters
Value(s): Variable
Descriptions: Identifies the stream on which the problem occurred
NTP table reference: N/A

10.8.4.5 Action to be taken

None.

10.8.5 Below Minor Disk Utilization

10.8.5.1 Example

SDMB655 AUG19 17:51:24 1234 INFO SDM Billing Disk

10.8.5.2 Overview

This is associated with the lowering of alarm LODSK described in the mm. It indicates that the disk utilization has dropped below the minor threshold.

10.8.5.3 Format

SDMB655 AUG19 17:51:24 1234 INFO SDM Billing Disk
STREAM=<stream>: BELOW MINOR DISK UTILIZATION

10.8.5.4 Field description

Field name: stream
Field optionality: mandatory, variable
Type: Text
Size: 4 characters
Value(s): Variable
Descriptions: Identifies the stream on which the problem occurred
NTP table reference: N/A

10.8.5.5 Action to be taken

None

10.8.6 File has been Removed from System

10.8.6.1 Example

SDMB655 AUG19 17:51:24 1234 INFO SDM Billing Disk
STREAM= <stream>: File <file name> has been removed from system.

10.8.6.2 Overview

This log notifies when a secondary file has been removed from the system.

10.8.6.3 Format

SDMB655 AUG19 17:51:24 1234 INFO SDM Billing Disk
STREAM=<stream>: File <file name> has been removed from system.

10.8.6.4 Field description

Field name: stream
Field optionality: mandatory, variable
Type: Text
Size: 4 characters
Value(s): Variable
Descriptions: Identifies the stream on which the problem occurred
NTP table reference: N/A

Field name: file name
Field optionality: mandatory, variable
Type: Text
Size: 16
Value(s): Variable
Descriptions: Identifies the file that was removed
NTP table reference: N/A

10.8.6.5 Action to be taken

None

10.9 Log report: SDMB660

Explanation

This log is generated whenever a problem involving communications with other SBA features is resolved and is associated with the alarm FTP.

Format

SDMB660 <date> <time> <seq #> INFO SDM BILLING COMMS
STREAM= <stream>: OFT - <specific resolution>

As shown in this example, the STREAM field is new, as is the text indication of OFT. Also, PSS is changed to FILE CLIENT in the text description.

Example 1

SDMB660 AUG19 17:51:24 1234 INFO SDM BILLING COMMS **STREAM=**
<stream>: OFT - RECONNECTED TO FILE CLIENT.

As shown in this example, the STREAM field is new, as is the text indication of OFT. Also, PSS is changed to FILE CLIENT.

Action 1

None.

Example 2

SDMB660 AUG19 17:51:24 1234 INFO SDM BILLING COMMS STREAM=
<stream>: OFT - CONNECTION TO FILE CLIENT reestablished.

PSSFILESERVER is changed to FILE CLIENT.

Action 2

None.

10.10 Log report: SDMB675

10.10.1 Example

```
SDMB675 AUG19 17:51:24 1234 INFO SDM BILLING FILE  
TRANSFER STREAM= <stream>: OFT - DPMS SUFFICIENT SPACE  
AVAILABLE.
```

As shown in this example, the STREAM field is new, as is the text indication of OFT.

10.10.2 Overview

This log is generated whenever a problem involving a file transfer has been resolved and is associated with the alarm FTP.

10.10.3 Format

```
SDMB675 <date> <time> <seq #> INFO SDM BILLING FILE  
TRANSFER STREAM= <stream>: OFT - <specific resolution>.
```

10.10.4 Field description

Field name: stream
Field optionality: mandatory, variable
Type: Text
Size: 4 characters
Value(s): Variable
Descriptions: Identifies the stream on which the problem occurred
NTP table reference: N/A

The new indication of file transfer mode (IFT or OFT) is part of the description text. The remaining portion of the text field describes the particular error associated with the file transfer.

Field name: specific resolution
Field optionality: mandatory
Type: text
Size: variable
Value(s): variable
Descriptions: Identifies the particular problem resolved
NTP table reference: N/A

10.10.5 Action to be taken

Contact your next level of support. For more information on this, refer to *The SBA Application Guide*, NTP 297-5051-300.

10.10.6 Post-analysis

N/A

10.10.7 Internal

N/A

10.10.8 OM register

N/A

11. AF7547 Log changes (LG)

Log changes for feature AF7547 (Bellcore AMA Format/ Automatic Message Accounting Data Networking System Decoupling from Base Billing) are not yet available. They are expected to be confined to the addition of stream ID to existing logs.

11.1 Summary

Table 6

LOG NAME	LOG NUMBER	NEW/MOD DELETED	SYSTEM (SOS/UNIX)

11.2 Log report

11.2.1 Example

11.2.2 Overview

11.2.3 Format

11.2.4 Field description

Field name:

Field optionality: mandatory/optional, variable/constant

Type:

Size:

Value(s):

Descriptions:

NTP table reference:

11.2.5 Action to be taken

11.2.6 Post-analysis

11.2.7 Internal

11.2.8 OM register

12. Log changes (LG)

12.1 Summary

Table 7

LOG NAME	LOG NUMBER	NEW/MOD DELETED	SYSTEM (SOS/UNIX)

NOT APPLICABLE.

No CM logs will be generated by this feature.

12.2 Log report

NOT APPLICABLE.

12.2.1 Example

NOT APPLICABLE.

12.2.2 Overview

NOT APPLICABLE.

12.2.3 Format

NOT APPLICABLE.

12.2.4 Field description

NOT APPLICABLE.

Field name:
Field optionality: mandatory/optional, variable/constant
Type:
Size:
Value(s):
Descriptions:
NTP table reference:

12.2.5 Action to be taken

NOT APPLICABLE.

12.2.6 Post-analysis

NOT APPLICABLE.

12.2.7 Internal

NOT APPLICABLE.

12.2.8 OM register

NOT APPLICABLE.

13. Log changes (LG)

13.1 Summary

Table 8

LOG NAME	LOG NUMBER	NEW/MOD DELETED	SYSTEM (SOS/UNIX)
SDM	320	new	UNIX
SDM	620	new	UNIX
SDM	550	mod	SOS

*** Start of block ***. Search for “*** End of block ***” mark.

13.2 Log report: SDM321

13.2.1 Example

SDM321 MAY30 12:42:44 5641 TBL SDM Base Maintenance
Split-system upgrade in-progress
Status: started

13.2.2 Overview

Generated at the start a split-system upgrade and before and after a SwAct during the upgrade.

13.2.3 Format

SDM321 MAY30 12:42:44 5641 TBL SDM Base Maintenance
Split-system upgrade in-progress
Status: <status>

13.2.4 Field description

Field name:status
Field optionality: mandatory, constant
Type:string
Size:<64 characters
Value(s):One of the following
started
SwAct started
SwAct completed
SwAct started for fallback
SwAct completed for fallback
Descriptions: indicates the current status of the upgrade
NTP table reference:none

13.2.5 Action to be taken

Carry out split-system upgrade procedure to completion or abort the upgrade by falling back.

13.3 Log report: SDM621

13.3.1 Example

SDM621 MAY30 12:42:44 5641 INFO SDM Base Maintenance
Split-system upgrade ended
Status: successfully completed

13.3.2 Overview

Generated at the end of a split-system upgrade procedure.

13.3.3 Format

SDM621 MAY30 12:42:44 5641 INFO SDM Base Maintenance
Split-system upgrade ended
Status: <status>

13.3.4 Field description

Field name:status
Field optionality: mandatory, constant
Type:string
Size:<64 characters
Value(s):One of the following
 successfully completed
 fallback completed
Descriptions: indicates whether the upgrade has been successfully completed
or whether a fallback has occurred
NTP table reference:none

13.3.5 Action to be taken

none

13.4 Log report: SDM550

13.4.1 Example

```
* SDM550 APR06 20:37:46 3100 INFO Node Status Change
Node:  SDM 0
Status: ISTb   from ISTb
Reason: Split-system upgrade started
```

13.4.2 Note:

The only change to this log is the addition of the following possible reasons:

Reason: Split-system upgrade started
Reason: SwAct started
Reason: SwAct completed
Reason: SwAct started for fallback
Reason: SwAct completed for fallback
Reason: Split-system upgrade successfully completed
Reason: Split-system upgrade fallback completed

*** End of block ***

Data Schema List of Features

af7546

af7547

14. AF7546 Data schema changes (DS)

This section includes all of the parameters and objects that are contained in the managed information base (MIB) for the provisioning and operation of the Supernode Billing Application. This information will be updated by week 24 and will be made available to the documentation prime upon request.

Note:

The MIB elements are not “traditional” data schema subject matter, but this section of the D-DOCs is the most appropriate place for their documentation.

Each elements *modified* for SBA010 includes a statement similar to the following:

```
08/09 Name: amaOutPriErrFiles
```

All elements that do not include such an “08/09...” statement are *new* elements for SBA010.

14.1 Tables

Are new tables added by this feature (Y/N)?: ___

Are existing tables modified by this feature (Y/N): ___

14.1.1 New/modified Table List

Table 9

TABLE NAME	NEW, CHANGED or DELETED	TABLE CONTROL (NEW/OLD/UNCHANGED)

14.1.2 Table Name:

14.1.2.1 General

14.1.2.2 Field Information

Table 10

FIELD NAME	RANGE OF VALUES	STATUS	DEFAULT VALUES

14.1.2.3 Description of changed or new fields

14.1.2.4 Datafill sequence

14.1.2.5 Table sizing

Table 11

Minimum Size	
Maximum Size	

Table 11

CC restart type required to increase size	
---	--

14.1.2.6 Dump and restore

14.1.2.7 Activation

14.1.2.8 Example

14.2 Office parameters

Note:

These parameters are not traditional office parameters - they apply only to the SBA application running on the SDM.

Table: outputAuditTable

This table stores counts of records and files sent to external components (e.g. File Transfer). The outRCIndex represents the entry(row) in the recordClientTable that is audited by the row in the table

08/09 Name: amaOutTable

Parameter Name: outRCIndex (outputAuditTable)

Functional Description:

"The entry number (row) in the recordClientTable of the recordClient for which this entry (row) is auditing."

Range Information: INTEGER

Default: Not Applicable

Privileges: read-only

Parameter Name: outNumFiles (outputAuditTable)

Functional Description:

"The number of non-error files sent by the record client corresponding to the outRCIndex."

Range Information: Integer

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Default: 0

Privileges: read-only

08/09 Name: amaOutPriAmaFiles

Parameter Name: outNumErrorFiles (outputAuditTable)

Functional Description:

"The number of error files sent by the record client
corresponding to the outRCIndex."

Range Information: Integer

Default: 0

Privileges: read-only

08/09 Name: amaOutPriErrFiles

Parameter Name: outFilesRemaining (outputAuditTable)

Functional Description:

"The number of ClosedNotSent files remaining to be sent by the
record client corresponding to the outRCIndex."

Range Information: Integer

Default: 0

Privileges: read-only

08/09 Name: amaOutPriFilesRem

Parameter Name: outLastFileTime (outputAuditTable)

Functional Description:

"The date and time the last file was sent by the record client
corresponding to outRCIndex."

Range Information: DateAndTime

Default: 0

Privileges: read-only

08/09 Name: amaOutLastFileTime

Parameter Name: outNumRecs (outputAuditTable)

Functional Description:

"The number of records sent in non-error files by the record client
corresponding to the outRCIndex."

Range Information: Integer

Default: 0

Privileges: read-only

08/09 Name: amaOutPriAmaRec

Parameter Name: outNumErrorRecs (outputAuditTable)

Functional Description:

"The number of error records sent in error files by the record client corresponding to the outRCIndex."

Range Information: Integer

Default: 0

Privileges: read-only

08/09 Name: amaOutPriErrRec

Table: inputAuditTable

This table contains auditing information - counts of incoming records and counts of changes to the number of records in storage. This table has 96 rows - each row corresponds to a fifteen minute interval of the day: 00:00 - 00:14 is interval 0 11:45 - 11:59 is interval 95.

Values inAuditRecsIn, inAuditCalcRecsDupl, and inAuditChangeInRecsStored each have 96 entries. inAuditTimeIndex also has 96 rows (from GR1343) but *only* row 0 is used. It's value indicates the current index value that the system is using. To find out how many records have come into the system in the current interval do the following, mib get -r0 inAuditTimeIndex to get the current row. If this was 46, then do mib get -r46 inAuditRecsIn

08/09 Name: amaAuditTable

Parameter Name: inAuditTimeIndex (inputAuditTable)

Functional Description:

"The day is divided into 96 15min intervals. Index '0' corresponding to midnight-12:15 AM, and the index '95' corresponding to 11:45 PM-midnight. Only row 0 of this table is used. The value in row 0 indicates which 15min interval is being used currently by the system"

Range Information: Minimum = 0 Maximum = 95

Default: Not Applicable

Privileges: read-only

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08/09 Name: amaAuditTimeIndex

Parameter Name: inAuditRecsIn (inputAuditTable)

Functional Description:

"The total number of non-error records which arrive over any interface (network interface or removable media interface) in the time interval specified by the inAuditTimeIndex."

Range Information: Counter

Default: 0

Privileges: read-only

08/09 Name: amaAuditAMAREcsIn

Parameter Name: inAuditChangeInRecsStored (inputAuditTable)

Functional Description:

"This value represents the number of incoming records *written* to disk in the appropriate 15min interval. Note: Despite it's name, this attribute does not represent a total number of records stored in the system. Generally, this will have the same value as inAuditRecsIn except in the case of a failure to fully write the incoming set of records to disk. This situation will be flagged in normal way by incrementing the value in the corresponding inAuditCalcRecsDupl. "

Range Information: INTEGER

Default: Not Applicable

Privileges: read-only

08/09 Name: amaAuditChangeInAMAREcsStored

Parameter Name: inAuditCalcRecsDupl (inputAuditTable)

Functional Description:

"This is a table value. There are 96 values, one for each 15 minute interval in the day. The number of non-error records calculated to have been unintentionally duplicated in the time interval specified by the inAuditTimeIndex. A trap is generated when this counter is incremented. The default value is 0"

Range Information: Counter

Default: 0

Privileges: read-only

08/09 Name: amaAuditAMACalcRecsDupl

Table: streamTable

This table contains information on the streams running in SBA, such as the stream and substream status. The indexing is not related to streamId.

Parameter Name: streamName (streamTable)

Functional Description:

"The name of a stream, as specified by the CM"

Range Information: Alphanumeric String SIZE(5)

Default: NULL_STRING

Privileges: read-only

Parameter Name: streamRecordFormat (streamTable)

Functional Description:

"Specifies the format of the CM Messages that will be sent on this stream. This determines which format-specific code will be executed to handle the messages. The value will either be an enum or a short string like BAF, CDR, SMDR"

Range Information: Alphanumeric String SIZE(5)

Default: NULL_STRING

Privileges: read-only

Parameter Name: streamId (streamTable)

Functional Description:

"The number of the stream, as specified by the CM. This number will be used as an index into other tables that are on a per stream basis."

Range Information: Counter

Default: 0

Privileges: read-only

Parameter Name: streamFileTransferMode (streamTable)

Functional Description:

"Boolean indicating whether the files for this stream will be pushed (outbound file transfer initiated from SBA) or pulled (inbound ftp - file transfer initiated outside SBA)."

Range Information: Enumeration Values

0 => Inbound

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1 => Outbound

Default: 1

Privileges: read-only

08/09 Name: fileTransferMode (09-InboundFTP)

Table: recordClientTable

This is a table of record clients for streams, where each row is a record client for a stream. This table contains data about the logical volume and stream data that the record client manages. Each row in this table has an index into the streamTable for the associated stream that this recordClient belongs to.

Parameter Name: rcName (recordClientTable)

Functional Description:

"The name of this record client"

Range Information: Alphanumeric String SIZE(10)

Default: NULL_STRING

Privileges: read-only

Parameter Name: rcStreamName (recordClientTable)

Functional Description:

"The name of the stream that this record client supports"

Range Information: Alphanumeric String SIZE(5)

Default: NULL_STRING

Privileges: read-only

Parameter Name: rcFileType (recordClientTable)

Functional Description:

"The type of files that this record client manages - like DIRP or DNS"

Range Information: Alphanumeric String SIZE(5)

Default: NULL_STRING

Privileges: read-only

Parameter Name: rcLogicalVolumeDir (recordClientTable)

Functional Description:

"Stores the name of the directory where the billing data files for this record client will be stored."

Range Information: Alphanumeric String SIZE(128)

Default: NULL_STRING

Privileges: read-only

08/09 Name: amaBillingDataDir

Parameter Name: rcLVCriticalAlarmThres (recordClientTable)

Functional Description:

"The threshold of percentage of mass storage on this record client's logical volume occupied by ClosedNotSent files that will trigger a critical alarm (e.g., 90 = 90%). The default value is 90."

Range Information: Minimum = 71 Maximum = 90

Default: 90

Privileges: read-only

08/09 Name: amaStoragePriOccuThres

Parameter Name: rcLVDesUtil (recordClientTable)

Functional Description:

"This object is used to control the Sent file deletion algorithm. It represents the desired disk utilization (percentage) for the logical volume under normal conditions. In other words, the billing application will attempt to keep the disk utilization for the volume containing this record client's files within rcLVUtilVariance of this value. Value may range between 10 and 90. The default value is 60."

Range Information: Minimum = 10 Maximum = 90

Default: 60

Privileges: read-only

08/09 Name: amaStorageDesUtil

Parameter Name: rcLVDesUtilVariance (recordClientTable)

Functional Description:

"The desired variance from rcLVDesUtil within which to keep the logical volume disk utilization percentage under normal conditions. This setting may range between 5 and 30. The default value is 5. So assuming both defaults for rcLVDesUtil and rcDesUtilVariance, this record client will attempt to keep disk

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utilization between 55 and 65 percent."

Range Information: Minimum = 5 Maximum = 30

Default: 5

Privileges: read-only

08/09 Name: amaStorageDesUtilVariance

Parameter Name: rcLVPercentTotalOccu (recordClientTable)

Functional Description:

 "Percentage of the logical volume mass storage occupied (e.g., 45 = 45%)."

Range Information: Minimum = 0 Maximum = 100

Default: 0

Privileges: read-only

08/09 Name: amaStorageTotalOccuLevel

Parameter Name: rcLVPercentCNSOccu (recordClientTable)

Functional Description:

 "Percentage of mass storage on this record client's logical volume that is occupied by ClosedNotSent files (e.g., 45 = 45%)."

Range Information: Minimum = 0 Maximum = 100

Default: 0

Privileges: read-only

08/09 Name: amaStoragePriOccuLevel

Parameter Name: rcCurrNumFiles (recordClientTable)

Functional Description:

 "Number of ClosedNotSent files currently on this record client's logical volume."

Range Information: Integer

Default: 0

Privileges: read-only

08/09 Name: amaStorageAmaFiles

Parameter Name: rcCurrNumRecs (recordClientTable)

Functional Description:

"Number of billing records, contained in ClosedNotSent files, currently on this record client's logical volume."

Range Information: Integer

Default: 0

Privileges: read-only

08/09 Name: amaStorageAmaRecords

Parameter Name: rcCurrNumErrorFiles (recordClientTable)

Functional Description:

"Number of ClosedNotSent error files currently on this record client's logical volume."

Range Information: Integer

Default: 0

Privileges: read-only

08/09 Name: amaStorageErrorFiles

Parameter Name: rcCurrNumErrorRecs (recordClientTable)

Functional Description:

"Number of error records, contained in ClosedNotSent error files, currently on this record client's logical volume."

Range Information: Integer

Default: 0

Privileges: read-only

08/09 Name: amaStorageErrorRecs

Parameter Name: rcMaxFileOpenTime (recordClientTable)

Functional Description:

"Maximum time (in minutes) that the current file can remain open. This setting may range between 5 and 10080. The default value is 10080 (corresponding to 1 week)"

Range Information: Minimum = 5 Maximum = 10080

Default: 10080

Privileges: read-only

08/09 Name: maxFileOpenTime

Parameter Name: rcMaxFileOpenTimeValid (recordClientTable)

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Functional Description:

"This indicates whether timers are used to close the files. The default value is 0 indicating that timers are not to be used."

Range Information: Enumeration Values

0 => no
1 => yes

Default: 0

Privileges: read-only

08/09 Name: maxFileOpenTimeValid

Parameter Name: rcFileMaxBytesOut (recordClientTable)

Functional Description:

"The maximum file size (expressed in bytes) for any file being sent by this record client. This setting may range between 8000000 and 20000000. The default value is 20000000 - this is a Nortel defined limit"

Range Information: Minimum = 8000000 Maximum = 20000000

Default: 20000000

Privileges: read-only

08/09 Name: amaLimitFileBytesOut

Parameter Name: rcFileMaxRecsOut (recordClientTable)

Functional Description:

"The maximum file size (expressed in records) for any file being sent by this record client. This setting may range between 100000 and 500000. The default value is 500000 - this is a Nortel defined limit"

Range Information: Minimum = 100000 Maximum = 500000

Default: 500000

Privileges: read-only

08/09 Name: amaLimitFileRecOut

Parameter Name: rcDNSDestCompType (recordClientTable)

Functional Description:

"The component identification type for the destination for naming dns files. This field must be within 01 and 15 inclusive. The default value is 01."

Range Information: Alphanumeric String SIZE(2)

Default: NULL_STRING

Privileges: read-only

08/09 Name: first 2 chars of row 1 of sessionCompIdCode

Parameter Name: rcDNSDestCompId (recordClientTable)

Functional Description:

"The component id for the destination for naming dns files. This subfield must be within 0000 and 4095 inclusive."

Range Information: Alphanumeric String SIZE(4)

Default: NULL_STRING

Privileges: read-only

08/09 Name: last 4 chars of row 1 of sessionCompIdCode

Parameter Name: rcDIRPFileNameRedateOnClose (recordClientTable)

Functional Description:

"This indicates whether the file name for DIRP files is changed when the file is closed. If true (1), the time/date portion of the DIRP file name is changed to the file closure time. The default value is 0 (false) so the time stays the creation time."

Range Information: Enumeration Values

0 => no
1 => yes

Default: 0

Privileges: read-only

Table: scheduleTable

This table contains data about the next scheduled transfer for a unique combination of primary destination, stream, file transfer protocol and file format, as well as data that will be used to determine future transfers. Each entry is a unique combination of primary destination, stream, file transfer protocol and file format.

Parameter Name: schStreamName (scheduleTable)

Functional Description:

"The name of the stream that originates the data to be sent in this file transfer."

Range Information: Alphanumeric String SIZE(5)

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Default: NULL_STRING

Privileges: read-only

Parameter Name: schFTPProtocol (scheduleTable)

Functional Description:

"The type of File Transfer protocol that will be used to send the files for this entry. Values can be FTP, FTAM, x25, ..."

Range Information: Alphanumeric String SIZE(5)

Default: NULL_STRING

Privileges: read-only

Parameter Name: schFileFormat (scheduleTable)

Functional Description:

"The format of the files that will be sent for this entry. Values can be DNS, DIRP, ..."

Range Information: Alphanumeric String SIZE(5)

Default: NULL_STRING

Privileges: read-only

Parameter Name: schPrimaryDestAddr (scheduleTable)

Functional Description:

"The primary IP address for the destination component."

Range Information: IPAddress

Default: 0

Privileges: read-only

08/09 Name: row 1 of sessionCompPrimAddr

Parameter Name: schSecondaryDestAddr (scheduleTable)

Functional Description:

"The secondary IP address for the destination component."

Range Information: IPAddress

Default: 0

Privileges: read-only

08/09 Name: row 1 of sessionCompSecAddr

Parameter Name: schRemoteStorageDirectory (scheduleTable)

Functional Description:

 "The directory path on the remote host to use when storing files
 via a File Transfer"

Range Information: Alphanumeric String SIZE(255)

Default: NULL_STRING

Privileges: read-only

08/09 Name: sessionFtpRemStorageDirectory

Parameter Name: schStartTime (scheduleTable)

Functional Description:

 "Time that a scheduled file transfer to the downstream processor
 should begin."

Range Information: Alphanumeric String SIZE(5)

Default: NULL_STRING

Privileges: read-only

08/09 Name: sessionFtpStartTime

Parameter Name: schStopTime (scheduleTable)

Functional Description:

 "Scheduled file transfer to the downstream processor should not
 begin after this time."

Range Information: Alphanumeric String SIZE(5)

Default: NULL_STRING

Privileges: read-only

08/09 Name: sessionFtpStopTime

Parameter Name: schFTInterval (scheduleTable)

Functional Description:

 "The interval (in seconds) used for scheduling periodic file
 transfers to the remote host. This setting may range between 0
 and 86400. The default value is 7200."

Range Information: Minimum = 0 Maximum = 86400

Default: 7200

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Privileges: read-only

08/09 Name: sessionFtpScheduleInterval

Parameter Name: schDestLoginId (scheduleTable)

Functional Description:

"The user's login ID. This string is used for remote identification via the chosen File Transfer protocol."

Range Information: Alphanumeric String SIZE(20)

Default: NULL_STRING

Privileges: read-only

08/09 Name: accessLoginLoginId

Parameter Name: schFTControlTimeout (scheduleTable)

Functional Description:

"The maximum amount of time (in seconds) allowed for a period when no messages are exchanged between two components over a control connection during an FileTransfer session. If a silent period exceeds this time period, other than during a file transfer, the corresponding FileTransfer session is forcefully ended. The default value is 30."

Range Information: Minimum = 0 Maximum = 2147483647

Default: 30

Privileges: read-only

08/09 Name: sessionFtpControlTimeout

Parameter Name: schFTMaxConsecRetries (scheduleTable)

Functional Description:

"The maximum number of consecutive times the initiator of an fileTransfer session (i.e., the FTP User) should attempt to complete a failed session before ceasing to do so, in which case the problem is assumed to be permanent and must be fixed before another session is attempted. This setting may range between 0 and 2147483647. The default value is 3."

Range Information: Minimum = 0 Maximum = 2147483647

Default: 3

Privileges: read-only

08/09 Name: sessionFtpMaxConsecRetries

Parameter Name: schFTRetryWaitTime (scheduleTable)

Functional Description:

"The amount of time (in minutes) the initiator of an FT session should wait after a failed session before requesting a session again. This setting may range between 0 and 2147483647. The default value is 1."

Range Information: Minimum = 0 Maximum = 2147483647

Default: 1

Privileges: read-only

08/09 Name: sessionFtpRetryWaitTime

Parameter Name: schActiveStatus (scheduleTable)

Functional Description:

"This object indicates if a table entry is valid or invalid. The value of this object is set to 1 when the entry is active and is set to 2 when the entry is inactive."

Range Information: Enumeration Values

2 => invalid

1 => valid

Default: 2

Privileges: read-only

Parameter Name: schDestFieldSeparatorChar (scheduleTable)

Functional Description:

"Contains the character to use as the field separator when naming billing files. Used by FileTransfer to rename a file for the downstream. The default value is ."

Range Information: Alphanumeric String SIZE(2)

Default: .

Privileges: read-only

08/09 Name: sdmAmaFieldSeparatorChar

Parameter Name: schDestFileNameExtension (scheduleTable)

Functional Description:

"Contains the three character string to be used as a file name extension when naming billing files. Used by FileTransfer to rename a file for the downstream. File is renamed to use this extension after file transmission is complete. The default value is the null string"

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Range Information: Alphanumeric String SIZE(4)

Default: NULL_STRING

Privileges: read-only

08/09 Name: sdmAmaFileNameExtension

Table: validFTPProtocolTable

This table contains the supported (valid) File Transfer
Protocols for the installed version of SBA

Parameter Name: validFTPProtocol (validFTPProtocolTable)

Functional Description:

"The type of File Transfer protocol that can be used to send the
files. Values could be FTP, FTAM, x25, ..."

Range Information: Alphanumeric String SIZE(5)

Default: NULL_STRING

Privileges: read-only

Parameter Name: sourcePrimaryAddr

Functional Description:

"The primary IP address for the sdm host."

Range Information: IPAddress

Default: 0

Privileges: read-write

08/09 Name: row 0 of sessionCompPriAddr

Parameter Name: sourceSecondaryAddr

Functional Description:

"The secondary IP address for the sdm host corresponding."

Range Information: IPAddress

Default: 0

Privileges: read-write

08/09 Name: row 0 of sessionCompSecAddr

Parameter Name: sourceCompType

Functional Description:

"The component identification type for the source for naming dns files. This field must be within 01 and 15 inclusive. The default value is 01."

Range Information: Alphanumeric String SIZE(2)

Default: 01

Privileges: read-only

08/09 Name: first 2 chars of row 0 of sessionCompIdCode

Parameter Name: sourceCompId

Functional Description:

"The component id for the source for naming dns files. This subfield must be within 0000 and 4095 inclusive."

Range Information: Alphanumeric String SIZE(4)

Default: NULL_STRING

Privileges: read-only

08/09 Name: last 4 chars of row 0 of sessionCompIdCode

Table: amadnsHeaderFormatTable

This table can override the standard amadns file type codes for standard and error files. If a record format's file type codes are not specified, the defaults of 1 for standard files and 2 for error files will be used.

Parameter Name: amadnsRecordFormat (amadnsHeaderFormatTable)

Functional Description:

"The record format for the which the specified file type codes will apply."

Range Information: Alphanumeric String SIZE(5)

Default: NULL_STRING

Privileges: read-only

Parameter Name: standardFileTypeCode (amadnsHeaderFormatTable)

Functional Description:

"The file type code that will be used in the header of normal dns files for streams that have the corresponding amadnsRecordFormat. Values must be between 01 and 31"

Range Information: Numeric String SIZE(2)

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Default: NULL_STRING

Privileges: read-only

Parameter Name: errorFileTypeCode (amadnsHeaderFormatTable)

Functional Description:

"The file type code that will be used in the header of error dns files for streams that have the corresponding amadnsRecordFormat. Values must be between 01 and 31"

Range Information: Numeric String SIZE(2)

Default: NULL_STRING

Privileges: read-only

Parameter Name: sendBillingLogsToCM

Functional Description:

"Boolean indicating whether to send logs to the CM or the SDM. To have all logs go to the CM, set to 1. If set to 0, logs will go to the SDM log delivery process. The default value for this parm is 1. Regardless of the setting of this parm, logs that are associated with the raising and lowering of alarms will go to the CM."

Range Information: Enumeration Values

0 => no
1 => yes

Default: 1

Privileges: read-write

08/09 Name: sendBillingLogsToCM

14.2.1 New/modified Parameter List

Table 12

PARM TABLE	PARAMETER NAME	NEW/CHANGED/ DELETED/RELOCATED
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14.2.2 Parameter Name:

14.2.2.1 Range of values

14.2.2.2 Reason for change

14.2.2.3 Description of parameter

14.2.2.4 Default value

14.2.2.5 PARM value

Set when feature not activated:

14.2.2.6 Method of change activation

14.2.2.7 Dependency

14.2.2.8 Dump and restore

14.2.2.9 Provisioning rules

14.2.2.10 Calculation

14.2.2.11 Memory requirements

14.2.2.12 Verification

14.2.2.13 Consequences

14.2.2.14 Duration

14.2.2.15 Operational measurements

14.2.2.16 Extensions

15. AF7546 Data schema changes (DS)

This is a placeholder only. To date no DS changes have been planned for AF7547.

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af7546

af7655

sd1002

sd1003

16. Man machine interface (MM)

16.1 Directories

16.1.1 Table of new/modified directories

Table 13

DIRECTORY NAME	NEW, CHANGED OR DELETED	NEW NAME (if renamed)	TARGET	RES/ NONRES
BILLMTC	Changed		SDM	Res
SCHEDULE	New		SDM	Res
CONFSTRM	New		SDM	Res
tools	Changed		SDM	Res

16.1.2 Accessing directory: BILLMTC

This is the existing main menu for the SBA.

16.1.2.1 To access

To access billmtc after user logs in as 'maint': type 'billmtc' at command line.

To access billmtc after the user logs in as 'root': change directory to /sdm/sba/base/bin then type './billmtc' at command line.

16.1.2.2 To return to CI

To Quit out of billmtc, type 'quit' or the corresponding number from the billmtc menu.

16.1.3 Accessing directory: SCHEDULE

This is the new directory off of billmtc directory that holds commands used to manipulate and/or display tuples from the Schedule Manager.

16.1.3.1 To access

To access the SCHEDULE menu, the user must enter the billmtc menu then type either 'SCHEDULE' or the corresponding number in the billmtc menu.

16.1.3.2 To return to CI

The user enters 'Quit' or the corresponding number from the SCHEDULE menu to go back to the billmtc menu. To quit all the way out of SCHEDULE and billmtc, type 'quit all.'

16.1.4 Accessing directory: CONFSTRM

This is the new directory off of billmtc directory that holds commands used to manipulate and/or display the stream configuration.

16.1.4.1 To access

To access the CONFSTRM menu, the user must enter the billmtc menu then type either 'CONFSTRM' or the corresponding number in the billmtc menu.

16.1.4.2 To return to CI

The user enters 'Quit' or the corresponding number from the CONFSTRM menu to go back to the billmtc menu. To quit all the way out of CONFSTRM and billmtc, type 'quit all.'

16.1.5 Accessing directory: tools

16.1.5.1 To access

Type "billmtc" from the unix prompt. For more information, refer to the MM section of the SuperNode Billing Application Base Function (User Interface). Type in "tools" to get into the tools directory.

16.1.5.2 To return to CI

Type "Quit all" at the User Interface prompt. For more information, refer to the MM section of the SuperNode Billing Application Base Function (User Interface). Type "exit" at the SDMRLOGIN prompt to return back to the CI.

16.2 Commands

All the following commands are available through both the Billing Remote Maintenance Interface(billmtc) and the CM SDMRLOGIN with the exception of the SET command which is only available through the RMI. To access the SDM through the CM, use the command SDMRLOGIN at the CI prompt. The Billmtc screen is not displayed, but all commands can used via the command line.

16.2.1 Table of New/modified commands

Table 14

COMMAND NAME	NEW, CHANGED OR DELETED	NEW NAME (if renamed)	DIRECTORY NAME
TOOLS: amadump	changed		BILLMTC -> TOOLS
amabakup	changed		BILLMTC
FILESYS: listfile	changed		BILLMTC -> FILESYS
FILESYS: sendfile	changed		BILLMTC -> FILESYS
mib	changed		BILLMTC
FILESYS: closec	changed		BILLMTC -> FILESYS
query	new		BILLMTC
set	new		BILLMTC, FILESYS, TOOLS, SCHEDULE or CONFSTRM
SCHEDULE: add	new		BILLMTC -> SCHEDULE
SCHEDULE: change	new		BILLMTC -> SCHEDULE
SCHEDULE: delete	new		BILLMTC -> SCHEDULE
SCHEDULE: list	new		BILLMTC -> SCHEDULE
CONFSTRM:add	new		BILLMTC -> CONFSTRM
CONFSTRM:change	new		BILLMTC -> CONFSTRM
CONFSTRM:delete	new		BILLMTC -> CONFSTRM
CONFSTRM:list	new		BILLMTC -> CONFSTRM

16.2.2 Command name: amabakup

16.2.2.1 Command type

MENU command from billmtc.

16.2.2.2 Command target

SDM

16.2.2.3 Command availability

RES

16.2.2.4 Command description

The amabakup command is used to make a copy of files from the SBA to a Digital Audio Tape (DAT) located in DAT drive 1. This command is enhanced this release to accept a stream for a parameter. This is a non-optional parameter. Other enhancements include the lifting of several restrictions in its use. Specifically, the user no longer has to use the time range parameters to back up 'closed sent' files (i.e. secondary or processed). Also, the user may wish to back up just one file with the filename parameter, although this is NOT RECOMMENDED because an entire DAT would be used for this one file. This is due to the amabakup command always rewinding to the beginning of the tape before copying files. This command can also be used with a new set of arguments designed to be more flexible.

The default behavior of this command is also changed. If the user does not specify a new required parameter representing the new file state, 'SENT' or 'NOTSENT', then the user will be prompted to choose whether or not they want to state to change to 'closed sent.' Specifying 'NOTSENT' results in the 'closed not sent' (i.e. secondary or processed) files staying in the 'closed not sent' state even after the execution of the amabakup command. If the user does specify 'SENT' then those 'closed not sent' (primary or unprocessed) files would change to be in the 'closed sent' (i.e. secondary or processed) state after the execution of the amabakup command.

16.2.2.5 Warning

There are no new warnings with this command.

16.2.2.6 Command syntax - New

This release a new command syntax is available for users for all streams. However, for users of streams with a DNS File Manager, the syntax supported in previous releases is still supported (see below.)

amabakup <stream_name> [STATE <primary, secondary, unprocessed, processed>, BTIME [hh[:mm[:ss]]][.mm[/dd[/[yy]yy]]], ETIME [hh[:mm[:ss]]][.mm[/dd[/[yy]yy]]], SEQNUM <i, [j]>, FNAME <filename>, FTYPE <file type>, PRIO <priority>] <new_file_state>

Note:

The <stream_name> parameter must be first, but the other parameters' order is not significant.

16.2.2.7 Parameter definitions - New Syntax

Table 15

PARAMETER	VALUE	DEFINITION
stream_name	string	<p>This is a REQUIRED parameter that is a string representing the particular stream that the files being backed up are a part of (e.g. AMA.) This is the string matching the stream name in table SDMBILL and CRSFMT on the CM.</p> <p>The user may wish to use the new command, SET <stream> <stream_name>, before invoking amabakup and would not need to enter this parameter due to the fact that the stream was previously set by the set stream command. However, if a stream name is entered on the command line as part of the amabakup command, it takes precedence over a previously set stream.</p>
STATE (or state) <value>	PROCESSED, UNPROCESSED, PRIMARY or SECONDARY	<p>This is an OPTIONAL parameter that tells amabakup which files in the stream specified are to be backed up. The files with the state equal to this value are to be backed up. For example: PROCESSED means all processed files are to be backed up.</p>
BTIME (or btime) <date-time>	<p>[hh[:mm[:ss]]][.mm[/dd[/[yy]yy]]]</p> <p>examples:</p> <p>8:00</p> <p>1/12/98</p> <p>12:00:00.2/23/98</p>	<p>This OPTIONAL parameter further constricts the matching criteria for files. This particular parameter, BTIME (begin time), states to back up only the files that were created at this time and later.</p>

Table 15

PARAMETER	VALUE	DEFINITION
ETIME (or etime) <value>	[hh[:mm[:ss]]][.mm/dd[/[yy]yy]] examples: 8:00 1/12/98 12:00:00.2/23/98	This OPTIONAL parameter further constricts the matching criteria for files. This particular parameter, ETIME (end time), states to back up only those files created before and up to this time.
SEQNUM (or seqnum) <value, value>	integer, integer defines a range of integers that represent file sequence numbers	This OPTIONAL parameter further constricts the matching criteria for files. This particular parameter, SEQNUM, states to back up 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>	filename (expected to be DIRP File name, example: U980223163503OC C	This is an OPTIONAL parameter that states to only back up this one file with this file name. The exact file name must match the string entered as <value>. **WARNING: When this parameter is used with amabakup, a whole DAT tape is used for this one file. This is because at the start of every execution of this command, the tape is rewound to the beginning, overwriting existing data. Therefore, this parameter is NOT RECOMMENDED.**
FTYPE <file type>	file type is an integer representing the DNS only concept of file type.	This is an optional parameter that states to back up only those files with this file type value. Range is between 0 and 32. Default values are 1 for Standard AMA Files and 2 for Error files. These values can also be assigned in the range 16-32 via the ConfStrm:add command.
PRIO <priority>	priority is an integer between 1 and 4 representing DNS priority.	This is an optional parameter that states to back up only these files with this priority. NOTE: Currently all DNS files have a priority of 2.

Table 15

PARAMETER	VALUE	DEFINITION
new_file_state	SENT or NOTSENT	<p>This is an OPTIONAL parameter representing the new file state after it is backed up. There is no default for this parameter. If the user does not enter a value for this parameter, a prompt is displayed asking if the user wishes the file state to change to 'SENT' or not. If SENT is entered on the command line then the result is that the file state is changed to 'closed sent' after the file is backed up. This is only applicable for files in the 'closed not sent' (i.e. primary or unprocessed) state and therefore is ignored when it is used in the case of already 'closed sent' files.</p> <p>example:</p> <p>'amabakup ama STATE primary SENT' would back up all primary files in the ama stream, and the state of the files would change to SENT (secondary)</p>

16.2.2.8 Command syntax - AMADNS File Format

The following syntax is documented here since it is still supported for this release. It may, however, only be used with a stream that is configured with a DNS File Format Type.

```
amabakup <stream_name> [-p, -s] [ -b [hh[:mm[:ss]]][.mm[/dd[/[yy]yy]]] ] [
-e [hh[:mm[:ss]]][.mm[/dd[/[yy]yy]]] ] [-q i[,j]] [-f <filename>] [ -y
<filetype>] [-r <priority>] [<new_file_state>]
```

Note:

The <stream_name> parameter must be first, but the other parameters' order is not significant.

16.2.2.9 Parameter definitions - AMADNS File Format

Table 16

PARAMETER	VALUE	DEFINITION
stream_name	string	<p>This is a REQUIRED parameter that is a string representing the particular stream that the files being backed up are a part of (e.g. AMA.) This is the string matching the stream name in table SDBILL and CRSFMT on the CM.</p> <p>The user may wish to use the new command, SET <stream> <stream_name>, before invoking amabakup and would not need to enter this parameter due to the fact that the stream was previously set by the set stream command. However, if a stream name is entered on the command line as part of the amabakup command, it takes precedence over a previously set stream.</p>
-p (or -P)		<p>This is an OPTIONAL parameter that specifies that the user wants to back up all PRIMARY (files in the 'closed not sent' state) files. This can be used in conjunction with any other parameters EXCEPT -s.</p>
-s (or -S)		<p>This is an OPTIONAL parameter that specifies that the user wants to back up all SECONDARY (files in the 'closed sent' state) files. This can be used in conjunction with any other parameter EXCEPT -p.</p>
-b (or -B) <date-time>	<p>[hh[:mm[:ss]]].mm/dd[[/yy]yy]]</p> <p>examples:</p> <p>8:00</p> <p>1/12/98</p> <p>12:00:00.2/23/98</p>	<p>This is an OPTIONAL parameter that specifies that the user wants to back up all files created at this date/time and later. This parameter can be used with the -e parameter to define a time window to further restrict the criteria defined by any other parameter.</p> <p>example: -p -b 8:00 -e 12:00 defines a criteria of all primary files created at 8:00am or after up to 12:00pm today</p>

Table 16

PARAMETER	VALUE	DEFINITION
-e (or -E) <date-time>	[hh[:mm[:ss]]][.mm/ dd[/[yy]yy]] examples: 8:00 1/12/98 12:00:00.2/23/98	This is an OPTIONAL parameter that specifies that the user wants to back up all files created before this date/time. This parameter can be used in conjunction with the -b parameter to define a time window to further restrict the criteria defined by any other parameter. example: -e 15:30.2/24/1998 defines a criteria for ALL files created up to 3:30pm on Feb. 24, 1998
-q (or -Q) <i[,j]>	integer, integer defines a range of integers that represent file sequence numbers	This is an OPTIONAL parameter that specifies that the user wants to back up all files with the sequence number of i or that falls in the range of sequence numbers defined by i through j. This parameter can be used in conjunction with any other parameter to further restrict the criteria. example: -s -Q 23,65 defines a criteria for all SECONDARY files that have a sequence number in the range from 23 to 65
-f (or -F) <filename>	filename (expected to be DNS File name, example: 021234.031234.000 001.05.2	This is an OPTIONAL parameter that specifies that the user wants to back up this FILE specifically. THIS IS NOT RECOMMENDED!! A whole DAT will be used for this one file since the command always rewinds the tape to the beginning overwriting any previously written data.
-y <file type>	file type is an integer representing the DNS only concept of file type.	This is an optional parameter that states to back up only those files with this file type value. Range is between 0 and 32. Default values are 1 for Standard AMA Files and 2 for Error files. These values can also be assigned in the range 16-32 via the ConfStrm:add command.

Table 16

PARAMETER	VALUE	DEFINITION
-r <priority>	priority is an integer between 1 and 4 representing DNS priority.	This is an optional parameter that states to back up only these files with this priority. NOTE: Currently all DNS files have a priority of 2.
new_file_state	SENT or NOTSENT	This is an OPTIONAL parameter representing the new file state after it is backed up. There is no default for this parameter. If the user does not enter a value for this parameter, a prompt is displayed asking if the user wishes the file state to change to 'SENT' or not. If SENT is entered on the command line then the result is that the file state is changed to 'closed sent' after the file is backed up. This is only applicable for files in the 'closed not sent' (i.e. primary or unprocessed) state and therefore is ignored when it is used in the case of already 'closed sent' files. example: 'amabakup ama -p SENT' would back up all primary files in the ama stream, and the state of the files would change to SENT (secondary)

16.2.3 Responses

The following responses are only those that are NEW this release.

16.2.3.1 Response

Do you wish the files' state to be changed to closedSENT? (y/n)

Explanation:

This message is displayed when the user invokes amabakup without specifying the new_file_state parameter (sent or notsent.) There is no default for this command so the user must choose one way or the other.

System action:

The command is halted until the user specifies yes or no to this question.

User action:

User should choose yes if they wish the files' that are in the 'closed not sent' state to change to 'closed sent' after they are backed up to tape. The user should answer no if they wish the files' state to remain the same.

16.2.3.2 Response

File state changed to 'closed sent' for <filename>.

Explanation:

This message is for each file that was backed up and had it's new file state changed to 'closed sent.' This is in response to a user specifying the SENT optional parameter when invoking the command for the files that are in the 'closed not sent' state before they are backed up. It could also be a result of the user answering 'yes' to the new prompt: Do you wish the files state to be changed to closedSENT? (y/n)

System action:

System is just reporting that the file state has been changed.

User action:

User should just make note of what files have had their state changed.

16.2.3.3 Response

File state was already 'closed sent' for <filename>.

Explanation:

This message is for each file that was backed up and was already in the state of 'closed sent.' This is in response to a user specifying the SENT optional parameter when invoking the command for the files that are already in the 'closed sent' state before they are backed up. It could also be a result of the user answering 'yes' to the new prompt: Do you wish the files state to be changed to closedSENT? (y/n)

System action:

System is just reporting that the file state was already closed sent.

User action:

User should just make note that the state was not changed since it was already in the desired state.

16.2.3.4 Response

Invalid stream. Valid streams are {<stream1>, <stream2>, etc.}

Explanation:

This message is in response to a user invoking the command with an invalid stream name. A valid stream is one that is running, actually turned on from the CM. If a stream is configured, but not yet turned on, it is considered an invalid stream.

System action:

Prompt is returned to user, execution of the command ends.

User action:

User must re-enter the command providing a valid stream name. The user may also choose to use the Set Stream command to set a stream, then re-invoke the command without providing the stream name.

16.2.4 Notes

This release changes the functionality of amabakup in that when the time range is given in the command line, it does NOT LIMIT the state of the files to be backed up to be 'closed sent' (i.e. secondary or processed). There were some restrictions with this command in previous releases, but these restrictions are no longer present with this release.

16.2.5 Examples

Note:

After the user chooses AMABakUp from the RMI menu, the actual RMI billing screen is cleared. The following examples show how the windows look sequentially.

The user wishes to back all ALL files in the AMA stream regardless of state.

```
BILLING
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 Mib
11 DispAl
12 DispLogs
13 FILESYS
14 SCHEDULE
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
  maint
Time 17:03 >16 ama
```

Do you wish the files' state to be changed to closedSENT (y/n)? n

*** WARNING: Any data previously written to the tape will be overwritten. ***

Do you wish to continue (y/n)? y

*** WARING: Do not kill process while the AMA backup is running. ***

*** Killing the process may have adverse effects on the DAT drive. ***

10 blocks

004096.004096.00146.01.2 was successfully written to tape.

10 blocks

004096.004096.00147.01.2 was successfully written to tape.

more...

```
10 blocks
004096.004096.00148.01.2 was successfully written to tape.

10 blocks
004096.004096.00149.01.2 was successfully written to tape.

10 blocks
004096.004096.00150.01.2 was successfully written to tape.

*** AMA backup done. Please remove tape from drive 1.***

Press Return to Continue...
```

The user wishes to back all files in the AMA stream that are in the 'closed not sent' state that were created between 8:00am this morning until 1:00pm this afternoon.

```
BILLING
0 Quit
2 Set
3
4CONFSTRM
5
6
7
8
9 Query
10 Mib
11 DispAl
12 DispLogs
13 FILESYS
14 SCHEDULE
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
.....
Time 17:03 >amabakup ama -p -b 8:00 -e 13:00
```

Do you wish the files' state to be changed to secondary (y/n)? n

*** WARNING: Any data previously written to the tape will be overwritten. ***

Do you wish to continue (y/n)? y

*** WARNING: Do not kill process while the AMA backup is running. ***

*** Killing the process may have adverse effects on the DAT drive. ***

10 blocks

004096.004096.00146.01.2 was successfully written to tape.

10 blocks

004096.004096.00147.01.2 was successfully written to tape.

more...

10 blocks

004096.004096.00148.01.2 was successfully written to tape.

10 blocks

004096.004096.00149.01.2 was successfully written to tape.

10 blocks

004096.004096.00150.01.2 was successfully written to tape.

*** AMA backup done. Please remove tape from drive 1. ***

Press Return to Continue...

The user wishes to back all files in the AMA stream that are in the 'closed not sent' state that were created between 8:00am this morning until 1:00pm this afternoon. This is the same as above, except the user chooses to utilize the new syntax.

```
BILLING
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 Mib
11 DispAl
12 DispLogs
13 FILESYS
14 SCHEDULE
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
.....
Time 17:03 >amabakup ama state primary btime 8:00 etime 13:00
```

Do you wish the files' state to be changed to closedSENT (y/n)? n

*** WARNING: Any data previously written to the tape will be overwritten. ***

Do you wish to continue (y/n)? y

*** WARNING: Do not kill process while the AMA backup is running. ***

*** Killing the process may have adverse effects on the DAT drive. ***

10 blocks

004096.004096.00146.01.2 was successfully written to tape.

10 blocks

004096.004096.00147.01.2 was successfully written to tape.

more...

10 blocks

004096.004096.00148.01.2 was successfully written to tape.

10 blocks

004096.004096.00149.01.2 was successfully written to tape.

10 blocks

004096.004096.00150.01.2 was successfully written to tape.

*** AMA backup done. Please remove tape from drive 1. ***

Press Return to Continue...

The user wishes to back all files in the CDR1 stream that are in the 'closed not sent' state that were created between 8:00am this morning until 1:00 pm this afternoon. This stream has a DIRP file format.

```
BILLING
 0 Quit
 2 Set
 3
 4 CONFSTRM
 5
 6
 7
 8
 9 Query
10 Mib
11 DispAl
12 DispLogs
13 FILESYS
14 SCHEDULE
15 TOOLS
16 AMABakUp
17 Help
18 Refresh

Time 17:03 >16 cdr1 state unprocessed btime 8:00 etime 13:00 notsent
```

```
*** WARNING: Any data previously written to the tape will be overwritten. ***
Do you wish to continue (y/n)? y

*** WARING: Do not kill process while the AMA backup is running. ***
*** Killing the process may have adverse effects on the DAT drive. ***

10 blocks
U980223163503OCC was successfully written to tape.

10 blocks
U980223173004OCC was successfully written to tape.

10 blocks
U980223183305OCC was successfully written to tape.

*** AMA backup done. Please remove tape from drive 1. ***
Press Return to Continue...
```

The user wishes to back up all data on the ama stream, but mistakenly misspells a stream name.

```
BILLING
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 Mib
11 DispAl
12 DispLogs
13 FILESYS
14 SCHEDULE
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
```

```
maint
Time 17:03 >amabakup dsd
```

Invalid stream. Valid streams are {ama, cdr1}.

Press Return to Continue...

The user wishes to back all files in the CDR1 stream that are in the 'closed sent' state. This stream has a DIRP file format. The user also mistakenly adds the NOTSENT option.

```
BILLING
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 Mib
11 DispAl
12 DispLogs
13 FILESYS
14 SCHEDULE
15 TOOLS
16 AMABakUp
17 Help
18 Refresh

Time 17:03 >amabakup cdr1 STATE processed NOTSENT
```

```
.

*** WARNING: Any data previously written to the tape will be overwritten. ***
Do you wish to continue (y/n)? y
*** WARNING: Do not kill process while the AMA backup is running. ***
*** Killing the process may have adverse effects on the DAT drive. ***

10 blocks
P980223173001OCC was successfully written to tape.

10 blocks
P980223183302OCC was successfully written to tape.

*** AMA backup done. Please remove tape from drive 1. ***
Press Return to Continue...
```

The user wishes to back all files in the CDR1 stream that are in the 'closed not sent' state. This stream has a DIRP file format. The user also wants the files to change state after being backed up.

```
BILLING
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 Mib
11 DispAl
12 DispLogs
13 FILESYS
14 SCHEDULE
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
```

```
Time 17:03 >amabakup cdr1 STATE unprocessed SENT
```

```
*** WARNING: Any data previously written to the tape will be overwritten. ***
Do you wish to continue (y/n)? y
```

```
*** WARING: Do not kill process while the AMA backup is running. ***
*** Killing the process may have adverse effects on the DAT drive. ***
```

```
10 blocks
U980223163503OCC was successfully written to tape.
File state changed to 'closed sent' for U980223163503OCC.
10 blocks
U980223173004OCC was successfully written to tape.
File state changed to 'closed sent' for U980223163504OCC.
10 blocks
U980223183305OCC was successfully written to tape.
File state changed to 'closed sent' for U980223183305OCC.
```

```
*** AMA backup done. Please remove tape from drive 1. ***
Press Return to Continue...
```

16.2.6 Command name: FILESYS: listfile

16.2.6.1 Command type

MENU command from Filesys menu

16.2.6.2 Command target

SDM

16.2.6.3 Command availability

RES

16.2.6.4 Command description

This is an existing command that is enhanced to accept a stream parameter and to utilize the new set of arguments. This command is under the FILESYS menu from billmtc. It enables the user to list all files currently stored in an SBA stream. The user may use command options to restrict the file criteria to match in order to only list files that meet the defined criteria.

In addition to listing the filenames of the files requested, this command displays other attributes of the files as well. These attributes include file size, date and time of creation, state and number of records.

16.2.6.5 Warning

There are no new warnings with this release for this command.

16.2.6.6 Command syntax - New

This release a new command syntax is available for users for all streams. However, for users of streams with a DNS File Manager, the syntax supported in previous releases is still supported (see below.)

```
listfile <stream_name> [STATE <primary, secondary, unprocessed,
processed>, BTIME [hh[:mm[:ss]]][.mm[/dd[/[yy]yy]]], ETIME
[hh[:mm[:ss]]][.mm[/dd[/[yy]yy]]], SEQNUM <i, [j]>, FNAME <filename>,
FTYPE <file type>, PRIO <priority>]
```

Note:

The <stream_name> parameter must be first, but the other parameters' order is not significant.

16.2.6.7 Parameter definitions - New Syntax

Table 17

PARAMETER	VALUE	DEFINITION
stream_name	string	<p>This is a REQUIRED parameter that is a string representing the particular stream that the files that are listed are a part of (e.g. AMA.) This is the string matching the stream name in table SDBILL and CRSFMT on the CM.</p> <p>The user may wish to use the new command, SET <stream> <stream_name>, before invoking listfile and would not need to enter this parameter due to the fact that the stream was previously set by the set stream command. However, if a stream name is entered on the command line as part of the listfile command, it takes precedence over a previously set stream.</p>
STATE (or state) <value>	PROCESSED, UNPROCESSED, PRIMARY or SECONDARY	<p>This is an OPTIONAL parameter that tells listfile which files in the stream specified are to be displayed. The files with the state equal to this value are to be backed up. For example: PROCESSED means all processed files are to be displayed.</p>
BTIME (or btime) <date-time>	[hh[:mm[:ss]]].mm/ dd[/[yy]yy]] examples: 8:00 1/12/98 12:00:00.2/23/98	<p>This OPTIONAL parameter further constricts the matching criteria for files. This particular parameter, BTIME (begin time), states to list only the files that were created at this time and later.</p>
ETIME (or etime) <value>	[hh[:mm[:ss]]].mm/ dd[/[yy]yy]] examples: 8:00 1/12/98 12:00:00.2/23/98	<p>This OPTIONAL parameter further constricts the matching criteria for files. This particular parameter, ETIME (end time), states to list only those files created before and up to this time.</p>

Table 17

PARAMETER	VALUE	DEFINITION
SEQNUM (or seqnum) <value, value>	integer, integer defines a range of integers that represent file sequence numbers	This OPTIONAL parameter further constricts the matching criteria for files. This particular parameter, 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>	filename (expected to be DIRP File name, example: U980223163503OC C	This is an OPTIONAL parameter that states to only list this one file with this file name. The exact file name must match the string entered as <value>. This may be used if the user wishes to see the other attributes of the file.
FTYPE <file type>	file type is an integer representing the DNS only concept of file type.	This is an optional parameter that states to list only those files with this file type value. Range is between 0 and 32. Default values are 1 for Standard AMA Files and 2 for Error files. These values can also be assigned in the range 16-32 via the ConfStrm:add command.
PRIO <priority>	priority is an integer between 1 and 4 representing DNS priority.	This is an optional parameter that states to list only these files with this priority. NOTE: Currently all DNS files have a priority of 2.

16.2.6.8 Command syntax - AMADNS File Format

The following syntax is documented here since it is still supported for this release. It may, however, only be used with a stream that is configured with a DNS File Format Type.

```
listfile <stream_name> [-p, -s] [ -b [hh:mm[:ss]][.mm[/dd[/[yy]yy]]] ] [ -e [hh:mm[:ss]][.mm[/dd[/[yy]yy]]] ] [-q i[,j]] [-f <filename>] [ -y <filetype>] [-r <priority>]
```

Note:

The <stream_name> parameter must be first, but the other parameters' order is not significant.

16.2.6.9 Parameter definitions - AMADNS File Format**Table 18**

PARAMETER	VALUE	DEFINITION
stream_name	string	<p>This is a REQUIRED parameter that is a string representing the particular stream that the files being listed from are a part of (e.g. AMA.) This is the string matching the stream name in table SDMBILL and CRSFMT on the CM.</p> <p>The user may wish to use the new command, SET <stream> <stream_name>, before invoking listfile and would not need to enter this parameter due to the fact that the stream was previously set by the set stream command. However, if a stream name is entered on the command line as part of the listfile command, it takes precedence over a previously set stream.</p>
-p (or -P)		<p>This is an OPTIONAL parameter that specifies that the user wants to list all PRIMARY (files in the 'closed not sent' state) files. This can be used in conjunction with any other parameters EXCEPT -s.</p>
-s (or -S)		<p>This is an OPTIONAL parameter that specifies that the user wants to list all SECONDARY (files in the 'closed sent' state) files. This can be used in conjunction with any other parameter EXCEPT -p.</p>

Table 18

PARAMETER	VALUE	DEFINITION
-b (or -B) <date-time>	[hh[:mm[:ss]]][.mm/ dd[/[yy]yy]] examples: 8:00 1/12/98 12:00:00.2/23/98	This is an OPTIONAL parameter that specifies that the user wants to list all files created at this date/time and later. This parameter can be used with the -e parameter to define a time window to further restrict the criteria defined by any other parameter. example: -p -b 8:00 -e 12:00 defines a criteria of all primary files created at 8:00am or after up to 12:00pm today
-e (or -E) <date-time>	[hh[:mm[:ss]]][.mm/ dd[/[yy]yy]] examples: 8:00 1/12/98 12:00:00.2/23/98	This is an OPTIONAL parameter that specifies that the user wants to list all files created before this date/time. This parameter can be used in conjunction with the -b parameter to define a time window to further restrict the criteria defined by any other parameter. example: -e 15:30.2/24/1998 defines a criteria for ALL files created up to 3:30pm on Feb. 24, 1998
-q (or -Q) <i[,j]>	integer, integer defines a range of integers that represent file sequence numbers	This is an OPTIONAL parameter that specifies that the user wants to list all files with the sequence number of i or that falls in the range of sequence numbers defined by i through j. This parameter can be used in conjunction with any other parameter to further restrict the criteria. example: -s -Q 23,65 defines a criteria for all SECONDARY files that have a sequence number in the range from 23 to 65
-f (or -F) <filename>	filename (expected to be DNS File name, example: 021234.031234.000 001.05.2	This is an OPTIONAL parameter that specifies that the user wants to list this FILE specifically. This may be used if the user wishes to see the other attributes of the file.

Table 18

PARAMETER	VALUE	DEFINITION
-y <file type>	file type is an integer representing the DNS only concept of file type.	This is an optional parameter that states to list only those files with this file type value. Range is between 0 and 32. Default values are 1 for Standard AMA Files and 2 for Error files. These values can also be assigned in the range 16-32 via the ConfStrm:add command.
-r <priority>	priority is an integer between 1 and 4 representing DNS priority.	This is an optional parameter that states to list only these files with this priority. NOTE: Currently all DNS files have a priority of 2.

16.2.7 Responses

The following responses are only those that are NEW this release.

16.2.7.1 Response

Invalid stream. Valid streams are {<stream1>, <stream2>, etc. }

Explanation:

This message is in response to a user invoking the command with an invalid stream name. A valid stream is one that is running, actually turned on from the CM. If a stream is configured, but not yet turned on, it is considered an invalid stream.

System action:

Prompt is returned to user, execution of the command ends.

User action:

User must re-enter the command providing a valid stream name. The user may also choose to use the Set Stream command to set a stream, then re-invoke the command without providing the stream name.

16.2.8 Notes

16.2.9 Examples

The user wishes to list all ALL files in the AMA stream regardless of state. Note that even the file(s) in the OPEN state is listed. The state abbreviations are as follows: CNS = ClosedNotSent; CS = ClosedSent; O = Open.

```

FILESYS
0 Quit
2 Set
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
  maint
Time 17:03 >8 ama

```

```

FILESYS      020001.030002.00670.01.2
0 Quit      Date: Thu Feb 19 10:15:00 1998 Recs: 423 Size: 100231CNS
2 Set      020001.030002.00671.01.2
3          Date: Thu Feb 19 10:30:00 1998 Recs: 425 Size: 100423CNS
4          020001.030002.00672.01.2
5          Date: Thu Feb 19 10:45:00 1998 Recs: 411 Size: 100811CNS
6          020001.030002.00673.01.2
7 Sendfile Date: Thu Feb 19 10:45:00 1998 Recs: 511 Size: 100829CNS
8 Listfile 020001.030002.00674.01.2
9 Closec   Date: Thu Feb 19 11:00:00 1998 Recs: 499 Size: 100991CNS
10         020001.030002.00675.01.2
11         Date: Thu Feb 19 11:15:00 1998 Recs: 443 Size: 100221CS
12         020001.030002.00676.01.2
13         Date: Thu Feb 19 11:20:00 1998 Recs: 457 Size: 100010CS
14         020001.030002.00677.01.2
15         Date: Thu Feb 19 12:36:00 1998 Recs: 488 Size: 100876CS
16         020001.030002.00678.01.2
17         Date: Thu Feb 19 12:37:00 1998 Recs: 435 Size: 100235O
18 Refresh
  maint
Time 17:03 >8 ama

```

The user wishes to list all files in the AMA stream that are in the 'closed not sent' state that were created between 8:00am this morning until 1:00pm this afternoon.

```
FILESYS
0 Quit
2 Set
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >listfile ama state primary btime 10:15 etime 11:15
```

```
FILESYS 020001.030002.00670.01.2
0 Quit Date: Thu Feb 19 10:15:00 1998 Recs: 423 Size: 100231CNS
2 Set 020001.030002.00671.01.2
3 Date: Thu Feb 19 10:30:00 1998 Recs: 425 Size: 100423CNS
4 020001.030002.00672.01.2
5 Date: Thu Feb 19 10:45:00 1998 Recs: 411 Size: 100811CNS
6 020001.030002.00673.01.2
7 Sendfile Date: Thu Feb 19 10:45:00 1998 Recs: 511 Size: 100829CNS
8 Listfile 020001.030002.00674.01.2
9 Closec Date: Thu Feb 19 11:00:00 1998 Recs: 499 Size: 100991CNS
10 020001.030002.00675.01.2
11 Date: Thu Feb 19 11:15:00 1998 Recs: 443 Size: 100221CNS
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >8 ama
```

The user wishes to list all files in the CDR1 stream that are in the 'closed not sent' state that were created between 8:00am this morning until 1:00pm this afternoon. This stream has a DIRP file format.

```

FILESYS
0 Quit
2 Set
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >listfile cdrl state unprocessed btime 8:00 etime 13:00

```

```

FILESYS      U980219080011OCC
0 Quit      Date: Thu Feb 19 8:00:00 1998 Recs: 423 Size: 100231CNS
2 Set      U980219083012OCC
3          Date: Thu Feb 19 8:30:00 1998 Recs: 425 Size: 100423CNS
4          U980219090013OCC
5          Date: Thu Feb 19 9:00:00 1998 Recs: 411 Size: 100811CNS
6          U980219093014OCC
7 Sendfile  Date: Thu Feb 19 9:30:00 1998 Recs: 511 Size: 100829CNS
8 Listfile  U980219103015OCC
9 Closec    Date: Thu Feb 19 10:00:00 1998 Recs: 499 Size: 100991CNS
10         U980219103016OCC
11         Date: Thu Feb 19 10:30:00 1998 Recs: 443 Size: 100221CNS
12         U980219110017OCC
13         Date: Thu Feb 19 11:00:00 1998 Recs: 433 Size: 111003CNS
14         U980219113018OCC
15         Date: Thu Feb 19 11:30:00 1998 Recs: 452 Size: 112003CNS
16         U980219120019OCC
17 Help     Date: Thu Feb 19 12:00:00 1998 Recs: 488 Size: 120455CNS
18 Refresh  more...
maint
Time 17:03 >

```

```
FILESYS U9802190800200CC
0 Quit Date: Thu Feb 19 12:30:00 1998 Recs: 423 Size: 100231CNS
2 Set U9802190830210CC
3 Date: Thu Feb 19 13:00:00 1998 Recs: 425 Size: 100423CNS
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >
```

The user wishes to list all files in the ama stream, but mistakenly misspells a stream name.

```
FILESYS
0 Quit
2 Set
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >listfile dsd
```

```
FILESYS Invalid stream. Valid streams are {ama, cdr1}.
0 Quit
2 Set
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >
```

The user wishes to list all files in the CDR1 stream that are in the 'closed sent' state. This stream has a DIRP file format.

```
FILESYS
0 Quit
2 Set
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >listfile cdr1 STATE processed
```

```
FILESYS P980219080011OCC
0 Quit   Date: Thu Feb 19 8:00:00 1998 Recs: 423 Size: 100231CS
2 Set    P980219083012OCC
3        Date: Thu Feb 19 8:30:00 1998 Recs: 425 Size: 100423CS
4        P980219090013OCC
5        Date: Thu Feb 19 9:00:00 1998 Recs: 411 Size: 100812CS
6        P980219093014OCC
7 Sendfile Date: Thu Feb 19 9:30:00 1998 Recs: 511 Size: 100829CS
8 Listfile P980219103015OCC
9 Closec  Date: Thu Feb 19 10:00:00 1998 Recs: 499 Size: 100991CS
10       P980219103016OCC
11       Date: Thu Feb 19 10:30:00 1998 Recs: 443 Size: 100221CS
12       P980219110017OCC
13       Date: Thu Feb 19 11:00:00 1998 Recs: 433 Size: 111003CS
14       P980219113018OCC
15       Date: Thu Feb 19 11:30:00 1998 Recs: 452 Size: 112003CS
16       P980219120019OCC
17       Date: Thu Feb 19 12:00:00 1998 Recs: 488 Size: 120455CS
17 Help
18 Refresh
maint
Time 17:03 >
```

The user wishes to list file P980219130021OCC. This stream has a DIRP file format.

```
FILESYS
0 Quit
2 Set
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >listfile cdr1 FNAME P980219130021OCC
```

```
FILESYS P980219130021OCC
0 Quit      Date: Thu Feb 19 8:00:00 1998 Recs: 423 Size: 100231CS
2 Set
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >
```

16.2.10 Command name: mib

16.2.10.1 Command type

MENU command from billmtc menu

16.2.10.2 Command target

SDM

16.2.10.3 Command availability

RES

16.2.10.4 Command description

This is an existing command that is enhanced this release to support multiple billing record formats such as CDR which may have format-specific configuration data. With the addition of new billing record formats, format-specific mibs may be built on top of the base mib. These format-specific mibs contain configuration data specific to that format. The format-specific mib contains data applicable to all streams that contain records of that format. Meanwhile, the base mib contains all configuration data common to all SBA.

16.2.10.5 Warning

There are no new warnings with this release for this command.

16.2.10.6 Command syntax

```
> mib [<record_format>] <action> [-r <row number>] [<mib parm name>]
[<new value>]
```

Note:

The above order of parameters is important.

16.2.10.7 Parameter definitions

Table 19

PARAMETER	VALUE	DEFINITION
record_format	string examples: BAF, CDR	This is an OPTIONAL parameter which identifies the record format-specific mib where the parameter the user is interested in is stored. If a value is provided here, that format-specific mib is searched first for the interested parameter. If it is not found, the base mib is automatically searched for the parameter. If the parameter is not found, an error is displayed. If the user wants to access an format-specific mib parameter, this parameter is REQUIRED.
action	'get' , 'set' or 'view'	This is a REQUIRED parameter. 'Get' action specifies the user wants to see what the value of the <mib parm name>or <mib table name> is currently set to. 'Set' action specifies that the user wants to make the <mib parm name> be set to the specified <new value>. Therefore, when this 'set' action is used the <new value> parameter must be supplied. The 'view' action requires no additional parameters and displays all the customer-definable or viewable parameters and tables.
-r <row number>	integer	This is a REQUIRED parameter ONLY when the 'get' or 'set' action utilizes a <mib parm name> that is a tabular item. Some mib parms are stored in tables and the specific row number is required to access the appropriate value.
<mib parm name>	string	This is a REQUIRED parameter for the 'set' and 'get' actions. This is the actual name of the interested mib parameter. An example is: inAuditRecsIn All of these names can be viewed with the 'view' action.

Table 19

PARAMETER	VALUE	DEFINITION
<new value>	appropriate type	This is a REQUIRED parameter ONLY when the 'set' action is used. This is the value that the user wishes the mib parameter to be set to. It must fall in the appropriate range of values for the particular mib parameter or an error will be displayed.

16.2.11 Responses

The following responses are only those that are NEW this release.

16.2.11.1 Response

Invalid record format. Valid record formats are {<record format1>, <record format2>, etc.}

Explanation:

This message is in response to a user invoking the command with an invalid record format name.

System action:

Prompt is returned to user, execution of the command ends.

User action:

User must re-enter the command providing a valid record format name.

16.2.11.2 Response

<mib parm name> is not an object in the <format_name> mib.

Will check the base mib.

Explanation:

This message is in response to a user invoking the command specifying an record format name and the specified mib parameter is not found in that format-specific mib.

System action:

The command continues, checking the base mib for the specified mib parameter.

User action:

No action required unless parameter is not found in the base mib either. At that time, the user may want to invoke mib view for a list of valid mib parameters.

16.2.11.3 Response

The following response has been changed slightly from last release, specifying it was not an object in the 'BASE mib' instead of just the 'mib':

get Error: <invalid mib parm name > is NOT a base mib object

Explanation:

This message is in response to a user invoking the command specifying an record format name and the specified mib parameter or table is not found in that format-specific mib. Then the BASE mib is searched and it was still not found.

System action:

The command ends.

User action:

The user may want to invoke mib view for a list of valid mib parameters and tables.

16.2.12 Notes

This command does not require a stream parameter and therefore, the set stream command has no effect with this command.

16.2.13 Examples

The user wishes to list the value of the cdr-specific parameter, someCdrSpecificParm.

```
BILLING
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 Mib
11 DispAl
12 DispLogs
13 FILESYS
14 SCHEDULE
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
```

```
Time 17:03 >mib cdr get someCdrSpecificParm
```

```
BILLING someCdrSpecificParm = 100000
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 Mib
11 DispAl
12 DispLogs
13 FILESYS
14 SCHEDULE
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
```

```
Time 17:03
```

The user wishes to change the value of a base parm, sourcePrimaryAddr, but supplies the baf record format parameter. This is okay since the base mib is invoked automatically by the baf mib when the match is not found.

```
BILLING
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 Mib
11 DispAl
12 DispLogs
13 FILESYS
14 SCHEDULE
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
Time 17:03 >10 baf set sourcePrimaryAddr 22.21.34.5
```

```
sourcePrimaryAddr is NOT an object in the baf mib
BILLING
0 Quit Will check the base mib
2 Set
3 sourcePrimaryAddr set to 22.21.34.5
4 CONFSTRM
5
6
7
8
9 Query
10 Mib
11 DispAl
12 DispLogs
13 FILESYS
14 SCHEDULE
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
Time 17:03
```

The user wishes to display a cdr parm, but misspells the format parameter.

```
> mib crd get someCdrSpecificParm
```

Invalid record format. Valid record formats are {baf, cdr}.

The user mistakenly forgets to give a format parameter, so only the base mib is searched thus resulting in no match.

```
> mib get someCdrSpecificParm
```

```
get Error: someCdrSpecificParm is NOT a base mib object
```

The user mistakenly misspells a format-specific mib parameter, so the record format mib is searched with not match and then the base mib is searched thus resulting in no match.

```
> mib cdr get someCdrSpecificPrm
```

```
someCdrSpecificPrm is not an object in the cdr mib - will check the base mib.
```

```
get Error: someCdrSpecificPrm is NOT a base mib object
```

16.2.14 Command name: closeC

16.2.14.1 Command type

MENU

16.2.14.2 Command target

SDM

16.2.14.3 Command availability

RES

16.2.14.4 Command description

This is an existing command that is enhanced to accept a stream for a parameter. When invoked, this causes the currently open files in the particular stream to be closed and changed to the ‘closed not sent’ (i.e. primary or unprocessed) state. Under normal operating conditions, this results in one file being closed, however, when the stream is in the recovery mode or if there were error files present, this may result in the closing of more than one file.

16.2.14.5 Warning

There are no new warnings with this release for this command.

16.2.14.6 Command syntax

> closec <stream_name>

16.2.14.7 Parameter definitions

Table 20

PARAMETER	VALUE	DEFINITION
stream_name	string	<p>This is a REQUIRED parameter that is a string representing the particular stream that the files are to be closed from (e.g. AMA.) This is the string matching the stream name in table SDMBILL and CRSFMT on the CM.</p> <p>The user may wish to use the new command, SET <stream> <stream_name>, before invoking closec and would not need to enter this parameter due to the fact that the stream was previously set by the set stream command. However, if a stream name is entered on the command line as part of the closec command, it takes precedence over a previously set stream.</p>

16.2.15 Responses

The following responses are only the NEW responses for this command that are added this release.

16.2.15.1 Response

Invalid stream. Valid streams are {<stream1>, <stream2>, etc.}

Explanation:

This message is in response to a user invoking the command with an invalid stream name. A valid stream is one that is running, actually turned on from the CM. If a stream is configured, but not yet turned on, it is considered an invalid stream.

System action:

Prompt is returned to user, execution of the command ends.

User action:

User must re-enter the command providing a valid stream name. The user may also choose to use the Set Stream command to set a stream, then re-invoke the command without providing the stream name.

16.2.16 Notes

16.2.17 Examples

The user wishes to close the current active file in the ama stream.

```
FILESYS
0 Quit
2 Set
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >9 ama
```

```
FILESYS
0 Quit          Closed 020001.030002.00686.01.2
2 Set
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >
```

The user closed the current file in the cdr1 stream, but misspells the stream name.

```
FILESYS
0 Quit
2 Set
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >closec cdr1
```

```
FILESYS
0 Quit
2 Set
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > Invalid stream. Valid streams are {ama, cdr1}.
```

16.2.18 Command name: query

16.2.18.1 Command type

MENU

16.2.18.2 Command target

SDM

16.2.18.3 Command availability

RES

16.2.18.4 Command description

This is a NEW command which enables the user to list the current state of a certain stream or all streams. The different states that a stream can be in are:

RBsy - The stream either has been manually busied or a problem has been encountered on the CM. This stands for “Remote Busy”

Init - The stream is either in the process of coming up or being stopped. It is a transitional state that occurs very quickly.

InSv - The stream is in normal running mode.

Off - The stream has been turned off from the CM side, accepted on the SDM side and is going down. It is a transitional state that occurs very quickly.

16.2.18.5 Warning

There are no warnings for this command.

16.2.18.6 Command syntax

> query {<stream_name, ALL>}

16.2.18.7 Parameter definitions

Table 21

PARAMETER	VALUE	DEFINITION
stream_name	string representing a stream or ALL	<p>This is an OPTIONAL parameter that is a string representing the particular stream that the files are to be queried from (e.g. AMA.) If the user does not supply a stream_name or the keyword, ALL, or a stream was not previously set by the set stream command, ALL is assumed.</p> <p>The user may wish to use the new command, SET <stream> <stream_name>, before invoking query and would not need to enter this parameter due to the fact that the stream was previously set by the set stream command. However, if a stream name or ALL is entered on the command line as part of the query command, it takes precedence over a previously set stream.</p>

16.2.19 Responses

16.2.19.1 Response

```
<stream_name>:
  PrimarySubStream: <current state>
  SecondarySubStream: <current state>
```

Explanation:

This is the information screen that the user gets for each stream if more than one was requested with the ALL keyword, or absence of a stream name. These few lines would be repeated for each stream.

The Secondary Substream (RECOVERY) would not be displayed if it was not present. What this means is that the SBA is currently not recovering files that were previously backed up in auxiliary storage on the CM.

System action:

Displays this info, command ends and the prompt is returned to the user.

User action:

None.

16.2.19.2 Response

Invalid stream. Valid streams are {<stream1>, <stream2>, etc. }

Explanation:

This message is in response to a user invoking the command with an invalid stream name. A valid stream is one that is running, actually turned on from the CM. If a stream is configured, but not yet turned on, it is considered an invalid stream.

System action:

Prompt is returned to user, execution of the command ends.

User action:

User must re-enter the command providing a valid stream name. The user may also choose to use the Set Stream command to set a stream, then re-invoke the command without providing the stream name. Also, the user has the choice of using the keyword, ALL or not entering a stream name at all (resulting in ALL.)

16.2.20 Notes

The output of this command is a SNAPSHOT of the current states of the substreams. This value displayed to the screen is NOT UPDATED dynamically. Therefore, at the instance this command is invoked, the state is displayed as one value that could change at any moment after this command is invoked.

16.2.21 Examples

The user wishes to display the current state of the substreams in the ama stream. The AMA stream is in normal running mode and there is no Recovery substream present.

```
BILLING
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 MIB
11 DispAl
12 Displogs
13 FileSys
14
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
  maint
Time 17:03 > query ama
```

```
BILLING          AMA:
0 Quit           PrimarySubStream: InSv
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 MIB
11 DispAl
12 Displogs
13 FileSys
14
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
  maint
Time 17:03 >
```

The user wants to query the cdr1 stream, but misspells the stream name.

```
BILLING
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 MIB
11 DispAl
12 Displogs
13 FileSys
14
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
maint
Time 17:03 >9 cdr1
```

```
BILLING Invalid stream. Valid streams are {ama, cdr1}.
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 MIB
11 DispAl
12 Displogs
13 FileSys
14
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
maint
Time 17:03 >
```

The user wants to query all the streams. The CDR1 Stream shows that Recovery is in progress. The AMA stream was manually busied from the CM.

```
BILLING
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 MIB
11 DispAl
12 Displogs
13 FileSys
14
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
maint
Time 17:03 > query ALL
```

```
BILLING
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 MIB
11 DispAl
12 Displogs
13 FileSys
14
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
maint
Time 17:03 >

AMA:
  PrimarySubStream:    RBSy
CDR1:
  PrimarySubStream:    InSv
  SecondarySubStream:  InSv
```

16.2.22 Command name: Set STREAM

16.2.22.1 Command type

MENU command from the billmtc, tools, schedule, confstrm and filesys menus

Note:

This command is available ONLY from the billmtc window and all other sublevels available from the billmtc menu. It is not available from the command line or from SDMRLOGIN.

16.2.22.2 Command target

SDM

16.2.22.3 Command availability

RES

16.2.22.4 Command description

This is a NEW command that allows the user to set a context for a particular stream. This is in order for subsequent command invocations to utilize this value for the stream parameter.

The billmtc menu shows 'set' and not 'set stream' in order to allow for future expansion of this command. STREAM is actually a keyword parameter for the 'set' command which also requires a <stream_name> parameter to follow. This results in the stream name to be displayed on the screen until the stream is cleared, changed or billmtc is exited.

16.2.22.5 Warning

There are no warnings associated with this command.

16.2.22.6 Command syntax

> set <STREAM> <stream_name, NULL>

16.2.22.7 Parameter definitions

Table 22

PARAMETER	VALUE	DEFINITION
stream_name	string or NULL (blank)	<p>This is a REQUIRED parameter that is a string representing the particular stream that the context is to be set to (e.g. AMA.) This is the exact string matching from tables SDBBILL and CRSFMT on the CM.</p> <p>This stream name results in subsequent commands executed utilizing this value for the stream name if they require one. However, if a stream name is entered on the command line with the subsequent command, that value takes precedence over the set stream.</p> <p>If the user enters 'set stream' then this CLEARS the value of the set stream.</p>

16.2.23 Responses

16.2.23.1 Response

Stream context now set to <stream_name>.

[<stream_name>] is also displayed in the upper left hand corner of the screen.

Explanation:

This is the default successful response displayed. The displayed stream name remains on the screen in the upper left hand corner until the user quits out of the billmtc menu or resets the stream name to NULL.

System action:

The stream is validated then displayed. Subsequent command invocations that require a stream parameter, but do not include one on the command line utilize this as the value of the stream parameter.

User action:

The user may now invoke other commands that require a stream name without having to type a stream name on the command line. The user may wish to invoke a command utilizing a different stream as the stream parameter and may do so by including that stream name as part of the command line. This will not result in the context being cleared.

16.2.23.2 Response

Invalid keyword. Valid keywords for set are: {stream.}

Explanation:

This message is in response to a user invoking the set command with an invalid keyword. The only valid keyword available this release is 'stream.'

System action:

Prompt is returned to user, execution of the command ends.

User action:

User must re-enter the command providing a valid keyword.

16.2.23.3 Response

Invalid stream. Valid streams are {<stream1>, <stream2>, etc.}

Explanation:

This message is in response to a user invoking the command with an invalid stream name.

System action:

Prompt is returned to user, execution of the command ends.

User action:

User must re-enter the command providing a valid stream name.

16.2.23.4 Response

Stream context is now cleared.

Explanation:

This message is in response to a user invoking the command without a stream name. This is how a user clears the previously set stream context.

System action:

Prompt is returned to user, execution of the command ends. The previously set stream name is now cleared from the screen.

User action:

None.

16.2.24 Notes

16.2.25 Examples

The user wishes to set the stream context to the ama stream.

```
BILLING
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 MIB
11 DispAl
12 Displogs
13 FileSys
14
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
maint
Time 17:03 > 2stream ama
```

```
[STREAM=AMA]
BILLING Stream context now set to AMA.
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 MIB
11 DispAl
12 Displogs
13 FileSys
14
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
maint
Time 17:03 >
```

The user wants to clear the stream context that was previously set.

```
[STREA=AMA]
```

```
BILLING
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 MIB
11 DispAl
12 Displogs
13 FileSys
14
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
  maint
Time 17:03 >set stream
```

```
BILLING      Stream context is now cleared.
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 MIB
11 DispAl
12 Displogs
13 FileSys
14
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
  maint
Time 17:03 >
```

The user wants to set the stream to cdr1, but misspells the stream name.

```
BILLING
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 MIB
11 DispAl
12 Displogs
13 FileSys
14
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
  maint
Time 17:03 > set stream cdr1
```

```
BILLING Invalid stream. Valid streams are {ama, cdr1}.
0 Quit
2 Set
3
4 CONFSTRM
5
6
7
8
9 Query
10 MIB
11 DispAl
12 Displogs
13 FileSys
14
15 TOOLS
16 AMABakUp
17 Help
18 Refresh
  maint
Time 17:03 >
```

16.2.26 Command name: amadump (2nd location on the menu)

16.2.26.1 Command type

Menu

16.2.26.2 Command target

SDM

16.2.26.3 Command availability

RES

16.2.26.4 Command description

AMADUMP is a tool on the SDM functionally similar to the AMADUMP on the CM. It allows users to view billing records from both DNS and DIRP formatted files. It can display records based on search criteria entered by the user. The output can further be refined by limiting the maximum number of records to search, the maximum number of records to output, and in case of DIRP formatted files, by allowing users to specify the start block of the file to start searching from.

The execution of the command takes the user into a new shell outside of RMI. The user can then dump records from the file(s). The set of files can be specified as a list of files or can be specified by giving a time period. The time period is evaluated to get all the files that have records that were created during the time period.

16.2.26.5 Command syntax

amadump <stream name>

16.2.26.6 Parameter definitions

Table 23

PARAMETER	DEFINITION
<stream name>	The stream name is a non-optional parameter. If it's not specified when triggering amadump, it needs to be specified by the set stream command. If amadump is run without setting the stream name, the user will be prompted to enter one of the available stream names.

16.2.27 Responses

16.2.27.1 Response: AMADUMP prompt

AMADUMP>>

Explanation:

The user is shown the prompt after they have successfully entered the amadump shell.

System action:

The prompt signifies that the amadump process has obtained the correct stream, and is ready for input from the user.

User action:

The user can dump records, maintain a list of filters, specify the number of records to search and output, specify the starting block of DIRP files, list fields, request help or quit out of amadump.

16.2.27.1.1 Sub-Command Name: dump (DNS file format)

16.2.27.1.1.1 Description

This command is used to dump records from standard DNS file(s) onto the screen. The formatted records are displayed one page at a time as per the request. Syntax A below shows the usage of unix type options. This release also offers the user the flexibility to specify the complete command names when specifying the options. This usage is shown in Syntax B. The parameters table shows both types of values.

16.2.27.1.1.2 SyntaxA

```
DUMP <DISPLAY MODE> [-S] [-NO <NUM OUT>] [-NM <NUM SEARCH>] [-NK <NUM BLOCK>] [-FT <FILTER STRING>] {[-FN <FILES ...> | -B <STARTTIME>] [-E <ENDTIME>]}
```

16.2.27.1.1.3 SyntaxB

```
DUMP <DISPLAY MODE> [SUM] [NUMOUT <NUMOUT VALUE>] [NUMSEARCH <NUMSRCH VALUE>] [NUMBLK <NUMBLOCK VALUE>] [FILTER <FILTER STRING>] {FNAME <FILES ...> | [BTIME <START TIME>] [ETIME <ENDTIME>]}
```

16.2.27.1.1.4Parameters

Table 24

PARAMETER	VALUE	DEFINITION
<display mode>	{HEX, DETAILS, NODETAILS, NOSHOW}	<p>It dumps the record in any of these modes.</p> <ul style="list-style-type: none"> • HEX indicates that the record will be displayed in its raw form. • The DETAILS option will display the record after it's split into the individual fields with the field names preceding each field. • The NODETAILS option should be used when the record is to be split into individual field and is to be displayed without a label preceding the fields. • NOSHOW is usually used with the SUMMARY option. This option allows the user to suppress all the details about the records. Basically, when this particular option is used, record information will not be displayed. <p>Note: A non-optional parameter.</p>
summary	-s OR sum	<p>Option requesting AMADUMP to display a summary of the dump. The summary will contain the following information. Filenames, total records in each file, total records matched (or selected) from each file, total of all the records in this particular dump and the total records matched in this particular dump. It will also display all the criteria used to choose the output.</p> <p>The sum option allows the user to specify the complete sub-command instead of specifying a flag. This feature is new to this release.</p>
numout	-no <numout val> OR numout <numout val>	<p>The -no option specifies the maximum number of records to output. <numout> is an integer value.</p> <p>The numout option allows the user to specify the complete sub-command instead of specifying a flag. This feature is new to this release.</p>
numsrch	-ns<numsrch val> OR numsrch <numsearch val>	<p>The -ns option specifies the maximum number of records to search. <numsearch> is an integer value.</p> <p>The numsrch option allows the user to specify the complete sub-command instead of specifying a flag. This feature is new to this release.</p>

Table 24

PARAMETER	VALUE	DEFINITION
numblk	-nk <numblk val> OR numblk <numblk val>	The -nk option allows the user to specify the starting block of records in case of DIRP files. If the file format is DNS, the value is read but is ignored. The numblk option allows the user to specify the complete sub-command instead of specifying a flag. This feature is new to this release.
filter	-ft <filter string> OR filter <filter string>	The -ft option specifies that the string that follows is the filter string. The string could be given in double quotes if it spans more than one word. The filters from the filter list (see the filter command) could be used in this filter string by referencing the number with a '%' sign in front of the number. For e.g. to refer to the second filter from the list, the string could be written like "structure_code = 0001 & %2". The filter option allows the user to specify the complete sub-command instead of specifying a flag. This feature is new to this release.
time period	-b <start time> or btime <starttime> OR -e <end time> or etime <endtime>	The "-b" and "-e" options specify the time period (start time and end time) in the format " hh:mm:ss.mm/dd/yyyy ". All the files matching the creation dates that fall within this time frame will be used for the dump. If -b option is not specified, the current date and time are set as the begin value. Similarly, if the -e option is not specified, the current date and time are assumed as the end value. The btime and etime options allow the user to specify the complete sub-command instead of specifying a flag. This feature is new to this release. Note: The dump command must have either a time period or a filename.
file names	-fn <list of files> or fname <list of files>	Instead of the time period, the user can enter a set of one or more files to be dumped. If more than one file is specified, the file list must be entered within double quotes. If only one file is requested, the double quotes are optional. The user will have to list out the file names separated by spaces. Note: The dump command must have either a time period or a filename.

16.2.27.1.1.5Warning

The dump command might take a long time depending on the number of files to be scanned. Thus the user should be careful in specifying the set of files or the time period, so that he/she doesn't run into this problem.

16.2.27.1.2 Sub-Command Name: dump (DIRP file format)**16.2.27.1.2.1 Description**

This command is used to dump records from DIRP formatted file(s) onto the screen. The formatted records are displayed one page at a time as per the request. The syntax below shows the usage. Due to the ambiguous nature of unix type option flags, with DIRP files, we are only supporting the usage of complete command names.

16.2.27.1.2.2 Syntax

```
DUMP<DISPLAY MODE> [SUM] [NUMOUT <NUMOUT VALUE>]  
[NUMSEARCH <NUMSRCH VALUE>] [NUMBLK <NUMBLOCK  
VALUE>] [FILTER <FILTER STRING>] {[BTIME <START TIME>]  
[ETIME <ENDTIME>] | FNAME <FILES ... > }
```

16.2.27.1.2.3Parameters

PARAMETER	VALUE	DEFINITION
<display mode>	{HEX, DETAILS, NODETAILS, NOSHOW}	<p>It dumps the record in any of these modes.</p> <ul style="list-style-type: none"> • HEX indicates that the record will be displayed in its raw form. • The DETAILS option will display the record after its split into the individual fields with the field names preceding each field. • The NODETAILS option should be used when the record is to be split into individual field and is to be displayed without a label preceding the fields. • NOSHOW is usually used with the SUMMARY option. This option allows the user to suppress all the details about the records. Basically, when this particular option is used, record information will not be displayed. <p>Note: A non-optional parameter.</p>
summary	sum	<p>Option requesting AMADUMP to display a summary of the dump. The summary will contain the following information. Filenames, total records in each file, total records matched (or selected) from each file, total of all the records in this particular dump and the total records matched in this particular dump. It will also display all the criteria used to choose the output.</p> <p>The sum option allows the user to specify the complete sub-command instead of specifying a flag. This feature is new to this release.</p>
numout	numout <numout val>	<p>The numout option specifies the maximum number of records to output, where <numout> is an integer value.</p> <p>The numout option allows the user to specify the complete sub-command instead of specifying a flag. This feature is new to this release.</p>
numsearch	numsrch <numsearch val>	<p>The numsrch option specifies the maximum number of records to search, where <numsearch> is an integer value.</p> <p>The numsrch option allows the user to specify the complete sub-command instead of specifying a flag. This feature is new to this release.</p>

PARAMETER	VALUE	DEFINITION
numblock	numblk <numblk val>	<p>The numblk option allows the user to specify the starting block of records in case of DIRP files. If the file format is DNS, a message saying "This option is not valid with a DNS file and is ignored" will be printed.</p> <p>The numblk option allows the user to specify the complete sub-command instead of specifying a flag. This feature is new to this release.</p>
filter	filter <filter string>	<p>The filter option specifies that the string that follows is the filter string. The string could be given in double quotes if it spans more than one word. The filters from the filter list (see the filter command) could be used in this filter string by referencing the number with a '%' sign in front of the number. For e.g. to refer to the second filter from the list, the string could be written like "structure_code = 0001 & %2".</p> <p>The filter option allows the user to specify the complete sub-command instead of specifying a flag. This feature is new to this release.</p>
time period	btime <starttime> or etime <endtime>	<p>The "btime" and "etime" options specify the time period (start time and end time) in the format "hh:mm:ss.mm/dd/yyyy". All the files matching the creation dates that fall within this time frame will be used for the dump. The etime option is optional in that if it is not provided, then the current date and time will be assumed.</p> <p>The btime and etime options allow the user to specify the complete sub-command instead of specifying a flag. This feature is new to this release.</p> <p>Note: The dump command must have either a time period or a filename.</p>
file names	fname <list of files>	<p>Instead of the time period, the user can enter a set of one or more files to be dumped. If more than one file is specified, the file list must be entered within double quotes. If only one file is requested, the double quotes are optional. The user will have to list out the file names separated by spaces.</p> <p>Note: The dump command must have either a time period or a filename.</p>

16.2.27.1.3 Sub-Command Name: filter

16.2.27.1.3.1 Description

This command is used to maintain a set of user defined and pre-defined filters to be used in the dump command. The current release allows 20 filter strings to be saved in the buffer. These filter strings can be referred to in the <filter string> of the dump command as “%<filter number>”. This allows the user the additional capability of storing complicated filters in the buffer.

A set of pre-defined filters (which cannot be over written) are also provided. The sub-commands “Add, Delete and Display” are used to add, delete or display the filter strings from the internal buffer with the filter strings.

Note: The filter strings will not be validated until it is actually used in the DUMP command.

16.2.27.1.3.2 Syntax

FILTER ADD <AT> <FILTER STRING>

Adds a filter string at the location specified by <at>. The value of <at> can be anywhere from 3 to 19. The command does nothing if the location is invalid. This command will overwrite an existing filter if it is writable.

FILTER DELETE <AT>

Puts a null string at the location specified by <at>. If it is a non-writable location or if the location is out of bounds, the command will simply return back to the prompt.

FILTER DISPLAY [<AT>]

Displays the filters in a tabular form. If the <at> value is present, then it will only display the filter string at the location specified.

16.2.27.1.3.3 Parameters

Table 25

PARAMETER	VALUE	DEFINITION
<at>	int	Indicates the location of the filter on which the operation is to be performed. The maximum is 19.
<filter string>	string	The actual filter that has to go in the appropriate location.

16.2.27.1.3.4 Notes on filter strings

The filter string is a string that can contain logical, comparison and arithmetic operations between constants and variables.

A constant could be an actual number (up to 19 digits) or a string in single quotes.

Variables are field names. A list of available field names (variables) can be obtained by issuing the command “list fields” at the AMADUMP prompt.

The operations permitted in this release in the order of decreasing precedence are given in the table below.

Table 26

Operation	Symbol
Parenthesis	()
slice a variable	from <int> count <int>. The from <int> starts indexing from 0. A count of 0 returns back a variable of size 0. For e.g. The from 9 count 1 takes a slice of the RECORD starting from position 9 and having a size of 1.
multiplication, division, addition, subtraction	*, /, +, -
greaterThan, lesserThan, greaterOrEqual, lesserOrEqual, equality, inEquality	>, <, >=, <=, =, !=
And, Or (both logical and bit-wise)	&,

Points worth noting are

- Most of the operands are binary, except the parenthesis. Parenthesis holds other expressions
- The slice operation is a ternary operation which takes a slice of the record, and it only works on variables. The result of a slice is a temporary variable.
- The And and Or operations function as both logical and bit-wise operators
- The result of any comparison operation is either “0” (false) or “1” (true)
- An expression is considered “true” if it evaluates to a non-zero value
- A string constant can only be used as a regular expression string to be compared to a variable. In other words, string constants can only be used in an equality (“=”) operation with the other operand being a variable. For more information about regular expressions, please refer to the UNIX man pages.

16.2.27.1.4 Sub-Command Name: numout

16.2.27.1.4.1 Description

This command, when used with the set option, allows the user to set the maximum number of records to output. The maximum is configured to 500000; the maximum value set in the mib. When used with the reset option, the value is set to the default maximum.

16.2.27.1.4.2 Syntax

NUMOUT SET <INT_VALUE>

Sets the value of the maximum number of records to output, to the specified integer value. If a value greater than the permissible maximum, i.e. 500000, is specified, a message showing the correct usage is displayed to the user.

NUMOUT RESET

Sets the value to the maximum default. In this case, essentially no numout value is specified.

Table 27

PARAMETER	VALUE	DEFINITION
<set>	integer value	indicates the value of the number of records to output
<reset>		sets the value of the number of records to output, to the maximum default value

16.2.27.1.5 Sub-Command Name: numsrch

16.2.27.1.5.1 Description

This command, when used with the set option, allows the user to set the maximum number of records to search. The maximum is configured to 500000; the maximum value set in the mib. When used with the reset option, the value is set to the default maximum.

16.2.27.1.5.2 Syntax

NUMSRCH SET <INT_VALUE>

Sets the value of the maximum number of records to search to the specified integer value. If a value greater than the permissible maximum, i.e. 500000, is specified, a message showing the correct usage is displayed to the user.

NUMSRCH RESET

Sets the value to the maximum default. In this case, essentially no numsrch value is specified.

Table 28

PARAMETER	VALUE	DEFINITION
<set>	integer value	indicates the value of the number of records to search
<reset>		sets the value of the number of records to search, to the maximum default value

16.2.27.1.6Sub-Command Name: numblk**16.2.27.1.6.1Description**

This command is only valid for DIRP formatted files. When used with the set option, it allows the user to set the block number to start searching from. If a value greater than the total number of blocks in the file is specified, a message showing the correct usage is displayed to the user. When used with the reset option, the value is set to the first block.

If the numblk option is used with DNS file(s), the value will be allowed to be set but will not be used.

16.2.27.1.6.2Syntax

NUMBLK SET <INT_VALUE>

Sets the value of the starting block to the specified integer value. If a value greater than the total number of blocks in the file is specified, a message showing the correct usage is displayed to the user.

NUMBLK RESET

Sets the value to minimum, so the search starts from the beginning.

Table 29

PARAMETER	VALUE	DEFINITION
<set>	integer value	indicates the starting block in DIRP files
<reset>		sets the starting block to the first block.

16.2.27.1.7Sub-Command Name: listfields

16.2.27.1.7.1Description

This command, when invoked, will provide the user with a list of the field names that the user can use when adding the filter string. Please note that variables in filter strings are used interchangeably with field names throughout this document.

16.2.27.1.7.2Syntax

listfields

16.2.27.1.7.3Parameters

Table 30

PARAMETER	VALUE	DEFINITION
None		

16.2.27.1.8Sub-Command Name: help

16.2.27.1.8.1Description

This command will provide a syntax help on all the commands available at the AMADUMP prompt.

16.2.27.1.8.2Syntax

help

16.2.27.1.8.3Parameters

Table 31

PARAMETER	VALUE	DEFINITION
None		

16.2.27.1.9Sub-Command Name: quit

16.2.27.1.9.1Description

The quit command or 'q' will allow the user to quit out of the amadump session.

16.2.27.1.9.2 Syntax

quit

16.2.27.1.9.3 Parameters

Table 32

PARAMETER	VALUE	DEFINITION
None		

16.2.27.1.10 Examples

1. An example to dump a list of files specified in double quotes, separated by white spaces. When only one file is specified, the double quotes are optional.

```
AMADUMP>> dump details -s -fn "010001.010000.00088.01.2 010001.010000.00089.01.2"
```

```
HEX ID AA STRUCTURE CODE 40001C CALL CODE 132C SENSOR TYPE 036C
SENSOR ID 0619351C REC OFFICE TYPE 036C REC OFFICE ID 0619351C
DATE 70311C TIMING IND 00000C STUDY IND 0001000C CLD PTY OFF-HK 0C
SERVICE OBSERVED 0C OPER ACTION 0C SERVICE FEATURE 000C ORIG NPA 919C
ORIG NUMBER 8472452C OVERSEAS IND 0C TERM NPA 00800C TERM NUMBER 9917782C
CONNECT TIME 0656399C ELAPSED TIME 000098182C MODULE CODE 103C
SIG DIGITS NEXT FIELD 007C ACCT CODE 000000007879424C MODULE CODE 000C
```

```
<<< STUFF DELETED >>>
```

```
HEX ID AA STRUCTURE CODE 40001C CALL CODE 132C SENSOR TYPE 036C
SENSOR ID 0619351C REC OFFICE TYPE 036C REC OFFICE ID 0619351C
DATE 70311C TIMING IND 00000C STUDY IND 0001000C CLD PTY OFF-HK 0C
SERVICE OBSERVED 0C OPER ACTION 0C SERVICE FEATURE 000C ORIG NPA 919C
ORIG NUMBER 8472452C OVERSEAS IND 0C TERM NPA 00800C TERM NUMBER 9917782C
CONNECT TIME 0656399C ELAPSED TIME 000098182C MODULE CODE 103C
SIG DIGITS NEXT FIELD 007C ACCT CODE 000000007879424C MODULE CODE 000C
```

```
FILE                               Total Records Searched   Total   Matched
-----
010001.010000.00088.01.2 100                               19
010001.010000.00089.01.2 120                               101
-----
TOTALS                               220                               120
AMADUMP>>
```

2. An example to add a filter at location 6

```
AMADUMP>> filter add 6 structure_code = 40511
```

3. An example display of the filters

```
AMADUMP>> filter display
Filter #   Writable   String
00         N         (structure_code = '001') & (module_code = 25)
01         N         module_code = 25
02         N         elapsed_time = 15
```

```

03          Y
04          Y
05          Y
06          Y      structure_code = 40511
07          Y
08          Y
09          Y
10          Y
11          Y
12          Y
13          Y
14          Y
15          Y
16          Y
17          Y
18          Y
19          Y

```

4. An example to delete a filter

```
AMADUMP>> filter delete 6
```

5. An example to dump a file (given a file name). The filename does not have any quotes around it.

```
AMADUMP>> dump details -ft "%1 & structure_code = '510'" -fn
004096.004096.00001.01.2
```

In this example the filter string uses a pre-defined filter (%1) number 1 along with some other criteria. The %1 will be substituted as is with the string from filter list location 1. This (if the earlier examples are considered) will actually be evaluated as “module_code = 25 & structure_code = ‘510’”. The structure_code will be compared with the string ‘510’ as a regular expression comparison.

6. An example to dump records when a time range is given

```
AMADUMP>> dump details -s -ft "structure_code = 40001" -b 08:10.03/18/1997
```

This will dump all the records with modules attached having a structure code of 0001 that were created after 18th of March 1997, 8:10 am till the current date and time. The “-s” option indicates that a summary of the report should be output at the end.

7. An example to specify the number of records to search from within dump:

```
AMADUMP>> dump details -ns 20 -fn 020001.030002.00072.01.2
```

The numsearch option will search a maximum of 20 records in the specified file. If the file has more than 20 records, it will only display the first 20.

8. An example to set the starting block of DIRP formatted files to the default value.

```
AMADUMP>> numblk reset
```

Resets the numblk value to the first block

16.2.27.2Response: Invalid stream name

invalid stream name

Explanation:

If the user enters a stream that is not supported, then the user will be presented with this message, and a list of all the available streams is displayed.

System action:

The message displayed is the system's method of informing the user that the user requested amadump to be run for an unsupported stream.

User action:

The user can re-enter the amadump command by entering one of the available streams.

16.2.28 Notes**16.3 Notes**

The current release of AMADUMP doesn't support saving the output of a dump onto a unix file on the SDM. The following work around is suggested to save the output of amadump in text files on the CM.

1. On the CM, run the command "record start onto sfdev *or any device*".
2. Login to the SDM through the SDM using the command "SDMRLOGIN" from the CI prompt.
3. Run the "amadump <stream name>" command at the prompt.
4. Dump the records using the dump sub-command
5. Quit out of amadump. ('q')
6. Exit out of the SDMRLOGIN. ("exit")
7. Run the command "record stop onto sfdev *or device specified*".
8. The file RECORDFILE created on sfdev will have the output as seen by the user.

16.3.1 Command name: sendfile**16.3.1.1 Command type**

MENU command from billmtc.

16.3.1.2 Command target

SDM

16.3.1.3 Command availability

RES

16.3.1.4 Command description

The sendfile command is used to transfer files from the SBA to the transfer destination. This command is enhanced this release to accept a stream as a required parameter. The stream parameter must either be set by a previous 'set stream' command or provided on the command line. The stream parameter provided on the command line takes precedence over the stream provided by 'set stream'.

An optional new parameter, `new_file_state`, controls whether the state of the files change after they are transferred. If this parameter is set to 'NOTSENT' then the files' states are not changed after they are transferred. This results in the 'closed not sent' files staying in the 'closed not sent' state even after the execution of the sendfile command. If this parameter is set to 'SENT' then the states of 'closed not sent' files are changed to 'closed sent' after the execution of sendfile. The default value of `new_file_state` is 'SENT'.

The `new_file_state` parameter only applies to files which are in the 'closed not sent' (i.e. primary or unprocessed) before the sendfile command is invoked. The `new_file_state` parameter does not apply to files which were already in the 'closed sent' state and is ignored for these files.

16.3.1.5 Warning

There are no new warnings with this command.

16.3.1.6 Command syntax - New

This release a new command syntax is available for users for all streams. However, for users of streams with a DNS File Manager, the syntax supported in previous releases is still supported (see below.)

```
sendfile <stream_name> [STATE <primary, secondary, unprocessed,  
processed>, BTIME [hh[:mm[:ss]]][.mm[/dd[/[yy]yy]]] , ETIME  
[hh[:mm[:ss]]][.mm[/dd[/[yy]yy]]], SEQNUM <i, [j]>, FNAME <filename>]  
<new_file_state>
```

Note:

The <stream_name> parameter must be first, but the other parameters' order is not significant.

16.3.1.7 Parameter definitions - New Syntax**Table 33**

PARAMETER	VALUE	DEFINITION
stream_name	string	<p>This is a REQUIRED parameter that is a string representing the particular stream that the files being sent are a part of (e.g. AMA.) This is the string matching the stream name in table SDMBILL and CRSFMT on the CM.</p> <p>The user may wish to use the new command, SET <stream> <stream_name>, before invoking sendfile and would not need to enter this parameter due to the fact that the stream was previously set by the set stream command. However, if a stream name is entered on the command line as part of the sendfile command, it takes precedence over a previously set stream.</p>
STATE (or state) <value>	PROCESSED, UNPROCESSED, PRIMARY or SECONDARY	<p>This is an OPTIONAL parameter that tells sendfile which files in the stream specified are to be sent. The files with the state equal to this value are to be sent. For example: PROCESSED means all processed files are to be sent.</p>
BTIME (or btime) <date-time>	[hh[:mm[:ss]]].mm/ dd[/[yy]yy]] examples: 8:00 1/12/98 12:00:00.2/23/98	<p>This OPTIONAL parameter further constricts the matching criteria for files. This particular parameter, BTIME (begin time), states to send only the files that were created at this time and later.</p>
ETIME (or etime) <value>	[hh[:mm[:ss]]].mm/ dd[/[yy]yy]] examples: 8:00 1/12/98 12:00:00.2/23/98	<p>This OPTIONAL parameter further constricts the matching criteria for files. This particular parameter, ETIME (end time), states to send only those files created before and up to this time.</p>

Table 33

PARAMETER	VALUE	DEFINITION
SEQNUM (or seqnum) <value, value>	integer, integer defines a range of integers that represent file sequence numbers	This OPTIONAL parameter further constricts the matching criteria for files. This particular parameter, 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>	filename (expected to be DIRP File name, example: U980223163503OC C	This is an OPTIONAL parameter that states to only send this one file with this file name. The exact file name must match the string entered as <value>.
new_file_state	SENT or NOTSENT	This is an OPTIONAL parameter representing the new file state after it is sent. The default for this parameter is that the state of a file in the 'closed not sent' state would change to 'sent'. If SENT is entered on the command line then the result is that the file state is changed to 'closed sent' after the file is transferred. This is only applicable for files in the 'closed not sent' (i.e. primary or unprocessed) state and therefore is ignored when it is used in the case of already 'closed sent' files. example: 'sendfile ama STATE primary SENT' would send all primary files in the ama stream, and the state of the files would change to SENT (secondary)

16.3.1.8 Command syntax - AMADNS File Format

The following syntax is documented here since it is still supported for this release. It may, however, only be used with a stream that is configured with a DNS File Format Type.

```
sendfile <stream_name> [-p, -s] [ -b [hh[:mm[:ss]]][.mm[/dd[/[yy]yy]]] ] [ -e [hh[:mm[:ss]]][.mm[/dd[/[yy]yy]]] ] [-q i[,j]] [-f <filename>]
[<new_file_state>]
```

Note:

The <stream_name> parameter must be first, but the other parameters' order is not significant.

16.3.1.9 Parameter definitions - AMADNS File Format**Table 34**

PARAMETER	VALUE	DEFINITION
stream_name	string	<p>This is a REQUIRED parameter that is a string representing the particular stream that the files being sent are a part of (e.g. AMA.) This is the string matching the stream name in table SDMBILL and CRSFMT on the CM.</p> <p>The user may wish to use the new command, SET <stream> <stream_name>, before invoking sendfile and would not need to enter this parameter due to the fact that the stream was previously set by the set stream command. However, if a stream name is entered on the command line as part of the sendfile command, it takes precedence over a previously set stream.</p>
-p (or -P)		<p>This is an OPTIONAL parameter that specifies that the user wants to send all PRIMARY (files in the 'closed not sent' state) files. This can be used in conjunction with any other parameters EXCEPT -s.</p>
-s (or -S)		<p>This is an OPTIONAL parameter that specifies that the user wants to send all SECONDARY (files in the 'closed sent' state) files. This can be used in conjunction with any other parameter EXCEPT -p.</p>

Table 34

PARAMETER	VALUE	DEFINITION
-b (or -B) <date-time>	[hh[:mm[:ss]]][.mm/ dd[/[yy]yy]] examples: 8:00 1/12/98 12:00:00.2/23/98	This is an OPTIONAL parameter that specifies that the user wants to send all files created at this date/time and later. This parameter can be used with the -e parameter to define a time window to further restrict the criteria defined by any other parameter. example: -p -b 8:00 -e 12:00 defines a criteria of all primary files created at 8:00am or after up to 12:00pm today
-e (or -E) <date-time>	[hh[:mm[:ss]]][.mm/ dd[/[yy]yy]] examples: 8:00 1/12/98 12:00:00.2/23/98	This is an OPTIONAL parameter that specifies that the user wants to send all files created before this date/time. This parameter can be used in conjunction with the -b parameter to define a time window to further restrict the criteria defined by any other parameter. example: -e 15:30.2/24/1998 defines a criteria for ALL files created up to 3:30pm on Feb. 24, 1998
-q (or -Q) <i[,j]>	integer, integer defines a range of integers that represent file sequence numbers	This is an OPTIONAL parameter that specifies that the user wants to send all files with the sequence number of i or that falls in the range of sequence numbers defined by i through j. This parameter can be used in conjunction with any other parameter to further restrict the criteria. example: -s -Q 23,65 defines a criteria for all SECONDARY files that have a sequence number in the range from 23 to 65
-f (or -F) <filename>	filename (expected to be DNS File name, example: 021234.031234.000 001.05.2	This is an OPTIONAL parameter that specifies that the user wants to send this FILE specifically.

Table 34

PARAMETER	VALUE	DEFINITION
new_file_state	SENT or NOTSENT	<p>This is an OPTIONAL parameter representing the new file state after it is sent. The default for this parameter is that a file with the state 'closed not sent' would change to 'closed sent' once the file was transferred. If SENT is entered on the command line then the result is that the file state is changed to 'closed sent' after the file is transferred. This is only applicable for files in the 'closed not sent' (i.e. primary or unprocessed) state and therefore is ignored when it is used in the case of already 'closed sent' files.</p> <p>example:</p> <p>'sendfile ama -p SENT' would send all primary files in the ama stream, and the state of the files would change to SENT (secondary)</p>

16.3.2 Responses

The following responses are only those that are NEW this release.

16.3.2.1 Response

File state changed to 'closed sent' for <filename>.

Explanation:

This message is for each file that was sent and had its new file state changed to 'closed sent.' Files in the 'closed not sent' state are changed to 'sent' by default. In addition, this is in response to a user specifying the SENT optional parameter when invoking the command for the files that are in the 'closed not sent' state before they are sent.

System action:

System is just reporting that the file state has been changed.

User action:

User should just make note of what files have had their state changed.

16.3.2.2 Response

Invalid stream. Valid streams are {<stream1>, <stream2>, etc.}

Explanation:

This message is in response to a user invoking the command with an invalid stream name.

System action:

Prompt is returned to user, execution of the command ends.

User action:

User must re-enter the command providing a valid stream name. The user may also choose to use the Set Stream command to set a stream, then re-invoke the command without providing the stream name.

16.3.2.3 Response

Invalid option, <new_file_state>. It is ignored for files in the 'closed sent' state.

Explanation:

This message is in response to a user entering either SENT or NOTSENT for use with files that are in the 'closed sent' state (i.e. secondary or processed). This parameter is only valid with 'closed not sent' files.

System action:

The command continues to be executed with this parameter being ignored.

User action:

There is no user action required or recommended.

16.3.2.4 Response

File Transfer Mode for stream: <stream_name> is not outbound.

Explanation:

This message is in response to a user entering stream which is not setup for outbound file transfers. This mode is controlled by the FTMode command.

System action:

Prompt is returned to user, execution of the command ends.

User action:

The user must setup the specified stream for outbound file transfer using the FTMode command.

16.3.2.5 Response

File transfer settings unavailable for <stream_name>.

Explanation:

This message is in response to a user entering a stream which has not been setup for file transfers. The schedule:add command is used to setup streams for manual (using this command) and scheduled file transfers.

System action:

Prompt is returned to user, execution of the command ends.

User action:

Check the stream entered. If incorrect, re-enter the command with corrections. If correct, setup this stream for file transfers using Schedule:add command.

16.3.3 Notes

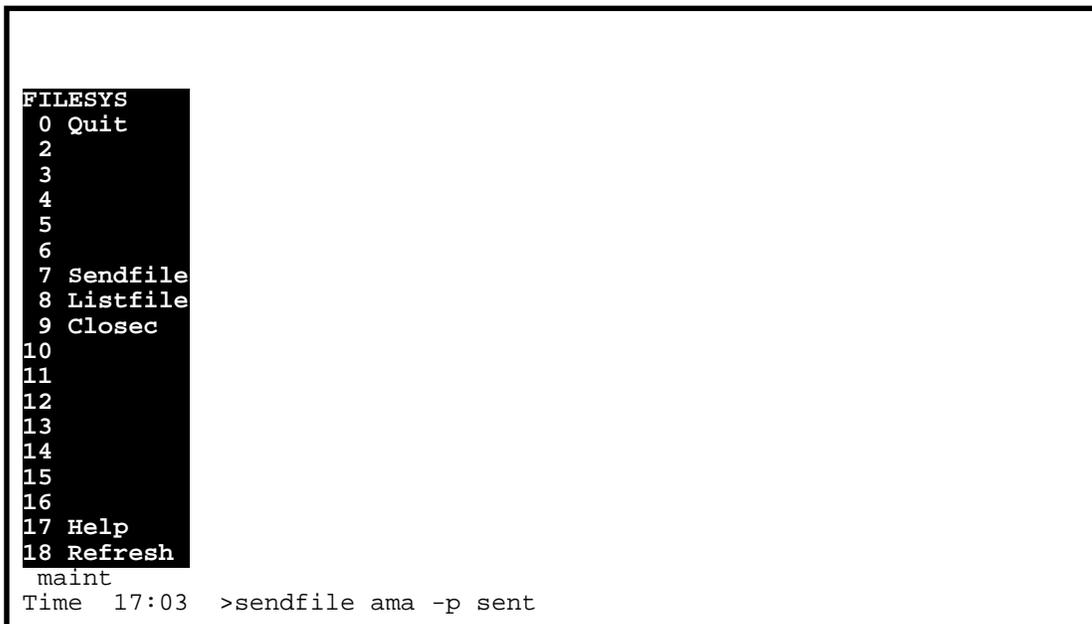
The default behavior of this command is changed from the previous release in that if no criteria is defined by using the parameters, then all files fit the criteria. In the previous release, issuing the command: 'sendfile' with no parameters resulted in the transfer of only PRIMARY files (files in the 'closed no sent' state.) This release, issuing the same command results in the transfer of ALL files, 'closed not sent' files and 'closed sent' files. This is to ensure all commands have a consistent interface.

16.3.4 Examples

The user wishes to transfer all files in the stream that are in the 'closed not sent' state.

If AMA stream is DNS only:

I



```
FILESYS
0 Quit
2
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >sendfile ama -p sent
```

```
FILESYS 020001.030002.00688.01.2 sent
0 Quit      Named as 020001.030002.00688.01.2.aaa on downstream DF
2          File state changed to 'closed sent' for 020001.030002.00688.01
3
4          020001.030002.00689.01.2 sent
5          Named as 020001.030002.00689.01.2.aaa on downstream DF
6          File state changed to 'closed sent' for 020001.030002.00689.01
7 Sendfile
8 Listfile 020001.030002.00690.01.2 sent
9 Closec   Named as 020001.030002.00690.01.2.aaa on downstream DF
10         File state changed to 'closed sent' for 020001.030002.00690.01
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >
```

Note:

The '.aaa' that is appended to the filename upon renaming at the downstream is datafilled by the user through the schedule command level for each stream. It is the field in the schedule tuple named, File Extension.

```
FILESYS
0 Quit
2
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >sendfile cdr STATE unprocessed sent
```

```
FILESYS U980219130021OCC sent
0 Quit      Named as U980219130021OCC.aaa on downstream DPMS.
2          File state changed to 'closed sent' for U980219130021OCC.
3
4          U980219140022OCC sent
5          Named as U980219140022OCC.aaa on downstream DPMS.
6          File state changed to 'closed sent' for U980219140022OCC.
7 Sendfile
8 Listfile  U980219150023OCC sent
9 Closec   Named as U980219150023OCC.aaa on downstream DPMS.
10         File state changed to 'closed sent' for U980219150023OCC.
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >
```

The user wishes to transfer all files in the stream that are in the 'closed not sent' state that were created between 8:00am this morning until 1:00pm this afternoon. The user also does not want the files' state to change to SENT.

If AMA stream is DNS only:

```
FILESYS
0 Quit
2
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >7 ama -p -b 8:00 -e 13:00 notsent
```

```
FILESYS 020001.030002.00688.01.2 sent
0 Quit      Named as 020001.030002.00688.01.2.aaa on downstream DF
2
3 020001.030002.00689.01.2 sent
4      Named as 020001.030002.00689.01.2.aaa on downstream DF
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >
```

The user does not specify a stream name and has not set one

using the set stream command.

```
FILESYS
0 Quit
2
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >sendfile
```

```
FILESYS
0 Quit
2 Invalid stream. Valid streams are {ama, abc}.
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >
```

The user wishes to transfer all files in the stream that are in the 'closed not sent' state, but does not want to change the state of the files to 'closed sent' when they have been successfully

transferred.

If AMA stream is DNS only, the command should be:

```
> sendfile ama -p NOTSENT
```

The following syntax could be used for both DNS or DIRP file formats0:

```
> sendfile abc STATE unprocessed NOTSENT
```

The user wishes to transfer all files in the stream that are in the 'closed sent' state. The user mistakenly includes the NOTSENT option which is only valid for 'closed not sent' files.

If AMA stream is DNS only:

```
FILESYS
0 Quit
2
3
4
5
6
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >7 ama -s notsent
```

```
FILESYS Invalid option, NOTSENT. It is ignored for files in the 'closed
0 Quit sent' state.
2
3 020001.030002.00688.01.2 sent
4 Named as 020001.030002.00688.01.2.aaa on downstream DPM
5
6 020001.030002.00689.01.2 sent
7 Named as 020001.030002.00689.01.2.aaa on downstream DPM
7 Sendfile
8 Listfile
9 Closec
10
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >
```

16.3.5 Command name: Schedule:add

16.3.5.1 Command type

MENU command from schedule level of billmtc.

16.3.5.2 Command target

SDM

16.3.5.3 Command availability

RES

16.3.5.4 Command description

The add command is a new command which is used to add schedule tuples to the schedule table. It has many required parameters and because of the complexity of the schedule tuple, it works in a prompting mode rather than requiring all of the parameters on the command line. All of the parameters supplied are used to create a new schedule tuple in the schedule table. Help text will be displayed with each prompt. Some parameters will have default values which will be displayed with the help text. Abort can be used at any prompt to exit the program without adding a tuple. Schedule tuples can be added for any configured streams, even if they are not running.

16.3.5.5 Warning

There are no new warnings with this command.

16.3.5.6 Command syntax

add [<stream_name>]

The following are also required named parameters and are described in Table 35, “Schedule:add parameters,” on page 254. These parameters are prompted for by the command and are not specified on the command line.

<file_format_type> <protocol> <primary_destination>
<alternate_destination> <start_time> <stop_time> <interval>
<remote_store_directory> <remote_login> <remote_password> <timeout>
<maximum_retries> <retry_wait_time> <file_extension> <field_separator>
<active>

16.3.5.7 Parameter definitions

Table 35 Schedule:add parameters

PARAMETER	VALUE	DEFINITION
stream_name	string which must be the name of a stream	<p>This is a required parameter that becomes part of the new schedule tuple. It identifies the stream for which the new tuple holds the file transfer and schedule settings.</p> <p>The user may wish to use the new command, SET <stream> <stream_name>, before invoking add and would not need to enter this parameter due to the fact that the stream was previously set by the set stream command. However, if a stream name is entered on the command line as part of the list command, it takes precedence over a previously set stream.</p> <p>If no stream parameter is entered and none is supplied via the set stream command, the add command prompts for one.</p> <p>This parameter forms part of the schedule table key, see the file format type parameter definition for more information about the key.</p>
file_format_type	string which must be a valid file format type for the specified stream	<p>This is a required parameter that becomes part of the new schedule tuple. It identifies the file format type of the stream for which the new tuple holds the file transfer and schedule settings.</p> <p>The value of this parameter combined with the value of the stream name parameter act as the key to the schedule table for this release. This means that there can only be one tuple having a given pair of stream name and file format type values stored in the schedule table at any time.</p> <p>The add command prompts for this parameter.</p>

Table 35 Schedule:add parameters

PARAMETER	VALUE	DEFINITION
protocol	string which must be a valid protocol name	This is a required parameter that becomes part of the new schedule tuple. It identifies which protocol will be used for file transfers. The add command prompts for this parameter.
primary_destination	string which must have the format of an IP address (i.e. N.N.N.N where N represents a number between 0 and 255.	This is a required parameter that becomes part of the new schedule tuple. It identifies the IP address of the primary destination for file transfers. The add command prompts for this parameter.
alternate_destination	string which must have the format of an IP address (i.e. N.N.N.N where N represents a number between 0 and 255.	This is a required parameter that becomes part of the new schedule tuple. It identifies the IP address of the alternate destination for file transfers The alternate destination is used when the primary destination is unavailable. The add command prompts for this parameter.
start_time	string which must have a valid time of day format (i.e. hh:mm) where hh represents the hour between 0 and 23 and mm represents the minute between 0 and 59.	This is a required parameter that becomes part of the new schedule tuple. It identifies what time of day scheduled file transfers start each day. The time of day is based on a 24 hour clock. The add command prompts for this parameter
stop_time	string which must have a valid time of day format (i.e. hh:mm) where hh represents the hour between 0 and 23 and mm represents the minute between 0 and 59.	This is a required parameter that becomes part of the new schedule tuple. It identifies what time of day scheduled file transfers stop each day. The time of day is based on a 24 hour clock. A stop time that is less than the start time is interpreted as occurring on the following day. The add command prompts for this parameter

Table 35 Schedule:add parameters

PARAMETER	VALUE	DEFINITION
interval	number which must be between 5 and 1440.	This is a required parameter that becomes part of the new schedule tuple. It identifies how often the files will be transferred between the start time and stop time each day. The interval is in units of minutes. The default value is 120 minutes. The add command prompts for this parameter.
remote_store_directory	string up to 255 characters in length. No spaces allowed.	This is a required parameter that becomes part of the new schedule tuple. It identifies the directory on the destination where the transferred files are stored. The add command prompts for this parameter.
remote_login	string up to 20 characters in length. No spaces allowed.	This is a required parameter that becomes part of the new schedule tuple. It identifies the login to use at the destination. The add command prompts for this parameter.
remote_password	string up to 20 characters in length. No spaces allowed.	This is a required parameter that becomes part of the new schedule tuple. It identifies the password to use with the login at the destination. The add command prompts for this parameter.
timeout	number between 1 and 300	This is a required parameter that becomes part of the new schedule tuple. It identifies how long to wait in seconds for a response from the destination before giving up. The default value is 30 seconds. The add command prompts for this parameter.
maximum_retries	number between 0 and 10	This is a required parameter that becomes part of the new schedule tuple. It identifies how many times to retry transferring the files if there are failures. The default value is 3. The add command prompts for this parameter.

Table 35 Schedule:add parameters

PARAMETER	VALUE	DEFINITION
retry_wait_time	number between 1 and 60	<p>This is a required parameter that becomes part of the new schedule tuple. It identifies how long to wait in seconds between having a failure and starting the next retry. The default value is 1 second.</p> <p>The add command prompts for this parameter.</p>
file_extension	<p>string up to 3 characters. No spaces allowed.</p> <p>“Blank” to indicate no file extension.</p>	<p>This is a required parameter that becomes part of the new schedule tuple. It identifies the file extension to use when the transferred files are renamed at the extension. The default value is no file extension.</p> <p>The add command prompts for this parameter.</p>
field_separator	1 character string	<p>This is a required parameter that becomes part of the new schedule tuple. It identifies the character used to separate the fields in a file name. It is useful for destinations that don't allow more than one period in a file name. The default value is period '.'.</p> <p>The add command prompts for this parameter.</p>
active	<p>string up to 3 characters. Can be 'Yes', 'No', 'Y', 'N'. Not case sensitive.</p>	<p>This parameter becomes part of the new schedule tuple. It identifies whether the new schedule tuple is active, meaning that the start time, stop time, and interval are used for scheduled file transfer. If it has a value of No, no scheduled file transfers take place using this tuple, but the other settings can still be used by manual sendfile commands if the file transfer mode (FTMode command) is set to outbound.</p> <p>If the file transfer mode is set to outbound and the stream is running when the add command is ready to save the new schedule tuple in the schedule table then it will allow the user to activate the tuple. Regardless, the default value is always No.</p>

16.3.6 Responses

16.3.6.1 Response

Valid streams are { '<stream1>', '<stream2>', etc. }.
Press Enter to accept '<stream1>'.
Enter Stream:

Explanation:

This message is in response to a user starting the add command or in response to the user entering an invalid stream name previously. It is prompting the user to enter a stream value and provides help text. The default value provided is in this precedence: stream name provided on command line, stream name provided by set stream, first item in list of valid streams.

System action:

This response will be presented repeatedly until the user provides a valid stream or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.6.21 Response" on page 269.) is presented. If the user provides a valid stream, then the file format type prompt (Please refer to "16.3.6.2 Response" on page 258.) is presented.

User action:

User must enter a valid stream name or Abort.

16.3.6.2 Response

Valid file format types are { '<file_format1>', '<file_format2>' }.
Press Enter to accept '<file_format1>'.
Enter File_Format_Type:

Explanation:

This message is in response to the user entering a valid stream name or entering an invalid file format type. It is prompting the user to enter a file format type and provides help text. The default value provided is the first value in the list of valid file format types.

System action:

This response will be presented until the user enters a valid file format type. If the user does not provide a valid file format type or enters “Abort”. If the user enters “Abort” then command aborted response (Please refer to “16.3.6.21 Response” on page 269.) is presented. If the user provides a valid file format type, then the protocol prompt (Please refer to “16.3.6.3 Response” on page 259.) is presented.

User action:

User must enter a valid file format type or Abort.

16.3.6.3 Response

Valid protocols are { ‘<protocol1>’, ‘<protocol2>’ }.
Press Enter to accept ‘<protocol1>’.
Enter Protocol:

Explanation:

This message is in response to the user entering a valid file format type or an invalid protocol. It is prompting the user to enter a protocol value and provides help text. The default value provided is the first value in the list of valid protocols.

System action:

This response will be presented repeatedly until the user provides a valid protocol or enters “Abort”. If the user enters “Abort” then command aborted response (Please refer to “16.3.6.21 Response” on page 269.) is presented. If the user provides a valid protocol, then the primary destination prompt (Please refer to “16.3.6.4 Response” on page 259.) is presented.

User action:

User must enter a valid protocol or Abort.

16.3.6.4 Response

A valid primary destination must follow IP address format (i.e. N.N.N.N where N is a number between 0 and 255).
Enter Primary_Destination:

Explanation:

This message is in response to the user entering a valid protocol or an invalid primary destination. It is prompting the user to enter a primary destination and provides help text. There is no default value.

System action:

This response will be presented repeatedly until the user provides a valid primary destination or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.6.21 Response" on page 269.) is presented. If the user provides a valid primary destination, then the alternate destination prompt (Please refer to "16.3.6.5 Response" on page 260.) is presented.

User action:

User must enter valid primary destination or Abort.

16.3.6.5 Response

A valid alternate destination must follow IP address format (i.e. N.N.N.N where N is a number between 0 and 255).

Enter Alternate_Destination:

Explanation:

This message is in response to the user entering a valid primary destination or an invalid alternate destination. It is prompting the user to enter an alternate destination value and provides help text. There is no default value. If no alternate destination is available, enter the same value as the primary destination.

System action:

This response will be presented repeatedly until the user provides a valid alternate destination or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.6.21 Response" on page 269.) is presented. If the user provides a valid alternate destination, then the start time prompt (Please refer to "16.3.6.6 Response" on page 261.) is presented.

User action:

User must enter valid alternate destination or Abort.

16.3.6.6 Response

Valid start times are in time of day format (hh:mm) where hh is hours from 0 to 23 and mm is minutes from 0 to 59.

Enter Start_Time:

Explanation:

This message is in response to the user entering a valid alternate destination or an invalid start time. It is prompting the user to enter a start time value and provides help text. There is no default value.

System action:

This response will be presented repeatedly until the user provides a valid start time or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.6.21 Response" on page 269.) is presented. If the user provides a valid start time, then the stop time prompt (Please refer to "16.3.6.7 Response" on page 261.) is presented.

User action:

User must enter valid start time or Abort.

16.3.6.7 Response

Valid stop times are in time of day format (hh:mm) where hh is hours from 0 to 23 and mm is minutes from 0 to 59.

Enter Stop_Time:

Explanation:

This message is in response to the user entering a valid start time or an invalid stop time. It is prompting the user to enter a stop time value and provides help text. There is no default value.

System action:

This response will be presented repeatedly until the user provides a valid stop time or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.6.21 Response" on page 269.) is presented. If the user provides a valid stop time, then the interval prompt (Please refer to "16.3.6.8 Response" on page 262.) is presented.

User action:

User must enter valid stop time or Abort.

16.3.6.8 Response

Interval can be between 5 and 1440 minutes.

Press Enter to accept '120'.

Enter Interval:

Explanation:

This message is in response to the user entering a valid stop time or an invalid interval. It is prompting the user to enter an interval value and provides help text. The default value is 60 minutes.

System action:

This response will be presented repeatedly until the user provides a valid interval or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.6.21 Response" on page 269.) is presented. If the user provides a valid interval, then the remote storage directory prompt (Please refer to "16.3.6.9 Response" on page 262.) is presented.

User action:

User must enter valid interval or Abort.

16.3.6.9 Response

Remote storage directory can have between 1 and 255 characters.

Enter Remote_Storage_Directory:

Explanation:

This message is in response to the user entering a valid interval or an invalid remote storage directory. It is prompting the user to enter a remote storage directory value and provides help text. There is no default value.

System action:

This response will be presented repeatedly until the user provides a valid remote storage directory or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.6.21 Response" on page 269.) is presented. If the user provides a valid remote storage directory, then the remote login prompt (Please refer to "16.3.6.10 Response" on page 263.) is presented.

User action:

User must enter valid remote storage directory or Abort.

16.3.6.10 Response

Remote login can have between 1 and 20 characters.

Enter Remote_Login:

Explanation:

This message is in response to the user entering a valid remote storage directory or an invalid remote login. It is prompting the user to enter a remote login value and provides help text. There is no default value.

System action:

This response will be presented repeatedly until the user provides a valid remote login or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.6.21 Response" on page 269.) is presented. If the user provides a valid remote storage directory, then the remote password prompt (Please refer to "16.3.6.11 Response" on page 263.) is presented.

User action:

User must enter valid remote login or Abort.

16.3.6.11 Response

Remote password can have between 1 and 20 characters. Enter

Remote_Password:

Explanation:

This message is in response to the user entering a valid remote login or an invalid remote password. It is prompting the user to enter a remote password value and provides help text. There is no default value.

System action:

This response will be presented repeatedly until the user provides a valid remote password or enters “Abort”. If the user enters “Abort” then command aborted response (Please refer to “16.3.6.21 Response” on page 269.) is presented. If the user provides a valid remote password, then the timeout prompt (Please refer to “16.3.6.12 Response” on page 264.) is presented.

User action:

User must enter valid remote password or Abort.

16.3.6.12 Response

Timeout can be between 1 and 300 seconds.
Press Enter to accept ‘30’.
Enter Timeout:

Explanation:

This message is in response to the user entering a valid password or an invalid timeout. It is prompting the user to enter a timeout value and provides help text. The default value is 30 seconds.

System action:

This response will be presented repeatedly until the user provides a valid timeout or enters “Abort”. If the user enters “Abort” then command aborted response (Please refer to “16.3.6.21 Response” on page 269.) is presented. If the user provides a valid timeout, then the maximum retries prompt (Please refer to “16.3.6.13 Response” on page 264.) is presented.

User action:

User must enter valid timeout or Abort.

16.3.6.13 Response

Maximum retries can be between 0 and 10.
Press Enter to accept ‘3’.
Enter Maximum_Retries:

Explanation:

This message is in response to the user entering a valid timeout or an invalid maximum retries value. It is prompting the user to enter a maximum retries value and provides help text. The default value is 3.

System action:

This response will be presented repeatedly until the user provides a valid maximum retries value or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.6.21 Response" on page 269.) is presented. If the user provides a valid maximum retries value, then the retry wait time prompt (Please refer to "16.3.6.14 Response" on page 265.) is presented.

User action:

User must enter valid maximum retries value or Abort.

16.3.6.14 Response

Retry wait time can be between 1 and 60 seconds.
Press Enter to accept '1'.
Enter Retry_Wait_Time:

Explanation:

This message is in response to the user entering a valid maximum retries value or an invalid retry wait time value. It is prompting the user to enter a retry wait time value and provides help text. The default value is 1 second.

System action:

This response will be presented repeatedly until the user provides a valid retry wait time value or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.6.21 Response" on page 269.) is presented. If the user provides a valid retry wait time value, then the file extension prompt (Please refer to "16.3.6.15 Response" on page 266.) is presented.

User action:

User must enter valid retry wait time value or Abort.

16.3.6.15 Response

Valid file extension values have 0 to 3 characters.

Enter 'Blank' for no file extension.

Press Enter to accept 'Blank'.

Enter File_Extension:

Explanation:

This message is in response to the user entering a valid retry wait time or an invalid file extension. It is prompting the user to enter a file extension value and provides help text. The default value is no file extension.

System action:

This response will be presented repeatedly until the user provides a valid file extension or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.6.21 Response" on page 269.) is presented. If the user provides a valid file extension, then the field separator prompt (Please refer to "16.3.6.16 Response" on page 266.) is presented.

User action:

User must enter valid file extension or Abort.

16.3.6.16 Response

Valid field separators can have 1 character.

Press Enter to accept '.'.

Enter Field_Separator:

Explanation:

This message is in response to the user entering a valid file extension or an invalid field separator. It is prompting the user to enter a field separator value and provides help text. The default value is '.'

System action:

This response will be presented repeatedly until the user provides a valid field separator or enters “Abort”. If the user enters “Abort” then command aborted response (Please refer to “16.3.6.21 Response” on page 269.) is presented. If the user provides a valid field separator, then active prompt (Please refer to “16.3.6.17 Response” on page 267.)

User action:

User must enter valid field separator or Abort.

16.3.6.17 Response

Valid active values are { ‘No’, ‘Yes’ }.

Press Enter to accept ‘No’.

Enter Active:

Explanation:

This message is in response to the user entering a valid field separator or an invalid active value. It is prompting the user to enter an active value and provides help text. The default value is No.

System action:

This response will be presented repeatedly until the user provides a valid active value or enters “Abort”. If the user enters “Abort” then command aborted response (Please refer to “16.3.6.21 Response” on page 269.) is presented. If the user provides a valid active value, then the save tuple response (Please refer to “16.3.6.18 Response” on page 267.) is presented.

User action:

User must enter valid active value or Abort.

16.3.6.18 Response

Stream	: ‘<stream>’
File_Format Type	: ‘<fileFormatType>’
Protocol	: ‘<protocol>’
Primary_Destination	: ‘<primaryDestination>’
Alternate_Destination	: ‘<alternateDestination>’
Start_Time	: ‘<startTime>’
Stop_Time	: ‘<stopTime>’
Interval	: ‘<interval>’
Remote_Storage_Directory	: ‘<remoteDirectory>’
Remote_Login	: ‘<login>’
Remote_Password	: ‘*****’

Timeout : '<timeout>'
Maximum_Retries : '<maxRetries>'
Retry_Wait_Time : '<retryWait>'
File_Extension : '<fileExtension>'
Field_Separator : '<fieldSeparator>'
Active : '<active>'

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

Explanation:

This message is in response to the user entering a valid active value. It is showing the user all of the entries made and asking for confirmation to save the new tuple to the schedule table, edit it or abort.

System action:

Saves the tuple and presents the tuple saved prompt (Please refer to “16.3.6.19 Response” on page 268.) if the user chooses Save. If the user chooses Abort then the command aborted response (Please refer to “16.3.6.21 Response” on page 269.) is presented. If the user chooses Edit then the edit tuple response (Please refer to “16.3.6.22 Response” on page 270.) is presented. The default is Edit.

User action:

User must enter Save, Edit, or Abort.

16.3.6.19 Response

Schedule tuple saved.

Explanation:

This message is in response to the user entering a valid active value. It is informing the user that the new schedule tuple just entered has been successfully saved in the schedule table.

System action:

The command is about to exit.

User action:

None, this is information for the user.

16.3.6.20 Response

Schedule tuple already exists with stream <stream> and file format type <fileFormatType>. Use the change command to change the tuple.

Explanation:

This message is in response to the user entering a stream and file format type for which there already exists schedule tuple in the schedule table. The combination of the stream and file format type form the key for the schedule table, schedule tuples with duplicate combinations of stream and file format type are not permitted.

System action:

Command execution stops.

User action:

If the user wishes to change this schedule tuple, this can be accomplished using the change command in the schedule level of billmtc.

16.3.6.21 Response

Command Aborted. Schedule tuple not saved.

Explanation:

This message is in response to the user entering abort at any of the prompts.

System action:

Command execution stops.

User action:

User can restart add command and enter valid values.

16.3.6.22 Response

Stream	: '<stream>'
File_Format Type	: '<fileFormatType>'
Protocol	: '<protocol>'
Primary_Destination	: '<primaryDestination>'
Alternate_Destination	: '<alternateDestination>'
Start_Time	: '<startTime>'
Stop_Time	: '<stopTime>'
Interval	: '<interval>'
Remote_Storage_Directory	: '<remoteDirectory>'
Remote_Login	: '<login>'
Remote_Password	: '*****'
Timeout	: '<timeout>'
Maximum_Retries	: '<maxRetries>'
Retry_Wait_Time	: '<retryWait>'
File_Extension	: '<fileExtension>'
Field_Separator	: '<fieldSeparator>'
Active	: '<active>'

Enter the field name to be changed. Stream and File_Format_Type cannot be changed. Enter 'All' to be prompted for all field names.

Press Enter to accept 'All'.

Enter Field_Name:

Explanation:

This message is in response to the user entering Edit at the save tuple prompt (Please refer to "16.3.6.18 Response" on page 267.). It is asking the user to provided the name of the field to change its value. The default value is All.

System action:

Prompts for specified field name if user provides a valid one. Prompts for all changeable field names if the user enters 'All' or accepts the default. Presents the command aborted response (Please refer to "16.3.6.21 Response" on page 269.) if the user enters "Abort". Reprompts if the user enters an invalid value.

User action:

User can enter one of the changeable field names, all, or abort.

16.3.7 Notes

16.3.8 Examples

The user wishes to add a schedule tuple and has AMA as the set

stream.

```
[ STREAM:AMA ]
SCHEDULE
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > add
```

Valid streams are { 'CDR1', 'AMA' }.
Press Enter to accept 'AMA'.
Enter Stream:<Enter>

Valid file format types are { 'DNS' }.
Press Enter to accept 'DNS'.
Enter File_Format_Type:<Enter>

Valid protocols are { 'FTP' }.
Press Enter to accept 'FTP'.
Enter Protocol:<Enter>

A valid primary destination must follow IP address format (i.e.N.N.N.N where N is a number between 0 and 255).
Enter Primary_Destination: 47.255.33.70

A valid alternate destination must follow IP address format (i.e. N.N.N.N where N is a number between 0 and 255).
Enter Alternate_Destination: 47.255.33.71

Valid start times are in time of day format (hh:mm) where hh is hours from 0 to 23 and mm is minutes from 0 to 59.
Enter Start_Time: 10:00

Valid stop times are in time of day format (hh:mm) where hh is hours from 0 to 23 and mm is minutes from 0 to 59.

Stop_Time: 22:00

Interval can be between 5 and 1440 minutes.

Press Enter to accept '120'.

Enter Interval: 30

Remote storage directory can have between 1 and 255 characters.

Enter Remote_Storage_Directory: /billing/ama

Remote login can have between 1 and 20 characters

Enter Remote_Login: billing

Remote password can have between 1 and 20 characters.

Enter Remote_Password: sesame

Timeout can be between 1 and 300 seconds.

Press Enter to accept '30'.

Enter Timeout:<Enter>

Maximum retries can be between 0 and 10.

Press Enter to accept '3'.

Enter Maximum_Retries:<Enter>

Retry wait time can be between 1 and 60 seconds.

Press Enter to accept '1'.

Enter Retry_Wait_Time: <Enter>

File extension can have between 0 to 3 characters.

Enter 'Blank' for no file extension.

Press Enter to accept 'Blank'.

Enter File_Extension:

Field separator can have 1 character. Default is period '.'.

Press Enter to accept '.'.

Enter Field_Separator:<CR>

Valid active values are { 'No', 'Yes' }.

Press Enter to accept 'No'.

Enter Active: <CR>

```
Stream: 'AMA'  
File_Format_Type: 'DNS'  
Protocol: 'FTP'  
Primary_Destination: '47.255.33.70'  
Alternate_Destination: '47.255.33.71'  
Start_Time: '10:00'  
Stop_Time: '22:00'  
Interval: '30'  
Remote_Storage_Directory: '/billing/ama'  
Remote_Login: 'billing'  
Timeout: '30'  
Maximum_Retries: '3'  
Retry_Wait_Time: '10'  
File_Extension: 'ABC'  
Field_Separator: '.'  
Active: 'Yes'  
  
Valid actions are { 'Save', 'Edit', 'Abort' }.  
Press Enter to accept 'Edit'.  
Enter Action: save  
  
Schedule tuple saved.  
>
```

The user wishes to add a new schedule tuple but the tuple already exists.

```
SCHEDULE
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > 7
```

Valid streams are { 'CDR1', 'AMA' }.
Press Enter to accept 'AMA'.
Enter Stream: <Enter>

Valid file format types are { 'DNS' }.
Press Enter to accept 'DNS'.
Enter File_Format_Type: <Enter>

Schedule tuple already exists with stream AMA and file format type DNS. Use the change command to change the tuple.

The user wishes to add a new schedule tuple but does not enter a valid stream.

```
SCHEDULE
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > add
```

```
Valid streams are {'CDR', 'AMA'}.
Press Enter to accept 'AMA'.
Enter Stream: WWW

Valid streams are {'CDR', 'AMA'}.
Press Enter to accept 'AMA'.
Enter Stream: abort

Command aborted. Schedule tuple not saved.
```

16.3.9 Command name: Schedule:change

16.3.9.1 Command type

MENU command from schedule level of billmtc.

16.3.9.2 Command target

SDM

16.3.9.3 Command availability

RES

16.3.9.4 Command description

The change command is a new command which is used to change the values of existing schedule tuples in the schedule table. It has many required parameters and because of this complexity works in a prompting mode rather than requiring all of the parameters on the command line. Two of the required parameters, the combination of stream and file format type, are used as a key to find the correct schedule tuple to modify. The values of the parameters which make up the key cannot be modified. Once an existing tuple is identified by the stream and file format type, the other values stored in the tuple can be changed. The change command reads the existing values of the schedule tuple and uses these values as the default if the user does not want to change them. Help text will be displayed with each prompt along with the previous value of that parameter which is the default value if the user just presses enter at the prompt.

16.3.9.5 Warning

There are no new warnings with this command.

16.3.9.6 Command syntax

change [<stream_name>]

The following are also required named parameters and are described in Table 36, “Schedule:change parameters,” on page 278. These parameters are prompted for by the command and are not specified on the command line.

<file_format_type> <parameter_name> <protocol> <primary_destination>
 <alternate_destination> <start_time> <stop_time> <interval>
 <remote_store_directory> <remote_login> <remote_password> <timeout>
 <maximum_retries> <retry_wait_time> <file_extension> <field_separator>
 <active>

16.3.9.7 Parameter definitions

Table 36 Schedule:change parameters

PARAMETER	VALUE	DEFINITION
stream_name	string which must be the name of the stream contained by the schedule tuple to be changed.	<p>This is a required parameter that along with the file format type identifies which schedule tuple the user wishes to change.</p> <p>The user may wish to use the new command, SET <stream> <stream_name>, before invoking change and would not need to enter this parameter due to the fact that the stream was previously set by the set stream command. However, if a stream name is entered on the command line as part of the list command, it takes precedence over a previously set stream.</p> <p>If no stream parameter is entered and none is supplied via the set stream command, the change command prompts for one.</p> <p>This parameter forms part of the schedule table key, see the file format type parameter definition for more information about the key.</p>

Table 36 Schedule:change parameters

PARAMETER	VALUE	DEFINITION
file_format_type	string which must be the file format type contained by the schedule tuple to be changed.	<p>This is a required parameter that along with the stream identifies which schedule tuple the user wishes to change.</p> <p>The value of this parameter combined with the value of the stream name parameter act as the key to the schedule table for this release. This means that there can only be one tuple having a given pair of stream name and file format type values stored in the schedule table at any time.</p> <p>The change command prompts for this parameter.</p>
parameter_name	<p>string which must be the name of the parameter the user wishes to change. The names are {Stream, File_Format_Type, Protocol, Primary_Destination, Alternate_Destination, Start_Time, Stop_Time, Interval, Remote_Storage_Directory, Remote_Login, Remote_Password, Timeout, Maximum_Retries, Retry_Wait_Time, File_Extension, Field_Separator, Active, All} The parameter names are not case sensitive.</p>	<p>This is a required parameter which identifies the parameter that the user wishes to change. If the user chooses All then the change command will prompt for each of the changeable parameters. If the user chooses a specific parameter name then the change command prompts for that parameter name only.</p> <p>The change command prompts for this parameter. The default value is All.</p>

Table 36 Schedule:change parameters

PARAMETER	VALUE	DEFINITION
protocol	string which must be a valid protocol name	<p>This is a parameter that replaces the current protocol value of the selected schedule tuple. It is required if the user chooses All or Protocol as the name of the parameter to change.</p> <p>The change command prompts for this parameter. The current value of protocol is the default value.</p>
primary_destination	string which must have the format of an IP address (i.e. N.N.N.N where N represents a number between 0 and 255.	<p>This is a parameter that replaces the current primary destination of the selected schedule tuple. It is required if the user chooses All or Primary_Destination as the name of the parameter to change.</p> <p>The change command prompts for this parameter. The current value of primary destination is the default.</p>
alternate_destination	string which must have the format of an IP address (i.e. N.N.N.N where N represents a number between 0 and 255.	<p>This is a parameter that replaces the current alternate destination of the selected schedule tuple. It is required if the user chooses All or Alternate_Destination as the name of the parameter to change.</p> <p>The change command prompts for this parameter. The current value of alternate destination is the default.</p>
start_time	string which must have a valid time of day format (i.e. hh:mm) where hh represents the hour between 0 and 23 and mm represents the minute between 0 and 59.	<p>This is a parameter that replaces the current start time of the selected schedule tuple. It is required if the user chooses All or Start_Time as the name of the parameter to change.</p> <p>The time of day is based on a 24 hour clock.</p> <p>The change command prompts for this parameter. The current value of start time is the default.</p>

Table 36 Schedule:change parameters

PARAMETER	VALUE	DEFINITION
stop_time	string which must have a valid time of day format (i.e. hh:mm) where hh represents the hour between 0 and 23 and mm represents the minute between 0 and 59.	<p>This is a parameter that replaces the current stop time of the selected schedule tuple. It is required if the user chooses All or Stop_Time as the name of the parameter to change.</p> <p>The time of day is based on a 24 hour clock. A stop time that is less than the start time is interpreted as occurring on the following day.</p> <p>The change command prompts for this parameter. The current value of stop time is the default.</p>
interval	number which must be between 5 and 1440.	<p>This is a parameter that replaces the current interval of the selected schedule tuple. It is required if the user chooses All or Interval as the name of the parameter to change.</p> <p>The change command prompts for this parameter. The current value of interval is the default.</p>
remote_store_directory	string up to 255 characters in length. No spaces allowed.	<p>This is a parameter that replaces the current remote storage directory of the selected schedule tuple. It is required if the user chooses All or Remote_Storage_Directory as the name of the parameter to change.</p> <p>The change command prompts for this parameter. The current value of remote storage directory is the default.</p>
remote_login	string up to 20 characters in length. No spaces allowed.	<p>This is the parameter that replaces the current remote login of the selected schedule tuple. It is required if the user chooses All or Remote_Login as the name of the parameter to change.</p> <p>The change command prompts for this parameter. The current value of remote login is the default.</p>

Table 36 Schedule:change parameters

PARAMETER	VALUE	DEFINITION
remote_password	string up to 20 characters in length. No spaces allowed.	<p>This is the parameter that replaces the current remote password of the selected schedule tuple. It is required if the user chooses All or Remote_Password as the name of the parameter to change.</p> <p>The current value of the remote password is not displayed as the default, but the value will not change if the user just presses Enter at the prompt.</p>
timeout	number between 1 and 300	<p>This is the parameter that replaces the current timeout of the selected schedule tuple. It is required if the user chooses All or Timeout as the name of the parameter to change.</p> <p>The change command prompts for this parameter. The current value of timeout is the default.</p>
maximum_retries	number between 0 and 10	<p>This is the parameter that replaces the current maximum retries of the selected schedule tuple. It is required if the user chooses All or Maximum_Retries as the name of the parameter to change.</p> <p>The change command prompts for this parameter. The current value of maximum retries is the default.</p>
retry_wait_time	number between 1 and 60	<p>This is the parameter that replaces the current retry wait time of the selected schedule tuple. It is required if the user chooses All or Retry_Wait_Time as the name of the parameter to change.</p> <p>The change command prompts for this parameter. The current value of retry wait time is the default.</p>
file_extension	string up to 3 characters. No spaces allowed.	<p>This is the parameter that replaces the current file extension of the selected schedule tuple. It is required if the user chooses All or File_Extension as the name of the parameter to change.</p> <p>The change command prompts for this parameter. The current value of file extension is the default.</p>

Table 36 Schedule:change parameters

PARAMETER	VALUE	DEFINITION
field_separator	1 character string	<p>This is the parameter that replaces the current field separator of the selected schedule tuple. It is required if the user chooses All or Field_Separator as the name of the parameter to change.</p> <p>The change command prompts for this parameter. The current value of field separator is the default.</p>
active	string up to 3 characters. Can be 'Yes', 'No', 'Y', 'N'. Not case sensitive.	<p>This is the parameter that replaces the current active value of the selected schedule tuple. It is required if the user chooses All or Active as the name of the parameter to change.</p> <p>If the file transfer mode is set to outbound and the stream is running when the change command is ready to save the changes to the schedule tuple then all values of active are accepted.</p> <p>If the file transfer mode is not set to outbound or the stream is not running when the change command is ready to save the changed schedule tuple then only negative values of active (No or N) are accepted.</p> <p>The change command prompts for this parameter. The current value of active is the default.</p>

16.3.10 Responses

16.3.10.1 Response

Valid streams are { '<stream1>', '<stream2>', etc. }.

Press Enter to accept '<stream1>'.

Enter Stream:

Explanation:

This message is in response to a user starting the change command or in response to the user entering an invalid stream name. It is prompting the user to enter a stream value and provides help text. The default value provided is in this precedence: stream name provided on command line, stream name provided by set stream, first item in list of valid streams.

System action:

This response will be presented repeatedly until the user provides a valid stream or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.10.22 Response" on page 298.) is presented. If the user provides a valid stream, then the file format type prompt (Please refer to "16.3.10.2 Response" on page 284.) is presented.

User action:

User must enter a valid stream name which is contained by the schedule tuple to be changed or Abort.

16.3.10.2 Response

Valid file format types are { '<file_format1>', '<file_format2>' }.
Press Enter to accept '<file_format1>'.
Enter File_Format_Type:

Explanation:

This message is in response to the user entering a valid stream name or entering an invalid file format type. It is prompting the user to enter a file format type and provides help text. The default value provided is the first value in the list of valid file format types.

System action:

This response will be presented repeatedly until the user provides a valid file format type or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.10.22 Response" on page 298.) is presented. If the user provides a valid file format type, then the parameter name prompt (Please refer to "16.3.10.3 Response" on page 285.) is presented.

User action:

User must enter a valid file format type which is contained by the schedule tuple to be changed or Abort.

16.3.10.3 Response

```

Stream                : '<stream>'
File_Format_Type     : '<fileFormatType>'
Protocol              : '<protocol>'
Primary_Destination  : '<primaryDestination>'
Alternate_Destination : '<alternateDestination>'
Start_Time           : '<startTime>'
Stop_Time            : '<stopTime>'
Interval             : '<interval>'
Remote_Storage_Directory : '<remoteDirectory>'
Remote_Login         : '<login>'
Timeout              : '<timeout>'
Maximum_Retries      : '<maxRetries>'
Retry_Wait_Time      : '<retryWait>'
File_Extension       : '<fileExtension>'
Field_Separator      : '<fieldSeparator>'
Active               : '<active>'

```

Enter the field name to be changed. Stream and File_Format_Type cannot be changed. Enter 'All' to be prompted for all field names.

Press Enter to accept 'All'.

Enter Field_Name:

Explanation:

This message is in response to the user entering the file format type and having the combination of the selected stream and file format type match an existing schedule tuple stored in the schedule table. Also in response to the user entering edit at the save tuple prompt (Please refer to "16.3.10.19 Response" on page 296.). It is showing the user the current values for this tuple and prompting the user to enter a the name of the parameter to be changed. Help text is provided. The default value is to change all changeable parameters.

System action:

This response will be presented repeatedly until the user provides a valid parameter name or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.10.22 Response" on page 298.) is presented. If the user provides a valid parameter name, then the protocol prompt (Please refer to "16.3.10.4 Response" on page 286.) is presented if the parameter name is All or Protocol. Otherwise the chosen parameter name prompt is displayed.

User action:

User must enter a valid parameter name, press enter to accept the default, or Abort.

16.3.10.4 Response

Valid protocols are { '<protocol1>', '<protocol2>' }.
Press Enter to accept '<current_protocol>'.
Enter Protocol:

Explanation:

This message is in response to the user entering a All or Protocol as the parameter name or the user entering an invalid protocol. It is prompting the user to enter a protocol value and provides help text. The default value is the current value of protocol of the selected schedule tuple.

System action:

This response will be presented repeatedly until the user provides a valid protocol or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.10.22 Response" on page 298.) is presented. If the user provides a valid protocol, and All was the parameter name selected then the primary destination prompt (Please refer to "16.3.10.5 Response" on page 286.) is presented. If Protocol is the parameter name selected then the save tuple response (Please refer to "16.3.10.19 Response" on page 296.) is presented.

User action:

User must enter a valid protocol, press enter to accept the current value, or Abort.

16.3.10.5 Response

A valid primary destination must follow IP address format (i.e. N.N.N.N where N is a number between 0 and 255).
Press Enter to accept '<current_primary_destination>'.
Enter Primary_Destination:

Explanation:

This message is in response to the user entering a valid protocol if the parameter name selected is All. Also can occur if the parameter name selected is Primary_Destination or an invalid primary destination is entered by the user. It is prompting the user to enter a primary destination and provides help text. The default value is the current value of primary destination for the selected schedule tuple.

System action:

This response will be presented repeatedly until the user provides a valid primary destination or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.10.22 Response" on page 298.) is presented. If the user provides a valid primary destination, then the alternate destination prompt (Please refer to "16.3.10.6 Response" on page 287.) is presented if the parameter name selected is All. If Primary_Destination is the parameter name selected then the save tuple response (Please refer to "16.3.10.19 Response" on page 296.) is presented.

User action:

User must enter valid primary destination, press enter to accept the current value, or Abort.

16.3.10.6 Response

A valid alternate destination must follow IP address format (i.e. N.N.N.N where N is a number between 0 and 255).

Press Enter to accept '<current_alternate_destination>'.

Enter Alternate_Destination:

Explanation:

This message is in response to the user entering a valid primary destination with the parameter name selected is All. Also if the parameter name selected is Alternate_Destination or the user enters an invalid alternate destination. It is prompting the user to enter an alternate destination value and provides help text. The default value is the current value of alternate destination for the selected schedule tuple.

System action:

This response will be presented repeatedly until the user provides a valid alternate destination or enters “Abort”. If the user enters “Abort” then command aborted response (Please refer to “16.3.10.22 Response” on page 298.) is presented. If the user provides a valid alternate destination, and All is the selected parameter name then the start time prompt (Please refer to “16.3.10.7 Response” on page 288.) is presented if the parameter name selected is All. If Alternate_Destination is the parameter name selected then the save tuple response (Please refer to “16.3.10.19 Response” on page 296.) is presented.

User action:

User must enter valid alternate destination, press enter to accept the current value, or Abort.

16.3.10.7 Response

Valid start times are in time of day format (hh:mm) where hh is hours from 0 to 23 and mm is minutes from 0 to 59.

Press Enter to accept ‘<current_start_time>’.

Enter Start_Time:

Explanation:

This message is in response to the user entering a valid alternate destination if the parameter name selected is ALL. Also if the parameter name selected is Start_Time or if the user enters an invalid start time. It is prompting the user to enter a start time value and provides help text. There default value is the current value of start time for the selected schedule tuple.

System action:

This response will be presented repeatedly until the user provides a valid start time or enters “Abort”. If the user enters “Abort” then command aborted response (Please refer to “16.3.10.22 Response” on page 298.) is presented. If the user provides a valid start time, then the stop time prompt (Please refer to “16.3.10.8 Response” on page 289.) is presented if the parameter name selected is All. If Start_Time is the selected parameter name then the save tuple response (Please refer to “16.3.10.19 Response” on page 296.) is presented.

User action:

User must enter valid start time, press enter to accept the current value, or Abort.

16.3.10.8 Response

Valid stop times are in time of day format (hh:mm) where hh is hours from 0 to 23 and mm is minutes from 0 to 59.

Press Enter to accept '<current_stop_time>'.

Enter Stop_Time:

Explanation:

This message is in response to the user entering a valid start time if the parameter name selected is ALL. Also if the parameter name selected is Stop_Time or if the user enters an invalid stop time. It is prompting the user to enter a stop time value and provides help text. There default value is the current value of stop time for the selected schedule tuple.

System action:

This response will be presented repeatedly until the user provides a valid stop time or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.10.22 Response" on page 298.) is presented. If the user provides a valid stop time, then the interval prompt (Please refer to "16.3.10.9 Response" on page 289.) is presented if the parameter name selected is All. If Stop_Time is the selected parameter name then the save tuple response (Please refer to "16.3.10.19 Response" on page 296.) is presented.

User action:

User must enter valid stop time, press enter to accept the current value, or Abort.

16.3.10.9 Response

Interval can be between 5 and 1440 minutes.

Press Enter to accept '<current_interval>'.

Enter Interval:

Explanation:

This message is in response to the user entering a valid stop time if the selected parameter name is All. Also if the selected parameter name is Interval or if the user enters an invalid interval. It is prompting the user to enter an interval value and provides help text. The default value is the current interval value of the selected schedule tuple.

System action:

This response will be presented repeatedly until the user provides a valid interval or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.10.22 Response" on page 298.) is presented. If the user provides a valid interval, then the remote storage directory prompt (Please refer to "16.3.10.10 Response" on page 290.) is presented if the selected parameter name is All. If Interval is the selected parameter name then the save tuple response (Please refer to "16.3.10.19 Response" on page 296.) is presented.

User action:

User must enter valid interval, press enter to accept the current value, or Abort.

16.3.10.10 Response

Remote storage directory can have between 1 and 255 characters.
Press Enter to accept '<current_remote_storage_directory>'.
Enter Remote_Storage_Directory:

Explanation:

This message is in response to the user entering a valid interval if the selected parameter name is All. Also if the selected parameter name is Remote_Storage_Directiory or the user enters an invalid remote storage directory. It is prompting the user to enter a remote storage directory value and provides help text. The default value is the current remote storage directory value for the selected schedule tuple.

System action:

This response will be presented repeatedly until the user provides a valid remote storage directory or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.10.22 Response" on page 298.) is presented. If the user provides a valid remote storage directory, then the remote login prompt (Please refer to "16.3.10.11 Response" on page 291.) is presented if the selected parameter name is All. If Remote_Storage_Directory is the selected parameter name than the save tuple response (Please refer to "16.3.10.19 Response" on page 296.) is presented.

User action:

User must enter valid remote storage directory, press enter to accept the current value, or Abort.

16.3.10.11 Response

Remote login values can have between 1 and 20 characters.
Press Enter to accept '<current_remote_login>'.
Enter Remote_Login:

Explanation:

This message is in response to the user entering a valid remote storage directory if the selected parameter name is All. Also if the selected parameter name is Remote_Login or the user enters an invalid remote login. It is prompting the user to enter a remote login value and provides help text. The default value is the current remote login of the selected schedule tuple.

System action:

This response will be presented repeatedly until the user provides a valid remote login or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.10.22 Response" on page 298.) is presented. If the user provides a valid remote storage directory, then the remote password prompt (Please refer to "16.3.10.12 Response" on page 291.) is presented if the selected parameter name is All. If Remote_Login is the selected parameter name then the save tuple response (Please refer to "16.3.10.19 Response" on page 296.) is presented.

User action:

User must enter valid remote login, press enter to accept the current value, or Abort.

16.3.10.12 Response

Remote password values can have between 1 and 20 characters.
Press Enter to accept current value.
Enter Remote_Password:

Explanation:

This message is in response to the user entering a valid remote login if the selected parameter name is All. Also if the selected parameter name is Remote_Password or the user enters an invalid remote password. It is prompting the user to enter a remote password value and provides help text. There default value is the current value of password for the selected schedule tuple, but is not displayed for security reasons.

System action:

This response will be presented repeatedly until the user provides a valid remote password or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.10.22 Response" on page 298.) is presented. If the user provides a valid remote password or accepts the default, then the timeout prompt (Please refer to "16.3.10.13 Response" on page 292.) is presented if the selected parameter name is All.. If Remote_Password is the selected parameter name then the save tuple response (Please refer to "16.3.10.19 Response" on page 296.) is presented.

User action:

User must enter valid remote password, press enter to accept the current value, or Abort.

16.3.10.13 Response

Timeout can be between 1 and 300 seconds.
Press Enter to accept '<current_timeout>'.
Enter Timeout:

Explanation:

This message is in response to the user entering a valid remote password if the selected parameter name is All. Also if the parameter name is Timeout or the user enters an invalid timeout. It is prompting the user to enter a timeout value and provides help text. The default value is the current timeout value for the selected schedule tuple.

System action:

This response will be presented repeatedly until the user provides a valid timeout or enters “Abort”. If the user enters “Abort” then command aborted response (Please refer to “16.3.10.22 Response” on page 298.) is presented. If the user provides a valid timeout, then the maximum retries prompt (Please refer to “16.3.10.14 Response” on page 293.) is presented if the selected parameter name is All. If Timeout is the selected parameter name then the save tuple response (Please refer to “16.3.10.19 Response” on page 296.) is presented.

User action:

User must enter valid timeout, press enter to accept the current value, or Abort.

16.3.10.14 Response

Maximum retries can be between 0 and 10.
Press Enter to accept ‘<current maximum_retries>’.
Enter Maximum_Retries:

Explanation:

This message is in response to the user entering a valid timeout if the selected parameter name is All. Also if the selected parameter name is Maximum_Retries or the user enters an invalid maximum retries value. It is prompting the user to enter a maximum retries value and provides help text. The default value is the current maximum retries value for the selected schedule tuple.

System action:

This response will be presented repeatedly until the user provides a valid maximum retries value or enters “Abort”. If the user enters “Abort” then command aborted response (Please refer to “16.3.10.22 Response” on page 298.) is presented. If the user provides a valid maximum retries value, then the retry wait time prompt (Please refer to “16.3.10.15 Response” on page 294.) is presented if the selected parameter name is All. If Maximum_Retries is the selected parameter name then the save tuple response (Please refer to “16.3.10.19 Response” on page 296.) is presented.

User action:

User must enter valid maximum retries value, press enter to accept the current value, or Abort.

16.3.10.15 Response

Retry wait time values can be between 1 and 60 seconds.
Press Enter to accept '<current_retry_wait_time>'.
Enter Retry_Wait_Time:

Explanation:

This message is in response to the user entering a valid maximum retries value if the selected parameter name is All. Also if the selected parameter name is Retry_Wait_Time or the user enters an invalid retry wait time value. It is prompting the user to enter a retry wait time value and provides help text. The default value is the current retry wait time for the selected schedule tuple.

System action:

This response will be presented repeatedly until the user provides a valid retry wait time value or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.10.22 Response" on page 298.) is presented. If the user provides a valid retry wait time value, then the file extension prompt (Please refer to "16.3.10.16 Response" on page 294.) is presented if the selected parameter name is All. If Retry_Wait_Time is the selected parameter name then the save tuple response (Please refer to "16.3.10.19 Response" on page 296.) is presented.

User action:

User must enter valid retry wait time value, press enter to accept the current value, or Abort.

16.3.10.16 Response

File extension can have between 0 and 3 characters.
Press Enter to accept '<current_file_extension>'.
Enter File_Extension:

Explanation:

This message is in response to the user entering a valid retry wait time if the selected parameter name is All. Also if the selected parameter name is File_Extension or the user enters an invalid file extension. It is prompting the user to enter a file extension value and provides help text. The default value is the current file extension value for the selected schedule tuple.

System action:

This response will be presented repeatedly until the user provides a valid file extension or enters “Abort”. If the user enters “Abort” then command aborted response (Please refer to “16.3.10.22 Response” on page 298.) is presented. If the user provides a valid file extension, then the field separator prompt (Please refer to “16.3.10.17 Response” on page 295.) is presented if the selected parameter name is All. If File_Extension is the selected parameter name then the save tuple response (Please refer to “16.3.10.19 Response” on page 296.) is presented.

User action:

User must enter valid file extension, press enter to accept current value, or Abort.

16.3.10.17 Response

Field separator can have 1 character.
Press Enter to accept ‘<current_field_separator>’.
Enter Field_Separator:

Explanation:

This message is in response to the user entering a valid file extension if the selected parameter name is All. Also if the selected parameter name is Field_Separator or the user enters an invalid field separator. It is prompting the user to enter a field separator value and provides help text. The default value is the current file separator value for the selected schedule tuple.

System action:

This response will be presented repeatedly until the user provides a valid field separator or enters “Abort”. If the user enters “Abort” then command aborted response (Please refer to “16.3.10.22 Response” on page 298.) is presented. If the user provides a valid field separator, then active prompt (Please refer to “16.3.10.18 Response” on page 296.) is presented if the selected parameter name is All. If Field_Separator is the selected parameter name then the save tuple response (Please refer to “16.3.10.19 Response” on page 296.) is presented.

User action:

User must enter valid field separator, press enter to accept current value, or Abort.

16.3.10.18 Response

Valid active values are: { 'No', 'Yes' }.
Press Enter to accept '<current_active>'.
Enter Active:

Explanation:

This message is in response to the user entering a valid field separator if the selected parameter name is All. Also if the selected parameter name is Active or the user enters an invalid active value. It is prompting the user to enter an active value and provides help text. The default value is the current active value of the selected schedule tuple. If the file transfer mode for this stream is not outbound or the stream is not running, then only negative values (No, N) are accepted.

System action:

This response will be presented repeatedly until the user provides a valid active value or enters "Abort". If the user enters "Abort" then command aborted response (Please refer to "16.3.10.22 Response" on page 298.) is presented. If the user provides a valid active value, then the save tuple response (Please refer to "16.3.10.19 Response" on page 296.) is presented.

User action:

User must enter valid active value, press enter to accept the current value, or Abort.

16.3.10.19 Response

Stream	: '<stream>'
File_Format Type	: '<fileFormatType>'
Protocol	: '<protocol>'
Primary_Destination	: '<primaryDestination>'
Alternate_Destination	: '<alternateDestination>'
Start_Time	: '<startTime>'
Stop_Time	: '<stopTime>'
Interval	: '<interval>'
Remote_Storage_Directory	: '<remoteDirectory>'
Remote_Login	: '<login>'
Remote_Password	: '*****'

Timeout : '<timeout>'
Maximum_Retries : '<maxRetries>'
Retry_Wait_Time : '<retryWait>'
File_Extension : '<fileExtension>'
Field_Separator : '<fieldSeparator>'
Active : '<active>'

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

Explanation:

This message is in response to the user entering a valid active value. It is showing the user all of the entries made and asking for confirmation to change the tuple in the schedule table, edit it or abort.

System action:

Saves the tuple and presents the tuple changed response (Please refer to "16.3.10.20 Response" on page 297.) if the user chooses Save. If the user chooses Abort then the command aborted response (Please refer to "16.3.10.22 Response" on page 298.) is presented. If the user chooses Edit then the edit tuple response (Please refer to "16.3.10.3 Response" on page 285.) is presented. The default is Edit.

User action:

User must enter Save, Edit, or Abort.

16.3.10.20 Response

Schedule tuple changed.

Explanation:

This message is in response to the user confirming the tuple changes at the save tuple response (Please refer to "16.3.10.19 Response" on page 296.). It is informing the user that the changes made to the selected schedule tuple have been saved successfully.

System action:

The command just saved the changes and is about to exit.

User action:

None, this is confirmation for the user.

16.3.10.21 Response

Schedule tuple does not exist with stream '<stream>' and file format type '<fileFormatType>'. Use the add command to add a tuple.

Explanation:

This message is in response to the user entering a stream and file format type for which there does not exist a schedule tuple in the schedule table.

System action:

Command execution stops.

User action:

User must choose a different schedule tuple to change or use the add command to add one.

16.3.10.22 Response

Command aborted. Schedule tuple not changed.

Explanation:

This message is in response to the user entering Abort at any of the prompts.

System action:

Command execution stops.

User action:

User can restart change command.

16.3.11 Notes

16.3.12 Examples

The user wishes to change a schedule tuple and has AMA as the set stream.

```
[STREAM: AMA]
SCHEDULE
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > change
```

Valid streams are { 'CDR1', 'AMA' }.

Press Enter to accept 'AMA'.

Enter Stream: <Enter>

Valid file format types are { 'DNS' }.

Press Enter to accept 'DNS'.

Enter File_Format_Type: <Enter>

Stream: 'AMA'

File_Format_Type: 'DNS'

Protocol: 'FTP'

Primary_Destination: '47.255.33.70'

Alternate_Destination: '47.255.33.71'

Start_Time: '10:00'

Stop_Time: '22:00'

Interval: '30'

Remote_Storage_Directory: '/billing/ama'

Remote_Login: 'billing'

Remote_Password: '*****'

Timeout: '30'

Maximum_Retries: '3'

Retry_Wait_Time: '10'

File_Extension: 'ABC'

Field_Separator: '.'

Active: 'Yes'

Enter the field name to be changed. Stream and File_Format_Type cannot be changed. Enter 'All' to be prompted for all field names.

Press Enter to accept 'All'.

Enter Field_Name: All

Valid protocols are { 'FTP' }.
Press Enter to accept 'FTP'.
Enter Protocol: <Enter>

A valid primary destination must follow IP address format (i.e. N.N.N.N where N is a number between 0 and 255).
Press Enter to accept '47.255.33.70'.
Enter Primary_Destination: <Enter>

A valid alternate destination must follow IP address format (i.e. N.N.N.N where N is a number between 0 and 255).
Press Enter to accept '47.255.33.71'.
Enter Alternate_Destination: <Enter>

Valid start times are in time of day format (hh:mm) where hh is hours from 0 to 23 and mm in minutes from 0 to 59.
Press Enter to accept '10:00'.
Enter Start_Time: 9:00

Valid stop times are in time of day format (hh:mm) where hh is hours from 0 to 23 and mm in minutes from 0 to 59.
Press Enter to accept '22:00'.
Enter Stop_Time: 23:00

Interval can be between 5 and 1440 minutes.
Press Enter to accept '30'.
Enter Interval: 60

Remote storage directory can have between 1 and 255 characters.
Press Enter to accept '/billing/ama'.
Enter Remote_Storage_Directory: <Enter>

Remote login can have between 1 and 20 characters.
Press Enter to accept 'billing'.
Enter Remote_Login: <Enter>

Remote password can have between 1 and 20 characters.
Press Enter to accept current value.
Enter Remote_Password: <Enter>

Timeout can be between 1 and 300 seconds.
Press Enter to accept '30'.
Enter Timeout: 60

Maximum retries can be between 0 and 10.

Press Enter to accept '3'.

Enter Maximum_Retries: <Enter>

Retry Wait Time can be between 1 and 60 seconds.

Press Enter to accept '10'.

Enter Retry_Wait_Time: <Enter>

File extension can have between 0 and 3 characters.

Enter 'Blank' for no file extension.

Press Enter to accept 'ABC'.

Enter File_Extension: XYZ

Field Separators can have 1 character.

Press Enter to accept '.'.

Enter Field_Separator: <Enter>

Valid active values are { 'No', 'Yes' }.

Press Enter to accept 'Yes'.

Enter Active: No

```
Stream: 'AMA'  
File_Format_Type: 'DNS'  
Protocol: 'FTP'  
Primary_Destination: '47.255.33.70'  
Alternate_Destination: '47.255.33.71'  
Start_Time: '9:00'  
Stop_Time: '23:00'  
Interval: '60'  
Remote_Storage_Directory: '/billing/ama'  
Remote_Login: 'billing'  
Remote_Password: '*****'  
Timeout: '60'  
Maximum_Retries: '3'  
Retry_Wait_Time: '10'  
File_Extension: 'XYZ'  
Field_Separator: '.'  
Active: 'No'
```

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

```
Schedule tuple changed.
```

The user wishes to change a schedule tuple but the tuple does not exist.

```
SCHEDULE
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > 8
```

Valid streams are { 'CDR1', 'AMA' }

Press Enter to accept 'AMA'.

Enter Stream: CDR1

Valid file format types are { 'DIRP' }

Press Enter to accept 'DIRP'.

Enter File_Format_Type: <Enter>

Schedule tuple does not exist with stream 'CDR1' and file format type 'DIRP'.

Use the add command to add a tuple.

16.3.13 Command name: Schedule:delete

16.3.13.1 Command type

MENU command from schedule level of billmtc.

16.3.13.2 Command target

SDM

16.3.13.3 Command availability

RES

16.3.13.4 Command description

The delete command is a new command which is used to remove schedule tuples from the table which stores file transfer schedules and settings. It has only one optional parameter which is used to specify a stream. No schedule tuples will be deleted without prompting the user for confirmation.

16.3.13.5 Warning

There are no new warnings with this command.

16.3.13.6 Command syntax

delete [<stream_name>]

16.3.13.7 Parameter definitions

Table 37

PARAMETER	VALUE	DEFINITION
stream_name	string representing a stream or the keyword, ALL	<p>This is an optional parameter that acts as a filter to only delete schedule tuples which refer to the specified stream.</p> <p>The user may wish to use the new command, SET <stream> <stream_name>, before invoking delete and would not need to enter this parameter due to the fact that the stream was previously set by the set stream command. However, if a stream name is entered on the command line as part of the delete command, it takes precedence over a previously set stream.</p> <p>If no stream parameter is entered and none is supplied via the set stream command, the delete command uses no filter and tries to delete all of the schedule tuples. Specifying "All" as a stream name also causes delete to try to delete all of the schedule tuples.</p> <p>In any case, no tuples are deleted without confirmation from the user.</p>

16.3.14 Responses

16.3.14.1 Response

Invalid stream '<stream>'. Valid streams are { '<stream1>', '<stream2>', etc. }

Explanation:

This message is in response to a user invoking the command with an invalid stream name.

System action:

Prompt is returned to user, execution of the command ends.

User action:

User must re-enter the command providing a valid stream name. The user may also choose to use the Set Stream command to set a stream, then re-invoke the command without providing the stream name.

16.3.14.2 Response

<x> schedule tuples found containing stream '<stream_name>'.
Valid responses are { 'Yes', 'Prompt', 'Abort' }.
Press Enter to accept 'Prompt'.
Delete all schedule tuples containing stream '<stream_name>'?

Explanation:

This message occurs when a stream is specified by the user, but more than one tuple exists which contains the specified stream. The message is prompting the user for more information about how to delete the tuples. The choices are: "Yes", "Prompt", and "Abort".

System action:

If the user enters "Yes", the system deletes all of the schedule tuples containing the specified stream with no further interaction from the user. If the user enters "Abort", the system exits the command without deleting any schedule tuples. If the user enters "Prompt", the system displays each schedule tuple containing the specified stream and prompts for confirmation from the user to delete each one at a time.

User action:

The user may type one of the options ("Yes", "Prompt", "Abort").

16.3.14.3 Response

<x> schedule tuples found.
Valid responses are { 'Yes', 'Prompt', 'Abort' }.
Press Enter to accept 'Prompt'.
Delete all schedule tuples for all streams?

Explanation:

This message occurs when no stream is specified and more than one schedule tuple exists. The message is prompting the user for more information about how to delete the tuples. The choices are: “Yes”, “Prompt”, and “Abort”.

System action:

If the user enters “Yes”, the system deletes all of the schedule tuples with no further interaction from the user. If the user enters “Abort”, the system exits the command without deleting any schedule tuples. If the user enters “Prompt”, the system displays each schedule tuple and prompts for confirmation from the user to delete each one at a time.

User action:

The user may type one of the options (“Yes”, “Prompt”, “Abort”).

16.3.14.4 Response

Stream:	<stream>
File_Format Type:	<fileFormatType>
Protocol:	<protocol>
Primary_Destination:	<primaryDestination>
Alternate_Destination:	<alternateDestination>
Start_Time:	<startTime>
Stop_Time:	<stopTime>
Interval:	<interval>
Remote_Storage_Directory:	<remoteDirectory>
Remote_Login:	<login>
Remote_Password:	*****
Timeout:	<timeout>
Maximum_Retries:	<maxRetries>
Retry_Wait_Time:	<retryWait>
File_Extension:	<fileExtension>
Field_Separator:	<fieldSeparator>
Active:	<active>

Valid responses are { ‘Yes’, ‘No’, ‘Abort’ }.

Press Enter to accept ‘No’.

Delete this tuple?

Explanation:

This message displays a tuple and prompts for the user to confirm deletion of this tuple. This message occurs after the user has responded to a “delete all” response with the choice of “Prompt”. This message also occurs if only one tuple containing the specified stream exists or there is no stream specified and only one tuple exists in the table. The choices are: “Yes”, “No”, and “Abort”

System action:

“Yes” deletes the tuple and displays the next tuple if there are more. “No” skips that tuple (does not delete it) and displays the next tuple if there are more. “Abort” skips this tuple and all others after it (does not delete them) and ends execution of the command. If “Yes” is chosen, the tuple is deleted immediately, responding with “Abort” to a later message does not restore tuples already deleted.

User action:

The user may type one of the options (“Yes”, “No”, “Abort”).

16.3.14.5 Response

<x> schedule tuple(s) deleted.

Explanation:

This message occurs just before the delete command exits. It displays a count of how many schedule tuples were deleted.

System action:

None, command is about to exit.

User action:

None, this is information for the user.

16.3.14.6 Response

No tuples found containing stream ‘<stream>’.

Explanation:

This message indicates that either there are no schedule tuples in the schedule table or no schedule tuples in the schedule table that contain the specified stream.

System action:

Prompt is returned to the user, execution of the command ends after reporting that zero schedule tuples were deleted.

User action:

If the specified stream is not correct, re-enter command with correct one. If no stream was provided in the command line or via set stream, then no tuples exist in the schedule table to delete.

16.3.15 Notes

16.3.16 Examples

The user wishes to delete all of the schedule tuples in the schedule

table without prompting.

```
SCHEDULE
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >delete
```

```
10 schedule tuples found.
Valid responses are {'Yes', 'Prompt', 'Abort'}.
Press Enter to accept 'Prompt'.
Delete all schedule tuples for all streams? y

10 schedule tuple(s) deleted.
```

The user wishes to delete all of the schedule tuples in the schedule table, but then decides not to proceed.

```
SCHEDULE
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 >9
```

```
10 schedule tuples found..
Valid responses are {'Yes', 'Prompt', 'Abort'}.
Press Enter to accept 'Prompt'.
Delete all schedule tuples for all streams? abort

0 schedule tuple(s) deleted.
```

The user wishes to delete all of the schedule tuples in the schedule table, but wants to be prompted for each tuple. After being prompted to delete the first schedule tuple, the user decides to not to delete any tuples

```
SCHEDULE
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > DELETE all
```

```
10 schedule tuples found.
Valid responses are { 'Yes', 'Prompt', 'Abort' }.
Press Enter to accept 'Prompt'.
Delete all schedule tuples for all streams? prompt

Stream: 'AMA'
File_Format_Type: 'DNS'
Protocol: 'FTP'
Primary_Destination: '47.255.33.70'
Alternate_Destination: '47.255.33.71'
Start_Time: '10:00'
Stop_Time: '22:00'
Interval: '60'
Remote_Storage_Directory: '/billing/ama'
Remote_Login: 'billing'
Remote_Password: '*****'
Timeout: '1'
Maximum_Retries: '3'
Retry_Wait_Time: '10'
File_Extension: 'ABC'
Field_Separator: '.'
Active: 'Yes'

Valid responses are { 'Yes', 'No', 'Abort' }
Press Enter to accept 'No'.
Delete this tuple? abort

0 schedule tuple(s) deleted.
```

The user wishes to delete the schedule tuples containing the AMA

stream, but no tuples exist.

```
SCHEDULE
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > DELETE ama
```

```
No tuples found containing stream 'AMA'.
0 schedule tuple(s) deleted.
```

The user wishes to delete all of the schedule tuples even though set

stream has a value of AMA.

```
[STREAM: AMA]
SCHEDULE
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > delete all
```

```
6 schedule tuples found.
Valid responses are {'Yes', 'Prompt', 'Abort'}.
Press Enter to accept 'Prompt'.
Delete all schedule tuples for all streams? y
6 schedule tuple(s) deleted.
```

The user wishes to delete the schedule tuples containing the WWW

stream and this stream is invalid.

```
SCHEDULE
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > delete www
```

Invalid stream 'WWW'. Valid streams are {'AMA', 'CDR'}.

16.3.17 Command name: Schedule:list

16.3.17.1 Command type

MENU command from schedule level of billmtc.

16.3.17.2 Command target

SDM

16.3.17.3 Command availability

RES

16.3.17.4 Command description

The list command is a new command which is used to list schedule tuples stored in the schedule table. It has only one optional parameter which is used to specify a stream name. The parameter is used by the list command as a filter so that it only displays schedule tuples which contain the specified stream.

16.3.17.5 Warning

There are no new warnings with this command.

16.3.17.6 Command syntax

list[<stream_name>]

16.3.17.7 Parameter definitions

Table 38

PARAMETER	VALUE	DEFINITION
stream_name	string representing a stream or the keyword, ALL	<p>This is an optional parameter that acts as a filter to only list schedule tuples which contain the specified stream.</p> <p>The user may wish to use the new command, SET <stream> <stream_name>, before invoking list and would not need to enter this parameter due to the fact that the stream was previously set by the set stream command. However, if a stream name is entered on the command line as part of the list command, it takes precedence over a previously set stream.</p> <p>If no stream parameter is entered and none is supplied via the set stream command, the list command uses no filter and lists all of the schedule tuples. Specifying "All" as a stream name also causes list to list all of the schedule tuples.</p>

16.3.18 Responses

16.3.18.1 Response

Invalid stream '<stream>'. Valid streams are { '<stream1>', '<stream2>', etc. }

Explanation:

This message is in response to a user invoking the command with an invalid stream name.

System action:

Prompt is returned to user, execution of the command ends.

User action:

User must re-enter the command providing a valid stream name. The user may also choose to use the Set Stream command to set a stream, then re-enter the command without providing the stream name.

16.3.18.2 Response

Stream:	'<stream>'
File_Format_Type:	'<fileFormatType>'
Protocol:	'<protocol>'
Primary_Destination:	'<primaryDestination>'
Alternate_Destination:	'<alternateDestination>'
Start_Time:	'<startTime>'
Stop_Time:	'<stopTime>'
Interval:	'<interval>'
Remote_Storage_Directory:	'<remoteDirectory>'
Remote_Login:	'<login>'
Remote_Password:	'*****'
Timeout:	'<timeout>'
Maximum_Retries:	'<maxRetries>'
Retry_Wait_Time:	'<retryWait>'
File_Extension:	'<fileExtension>'
Field_Separator:	'<fieldSeparator>'
Active:	'<active>'

Press Enter to continue ('Abort' quits)...

Explanation:

This message displays one or more schedule tuples.

System action:

Displays tuples listed count and exits if user enters abort. Displays the next tuple (if it exists) if the user enters any thing else.

User action:

User views schedule tuples of interest and either aborts to stop the listing or presses enter to see the next tuple.

16.3.18.3 Response

<x> schedule tuple(s) listed.

Explanation:

This message occurs just before the list command exits. It displays a count of how many schedule tuples were listed.

System action:

None, command is about to exit.

User action:

None, this is information for the user.

16.3.19 Notes

16.3.20 Examples

The user wishes to list all of the schedule tuples in the schedule

table.

```
SCHEDULE
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > list
```

```
Stream: 'AMA'
File_Format_Type: 'DNS'
Protocol: 'FTP'
Primary_Destination: '47.255.33.70'
Alternate_Destination: '47.255.33.71'
Start_Time: '10:00'
Stop_Time: '22:00'
Interval: '60'
Remote_Storage_Directory: '/billing/ama'
Remote_Login: 'billing'
Remote_Password: '*****'
Timeout: '1'
Maximum_Retries: '3'
Retry_Wait_Time: '10'
File_Extension: 'ABC'
Field_Separator: '.'
Active: 'Yes'

1 schedule tuple(s) listed.
```

The user wishes to list the schedule tuples containing the AMA

stream, but no tuples exist.

```
SCHEDULE
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > 10 ama
```

```
0 schedule tuple(s) listed.
```

The user wishes to list all of the schedule tuples even though

set stream has a value of AMA.

```
STREAM: AMA]
SCHEDULE
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > list all
```

```
Stream: 'CDR'
File_Format_Type: 'DIRP'
Protocol: 'FTP'
Primary_Destination: '47.255.33.70'
Alternate_Destination: '47.255.33.71'
Start_Time: '10:00'
Stop_Time: '22:00'
Interval: '60'
Remote_Storage_Directory: '/billing/ama'
Remote_Login: 'billing'
Remote_Password: '*****'
Timeout: '1'
Maximum_Retries: '3'
Retry_Wait_Time: '10'
File_Extension: 'ABC'
Field_Separator: '.'
Active: 'Yes'

1 schedule tuple(s) listed.
```

16.3.21 Command name: Confstrm:add

16.3.21.1 Command type

MENU command from confstrm level of billmtc.

16.3.21.2 Command target

SDM

16.3.21.3 Command availability

RES

16.3.21.4 Command description

The add command is a new command which is used to configure a stream. It has many required parameters and because of the complexity of the information required to configure a stream, it works in a prompting mode rather than requiring all of the parameters on the command line.

All of the parameters supplied are used to configure a new stream. Some parameters will have default values. Abort can be used at any prompt to exit the program without configuring the stream. Streams can only be configured for record formats (BC, CDR250, ...) and file formats (DIRP, DNS) that are currently installed on the SDM.

Available from the command line as configureStream.sh for root users and from SDMRLOGIN as CONFSTRM.add.

16.3.21.5 Warning

WARNING: The source component id is the same for all streams
A change here amounts to changing the source component id
for all streams

The above Warning is displayed before the prompt for
Source Component Id [0001] {0000 - 4095}:

This is to warn the user that if this value is changed for this stream that all previously configured streams will be changed to this new value for this parameter.

WARNING: The source component Type is the same for all streams

A change here amounts to changing the source component Type for all streams

The above Warning is displayed before the prompt for Source Component Type [02] {01 - 15}:

This is to warn the user that if this value is changed for this stream that all previously configured streams will be changed to this new value for this parameter.

16.3.21.6 Command syntax

add [<stream record format { BC, CDR250, ... } >]

The following are also required named parameters and are described in Table 39, “Confstrm:add parameters,” on page 327. These parameters are prompted for by the command and are not specified on the command line.

- stream record format
- stream name
- file format
- logical volume
- file transfer mode
- destination component id {DNS only}
- destination component type {DNS only}
- source component id {DNS only}
- source component type {DNS only}
- customer standard header file type {DNS only}
- customer error header file {DNS only}
- files renamed with close date {DIRP only}
- files closed based on time {True/False}
- file closure time limit
- max. records per file
- max. bytes per file

16.3.21.7 Parameter definitions

Table 39 Confstrm:add parameters

PARAMETER	VALUE	DEFINITION
stream record format	string specifying the record format for the stream. (e.g. BC, CDR250, ...)	<p>This is a required parameter. The valid range for this field is determined at install time based on the software installed. For different markets it will have different values. For now, the NA100 market will only have a value of {BC}. The DMS500 market could have values of {BC, CDR250}.</p> <p>The add command prompts for this parameter.</p>
stream name	A "1 to 4" character long ascii string.	<p>This is a required parameter.</p> <p>The only validity performed on this string is that it should be from 1 to 4 characters in size and shouldn't already be present in the system.</p> <p>The craftsperson has to ensure that the name specified here should match the stream name on the CM.</p> <p>The add command prompts for this parameter.</p>
file format	string specifying the file format of the billing files. Valid values in SBA010 are {DNS, DIRP}	<p>A required parameter, it specifies the format of the file to which the billing records are written.</p> <p>The add command prompts for this parameter.</p>
logival volume name	string specifying a valid directory path. (E.g. /data/sba/AMA2)	<p>A required parameter. It specifies the directory (a logical volume should be created for each stream) on which the billing files are to be created.</p> <p>By default, the name of the stream will be shown as the volume name.</p> <p>Notes: The default value need not be a valid value.</p> <p>Validation will be done by verifying that the specified directory exists and is accessible to the user.</p> <p>The add command prompts for this parameter.</p>

Table 39 Confstrm:add parameters

PARAMETER	VALUE	DEFINITION
file transfer mode	string specifying whether the mode is outbound or inbound. Valid values are {OUTBOUND, INBOUND}	<p>A required parameter, it specifies the mode of file transfer.</p> <p>Outbound indicates that the SDM will initiate the file transfer. In the case of INBOUND, it is expected that the downstream processor will ftp into the SDM and retrieve the billing files.</p> <p>The add command prompts for this parameter</p>
destination component id	integer { 0000 - 4095}	<p>Required parameter for DNS file format, defaults to 0000.</p> <p>It specifies an "id" for final destination of the DNS billing files.</p> <p>Refer to the GR1343 for more info.</p> <p>The add command prompts for this parameter</p>
destination comp type	integer { 01 - 15}	<p>Required parameter for DNS file formats. Default is 01.</p> <p>It specifies the type of the destination.</p> <p>Refer to the GR1343 for more info.</p> <p>The add command prompts for this parameter</p>
source component id	integer { 0000 - 4095}	<p>Non mandatory parameter for DNS file format, defaults to 0001.</p> <p>It specifies an "id" for the source of the billing records.</p> <p>Refer to the GR1343 for more info.</p> <p>The add command prompts for this parameter</p> <p>Notes:</p> <p>All streams share the same value for the source component id. A change in this parameter would change the source component id for all streams.</p>

Table 39 Confstrm:add parameters

PARAMETER	VALUE	DEFINITION
source comp type	integer { 01 - 15}	<p>Non mandatory parameter for DNS file formats. Default is 02.</p> <p>It specifies the type of the source of the billing records.</p> <p>Refer to the GR1343 for more info.</p> <p>The add command prompts for this parameter</p> <p>Notes: All streams share the same value for the source component type. A change in this parameter would change the source component type for all streams.</p>
customer standard header file type	integer {1, 16 - 31}	<p>DNS specific mandatory parameter. Default is 16.</p> <p>It specifies the value that should be given to the standard files. This value goes into the header of the file.</p> <p>Refer to the GR1343 for more info.</p> <p>The add command prompts for this parameter</p>
customer error header file type	integer {2, 16 - 31}	<p>DNS specific mandatory parameter. Default is 17.</p> <p>It specifies the value that should be given to the error files. This value goes into the header of the file.</p> <p>Refer to the GR1343 for more info.</p> <p>The add command prompts for this parameter</p>
files renamed with close date	Boolean {True/False}	<p>DIRP specific mandatory parameter. Default is FALSE.</p> <p>It specifies whether the file names should reflect the date/time when the file was created or when the file was closed.</p> <p>The add command prompts for the parameter.</p>

Table 39 Confstrm:add parameters

PARAMETER	VALUE	DEFINITION
files closed based on time	Boolean {Yes, No}	<p>Default is No.</p> <p>This parameter indicates whether the billing files should be closed based on a timer expiry. In other words, it specifies whether the crafterson wants a limit on the how long the billing file should be kept in the open or active state.</p> <p>Refer to the GR1343 for more info.</p> <p>The add command prompts for this parameter</p>
files closure time limit	integer {5 - 10080} in minutes	<p>Default is 10080.</p> <p>This prompt will only be shown if the user specified TRUE in the "files closed on time" field. The value specified in this field is the maximum time in minutes for which the files will be kept open.</p> <p>Refer to the GR1343 for more info.</p> <p>The add command prompts for this parameter</p>
maximum number of records per file	integer {100000 - 500000}	<p>Default is 500000.</p> <p>This value specifies the maximum number of records that a billing file can have. In other words, the active (or open) billing file is closed when the total number of records in the file reach this limit.</p> <p>Refer to the GR1343 for more info.</p> <p>The add command prompts for this parameter</p>
maximum number of bytes per file	integer {8000000 - 20000000}	<p>Default is 20000000.</p> <p>This value specifies the maximum number of bytes that a billing file can have. In other words, the active (or open) billing file is closed when the size of the billing file reaches this limit.</p> <p>Refer to the GR1343 for more info.</p> <p>The add command prompts for this parameter</p>

16.3.22 Responses

16.3.22.1 Response

Standard Responses:

Stream Record Format: [] {BC CDR250}
Stream Name: []
File Format [] {DNS DIRP}:
Please specify the logical Volume [] :
File Transfer Mode [OUTBOUND] {INBOUND OUTBOUND}:

DNS Specific Responses:

Destination Component Id [0000] {0000 - 4095}:
Destination Component Type [01] {01 - 15}:

WARNING: The source component id is the same for all streams
A change here amounts to changing the source component id
for all streams

Source Component Id [0001] {0000 - 4095}:

WARNING: The source component Type is the same for all streams
A change here amounts to changing the source component Type
for all streams

Source Component Type [02] {01 - 15}:
Customer Standard Header File Type [1] {1,16 - 31}:
Customer Error Header File Type [2] {2,16 - 31}:

DIRP Specific Responses:

Files Renamed With Close Date [NO] { NO YES } :

Standard Responses:

Do you want Files closed based on time [NO] {NO YES}:
File Closure time limit [10080] {5 - 10080}:
Maximum Number of records per file [500000] {100000 - 500000}:
Maximum Number of Bytes per file [20000000] {8000000 - 20000000}:

Explanation:

The responses listed above behave in a similar manner. The DNS or DIRP specific responses (or prompts) will only be shown when either DNS or DIRP is selected as the file format type.

Pressing the <enter> or <return> key without giving a value will mean that the user wants the default value shown in the square brackets (if any are shown).

An explanation for each of these prompts can be found in the table Table 39, “Confstrm:add parameters,” on page 327.

System action:

For each of these prompts, after the user provides the input, if the user entered Abort, the current operation is terminated and the user is taken back to the billmtc. All the values that the user entered will be discarded after an abort.

If the user enters an invalid value, the user is prompted for the again for the proper value. An e.g. of an invalid entry is shown below,

*Stream Record Format: [BC] {BC CDR250 } baf
Please enter a valid value -> You entered BAF*

On a valid input, the system takes the user through to the next prompt. At the end, the user is given a choice of saving, editing or aborting the values entered. An explanation of this prompt is given below.

User action:

User must enter a valid value or Abort. Pressing the <enter> or <return> key at the prompt assumes the default value, if any is applicable. The default value is shown in square brackets in the prompt.

16.3.22.2 Response

Commit ? [Save] {Save Edit Abort}:

Explanation:

This message is shown at the end after the user has entered all the valid values. It allows the user to review the contents of additions made to the stream and edit or save or abort the operation.

System action:

If the user enters “save”, the information entered by the user is saved in the MIB.

On an “edit”, the system takes the user through all the fields again.

An “abort” will cancel the whole operation and it will not change anything in the system.

User action:

User must enter Save, Edit or Abort.

16.3.22.3 Response

Committing the configuration.

Explanation:

This message informs the user that the values entered prior to this message being displayed is now being written to the MIB. The configuration of the stream was successful.

System action:

The command is about to exit.

User action:

None, this is information for the user.

16.3.22.4 Response

Aborting operation for stream <streamName>

Explanation:

This message is displayed to the user when the user types “abort” at any field except the stream record format prompt. The <streamName> is replaced with the appropriate value.

System action:

Command execution stops.

User action:

User can restart add command and enter valid values.

16.3.23 Notes

None

16.3.24 Examples

16.3.24.0.1 Configure a stream

```
[ STREAM:AMA ]
CONFSTRM
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > add bc
```

```
Stream Record Format: [BC] {BC CDR250 } bc
Stream Name: [] ama2
```

```
File Format [] {DNS DIRP } : dirp
Please specify the logical Volume [./AMA2] : /tmp
File Transfer Mode [OUTBOUND] {INBOUND OUTBOUND}:
Do you want the files renamed with close date [NO] {NO YES}:
Do you want Files closed based on time [NO] {NO YES}:
Maximum Number of records per file [500000] {100000 - 500000}:
Maximum Number of Bytes per file [20000000] {8000000 - 20000000}:
```

You entered

```
Stream Name -> AMA2
Stream Record Format -> BC
File Format Type -> DIRP
Logical Volume Name -> /tmp
File Transfer Mode -> OUTBOUND
Files Renamed With Close Date -> NO
File Closed On Time Valid -> NO
File Closed On Time -> 10080
Maximum number of records -> 500000
Maximum number of bytes -> 20000000
```

```
Commit ? [Save] {Save Edit Abort}: save  
Committing the configuration
```

16.3.25 Confstrm:change

16.3.25.1 Command type

MENU command from confstrm level of billmtc.

16.3.25.2 Command target

SDM

16.3.25.3 Command availability

RES

16.3.25.4 Command description

The change command is a new command which is used to change the configuration of a stream. It has many required parameters and because of the complexity of the information required to configure a stream, it works in a prompting mode rather than requiring all of the parameters on the command line.

The stream name of a stream is the only parameter that cannot be changed.

The default values for all the parameters will be taken from what was set earlier. Abort can be used at any prompt to exit the program without changing the configuration. Streams can only be configured for record formats (BC, CDR250, ...) and file formats (DIRP, DNS) that are currently installed on the SDM.

Not all the parameters for a stream can be modified if the stream is running (or active).

This command is available from the command line for root users as `updateStream.sh` and from `SDMRLOGIN` as `CONFSTRM.change`

16.3.25.5 Warning

There are no new warnings with this command.

16.3.25.6 Command syntax

change [<stream name>]

The following are also required named parameters and are described in Table 40, “Confstrm:change parameters,” on page 337. These parameters are prompted for by the command and are not specified on the command line.

- stream name
- stream record format
- file format
- logical volume
- file transfer mode
- destination component id {DNS only}
- destination component type {DNS only}
- source component id {DNS only}
- source component type {DNS only}
- customer standard header file type {DNS only}
- customer error header file {DNS only}
- files renamed with close date {DIRP only}
- files closed based on time {True/False}
- file closure time limit
- max. records per file
- max. bytes per file

16.3.25.7 Parameter definitions

Table 40 Confstrm:change parameters

PARAMETER	VALUE	DEFINITION
stream name	A "1 to 4" character long ascii string.	<p>This is a required parameter.</p> <p>This parameter is specified in the command line, if the user doesn't enter a stream name, then the value from the "set stream <streamName>" would be used instead.</p> <p>This parameter is only used to find the appropriate stream configuration info. It can never be changed. To change the stream name, the user will have to delete the entry and add another one.</p>
stream record format	string specifying the record format for the stream. (e.g. BC, CDR250, ...)	<p>This is a required parameter. The valid range for this field is determined at install time based on the software installed. For different markets it will have different values. For now, the NA100 market will only have a value of {BC}. The DMS500 market could have values of {BC, CDR250}.</p> <p>Can only be modified if the stream is not running (inactive).</p> <p>The change command prompts for this parameter.</p>
file format	string specifying the file format of the billing files. Valid values in SBA010 are {DNS, DIRP}	<p>A required parameter, it specifies the format of the file to which the billing records are written.</p> <p>Can only be modified if the stream is not running (inactive).</p> <p>The change command prompts for this parameter.</p>

Table 40 Confstrm:change parameters

PARAMETER	VALUE	DEFINITION
logival volume name	string specifying a valid directory path	<p>A required parameter. It specifies the directory (a logical volume should be created for each stream) on which the billing files are to be created.</p> <p>By default, the name of the stream will be shown as the volume name</p> <p>Validation will be done by verifying that the specified directory exists and is accessible to the user.</p> <p>Can only be modified if the stream is not running (inactive).</p> <p>The change command prompts for this parameter.</p>
file transfer mode	string specifying whether the mode is outbound or inbound. Valid values are {OUTBOUND, INBOUND}	<p>A required parameter, it specifies the mode of file transfer.</p> <p>Outbound indicates that the SDM will initiate the file transfer. In the case of INBOUND, it is expected that the downstream processor will ftp into the SDM and retrieve the billing files.</p> <p>The change command prompts for this parameter</p>
destination component id	integer { 0000 - 4095}	<p>Required parameter for DNS file format, defaults to 0000.</p> <p>It specifies an "id" for final destination of the DNS billing files.</p> <p>Refer to the GR1343 for more info.</p> <p>The change command prompts for this parameter</p>
destination comp type	integer { 01 - 15}	<p>Required parameter for DNS file formats. Default is 01.</p> <p>It specifies the type of the destination.</p> <p>Refer to the GR1343 for more info.</p> <p>The change command prompts for this parameter</p>

Table 40 Confstrm:change parameters

PARAMETER	VALUE	DEFINITION
source component id	integer { 0000 - 4095}	<p>Non mandatory parameter for DNS file format, defaults to 0001.</p> <p>It specifies an "id" for the source of the billing records.</p> <p>Refer to the GR1343 for more info.</p> <p>The change command prompts for this parameter</p> <p>Notes: All streams share the same value for the source component id. A change in this parameter would change the source component id for all streams.</p>
source comp type	integer { 01 - 15}	<p>Non mandatory parameter for DNS file formats. Default is 02.</p> <p>It specifies the type of the source of the billing records.</p> <p>Refer to the GR1343 for more info.</p> <p>The change command prompts for this parameter</p> <p>Notes: All streams share the same value for the source component type. A change in this parameter would change the source component type for all streams.</p>
customer standard header file type	integer {1, 16 - 31}	<p>DNS specific mandatory parameter. Default is 16.</p> <p>It specifies the value that should be given to the standard files. This value goes into the header of the file.</p> <p>Refer to the GR1343 for more info.</p> <p>The change command prompts for this parameter</p>

Table 40 Confstrm:change parameters

PARAMETER	VALUE	DEFINITION
customer error header file type	integer {2, 16 - 31}	<p>DNS specific mandatory parameter. Default is 17.</p> <p>It specifies the value that should be given to the error files. This value goes into the header of the file.</p> <p>Refer to the GR1343 for more info.</p> <p>The change command prompts for this parameter</p>
files renamed with close date	Boolean {Yes, No}	<p>DIRP specific mandatory parameter. Default is No.</p> <p>It specifies whether the file names should reflect the date/time when the file was created or when the file was closed.</p> <p>The change command prompts for the parameter.</p>
files closed based on time	Boolean {Yes, No}	<p>Default is No.</p> <p>This parameter indicates whether the billing files should be closed based on a timer expiry. In other words, it specifies whether the crafterson wants a limit on the how long the billing file should be kept in the open or active state.</p> <p>Refer to the GR1343 for more info.</p> <p>The change command prompts for this parameter</p>
files closure time limit	integer {5 - 10080} in minutes	<p>Default is 10080.</p> <p>This prompt will only be shown if the user specified TRUE in the "files closed on time" field. The value specified in this field is the maximum time in MINUTES for which the files will be kept open.</p> <p>Refer to the GR1343 for more info.</p> <p>The change command prompts for this parameter</p>

Table 40 Confstrm:change parameters

PARAMETER	VALUE	DEFINITION
maximum number of records per file	integer {100000 - 500000}	<p>Default is 500000.</p> <p>This value specifies the maximum number of records that a billing file can have. In other words, the active (or open) billing file is closed when the total number of records in the file reach this limit.</p> <p>Refer to the GR1343 for more info.</p> <p>The change command prompts for this parameter</p>
maximum number of bytes per file	integer {8000000 - 20000000}	<p>Default is 20000000.</p> <p>This value specifies the maximum number of bytes that a billing file can have. In other words, the active (or open) billing file is closed when the size of the billing file reaches this limit.</p> <p>Refer to the GR1343 for more info.</p> <p>The change command prompts for this parameter</p>

16.3.26 Responses

16.3.26.1 Response

Standard Responses:

Stream Name: [AMA]
Stream Record Format: [BC] {BC CDR250}
File Format [DNS] {DNS DIRP}:
Please specify the logical Volume [/tmp] :
File Transfer Mode [OUTBOUND] {INBOUND OUTBOUND}:

DNS Specific Responses:

Destination Component Id [0000] {0000 - 4095}:
Destination Component Type [01] {01 - 15}:

WARNING: The source component id is the same for all streams
A change here amounts to changing the source component id

for all streams

Source Component Id [0001] {0000 - 4095}:

WARNING: The source component Type is the same for all streams
A change here amounts to changing the source component Type
for all streams

Source Component Type [02] {01 - 15}:

Customer Standard Header File Type [16] {16 - 31}:

Customer Error Header File Type [17] {16 - 31}:

DIRP Specific Responses:

Files Renamed With Close Date [NO] { NO YES } :

Standard Responses:

Do you want Files closed based on time [YES] {NO YES}:

File Closure time limit [10080] {5 - 10080}:

Maximum Number of records per file [500000] {100000 - 500000}:

Maximum Number of Bytes per file [20000000] {8000000 - 20000000}:

Explanation:

The responses listed above behave in a similar manner. The DNS or DIRP specific responses (or prompts) will only be shown when either DNS or DIRP is selected as the file format type.

The following parameters are not prompted for if the stream is “running” or “active”.

- stream record format
- file format type
- logical volume name

Pressing the <enter> or <return> key without giving a value will mean that the user wants the default value shown in the square brackets (if any are shown).

An explanation for each of these prompts can be found in the table Table 40, “Confstrm:change parameters,” on page 337.

System action:

For each of these prompts, after the user provides the input, if the user entered ABORT, the current operation is terminated and the user is taken back to the billmtc.

If the user enters an invalid value, the user is prompted for the again for the proper value. An e.g. of an invalid entry is shown below,

*Stream Record Format: [BC] {BC CDR250 } baf
Please enter a valid value -> You entered BAF*

On a valid input, the system takes the user through to the next prompt. At the end, the user is given a choice of saving, editing or aborting the values entered. An explanation of this prompt is given below.

User action:

User must enter a valid value or Abort. Pressing the <enter> or <return> key at the prompt assumes the default value, if any is applicable. The default value is shown in square brackets in the prompt.

16.3.26.2 Response

Commit ? [Save] {Save Edit Abort}:

Explanation:

This message is shown at the end after the user has entered all the valid values. It allows the user to review the contents of changes made to the stream and edit or save or abort the operation.

System action:

If the user enters “save”, the information entered by the user is saved in the MIB.

On an “edit”, the system takes the user through all the fields again.

An “abort” will cancel the whole operation and it will not change anything in the system.

User action:

User must enter Save, Edit or Abort.

16.3.26.3 Response

Committing the configuration.

Explanation:

This message informs the user that the values entered prior to this message being displayed is now being written to the MIB. The configuration of the stream was successful.

System action:

The command is about to exit.

User action:

None, this is information for the user.

16.3.26.4 Response

Aborting operation for stream <streamName>

Explanation:

This message is displayed to the user when the user types “abort” at any field except the stream record format prompt. The <streamName> is replaced with the appropriate value.

System action:

Command execution stops.

User action:

User can restart add command and enter valid values.

16.3.27 Notes

None

16.3.28 Examples

16.3.28.0.1 Change the configuration of an inactive stream.

```
[STREAM:AMA]
CONFSTRM
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > change ama2
```

```
Stream Name: [AMA2]
Record Format [BC]:
File Format [DIRP] {DNS DIRP } : dns
Please specify the logical Volume [/tmp] :
File Transfer Mode [OUTBOUND] {INBOUND OUTBOUND}:
Destination Component Id [0000] {0000 - 4095}:
Destination Component Type [01] {01 - 15}:
```

WARNING: The source component id is the same for all streams
A change here amounts to changing the source component id
for all streams

```
Source Component Id [2354] {0000 - 4095}:
```

WARNING: The source component Type is the same for all streams
A change here amounts to changing the source component Type
for all streams

```
Source Component Type [2] {01 - 15}:
Customer Standard Header File Type [1] {1, 16 - 31}:
Customer Error Header File Type [2] {2, 16 - 31}:
Do you want Files closed based on time [NO] {NO YES}: yes
File Closure time limit [10080] {5 - 10080}: 100
Maximum Number of records per file [500000] {100000 - 500000}:
Maximum Number of Bytes per file [20000000] {8000000 - 20000000}:
```

You entered

```
Stream Record Format -> BC
File Format Type -> DNS
Logical Volume Name -> /tmp
File Transfer Mode -> OUTBOUND
```

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```
Destination Component Id -> 0000
Destination Component Type -> 01
Source Component Id -> 2354
Source Component Type -> 2
Customer Standard Header File Type -> 16
Customer Error Header File Type -> 17
File Closed On Time Valid -> YES
File Closed On Time -> 100
Maximum number of records -> 500000
Maximum number of bytes -> 20000000
```

```
Commit ? [Save] {Save Edit Abort}: save
Committing the configuration
```

16.3.28.0.2 Change the configuration of an active stream.

```
[STREAM:AMA]
CONFSTRM
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > change ama2
```

```
Stream Name: [AMA2]
File Transfer Mode [OUTBOUND] {INBOUND OUTBOUND}: inbound
Destination Component Id [0000] {0000 - 4095}: 0001
Destination Component Type [01] {01 - 15}: 01
```

```
WARNING: The source component id is the same for all streams
A change here amounts to changing the source component id
for all streams
```

```
Source Component Id [2354] {0000 - 4095}: 0002
```

```
WARNING: The source component Type is the same for all streams
A change here amounts to changing the source component Type
for all streams
```

```
Source Component Type [2] {01 - 15}:
Customer Standard Header File Type [1] {1, 16 - 31}:
Customer Error Header File Type [2] {2, 16 - 31}:
Do you want Files closed based on time [YES] {NO YES}:
```

```
File Closure time limit [100] {5 - 10080}: 700
Maximum Number of records per file [500000] {100000 - 500000}:
Maximum Number of Bytes per file [20000000] {8000000 - 20000000}:
```

You entered

```
Stream Record Format -> BC
File Format Type -> DNS
File Transfer Mode -> INBOUND
Destination Component Id -> 0001
Destination Component Type -> 01
Source Component Id -> 0002
Source Component Type -> 2
Customer Standard Header File Type -> 16
Customer Error Header File Type -> 17
Critical Alarm Threshold -> 85
File Deletion Threshold -> 65
File Deletion Threshold Variance -> 10
File Closed On Time Valid -> YES
File Closed On Time -> 700
Maximum number of records -> 500000
Maximum number of bytes -> 20000000
```

```
Commit ? [Save] {Save Edit Abort}: save
Committing the configuration
```

16.3.29 Confstrm:delete

16.3.29.1 Command type

MENU command from confstrm level of billmtc.

16.3.29.2 Command target

SDM

16.3.29.3 Command availability

RES

16.3.29.4 Command description

The delete command is a new command which is used to unconfigure (or delete) a stream. This command will only work on inactive streams. Also, it will only work if no tuples in the schedule are set up for this stream.

This command is available from the command line for root users as `unconfigureStream.sh` and from `SDMRLOGIN` as `CONFSTRM.delete`

16.3.29.5 Warning

There are no new warnings with this command.

16.3.29.6 Command syntax

delete [<stream name>]

16.3.29.7 Parameter definitions

Table 41 Confstrm:change parameters

PARAMETER	VALUE	DEFINITION
stream name	A "1 to 4" character long ascii string.	This is a required parameter. This parameter is specified in the command line, if the user doesn't enter a stream name, then the value from the "set stream <streamName>" would be used instead. This parameter is only used to find the appropriate stream configuration info.

16.3.30 Responses

16.3.30.1 Response

Stream Name: [AMA2]

Explanation:

The user is required to enter the name of the stream that has to be deleted. If the name was entered on the command line or if the "set stream" command has been run, then that value will be shown as the default.

System action:

The system will display the configuration information pertaining to the whole stream before asking the user to confirm the deletion.

User action:

Enter a valid stream name or press <enter> or <return> to accept the default value.

16.3.30.2 Response

Are you sure you want to delete the stream? [NO] { Yes/No, Y/N }

Explanation:

This message is shown after the configuration information is displayed. The user is required to confirm the deletion of the stream.

System action:

If the user enters “save”, the information entered by the user is saved in the MIB.

On an “edit”, the system takes the user through all the fields again.

An “abort” will cancel the whole operation and it will not change anything in the system.

User action:

User must enter Yes or Y or No or N.

16.3.30.3 Response

Unconfiguration of Stream AMA2 is now complete

Explanation:

This message informs the user that the stream is deleted.

System action:

The command is about to exit.

User action:

None, this is information for the user.

16.3.30.4 Response

Verifying that no scheduled events exists for this stream

Explanation:

This message informs the user that the stream that is trying to be deleted is being checked for in the schedule table.

System action:

The command will exit if tuple(s) are found. The command will continue if no tuples are found with that stream.

User action:

None, this is information for the user.

16.3.31 Notes

None

16.3.32 Examples

16.3.32.0.1 Delete the configuration of an active stream.

```
[STREAM:AMA]
CONFSTRM
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > delete ama2
```

```
Stream Name: [AMA2]
StreamName -> AMA2
Stream Running status -> YES
Stream Record Format -> BC
```

```

File Format Type -> DNS
Logical Volume Name -> /tmp
File Transfer Mode -> INBOUND
Destination Comp Id -> 0001
Destination Comp Type -> 01
Source Comp Id -> 0002
Source Comp Type -> 2
Customer Standard Header File Type -> 16
Customer Error Header File Type -> 17
Files Closed On Time Valid -> YES
-- Files Closed On Time -> 700
Max Number of Records to close file -> 500000
Max Num Bytes Before closing a file -> 20000000

```

Sorry, cannot delete an active stream
Please turn the stream off from the CM and then unconfigure it

16.3.32.0.2 Delete the configuration of an inactive stream.

```

[STREAM:AMA]
CONFSTRM
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > delete ama2

```

```

Stream Name: [AMA2]
StreamName -> AMA2
Stream Running status -> NO
Stream Record Format -> BC

```

```

File Format Type -> DNS
Logical Volume Name -> /tmp
File Transfer Mode -> INBOUND
Destination Comp Id -> 0001
Destination Comp Type -> 01
Source Comp Id -> 0002
Source Comp Type -> 2
Customer Standard Header File Type -> 16

```

```
Customer Error Header File Type -> 17
Critical Alarm Threshold -> 85
Deletion Threshold -> 65
Deletion Threshold Variance -> 10
Files Closed On Time Valid -> YES
  -- Files Closed On Time -> 700
Max Number of Records to close file -> 500000
Max Num Bytes Before closing a file -> 20000000
```

```
| Verifying that no scheduled events exists for this stream
```

```
| None exists.
```

```
| Are you sure you want to delete the stream? [NO] {Yes/No, Y/N} yes
```

```
Unconfiguration of Stream AMA2 is now complete
Committing it
```

16.3.33 Confstrm:list

16.3.33.1 Command type

MENU command from confstrm level of billmtc.

16.3.33.2 Command target

SDM

16.3.33.3 Command availability

RES

16.3.33.4 Command description

The list command is a new command which is used to list (or display) the details about a stream.

```
| This command is available from the command line for root users as
displayStream.sh or from SDMRLOGIN as CONFSTRM.list
```

16.3.33.5 Warning

There are no new warnings with this command.

16.3.33.6 Command syntax

```
| list [<stream name>, ALL]
```

16.3.33.7 Parameter definitions

Table 42 Confstrm:change parameters

PARAMETER	VALUE	DEFINITION
stream name	A "1 to 4" character long ascii string. 'ALL' can also be used	This is a required parameter. This parameter is specified in the command line, if the user doesn't enter a stream name, then the value from the "set stream <streamName>" would be used instead. This parameter is only used to find the appropriate stream configuration info. If 'ALL' is entered, the user is prompted as each configured stream is displayed.

16.3.34 Responses

16.3.34.1 Response

Stream Name: [AMA2]

Explanation:

The user is required to enter the name of the stream that has to be displayed. If the name was entered on the command line or if the "set stream" command has been run, then that value will be shown as the default.

System action:

The system will display the configuration information pertaining to the whole stream.

User action:

Enter a valid stream name or press <enter> or <return> to accept the default value.

16.3.35 Notes

None

16.3.36 Examples

16.3.36.0.1 list the configuration of a stream.

```
[STREAM:AMA]
CONFSTRM
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > list ama2
```

```
Stream Name: [AMA2]
StreamName -> AMA2
Stream Running status -> YES
Stream Record Format -> BC
```

```
File Format Type -> DNS
Logical Volume Name -> /tmp
File Transfer Mode -> INBOUND
Destination Comp Id -> 0001
Destination Comp Type -> 01
Source Comp Id -> 0002
Source Comp Type -> 2
Customer Standard Header File Type -> 16
Customer Error Header File Type -> 17
Files Closed On Time Valid -> YES
-- Files Closed On Time -> 700
Max Number of Records to close file -> 500000
Max Num Bytes Before closing a file -> 20000000
```

16.3.36.0.2 list the configuration of all streams.

```
[STREAM:AMA]
CONFSTRM
0 Quit
2
3
4
5
6
7 Add
8 Change
9 Delete
10 List
11
12
13
14
15
16
17 Help
18 Refresh
maint
Time 17:03 > list all
```

```
Stream Name: [ALL]
Displaying streams SBA1 SBA2
```

```
Display stream SBA1 [Y] {Y/N/abort} ? y
StreamName -> SBA1
Stream Running status -> NO
Stream Record Format -> BC
```

```
File Format Type -> DNS
Logical Volume Name -> /users/melucci/sba/SBA1
File Transfer Mode -> OUTBOUND
Destination Comp Id -> 0000
Destination Comp Type -> 01
Source Comp Id -> 0001
Source Comp Type -> 02
Customer Standard Header File Type -> 1
Customer Error Header File Type -> 2
Files Closed On Time Valid -> NO
Max Number of Records to close file -> 500000
Max Num Bytes Before closing a file -> 20000000
```

```
Display stream SBA2 [Y] {Y/N/abort} ? y
StreamName -> SBA2
Stream Running status -> NO
Stream Record Format -> BC
```

```
File Format Type -> DNS
Logical Volume Name -> /users/melucci/sba/SBA2
File Transfer Mode -> OUTBOUND
Destination Comp Id -> 0000
Destination Comp Type -> 01
```

Source Comp Id -> 0001
Source Comp Type -> 02
Customer Standard Header File Type -> 1
Customer Error Header File Type -> 2
Files Closed On Time Valid -> NO
Max Number of Records to close file -> 500000
Max Num Bytes Before closing a file -> 20000000

16.4 Alarms

16.4.1 Alarm name:

16.4.1.1 Conditions required to raise the alarm

16.4.1.2 Duration of the alarm

- 1.

17. Man machine interface (MM)

17.1 Directories

NOT APPLICABLE.

17.1.1 Table of new/modified directories

Table 43

DIRECTORY NAME	NEW, CHANGED OR DELETED	NEW NAME (if renamed)	TARGET	RES/ NONRES

17.1.2 Accessing directory:

17.1.2.1 To access

17.1.2.2 To return to CI

17.2 Commands

NOT APPLICABLE.

17.2.1 Table of New/modified commands

Table 44

COMMAND NAME	NEW, CHANGED OR DELETED	NEW NAME (if renamed)	DIRECTORY NAME

17.2.2 Command name:

17.2.2.1 Command type

17.2.2.2 Command target

17.2.2.3 Command availability

17.2.2.4 Command description

17.2.2.5 Warning

17.2.2.6 Command syntax

17.2.2.7 Parameter definitions

Table 45

PARAMETER	VALUE	DEFINITION

17.2.3 Responses

17.2.3.1 Response

Explanation:

System action:

User action:

17.2.4 Notes

17.2.5 Examples

17.3 Alarms

NOT APPLICABLE.

17.3.1 Alarm name:

17.3.1.1 Conditions required to raise the alarm

17.3.1.2 Duration of the alarm

18. Man machine interface (MM)

18.1 Overview:

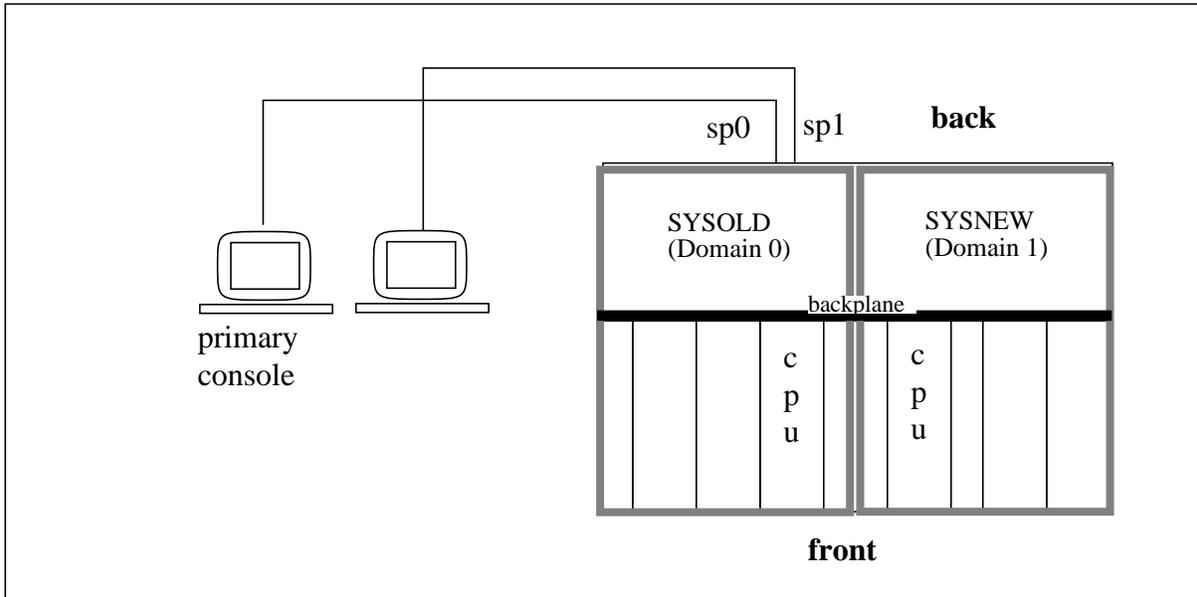
This document describes the user interface for performing splitmode on-line upgrades on the SDM.

Most user interactions for splitmode upgrades are performed at the primary console port through the Remote Maintenance Interface (RMI). After a switchover, the console port is connected to the newly active CPU so no change in physical connectivity is required. A second console port is needed for booting and installing software on SYSNEW.

At various points of the upgrade when user intervention is required, the user is prompted to enter the 'continue' or 'fallback' command from the RMI 'Split' level. The text strings for prompt messages are listed in this document.

From the CM MAP, the user can query the status of the upgrade by issuing *QuerySDM* commands.

A *mate* option has been added to the *QuerySDM* command. This option is available when *QuerySDM* is issued at the RMI or at the command line on the SDM (but not at the MAP).



console connectivity

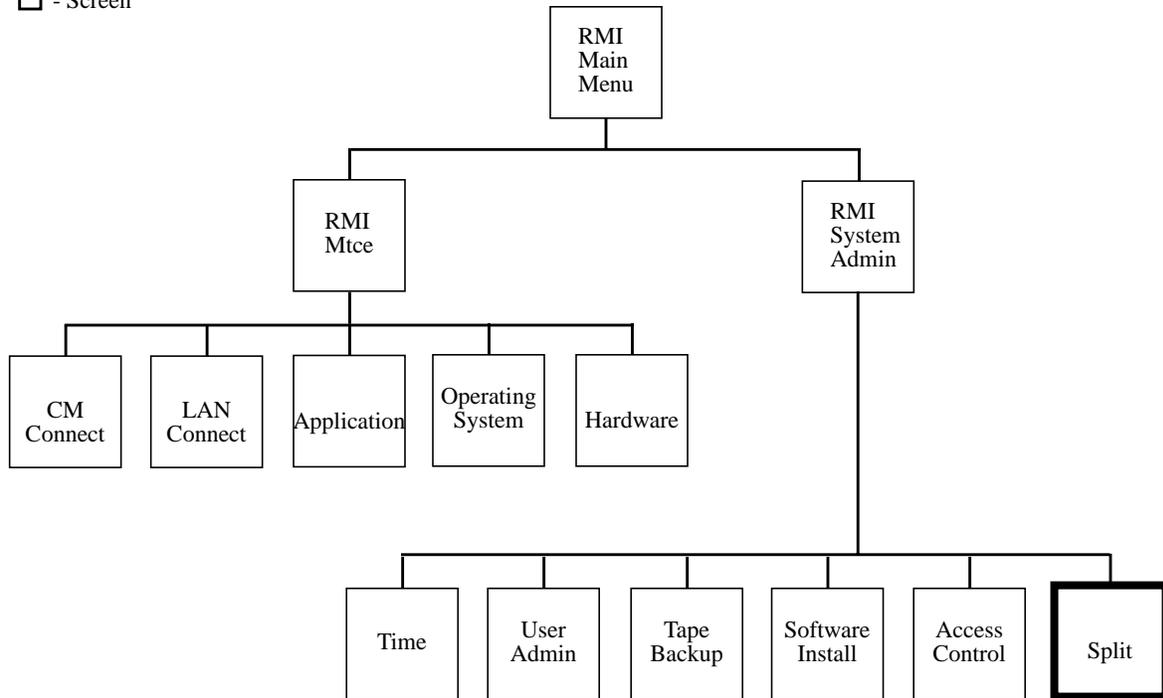
The primary console is the one connected to port sp0. It is connected to the active CPU via the backplane. When the system is split, the active CPU is in SYSOLD before the SwAct. After the SwAct it is the one in SYSNEW.

The second console terminal (one connected to sp1) is connected to the inactive CPU via the backplane. It is used for booting and upgrading SYSNEW software which is done before the SwAct.

18.2 RMI Splitmode upgrade level

The *Split* level is located under **admin** level of the RMI and can be entered by typing *Split* at any other levels.

□ - Screen



The following figure shows the layout of the ‘Split’ screen.

SDM Split level of the RMI

```

Active          SDM Remote Maintenance Interface
Domain 0       I   CON   LAN   APPL  SYS   HW           CM : FCC11
                                                SDM: bmerye76
Split
0 Quit         SDM Node State:           ISTb .../Upgrade in Progress
2
3              Split      : [100%] Completed
4              Configure: [----] Waiting for domain 1 upgrades
5              SwAct     : [----]
6 Start       Integrate: [----]
7 Continue
8 Abort
9
10
11
12
13
14 QuerySDM
15 Locate
16
17 Help
18 Refresh
root
Time 17:03 >
Validation of domain 1 failed.
Type 'continue' to continue
or 'fallback' to cancel the entire upgrade.

```

- The ‘Active’ and ‘Domain 0’ at top left corner shows that the RMI is executing on the active processor which is located in domain 0. This Active/Inactive, Domain 0/1 indicator will be visible from all RMI screens when the system is split. The status displayed by the RMI are different depending on whether the user is logged on to the Active or Inactive side. e.g. hardware level will show different hardware missing, connectivity level will show different links open, storage level may show different logical volume usage.
- In the above figure, the ISTb node state is due to the fact that Upgrade is in progress.
- ‘...Upgrade in Progress’ is displayed throughout the upgrade on all RMI screens. It occupies the same screen position as the existing ‘...Mtce in Progress’ indicator. When both indicators are set, the ‘...Mtce in Progress’ is displayed.
- The four upgrade stages - Split, Configure, SwAct, Integrate are fixed. i.e. the number and name of these states do not change at run time. See ‘state definition’ section of this document for more details.
- The above figure shows an example prompt message - ‘Validation of domain...’. Prompt messages are displayed at various points of the upgrade where user interaction is required. The response is limited to ‘Continue’ or ‘Fallback’.

- The Start, Continue, and Fallback menu items are executable by root user only. These commands are ignored if the RMI is executing on the Inactive domain. For the Start command the user is further prompted to chose the type of upgrade. e.g. full OS reinstall, CPU hardware upgrade etc.
- After the upgrade has been started, when the user is prompted to type either ‘continue’ or ‘fallback’, the screen is not locked so that the user may chosen to issue other commands such as QuerySDM or Quit. If the user quits then reenters the ‘split’ level at a later time, the prompt message will be still be displayed.

18.2.0.1 State Definitions

The following table shows the significance of the four stages and possible user actions required within each stage.

Table 46 User visible states for split-mode upgrade:

stage	meaning	possible manual actions
Split	Domain 1 is shutdown, system is split so domain 0 CPU can not access domain 1 hardware	upgrade CPU on SYSOLD,
Configure	loading, commissioning, validation of SYSNEW in progress	install OS,SDM S/W on SYSNEW correct problems that failed validation on SYSNEW
SwAct	switch-over and DataVG steal	verify SYSNEW applications
Integrate	unsplit and reintegrate VGs to FT	upgrade CPU on SYSNEW

18.3 Prompts for user action

Prompts for user input may be displayed at various stages of the upgrade. The prompt messages are part of the ‘dynamic data’ of the screen, so they will be redisplayed if the RMI menu is exited and reentered.

Table 47 user messages

message	text displayed to user
start command initial warning	The split-system upgrade procedure will cause the system to be not fault tolerant for the duration of the upgrade. A period of service interruption will occur during the upgrade. Do you wish to proceed? Please confirm ("YES", "Y", "NO", or "N"):
start command 1st prompt	Will the CPU hardware be upgraded? ("YES", "Y", "NO", or "N"):
start command 2nd prompt	Will the OS software be upgraded? ("YES", "Y", "NO", or "N"):
start commnd final confirm	Start upgrade with the following parameters: Operating System: upgrade CPU hardware : no change ("YES", "Y", "NO", or "N"):
error reason 1	Fall-back was automatically initiated because: a hardware problem was discovered.
error reason 2	Fall-back was automatically initiated because: a software problem was encountered.
error reason 3	Fall-back was automatically initiated because: a critical error was encountered.
manual fallback	Fall-back was manually initiated.
cpu eprom fail	Error: Failed to retrieve CPU eprom data. Check failed.
soupInitalPromptForTape	Please insert the OS upgrade tape into the Domain 1 tape drive. Type 'continue' once the tape has been inserted or type 'fallback' to cancel the entire upgrade.
soupAdditionalPromptForTape	Error: Failed to find the OS tape in the Domain 1 tape drive. Please insert the OS upgrade tape into the Domain 1 tape drive. Type 'continue' once the tape has been inserted or type 'fallback' to cancel the entire upgrade.
soupRetryFirmwareInstall Prompt	Error: Failed to install the new firmware files from the tape. Type 'continue' to retry the file set installation or type 'fallback' to cancel the entire upgrade.

Table 47 user messages

soupInitalPromptForCPU1	Please upgrade the Domain 1 CPU. Type 'continue' once the CPU has been upgraded or type 'fallback' to cancel the entire upgrade.
soupAdditionalPromptForCPU1	Error: The Domain 1 CPU has not been changed. Please upgrade the Domain 1 CPU. Type 'continue' once the CPU has been upgraded or type 'fallback' to cancel the entire upgrade.
soupRetryVerifyCPUChange	Error: Failed to verify the CPU change. Type 'continue' to retry the CPU verification or type 'fallback' to cancel the entire upgrade.
soupRetryFirmwareUpgrade	Error: Failed to upgrade the CPU firmware. Type 'continue' to retry the firmware upgrade or type 'fallback' to cancel the entire upgrade.
soupRetrySplit	Error: Failed to split the system. Type 'continue' to retry the split or type 'fallback' to cancel the entire upgrade.
soupPromptForUpgradeStart	Please upgrade the Domain 1 software. Type 'fallback' to cancel the entire upgrade. 'Continue' is only available from the inactive console.
soupPromptForUpgrade Completion	Please complete the software upgrades to this system. Type 'continue' once the upgrades are complete. 'Fallback' is only available on the active console.
soupRetryMtceOpenLinksSide1	Error: Failed to mtce open the Domain 1 links. Type 'continue' to retry the mtce open or type 'fallback' to cancel the entire upgrade.
soupRetrySysnewValidation	Error: Failed to validate Domain 1. Type 'continue' to retry the validation or type 'fallback' to cancel the entire upgrade.
soupPromptForSwact	The system is ready for the SwAct. Type 'continue' to initiate the SwAct or type 'fallback' to cancel the entire upgrade.
soupRetrySwact	Error: Failed to SwAct. Type 'continue' to retry the SwAct or type 'fallback' to cancel the entire upgrade.
soupPromptForIntegration	The system is ready to begin integration. WARNING: No fall-back is possible once integration has started! Type 'continue' when ready to proceed or type 'fallback' to cancel the entire upgrade.
soupInitalPromptForCPU0	Please upgrade the Domain 0 CPU. Type 'continue' once the CPU has been upgraded.
soupAdditionalPromptForCPU0	Error: The Domain 0 CPU has not been changed. Please upgrade the Domain 0 CPU. Type 'continue' once the CPU has been upgraded or type 'continue force' to attempt the integration anyway.

Table 47 user messages

soupRetryVerifyCPU0Change	Error: Failed to verify the CPU change. Type 'continue' to retry the CPU verification or type 'continue force' to attempt the integration anyway.
soupRetryExitSplitmode	Error: Failed to inform the CM of upgrade completion. Type 'continue' to retry or type 'fallback' to attempt integration anyway.
soupInitialPromptFor OriginalCPU1	Please insert the original Domain 1 CPU. Type 'continue' once the original CPU has been inserted or type 'continue force' to attempt the integration anyway.
soupAdditionalPromptFor OriginalCPU1	Error: Original Domain 1 CPU has not been inserted. Type 'continue' once the original CPU has been inserted or type 'continue force' to attempt the integration anyway.
soupRetryVerifyCPU1Change	Error: Failed to verify the CPU change. Type 'continue' to retry the CPU verification or type 'continue force' to attempt the integration anyway.
soupSplitmodeAbortComplete	Fall-back complete. If any alarms are raised, they should be cleared by following the normal documented alarm clearing procedures.
soupAbortMtceOpenFailed	Error: Failed to mtce open links. Continuing to fall-back anyway.
soupAbortCloseFailed	Error: Failed to close links. Continuing to fall-back anyway.
soupAbortOpenFailed	Error: Failed to open links. Continuing to fall-back anyway.
soupAbortFailExitSplitmode	Error: Failed to inform CM of fall-back completion. Continuing to fall-back anyway.

18.4 Progress status:

Status are updated on the *Split* screen dynamically as the upgrade progresses. These strings are the ones displayed after the state name and percentages. The “waiting for domain 1 upgrades” string in figure on page 4 is an example. The following lists the possible strings for each off the states.

Table 48 status text strings

Split
Informing CM of split upgrade
Informed CM of split upgrade
Waiting for OS upgrade tape in Domain 1
Checking for the tape
Checking tape for firmware upgrade
Installing firmware upgrade
Checking system status
System status check passed
Closing Domain 1 DS512 links
Domain 1 DS512 links closed
Unconfiguring Domain 1
Domain 1 unconfigured
Please upgrade Domain 1 CPU
Domain 1 CPU upgraded
Checking Domain 1 CPU firmware version
Powering down Domain 1 CPU
Upgrading Domain 1 CPU firmware
Domain 1 CPU firmware upgraded
Firmware upgrade not required for Domain 1
Splitting system
Split completed
Failed to install new firmware
System status check failed
Failed to inform CM of upgrade

Table 48 status text strings

Failed to close Domain 1 DS512 links
Hardware error detected
Domain 1 CPU firmware upgrade failed
User fall-back completed
Falling back...
Reconfiguring Domain 1
Domain 1 reconfigured
Cleaning up
Opening Domain 1 DS512 links
Domain 1 links opened
Fall-back completed
Fall-back failed
Failed to inform CM of upgrade fall-back
User fall-back requested!
User fall-back requested!
Falling back...
Unsplitting
Unsplit
Fall-back failed
Please replace Domain 1 CPU with original
Unsplit fall-back completed
Configure
Waiting for user input
Waiting for Domain 1 upgrades
Domain 1 available
In-progress
Transferring system files
Commissioning file systems
Commissioning users
Mtce opening Domain 1 DS512 links
Domain 1 DS512 links mtce open

Table 48 status text strings

Validating Domain 1 system
Domain 1 system validation passed
Domain 1 system validation failed
User fall-back requested!
Falling back...
Closing Domain 1 links
Failed to close Domain 1 links
Domain 1 links closed
Config fall-back completed

SwAct

Waiting for SwAct continue indication
Verifying filesets
Preparing for file transfer
Prepared for file transfer
Testing Domain 1 DS512 links
Warning applications
In progress
Busying applications
Stopping DCE on Domain 0
Closing Domain 0 DS512 links
Switching active to Domain 1
Switch active to Domain 1 complete
Opening Domain 1 DS512 links
Transferring data
Transferring files
Files transfered
Starting DCE on Domain 1
Starting applications
Applications started
User fall-back requested!

Table 48 status text strings

Falling back...
Preparing for file transfer
Prepared for file transfer
Mtce opening Domain 0 DS512 links
Failed to mtce open Domain 0 DS512 links
Warning applications
In progress
Busying applications
Busy failed
Closing Domain 1 DS512 links
Failed to close Domain 1 DS512 links
Stopping DCE on Domain 1
Failed to stop DCE
Switching active to Domain 0
Switch active to Domain 0 successful
Starting DCE on Domain 0
Opening Domain 0 DS512 links
Transferring files
Files transfered
Starting applications
Applications started
Abort SwAct completed

Integrate

Waiting for continue to begin integration
Pre-integration check passed
Beginning integration
Integration begun
Please upgrade Domain 0 CPU
Domain 0 CPU upgraded
Domain 0 CPU upgraded
User fall-back requested!

Table 48 status text strings

Opening Domain 0 DS512 links
Domain 0 DS512 links opened
Integration in progress
Cleaning up
Failed to inform the CM of upgrade completion

18.5 QuerySDM Commands

18.5.1 QuerySDM status

When an upgrade is in progress, the upgrade status is displayed before the usual QuerySDM status output.

'QuerySDM status' output during upgrade

```

SDM Remote Maintenance Interface
Active      SDM   CON   LAN   APPL  SYS   HW           CM : FCC11
Domain 0    I     .     .     .     .     .           SDM: bmerye76
MTC
0 Quit      SDM Node State:           ISTb .../Upgrade in Progress
2 Con
3 LAN
4 Appl
5 Sys      Online upgrade status:
6 Hw       Split      : [100%] Completed
7 Bsy      Configure: [----] Waiting for domain 1 upgrades
8 RTS      SwAct      : [----]
9 OffL     Integrate: [----]
10         A L S C     I F C E D D D D 5
11         P A Y O     C A P T S S S A 1
12         P N S N     M N U H K K K T 2
13         . . . .   D0 . . . . . . . .
14 QuerySDM . . . .   D1 . . - - - - -
15 Locate
16
17 Help
18 Refresh
root
Time 17:03 >

```

18.5.2 QuerySDM mate option

The *mate* option can be used on QuerySDM commands to return the status of the mate domain. The result displayed is the same as executing the QuerySDM command on the mate. The following error message is returned if the mate is not accessible.

```
>QuerySDM flt mate
Remote side of SDM is not accessible. Command failed
```

18.5.3 Locate command

When the SDM is split, the locate command will list either domain 0 or domain 1 modules, depending on whether the user is on SYSOLD or SYSNEW. The *mate* option is available to list modules in the mate domain.

18.6 Hardware status

It is possible for device states to be CBsy during upgrade.

Hw level while in split state before system is split

```

SDM Remote Maintenance Interface
Active   D0   SDM   CON   LAN   APPL  SYS   HW           CM : FCC11
          I   .   .   .   .   .   .           SDM: bmerye76

Hw
0 Quit   SDM Node State:           ISTb .../Upgrade in Progress
2        SDM Hardware State:  ISTb
3
4 Logs   I I F F C E D D D D 5
5        C C A A P T S S S A 1
6        M M N N U H K K K T 2
7 Bsy    1 2 1 2     1 2 3
8 RTS    0 . . . . . . . . . .
9        1 . . . . C C C C C C C
10
11
12
13
14 QuerySDM
15 Locate
16
17 Help
18 Refresh
root
Time 17:03 >

```

Hw level after system is split

```

SDM Remote Maintenance Interface
Active   D0   SDM   CON   LAN   APPL  SYS   HW           CM : FCC11
          I   .   .   .   .   .   .           SDM: bmerye76

Hw
0 Quit   SDM Node State:           ISTb .../Upgrade in Progress
2        SDM Hardware State:  ISTb
3
4 Logs   I I F F C E D D D D 5
5        C C A A P T S S S A 1
6        M M N N U H K K K T 2
7 Bsy    1 2 1 2     1 2 3
8 RTS    0 . . . . . . . . . .
9        1 . . . . - - - - - - -
10
11
12
13
14 QuerySDM
15 Locate
16
17 Help
18 Refresh
root
Time 17:03 >

```

18.6.1 Alternatives for Split screen:

The following are alternatives that were considered but not chosen.

show percentage completion through the use of percentage bars

```

SDM Remote Maintenance Interface
SDM      CON      LAN      APPL      SYS      HW      CM : FCC11
I        I        .        .        .        .        SDM: bmerye76

Upgrade
0 Quit   SDM Node State: ISTb      .../Upgrade in Progress
2
3 Overall Completion:      [*****      ]
4 Current Step: entering simplex mode
5 Current Step Completion: [*****      ]
6 Start  Current Action: Powering down domain 1 CPU
7 Continue
8 Abort
9
10
11
12
13
14 QuerySDM
15 Locate
16
17 Help
18 Refresh
root
Time 17:03 >

```

show separate each node state for

```

SDM Remote Maintenance Interface
SDM      CON      LAN      APPL      SYS      HW      CM : FCC11
I        I        .        M        I        .        SDM: bmerye76

SmUpgd
0 Quit   Upgrade State: split in progress.../Command in Progress
2
3 SDMD0 SDMD1 CPUSync ActiveCPU DiskSync
4 I      I      no      D0      no
5
6 GoSmplx
7 Split
8 Validate
9 SwOver
10 GoFT
11
12
13
14 QuerySDM
15 Locate
16
17 Help
18 Refresh
root
Time 17:03 >

```

18.7 Catastrophic Recovery

18.7.1 Recover Script:

During the split mode process, the system is susceptible to faults. Often, the system must be rebooted during the recovery process.

A script called “souprecover.text” is provided to assist in the recovery process. It should only be used if all other methods of recovery fail.

The script will attempt to bring the system to the FT_START state after a system crash. If it is unsuccessful, it will try to go to the CATASTROPHIC_RECOVER state and then transition back to FT_START.

The recover script can be found in the /sdm/mtce/soup/ directory.

19. SWIM man machine interface (MM)

19.1 Purpose

This document outlines the use of Software Inventory Manager (SWIM) inside the Remote Maintenance Interface (RMI).

19.2 Synopsis

SWIM provides the user interface (UI) for local SDM software installation and maintenance. SWIM has commands for applying new software, updating all software to newest level, removing software, committing software, viewing the history of previous commands, viewing all SDM and OS filesets and running user input configuration scripts.

19.3 SWIM and AIX software management basics

Below is a description of how SWIM and AIX handle installing software. Terms are defined that may be used throughout the document. If you are unfamiliar with the SDM installation guidelines the following may help you understand what the purpose of SWIM is. This section does not cover every detail of installation. For more see *SDM Software Product Packaging and Installation* in the *Application Programmer's Guide*.

19.3.1 NCL/MNCL

The SDM group delivers its software in the form of NCLs for a release of an SDM product and MNCLs for corrective content software delivery. These could be tapes or an electronic software delivery to a remote SDM.

19.3.2 Packages

An NCL or MNCL is divided up into software Packages. An example of SDM packages are SDM_BASE, SDM_ETA, SDM_SFT. Packages are the software groups that a customer can purchase. For example, a customer may purchase SDM_BASE but not SDM_SFT.

19.3.3 Filesets

A package can be further divided into filesets. Filesets are the atomic units that are installed on an SDM. When SWIM is used it will display software on an SDM at the fileset level. It is possible to install only part of a package by selecting individual filesets. For example, the SDM_BASE package is divided up into several filesets: SDM_BASE.mtce, SDM_BASE.client, SDM_BASE.logs, etc., but it is possible to only install SDM_BASE.mtce and leave the others off of the SDM.

19.3.4 Fileset images

Prior to installation a fileset is stored on a digital audio tape (DAT) or a directory as an install or corrective content image. An image contains all the fileset executables and scripts together in archive format. When applying a fileset, the user selects an image to use.

19.3.5 Fileset names and version numbers

Filesets have version numbers to indicate how recent the software is and the application of software corrective content. The numbering scheme may change but the current standards are as follows. There are four numbers, the first indicates the SDM release. The second indicates any major changes to that release. The third is the loadbuild number and the fourth is the software corrective content version. An initial install of SDM 9 may be 9.0.21.0, later this may be updated by software corrective content to version 9.0.21.1. The fileset version numbers shown in Figure 3 do not necessarily represent the version numbers which are available on a real SDM, they are simply meant to show the example of the results of applying or removing a fileset.

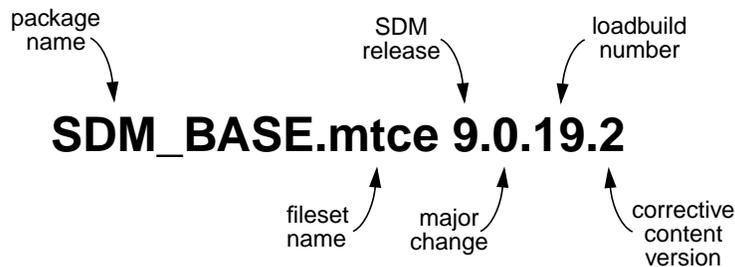


Figure 3 How to read a fileset name and version number.

19.3.6 Install versus corrective content images

The user is given the ability to apply filesets to the SDM by selecting fileset images to install. Fileset images are divided into two classes, install images and software corrective content images. The behavior of SWIM is different depending on the type of image that is selected to be applied. An install image contains every file and executable needed for that fileset, while software corrective content may only contain some of the files and executables for that

fileset. An install image can be used to apply the software for the first time on an SDM. Software corrective content cannot be used if the software does not already exist on the SDM. Software corrective content is applied to fix problems found in the original install image.

When shown in the fileset list on the SWIM Apply command menu in the RMI, install fileset images are marked with an (*) character to distinguish them from software corrective content fileset images. It is important to note that applying an install image will result in the loss of all archived versions of that fileset.

19.3.7 SWIM actions on filesets

The actions that SWIM can perform with the installed filesets the filesets listed on the installation directory or the installation tape are described below and pictorially in Figure 4.

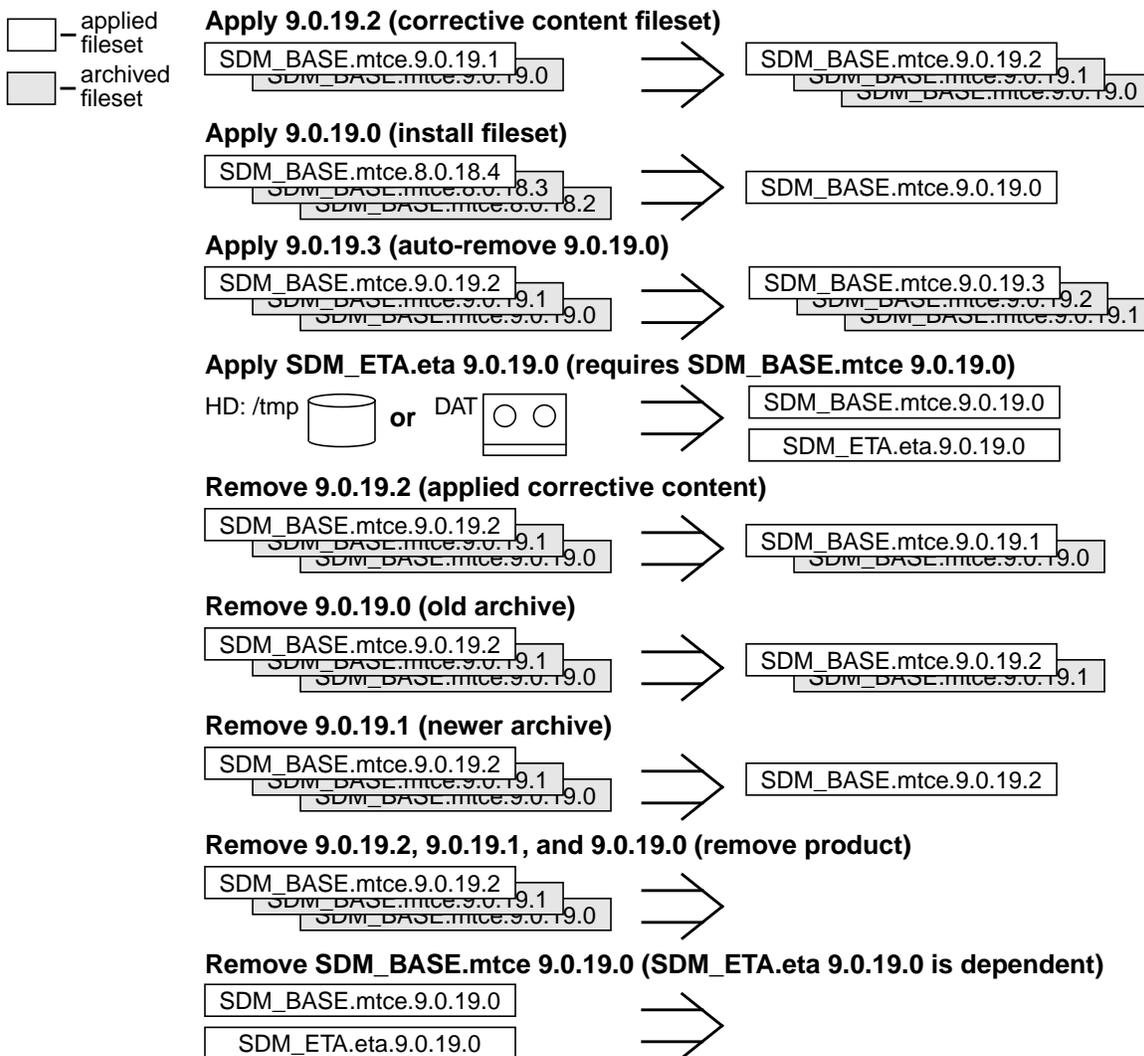


Figure 4 Fileset application and removal.

19.3.7.1 Applying software corrective content and Auto-Remove

When the user applies software corrective content, the older fileset images are archived. The newly applied fileset version can be removed to restore the archived fileset. If after the application of new corrective content, there are three archived versions of the fileset that is being applied already installed on the SDM, then the oldest archived version will automatically be removed to conserve disk space.

19.3.7.2 Applying install images

When the user applies an install fileset image, any versions of that fileset currently installed or archived on the SDM are removed. Install images are marked with an asterisk (*) character when listed in the SWIM Apply command menu in the RMI.

19.3.7.3 Application of requisites

If a user attempts to apply a fileset image that requires that another fileset is installed on the SDM beforehand, then both filesets will be added automatically. The user will be notified of this automatic action.

19.3.7.4 Removing new corrective content (falling back)

If software corrective content is applied then the existing software is archived. Software corrective content can be removed later if a problem was found, and the original software will be restored.

19.3.7.5 Removing archived fileset images

Software corrective content can be applied several times resulting in several fileset images archived on the SDM hard disk. This can consume a considerable amount of disk space. The user can use the Remove command to delete archived fileset images which exists on the SDM.

If the user removes a newer archived version which is installed on top of an older archived version, then the older archived version will be removed as well. The user is warned when any filesets that have not been selected are removed.

19.3.7.6 Removing entire products

If the user selects to remove every installed version of a particular fileset, then the user is warned that this is the case. This is known as removing a product.

19.3.7.7 Removal of dependencies

If the selected fileset has dependencies (i.e. the selected fileset is a requisite for another fileset), then the dependent filesets must be removed along with the selected fileset. The user is warned that this is the case and asked whether or not he wishes to proceed with the operation before it is carried through.

19.3.8 Software States

The filesets installed properly on the SDM are considered to be in the *Applied* (currently installed) or the *Archived* state. If a fileset is unusable or damaged then it is considered to be in the *Failed* state. Table 49 shows a list of the possible SWIM fileset states and their meaning. Figure 5 shows the possible transitions between the SWIM states.

Table 49 SWIM fileset states.

SWIM State	Description
APPLYING	installp is currently installing the fileset.
APPLIED	The software is currently being used by the SDM. If a previous version of the fileset exists in the Archived state, this fileset may be removed to restore the previous version.
FAILED	The fileset application failed and the fileset should be reinstalled before being used.
ARCHIVED	The fileset is stored in the archives, and can be restored.
REMOVING	This fileset is being removed.

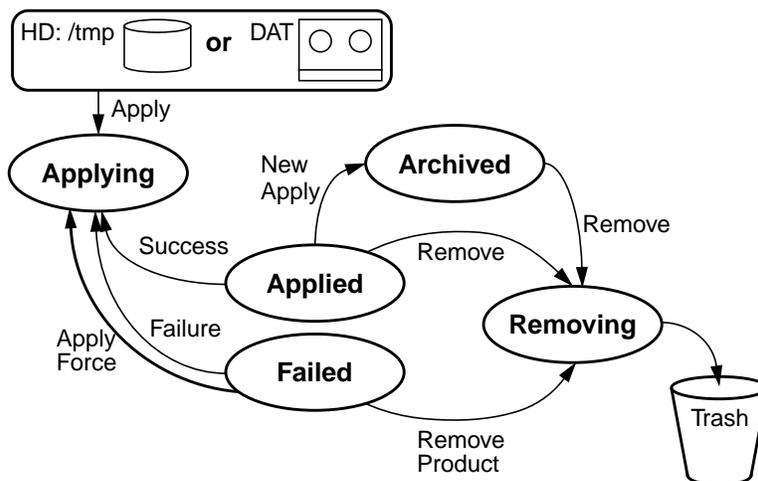


Figure 5 SWIM fileset state transition diagram.

19.4 User interface functionality

19.4.1 SWIM menu hierarchy

SWIM is located underneath the Admin->SWIM path from the RMI. SWIM has a menu hierarchy displayed in the Figure 6.

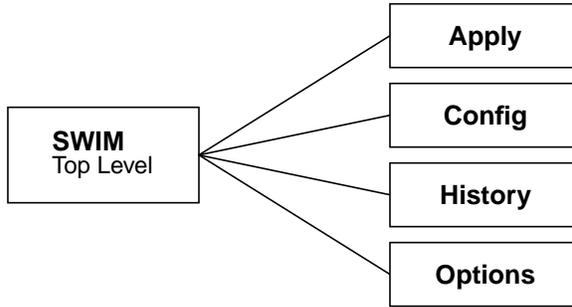


Figure 6 SWIM Hierarchy

19.4.2 SWIM main menu

Once the user has entered the SWIM top level the current SDM software status is displayed. By default the user is only shown the SDM software installed on the SDM, and not the OS software. The filter command is used to control the filesets that are displayed.

```

SDM Remote Maintenance Interface
SDM   CON   LAN   APPL  SYS           CM : CMCLLI
      .   .   .   .   .           SDM: SDMCLLI

SWIM
0 Quit      List Filter: off
2 Apply     # Fileset Description          Version      Status
3 Config    1 Platform Maintenance        9.0.99.0    APPLIED
4           2 Enhanced Terminal Access    9.0.42.1    FAILED
5 History   3 Enhanced Terminal Access    9.0.42.0    ARCHIVED
6           4 AIXwindows aixterm Applicatio 4.1.3.0     APPLIED
7           5 AIXwindows Runtime Configurat 4.1.4.0     APPLIED
8 Remove    6 AIXwindows Utility Applicatio 4.1.0.0     APPLIED
9           7 AIXwindows Runtime Common Dir 4.1.0.0     APPLIED
10          8 AIXwindows Runtime Libraries  4.1.4.0     APPLIED
11 Options  9 AIXwindows Runtime Shared Mem 4.1.4.0     APPLIED
12          10 AIXwindows Runtime Shared Mem 4.1.4.0     APPLIED
13          11 AIXwindows Client Locale Conf 4.1.1.0     APPLIED
14          12 AIXwindows Motif Libraries    4.1.4.0     APPLIED
15 Filter   13 AIXwindows Motif Window Manag 4.1.3.0     APPLIED
16          14 AIXwindows aixterm Messages - 4.1.1.0     APPLIED
17 Help     15 AIXwindows Runtime Config Mes 4.1.1.0     APPLIED
18 Refresh  16 AIXwindows Common Messages - 4.1.1.0     APPLIED

SDMUSERID
Time 17:03 >
  
```

Figure 7 SWIM Top Level

There are four columns of information. The first column is a number representing each of the filesets in the list. The second column is the fileset name or description of the SDM or AIX software package installed on the SDM. The text shown in the Fileset column is either the fileset description text, or the actual name of the fileset. For example, the fileset *SDM_BASE.mtce* has *Platform Maintenance* as description text. The *Filter View* command is used to change this text.

The third column is the fileset version number, and the fourth column is the fileset status. See “19.3.8 Software States” for more information on the fileset status.

The information displayed at the SWIM level is a dynamic display, the screen will update if another user has applied or removed a fileset.

19.4.2.1 Command use restriction

SWIM allows the use of the *History* menu, and the *Up*, *Down*, *Filter*, *Help* and *Refresh* commands by any user at any time. The *Apply*, *Config*, and *Options* menus and the *Remove* command can only be used by the root user while not on SYSOLD on an SDM FT running in split-mode.

19.4.2.2 Quit

The *Quit* command returns the user to the Admin command menu.

19.4.2.3 Apply

The *Apply* command places the user in the Apply command menu. See “19.4.3 Apply command menu” for more detailed information about the Apply command menu.

19.4.2.4 Config

The *Config* command places the user in the Config command menu. See “19.4.4 Config command menu” for more detailed information about the Config command menu.

19.4.2.5 History

The *History* command places the user in the History command menu. See “19.4.5 History command menu” for more detailed information about the History command menu.

19.4.2.6 Remove

Syntax: remove <fileset number> [<fileset number> [...]]

The *Remove* command allows the user to remove filesets from the numbered list shown on screen. To remove a fileset, the user types ‘remove’ followed by the fileset number that he wishes to remove. The fileset number is the number shown to the left of the fileset name on the list.

19.4.2.6.1 Dependency removal

Before actually removing any software corrective content SWIM checks to see if any dependencies exist that the user did not already select. If any are found then SWIM displays the list of dependencies that will automatically be removed. The user has the choice to continue or cancel, however the user does not have the choice to remove without the dependencies.

```
Warning: Some dependencies will be removed automatically:
        SDM_ETA.eta 9.0.21.1
        SDM_SFT.sft 9.0.21.1
```

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

19.4.2.6.2 Removing a product

If the user removes all of the fileset versions for a single fileset, then the user is removing a product. SWIM verifies with the user to ensure the he wishes to do this. It is unlikely that the user will use this command often so the below message is given, where the user has a chance to abort.

```
Warning: The following filesets will be removed permanently:
```

```
        SDM_ETA.eta
        SDM_SFT.sft
```

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

After SWIM is finished checking the user selections SWIM will delete the software. The progress is displayed to show fileset count and which fileset is currently being removed.

19.4.2.6.3 Removal progress

After SWIM is finished checking the user selections SWIM will remove the software. The progress is displayed to show a fileset count and which fileset is currently being removed.

```
Command in progress.

REMOVING fileset: 1
        SDM_ETA.eta 9.0.21.1
```

When all filesets are processed one of three messages will appear

```
No changes to filesets detected.
```

or

```
Command completed with no errors.
```

or an error message. See the appendix for a list of possible error messages.

19.4.2.6.4 Removing the applied SDM_BASE.mtce fileset

The SWIM software will warn the user before allowing him/her to remove the currently applied Platform Maintenance (SDM_BASE.mtce) fileset. The user is warned because after the removal is complete, the user must exit the sdmmtc software and restart it. If only one sdmmtc process is executing, then the following warning message is displayed on screen:

```
Platform Maintenance is being modified. You should close and
reload sdmmtc program after it is finished.
```

If more than one sdmmtc process is running, then the following warning message is displayed on screen:

```
Platform Maintenance is being modified. You should close and
reload the sdmmtc program after it is finished.
Please close the n other sdmmtc processes that are currently
executing.
```

19.4.2.6.5 Remove restrictions

The SWIM remove command does not allow the user to remove certain filesets.

1. The user may not do a product removal of AIX filesets with the SWIM Remove command. However, the user may remove any corrective content for the AIX fileset that had previously been installed with the SWIM software. If the user attempts to remove all versions of an AIX fileset, the SWIM software will display the following error message on screen:

```
SWIM cannot be used to remove a non SDM product.
```

2. The user may not do a product removal of the SDM_BASE.mtce (Platform Maintenance) fileset. This is the fileset which contains the maintenance software for the SDM, and every other SDM fileset depends on it. Removal of this fileset will cause the removal of every other fileset installed on the SDM. However, SWIM will allow the user to remove patches to the SDM_BASE.mtce fileset. If the user attempts to remove all versions of the SDM_BASE.mtce fileset, then the SWIM software will display the following error message on screen:

```
SWIM cannot be used to remove the Platform Maintenance product
(SDM_BASE.mtce).
```

19.4.2.7 Options

The Options command places the user in the Options command menu. See “19.4.6 Options command menu” for more detailed information about the Options command menu.

19.4.2.8 Up & Down

SWIM frequently uses scrollable lists to display the fileset content. Each scrollable list can be moved up one screen length with the *Up* command and moved down one screen length with the *Down* command.

19.4.2.9 Filter

19.4.2.9.1 Syntax and description

Syntax: `filter <{off, sdm, os, view} |
<sub-string> [<sub-string> [...]]>`

The *Filter* command has three uses; First, it can change the display list with one of the *off*, *sdm*, or *os* sub-commands to turn off the filter, display only sdm filesets, or display only OS filesets respectively. Second, providing a *sub-string* parameter can make the displayed list shorter by only displaying entries matching the filter sub-string. Third, the user may toggle between fileset description view, and the fileset name view. If no parameter is supplied then SWIM will ask for a sub-string to search for.

19.4.2.9.2 Filter sdm

This command will filter the fileset list by allowing only the list entries who's fileset name begins with 'SDM_'. Thus only SDM filesets are shown in the list. Further filters can be made with the *Filter <sub-string>* command.

19.4.2.9.3 Filter os

This command is the opposite of the Filter sdm command. This command will filter out all of the list entries who's fileset name begins with 'SDM_'. Thus only OS filesets are shown in the list. Further filters can be made with the *Filter <sub-string>* command.

19.4.2.9.4 Filter <sub-string>

If given a parameter the filter command will do a case insensitive search on the fileset name or description, version, and status. The list then redisplay with only the filesets that have a sub-string matching the parameter. The sub-string search acts like the UNIX 'grep' command except that no wildcards or regular expressions are accepted. For example, if the user was to type

```
filter off;filter ai
```

at the RMI prompt, then the list would include all of the filesets which contained the text 'ai', even if they do not include a word 'ai'. This search is equivalent to a shell file expansion search of "*ai*" or the regular expression ".*ai.*". In this case, the user will likely see filesets in the failed state, and AIX filesets.

The user can enter more than one sub-string by which to filter the fileset list. Each sub-string causes a subsequent execution of the filter command, so that the final list has been filtered by each sub-string in sequence.

If no filesets contain the sub-string text, then the fileset list will not change.

19.4.2.9.5 Filter view

The second column in the fileset list on the main SWIM menu contains the fileset name or description. The *Filter view* command toggles the display of either the fileset name or the fileset description in that column.

If the fileset description is currently being displayed, the user can enter 'filter view' to show the fileset names. The header of the fileset list will then become:

```
# Fileset Name                               Version           Status
```

If the fileset name is currently being displayed, then entering the 'filter view' command will cause the fileset description to be displayed again. The header for the fileset list will then become:

```
# Fileset Description                         Version           Status
```

The filter view command has no effect on the list filter, however the filter command will only search through text shown on the screen: if the fileset name is displayed, then the searching only goes through the fileset name, and not the fileset description. Of course, the opposite is true if the fileset description is displayed.

19.4.2.10 Help

The Help command can be used to show help about the commands in the SWIM command menu. This is the standard help command provided in every RMI command menu.

19.4.2.11 Refresh

This is the standard refresh command used to refresh the RMI display.

19.4.3 Apply command menu

The Apply command menu is used for three main tasks. The first is to apply software corrective content on the SDM. The second is to apply new software on the SDM. The third is to apply an older version of the software. If the newer version cannot be removed and is causing problems then an install fileset image can overwrite the existing software.

Upon entering the Apply command menu, the default source device or directory is read to create a list of available filesets, the version currently applied on the SDM, the version of that fileset found on the device. If the default device could not be read, then where the list is normally displayed the user will be given an error message and told to use the *Source* command to read a different directory. If the fileset found on the tape is not installed on the SDM, the version applied field will read 'N/A' for that fileset. If there is a fileset with several different versions, all will be displayed. If the SDM has a version newer than the image version it will still be displayed.

It is possible that the list extends onto several screens worth so the Up/Down commands will allow the user to scroll the list up or down, and the filter command will allow the user to make the list shorter.

An asterix (*) character is shown beside the available fileset version to indicate that the fileset image is an install image. This means that if the user installs that fileset image, all archives of that fileset will be removed from the SDM's hard disk.

```

SDM Remote Maintenance Interface
SDM   CON   LAN   APPL  SYS           CM : CMCLLI
      .   .   .   .   .           SDM: SDMCLLI

Apply
0 Quit      Source Device: /dev/rmt0
2          # Fileset                Current      Available
3 Source    1 Enhanced Terminal Access    9.0.42.0    9.0.42.1
4          2 Enhanced Terminal Access 9.0.42.0    9.0.42.0 *
5          3 Platform Maintenance   9.0.42.2    9.0.42.2
6          4 Platform Maintenance   9.0.42.2    9.0.42.1
7 Select    5 Platform Maintenance          9.0.42.2    9.0.42.0 *
8 Apply     6 Secure File Transfer         N/A         9.0.42.1
9          7 Secure File Transfer         N/A         9.0.42.0 *
10
11
12
13
14
15 Filter
16
17 Help
18 Refresh
SDMUSERID
Time 17:03 >

```

Figure 8 Apply command menu

19.4.3.1 Source

Syntax: source <device/directory>

The source command is used to read a directory or device to rebuild the list of available filesets. If the user types 'source' and presses [Enter], then he will be prompted to enter the directory name, or tape, or [Enter] to use the default device/directory.

Specify a directory or one of the following tape drives:

- ```

Type: To select:
 0) Tape drive in main chassis slot 2
 1) Tape drive in main chassis slot 13

```

Press Enter to select the default: /home/swd

If the user types 'abort' then SWIM will cancel the command. Once the device is entered SWIM checks to see if any filesets exist on the device. If the user input was not a tape and no directory by that name exists then the error message:

```
Directory path "/no/directory/exists/here" does not exist.
```

If the directory or tape device exists but no filesets exist then the following error message is displayed, and the fileset list will be empty.

```
No filesets listed.
```

Use the Source command to read another directory or device.

### 19.4.3.2 Select

**Syntax:** `select <number|text> [<number|text> [...]]`

#### 19.4.3.2.1 Selecting a fileset

The user marks which filesets (s)he wishes to apply by using the Select command. Select will place a greater than symbol (>) beside the chosen fileset(s). Select takes a parameter to indicate which fileset to mark. For example, 'select 1' will mark Enhanced Terminal Access 9.0.42.1 as shown in the above figure. To deselect one reselects the marked fileset using the select command. In other words, select toggles the '>' that marks the fileset. Select can take many parameters so 'select 1 2 3 4 5 6 7' will mark all the filesets in the above diagram. Select also takes text as a parameter and attempts to match the text to the fileset name. For example, 'select Secure' will mark 6 and 7 as selected.

Once the user is satisfied with the selection they have made they can execute the Apply command to apply the selected filesets.

#### 19.4.3.2.2 Deselecting a fileset

The select command is used to deselect filesets as well as select a fileset. Selected filesets are marked with the '>' character. Selecting that fileset again will cause it to be deselected, and the '>' character is removed.

### 19.4.3.3 Apply

**Syntax:** `apply [all|fileset number [fileset number [...]]]`

The Apply command is used to update the SDM software. The Apply command has two modes. If the user types 'apply all', then the SWIM software will automatically apply the most recent updates for the software that is currently installed on the SDM. If the user has selected filesets in the list, the Apply command (without the all argument) will apply the selected filesets. If the user gives a list of fileset numbers as arguments to the apply command, then those filesets will be installed on the SDM.

#### 19.4.3.3.1 Apply All

Apply All will update all existing software to the newest version available. Apply All will update both SDM and AIX filesets. It is the fastest way to apply software corrective content or subsequent installs. No difficult decisions need to be made because SWIM will decide what filesets to apply.

If no filesets are listed in the fileset list, then the SWIM automatically executes the Source command before resuming the Apply All (see “19.4.3.1 Source” for more on the Source command).

From here on, the Apply All command acts as described in “19.4.3.3.8 Apply progress”.

#### **19.4.3.3.2 Apply (no parameters)**

If the user has selected filesets, then the Apply command (without any parameters) will apply the filesets selected by the user with the Select command. If the user had not selected any filesets, then the user is asked to select filesets before using the Apply command.

After the user has called the Apply command, checks will be made to determine what the user is trying to accomplish. SWIM will check for force installs (see “19.4.3.3.4 Applying old fileset install images”), superseded corrective content (see “19.4.3.3.5 Applying fileset corrective content, but not the newest available”), and requisites (see “19.4.3.3.6 Application of requisites”). Once these checks have been completed, the software continues as described in “19.4.3.3.8 Apply progress”.

#### **19.4.3.3.3 Apply [number] [number] [number]**

If the user types in fileset numbers as parameters to the Apply command (for example: `apply 1 3 5`), then only those filesets will be installed whether or not the user has selected filesets with the *Select* command.

After the user has called the Apply command, checks will be made to determine what the user is trying to accomplish. SWIM will check for force installs (see “19.4.3.3.4 Applying old fileset install images”), superseded corrective content (see “19.4.3.3.5 Applying fileset corrective content, but not the newest available”), and requisites (see “19.4.3.3.6 Application of requisites”). Once these checks have been completed, the software continues as described in “19.4.3.3.8 Apply progress”.

#### **19.4.3.3.4 Applying old fileset install images**

If the user attempts to install a fileset install image with a package version less than the current version then the following message is displayed.

```
You have selected to apply older software over the currently
installed version:
```

```
SDM_BASE.mtce 9.0.21.0 over 9.0.21.2.
```

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

SWIM only allows the user to install one older fileset install image at a time. If the user has selected multiple filesets along with the older fileset install image then SWIM will return an error.

SWIM does not allow the user to apply older software corrective content fileset images. These images may require the installation of an older install image before they work properly. For this reason, the user must remove the newer corrective content fileset first, and install the older fileset afterwards.

#### **19.4.3.3.5 Applying fileset corrective content, but not the newest available**

It may be possible that there are several corrective content filesets for the same fileset name on one tape. Typically a user would only apply the newest corrective content and leave the older corrective content alone (the *Apply all* command does this automatically).

There may be cases where the user needs to do this. If an MNCL tape has two sets of software corrective content filesets and it is found that after shipping the newest software corrective content is unstable then the users can selectively apply the older set of software corrective content.

Because of a limitation in the underlying operating system software, to install the older corrective content fileset the user may be asked to install the requisite filesets. SWIM will show the list of requisite filesets which need to be installed first. If no requisite filesets need to be installed, then SWIM will proceed with the installation of the older corrective content fileset.

The following error message displayed when this case occurs:

```
A selected software corrective content fileset is superceded
by newer software. Requisites will not be automatically
applied. Please apply the following filesets first:
```

```
SDM_BASE.mtce 9.0.19.2
SDM_BASE.client 9.0.19.2
```

#### **19.4.3.3.6 Application of requisites**

The user may have selected a fileset that has a requisite that they did not have selected. SWIM will notify the user that some filesets will be automatically selected. The user can then agree to allow the requisites to be included or cancel the apply. SWIM does not allow the requisites to be ignored, doing so could place the SDM in an unsupported state. For example, SDM\_SFT.sft 9.0.21.0 should not installed without SDM\_BASE.mtce 9.0.21.0. An example of the potential warning follows:

```
Note: Some requisites will be applied automatically:
SDM_BASE.mtce 9.0.21.0
SDM_BASE.client 9.0.21.0
```

#### 19.4.3.3.7 Applying the SDM\_BASE.mtce fileset

The SWIM software will warn the user before allowing him/her to apply the Platform Maintenance (SDM\_BASE.mtce) fileset. The user is warned because after the application is complete, the user must exit the sdmmtc software and restart it. If only one sdmmtc process is executing, then the following warning message is displayed on screen:

```
Platform Maintenance is being modified. You should close and
reload sdmmtc program after it is finished.
```

If more than one sdmmtc process is running, then the following warning message is displayed on screen:

```
Platform Maintenance is being modified. You should close and
reload the sdmmtc program after it is finished.
Please close the n other sdmmtc processes that are currently
executing.
```

#### 19.4.3.3.8 Apply progress

For either the Apply or Apply All command, SWIM shows the progress of the command by displaying a fileset count and which fileset is currently being applied.

```
Command in progress.

APPLYING fileset: 1
SDM_BASE.client 9.0.21.1
```

When all filesets are updated to the newest version then a message is displayed indicating the result of the apply. One of three messages will appear

```
No changes to filesets detected.
```

or

```
Command completed with no errors.
```

or an error message. See the appendix for a list of possible error messages.

If the resulting state for the newly installed fileset is the FAILED state, then the user is warned of this case. For example,

```
Warning: the following filesets are in the failed state:

SDM_ETA.eta 9.0.12.1
```

**NOTE:** *If an error occurs and a fileset is in the FAILED state (as shown on the SWIM main menu), then the user should refer to “19.5 Fault clearing procedures” to clear the fault.*

#### 19.4.3.3.9 Configuration scripts

When the Apply command has finished, SWIM checks for configuration scripts which have been installed by the application developer (through the installation scripts which are executed automatically as part of the Apply process).

If the configuration scripts exist, the user is shown a list of configuration scripts which have not been executed yet. The user is then advised to use the Config command menu to execute those commands.

```
An application applied has installed a configuration script
which must be executed before the software is brought on-line.
```

```
Configuration scripts were found for the following packages:
SDM_BASE.mtce (Platform Maintenance)
SDM_ETA.eta (Enhanced Terminal Access)
SDM_SFT.sft (Secure File Transfer)
```

```
Please execute these scripts from the Config command menu.
```

Please see “19.4.4 Config command menu” for more information on the config command menu.

#### 19.4.3.4 Filter

The filter command can be used to filter the list and show only those filesets that the user is interested in. This command accepts the same parameters as the filter command in the SWIM main menu. Please see “19.4.2.9 Filter” for more information.

### 19.4.4 Config command menu

Some SDM filesets may require user input to complete an installation of a fileset. If such a fileset was applied then that fileset will have an *Unconfigured* script available in the config menu.

When the user enters the Config menu, a selectable list of configuration scripts is shown. For each script, the name of the script and the script status is displayed.

```

SDM Remote Maintenance Interface
SDM CON LAN APPL SYS CM : CMCLLI
 SDM: SDMCLLI

Config
0 Quit # Fileset Description Status
2 1 Enhanced Terminal Access FAILED
3 2 Secure File Transfer UNCONFIGURED
4 3 Platform Maintenance PASSED
5
6
7 Select
8 Config
9
10
11
12
13
14
15 Filter
16
17 Help
18 Refresh
SDMUSERID
Time 17:03 >

```

Figure 9 Config command menu

The script status can have one of the three values show and described in Table 50.

Table 50 Config script status values.

| Config Status | Description                                                                                                                                                                     |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UNCONFIGURED  | The script has recently been installed when it's fileset was applied to the SDM and should be executed before that application is brought on-line.                              |
| PASSED        | The script had previously been executed and is available for execution again. Some configuration scripts can be executed more than one time if there are some changes required. |
| FAILED        | The configuration script had previously been executed but it failed during it's execution.                                                                                      |

There are several methods for executing configuration scripts. First, the user can type 'Config All' to execute all incomplete or failed scripts. Second, the user can select configuration scripts to execute with the Select command and use the Config command to execute them. Third, the user can specify the configuration script numbers to execute as parameters to the Config command.

#### 19.4.4.1 Select

The Select command works as described in "19.4.3.2 Select". It is the same as for the Apply command menu.

### 19.4.4.2 Config

**Syntax:** `config [all|number [number [...]]]`

#### 19.4.4.2.1 Config All

The Config All command will automatically start executing all of the configuration scripts which are in the INCOMPLETE or FAILED state. After typing 'Config All' the user is presented with prompts as described in "19.4.4.2.4 Config progress".

#### 19.4.4.2.2 Config (without parameters)

If the user selected configuration scripts to execute with the Select command, then the Config command can be used to execute those scripts. After entering Config, the scripts will be executed as described in "19.4.4.2.4 Config progress".

#### 19.4.4.2.3 Config [number] [number] [number]

If the user supplies a script number as an argument to the Config command (for example 'config 1 4 5'), then only the scripts specified will be executed, whether or not the user had selected scripts with the *Select* command.

#### 19.4.4.2.4 Config progress

When either the *Config All* or *Config* commands are executed, the following messages will be displayed for each configuration script before and after it is executed.

Before the script is executed, the user is prompted with a message similar to the following (obviously FAILED or PASSED scripts will read 'A FAILED script' or 'A PASSED script'):

```
A INCOMPLETE script will execute.The RMI will disappear
and load the script:
/sdm/mtce/swm/SDM_SFT.sft.swim
```

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

The RMI screen disappears and the user config script that is called will take over the screen. The behavior of the config script is dependent on the fileset not on SWIM. When the script returns to the RMI then another message is displayed.indicating whether the config script passed or failed.

```
The user input script: SDM_SFT.sft.swim failed.
To try again later use 'Config selectable'
```

The other scripts in an *incomplete* or *failed* state are executed in the same fashion.

### 19.4.4.3 Filter

The filter command can be used to filter the list and show only those fileset configuration scripts that the user is interested in. This command accepts the same parameters as the filter command in the SWIM main menu. Please see “19.4.2.9 Filter” for more information.

### 19.4.5 History command menu

The history menu displays a log of the past commands the user has executed. The history menu will allow up to two hundred entries before any old entries are removed. Each history log entry has a three line summary. If the summary is for a success software maintenance command then the following information is given: The date, fileset, previous version, the action taken, the updated version and the fileset description (or full name). If the summary is for a failed install then the following information is given: The date, a message saying the command failed and the log file name that contains the *installp* output.

```

SDM Remote Maintenance Interface
SDM CON LAN APPL SYS CM : CMCLLI
 SDM: SDMCLLI

History
0 Quit
2
3
4
5
6
7
8
9
10
11
12
13
14
15 Filter
16
17 Help
18 Refresh
SDMUSERID
Time 17:03 >

List filter: off
Date Fileset
Feb 12 09:38 1998 SDM_BASE.mtce
 --9.0.21.2 COMMITTED TO 9.0.21.2
 --Platform Maintenance
Feb 12 09:35 1998 SDM_BASE.client
 --9.0.21.3 REMOVED TO 9.0.21.2
 --Client Common Resources
Feb 12 09:34 1998 SDM_ETA.eta
 --NA INSTALLED TO 9.0.21.0
 --Enhanced Terminal Access
Feb 12 09:34 1998 Failed-command
 --Status: FAILED
 --View /sdm/mtce/swm/logFeb12.1
Feb 12 09:16 1998 Failed-script
 --Status: FAILED
 --sdmconfig returned an error

```

Figure 10 History command menu

The list is displayed in chronological order with the most recent first. The user can scroll the screen Up or Down. The user can also filter the history log so that only certain entries are in the list. If given a parameter the filter command will do a case sensitive search on the fileset, version, status and fileset description. The list then redisplay with only the filesets that have a substring matching the parameter. If no parameter is supplied then SWIM will ask for a string to search for. At this point if the user inputs ‘all’ then the entire list is redisplayed.

### 19.4.5.1 Filter

The filter command can be used to filter the list and show only those fileset configuration scripts that the user is interested in. This command accepts the same parameters as the filter command in the SWIM main menu except for the view parameter. In this menu, the view parameter makes no changes to the list since both the fileset and the fileset description are already shown.

Please see “19.4.2.9 Filter” for more information.

### 19.4.6 Options command menu

The options menu allows the user to configure SWIM so that it will be faster for the customer to use. If the user does not use the options menu SWIM will still operate normally. The options menu allows the user to change the value for the default directory.

```

SDM Remote Maintenance Interface
SDM CON LAN APPL SYS CM : CMCLLI
 SDM: SDMCLLI

Options
0 Quit
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17 Help
18 Refresh
SDMUSERID
Time 17:03 >
1) Default device: /home/swd

```

Figure 11 Options command menu

#### 19.4.6.1 Change

**Syntax:** change <option>

The options menu only has the hidden change command. The change command allows the user to select a new value for the given option. The parameter ‘option’ is the option number shown in the list of options on screen. To change the default device, the user types ‘Change 1’. The change command has no default behavior the user must give a parameter to the change command. There will be more options to change in the future.

#### 19.4.6.1.1 Default device

If the user chooses to change the default device then the following message is displayed:

```
Specify a directory or one of the following tape drives:
```

```
Type: To select:
```

- 0) Tape drive in expansion chassis slot 2
- 1) Tape drive in main chassis slot 13

```
Press Enter to select the default: /home/swd
```

If the user simply presses [Enter], the user is returned to the options command menu. If the user enters a directory that does not exist an error message is displayed and no change is made.

```
Directory path "/blah/blah/blah/" does not exist.
```

Otherwise the default directory will be set to the user's choice.

## 19.5 Fault clearing procedures

### 19.5.1 Fileset in a 'FAILED' state

If an error occurs during the application of filesets the fileset may be stuck in the FAILED state. This only occurs if the SWIM software was not able to clean up the mess, and restore a previously installed version of the software.

To clear the failed state for that software, the user has two options, either force install a older version of the software with the Apply command (i.e.: install version 9.0.21.0 over the failed 9.0.21.2), or restore a backup of the entire system.

Clearly, force installing the software is the best course of action since that method will only impact on the software that is in the failed state.

To force install the software. The user should go to the Apply command menu, select the install image for that fileset and install it. SWIM will then remove the failed files, and replace all of those files.

## 19.6 Appendix - Error messages

After SWIM attempts to apply/remove/commit filesets it is possible the command will fail. There are many possible reasons that the command may fail so there are many potential error messages that may be displayed to the user. All the error messages give the full path to the SWIM log file. If further investigation is needed into the failure one can view the log file to see the *installp* and config scripts output. SWIM log files are automatically deleted once the creation date is two months old.

Here are a list of possible messages.

Command did not complete successfully.  
Return code = 142. View /sdm/mtce/swm/logFeb30.1 for details.  
-- A config script failed.

Command did not complete successfully.  
Return code = -28928. View /sdm/mtce/swm/logFeb30.1 for details.  
-- A conflicting requisites failure.

Command did not complete successfully.  
Return code = 143. View /sdm/mtce/swm/logFeb30.1 for details.  
-- A fileset is in the FAILED state.  
A cleanup attempt was made. Try again.

Command did not complete successfully.  
Return code = -256. View /sdm/mtce/swm/logFeb30.1 for details.  
-- The install image has problems.  
Installp may need to clean up from a previous partial installation. A cleanup attempt has been made.

Command did not complete successfully.  
Return code = 256. View /sdm/mtce/swm/logFeb30.1 for details.  
-- A requisite failure occurred.

Command did not complete successfully.  
Return code = 220. View /sdm/mtce/swm/logFeb30.1 for details.  
-- A device failed (probably Tape). Check tape drive.

Command did not complete successfully.  
Return code = 249. View /sdm/mtce/swm/logFeb30.1 for details.  
-- Installp is in use, or a previous failure needs clean up.

\*No clean up attempt was made. An installp process is running.

Command did not complete successfully.  
Return code = 1. View /sdm/mtce/swm/logFeb30.1 for details.  
-- General failure.

Command did not complete successfully.  
Return code = 2. View /sdm/mtce/swm/logFeb30.1 for details.  
-- Fatal error. Installp unable to continue.

\* If no *installp* process is running then SWIM will attempt to clean up, otherwise it will print that message.

## 19.7 Definitions & abbreviations

**Table 51 Acronyms**

| <b>Acronym</b> | <b>Definition</b>                |
|----------------|----------------------------------|
| AIX            | Advanced Interactive Executive   |
| CM             | Computing Module                 |
| DAT            | Digital Audio Tape               |
| installp       | An AIX install tool used by SWIM |
| FT             | Fault Tolerant                   |
| UI             | User Interface                   |
| ODM            | Object Data Manager              |
| OS             | Operating System                 |
| RMI            | Remote Maintenance Interface     |
| SDM            | SuperNode Data Manager           |
| SMIT           | System Management Interface Tool |
| SWIM           | Software Inventory Manager       |

## 19.8 References

SDM Software Product Packaging and Installation

# Operational Measurements List of Features

There are no new or changed. Operational Measurement features for SDM0010.

# SERVORD List of Features

There are no new or changed SERVORD features for SDM0010.

# Automatic Message Accounting List of Features

There are no new or changed Automatic Message Accounting features for SDM0010.





DMS-100 Family  
**SDM0010 PCL ReIDoc**  
User's Guide

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