Core and Billing Manager 850 Fault Management

What's new in Core and Billing Manager 850 Fault Management in (I)SN09

Features changes

The following feature-related changes have been made in the documentation:

- The OMDD enhancements robustness feature required the addition of new descriptions for logs SDM338, SDM631, SDM638, SDM639
- The Geo OA&M Automated Backup and Accelerated Restore feature required the addition of the following procedures:
  - Performing a manual backup of the remote server
  - Scheduling automatic backups of the remote server
  - Viewing configuration information for remote server backups
  - Viewing logs from a remote backup

Other changes

The following additional changes have been made in the documentation:

- Removed log SDMB330.
- Modified log SDM316.
- Modified procedure Clearing an RTBCD alarm.
- Added procedure Changing a user password on an SPFS-based server
- Removed log SDM333.

Fault Management Strategy

The Core and Billing Manager 850 (CBM 850) uses self-testing, automated diagnostics, and reporting systems to support maintenance

and to manage faults. These systems raise alarms and generate logs when the following types of software and hardware events occur:

- one or more CBM 850 applications have failed
- the CBM 850 is reporting an in-service trouble condition
- a system software resource has exceeded its alarm threshold
- a hardware device failure has been reported
- communication with the core has failed
- correction of a fault or failure condition

Alarms

Alarms provide notification that a system hardware or software-related event has occurred that requires attention. Alarms are generated when problems or conditions are detected that can change the performance or operating state of the CBM 850 and its connections.

Fault conditions on the CBM 850 are indicated through the customer's office alarm unit, through hardware LEDs, or through alarms displayed on the IEMS alarm management system. Alarms are also displayed on the CBM maintenance interface (CBMMTC) alarm banner.

Routine CBM 850 administration requires monitoring for alarms and alarm status, and checking that functions continue without interruption.

Logs

A log report is a record of a message generated whenever a significant event on the system has occurred. Log reports include status and activity reports, as well as reports on hardware or software faults, test results, changes in state, or other temporary events or conditions likely to affect the performance of the system. A system action or a manual action can generate a log report.

In the CBM 850, applications and CBM base software generate logs to identify status changes and to notify the operator about events requiring attention. Logs are also generated on the core, in response to the loss of heartbeat between the core and CBM 850. Core-side CBM application software also generates logs on the core. The Log Delivery application, included as part of the base software on the CBM 850, collects the logs generated by the CBM 850 and by the core in order to provide a single fault feed to the operational support systems (OSS).

A list of the CBM 850 logs can be found in CBM 850 logs on page 11.

Fault clearing procedures

The basic strategy for clearing CBM 850 faults is outlined in Strategy for clearing a CBM 850 fault condition on page 23.

Tools and utilities

It is important to note that CBM 850 application maintenance is separated from the maintenance of the platform on which the CBM 850 resides. Thus, CBM 850 application maintenance function is performed through the CBM maintenance interface (CBMMTC) and through the command line. Maintenance for the SPFS platform and for the Sun Netra240 hardware platform is performed through a suite of SPFS tools.

CBMMTC

The CBMMTC includes a hierarchical set of screens or levels and a dynamic alarm banner that provides state information, for the following functional areas:

- CBM product state (aggregated from all subcomponent states), that includes the state of the inactive server in the cluster configuration
- application state (aggregated from all individual application states)
- core connectivity status
- Network Time Protocol (NTP) service health status
- platform status, including computing resources, and file system resources and health

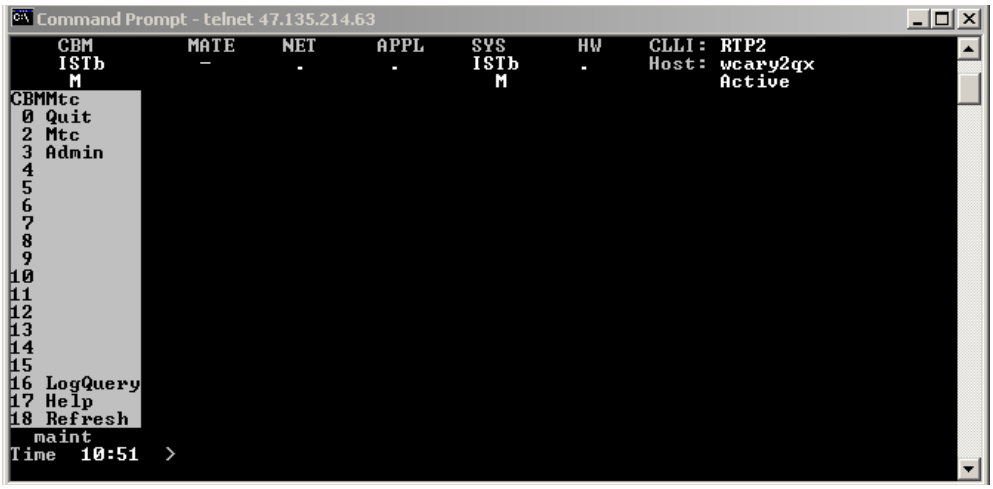
Each of the functional areas, except for CBM product state, has individual screens or levels that provide an aggregated state for its own sub-components. Thus, for example, the applications level aggregates the state of each application into the general application state. Additional levels provide administration functions such as:

- user pass-through functionality, which allows user to pass directly to the core for terminal access for file transfer operations
- access configuration to set the level of terminal access
- software installation and maintenance

The individual component states reflect the state of the local server where the cbmmtc tool is being run. Each screen in the cbmmtc tool provides context-sensitive help text and fault reporting.

A sample CBMMTC screen is shown below.

Figure 1 Sample CBMMTC screen



The alarm banner categories include:

- CBM - status the CBM
- MATE - status of the mate of the active CBM in a CBM 850 cluster
- NET - network status
- APPL - CBM application status
- SYS - system status
- HW - hardware status

The alarm banner states for the categories are shown in the table below.

State	Description
-	unequipped
.	standby
.	in-service
ISTb	in-service trouble
SysB	system-made busy
ManB	manually-made busy
OffL	offline

State	Description
CBsy	c-side busy
Fail	failure

The alarm status indicators that appear below the alarm banner states are shown in the table below.

Alarm Indicator	Description
	cleared
	warning
	minor
M	major
C	critical
?	indeterminate

SPFS / Sun Netra240 services

The SPFS common OAM platform provides the system monitoring and maintenance procedures for the platform on which the CBM 850 runs. The platform provides the basic resources necessary for the CBM 850 and its applications. The SPFS platform is maintained using SPFS-provided tools and procedures built on standard Sun/Solaris administration tools and commands. The procedures and capabilities provide functions such as:

- procedures for diagnosing all platform faults
- procedures for upgrading SPFS platform hardware and software
- procedures for field-replaceable-unit (FRU) hardware replacement, such as disk drives, DVD drives, and the server itself
- creating and modifying file systems (or logical volumes) and their characteristics, including size, capacity, permissions, alarm threshold, type
- user interfaces to maintain the HA cluster, including the ability to switch activity (SwAct), query which unit is active, and state of HA services

- interface to determine the active or inactive node
- ability to duplicate synchronize the program store and configuration from the active unit to the inactive unit in the cluster (image copy)

CBM 850 maintenance procedures

This document contains the procedures used for maintaining the CBM 850 and for responding to fault conditions that arise on the CBM 850. The procedures are performed primarily in response to alarms and logs that are raised. The log and alarm description and text generally provide you with the direction needed to determine which procedure to perform.

To assist you in locating the correct procedure when specific instructions are not provided in an alarm or log, the following tables group procedures by the general functional areas, "CBM 850 application", "SuperNode Billing Application (SBA)", and "SPFS / Sun Netra 240 services".

CBM 850 application fault clearing procedures

The following table contains the fault clearing procedures for CBM 850 applications.

CBM 850 application
Strategy for clearing a CBM 850 fault condition
Clearing a CBM application alarm
Clearing a GDD logical volume size threshold violation
Collecting DEBUG information using the CBMGATHER command
Displaying or storing log records using logreceiver
Retrieving and viewing log records
Troubleshooting Log Delivery problems on a CBM
Verifying the file transfer protocol
Verifying the FTP Schedule

SuperNode Billing Application (SBA) fault clearing procedures

The following table contains procedures used for clearing faults related to the SuperNode Billing Application (SBA). The type of alarm or log you receive in response to a fault will contain the information that will normally direct you to the appropriate procedure to use. If no specific SBA fault clearing procedure is apparent in the alarm or log, refer to SBA alarm troubleshooting on page 64.

SuperNode Billing Application (SBA)
SBA alarm troubleshooting
Displaying SBA log reports
Displaying SBA alarms
Controlling the SDM Billing Application
Troubleshooting AFT alarms
Troubleshooting RTB problems
Troubleshooting problems with scheduled billing file transfers
Clearing a BAK50 alarm
Clearing a BAK70 alarm
Clearing a BAK90 alarm
Clearing a BAKUP alarm
Adjusting disk space in response to SBA backup file system alarms
Clearing a CDRT alarm
Clearing a DSKWR alarm on a CBM
Clearing an FTPW alarm
Clearing an inbound file transfer alarm
Clearing an LODSK alarm
Clearing a NOBAK alarm
Clearing a NOCLNT alarm
Clearing a NOFL alarm

SuperNode Billing Application (SBA)
Clearing a NOREC alarm
Clearing an NOSC alarm
Clearing a NOSTOR alarm
Clearing a NOVOL alarm
Clearing an RTBCD alarm
Clearing an RTBCF alarm
Clearing an RTBER alarm
Clearing an RTBFM alarm
Clearing an RTBPD alarm
Clearing an RTBST alarm
Clearing a major SBACP alarm
Clearing a minor SBACP alarm
Clearing an SBAIF alarm

SPFS / Sun Netra 240 services fault clearing procedures

The following table shows selected SPFS procedures that are used during CBM fault clearing. If you do not find a procedure that you need to use, contact your next level of support for assistance.

SPFS / Sun Netra 240 services
Clearing a major Heartbeat alarm
Replacing a failed power supply
Replacing a failed SPFS-based server on page 43
Replacing failed Ethernet interfaces
Clearing an expired password alarm: Changing a user password on an SPFS-based server
Accessing TCP and TCP-IN log devices from a remote location
Accessing the MATE
Clearing the MATE alarm
Replacing one or more failed disk drives on an SPFS-based server
Shutting down an SPFS-based server
Preparing a DVD-RW for use
Increasing the size of a file system on an SPFS-based server
Performing a backup of file systems on an SPFS-based server
Performing a full system restore on an SPFS-based server
Verifying disk utilization on an SPFS-based server
Replacing a DVD drive on an SPFS-based server
Initiating a manual failover on a Sun Netra 240 server pair

CBM 850 logs

The following is a list of the CBM 850 logs, with high-level summaries of causes for the logs, and general descriptions of actions to be taken in response. The logs are arranged in two categories:

- SDM logs - logs pertaining to CBM
- SDMB logs - logs pertaining to SBA (SuperNode Billing Application)

The comprehensive listing of all Carrier VoIP logs is found in NN10275-909, *Carrier Voice over IP Fault Management Logs*. The NN10275-909 document should always be consulted for complete information about CBM logs and the actions to be taken in response.

SDM logs

The following table lists SDM logs.

Log	Trigger	Action
SDM303	A core manager application or process has failed more than three times in a day, or has declared itself to be in trouble.	Users with root permissions can examine the log files in /usr/adm to determine the cause of the process failure. If required, contact your next level of support for assistance.
SDM304	The Log Delivery application cannot deliver logs to the specified UNIX file.	Use the Log Delivery online commissioning tool (logroute) to verify the existence and validity of the device name. Refer to the following procedures for more information: • "Configuring a core manager for log delivery" in the Configuration Management document • "Deleting a device using logroute" in the Configuration Management document If required, contact your next level of support for assistance.

Log	Trigger	Action
SDM306	The Table Access Service application on the core manager has detected that the software load on the Core is incompatible with the software load on the core manager.	Upgrade the CM software to a version that is compatible with the SDM software. ***Note:*** The software on the core manager must not be at a lower release level than the software on the Core.
SDM315	The Table Access Service application on the core manager has detected corruption in the Data Dictionary on the Core.	Contact your next level of support with the information provided in the log. The log information contains essential information for identifying the Data Dictionary type that is corrupt.
SDM318	An operational measurements (OM) report was not generated. (The OM report failed to complete within one report interval.)	Contact your next level of support.
SDM325	Indicates a lost connection to a Preside network management component.	No action required.
SDM330	Indicates a communication problem between two mated nodes on a CBM850 HA cluster	Use the description field to determine necessary action.
SDM331	OMDD audit deleted files from the OMDD storage volume to free up space.	No action required.
SDM332	Indicates that the system audit completed, with failures.	Execute the ’sysaudit-report’ command to display the results of the system audit.
SDM336	No heartbeat response received	Use the logs command from the hw level of the cbmmtc display to check for Ethernet link faults on the CBM. Check on core mapci;mtc;xac level for Ethernet connectivity faults.
SDM338	Audit finds that omdata file system usage exceeds 60% or 80%.	No action required.

Log	Trigger	Action
SDM375	OMDD discovered a problem while performing outbound file transfer and could not ensure that the OM report got transferred downstream.	Contact your next level of support.
SDM603	A fault on a core manager application or process has cleared.	No action required.
SDM604	The Log Delivery Application generates this log when the Core generates logs at a higher rate than can be transferred to the Log Delivery Service and the device buffer on the core is too full to accept more logs.	Increase office parameter PER_OPC_LOGDEV_BUFFER_SIZE to its maximum size of 32,000. (For more information about this parameter, refer to the *SuperNode Data Manager Log Report Reference Manual*, 297-5051-840.) If you still continue to receive SDM604 logs after you have increased the size of the parameter, or if large numbers of logs are lost, contact your next level of support for assistance.
SDM605	Indicates that logs for a specific application have been lost.	No action required.
SDM619	The OM Access Server has detected a corrupt OM Group during an OM Schema download.	No action required.
SDM622	The SDM log delivery application generates this log when the file device reaches its maximum size.	Check if you have configured enough space for the file device. If there is a software error causing the increase of logs, contact your next level of support for help.
SDM625	Indicates a re-established connection to a Preside network management component.	No action required.
SDM631	Indicates that Audit has deleted a file in the closedNotSent directory to make more than 80% available space in the omdata file system.	No action required.

Log	Trigger	Action
SDM632	Indicates that the system audit failure reported through SDM332 has been cleared.	No action required.
SDM636	Heartbeat alarm cleared	No action required.
SDM638	Issued when Audit finds that omdata file system usage has gone below 80% or 60%.	No action required.
SDM639	Issued when Audit finds that omdata file system usage exceeds 90%.	Audit deletes all of the OM files in the closedSent directory.
SDM700	Log report SDM700 reports a Warm, Cold, or Reload restart or a norestartswact on the core	No action required.
SDM739	This log prints the ftp user's log-in status.	No action required.
SDMO 375	Indicates that OMDD discovered a problem while performing an outbound file transfer and could not ensure that the OM report was transferred downstream.	Contact your next level of support.

SDMB logs

SDMB logs describe events related to the operations of the SuperNode Billing Application (SBA) and the SDM Billing System that resides on the core manager. The following table lists SDMB logs.

SDM Billing Application (SBA) logs

Log	Trigger	Action
SDMB300	Memory allocation has failed.	Contact your next level of support.
SDMB310	A communication-related problem has occurred.	Determine the reason that the core manager is not communicating with the Core. Determine whether the core manager, the Message switch (MS) and the Frame Transport bus (FBus) are in service (InSv) or in-service trouble (ISTb). If the core manageris InSv or ISTb, return the billing stream to service.
SDMB315	A general software-related problem has occurred.	Contact your next level of support.
SDMB316	One of the following billing processes on the CM has been manually killed: • BUFAUDI • BUFAUDIT • BUFCABKI • BUFDEVP • BUFPROC • BUFRECI • SBCPROCI • SBMTSTRI	Restart the process.
SDMB320	A billing backup-related problem occurred, which affects more than one file.	Ensure that the backup volumes configured for the stream have enough available space.
SDMB321	A billing backup-related problem occurred, which affects one file.	Ensure that the backup volume is not busy or full.

SDM Billing Application (SBA) logs

Log	Trigger	Action
SDMB350	An SBA process has reached a death threshold and made a request to restart. A death threshold occurs after a process has died more than 3 times less than 1 minute apart.	SBA will automatically restart. What for logs that indicate that SBA is in normal operation. If the system generates this log more than once, contact your next level of support.

SDM Billing Application (SBA) logs

Log	Trigger	Action
SDMB355	A problem with a billing disk has occurred, which can consist of any one of the following problems:	
	• Records cannot be written to file (by stream). When this occurs, alarm DSKWR is raised.	• Check the disk space on the core manager. You may need to FTP files or may need to clean up the disk.
	• The Record Client/File Manager is unable to write to the disk.	• Check the disk space on the core manager. You may need to FTP files or may need to clean up the disk.
	• The disk use is above the critical threshold specified in the MIB in parameter. When this occurs, alarm LODSK is raised.	• Check to see if files are being sent FTP. If not, set the system up to FTP files or back up files.
	• The disk use is above the major threshold specified in the MIB in parameter. When this occurs, alarm LODSK is raised.	• Check to see if files are being sent FTP. If not, set the system up to FTP files or back up files.
	• The disk use is above the minor threshold specified in the MIB in parameter. When this occurs, alarm LODSK is raised.	• Check to see if files are being sent FTP. If not, set the system up to FTP files or back up files.
	• Reached limit for disk space or for the number of files that can reside on the system for a particular stream.	• Check to see if files are being sent FTP. If not, set the system up to FTP files or back up files. Also check file permission for the destination directories.
	• The SBA cannot close or open a file.	• Contact your next level of support.
	• Flush file failed	
SDMB360	SBA has lost the connection to the Persistent Store System (PSS) and cannot restore it. When this occurs alarm SBAIF is raised.	Contact your next level of support.

SDM Billing Application (SBA) logs

Log	Trigger	Action
SDMB365	A serious problem is preventing the creation of a particular stream. Generated when a new version of SBA does not support a stream format on an active stream that was present in a previous load.	Revert to the previous running version of the SBA. If you removed the support for the stream format in the new release, turn off the stream before installing the new version. If the new version is supposed to support all existing streams, contact your next level of support for the latest appropriate software.
SDMB366	Indicates that a problem exists on the SDM. If the installed SBA supports multiple stream record formats, you can continue to process streams of the unlogged formats.	Contact your next level of support.
SDMB367	A trapable Management Information Base (MIB) object was set. The modification of some MIB objects provides notification of failures to the System Manager by way of a trap. Because there is no System Manager, the system logs messages. While most SDM logs report the stream, the logs associated with the MIB do not. Consideration for separate streams is not built into the Automatic Accounting Data Networking System (AMADNS) MIB specification.	Contact your next level of support.
SDMB370	The CDR-to-BAF conversion encountered a problem that prevents it from converting CDR to BAF. When this occurs, alarm NOSC is raised because the BAF record was not generated.	Clear the alarm.

SDM Billing Application (SBA) logs

Log	Trigger	Action
SDMB375	A problem occurred during the transfer of a file to the Data Processing Management System (DPMS). When this occurs, alarm FTP is raised. The error text can be any of the following: ***Note:*** The system may escalate these logs and minor alarms to critical status when the DPMS transmitter exhausts all possible retries. The MIB parameter SessionFtpMaxConsecRetries specifies the condition.	Contact your next level of support if log indicates any one of the following errors: • insufficient storage space in system • exceeded storage allocation on downstream DPMS • unable to fork child process • unable to open pseudo terminal master • unable to setsid in child process • unable to open pseudo terminal slave in child process • unable to set stdout of child process to pseudo terminal slave • unable to set stderr of child process to pseudo terminal slave • unable to set stdin of child process to pseudo terminal slave • local error in processing • DPMS FTP service not available • DPMS FTP connection closed • requested file action not taken: <command>. File unavailable Verify FTP if the log indicates any one of the following errors: • not logged in while executing command: <command> • unable to exec FTP process
SDMB380	The file transfer mode for the specified stream has an invalid value	Set the file transfer mode to either Inbound or Outbound.

SDM Billing Application (SBA) logs

Log	Trigger	Action
SDMB390	A schedule-related problem has occurred. When this occurs, alarm SBAIF is raised.	Clear the alarm and any alarms related to failure.
SDMB400	This log is generated for every active stream every hour and lists all of the current active alarms.	Clear alarms immediately using the corresponding procedure in the Fault section.
SDMB530	A change in the configuration or status of a stream has occurred.	No action required.
SDMB531	The configuration for backup volumes has been corrected.	No action required.
SDMB550	The SBA has shut down either because the core manager was busied or the SBA was turned off.	Determine the reason SBA shut down.
SDMB600	This generic log provides information for billing system problems.	No action required.
SDMB610	A communication-related problem with the SBA has been resolved.	No action required.
SDMB615	A software-related condition has been resolved.	No action required.
SDMB620	A backup-related problem with the SBA has been resolved.	No action required.
SDMB621	A new backup file has been started.	No action required.
SDMB625	Recovery has started on a backup file.	No action required.
SDMB650	The SBA is restarting one or more of its processes.	No action required.

SDM Billing Application (SBA) logs

Log	Trigger	Action
SDMB655	• The state of a billing file has changed. • Disk utilization for a particular stream has dropped below a threshold. • A billing file could not be moved to closedSent.	Contact your next level of support.
SDMB660	A problem related to communications with other SBA features was resolved.	No action required.
SDMB665	A software problem on the Core that prevents the synchronization (downloading) of FLEXCDR data at the core manager.	Restart the Core with a load that supports the SBA enhancements for CDR on the core manager.
SDMB670	Either a CDR-to-BAF conversion process used default values to create a BAF field because a CDR field was missing, or the problem was corrected.	For the missing CDR field(s), determine which are needed to generated the BAF field. Use the BAF field displayed in the log report and refer to the applicable Billing Records Application Guide for a list of the CDR fields associated with each BAF field. Update the CDR to include the missing field.
SDMB675	A problem related to file transfer was resolved.	No action required.
SDMB680	The file transfer mode has changed value.	No action required.
SDMB690	Indicates that an SBAIF alarm has cleared.	No action required.

SDM Billing Application (SBA) logs

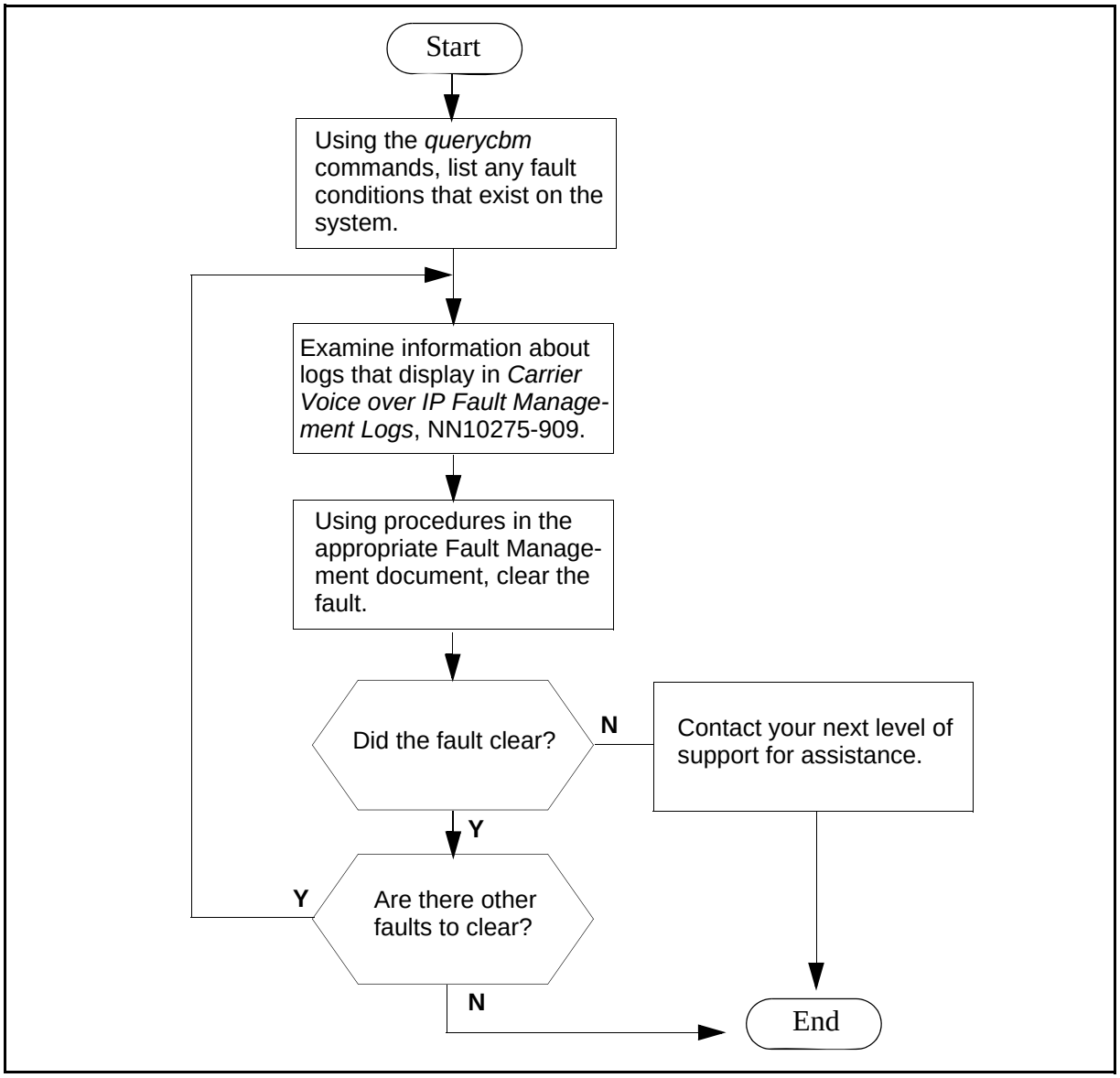
Log	Trigger	Action
SDMB691	Identifies events related to the scheduled transfer of billing files.	For the version of this alarm that displays the message, "Unable to initialize file transfer schedule for stream <stream>", make sure the system is free of faults. When the system is free of faults, the SBA will resume the scheduled transfer of billing files.
SDMB820	Minimal backup space is available.	Increase the size of backup volumes.

Strategy for clearing a CBM 850 fault condition

The following procedure shows the basic steps to be performed to clear a CBM 850 fault. The procedure is designed to provide you with a fault-clearing strategy to follow. Specific procedures in this document and in other documents in the Carrier VoIP document collection provide you with the detailed steps used to actually clear a fault.

The steps required to clear a CBM 850 fault are outlined in the following flowchart.

Basic task flow for clearing faults on the CBM 850



Procedure

Strategy for clearing a CBM 850 fault condition

At your CBM 850

1 Log into the CBM 850 as a maint class user, or root user, and list any fault conditions that exist on the system:

```
querycbm flt
```

If the alarm is in cbmmtc under the MATE column of the banner (the state is not a dot [.]), enter the following command:

```
querycbm mate
```

2 Use the table below to determine the type of fault indicated by the response. Note the log type and the reason for use in later steps.

Fault type	log number	Description
Application	SDM303	Exceeded failure threshold Package: <package> Process: <process> Trouble condition asserted Package: <package> Process: <process> <reason>
Communication	SDM336	Heartbeat alarm. No heartbeat response received.
Billing related	SDMBxx	Specific to the SBA
Network Time Protocol	SDM327	NTP alarm. Synchronization started, can take up to 30 minutes.
Platform related	SPFSxx	Specific to the platform, such as a hardware fault or resource exceeded threshold
Mate		Application or platform related fault condition.

3 For any logs that display, read and understand any information available about the logs in NN10275-909, *Carrier Voice over IP Fault Management Logs*. Record the relevant details for the fault

condition, such as the network element name, time that the log was raised, severity, and category.

4 Use the following table to determine the appropriate response to the fault condition.

If the fault is	Do
Platform related (SPFSxxx) problem	Refer to SPFS / Sun Netra 240 services fault clearing procedures on page 10
Communication problem with the Core (SDM336)	Refer to Clearing a major Heartbeat alarm on page 34
Network Time Protocol problem (SDM327)	First verify with your system administrator that the NTP server is not in a fault condition. If the fault condition is not in the NTP server and can be isolated to the CBM 850, contact your next level of support for assistance.
Application problem (SDM 303)	Clearing a CBM application alarm on page 27
SBA related (SDMBxx)	Refer to SuperNode Billing Application (SBA) fault clearing procedures on page 8
Mate related	Refer to Clearing the MATE alarm on page 71

5 Refer to the alarm indicator that informed you about the fault condition and check to see that the fault has now been cleared.

If	Do
the fault has cleared	step 6
the fault has not cleared	Contact your next level of support for assistance

6 Check to see if all fault conditions have now cleared:

```
querycbm flt
```

querycbm mate

If	Do
any fault conditions still exist	step 3
no fault conditions exist	step 7

7 You have completed this procedure.

Clearing a CBM application alarm

Purpose

Use this procedure to clear a minor or major or critical CBM alarm for a CBM application.

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Action

Clearing a CBM application alarm

At the local or remote VT100 terminal

1 Log into the CBM as a maint class user, or root user, and access the maintenance interface:

`cbmmtc`

2 Access the application (Appl) menu level of CBMMTC:

`appl`

Example response:

```
Group: CBM                          State: ISTb
# Application                             State
1 Generic Data Delivery                     .
2 OSS Comms Svcs                          ManB
3 Log Delivery Service                      .
4 Table Access Service                      .
5 OM Access Service                         .
6 OM Delivery                               .
7 GR740 Pass Through                        .
8 Passport Log Streamer                   ISTb
9 Base Maintenance Utility                  .
10 FTP Proxy                                .
           Applications showing: 1 to 10 of 10
```

3 Refer to the following table to determine your next step.

If you	Do
receive a Generic Data Delivery (GDD) threshold alarm	refer to procedure Clearing a GDD logical volume size threshold violation on page 32
do *not* receive a GDD threshold alarm	step 4

4 Determine the affected application from the display and note its key number, shown under the header "#".

5 Proceed depending on the state of the application.

If the state is	Do
ManB	step 6
ISTb	step 7
SysB	step 9
Fail	step 10

6 Determine from office records or other personnel why the application was manually removed from service. When permissible, return the application software package to service:

```
rts <key>
```

where

<key>
is the key number of the application, shown under the header “#”

Example response:

```
RTS Application - Command initiated.
Please wait...
```

Note: When the RTS command is finished, the "Please wait..." message disappears. The word "initiated" also changes to "complete" as follows:

```
RTS Application  Command complete.
```

If	Do
the application returns to service	step 13

If	Do
the application does not return to service	step 5

7 The ISTb state can result from one of the following reasons:

- a recent change of state
- this application is dependent on another application that has not completed initialization

If	Do
either reason is applicable	wait 10 minutes for the applications to complete initializing
either reason is *not* applicable	use the value in the reason field to resolve the problem

8 Refer the following table to determine your next step.

If you	Do
can resolve the ISTb problem	step 13
cannot resolve the ISTb problem	Contact your next level of support.

9 Use the reason given to resolve the SysB problem.

If you	Do
can resolve the SysB problem	step 13
cannot resolve the SysB problem	Contact your next level of support.

10 The specified application software package was set to Fail state because it failed for one of the following reasons:

- the system cannot restart the package
- the application has restarted and failed three times within 10 minutes

At the application menu level of the RMI, manually busy the affected application software package:

`bsy <key>`

where

<key>
is the key number of the application, shown under the header "#"

Example response:

```
Bsy Application - Command initiated.
Please wait...
```

Note: When the Bsy command is finished, the "Please wait..." message disappears. The word "initiated" also changes to "complete" as follows:

```
Bsy Application - Command complete.
```

11 Return the application to service:

`rts <key>`

where

<key>
is the key number of the application, shown under the header "#"

Example response:

```
RTS Application - Command initiated.
Please wait...
```

Note: When the RTS command is finished, the "Please wait..." message disappears. The word "initiated" also changes to "complete" as follows:

```
RTS Application - Command complete.
```

12 Proceed depending on the state of the application.

If the application	Do
remains in a Fail state	refer to the configuration or installation information modules in the Configuration or Upgrades documents specific to that application
changes to InSv state	go to step 13

13 Obtain the fault status information from the CBM:

`querycbm flt`

If	Do
more faults are reported	step 2
all faults are cleared	step 14

14 You have completed this procedure.

Clearing a GDD logical volume size threshold violation

Application

Use this procedure to clear the fault that results when the content of the Generic Data Delivery (GDD) logical volume exceeds its designated content size threshold.

Indication

The system operation is unpredictable when a logical volume reaches 100% disk full, and CBM applications can fail as a result.

Action

Clearing a GDD logical volume size threshold violation

At the local or remote VT100 terminal

1 There are two choices when the GDD logical volume size threshold is exceeded:

- increase the size of the logical volume

or

- decrease the number of days to keep the logs

If you decide to	Do
Increase the size of the GDD logical volume	proceed to the SPFS procedure Increasing the size of a file system on an SPFS-based server on page 195
Decrease the number of days to retain logs	step 2

2 Log in to the CBM and access the Logroute commissioning tool:

```
logroute
```

Example response:

```
Logroute            Main Menu
                    1 - Device List
                    2 - Global Parameters
                    3 - CM Configuration File
                    4 - Gdd Configuration
                    5 - Help
```

```
                                6 - Quit Logroute
                                Enter Option ==>
```

3 Access the GDD configuration menu:

4

Example response:

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

Enter Option ==>
```

4 Enter the option number for the number of days to keep log files in /gdd:

Enter Option ==> 1

5 Enter the number of days to retain the log files:

Enter number of days(range - 1 To 30) ==>

6 Confirm to save the changes by entering "y":

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

Example response:

```
Warning: This would change the number of days to
store logsin/gdd. Logfiles older than the day
specified would be deleted.
```

Press the Enter key to acknowledge that the data was saved.

Example response

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

7 Press the Enter key to acknowledge that the data was saved.

8 You have completed this procedure.

Clearing a major Heartbeat alarm

Application

Use this procedure to clear a major Heartbeat alarm on the CBM.

Indication

At the net level of the cbm mtc display, the Core Heartbeat State indicates a SysB condition.

Meaning

The CBM is not receiving responses from the Core.

Impact

If the CBM is unable to communicate with the Core, the applications will also be unable to communicate with the Core.

Action

Clearing a major Heartbeat alarm

At the CBM

1 Verify that the CBM Ethernet interface is in service.

See SPFS / Sun Netra 240 services fault clearing procedures on page 10 for the procedure used to clear the fault.

2 Verify that the Core Ethernet interface is in service.

Search the "North America - DMS" document collection (for North American Carrier Voice over IP networks) or "International DMS Global Services Platform" document collection (for International Carrier Voice over IP networks) in Helmsman for the appropriate procedures to use to clear this fault.

3 Verify that Ethernet packets are routed properly between the CBM and Core interfaces.

Search the "North America - DMS" document collection (for North American Carrier Voice over IP networks) or "International DMS Global Services Platform" document collection (for International Carrier Voice over IP networks) in Helmsman for the appropriate procedures to use to clear this fault.

Replacing a failed power supply

Application

Use the following procedure to replace a power supply on a CBM server.

Action

The power supply is a field replaceable unit (FRU). It can be replaced while the server is powered up and in-service.

Replacing a power supply on a CBM server

1. Refer to the manufacturer documentation for the procedure on how to replace the power supply.
2. You have completed this procedure.

Replacing failed Ethernet interfaces

Purpose

Use the following procedures to replace a failed Ethernet interface.

Application

The Ethernet interface is not a field replaceable unit. The server must be put out of service and powered down before hardware can be removed from the shelf.

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Action

Replacing failed Ethernet interfaces

At the CBM

1 Record the stream_name for the stream you wish to busy as determined in the procedure "Preparing for SBA installation and configuration" in the *Accounting* NTP for your core manager.

2 Access the SDMBIL level:

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

where

<stream_name>
is the stream name value determined in step 1.

3 Busy the stream at the SDMBIL level by typing:

`bsy`

4 Proceed with busying the stream by typing:

`y`

5 Ensure that the stream is in Backup mode by verifying the state is indicated as ManB by typing:

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

where

<stream_name>
is the stream name value determined in step 1.

6 Follow the procedure "Sending billing files from disk" in the *Accounting* NTP for your core manager.

7 Go to the appl level of the cbmmtc tool by typing:

cbmmtc appl

Example response:

```
Group: CBM                          State: ISTb
 # Application                                    State
 1 Generic Data Delivery                          .
 2 DMS Maintenance Application                    .
 3 GR740 Pass Through                            OffL
 4 FTP Proxy                                      .
 5 Log Delivery Service                          Fail
 6 Passport Log Streamer                         OffL
 7 Table Access Service                           .
 8 OM Access Service                              .
 9 Reach Through SPM                              .
10 OM Delivery                                    .
                        Applications showing: 1 to 10 of 15
```

8 Manually busy all the applications by entering:

bsy group

9 Confirm the BUSY operation:

y

Example response:

```
15          Bsy GROUP: The GROUP is in service.
16          This command will cause a service interruption.
17 Help     Do you wish to proceed?
18 Refresh  Please confirm ("YES", "Y", "NO", or "N")
```

10 Offline each application by entering:

offl <application number 1><application number 2><....>

Note: Application numbers are separated by spaces if multiple applications are expected to be offlined.

11 Offline the CBM group by entering:

offl group

At the shelf

12 Follow the procedure "Shutting down an SPFS-based server" in *ATM/IP Solution-level Security and Administration*, NN10403-900.

13 Remove and replace the CBM server by following instructions provided by the hardware manufacturer.

Note: Remove both disk drives from the server being replaced and place them in the replacement server.

14 To bring the server back up, turn on the power to the server at the circuit breaker panel of the frame.

At the CBM

15 Go to the appl level of the cbmmtc tool by typing:

`cbmmtc appl`

Example response:

```
Group: CBM                          State: ISTb
 # Application                                    State
 1 Generic Data Delivery                          .
 2 DMS Maintenance Application                    .
 3 GR740 Pass Through                           OffL
 4 FTP Proxy                                      .
 5 Log Delivery Service                         Fail
 6 Passport Log Streamer                        SysB
 7 Table Access Service                           .
 8 OM Access Service                              .
 9 Reach Through SPM                              .
10 OM Delivery                                    .
                        Applications showing: 1 to 10 of 15
```

16 Proceed depending on the state of the application. If the CBM group state is Offl go to step 17; otherwise, go to step 19.

17 Manually busy all the applications by entering:

`bsy group`

18 Confirm the BUSY operation:

`y`

19 Proceed depending on the state of the application. If the applications you want to RTS are in the Offline state, go to step 20; otherwise, go to step 21.

20 Manually busy all the applications which are in the Offl state:

`bsy <application number 1><application number 2><....>`

Note 1: The Bsy command can take multiple application numbers, each separated by a space, to manually busy multiple applications at the same time.

Note 2: Do not apply the Bsy command to the applications you do not want to RTS.

21 If the CBM group state is in ManB state, go to step 22; otherwise, go to step 23.

22 RTS all the applications which are in the ManB state by typing:

```
rts group
```

Go to step 24.

23 RTS each application by typing:

```
rts <application number 1><application number 2><....>
```

24 Ensure that the stream is in Recovery mode by verifying the state is indicated as Rcvy by typing:

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

where

<stream_name>
is the stream name value determined in step 1.

Note 1: Rcvy indicates that the stream is in-service and also sending previously created backup files to the CS2000 Core Manager.

Note 2: The state may also be InSv, which indicates that the stream is in a normal working state if recovery has already completed.

25 Clear any application and system alarms if they are present.

26 You have completed this procedure.

Changing a user password on an SPFS-based server

Application

Use this procedure to change a user password on a Server Platform Foundation Software (SPFS)-based server.

ATTENTION
User accounts and passwords are automatically propagated from the active server to the inactive server in a high-availability (two-server) configuration to allow users to log in to either server. However, user files are not propagated to the other server.

Prerequisites

None

Action

Perform the following steps to complete this procedure.

ATTENTION
In a two-server configuration, perform the steps that follow on the active server.

At your workstation

1 Log in to the server by typing

> **`telnet <server>`**

and pressing the Enter key.

where

server
is the IP address or host name of the SPFS-based server

Note: In a two-server configuration, log in to the active server using its physical IP address.

2 When prompted, enter your user ID and password.

3 Change to the root user by typing

$ **`su -`**

and pressing the Enter key.

4 When prompted, enter the root password.

5 Change the password for a specific user by typing

```
# passwd -r files <userid>
```

and pressing the Enter key.

where

userid
is a variable for the user's login identification

6 When prompted, enter a password of at least three characters.

Note: It is not recommended to set a password with an empty value. Use a minimum of three characters.

7 When prompted, enter the password again for verification.

You have completed this procedure.

Replacing a failed SPFS-based server

Application

Use the following procedure when an SPFS-based server has failed and you need to replace it. This procedure provides the instructions for a one-server configuration or a two server configuration.

The server can be hosting one or more of the following components:

- CS 2000 Management Tools
- IEMS
- Audio Provisioning Server (APS)
- Media Gateway 9000 Manager
- CS 2000 SAM21 Manager
- Network Patch Manager (NPM)
- Core Billing Manager (CBM)

Prerequisites

You have a replacement server.

ATTENTION
Ensure that no provisioning activities are in progress, or are scheduled to take place during this procedure.

Action

Perform the steps under one of the headings that follow to complete this procedure.

- Replacing an SPFS-based server (one-server configuration) on page 44
- Replacing one server in an HA configuration on page 44
- Replacing both servers in an HA configuration on page 44

Replacing an SPFS-based server (one-server configuration)

At the COAM frame

1 Disconnect and remove the failed server.

2 Connect and power up the replacement server.

3 Restore the file systems and oracle data from backup media. If required, refer to procedure Performing a full system restore on an SPFS-based server on page 45.

Note: Restoring the oracle data does not apply to the CBM as it does not use an oracle database.

You have completed this procedure.

Replacing one server in an HA configuration

At the COAM frame

1 Disconnect and remove the failed server.

2 Connect and power up the replacement server.

3 Clone the image of the active server onto the server you just replaced. If required, refer to procedure Cloning the image of one server in a cluster to the other server on page 51.

You have completed this procedure.

Replacing both servers in an HA configuration

At the COAM frame

1 Disconnect and remove one failed server.

2 Connect and power up the replacement server.

3 Restore the file systems and oracle data from backup media on the server you just replaced. If required, refer to procedure Performing a full system restore on an SPFS-based server on page 45.

Note: Restoring the oracle data does not apply to the CBM as it does not use an oracle database.

4 Disconnect and remove the other failed server.

5 Connect and power up the replacement server.

6 Clone the image of the active server onto the server you just replaced. If required, refer to procedure Cloning the image of one server in a cluster to the other server on page 51.

You have completed this procedure.

Performing a full system restore on an SPFS-based server

Application

Use this procedure to perform a full system restore from backup media on a Server Platform Foundation Software (SPFS)-based server (Sun Netra t1400 or Sun Netra 240).

A full system restore consists of reverting to the previous release of SPFS, restoring the file systems, and restoring the oracle data.

The server can be hosting one or more of the following components:

- CS 2000 Management Tools
- IEMS
- Audio Provisioning Server (APS)
- Media Gateway (MG) 9000 Manager
- CS 2000 SAM21 Manager
- Network Patch Manager
- Core Billing Manager (CBM)

Note: Restoring the oracle data does not apply to the CBM as it does not use an oracle database.

ATTENTION
System logs indicating application and database errors generate until the file systems and oracle data are restored on the system using this procedure and procedure Restoring the oracle date on an SPFS-based server. No database errors generate on the CBM as it does not use an oracle database.

Prerequisites

To complete this procedure you need

- the SPFS Installation CD disk#1 for the release you are reverting to
- the tape or DVD on which you backed up the file systems
- the tape or DVD on which you backed up the oracle data

Action

Use one of the methods below according to your office configuration.

- Simplex configuration (one server) on page 46
- High-availability configuration (two servers) on page 48

Note: Only the Simplex configuration (one server) uses a full system restore from tape on a Sun Netra t1400 server.

Simplex configuration (one server)

At the server console

1 Log in to the server through the console (port A) using the root user ID and password.

2 Bring the system to the OK prompt by typing

```
# init 0
```

and pressing the Enter key.

3 Insert SPFS Installation CD disk#1 into the drive.

4 Use the following table to determine your next step.

If restoring from	Do
tape	step 5
DVD	step 6

5 Insert the tape with the backed up file systems into the drive.

6 At the OK prompt, restore the system by typing

```
OK boot cdrom - restore
```

and pressing the Enter key.

7 When prompted, accept the software license restrictions by typing

ok

and pressing the Enter key.

The system reboots.

Note: If the restore process fails at this point due to one or more disks not being labeled, which is reported as “Bad Magic Number in Disk Label”, refer to procedure Labelling disks on an SPFS-based server to label the disks.

If restoring from DVD, you will be prompted to insert Volume 1 of the backup DVD into the drive. Insert the DVD on which you backed up the file systems. During the restore process, the system will prompt you for additional Volumes if more than one DVD was used during the backup of file systems.

The restore process can take several hours to complete depending on the number and size of the files that are being restored.

Note: Although it can appear as if the system is hanging at times, please do not interrupt the restore process. If you suspect an issue with the restore process, please contact your next level of support.

8 Eject the backup DVD from the drive as follows:

a Ensure you are at the root directory level by typing

`cd /`

and pressing the Enter key.

b Eject the DVD by typing

`eject cdrom`

and pressing the Enter key.

Note: If the DVD drive tray does not open (if not busy or being read from or written to), enter the following commands:

/etc/init.d/volmgt stop

/etc/init.d/volmgt start

Then, press the eject button located on the front of the DVD drive.

c Remove the backup DVD from the drive.

9 Use the following table to determine your next step.

If	Do
this SPFS-based server is hosting the CBM	step 13
otherwise	step 10

10 List the oracle groups by typing

```
# groups oracle
```

and pressing the Enter key.

If the output is	Do
oinstall data dba or oinstall dbs data	step 11
oinstall dba data	step 12

11 Correct the oracle groups by typing

```
# usermod -g oinstall -G data,dba oracle
```

and pressing the Enter key.

12 Restore the oracle data using this procedure. Once the data restore is complete, continue to step 13.

13 Reboot the server by typing

```
# init 6
```

and pressing the Enter key.

You have completed this procedure.

High-availability configuration (two servers)

At the console connected to the inactive node

1 Log in to the inactive node through the console (port A) using the root user ID and password.

2 Bring the system to the OK prompt by typing

```
# init 0
```

and pressing the Enter key.

At the console connected to the active node

3 Log in to the active node through the console (port A) using the root user ID and password.

4 Access the OK prompt by typing

```
# init 0
```

and pressing the Enter key.

5 Insert SPFS Installation CD disk#1 into the drive.

6 At the OK prompt, restore the system by typing

```
OK boot cdrom - restore
```

and pressing the Enter key.

7 When prompted, accept the software license restrictions by typing

ok

and press the Enter key.

The system reboots.

Note: If the restore process fails at this point due to one or more disks not being labeled, refer to procedure Labelling disks on an SPFS-based server to label the disks.

8 When prompted, insert Volume 1 of the DVD on which you backed up the file systems, into the drive.

Note: During the restore process, the system will prompt you for additional Volumes if more than one DVD was used during the backup of file systems.

The restore process can take several hours to complete depending on the number and size of the files that are being restored.

Note: Although it can appear as if the system is hanging at times, please do not interrupt the restore process. If you suspect an issue with the restore process, please contact your next level of support.

9 Eject the backup DVD from the drive as follows:

a Ensure you are at the root directory level by typing

cd /

and pressing the Enter key.

b Eject the CD by typing

eject cdrom

and pressing the Enter key.

Note: If the DVD drive tray does not open (if not busy or being read from or written to), enter the following commands:

/etc/init.d/volmgt stop

/etc/init.d/volmgt start

Then, press the eject button located on the front of the DVD drive.

c Remove the backup DVD from the drive.

10 Use the following table to determine your next step.

If	Do
this SPFS-based server is hosting the CBM	step 14
otherwise	step 11

11 List the oracle groups by typing

groups oracle

and pressing the Enter key.

If the output is	Do
oinstall data dba or oinstall dbs data	step 12
oinstall dba data	step 13

12 Correct the oracle groups by typing

usermod -g oinstall -G data,dba oracle

and pressing the Enter key.

13 Restore the data using this procedure. Once the data restore is complete, execute step 14 and step 15.

14 Reboot the server by typing

init 6

and pressing the Enter key.

15 Re-image the inactive node using the active node's image. If required, refer to procedure Cloning the image of one server in a cluster to the other server.

You have completed this procedure.

Cloning the image of one server in a cluster to the other server

Application

Use this procedure to clone the image of the active server in a cluster to the inactive server.

The server can be hosting one or more of the following components:

- CS 2000 Management Tools
- IEMS
- Audio Provisioning Server (APS)
- Media Gateway 9000 Manager
- CS 2000 SAM21 Manager
- Network Patch Manager (NPM)
- Core and Billing Manager (CBM)

Prerequisites

This procedure has the following prerequisites:

- you need the root user ID and password
- you need console access to the inactive server under the following circumstances
  - this is the first time you clone
  - you replaced the inactive server
  - you executed a reverse restore (that is, you switched unit 0 and 1)

Note: Under any of the previous circumstances, the inactive server will have a different ethernet address from the one retained in the system. Therefore, console access is required to obtain the ethernet address of the inactive server.

ATTENTION

Ensure that no provisioning activities are in progress, or are scheduled to take place during this procedure.

Action

Perform the following steps to complete this procedure.

ATTENTION
Perform the steps that follow on the active server.

At your workstation

1 Establish a login session to the server, using one of the following methods:

If using	Do
telnet (unsecure)	step 2
ssh (secure)	step 3

2 Log in to the server using telnet (unsecure) as follows:

a Log in to the server by typing

```
> telnet <server>
```

and pressing the Enter key.

where

server
is the physical IP address of the active server

b When prompted, enter your user ID and password.

c Change to the root user by typing

```
$ su -
```

and pressing the Enter key.

d When prompted, enter the root password.

Note: Ensure you are on the active server by typing ubmstat. If *ClusterIndicatorSTBY* is displayed in the response, which indicates you are on the inactive server, log out of that server and log in to the other server through telnet using the physical IP address of the other unit. The response must display *ClusterIndicatorACT*, which indicates you are on the active server.

Proceed to step 4.

3 Log in using ssh (secure) as follows:

a Log in to the server by typing

```
> ssh -l root <server>
```

and pressing the Enter key.

where

server
is the physical IP address of the active server

Note: If this is the first time you are logging in using ssh, the system will request that you confirm to continue connecting. Enter `yes` at the prompt.

b When prompted, enter the root password.

Note: Ensure you are on the active server by typing ubmstat. If *ClusterIndicatorSTBY* is displayed in the response, which indicates you are on the inactive server, log out of that server and log in to the other server through telnet using the physical IP address of the other unit. The response must display *ClusterIndicatorACT*, which indicates you are on the active server.

On the active server

4 Access the command line interface to determine the server profile by typing

```
# cli
```

and pressing the Enter key.

5 Enter the number next to the View option in the menu.

6 Enter the number next to the sspfs_soft option in the menu.

Example response

```
=== Executing “sspfs_soft”

SSPFS version: 09.0 Build: 200508421 Server
Profile: cbm850

===”sspfs_soft” completed successfully
```

7 In the system response, note the server profile.

8 Exit the CLI by typing x until you return to the command prompt.

9 Use the following table to determine your next step.

If	Do
the Server Profile is cbm850	step 16
otherwise	step 10

10 Verify that all applications on the server are running by typing

servquery -status all

and pressing the Enter key.

11 Use the following table to determine your next step.

If	Do
all applications are running	step 14
otherwise	step 12

12 Start each application that is not running by typing

servstart <app_name>

and pressing the Enter key.

where

app_name
is the name of the application that is not in a RUNNING state, for example, SAM21EM

13 Use the following table to determine your next step.

If	Do
all applications started	step 14
otherwise	contact your next level of support

14 Verify the Patching Server Element (PSE) server application is running by typing

pse status

and pressing the Enter key.

If	Do
PSE is running	step 16
otherwise	step 15

15 Start the PSE server application by typing

```
# pse start
```

and pressing the Enter key.

If	Do
PSE starts	step 16
otherwise	contact your next level of support

16 Use the following table to determine your next step.

If	Do
this is the first time you are cloning the server, or you replaced the server, or you executed a reverse restore (that is, switched unit 0 and unit 1) Under any of the previous circumstances, the inactive server will have a different ethernet address from the one retained in the system. Therefore, console access is required to obtain the ethernet address of the inactive server.	step 17
otherwise	step 21

17 Use the following table to determine your next step.

If	Do
you do not know the Ethernet address of the inactive server	step 18
otherwise	step 19

At the console connected to the inactive server

18 Determine the Ethernet address of the inactive server as follows:

a Log in to the inactive server through the console (port A) using the root user ID and password.

Ensure you are on the inactive server by typing ubmstat. If ClusterIndicatorACT is displayed in the response, which indicates you are on the active server, log out of that server and log in to the other server. The response must display ClusterIndicatorSTBY, which indicates you are on the inactive server.

b Bring the system to the OK prompt by typing

```
# init 0
```

and pressing the Enter key.

c At the OK prompt, display the Ethernet address of the inactive server by typing

```
OK banner
```

and pressing the Enter key.

Example response:

```
Sun Fire V240, No keyboard
Copyright 1998-2002 Sun Microsystems, Inc.
All rights reserved. OpenBoot 4.8.0.build_04,
2048 MB memory installed, Serial #52964131.
Ethernet address 0:3:ba:28:2b:23, Host ID:
83282b23.
```

d Record the Ethernet address that is displayed.

On the active server

19 Start the cloning process on the active server by typing

```
# startb <Ethernet address>
```

and press the Enter key.

where

Ethernet address
is the Ethernet address of the inactive server

20 Proceed to step 22

On the active server

21 Start the cloning process on the active server by typing

```
# startb
```

and press the Enter key.

22 Use the following table to determine your next step.

If	Do
the system prompts you to enter the command “boot net - image”	step 23
otherwise	step 27

23 Connect to the console port of the inactive server.

If the console displays the	Do
login prompt	step 24
OK prompt	step 26

At the console connected to the inactive server

24 Log in to the inactive server using the root user ID and password.

25 Bring the system to the OK prompt by typing

```
# init 0
```

and pressing the Enter key.

26 At the OK prompt, boot the inactive server from the image of the active server by typing

```
OK boot net - image
```

and press the Enter key.

Note: There must be a space between the “-” and “image”.

Example response

```
SC Alert: Host System has Reset
Sun Fire V240, No Keyboard
Copyright 1998-2002 Sun Microsystems, Inc.  All
rights reserved. OpenBoot 4.8.0.build_04, 2048
MB memory installed, Serial #52964131. Ethernet
address 0:3:ba:28:2b:23, Host ID: 83282b23.
Rebooting with command: boot net - image
.
.
.
SC Alert: Host System has Reset
```

On the active server

27 Monitor the progress of the cloning from the active server. Cloning the inactive server takes approximately 40 minutes to complete, but the time can vary depending on system configuration.

Example response:

```
Waiting for network response from unit1-priv0...
received network response from unit1-priv0...
Waiting for unit1-priv0 to clone data...
waiting...1
waiting...2
waiting...3
unit1-priv0 is cloning: /export/d2
.
.
.
Verifying cluster status of unit1-priv0
waiting for cluster filesystem status to become
normal.
Jun 27 16:01:38 ucary0883c unix: /data: active up
repair - standby reflected (normal)
Deleted snapshot 2.
Deleted snapshot 1.
Deleted snapshot 0.
ucary0883c-unit0(active):/>
```

28 Once cloning is complete, wait approximately 5 minutes before you proceed to the next step.

On the active server

29 Verify the status of replicated disk volumes on the active server by typing

udstat

and pressing the Enter key.

If	Do
all file systems are ACTIVE normal UP clean	step 30
otherwise	contact your next level of support

At your workstation

30 Establish a login session to the inactive server using one of the following methods:

If using	Do
telnet (unsecure)	step 31
ssh (secure)	step 36

31 Log in to the inactive server using telnet (unsecure) by typing

```
> telnet <server>
```

and pressing the Enter key.

where

server
is the physical IP address of the inactive server in the cluster

32 When prompted, enter your user ID and password.

33 Change to the root user by typing

```
$ su -
```

and pressing the Enter key.

34 When prompted, enter the root password.

35 Proceed to step 38.

36 Log in to the inactive server by typing

```
> ssh -l root <server>
```

and pressing the Enter key.

where

server
is the physical IP address of the inactive server in the cluster

Note: If this is the first time you are logging in using ssh, the system will request that you confirm to continue connecting. Enter **yes** at the prompt.

37 When prompted, enter the root password.

On the inactive server

38 Verify the status of replicated disk volumes on the inactive server by typing

udstat

and pressing the Enter key.

If	Do
all file systems are STANDBY normal UP clean	step 39
otherwise	contact your next level of support

39 You have completed this procedure. If applicable, return to the high level task or procedure that directed you to this procedure.

Accessing TCP and TCP-IN log devices from a remote location

Purpose

Use this procedure to access TCP and TCP-IN devices, from a remote location.

Application

The TCP and TCP-In log devices can be accessed from either a local, or a remote location (console). The following procedures describe how to access these log devices from a remote location. These procedures can be used when you are performing the related procedures listed in the table Remote access to log devices procedures on page 62.

Remote access to log devices procedures

Log device	Procedure	Applies to
TCP	Accessing a TCP device from a remote location	“Configuring a core manager for log delivery” in the Configuration Management document Displaying or storing log records using logreceiver on page 84
TCP-IN	Accessing a TCP-IN device from a remote location	“Configuring a core manager for log delivery” in the Configuration Management document “Deleting a device using logroute” in the Configuration Management document

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Procedure

Accessing a TCP device from a remote location

At the remote workstation

1 Start the logreceiver tool:

`logreceiver <port_number>`

where:

<port_number>
is the port number used for the TCP device on the core manager

2 Continue with the desired procedure listed in the table Remote access to log devices procedures on page 62.

3 You have completed this procedure.

Accessing a TCP-IN device from a remote location

At the remote workstation

1 Use telnet to access the core manager:

`telnet <ip_address> <port_number>`

where:

<ip_address>
is the address of the core manager

<port_number>
is the number of the port of the device on the core manager

2 Log into the core manager either as maint or admin.

3 Start the logroute tool:

`logroute`

4 Continue with the desired procedure from the table Remote access to log devices procedures on page 62.

5 You have completed this procedure.

SBA alarm troubleshooting

Purpose

In the SBA environment, there are many conditions that can cause an alarm to be raised. While there is a log message associated with each alarm, the information that is supplied is not always enough to determine what raised the alarm.

Note: When alarms related to a filtered stream are sent to the CM, they are sent under the name of the associated CM billing stream. When this occurs, the name of the filtered stream is prepended to the text of the alarm.

Application

The majority of the alarms raised on the SBA system that you can resolve can be traced back to one of two problem areas:

- a problem in the FTP process
- an insufficient amount of storage

A problem in the FTP process

If you receive numerous FTP and LODSK alarms, this can indicate a problem with either the SBA or the general FTP process on the core manager. LODSK generally indicates that your primary files (closedNotSent) are not being moved from the core manager to the downstream processor. Review any accompanying logs.

The downstream processor can be full with no space to write files to, which can cause an FTP error. When this happens, you see core SDMB logs, which indicate that the file is not sent. In addition, if you do not receive an FTP alarm, it is possible that scheduling is turned off, which prevents FTP alarms from being sent.

Insufficient amount of storage

If you receive numerous alarms for the backup system without receiving an FTP or LODSK alarm, this indicates a communication problem. The core is not communicating with the core manager.

Use the following procedures to clear alarms based on the FTP process:

- Verifying the file transfer protocol on page 168
- Verifying the FTP Schedule on page 175

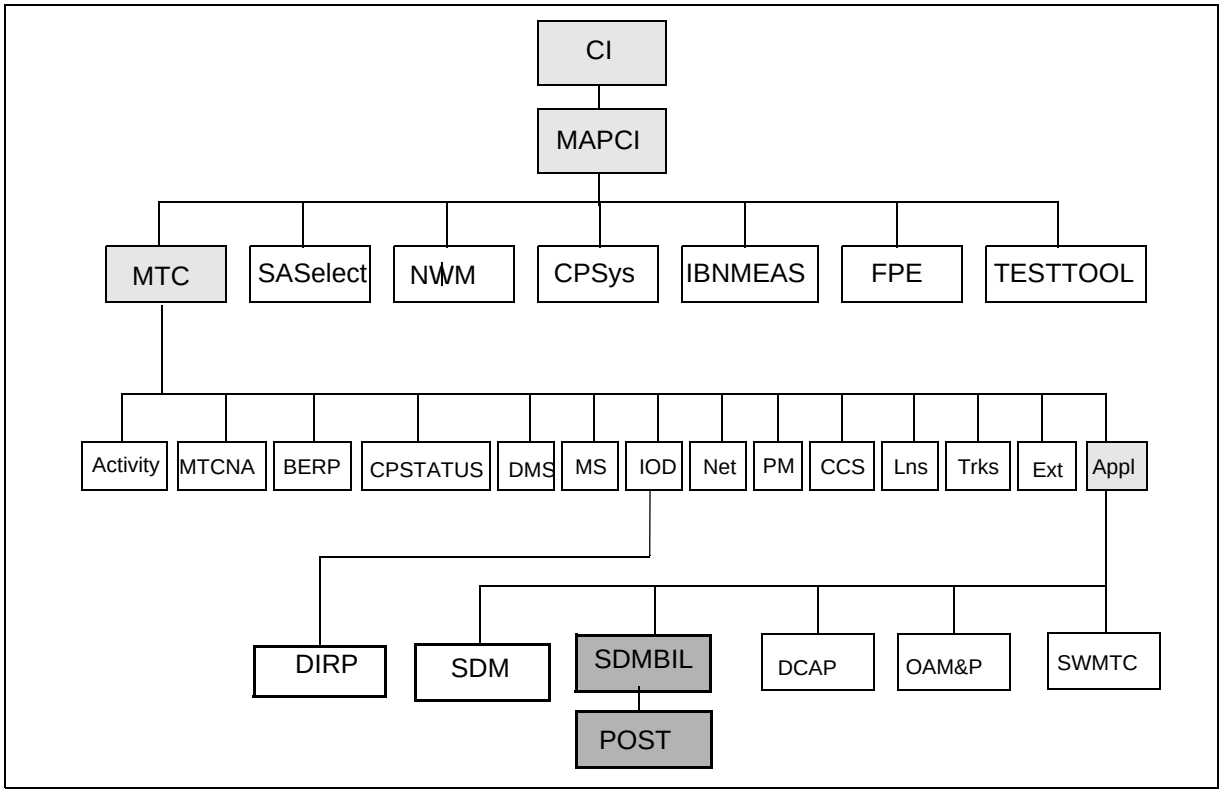
Use the following procedures to clear alarms based on communication problems between the core and the core manager:

- Clearing a DSKWR alarm on a CBM on page 122
- Clearing a major SBACP alarm on page 160
- Clearing a minor SBACP alarm on page 163

APPL Menu level alarms

Because SBA processing takes place in both the CM and the core manager environment, the SBA program displays core manager-generated alarms in the MAPCI;MTC window at the CM. The figure Alarms layout shows the SBA alarms that are displayed under the APPL Menu level at the MAPCI;MTC level on the CM side.

Alarms layout



Maintenance for SBA

Maintenance for SBA on the CM side centers around the following entities:

- table SDMBILL
- MAP level SDMBIL

- logs
- states
- alarms

Maintenance for SBA on the core manager side is performed using the interface on the SBA RMI. For example, you perform maintenance on the core manager side of SBA by using commands in the billing level (billmtc) of the core manager RMI display.

You can also display the alarms raised by the core manager side for the SBA by using the DispAl command from the billmtc level. The DispAl command displays the alarm criticality, stream, and text of the alarms.

Alarm severity

There are three levels of severity for SBA alarms:

- Critical:
  a severe problem with the system that requires intervention
- Major:
  a serious situation that can require intervention
- Minor:
  a minor problem that deserves investigation to prevent it from evolving to a major problem

When multiple alarms are raised, the alarm with the highest severity is the one displayed under the SDM header of the MAP banner. If multiple alarms of the same severity (for example, critical) are raised, the first alarm that is raised is the one displayed under the SDM header of the MAP banner. For example, if a NOBAK critical alarm is raised before a NOSTOR critical alarm, the NOBAK alarm is the one that is displayed. Use the DispAl command to view all outstanding alarms, and use the associated procedure to clear each outstanding alarm.

CM MAP states

In the SBA environment, an SBA stream can have different state values due to some action or condition on the SBA system. You can view the state of a stream from the CM by entering:

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

where

<stream_name> is the name of the stream

The possible state values and their definition are as follows:

- Offline pending (OffP):
the stream has been turned off and is waiting for the core manager to complete processing its data
- Offline (OffL):
the stream is offline
- Manual busy (ManB):
the stream has been manually busied by a user from the CM; data is being written to backup files
- System busy (SysB):
the stream has been busied by the SBA system due to a communications or internal software error; data is being written to backup files
- Remote busy (RBsy):
the stream has been busied by the SBA system due to a communications or internal software error; data is being written to backup files
- Backup (Bkup):
the stream is writing data to backup files due to performance and communication problems
- Recovery (Rcvy):
the stream is in service and is also sending backup files previously created to the core manager
- In-service (InSv):
the stream is in a normal working state
- In-service trouble (ISTb):
the core manager communication is in service trouble because it is in a split-mode state

Common procedures

There are a few procedures that are common to all of the alarm clearing procedures. These common procedures include the following:

- Verifying the file transfer protocol on page 168 helps you determine that the FTP process is configured correctly and is able to transfer files
- Verifying the FTP Schedule on page 175 helps you determine that the system is able to send FTP files on a regular basis
- “Configuring SBA backup volumes on the core” in the core manager Accounting document is used to create and activate alternative backup volumes for a stream

Use the following procedures to clear alarms based on insufficient storage capacity:

- Clearing a BAK50 alarm on page 102
- Clearing a BAK70 alarm on page 106
- Clearing a BAK90 alarm on page 110
- Clearing a BAKUP alarm on page 114
- Clearing a NOBAK alarm on page 135
- Clearing a NOREC alarm on page 144
- Clearing a NOSTOR alarm on page 146
- Clearing a NOVOL alarm on page 150

Accessing the MATE

Purpose

Use this procedure to access the MATE.

Procedure

Use the following procedure to access the MATE.

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Accessing the MATE

At the workstation UNIX prompt or VT-100 terminal prompt:

1 Log onto the CBM.

2 Get the current hostname by entering:

```
GetCurrentHostName
```

Example response:

<CBM hostname>-<unit0 / unit1>

3 Access the Report Registration Menu:

If	Then
the hostname returned in step 2 contains "unit0"	the MATE hostname is "unit1"
the hostname returned in step 2 contains "unit1"	the MATE hostname is "unit0"

4 Determine if the MATE is running by entering:

```
ping <mate hostname>
```

Note: The <mate hostname> is the one determined in step 3.

5

If	Do
step 4 indicates the MATE is Active	step 6
otherwise	step 8

6 Access the MATE using SSH by typing:

ssh root@ <mate hostname>

where

Note: You can log into the MATE without a password. To exit the MATE, type > exit to return to the local system.

7 You have completed this procedure.

8 You need to access the MATE through a local VT100 terminal.

Clearing the MATE alarm

Purpose

Use this procedure to clear the MATE alarm.

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Procedure

Use the following procedure to clear the MATE alarm.

At the workstation UNIX prompt or VT-100 terminal prompt:

1 Log onto the CBM showing the mate alarm.

2 Start the cbmmtc tool by typing:

```
cbmmtc
```

Note: Check the MATE column on the banner. If the state is not "." (dot), this indicates the presence of an alarm.

3 Access the MATE by performing the procedure Accessing the MATE on page 69.

4 Use the following table to determine your next step.

If	Do
the fault is related to the CBM	Clearing a CBM application alarm on page 27
the fault is platform-related (SPFS)	SPFS / Sun Netra 240 services fault clearing procedures on page 10

5 Log out of the MATE.

6 You have completed this procedure.

Displaying SBA log reports

Purpose

Use this procedure to display the current logs raised by the core manager for the SuperNode Billing application (SBA) that have not been acknowledged by the Core.

Application

The MIB parameter “sendBillingLogsToCM” affects the displogs command.

The displogs command does not display logs generated by the Core.

Prerequisites

Logging on to the CS 2000 Core Manager

You must be a user authorized to perform fault-admin actions in order to perform this procedure.

For information on how to log in to the CS 2000 Core Manager as an authorized user or how to display other information about a user or role group, review the procedures in the following table.

Procedure	Document
Logging in to the CS 2000 Core Manager	*CS 2000 Core Manager Security and Administration*, NN10170-611
Displaying information about a user or role group	*CS 2000 Core Manager Security and Administration*, NN10170-611

Logging on to the Core and Billing Manager

You must have the root user ID and password to log into the server.

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Procedure

Displaying SBA logs

At any workstation or console

1 Log into the core manager. Refer to Prerequisites for details.

2 Access the billing maintenance interface:

```
billmtc
```

3 Display the logs:

```
displogs
```

The logs are displayed in the format of name, number, event type, alarm status, label, and body. If there are no logs to display, the message `No unsent logs` is displayed.

4 You have completed this procedure.

Displaying SBA alarms

Purpose

Use this procedure to display the current alarms raised by the core manager for the SuperNode Billing application (SBA).

Application

The MAP CI displays the status (critical, major, minor), the stream, and the text of the alarm.

This command displays alarms that have not been sent to the computing module (CM). However, the dispal command does not display Core-side alarms, such as the BAK50, BAK70, BAK90, NOBAK, NOSTOR, and BAKUP alarms.

Prerequisites

Logging on to the CS 2000 Core Manager

You must be a user authorized to perform fault-admin actions in order to perform this procedure.

For information on how to log in to the CS 2000 Core Manager as an authorized user or how to display other information about a user or role group, review the procedures in the following table.

Procedure	Document
Logging in to the CS 2000 Core Manager	*CS 2000 Core Manager Security and Administration*, NN10170-611
Displaying information about a user or role group	*CS 2000 Core Manager Security and Administration*, NN10170-611

Logging on to the Core and Billing Manager

You must have the root user ID and password to log into the server.

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Procedure

Displaying SBA alarms

At any workstation or console

1 Log into the core manager. Refer to Prerequisites for details.

2 Access the billing maintenance interface:

```
billmtc
```

3 Display the alarms:

```
dispal
```

The alarms are displayed in the format of alarm status (critical, major, minor), stream, alarm short text, and alarm long text. If there are no alarms to display, the message, “No alarms” is displayed.

4 You have completed this procedure.

Collecting DEBUG information using the CBMGATHER command

Purpose

Use this procedure to collect DEBUG information from the core manager.

Application

Use either of these procedures to collect the following DEBUG information from the core manager:

- the output of cbmgather
- the content of /var/adm directory

It is important to collect DEBUG information from the system in case of a failure (before recovery). The information assists in discovering the root cause of the problem and in preventing similar problems in the future.

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Procedure

At the core manager command line (UNIX prompt) of the active node

1 Run the utility to collect the output:

```
cbmgather
```

The output file from this command is located under /var/adm and has a name in the format:
cbmgather_<machine>_<date_and_time>.tar.Z

Example
/var/adm/cbmgather_hadry2_20050221141300.tar.Z

2 Tar and compress the content of directory /var/adm:

```
cd /var/adm
tar cvf varadm_active.tar *.day* *.log
compress varadm_active.tar
```

The output of the compressed tar file in the example is called varadm_active.tar.Z.

3 Move the files generated by commands executed in steps 1 and 2 out the system to a secure location using FTP (in BINary mode).

4 Remove the gathered output/files from the system:

```
rm -f
/var/adm/cbmgather_<machine>_<date_and_time>
.tar.Z
```

Note: The command shown above is entered on a single line. When entering the command, ensure that there is a single space between -f and /var, and that there is no space between time> and .tar.

```
rm -f /varadm_active.tar.Z
```

If	Do
your system is a CBM 850 cluster configuration	step 5
your system is not a CBM 850 cluster configuration	step 9

At the core manager command line (UNIX prompt) of the inactive node

5 Run the utility to collect the output:

```
cbmgather
```

6 Tar and compress the content of directory /var/adm:

```
cd /var/adm
tar cvf varadm_inactive.tar *.day* *.log
compress varadm_inactive.tar
```

Example response:

The output of the compressed tar file in the example is called `varadm_inactive.tar.Z`.

7 Move the files generated by commands executed in steps 5 and 6 out the system to a secure location using FTP (in BINary mode).

8 Remove the gathered output/files from the system:

```
rm -f
/var/adm/cbmgather_<machine>_<date_and_time>
.tar.Z
```

Note: The command shown above is entered on a single line. When entering the command, ensure that there is a single

space between -f and /var, and that there is no space between time> and .tar.

```
rm -f /varadm_inactive.tar.Z
```

9 You have completed this procedure.

Controlling the SDM Billing Application

Purpose

Use the following procedure to busy the SDM Billing Application (SBA) or return the SBA to service.

Prerequisites

You must establish communications between the core manager and the core for SBA to run successfully.

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Procedure

At any workstation or console

1 Log in to the CBM.

2 Access the Application level:

```
cbmmtc appl
```

The system displays a list of applications.

Note: Use the up and down commands to scroll through the list of applications.

If you want to	Do
busy the SBA	step 3
return the SBA to service	step 5

3

CAUTION

Busying the SBA causes SBA to go into backup mode, and triggers an SBACP (major) alarm under the SDMBIL banner at the MAP terminal.

Busy the SDM Billing Application:

```
bsy <x>
```

where:

<x>
is the number next to the CBM Billing Application

Example response:

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

4 Confirm the busy command:

y

If the SBA	Do
busied successfully and you want to return the SBA to service	step 5
busied successfully but you do not want to return the SBA to service at this time	step 13
did not busy successfully	contact your next level of support

5 Return the CBM Billing Application to service:

`rts <x>`

where:

<x>
is the number next to the CBM Billing Application

Note 1: This command causes SBA streams to go into a recovery mode.

Note 2: Any streams configured for real-time billing (RTB) are also returned to service. Log report SDMB375 is generated when a stream configured for RTB fails to return to service.

If the SBA	Do
returned to service successfully	step 6
did not return to service successfully	contact your next level of support

6 Determine if log SDMB375 was generated.

If the system	Do
generates log SDMB375	step 7
does not generate log SDM375	you have completed this procedure

7 Return the RTB streams to service. Exit the Application level:

```
quit all
```

8 Access the billing maintenance level:

```
billmtc
```

9 Access the schedule level:

```
schedule
```

10 Access the real-time billing level:

```
rtb
```

11 Busy the stream:

```
bsy <stream name>
```

where:

<stream name>
is the name of the billing stream configured for RTB (for example OCC)

12 Return the stream to service:

```
rts <stream name>
```

where:

<stream name>
is the name of the billing stream configured for RTB (for example OCC)

If the billing stream configured for RTB	Do
returns to service successfully	step 13
does not return to service successfully	contact your next level of support

13 Quit the billing maintenance level:

```
quit all
```

14 You have completed this procedure

Displaying or storing log records using logreceiver

Purpose

Use this procedure to display or store log records on a workstation using the logreceiver tool.

Application

The commands that you enter to display or store log records on a workstation must include a port number. The port number must be the same as the port number used to configure the TCP device on the core manager. The port number must not be used for any other purpose on the workstation, otherwise the following error message appears:

```
Failed to listen for connection request on port
<port_number>, exiting
```

You must change the port number used to configure the TCP device on the core manager.

Storage file

If the storage file does not exist, it is created automatically. The logs from the core manager are stored in this file.

If the file exists, the logs from the core manager are added to it provided its UNIX access permissions allow writing to the file. In either case, a message ‘`Accepted connection request from host <hostname>`’ is displayed on the screen just before the first log received is written to the file. Press ctrl -c and press the Enter key to terminate execution of the logreceiver tool.

If the file exists, but its permissions do not allow writing to it, an error message ‘`Failed to open <filename>`’ displays on the screen. Press ctrl -c, and press the Enter key to terminate execution of the logreceiver tool.

The file continues to fill up until either the logreceiver execution terminates or all free storage in the file system is exhausted. In the latter case, the logreceiver execution terminates automatically. The error message ‘`Failed to open <filename>`’ displays on the screen and you must remove the file or free up some storage.

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Procedure

Checking the port numbers in use on a workstation

At the client workstation

1 Check the port numbers in use:

```
more/etc/services
```

The list of port numbers in use is displayed. Scroll through the display by pressing the Enter key again.

Storing logs in a file

At the client workstation

1 Start the logreceiver tool to store logs in a file:

```
logreceiver <port> -f <filename>
```

where

<port> is the port number used when configuring the TCP device on the core manager

<filename> is the name of the file

Displaying log records on a workstation

At the client workstation

1 Start the logreceiver tool to display the log records on the screen:

```
logreceiver <port>
```

where

<port> is the port number used when configuring the TCP device on the core manager

2 You have completed this procedure.

Retrieving and viewing log records

Purpose

Use this procedure to retrieve and view CM and core manager log records using the core manager log query tool.

Application

When you enter the log query tool, the system automatically displays the log records using the following default settings:

- log type: all
- format: std
- date: current date
- time: midnight of current date
- display of log records: page by page
- arrangement of logs displayed: show latest log first

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Procedure

Retrieving and viewing logs

At a terminal or terminal session connected to the core manager

1 Log into the core manager.

2 Start the log query tool using the default settings:

logquery

Example response:

```
                                SDM Log Query
Category: CUSTLOG                 Type: ALL
RTEC02CR     C7UP105 MAR12 14:58:55 7365 INFO UNSUCCESSFUL CALL ATTEMPT
        CKT RLGHNCECBDS1LSA   10
        REPORTED BY CKT RLGHNCECBDS1LSA   10
        REASON = UNALLOCATED NUMBER
        ROUTESET =   EC_B_RS
        CLDNO =                     3579972019

RTEC02CR   * BOOT201 MAR12 14:58:44 7364 INFO Bootp log report
Mac Address : 006038381f87
          MAC addr to node_id lookup failure : 13
          INM permisssion to boot failure    : 0
          Core IP address lookup failure     : 0
          SEND_UDP_MSG failure               : 0

RTEC02CR   * BOOT201 MAR12 14:58:44 7363 INFO Bootp log report
Mac Address : 52415320c011
          MAC addr to node_id lookup failure : 19
          INM permisssion to boot failure    : 0
[Warning: log too big for screen; truncated...]


Command:
```

3 Access a list of available parameters and variables to view logs:

logquery -help

4 Enter the applicable command.

5 When you are finished, exit the log query tool:

quit

6 You have completed this procedure.

Troubleshooting AFT alarms

Purpose

Use this procedure to clear alarms generated by the Automatic File Transfer (AFT) application.

Application

Use the following procedures to resolve AFT alarms that are specific to the SuperNode Billing Application (SBA).

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Indication

At the SDMBIL level of the MAP, "AFT" and the alarm level indicators for critical (*C*) and major (M) alarms appear in the alarm banner under the SDMBIL header.

Meaning

An AFT alarm is generated under the conditions listed in the table AFT alarms.

AFT alarms

Alarm	Occurs when:
Critical (*C*)	• an AFT session network connection has been disrupted during file transfer • the retry count has been exceeded on a file • the message transfer protocol (MTP) timer has expired
Major (M)	an AFT session has been stopped using the AFT level Stop command

Impact

When conditions exist for a critical or major AFT alarm, billing records are not being transferred to the downstream collector.

Procedure

This section describes the methods for clearing critical and major AFT alarms.

Clearing critical alarms

To clear a critical alarm, use one of the following methods:

- correct the network connection disruption
- manually clear the alarm through the Alarm command at the AFT level of the BILLMTC remote maintenance interface (RMI)
- delete the AFT session

Critical alarms also are cleared when the network connection disruption is corrected.

Clearing major alarms

To clear a major alarm, use one of the following methods:

- restart the session using the Start the command available at the AFT level of the BILLMTC RMI
- manually clear the alarm through the Alarm command available at the AT level of the BILLMTC RMI
- delete the tuple from the automaticFileTransferTable table

Procedure

Use the following procedure to clear an AFT alarm manually.

Clearing an AFT alarm manually

At the core manager

1 Access the BILLMTC level:

```
billmtc
```

2 Access the Application (APPL) level:

```
appl
```

3 Access the Automatic File Transfer (AFT) level:

```
aft
```

4 Clear the alarm:

```
alarm cancel <session_name>
```

where:

<session_name> is the unique name of the network connection for which you want to clear the alarm

Example response:

```
*** WARNING: Alarm(s) will be cancelled for AFT
session <session_name> Do you want to continue?
(Yes or No)
```

5 To cancel the alarms, enter:

yes

Example response:

```
Cancelled alarms for AFT session:
<session_name>
```

6 You have completed this procedure.

Deleting a tuple from automaticFileTransferTable

CAUTION

An AFT session must be stopped before it can be deleted. When an AFT tuple is deleted, billing files are no longer being transferred downstream.

At the core manager

1 Access the BILLMTC level:

billmtc

2 Access the APPL level:

appl

3 Access the AFT level:

aft

4 Access the AFTCONFIG level:

aftconfg

5 Delete the tuple from the automaticFileTransferTable:

delete <session_name>

where:

<session_name> is the unique name of the network connection that generated the alarm

Example response:

```
*** WARNING: Alarm(s) will be cancelled for AFT
session <session_name> Do you want to continue?
(Yes or No)
```

6 To delete the table entry (tuple), enter:

yes

Example response:

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

7 You have completed this procedure.

Restarting an AFT session

At the core manager

1 Access the BILLMTC level:

billmtc

2 Access the APPL level:

appl

3 Access the AFT level:

aft

4 Restart the AFT session that generated the alarm:

start <session_name>

where:

<session_name> is the unique name of the network connection that generated the alarm

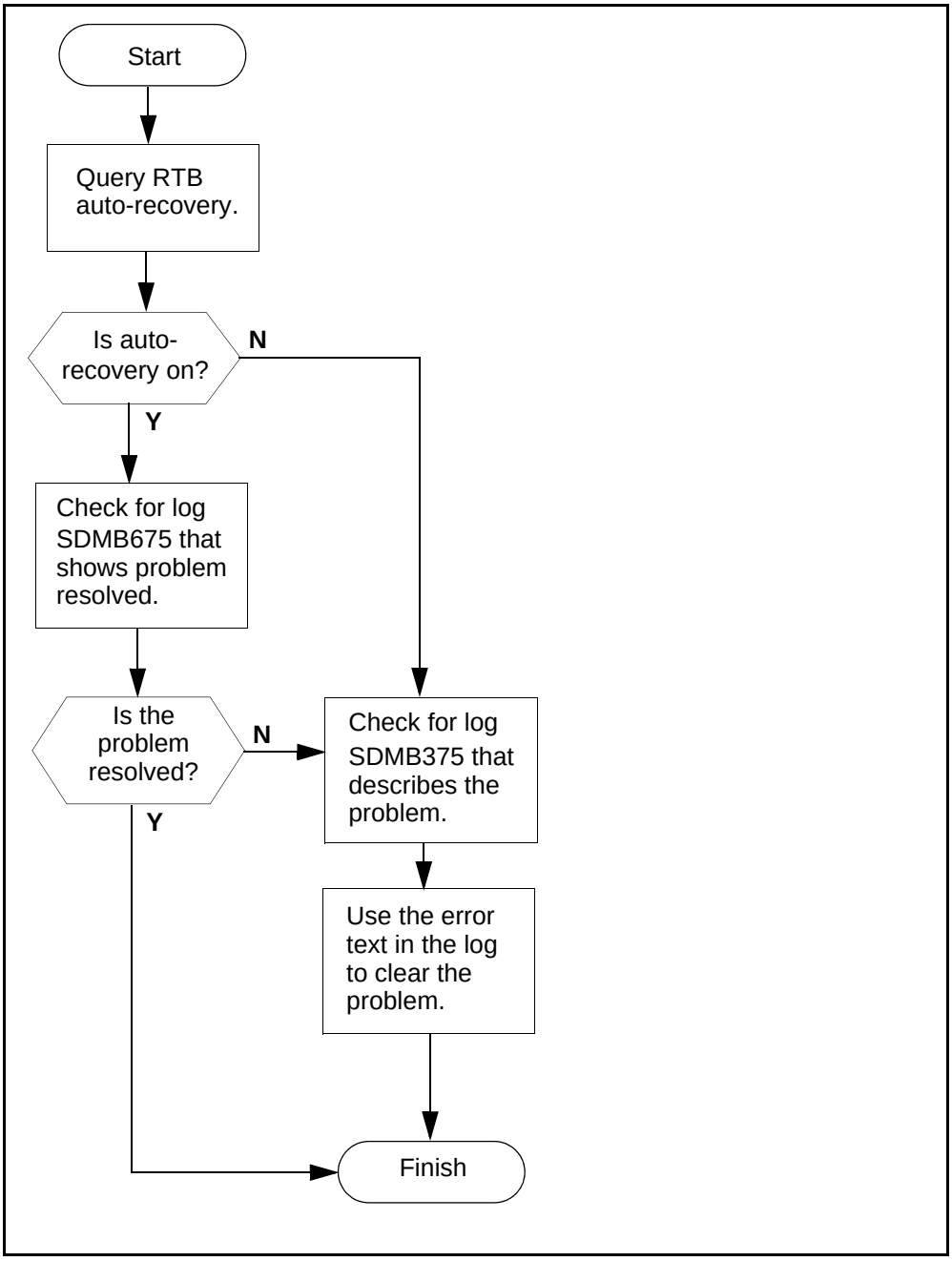
Example response:

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

5 You have completed this procedure.

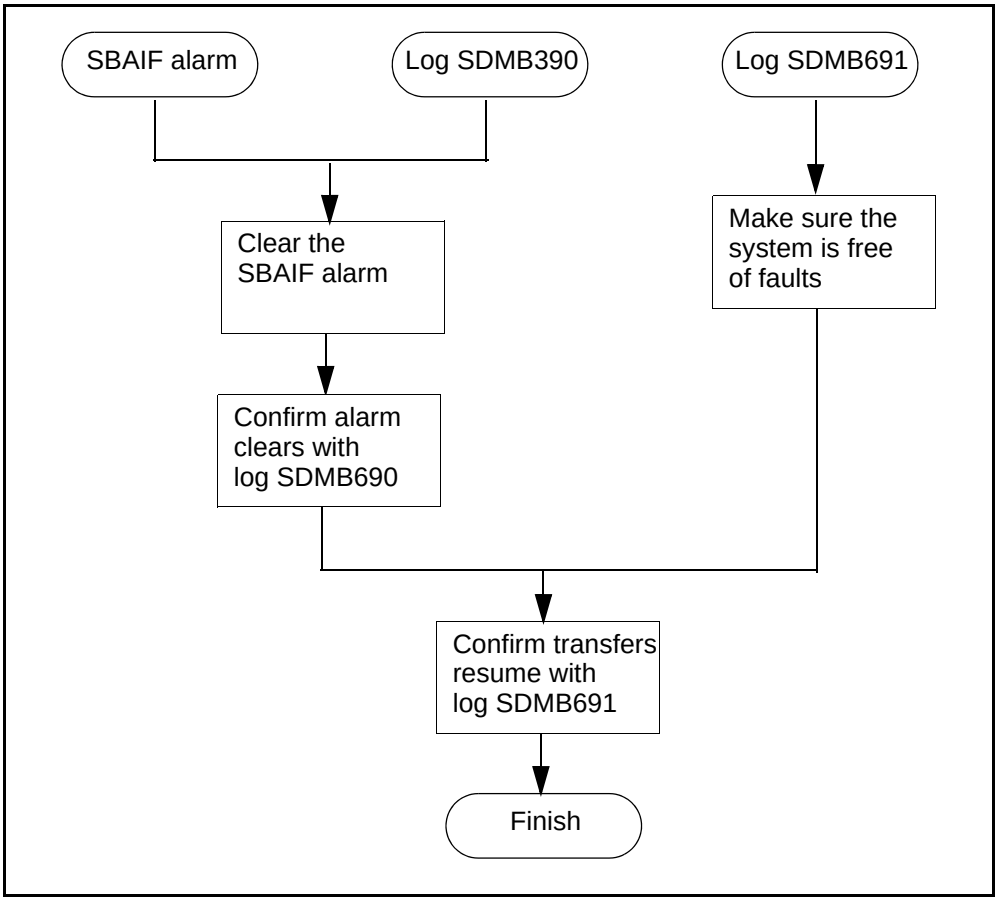
Troubleshooting RTB problems

Use the following flowchart, and the procedures in your documentation for this product, to troubleshoot problems related to real time billing (RTB).



Troubleshooting problems with scheduled billing file transfers

Use the following flowchart, and the procedures in your product documentation, to troubleshoot problems related to the scheduled transfer of billing files from the core manager to a downstream destination.



Note: The length of time for the SuperNode Billing Application (SBA) to resume transferring billing files depends on the following configured parameters:

- the number of active scheduled tuples
- the time interval to transfer files

Troubleshooting Log Delivery problems on a CBM

Purpose

Use the procedure to:

- troubleshoot the ISTb state of the log delivery application
- isolate and clear faults
- change the state of the log delivery application from ISTb to InSv

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Fault conditions affecting Log Delivery

Lost logs

When the system detects that logs are being lost, an internal report indicating the number of logs lost is sent to all client output devices.

To clear the problem:

1 Access the Log Delivery commissioning tool

2 Select the Global Parameters menu, and

3 Increase the buffer size

Refer to procedure “Configuring Log Delivery global parameters” in the CBM Configuration Management document.

No logs being received at a Log Delivery client

If no logs are being received at a Log Delivery client, do the following at the Device List menu of the Log Delivery commissioning tool:

- verify that the client is defined
- verify that the log stream for the client is defined

Refer to procedure “Modifying a log device using logroute” in the CBM Configuration Management document.

Logs not formatted properly

If the log reports at a Log Delivery client device are not formatted correctly, access the Log Delivery commissioning tool and check the following:

- at the Device menu, verify that the correct log format has been commissioned for the device (STD, SCC2, STD_OLD, SCC2_OLD)
- at the Global Parameters menu, check that the parameters for start and end of line, and start and end of log, are set correctly.

For more information, refer to procedure “Modifying a log device using logroute” in the CBM Configuration Management document.

Log devices on the computing module are full

If a CBM cannot detect computing module (CM) logs, it is possible that there are no free log devices on the CM. In the event that all the log devices on the CM are full, the Log Delivery application generates an alarm. The application state changes to ISTb, and generates an SDM303 log at the RMI.

The log delivery alarm can be cleared when any log device on the CM/Core is freed, and the Log Delivery application is manually busied and returned to service.

Interval

Perform this procedure when the state of the log delivery application in the Apply menu level of the cbmmtc user interface is ISTb.

Procedure

Troubleshooting the log delivery application when its state is ISTb

At the local or remote VT100 console

1 Log into the CBM as the root user.

2 Access the maintenance interface:

```
cbmmtc
```

3 Access the application level (Appl):

```
appl
```

If GDD is	Do
Offl	step 4
ManB	step 5

If GDD is	Do
InSv	step 6

4 Busy the GDD application:

bsy <fileset_number>

where

<fileset_number>
is the number next to the GDD application

5 Return the GDD application to service:

rts <fileset_number>

where

<fileset_number>
is the number next to the GDD application on the screen

Note: Wait at least one minute for the ISTb state to change to InSv.

If the Log Delivery application	Do
remains ISTb	step 6
goes InSv	you have completed this procedure

6 Check the CBM for any faults:

querycbm flt

If	Do
a fault report indicates “log file is circulating (losing logs)”	step 7
a fault report indicates “Core log device is not Configured”	step 20
no fault report indicates “log file is circulating (losing logs)”	contact your next level of support

7 Exit the maintenance interface:

quit all

Note: You must be a root user of the CBM to continue with the procedure.

8 Access the /gdd directory:

```
cd /cbmdata/00/gdd
```

9 Check all log files:

```
ls -l
```

10 Determine if there are any files present that are not log files.

Note: Log files start with *LOGS.recorddata*.

If	Do
there are files present that do not start with LOGS.recorddata	step 11
all files start with LOGS.recorddata	step 17

11 Delete files that are not log files:

Note: Once you remove the file, there is no way to restore it.

```
rm <file>
```

where

<file>
is the file in the /gdd directory that is not a log file.

12 Return to the maintenance interface:

```
cbmmtc
```

13 Access the application level (Appl):

```
appl
```

14 Determine if the state of the log delivery application is ISTb. Wait at least 1 min. to for the ISTb state to change to InSv.

If the Log Delivery application	Do
remains ISTb	step 15
goes InSv	you have completed this procedure

15 Exit the maintenance interface:

```
quit all
```

16 Access the /gdd directory:

```
cd /cbmdata/00/gdd
```

17 Check the log files:

```
ls -l
```

18 Determine if the current log file (LOGS.recorddata) is much larger than the other log files.

If the current log file is	Do
larger than the other log files	contact your next level of support
the same size as the other log files	step 19

19 Increase the size of the /cbmdata/00/gdd file system:

Note: Once you have increased the size of a file system, you cannot decrease it.

```
filesys grow -m /cbmdata/00/gdd -s <size>{m,g}
```

where

<size>
is the size in megabytes (Mbytes) or gigabytes (g) by which you want to increase the current size of the file system

Note 1: Configure the size of the /cbmdata/00/gdd file system to be equal to the required capacity for 12 hours of log files, multiplied by 2 (for a 24 hour file size) then multiply the value by 50 days. This provides enough storage space to accommodate the required 30 days of log files, with excess capacity available.

Example
3Mb x 2 x 50 days = 300 Mb

where

300 Mb

is the average size of a 12 hour log file in the /gdd file system

Note 2: The default value for GDD is set for seven days. If needed, increase the value, but a corresponding increase in GDD size is required.

At the MAP

20 Verify that a log device on the core is available.

```
logutil; listdevs
```

If all 32 log devices are being used, free up one log device for the Log Delivery Service on the CBM to use.

For more information, refer to procedure “Deleting a log device using logroute” in the CBM Configuration Management document.

At the local or remote VT100 console

21 Busy the Log Delivery application:

```
bsy <fileset_number>
```

where

<fileset_number>
is the number next to the GDD application

22 Return the Log Delivery application to service:

```
rts <fileset_number>
```

where

<fileset_number>
is the number next to the GDD application

23 Determine if the state of the log delivery application is still ISTb. Wait at least 1 minute for the ISTb state to change to InSv.

If the Log Delivery application	Do
remains ISTb	contact your next level of support
goes InSv	step 24

24 You have completed this procedure.

Clearing a BAK50 alarm

Purpose

Use this procedure to clear a BAK50 alarm.

Indication

BAK50 appears under the APPL header of the alarm banner at the MTC level of the MAP display. The alarm indicates a critical alarm for the backup system.

Meaning

The SBA backup system is using more than 50 percent of the total space on backup volumes on the DMS/CM. If the stream is configured as:

- `both`
  the alarm severity level is major
- `on`
  the alarm severity level is critical

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

The core manager generates the SDMB820 log report when this alarm is raised.

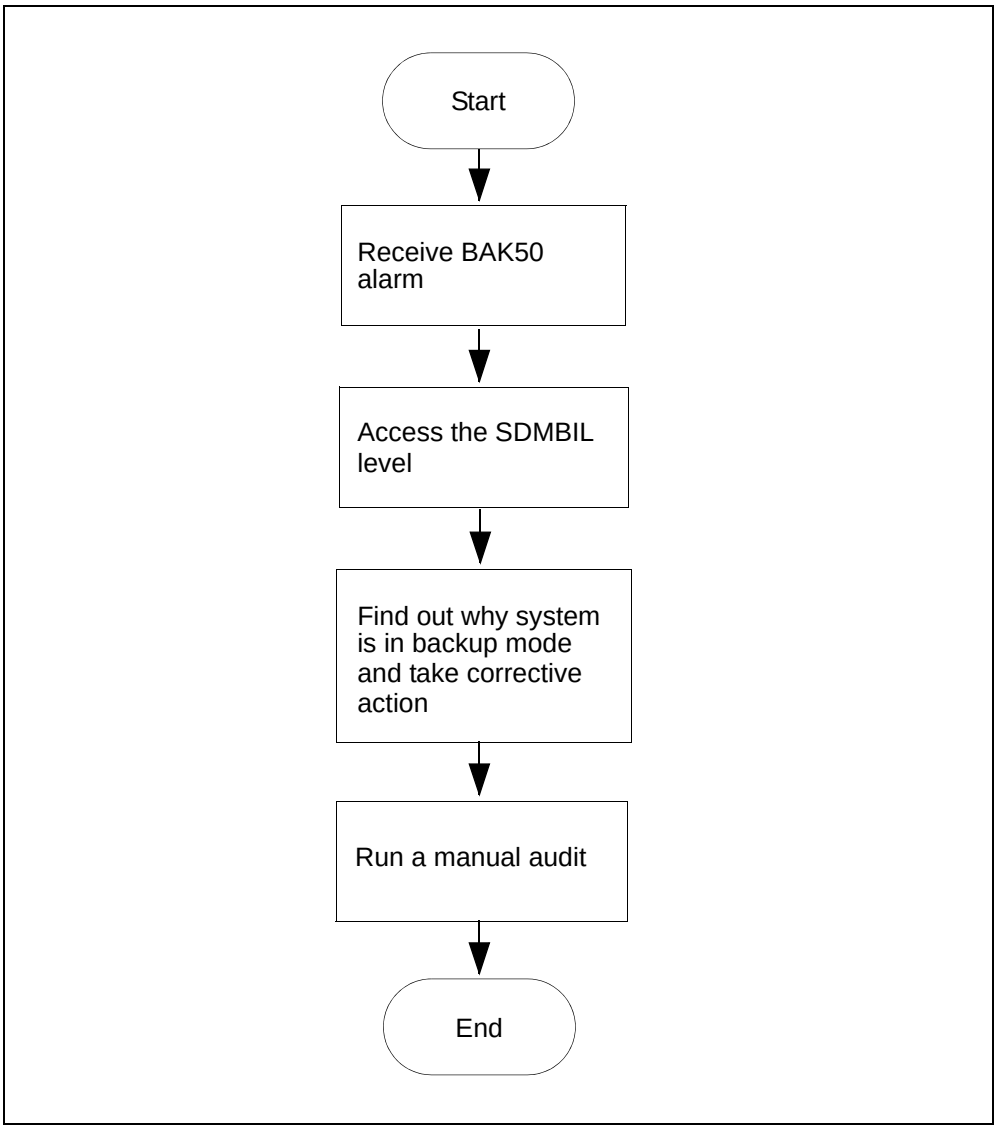
Impact

If the disk usage for the SBA backup system reaches 100 percent of its capacity, data that is configured to go to backup storage is lost.

Procedure

The following flowchart provides a summary of the procedure. Use the instructions in the procedure to clear the alarm.

BAK50 alarm clearing flowchart



Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Clearing a BAK50 alarm

At the MAP

1 Post the billing stream:

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

where

<stream_name> is the name of the billing stream.

2 Determine why the system is in backup mode.

3 Display all of the alarms that have been raised:

```
DispAL
```

4 Determine the billing stream status.

If the billing stream is	Perform the following steps
SysB	perform the procedure for the alarm or the condition, and then return to step 5.
RBsy	refer to Clearing a major SBACP alarm on page 160, and then return to step 5.
ManB	RTS the billing stream.
Bkup	Go to step 8. **Note:** The system may be in backup mode because communication between the core manager and CM has been lost. Adjusting disk space can temporarily remove the alarm. It is important, however, to determine why the system is in backup mode and take corrective action.

5 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 6
did not clear	step 8

6 Ensure that the billing system is in recovery:

```
post <streamname>
```

7 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 12
is not in recovery	contact your next level of support

8 Perform the procedure Adjusting disk space in response to SBA backup file system alarms on page 118

9 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 10
did not clear	contact your next level of support

10 Ensure that the billing system is in recovery:

```
post <streamname>
```

11 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 12
is not in recovery	contact your next level of support

12 You have completed this procedure.

Clearing a BAK70 alarm

Purpose

Use this procedure to clear a BAK70 alarm.

Indication

BAK70 appears under the APPL header of the alarm banner at the MTC level of the MAP display, and indicates a critical alarm for the backup system.

Meaning

The SBA backup system is using more than 70 percent of the total space on backup volumes on the DMS/CM. If the stream is set to:

- `both`
  the alarm severity level is major
- `on`
  the alarm severity level is critical

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

The core manager generates the SDMB820 log report when this alarm is raised.

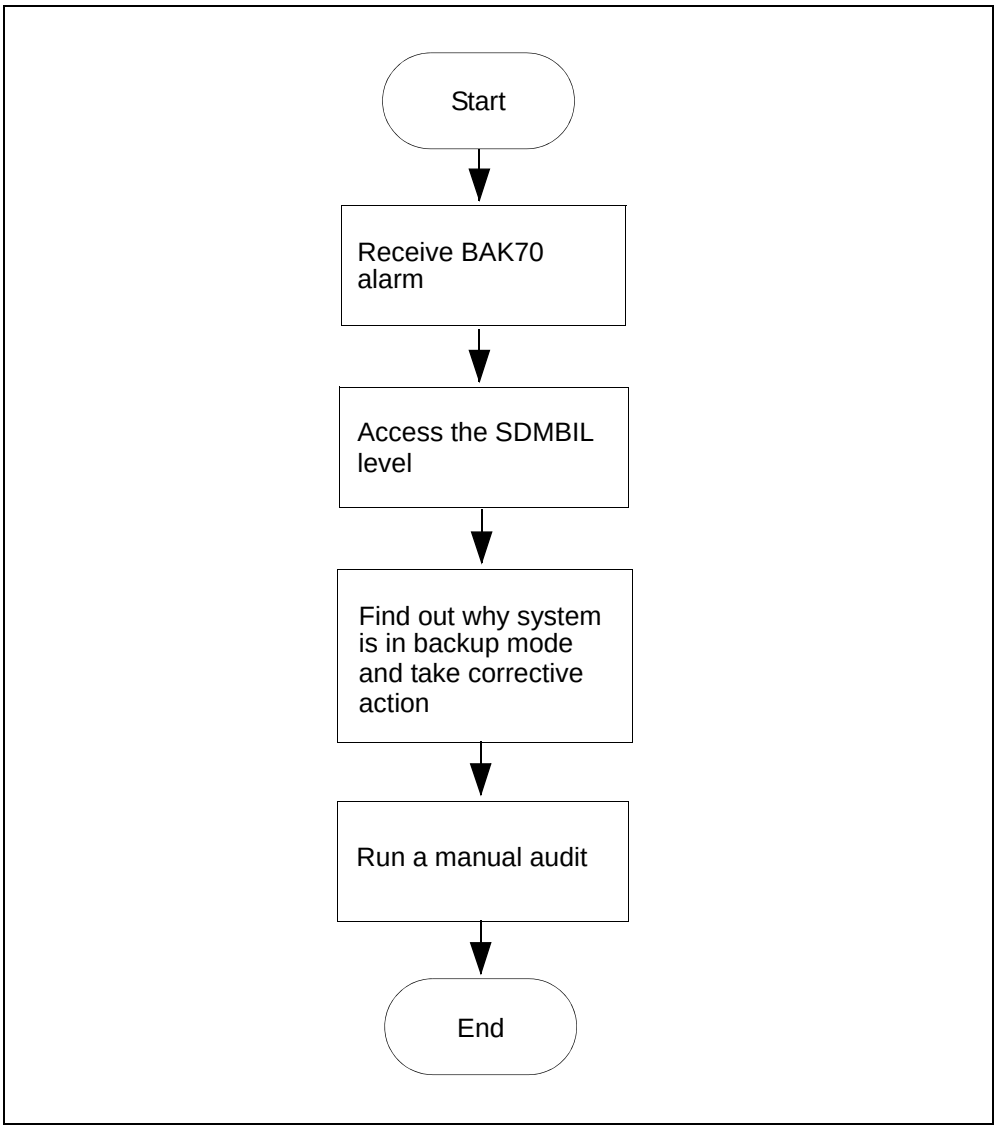
Impact

If the disk usage for the SBA backup system reaches 100 percent of its capacity, data that is configured to go to backup storage is lost.

Procedure

The following flowchart provides a summary of the procedure. Use the instructions in the procedure to clear the alarm.

BAK70 alarm clearing flowchart



Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Clearing a BAK70 alarm

At the MAP

1 Post the billing stream:

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

where

<billing_stream> is the name of the billing stream.

2 Determine why the system is in backup mode.

3 Display all of the alarms that have been raised:

`DispAL`

4 Determine the state of the billing stream.

If the billing stream is	Perform the following steps
SysB	perform the procedure for the alarm or the condition, and then return to step 5.
RBsy	refer to Clearing a major SBACP alarm on page 160, and then return to step 5.
ManB	RTS the billing stream. Go to step 5
Bkup	Go to step 8 **Note:** The system may be in backup mode because communication between the core manager and CM has been lost. Adjusting disk space can temporarily remove the alarm. It is important, however, to determine why the system is in backup mode and take corrective action

5 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 6
did not clear	step 8

6 Ensure that the billing system is in recovery:

`post <streamname>`

7 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 12
is not in recovery	contact your next level of support

8 Perform the procedure Adjusting disk space in response to SBA backup file system alarms on page 118

9 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 10
did not clear	contact your next level of support

10 Ensure that the billing system is in recovery:

```
post <streamname>
```

11 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 12
is not in recovery	contact your next level of support

12 You have completed this procedure.

Clearing a BAK90 alarm

Purpose

Use this procedure to clear a BAK90 alarm.

Indication

BAK90 appears under the APPL header of the alarm banner at the MTC level of the MAP display and indicates a critical alarm for the backup system.

Meaning

The SBA backup system is using more than 90 percent of the total space on backup volumes on the DMS/CM. If the stream is configured as:

- `both`
  the alarm severity level is major
- `on`
  the alarm severity level is critical

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

The core manager generates the SDMB820 log report when this alarm is raised.

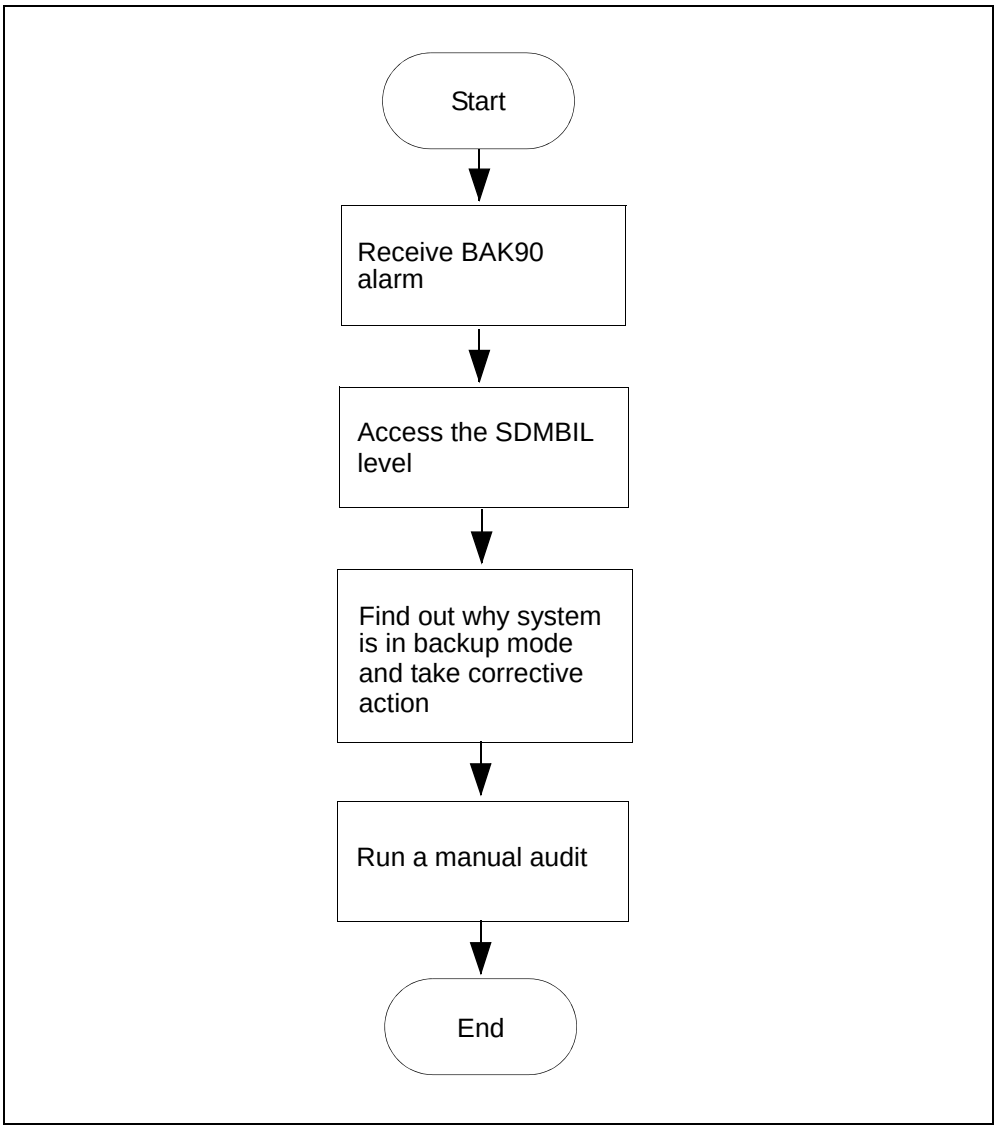
Impact

If the disk usage for the SBA backup system reaches 100 percent of its capacity, data that is configured to go to backup storage is lost.

Procedure

The following flowchart is a summary of the procedure. Use the instructions in the procedure to clear the alarm.

BAK90 alarm clearing flowchart



Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Clearing a BAK90 alarm

At the MAP

1 Post the billing stream:

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

where

<billing_stream> is the name of the billing stream.

2 Determine why the system is in backup mode.

3 Display all alarms that have been raised:

`DispAL`

4 Determine the state of the billing stream.

If the billing stream is	Perform the following steps
SysB	perform the procedure for the alarm or the condition, and then return to step 5.
RBsy	refer to Clearing a major SBACP alarm on page 160, and then return to step 5.
ManB	RTS the billing stream
Bkup	Go to step 8 **Note:** The system may be in backup mode because communication between the core manager and CM has been lost. Adjusting disk space can temporarily remove the alarm. It is important, however, to determine why the system is in backup mode and take corrective action

5 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 6
did not clear	step 8

6 Ensure that the billing system is in recovery:

`post <streamname>`

7 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 12
is not in recovery	contact your next level of support

8 Perform the procedure Adjusting disk space in response to SBA backup file system alarms on page 118

9 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 10
did not clear	contact your next level of support

10 Ensure that the billing system is in recovery:

```
post <streamname>
```

11 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 12
is not in recovery	contact your next level of support

12 You have completed this procedure.

Clearing a BAKUP alarm

Purpose

Use this procedure to clear a BAKUP alarm.

Indication

BAKUP appears under the APPL header of the alarm banner at the MTC level of the MAP display, and indicates a critical alarm for the backup system.

Meaning

Records are being stored on the DMS/CM backup volume for more than 10 minutes. If the stream is configured as:

- `both`
  the alarm severity level is major
- `on`
  the alarm severity level is critical

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

The core manager generates the SDMB820 log report when this alarm is raised.

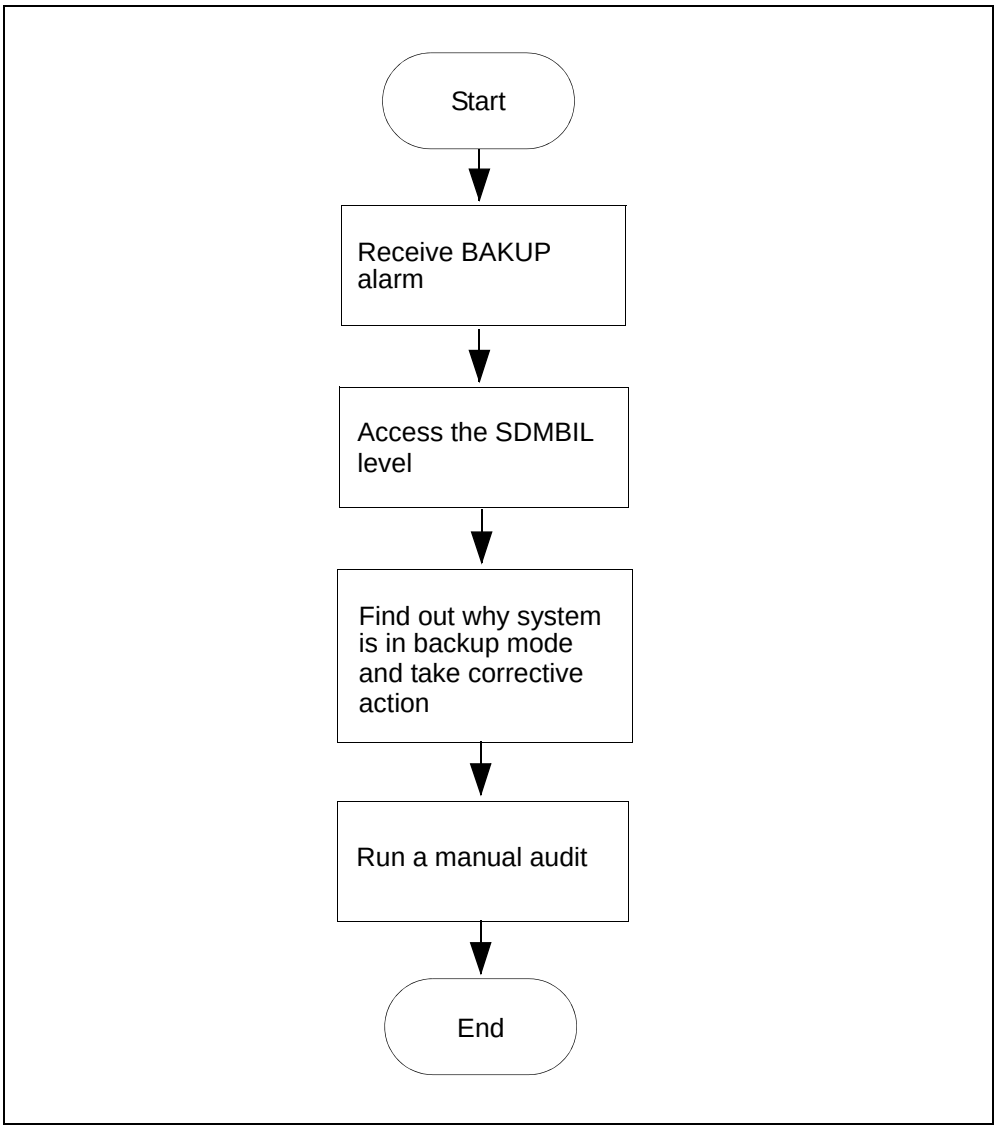
Impact

A problem with the SBA disk storage capacity can occur depending on the rate at which new data is sent to backup storage. BAK`xx` alarms provide storage notification (`xx` is the percentage of disk storage used).

Procedure

The following flowchart provides a summary of the procedure. Use the instructions in the procedure to clear the alarm.

BAKUP alarm clearing flowchart



Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Clearing a BAKUP alarm

At the MAP

1 Post the billing stream:

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

where

<billing_stream> is the name of the billing stream

2 Determine why the system is in backup mode.

3 Display all alarms that have been raised:

`DispAL`

4 Determine the state of the billing stream.

If the billing stream is	Perform the following steps
SysB	perform the procedure for the alarm or the condition, and then return to step 5.
RBsy	refer to Clearing a major SBACP alarm on page 160, and then return to step 5.
ManB	RTS the billing stream.
Bkup	**Note:** The system may be in backup mode because communication between the core manager and CM has been lost. It is important to determine why the system is in backup mode and take corrective action.

5 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 6
did not clear	Contact your next level of support.

6 Ensure that the billing system is in recovery:

`post <streamname>`

7 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 11
is not in recovery	contact your next level of support

8 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 9
did not clear	contact your next level of support

9 Ensure that the billing system is in recovery:

```
post <streamname>
```

10 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 11
is not in recovery	contact your next level of support

11 You have completed this procedure.

Adjusting disk space in response to SBA backup file system alarms

Purpose

Use this procedure to adjust disk space when SBA backup file system alarms are raised. The procedure enables you to either add logical volumes to a disk or to remove logical volumes from a disk.

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Procedure

Adjusting disk space in response to SBA backup file system alarms

At the MAP

1 Post the billing stream:

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

where

<stream_name> is the name of the billing stream.

2 Display the names of the backup volumes configured for the stream:

```
conf view <stream_name>
```

where

<stream_name> is the name of the billing stream.

If the backup volumes are located on	Do
DDU disks	step 3
IOP disks	step 5
SLM disks	step 5
3PC disks	step 5

3 Display and record the size of a volume and its number of free blocks:

```
dskut;sv <volume name>
```

where

<volume name>
is the name of one of the volumes that you obtained and recorded in step 2

4 Repeat step 3 for each volume name that you recorded in step 2, and then proceed to step 5.

5 Display and record the size of a volume and its number of free blocks:

`diskut;lv <volume name>`

where

<volume name>
is the name of one of the volumes that you obtained and recorded in step 2.

6 Repeat step 5 for each volume name that you recorded in step 2.

If the volumes	Do
have enough disk space	step 7
do not have enough disk space	perform procedure "Configuring SBA backup volumes on the core" in the Accounting document for your core manager.

7 You have completed this procedure.

Clearing a CDRT alarm

Purpose

Use this procedure to clear a CDRT alarm.

Indication

At the MTC level of the MAP display, CDRT appears under the APPL header of the alarm banner and indicates a core manager alarm.

Meaning

The CDRT alarm indicates the value of the active template ID template on the DMS CM is not set to “0” (zero) or it does not match the value of the CurrentTmpltID MIB parameter.

- Log report SDMB370 is generated when this alarm is raised
- log report SDMB670 is generated when this alarm is cleared

Valid template IDs are 0, 1, 2, or a template ID matching the value in the CDR MIB field currentTmpltID.

Impact

The CDR to BAF conversion process does not create BAF records.

Action

If this alarm occurs:

- set the value of the CurrentTmpltID MIB parameter to match the value (template ID) of the active template ID on the DMS/CM, or
- set the active template ID on the CM to “0” (zero)

The alarm is cleared when a valid template is received.

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

At the MAP

1 Determine the value of the active template ID on the DMS/CM:

```
CTMPLT “template all”
```

2 Set the CurrentTmpltID mib parameter to match the value of the active template ID:

```
mib cdr set CurrentTmpltID <template_ID>
```

where

<template_ID> is the value of the active template on the DMS/CM.

3 If you change the CurrentTmpltID MIB parameter after you have turned on the stream, you must BSY and then `rts` the SBA application to activate the change.

4 If the alarm persists, contact your next level of support.

Clearing a DSKWR alarm on a CBM

Indication

At the MTC level of the MAP display, DSKWR appears under the APPL header of the alarm banner and indicates a critical disk alarm.

Meaning

The system is unable to write records to the CBM disk because the disk is unavailable or the disk is full.

Impact

The DMS/CM cannot send the billing records to the CBM. As a result, the DMS/CM send the billing records to backup storage. However, this backup storage is limited. As the backup storage becomes filled, alarms notify you as to how much of its capacity is used.

Prerequisites

ATTENTION
If the NOBAK or NOSTOR alarm appears in addition to the DSKWR alarm, you must configure and activate alternative backup volumes before you clear the DSKWR alarm.

Procedure

Use the following procedure to clear DSKWR alarm.

Clearing a DSKWR alarm

At the MAP interface on the CM

1 Access the SDMBIL level:

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

2 Check to see if the NOBAK or NOSTOR alarm exists in addition to the DSKWR alarm on the alarm banner:

```
> dispal
```

If the NOBAK or NOSTOR alarm	Do
appears in the alarm banner	perform the procedure "Configuring SBA backup volumes on the core" in the NN10363-811 document.
does not appear in the alarm banner	step 3

At your workstation

3 Check to see if any logs have been raised that indicate a problem with the system's disks, by performing the procedure, Viewing customer logs on an SPFS-based server on page 219.

4 Determine whether the file system holding the billing files has adequate space by performing the procedure, Verifying disk utilization on an SPFS-based server.

5 If you want to back up the billing files, perform the procedure "Copying files to DVD" in the NN10363-811 document.

6 Using the information you obtained in step 4 determine whether the file system is full. The file system can be full if you have not sent the primary files downstream.

If	Do
you want to send the billing files downstream	step 7
you feel that the capacity of the SBA file system requires adjustment	contact your next level of support

7 Access the BILLMTC interface:

```
> billmtc
```

8 Access the FILESYS level:

```
> filesys
```

9 Send the primary billing files to the downstream processor:

```
> sendfile <stream_name>
```

where:

<stream_name> is the name of the stream.

Note: The **sendfile** command sends the billing file to the billing collector.

If the SENDFILE command	Do
is successful	step 10
is not successful	refer to procedures Verifying the file transfer protocol and Verifying the FTP Schedule, then return to this procedure and repeat step 9 If unsuccessful afterwards, contact your next level of support

10 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 17
did not clear	step 11

11 Quit the BILLMTC interface:

```
> quit all
```

12 At the prompt, check for orphan files and for files someone else copied to the logical volume of your billing stream:

```
> ls /<stream>/<stream_name>/orphan
```

where:

<stream> is the full pathname of the directory you have configured for the billing stream

<stream_name> is the name of the billing stream.

If billing files full because of accumulated orphan files	Do
and you are unclear as to how to clean up the billing directory	contact your next level of support
and you have cleaned up the billing directory and are still incurring a problem	step 13

13 Verify the write permission and ownership for the directories in the billing stream:

```
ls -lrt /<stream>/<stream_name>
```

<stream> is the full pathname of the directory you have configured for the billing stream

<stream_name> is the name of the billing stream

If the	Do
permissions (rwx r-x r-x) and file ownership (maint) are correct	contact your next level of support
permissions for a directory are not rwx	step 14
ownership for a directory is not maint	step 15
the alarm fails to clear	contact your next level of support

14 Change the permissions for a directory:

```
> chmod 755 <directory>
```

where:

<directory> is the billing file directory in which you are changing permissions.

15 Change the ownership of a directory:

```
> chown maint:maint <directory>
```

where:

<directory> is the billing file directory in which you are changing ownership.

16 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 17
did not clear	contact your next level of support

17 You have completed this procedure.

Clearing an FTPW alarm

Purpose

Use this procedure to clear an FTPW alarm.

Indication

At the MTC level of the MAP display, FTPW appears under the APPL header of the alarm banner and indicates an alarm for FTP.

Meaning

The FTP process failed. The SDMB375 log report provides details about the FTP problem. Log report SDMB675 is generated when this alarm is cleared. This alarm can be either critical or major.

Note: The FTPW alarm can be present on the CM for a non-existent schedule. For example, the FTPW alarm is generated if an operator shuts down the server (making the ftp service unavailable to the core manager) without deleting the associated schedule tuple on the core manager first.

Impact

The core manager cannot send files to the downstream destinations. The core manager will eventually reach its storage capacity, depending on the amount of storage and the volume of records. When this storage is full, the DMS switch/CM sends subsequent records to backup storage. When backup storage reaches capacity, billing records cannot be stored and will be lost.

Action

Clearing an FTPW alarm

At the core manager

1 Complete procedure Verifying the file transfer protocol on page 168 in this document.

If	Do
alarm fails to clear	contact next level of support
schedule does not exist	step 2

2 Add a schedule tuple with the same stream name and destination defined by the alarm.

Use the procedure “Configuring the outbound file transfer schedule” in the Accounting document, then return to this procedure.

3 Once the alarm is cleared, delete the tuple that you added in step 2.

4 You have completed this procedure.

Clearing an inbound file transfer alarm

Purpose

Use this procedure to clear an inbound file transfer (IFT) alarm.

Indication

At the MTC level of the MAP display, inbound file transfer (IFT) appears under the APPL header of the alarm banner and indicates an alarm for the inbound file transfer connection.

Meaning

The IFT alarm indicates the occurrence of an inbound file transfer. This alarm is raised if the link in the ftpdir directory of a stream cannot be managed or if an ftpdir directory is not accessible. This alarm can be minor, major, or critical.

Detailed information about the alarm condition is documented in log reports:

- SDMB375 or SDMB380 when the alarm is raised
- SDMB675 or SDMB680 after the alarm is cleared

Prerequisites

Logging on to the CS 2000 Core Manager

You must be a user authorized to perform fault-admin actions in order to perform this procedure.

For information on how to log in to the CS 2000 Core Manager as an authorized user or how to display other information about a user or role group, review the procedures in the following table.

Procedure	Document
Logging in to the CS 2000 Core Manager	*CS 2000 Core Manager Security and Administration*, NN10170-611
Displaying information about a user or role group	*CS 2000 Core Manager Security and Administration*, NN10170-611

Logging on to the Core and Billing Manager

You must have the root user ID and password to log into the server.

Impact

Inbound file transfer for the billing stream is not possible.

Action

This alarm occurs only in rare situations. If this alarm occurs, ensure all other SBA alarms are cleared. The root user can check the following IFT alarm conditions:

- ftpdir directory has no write access
- storage for the billing stream has no space available
- <rcLogicalVolumeDirectory>/ftpdir directory does not exist

Determine what alarm is present by reading the log text and associating it to the appropriate alarm.

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Clearing an IFT alarm

At the MAP

1 Log into the core manager. Refer to Prerequisites for details.

If the	Do
/home/maint/ftpdir directory has write permissions	no action is required
/home/maint/ftpdir directory does not have write permissions	step 2 only
<rcLogicalVolumeDirectory>/ ftpdir directory has write permissions	no action is required
<rcLogicalVolumeDirectory>/ ftpdir directory does not have write permissions	step 3 only
storage disk has sufficient space	no action is required
storage disk does not have sufficient space	step 4 only

If the	Do
<rcLogicalVolumeDirectory> path is correct	no action is required
<rcLogicalVolumeDirectory> path is incorrect	correct the <rcLogicalVolumeDirectory> path into the CONFSTRM
<rcLogicalVolumeDirectory>/ ftpdir is a directory	no action is required
<rcLogicalVolumeDirectory>/ ftpdir is not a directory	step 5 only
IFT alarm persists once you have performed the appropriate steps in this procedure	contact your next level of support

2 Change the permissions of the /home/maint/ftpdir directory:

`chmod 777 /home/maint/ftpdir`

3 Remove the <rcLogicalVolumeDirectory>/ftpdir directory:

`rm /<rcLogicalVolumeDirectory>/ftpdir`

where

<rcLogicalVolumeDirectory> is the logical volume that is assigned to the billing stream in the `confstrm`. The billing files are stored in the specified path.

Note: The next interval recreates the correct permissions and recreates all links.

4 Retrieve some *closed not sent* files and rename them to *closed sent*.

Note 1: Closed not sent files for DNS and DIRP have the file extensions of .pri and .unp respectively. When you rename them, change the file extensions to .sec and .pro respectively.

Note 2: The closed sent files are removed from the system to make available more disk space. If you continue to receive the IFT alarm, consider increasing the size of the logical volume.

5 Remove the <rcLogicalVolumeDirectory>/ftpdir directory:

`rm /<rcLogicalVolumeDirectory>/ftpdir`

<rcLogicalVolumeDirectory> is the logical volume that is assigned to the billing stream in the `confstrm`. The billing files are stored in the specified path.

Note: At the next transfer interval, the correct permissions and all links are re-created.

6 You have completed the procedure.

Clearing an LODSK alarm

Purpose

Use this procedure to clear a low disk storage (LODSK) alarm.

Indication

CAUTION
Possible Loss of Service
If you receive a LODSK alarm, transfer (FTP) the billing files in the closedNotSent directory, or write to tape immediately. Refer to Verifying the file transfer protocol on page 168 for more information.

At the `mtc` level of the `mapci`, LODSK appears under the APPL header of the alarm banner, and indicates a storage alarm.

Meaning

The closedNotSent directory is reaching its capacity. The core manager generates the SDMB355 log report when this alarm is raised.

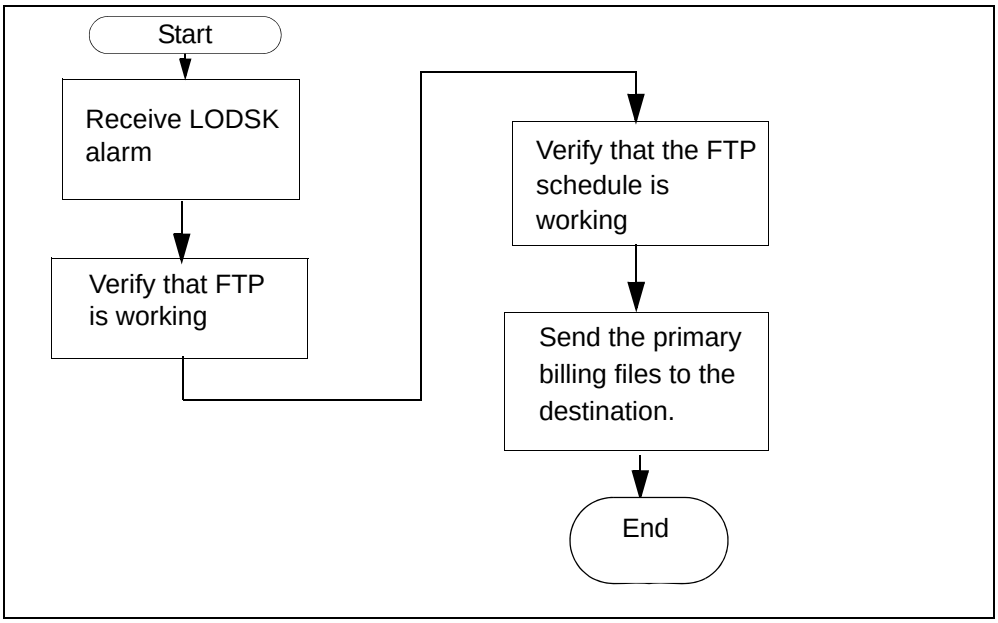
Impact

As the storage becomes full, alarms notify you of how much capacity is used. In addition, there is a possibility that the DMS/CM does not go into backup mode when the core manager logical volume reaches 100 percent capacity.

Action

The following flowchart is a summary of the procedure. Use the instructions in the procedure to clear the alarm.

LODSK alarm clearing flowchart



Clearing a LODSK alarm

At the MAP

1 Use the procedure Verifying the file transfer protocol on page 168 to determine if the FTP is working properly.

If the alarm	Do
clears	you have completed this procedure
does not clear	refer to procedure Verifying the FTP Schedule on page 175
	if the alarm persists, contact your next level of support

Clearing a NOBAK alarm

Purpose

Use this procedure to clear a no-backup (NOBAK) alarm.

Indication

NOBAK appears under the APPL header of the alarm banner at the MTC level of the MAP display and indicates a critical alarm for the backup system.

Meaning

This alarm only occurs if the volumes that are configured for backup are 100 percent full. If the stream is configured as

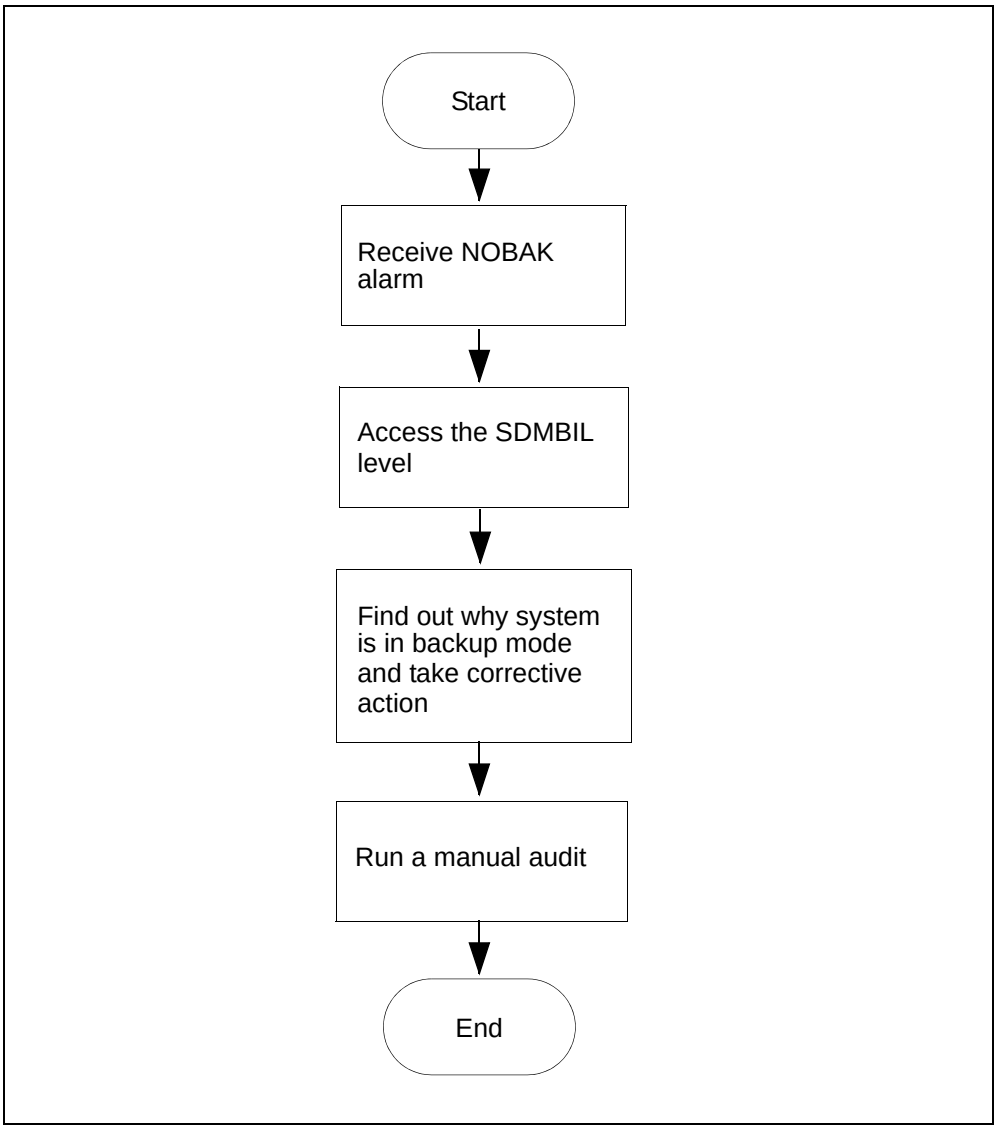
- `both`
  the alarm severity level is major
- `on`
  the alarm severity level is critical

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

Procedure

The following flowchart is a summary of the procedure. Use the instructions in the procedure to clear the alarm.

NOBAK alarm clearing flowchart



Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Clearing a NOBAK alarm

At the MAP

1 Post the billing stream:

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

where

<billing_stream> is the name of the billing stream

2 Determine why the system is in backup mode.

3 Display all alarms that have been raised:

`DispAL`

4 Determine the state of the billing stream.

If the billing stream is	Perform the following steps
SysB	perform the procedure for the alarm or the condition, and then go to step 5.
RBsy	refer to Clearing a major SBACP alarm on page 160, and then return to step 5.
ManB	RTS the billing stream
Bkup	Go to step 8 **Note:** The system may be in backup mode because communication between the core manager and CM has been lost. Adjusting disk space can temporarily remove the alarm. It is important, however, to determine why the system is in backup mode and take corrective action.

5 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 6
did not clear	step 8

6 Ensure that the billing system is in recovery:

`post <streamname>`

7 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 12
is not in recovery	contact your next level of support

8 Perform the procedure Adjusting disk space in response to SBA backup file system alarms on page 118

9 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 10
did not clear	contact your next level of support

10 Ensure that the billing system is in recovery:

```
post <streamname>
```

11 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 12
is not in recovery	contact your next level of support

12 You have completed this procedure.

Clearing a NOCLNT alarm

Purpose

Use this procedure to clear a NOCLNT alarm.

Indication

At the MTC level of the MAP display, NOCLNT appears under the APPL header of the alarm banner and indicates an alarm.

Meaning

The stream was activated by the SDMBCTRL command before initialization was complete. If the stream is set to

- `on`
  the alarm is critical
- `both`
  the alarm is major

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

Impact

No data is buffered by the SBA system. As a result, no data is backed up or made available for delivery to the core manager.

If the stream is set to `both`, data is still being routed to DIRP. Therefore, you can send the billing records to the operating company collector through the previously-established network used by DIRP.

Action

This alarm only occurs in rare cases during installation. If this alarm occurs, contact your next level of support.

Clearing a NOFL alarm

Purpose

Use this procedure to clear a no file (NOFL) alarm.

Indication

NOFL appears under the APPL header of the alarm banner at the MTC level of the MAP display and indicates a critical alarm for the backup system.

Meaning

On startup, the SBA backup file system is unable to create a file. If the stream is set to:

- `both`
  the alarm severity level is major
- `on`
  the alarm severity level is critical

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

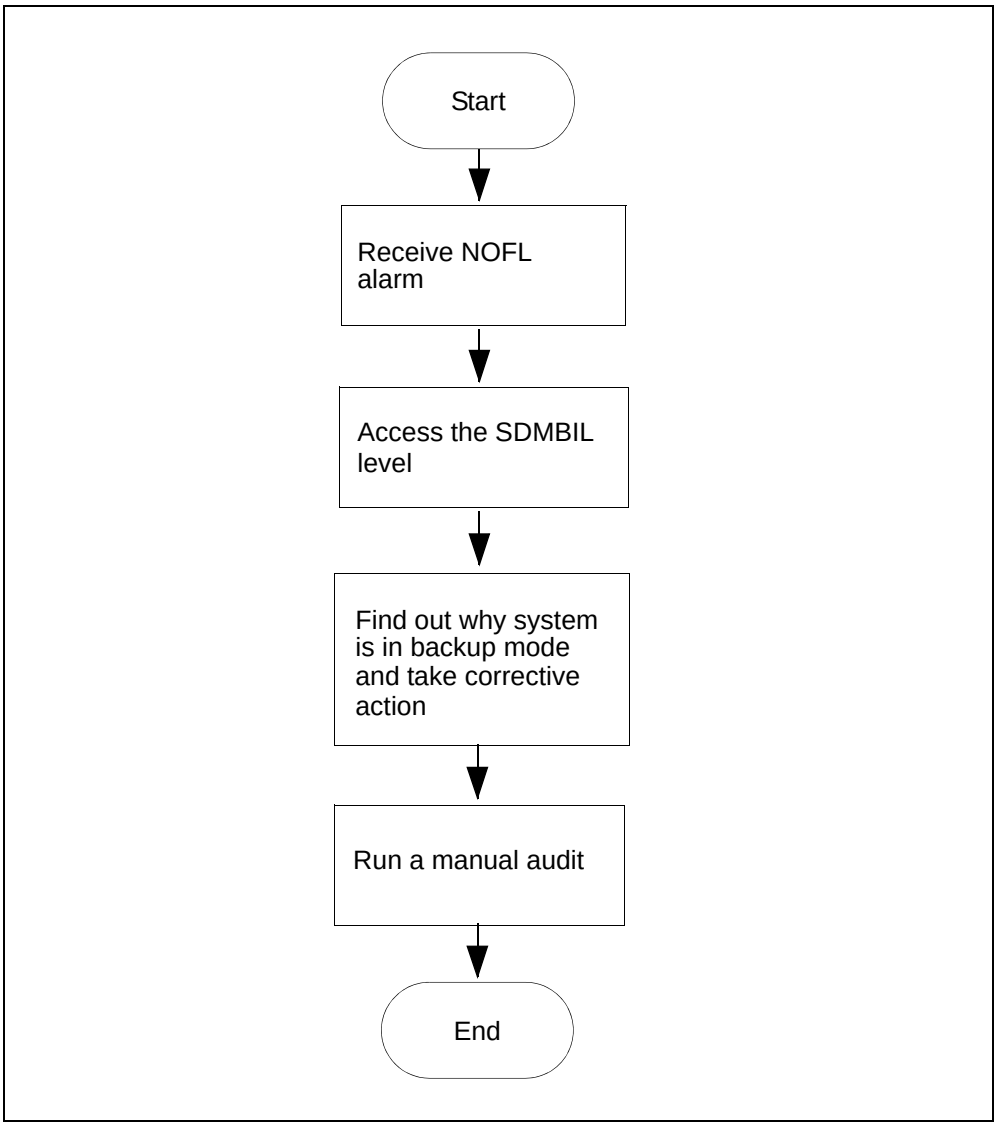
Impact

Because no file is available for SBA data storage, data intended for storage is lost.

Procedure

The following flowchart is a summary of the procedure. Use the instructions in the procedure to clear the alarm.

NOFL alarm clearing flowchart



Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Clearing a NOFL alarm

At the MAP

1 Post the billing stream:

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

where

<stream_name> is the name of the billing stream.

2 Determine why the system is in backup mode.

3 Display all alarms that have been raised:

`DispAL`

4 Determine the status of the billing stream.

If the billing stream is	Perform the following steps
SysB	perform the procedure for the alarm or the condition, and then go to step 5.
RBsy	refer to Clearing a major SBACP alarm on page 160, and then return to step 5.
ManB	Go to step 8
Bkup	Go to step 8

5 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 6
did not clear	step 8

6 Ensure that the billing system is in recovery:

`post <streamname>`

7 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 12
is not in recovery	contact your next level of support

8 Perform the procedure Adjusting disk space in response to SBA backup file system alarms on page 118

9 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 10
did not clear	contact your next level of support

10 Ensure that the billing system is in recovery:

```
post <streamname>
```

11 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 12
is not in recovery	contact your next level of support

12 You have completed this procedure.

Clearing a NOREC alarm

Indication

At the MTC level of the MAP display, NOREC appears under the APPL header of the alarm banner. It indicates an alarm for the recovery system.

Meaning

The SBA system is unable to create a recovery stream. The most likely reasons for not being able to start a recovery stream include the following:

- the system is out of buffers (also causes a NOSTOR alarm).
- the disk on the core manager is full (also causes DSKWR and LODSK alarms)

If the stream is set to:

- `on`
  the alarm is major, or
- `both`
  the alarm is minor

Impact

No backup files are recovered by the SBA system.

If the stream is set to `both`, data is still being routed to DIRP. Therefore, you can send the billing records to the operating company collector through the previously-established network used by DIRP.

Action

Contact your next level of support when you receive this alarm.

Clearing an NOSC alarm

Indication

At the MTC level of the MAP display, NOSC appears under the APPL header of the alarm banner and indicates a core manager alarm.

The core manager generates the SDMB370 log report when this alarm is raised.

Meaning

The NOSC alarm indicates that the CDR has received an invalid structure code. Valid structure codes are 220, 360, 364, 625, 645, and 653.

Note: If the fixed template id 0 or if the CurrrentTmpltID in the CDR MIB is used, structure codes 220 and 645 are invalid.

Impact

The CDR2BAF conversion process does not create BAF records.

Action

This alarm is cleared when a call is completed that contains a valid structure code. Contact your next level of support if this alarm fails to clear.

Clearing a NOSTOR alarm

Purpose

Use this procedure to clear a no storage (NOSTOR) alarm.

Indication

NOSTOR appears under the APPL header of the alarm banner at the MTC level of the MAP display and indicates a critical alarm for the backup system.

Meaning

The SBA buffer pool cannot allocate buffers. This means that all buffers are in use, though it does not necessarily mean that the disk is full.

The NOSTOR alarm is usually seen when the system is in backup mode and the traffic is too high for the disk to process. If the disk stream is configured as:

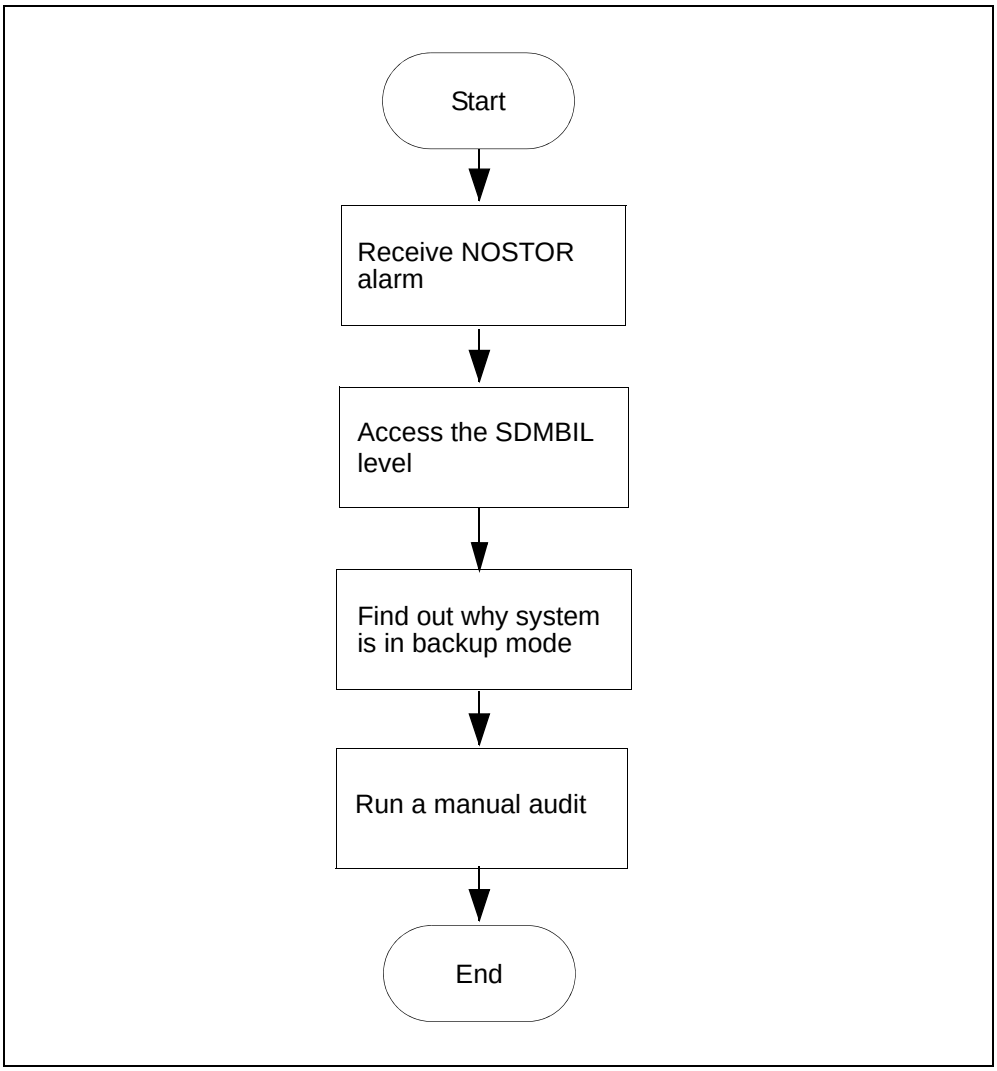
- `both`
  the alarm severity level is major
- `on`
  the alarm severity level is critical

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

Procedure

The following flowchart is a summary of the procedure. Use the instructions in the procedure to clear the alarm.

NOSTOR alarm clearing flowchart



Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Clearing a NOSTOR alarm

At the MAP

1 Post the billing stream:

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

where

<stream_name> is the name of the billing stream

2 Determine why the system is in backup mode.

3 Display all alarms that have been raised:

```
DispAL
```

4 Determine the state of the billing stream.

If the billing stream is	Perform the following steps
SysB	perform the procedure for the alarm or the condition, and then go to step 5.
RBsy	refer to Clearing a major SBACP alarm on page 160, and then go to step 5.
ManB	RTS the billing stream
Bkup	Go to step 8

5 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 6
did not clear	step 8

6 Ensure that the billing system is in recovery:

```
post <streamname>
```

7 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 12
is not in recovery	contact your next level of support

8 Perform the procedure Adjusting disk space in response to SBA backup file system alarms on page 118

9 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 10
did not clear	contact your next level of support

10 Ensure that the billing system is in recovery:

```
post <streamname>
```

11 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 12
is not in recovery	contact your next level of support

12 You have completed this procedure.

Clearing a NOVOL alarm

Purpose

Use this procedure to clear a no disk volume (NOVOL) alarm.

Indication

NOVOL appears under the APPL header of the alarm banner at the MTC level of the MAP display and indicates a critical alarm for the backup system.

The core manager generates the SDMB820 log report when this alarm is raised.

Meaning

On startup, the SBA backup file system is unable to find a volume in which to create a file. If the stream is configured as:

- `both`
  the alarm severity level is major
- `on`
  the alarm severity level is critical

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

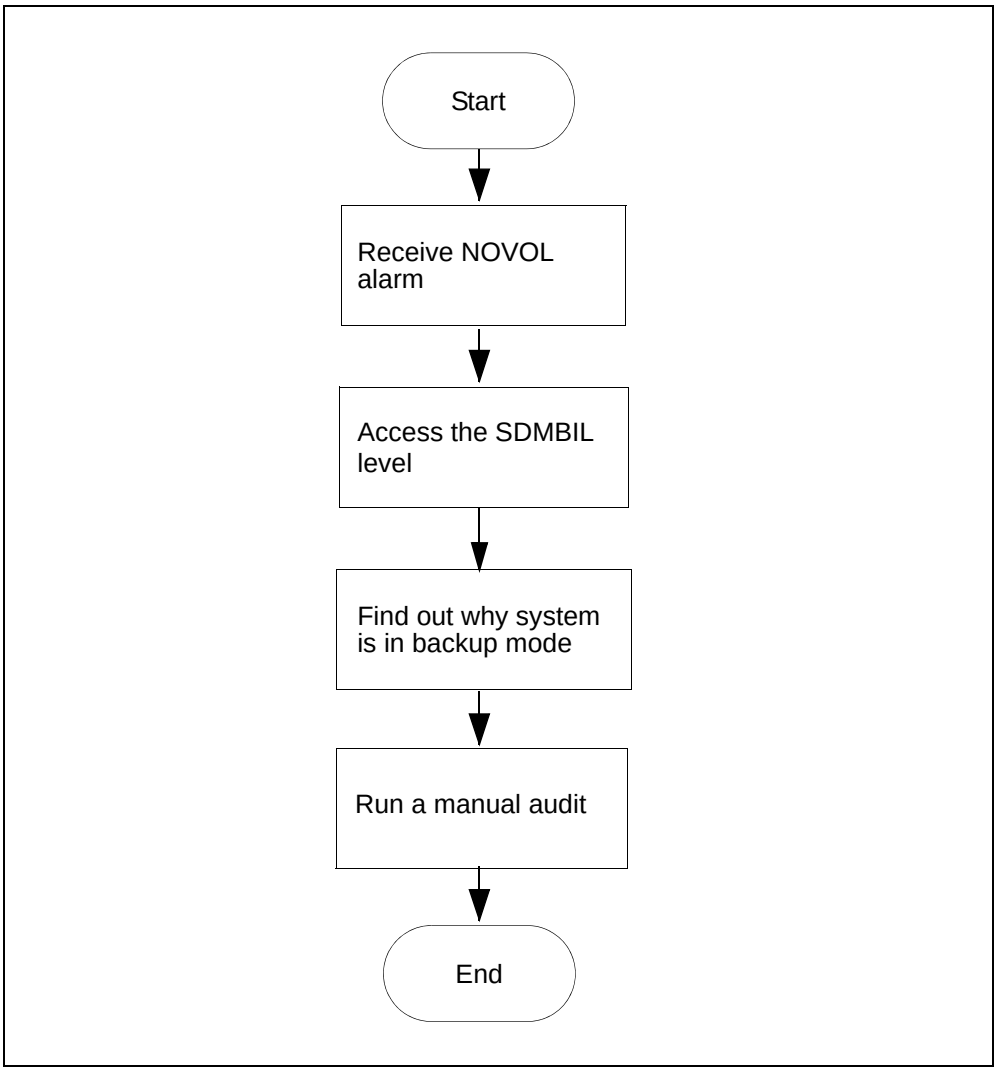
Impact

Because there is no volume available for SBA storage, data intended for backup storage can be lost.

Procedure

The following flowchart is a summary of the procedure. Use the instructions in the procedure to clear the alarm.

NOVOL alarm clearing flowchart



Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Clearing a NOVOL alarm

At the MAP

1 Post the billing stream:

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

where

<stream_name> is the name of the billing stream

2 Determine why the system is in backup mode.

3 Display all alarms that have been raised:

```
DispAL
```

4 Determine the status of the billing stream.

If the billing stream is	Perform the following steps
SysB	perform the procedure for the alarm or the condition, and then go to step 5.
RBsy	refer to Clearing a major SBACP alarm on page 160, and then go to step 5.
ManB	Go to step 8
Bkup	Go to step 8

5 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 6
did not clear	step 8

6 Ensure that the billing system is in recovery:

```
post <streamname>
```

7 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 12
is not in recovery	contact your next level of support

8 Perform the procedure Adjusting disk space in response to SBA backup file system alarms on page 118

9 Use Audit to clear the alarm.

If the alarm	Do
cleared	step 10
did not clear	contact your next level of support

10 Ensure that the billing system is in recovery:

```
post <streamname>
```

11 In the display, look for the status of the billing stream.

If the billing system	Do
is in recovery (Rcvy)	step 12
is not in recovery	contact your next level of support

12 You have completed this procedure.

Clearing an RTBCD alarm

Indication

At the MTC level of the MAP display, RTBCD appears under the APPL header of the alarm banner and indicates a critical problem for the Real Time Billing (RTB) program.

The core manager generates the SDMB375 log report when this alarm is raised.

Meaning

The RTBCD alarm indicates that the RTB child (rtbChild) process has died abnormally.

Impact

A critical problem for the Real Time Billing (RTB) program exists.

Action

This alarm is cleared when the killed RTB process is restarted properly by the SBA. An SDMB675 log report is generated when the alarm is cleared. Contact your next level of support if this alarm fails to clear.

Clearing an RTBCF alarm

Indication

At the MTC level of the MAP display, RTBCF appears under the APPL header of the alarm banner. It indicates a critical alarm for the Real Time Billing (RTB) application.

The core manager generates the SDMB375 log report when this alarm is raised. When this alarm is cleared, the core manager generates the SDMB675 log report.

Refer to the log reports for more information about the condition causing the alarm.

Meaning

The RTBCF alarm indicates that RTB is unable to transfer an open file after RTBMaxConsecutiveFailures.

Impact

RTB will move to the SysB state, if RTB auto-recovery is OFF. RTB will move to the IsTb state, if RTB auto-recovery is ON. In either event, RTB stops transferring open files.

Action

Refer to log report SDMB675 for more information about the RTBCF alarm. If required, contact your next level of support.

Clearing an RTBER alarm

Purpose

Use this procedure to clear an RTBER alarm.

Indication

At the MTC level of the MAP display, RTBER appears under the APPL header of the alarm banner, and indicates a critical alarm for real time billing (RTB).

Meaning

The RTBER alarm indicates that RTB has encountered a severe system error trying to re-establish file transfers with the data processing and management system (DPMS).

Impact

This alarm has the following impact:

- RTB is unable to send billing files to the DPMS
- RTB moves to the SysB state
- the condition generates an SDMB375 log

Action

At the MAP

1 Read the text in log SDMB375 for the cause of error.

2 Use the Logs reference documentation for SDMB375 to determine the actions to take to clear each type of error.

3 After you correct the error, return the RTB destination to service.

The system generates SDMB675 when the error is corrected and the alarm is cleared.

Clearing an RTBFM alarm

Purpose

Use this procedure to clear an RTBFM alarm.

Indication

At the MTC level of the MAP display, RTBFM appears under the APPL header of the alarm banner, indicating a critical alarm for the RTB program.

The core manager generates the SDMB375 log report when this alarm is raised. When this alarm is cleared, the core manager generates the SDMB675 log report. Refer to the log reports for more information about the condition causing the alarm.

Meaning

The RTBFM alarm indicates that communication with the file manager is lost and that the file manager failed to close current active files.

Impact

RTB will move to the SysB state, if RTB auto-recovery is OFF. RTB will move to the IsTb state, if RTB auto-recovery is ON.

Action

Refer to log report SDMB675 for more information about the RTBFM alarm. If required, contact your next level of support.

Note: If the core manager is utilizing RTB streams, ensure that whenever you busy (BSY) and return the SBA application to service (RTS) you must also return any RTB streams to service separately.

The RTB stream does not return itself to service when the SBA application is returned to service.

Use the Query command to determine whether you have RTB streams running on your core manager.

Clearing an RTBPD alarm

Purpose

Use this procedure to clear an RTBPD alarm.

Indication

At the MTC level of the MAP display, RTBPD appears under the APPL header of the alarm banner and indicates a critical alarm for the RTB program.

The core manager generates the SDMB375 log report when this alarm is raised. When this alarm is cleared, the core manager generates the SDMB675 log report.

Meaning

The RTBPD alarm indicates that the RTB controlling process died and that RTB is halted.

Impact

RTB moves to the SysB state.

Action

Refer to log reports SDMB375 and SDMB675 for more information about the condition causing the alarm, and corrective actions. If required, contact your next level of support.

Clearing an RTBST alarm

Indication

At the MTC level of the MAP display, RTBST appears under the APPL header of the alarm banner and indicates a critical alarm for the RTB program.

The core manager generates the SDMB375 log report when this alarm is raised. When this alarm is cleared, the core manager generates the SDMB675 log report.

Meaning

The RTBST alarm is raised if the schedule tuple is deleted or invalid for RTB.

Impact

RTB moves to the SysB state.

Action

Refer to the log reports for more information about the condition causing the alarm.

Refer to log report SDMB675 for more information about the RTBST alarm. You need to verify that the

- protocol is set to RFTPW, and
- file format type is set to “DIRP” in the schedule tuple associated with the alarm

If required, contact your next level of support.

Clearing a major SBACP alarm

Purpose

Use this procedure to clear an SBACP alarm.

Indication

At the MTC level of the MAP display, SBACP appears under the APPL header of the alarm banner and indicates a major alarm for the SDM Billing Application (SBA).

Meaning

The SBA is shutting down because either

- a user busied the SBA or the core manager, or
- a process is repeatedly dying and the SBA shut down

Impact

The SBA on the core manager is out of service and billing records are being written to backup volumes on the core.

Action

Use the instructions in the following procedure to clear the alarm.

Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

ATTENTION
This alarm will not clear until at least one billing stream is in service.

At the core manager

1 Go to the Appl level of the cbmmtc tool by typing:

```
cbmmtc appl
```

If the SBA application is	Do
ISTB, Offl, or SysB	step 2
ManB	step 3
InSv, and the alarm is cleared	step 10

If the SBA application is	Do
InSv, but the alarm is still present	contact your next level of support

2 Busy the SBA application:

bsy <SBA_no>

where

<SBA_no> is the number next to the SBA application.

3 Return the SBA application to service:

rts <SBA_no>

where

<SBA_no> is the number of the SBA application.

Note: Any streams configured for real-time billing (RTB) are also returned to service.

Log report SDMB375 is generated when a stream configured for RTB fails to return to service.

If the SBA	Do
returned to service successfully and the alarm is cleared	step 4
returned to service successfully and the alarm is still present	contact your next level of support
did not return to service successfully	contact your next level of support

4 Return the RTB streams to service. Exit the maintenance interface.

quit all

5 Access the billing maintenance level:

billmtc

6 Access the schedule level:

schedule

7 Access the real-time billing level:

```
rtb
```

8 Busy the stream:

```
bsy <stream_name> DIRP <destination_name>
```

where:

<stream_name>
is the name of the billing stream configured for RTB (for example OCC)

9 Return the stream to service:

```
rts <stream name> DIRP <destination_name>
```

where:

<stream name>
is the name of the billing stream configured for RTB (for example OCC)

If the billing stream configured for RTB	Do
returns to service successfully	you have completed this procedure
does not return to service successfully	contact your next level of support

10 You have completed this procedure.

Clearing a minor SBACP alarm

Indication

At the MTC level of the MAP display, SBACP appears under the APPL header of the alarm banner, and indicates a minor alarm for the SBA program.

Meaning

The SBA program is shutting down because one of the processes has failed three times in one minute.

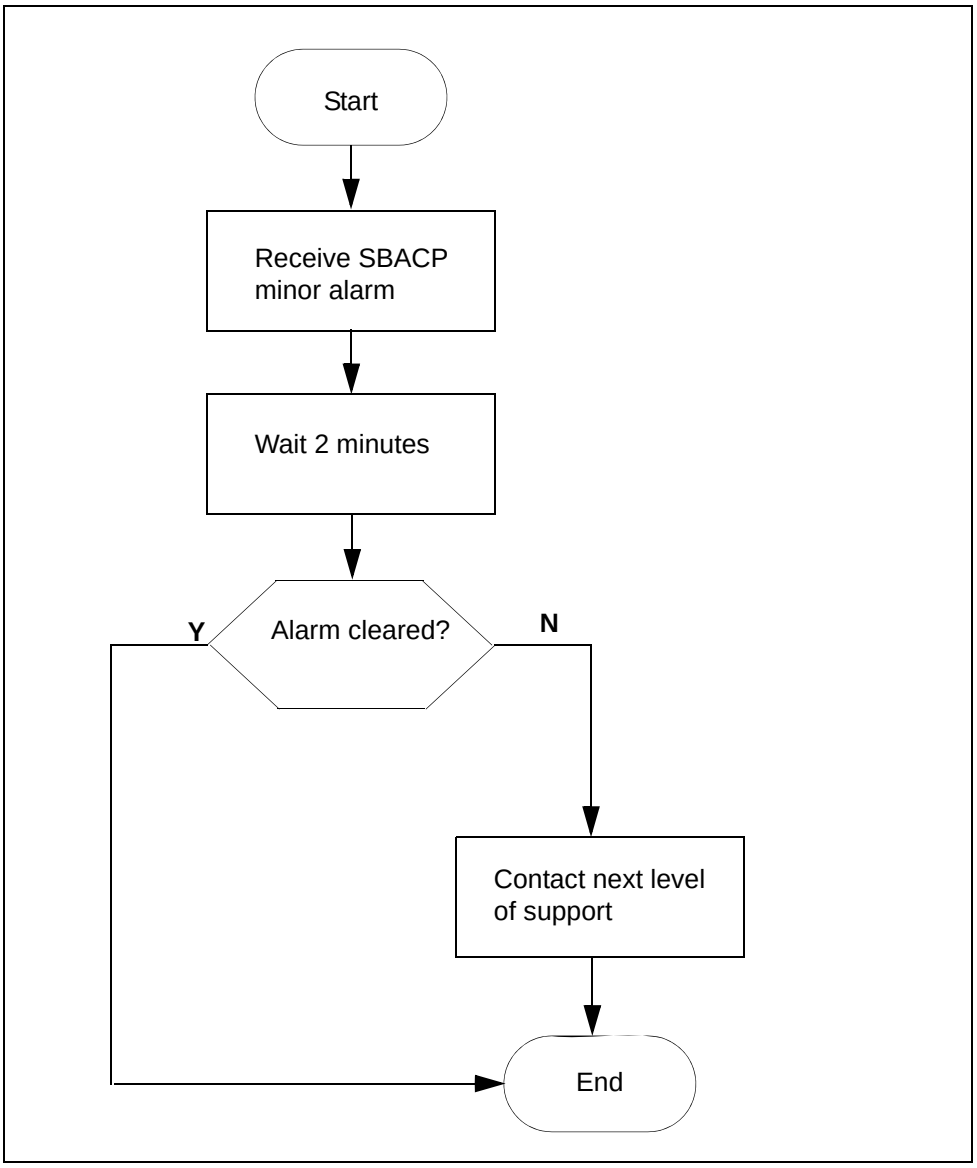
Impact

The SBA program ends, but restarts within two minutes.

Action

The following flowchart is a summary of the procedure. Use the instructions in the following procedure to clear the alarm.

SBACP (minor) alarm clearing flowchart



Clearing a minor SBACP alarm

At the MAP

1 Wait 2 minutes for the SBA to restart.

2 Contact your next level of support if the

- alarm does not clear, or
- SBA application fails three times within one minute

3 You have completed the procedure.

Clearing an SBAIF alarm

Purpose

Use this procedure to clear a SuperNode Billing Manager file transfer (SBAIF) alarm.

Indication

At the MTC level of the MAP display, SBAIF appears under the APPL header of the alarm banner and indicates a major alarm.

The system also generates an SDMB390 log.

Meaning

SuperNode Billing Application (SBA) cannot perform a scheduled transfer of billing files from the core manager to a downstream destination.

Impact

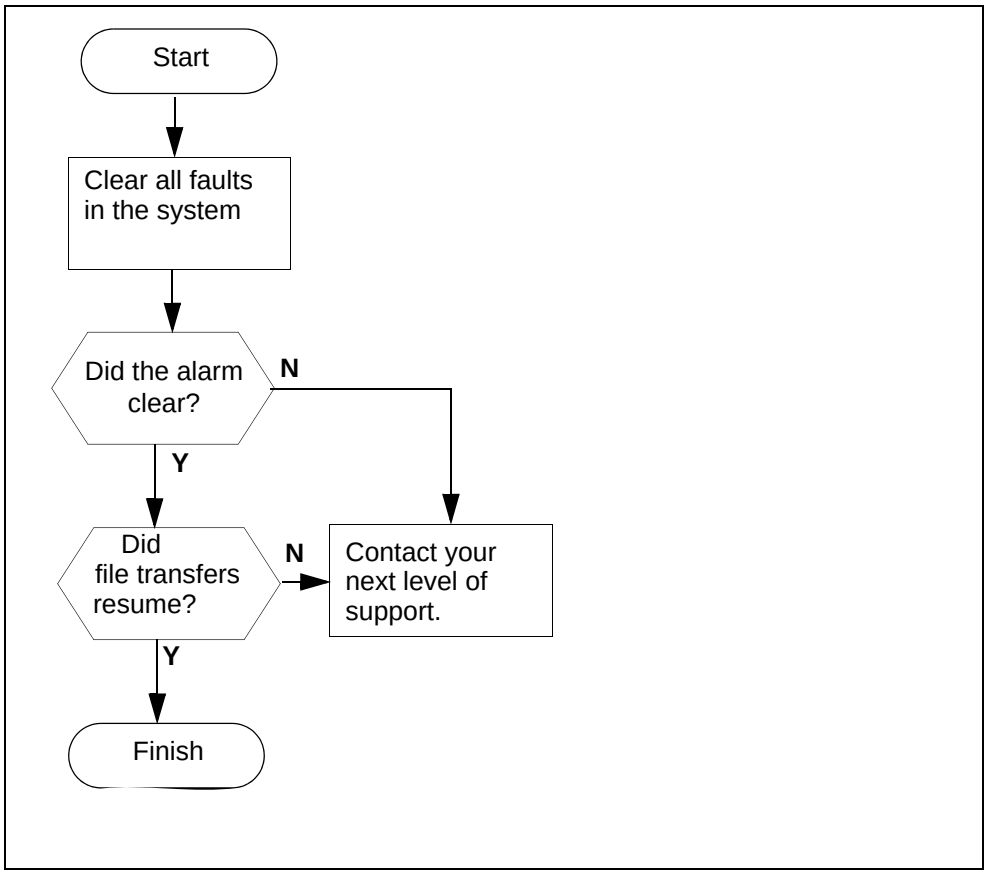
If the alarm does not clear, SBA is not able to transfer files to the downstream destination:

- SBA uses local storage on the core manager to store billing files. Alarms are generated as SBA uses available capacity.
- if local storage becomes full, the Core is unable to send billing records to the core manager. The Core sends the billing records to backup storage. Alarms are generated as the Core uses available capacity.

Action

The following flowchart is a summary of the procedure. Use the instructions in the procedure to clear the alarm.

SBAIF alarm clearing flowchart



Clearing an SBAIF alarm

At a workstation or console

1 Clear all faults in the system using the appropriate procedures in this document.

The SBAIF alarm clears when the fault is corrected.

If the SBAIF alarm	Do
clears	step 2
does not clear	Contact your next level of support.

2 Access the core manager.

3 Monitor the billing-related logs and look for log SDMB690, which indicates that the SBAIF alarm has cleared.

If log SDMB690	Do
is present	step 4
is not present	contact your next level of support.

4 Make sure SBA successfully performs a scheduled transfer of billing files. Monitor billing-related logs and look for log SDMB691, which indicates the file transfer schedule is now working for the stream.

Note: The length of time for SBA to resume transferring billing files depends on the following configured parameters:

- the number of active scheduled tuples
- the time interval to transfer files

If	Do
log SDMB691 indicates the file transfer schedule is now working for the stream.	step 5
log SDMB691 or any other log indicates a new problem with the scheduled transfer of billing files	contact your next level of support

5 You have completed this procedure.

Verifying the file transfer protocol

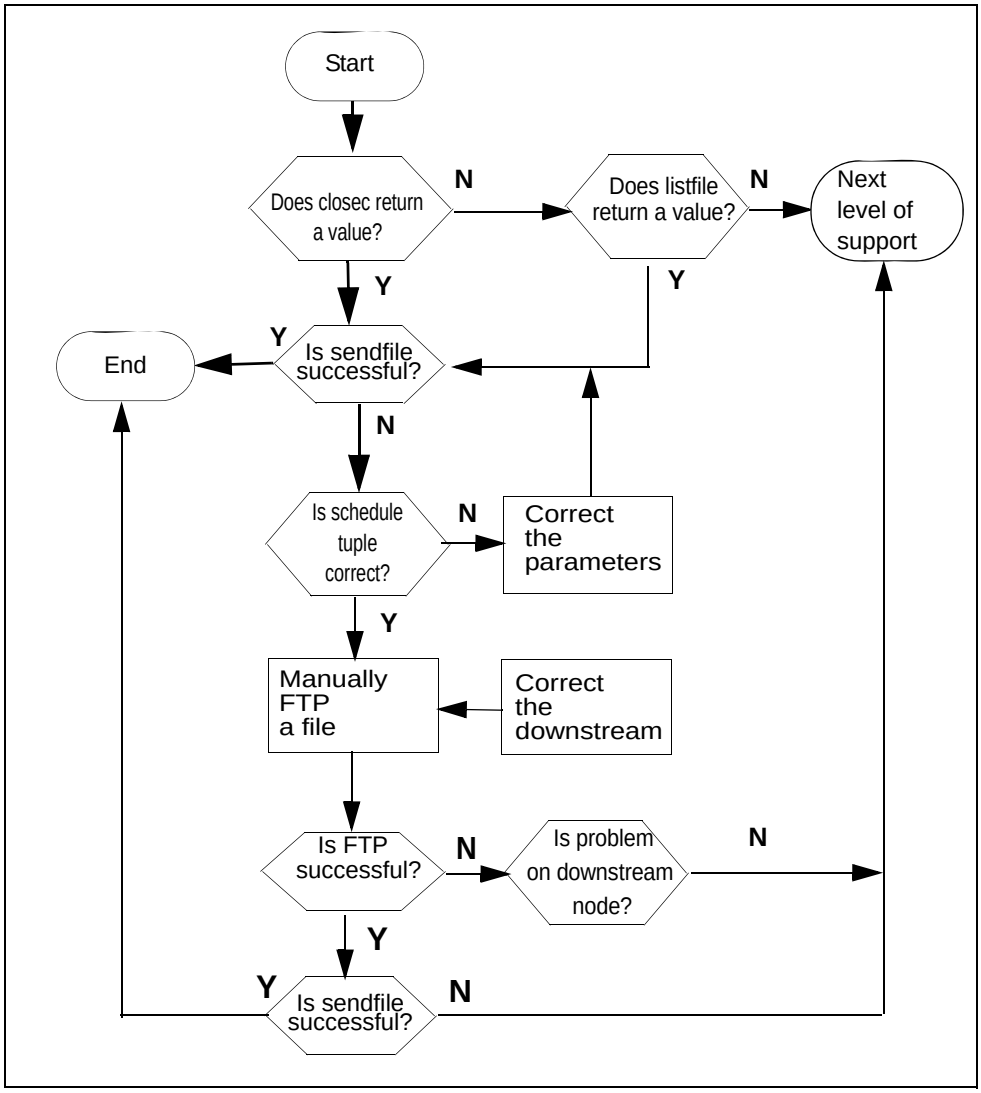
Purpose

You can use this procedure on the core manager to verify that the file transfer protocol (FTP) is configured correctly to transfer files.

Action

The following flowchart summarizes the steps outlined in the procedure.

FTP verification flowchart



Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Verify the FTP

At the core manager

1 Access the bill maintenance level:

```
billmtc
```

2 Access the file system:

```
filesys
```

3 Close active billing files:

```
closec <stream_name>
```

where

<stream_name> is the name of the stream.

Note: You must close any active billing files prior to the FTP process.

4 Determine the results of the closec command.

If the “closec” command	Do
returns a filename	step 7
does not return a filename	step 5

5 List the primary file (closedNotSent directory):

```
listfile <stream_name>
```

where

<stream_name> is the name of the stream

6 If the listfile command does not return a filename, contact your next level of support because this can indicate a problem with billing generation.

7 Send the primary file (closedNotSent directory):

```
sendfile <stream_name>
```

where

<stream_name> is the name of the stream.

Note: The sendfile command sends the billing file to the operating company billing collector.

8 Go to the previous level:

`quit`

9 Determine the results of the sendfile command.

If the “sendfile” command is	Do
successful	you have completed this procedure
not successful	step 10

Note: Observe the SDMB logs on the CM in logutil to determine why the `sendfile` command is not successful prior to continuing with step 10.

10 Access the schedule level:

`schedule`

11 List the parameters of the schedule tuple:

`list`

If the parameters are	Do
correct, but you are receiving an alarm	step 21
incorrect	step 12

12 Reset the schedule tuple parameters:

`change`

13 Enter the stream name (name of billing file).

14 Enter the file format.

15 Enter the destination name.

Note: The destination name can be up to 15 alphanumeric characters.

16 Observe the schedule tuple displayed.

17 Enter the corrected parameters.

Note: You can change parameters one at a time or you can choose to change the entire schedule tuple.

18 Enter the new values of the parameters you have chosen to change.

19 Save the changed parameters:

`save`

If you have	Do
corrected the parameters in the schedule tuple	step 7
determined that the parameters are correct	• step 20 (verify login and write permissions are correct for FTP process without testing a billing file), OR • step 23 (verify login and write permissions are correct for FTP process while testing an actual billing file)

20 Exit the maintenance interface:

`quit all`

21 Login as root user.

22 Attempt to FTP any billing file to the destination used by the "sendfile" command. This action verifies that FTP is functioning properly for the node and directory.

Note: You can use any billing file for step 22 because you are only verifying login and write ability on the downstream node.

23 Exit back to the command prompt:

`quit all`

24 Login as root user.

25 Copy a billing file from the closedNotSent directory to a temporary directory:

`cp /<logical_vol>/closedNotSent/<file> /tmp`

where

<logical_vol> is the logical volume for the stream that is in use

<file> is the name of the billing file in the closedNotSent directory

Note: You can obtain the logical volume from the `confstrm` level of the `billmtc` by requesting a list on the stream.

26 Access the /tmp directory:

```
cd /tmp
```

27 FTP to the downstream node:

```
ftp <address> <port>
```

where

<address> is the Primary_Destination IP address of the destination node

<port> is the Primary_Port of the destination node

28 Log onto the node when prompted by the FTP (Remote_Login and Remote_Password defined in the schedule tuple):

Note: A successful login is confirmed by a “230 User <user_name> logged in” message returned by the FTP.

If the login attempt is unsuccessful, obtain a valid login ID and password and update the schedule tuple with the valid values.

29 Change the directory to the one the schedule tuple is using:

```
ftp> cd <remote_directory>
```

where

<remote_directory> is the Remote_Storage_Directory defined in the schedule tuple.

Note: A successful login is confirmed by a “250 CWD command successful” message returned by the FTP.

30 If the “cd” command is unsuccessful, obtain a valid directory from the downstream node and update the schedule tuple with the valid values.

31 Set the file transfer mode to binary:

```
ftp> binary
```

Note: A successful command is confirmed by a “200 Type set to I” message returned by the FTP.

32 Execute the “structure” command and verify the returned message:

```
ftp> stru f
```

Note: The response from a UNIX machine for a successful command would be: “We only support file structure, sorry.” The response from an AS400 machine for a successful command would be: “250 Data structure is File”.

33 Attempt to write a file to the destination node directory used for billing:

`ftp> put <file> <file.tmp>`

where

<file> is the name of a billing file that is copied to the /tmp directory in step 25.

<file.tmp> is the name of the billing file with the .tmp extension appended.

Note: The responses from a UNIX machine for a valid command would be “200 PORT command successful” and “226 Transfer complete”.

34 Rename the <file.tmp> file:

`ftp> rename <file.tmp> <file>`

where

<file.tmp> is the name of the billing file with .tmp extension appended that you created in step 33.

<file> is the name of billing file to which the .tmp extension was appended in step 33.

Note: The responses from a UNIX machine for a valid command would be “350 File exists, ready for destination name” and “250 RNTO command successful”.

35 Exit from the FTP session:

`ftp> quit`

If the file transfer is	Do
successful	step 38
unsuccessful because of a permission error	step 36
unsuccessful for a reason other than permission error	step 38

36 Correct the directory permissions to allow write access.

37 Repeat steps 21 through 35.

38 Send the primary files in the closedNotSent directory:

`sendfile <billing_stream> dest <dest_name>`

where

<billing_stream> is the name of the billing stream

<dest_name> is the name you choose to name the destination (for example, fraud detection).

Note: The `sendfile` command with the `dest` option sends the billing file to the specified destination only.

If the “sendfile” command is	Do
successful	you have completed this procedure
unsuccessful	contact your next level of support

Verifying the FTP Schedule

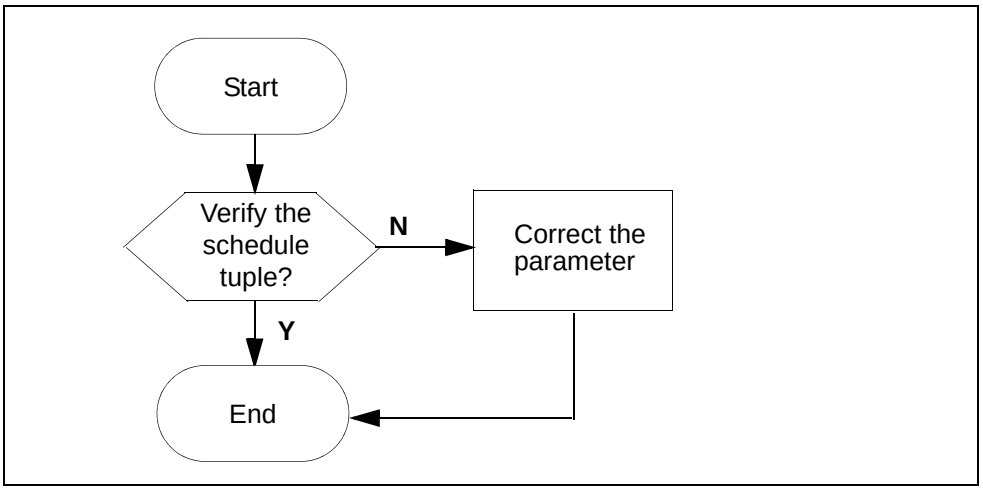
Purpose

You can use this procedure to verify that the schedule is configured correctly and can transfer files using FTP.

Action

The following flowchart summarizes the steps in the procedure.

Verifying the FTP schedule flowchart



Note: Instructions for entering commands in the following procedure do not show the prompting symbol, such as #, >, or $, displayed by the system through a GUI or on a command line.

Verifying the FTP schedule

At any workstation or console

1 Log in to the core manager.

2 Access the bill maintenance level:

```
billmtc
```

3 Verify the schedule tuple:

```
schedule
```

4 List the parameters of the schedule tuple:

list

If the parameters are	Do
correct	contact your next level of support
incorrect	step 5

5 Reset the schedule tuple parameters:

change

6 Enter the stream name (billing file name).

7 Enter the file format.

8 Enter the destination name.

Note: The destination name can be up to 15 alphanumeric characters.

9 Observe the schedule tuple displayed.

10 Enter the parameters that you need to correct.

Note: You can change parameters one at a time or you can choose to change the entire schedule tuple.

11 Enter the new values of the parameters you have chosen to change.

12 Save the changed parameters:

save

If the parameters are	Do
correct, but still receiving an alarm	contact your next level of support
correct and no longer receiving an alarm	step 13

13 Wait for the next scheduled transfer to execute after the scheduled transfer interval for the alarm not to appear.

14 You have completed the procedure.

Replacing one or more failed disk drives on an SPFS-based server

Application

Use this procedure to replace one or more failed disk drives on a Server Platform Foundation Software (SPFS)-based server (a Netra t1400 or a Netra 240 server). Also use this procedure if a disk drive was pulled out by mistake. Simply re-inserting the disk is not sufficient to recover.

Disk failures will appear as IO errors or SCSI errors from the Solaris kernel. These messages will appear in the system log and on the console terminal. To indicate a disk failure, log SPFS310 is generated, and an alarm light is illuminated on the front panel. After the disk is replaced, the alarm light will go off within a few minutes.

Systems installed with SPFS use disk mirroring. With mirrored hot-swap disks, a single failed disk can be replaced without interrupting the applications running on the server. Thus, a single disk can be replaced while the system is in-service. Follow one of the links below for a view of the disks on a Netra t1400 and Netra 240:

- Netra t1400 on page 178
- Netra 240 on page 179

The steps to replace a failed drive are to identify the failed drive, replace it physically, and replace it logically.

Follow one of the links below according to your office configuration to replace the failed disk drives:

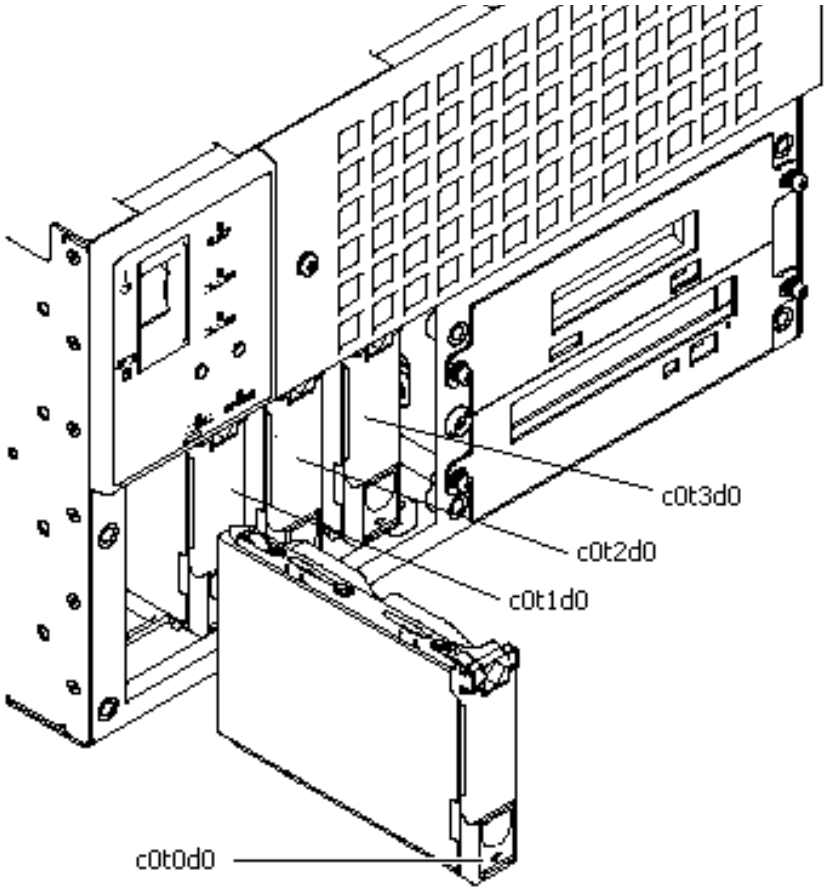
- Replacing failed disks on a Netra t1400 on page 180
- Replacing failed disks on a Netra 240 simplex on page 183
- Replacing failed disks on a Netra 240 cluster (two-server) on page 185

Netra t1400

Each Netra t1400 is equipped with four hot-swap drives: “c0t0d0”, “c0t1d0”, “c0t2d0”, and “c0t3d0”. Each physical drive is divided into slices, which are named based on the physical disk and a slice number. For example, “c0t0d0s0” is the first slice of the physical disk “c0t0d0”.

The following figure identifies the disk drives of the Netra t1400.

Netra t1400 disk drives

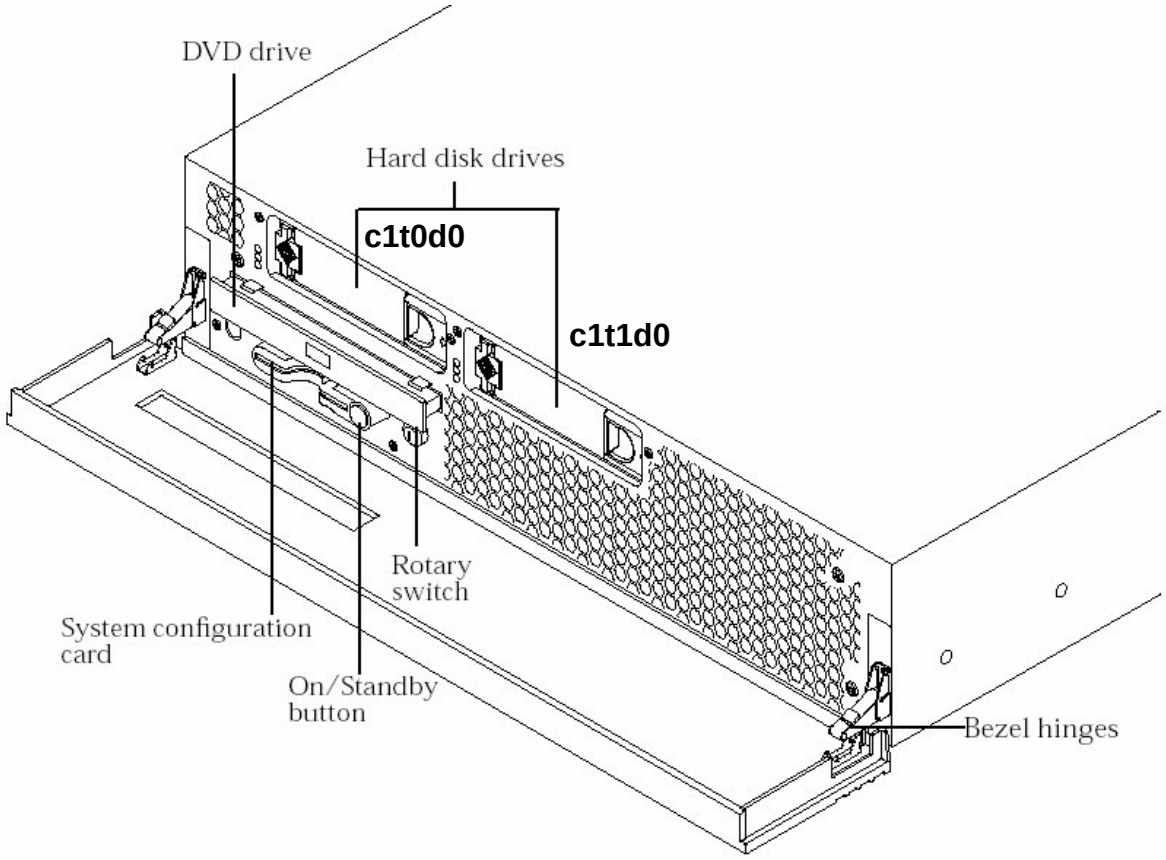


Netra 240

Each Netra 240 is equipped with two hot-swap drives: “c1t0d0”, and “c1t1d0”.

The following figure identifies the disk drives of the Netra 240.

Netra 240 disk drives



Prerequisites

You have a replacement disk.

Action

Perform the following steps to complete this procedure.

Replacing failed disks on a Netra t1400

At the server

1 Locate the failed disk(s) using figure Netra t1400 disk drives on page 178.

2 Physically replace the disk using the documentation for the Netra t1400. When complete, proceed with step 3 in this procedure to logically replace the disk.

Note: If more than one disk needs to be replaced, physically replace one disk and return to this procedure to logically replace the disk (step 3), before you proceed to physically replace the next failed disk.

At your workstation

3 Logically replace the disk you just physically replaced.

If you physically replaced	Do
c0t0d0	step a
c0t1d0	step b
c0t2d0	step c
c0t3d0	step d

a Logically replace disk “c0t0d0” by entering the following sequence of commands:

```
# metadb -d c0t0d0s7
# prtvtoc -h /dev/rdsk/c0t1d0s2 | fmthard -s
- /dev/rdsk/c0t0d0s2
# metadb -a c0t0d0s7
# metareplace -e d2 c0t0d0s1
# metareplace -e d5 c0t0d0s0
# metareplace -e d8 c0t0d0s3
# metareplace -e d11 c0t0d0s4
# metareplace -e d100 c0t0d0s5
```

Proceed to step 4

b Logically replace disk “c0t1d0” by entering the following sequence of commands.

```
# metadb -d c0t1d0s7
# prtvtoc -h /dev/rdsk/c0t0d0s2 | fmthard -s
- /dev/rdsk/c0t1d0s2
# metadb -a c0t1d0s7
# metareplace -e d2 c0t1d0s1
# metareplace -e d5 c0t1d0s0
# metareplace -e d8 c0t1d0s3
# metareplace -e d11 c0t1d0s4
# metareplace -e d100 c0t1d0s5
```

Proceed to step 4

c Logically replace disk “c0t2d0” by entering the following sequence of commands.

```
# metadb -d c0t2d0s7
# prtvtoc -h /dev/rdsk/c0t3d0s2 | fmthard -s
- /dev/rdsk/c0t2d0s2
# metadb -a cot2d0s7
# metareplace -e d100 c0t2d0s0
```

Proceed to step 4

d Logically replace disk “c0t3d0” by entering the following sequence of commands.

```
# metadb -d c0t3d0s7
# prtvtoc -h /dev/rdsk/c0t2d0s2 | fmthard -s
- /dev/rdsk/c0t3d0s2
# metadb -a c0t3d0s7
# metareplace -e d100 c0t3d0s0
```

Proceed to step 4

4 Use the following table to determine your next step.

If you	Do
have another disk to physically replace	step 1
do not have another disk to physically replace	step 5

5 Use the following table to determine your next step.

If you replaced	Do
1 disk	you have completed this procedure
2 non-mirrored disks (i.e. c0t0d0 and c0t2d0 or c0t3d0, or c0t1d0 and c0t2d0 or c0t3d0)	you have completed this procedure
2 mirrored disks (i.e. c0t0d0 and c0t1d0, or c0t2d0 and c0t3d0)	step 6
3 disks	step 6
4 disks	step 6

6 Restore the file systems and oracle data. If required, refer to procedure “Performing a full system restore on a Sun server - SN06.2 or greater” in the ATM/IP Security and Administration document, NN10402-600.

Note: As long as one disk from each pair is good, the data in the system is intact. When both disks in a pair fail, the data needs to be restored.

You have completed this procedure.

Replacing failed disks on a Netra 240 simplex

At the server

1 Locate the failed disk(s) using figure Netra 240 disk drives on page 179.

2 Physically replace the disk using the documentation for the Netra 240. When complete, proceed with step 3 in this procedure to logically replace the disk.

Note: If both disks need to be replaced, physically replace one disk and return to this procedure to logically replace the disk (step 3), before you proceed to physically replace the other failed disk.

At your workstation

3 Logically replace the disk you just physically replaced.

If you physically replaced	Do
c1t0d0	step a
c1t1d0	step b

a Logically replace disk “c1t0d0” by entering the following sequence of commands:

```
# metadb -d c1t0d0s7
# prtvtoc -h /dev/rdsk/c1t1d0s2 | fmthard -s
- /dev/rdsk/c1t0d0s2
# metadb -a c1t0d0s7
# metareplace -e d2 c1t0d0s1
# metareplace -e d5 c1t0d0s0
# metareplace -e d8 c1t0d0s3
# metareplace -e d11 c1t0d0s4
# metareplace -e d100 c1t0d0s5
```

Proceed to step 4

b Logically replace disk “c1t1d0” by entering the following sequence of commands:

```
# metadb -d c1t1d0s7
# prtvtoc -h /dev/rdsk/c1t0d0s2 | fmthard -s
- /dev/rdsk/c1t1d0s2
# metadb -a c1t1d0s7
# metareplace -e d2 c1t1d0s1
# metareplace -e d5 c1t1d0s0
# metareplace -e d8 c1t1d0s3
# metareplace -e d11 c1t1d0s4
# metareplace -e d100 c1t1d0s5
```

Proceed to step 4

4 Use the following table to determine your next step.

If you	Do
have another disk to replace	step 1
do not have another disk to replace	step 5

5 Use the following table to determine your next step.

If you replaced	Do
1 disk	you have completed this procedure
both disks	step 6

6 Restore the file systems and oracle data. If required, refer to procedure “Performing a full system restore on a Sun server - SN06.2 or greater” in the ATM/IP Security and Administration document, NN10402-600.

Note: As long as one disk is good, the data in the system is intact. When both disks fail, the data needs to be restored.

You have completed this procedure.

Replacing failed disks on a Netra 240 cluster (two-server)

At the server

1 Locate the failed disk(s) using figure Netra 240 disk drives on page 179.

2 Use the following guidelines to determine the steps you need to do, and do only those steps in the order they appear:

- **to replace one disk on one unit**
  - physically replace the disk (step 3)
  - logically replace this disk (step 4)
- **to replace one disk on each unit**
  - physically replace the disk on the Active unit first (step 3)
  - logically replace this disk (step 4)
  - physically replace the disk on the other unit (step 3)
  - logically replace this disk (step 4)
- **to replace both disks on a unit**
  - physically replace one disk on the unit (step 3)
  - logically replace this disk (step 4)
  - physically replace the other disk on this unit (step 3)
  - logically replace this disk (step 4)
  - clone the image from the Active unit onto this unit (step 6)
- **to replace three disks**
  - physically replace the disk on the Active unit first (step 3)
  - logically replace this disk (step 4)
  - physically replace one disk on the other unit (step 3)
  - logically replace this disk (step 4)
  - physically replace the other disk on this same unit (step 3)
  - logically replace this disk (step 4)
  - clone the image from the Active unit onto this unit (step 6)

- **to replace four disks**
  - physically replace one disk on the unit with the most recent backup (step 3)
  - logically replace this disk (step 4)
  - physically replace the other disk on this same unit (step 3)
  - logically replace this disk (step 4)
  - restore the file systems and oracle data on this unit (step 5)
  - physically replace one disk on the other unit (step 3)
  - logically replace this disk (step 4)
  - physically replace the other disk on this same unit (step 3)
  - logically replace this disk (step 4)
  - clone the image from the Active unit onto this unit (step 6)

3 Physically replace the disk using the documentation for the Netra 240. When complete, proceed with step 4 in this procedure to logically replace the disk.

At your workstation

4 Logically replace the disk you just physically replaced.

If you physically replaced	Do
c1t0d0	step a
c1t1d0	step b

a Logically replace disk “c1t0d0” by entering the following sequence of commands:

```
# metadb -d c1t0d0s7
# prtvtoc -h /dev/rdsk/c1t1d0s2 | fmthard -s
- /dev/rdsk/c1t0d0s2
# metadb -a c1t0d0s7
# metareplace -e d2 c1t0d0s1
# metareplace -e d5 c1t0d0s0
# metareplace -e d8 c1t0d0s3
# metareplace -e d11 c1t0d0s4
# metareplace -e d100 c1t0d0s5
```

b Logically replace disk “c1t1d0” by entering the following sequence of commands:

```
# metadb -d c1t1d0s7
# prtvtoc -h /dev/rdsk/c1t0d0s2 | fmthard -s
- /dev/rdsk/c1t1d0s2
# metadb -a c1t1d0s7
# metareplace -e d2 c1t1d0s1
# metareplace -e d5 c1t1d0s0
# metareplace -e d8 c1t1d0s3
# metareplace -e d11 c1t1d0s4
# metareplace -e d100 c1t1d0s5
```

5 Restore the file systems and oracle data. If required, refer to procedure “Performing a full system restore on a Sun server - SN06.2 or greater” in the ATM/IP Security and Administration document, NN10402-600.

Note: As long as one disk is good, the data in the system is intact. When both disks fail, the data needs to be restored.

6 Clone the data from the Active unit. If required, refer to procedure “Cloning the image of one node in a cluster to the other node” in the ATM/IP Security and Administration document, NN10402-600.

You have completed this procedure.

Shutting down an SPFS-based server

Application

Use this procedure to shut down a Server Platform Foundation Software (SPFS)-based server, which may be hosting one or more of the following components:

- CS 2000 Management Tools
- IEMS
- Audio Provisioning Server (APS)
- Media Gateway (MG) 9000 Manager
- CS 2000 SAM21 Manager
- Network Patch Manager (NPM)
- Core and Billing Manager (CBM)
- Multiservice Data Manager (MDM)

Note: MDM when installed on SPFS-based servers is not configured as a two-server cluster but as two distinct one-server configurations.

ATTENTION

The SPFS-based server may be hosting more than one of the above components, therefore, ensure it is acceptable to shut down the server.

Prerequisites

You must have root user privileges.

Action

Use one of the following procedures according to your office configuration:

- One-server configuration on page 189
- Two-server (cluster) configuration on page 190

One-server configuration

At your workstation

1 Log in to the server by typing

> **telnet <IP address>**

and pressing the Enter key.

where

IP address
is the IP address of the SPFS-based server you want to power down

2 When prompted, enter your user ID and password.

3 Change to the root user by typing

$ **su -**

and pressing the Enter key.

4 When prompted, enter the root password.

5 Shut down the server by typing

init 0

and pressing the Enter key.

The server shuts down gracefully, and the telnet connection is closed.

6 If required, turn off the power to the server at the circuit breaker panel of the frame.

You have completed this procedure.

To bring the server back up, turn on the power to the server at the circuit breaker panel of the frame. The server recovers on its own once power is restored.

Two-server (cluster) configuration

At your workstation

1 Log in to the Inactive server by typing

> **telnet <IP address>**

and pressing the Enter key.

where

IP address
is the physical IP address of the Inactive SPFS-based server in the cluster you want to power down (unit 0 or unit 1)

2 When prompted, enter your user ID and password.

3 Change to the root user by typing

$ **su - root**

and pressing the Enter key.

4 When prompted, enter the root password.

Note: Ensure you are on the Inactive server by typing ubmstat. If *ClusterIndicatorACT* is displayed in the response, which indicates you are on the Active server, log out of that server and log in to the other server through telnet using the physical IP address of the other unit. The response must display *ClusterIndicatorSTBY*, which indicates you are on the Inactive server.

5 Shut down the Inactive server by typing

init 0

and pressing the Enter key.

The server shuts down gracefully, and the telnet connection is closed.

6 If required, turn off the power to the Inactive server at the circuit breaker panel of the frame. You have completed a partial power down (one server).

If you want to perform a full power down (both servers), proceed to step 7, otherwise, you have completed this procedure.

7

ATTENTION

Only perform the remaining steps if you want to perform a full power down, which involves powering down both servers in the cluster.

Telnet to the Active server by typing

```
> telnet <IP address>
```

and pressing the Enter key.

where

IP address
is the physical IP address of the Active SPFS-based server in the cluster you want to power down

8 When prompted, enter your user ID and password.

9 Change to the root user by typing

```
$ su - root
```

and pressing the Enter key.

10 When prompted, enter the root password.

11 Shut down the Active server by typing

```
# init 0
```

and pressing the Enter key.

The server shuts down gracefully, and the telnet connection is closed.

12 If required, turn off the power to the servers at the circuit breaker panel of the frame. You have completed a full power down (two servers).

You have completed this procedure.

To bring the servers back up, turn on the power to the servers at the circuit breaker panel of the frame. The servers recover on their own once power is restored.

Preparing a DVD-RW for use

Application

Use this procedure to verify the DVD-RW is ready for use when using it for the first time, or when you want to erase the contents of a used CD-RW or DVD-RW to use it again.

Prerequisites

None

Action

Perform the following steps to complete this procedure.

At the server

1 Insert the DVD into the drive.

Note: Only rewriteable media can be erased. Verify that the DVD you are attempting to erase is a DVD-RW before inserting it into the drive.

At your workstation

2 Log in to the server by typing

> **`telnet <server>`**

and pressing the Enter key.

where

server
is the IP address or hostname of the SPFS-based server

3 When prompted, enter your user ID and password.

4 Use the following table to determine your next step.

If the DVD is	Do
new	step 5
used	step 6

5 Verify the DVD is ready for use by typing

```
$ cdrw -l
```

and pressing the Enter key

If the system response	Do
provides the CD device	step 11
indicates “No CD writers found or no media in the drive”	step 6

6 Erase the contents of the DVD by typing

```
$ cdrw -b all
```

and pressing the Enter key

Note: Erasing a DVD-RW can take over two hours. You can also use the “fast” and “session” arguments. For more details, refer to the man pages by typing **`man cdrw`**.

7 Reinsert the DVD into the drive.

8 Verify the DVD is ready for use by typing

```
$ cdrw -l
```

and pressing the Enter key

If the system response	Do
provides the CD device	step 11
indicates “No CD writers found or no media in the drive” or “Media in the device is not erasable”	step 9

9 Eject the DVD from the drive as follows:

a Ensure you are at the root directory level by typing

```
$ cd /
```

and pressing the Enter key.

b Eject the DVD by typing

`eject cdrom`

and pressing the Enter key.

Note: If the DVD drive tray will not open after you have determined that the DVD drive is not busy and is not being read from or written to, enter the following commands:

/etc/init.d/volmgt stop

/etc/init.d/volmgt start

Then, press the eject button located on the front of the DVD drive.

c Remove the DVD from the drive.

10 Obtain another DVD and repeat the process starting with step 4.

11 Proceed to use the DVD.

You have completed this procedure.

Increasing the size of a file system on an SPFS-based server

Application

Use one of the following procedures to increase the size of a file system on a Server Platform Foundation Software (SPFS)-based server:

- Simplex configuration (one server) on page 196
- High-availability configuration (two servers) on page 201

It is recommended you perform this procedure during off-peak hours.

The SPFS creates file systems to best fit the needs of applications. However, it may be necessary to increase the size of a file system.

Not all file systems can be increased. The table below lists the file systems that cannot be increased, and lists examples of those that can be increased.

Note: Not all the file systems that can be increased are listed.

SPFS file systems

Cannot be increased	Can be increased (examples)
/ (root)	/data
/var	/opt/nortel
/opt	/data/oradata
/tmp	/audio_files
	/PROV_data
	/user_audio_files
	/data/qca
	/data/mg9kem/logs

While file systems are being increased, writes to the file system are blocked, and the system activity increases. The greater the size increase of a file system, the greater the impact on performance.

Prerequisites

It is recommended that you back up your file systems and oracle data (if applicable) prior to performing this procedure. Refer to procedures Performing a backup of file systems on an SPFS-based server on page 208 if required.

Action

Perform the following steps to complete this procedure.

Simplex configuration (one server)

At your workstation

1 Log in to the server by typing

```
> telnet <server>
```

and pressing the Enter key.

where

server
is the IP address or host name of the server

2 When prompted, enter your user ID and password.

3 Change to the root user by typing

```
$ su - root
```

and pressing the Enter key.

4 When prompted, enter the root password.

5 Determine the amount of disk utilization by the file systems as follows:

a Access the command line interface by typing

```
# cli
```

and pressing the Enter key.

Example response

```
Command Line Interface
 1 - View
 2 - Configuration
 3 - Other

 X - exit

select -
```

b Enter the number next to the “View” option in the menu.

Example response

```
View
  1 - sspfs_soft (Display Software
      Installation Level Of SSPFS)
  2 - chk_sspfs (Check SSPFS Processes)
  3 - sw_conf (The software configuration of
      the znc0s0jx)
  4 - cpu_util (Overall CPU utilization)
  5 - cpu_util_proc (CPU utilization by
      process)
  6 - port_util (I/O port utilization)
  7 - disk_util (Filesystem utilization)

  X - exit

select -
```

c Enter the number next to the “disk_util” option in the menu.

Example response

```
=== Executing "disk_util"

Filesystem             kbytes    used   avail capacity  Mounted on
/dev/md/dsk/d2       4129290 1892027 2195971    47%    /
/proc                      0       0       0     0%    /proc
fd                         0       0       0     0%    /dev/fd
mnttab                     0       0       0     0%    /etc/mnttab
/dev/md/dsk/d8       2053605  155600 1836397     8%    /var
swap                 3505488      40 3505448     1%    /var/run
swap                  524288     448  523840     1%    /tmp
/dev/md/dsk/d11      5161437 1428691 3681132    28%    /opt
/dev/md/dsk/d23      2031999   34313 1936727     2%    /PROV_data
/dev/md/dsk/d24      2031999  169042 1801998     9%    /audio_files
/dev/md/dsk/d20      3080022  294615 2723807    10%    /data
/dev/md/dsk/d25       949455  440344  452144    50%    /user_audio_files
/dev/md/dsk/d21      3080022  275962 2742460    10%    /opt/nortel
/dev/md/dsk/d22     12386331 10337214 1925254    85%    /data/oradata
/dev/md/dsk/d26       122847    1041  109522     1%    /data/qca

=== "disk_util" completed successfully
```

The “capacity” column indicates the percentage of disk utilization by the file system, which is specified in the “Mounted on” column.

6 Note the file system you want to increase, as well as its current size (under column “Kbytes”).

7 Exit each menu level of the command line interface to eventually exit the command line interface, by typing

`select - x`

and pressing the Enter key.

8

ATTENTION

Before you proceed with this procedure, ensure the file system you want to increase is full or nearly full and that its content is valid application data. Remove any unneeded files or files generated in error that are taking up disk space.

Determine the size by which to increase the file system, by subtracting the desired size for the file system based on your specific needs, from its current size (noted in 6).

For example, to determine the size by which to increase the “qca” file system, subtract its current size, 122847k from the desired size, for example, 256000k. You would increase the size of the “qca” file system by 133153k, or 133MB.

9 Determine the amount of free disk space that can be allocated to file systems as follows:

a Determine the amount of free disk space on your system by typing

/opt/nortel/sspfs/fs/meta.pl fs

and pressing the Enter key.

Divide the resulting number by 2048, which is the amount of free disk space in megabytes (MB) that can be allocated to existing file systems.

If the value is	Do
less than zero (0)	contact Nortel Networks for assistance
more than zero (0)	step b

b Use the following table to determine your next step.

If	Do
the value you determined in step 8 (size by which to increase the file system) is greater than the value you obtained in step 9a (amount of free disk space you can allocate to file systems)	contact Nortel Networks for assistance
the value you determined in step 8 (size by which to increase the file system) is less than the value you obtained in step 9a (amount of free disk space you can allocate to file systems)	step 10

10

> **ATTENTION**
> Once you increase the size of a file system, you cannot decrease it. Therefore, it is strongly recommended that you grow a file system in small increments.

Increase the size of the file system by typing

```
#  filesys grow -m <mount_point> -s <size>m
```

Where

mount_point
is the name of the file system you want to increase (noted in step 6)

size
is the size in megabytes (m) by which you want to increase the file system (determined in step 8)

Example

```
# filesys grow -m /data -s 512m
```

Note: The example above increases the “/data” file system by 512 megabytes (MB).

You have completed this procedure.

High-availability configuration (two servers)

ATTENTION
During this procedure, the cluster will be running without a standby node. The duration is estimated at approximately one hour.

At your workstation

1 For all users except those using Core and Billing Manager (CBM), start a login session using telnet. For CBM, start a login session connecting to the inactive node using ssh.

If using	Do
telnet (unsecure)	step 2
ssh (secure)	step 6

2 Log in to the Inactive node by typing

> **`telnet <server>`**

and pressing the Enter key.

where

server
is the physical IP address of the Inactive node in the cluster

Note: If you use the cluster IP address, you will log in to the Active node. Therefore, ensure you use the physical IP address of the Inactive node to log in.

3 When prompted, enter your user ID and password.

4 Change to the root user by typing

$ **`su - root`**

and pressing the Enter key.

5 When prompted, enter the root password.

Note: Ensure you are on the Inactive server by typing ubmstat. If *ClusterIndicatorACT* is displayed in the response, which indicates you are on theActive server, log out of that server and log in to the other server through telnet using the physical IP address of the other unit. The response must display *ClusterIndicatorSTBY*, which indicates you are on the Inactive server.

6 Log in using ssh (secure) as follows:

a Log in to the server by typing

```
> ssh -l root <server>
```

and pressing the Enter key.

where

server
is the physical IP address of the inactive server

Note: If this is the first time you are logging in using ssh, the system will request that you confirm to continue connecting. Enter `yes` at the prompt.

b When prompted, enter the root password.

At the Inactive node

7 Verify the cluster indicator to ensure you are logged in to the Inactive node, by typing

```
# ubmstat
```

and pressing the Enter key.

If the system response is	Do
ClusterIndicatorSTBY	step 8
ClusterIndicatorACT	step 2

8 Verify the status of file systems on this server by typing

```
# udstat
```

and pressing the Enter key.

If the file systems are	Do
STANDBY normal UP clean	step 9
not STANDBY normal UP clean	contact your next level of support

9 Determine the amount of disk utilization by the file systems as follows:

a Access the command line interface by typing

```
# cli
```

and pressing the Enter key.

Example response

```
Command Line Interface
 1 - View
 2 - Configuration
 3 - Other

 X - exit

select -
```

b Enter the number next to the “View” option in the menu.

Example response

```
View
  1 - sspfs_soft (Display Software
      Installation Level Of SSPFS)
  2 - chk_sspfs (Check SSPFS Processes)
  3 - sw_conf (The software configuration of
      the znc0s0jx)
  4 - cpu_util (Overall CPU utilization)
  5 - cpu_util_proc (CPU utilization by
      process)
  6 - port_util (I/O port utilization)
  7 - disk_util (Filesystem utilization)

  X - exit

select -
```

c Enter the number next to the “disk_util” option in the menu.

Example response

```
=== Executing "disk_util"

Filesystem             kbytes    used   avail capacity  Mounted on
/dev/md/dsk/d2       4129290 1892027 2195971    47%    /
/proc                      0       0       0     0%    /proc
fd                         0       0       0     0%    /dev/fd
mnttab                     0       0       0     0%    /etc/mnttab
/dev/md/dsk/d8       2053605  155600 1836397     8%    /var
swap                 3505488      40 3505448     1%    /var/run
swap                  524288     448  523840     1%    /tmp
/dev/md/dsk/d11      5161437 1428691 3681132    28%    /opt
/dev/md/dsk/d23      2031999   34313 1936727     2%    /PROV_data
/dev/md/dsk/d24      2031999  169042 1801998     9%    /audio_files
/dev/md/dsk/d20      3080022  294615 2723807    10%    /data
/dev/md/dsk/d25       949455  440344  452144    50%    /user_audio_files
/dev/md/dsk/d21      3080022  275962 2742460    10%    /opt/nortel
/dev/md/dsk/d22     12386331 10337214 1925254    85%    /data/oradata
/dev/md/dsk/d26       122847    1041  109522     1%    /data/qca

=== "disk_util" completed successfully
```

The *capacity* column indicates the percentage of disk utilization by the file system, which is specified in the *Mounted on* column.

10 Note the file system you want to increase, as well as its current size (under column *Kbytes*).

11 Exit each menu level of the command line interface to eventually exit the command line interface, by typing

```
select - x
```

and pressing the Enter key.

12

ATTENTION

Before you proceed with this procedure, ensure the file system you want to increase is full or nearly full and that its content is valid application data. Remove any unneeded files or files generated in error that are taking up disk space.

Determine the size by which to increase the file system, by subtracting the desired size for the file system based on your specific needs, from its current size (noted in 10).

For example, to determine the size by which to increase the “qca” file system, subtract its current size, 122847k from the desired size, for example, 256000k. You would increase the size of the “qca” file system by 133153k, or 133MB.

13 Determine the amount of free disk space that can be allocated to file systems as follows:

a Determine the amount of free disk space on your system by typing

```
# /opt/nortel/sspfs/fs/meta.pl fs
```

and pressing the Enter key.

Divide the resulting number by 2048, which is the amount of free disk space in megabytes (MB) that can be allocated to existing file systems.

If the value is	Do
less than zero (0)	contact Nortel Networks for assistance
more than zero (0)	step b

b Use the following table to determine your next step.

If	Do
the value you determined in step 12 (size by which to increase the file system) is greater than the value you obtained in step 13a (amount of free disk space you can allocate to file systems)	contact Nortel Networks for assistance
the value you determined in step 12 (size by which to increase the file system) is less than the value you obtained in step 13a (amount of free disk space you can allocate to file systems)	step 14

14

ATTENTION
Once you increase the size of a file system, you cannot decrease it. Therefore, it is strongly recommended that you grow a file system in small increments.

Increase the size of the desired file system by typing

```
#  GrowClusteredFileSystem.ksh <mount_point>
<size>m
```

Where

mount_point
is the name of the file system you want to increase (noted in step 10)

size
is the size in megabytes (m) by which you want to increase the file system (determined in step 12)

Example

```
# GrowClusteredFileSystem.ksh /data/qca 10m
```

Note: The example above increases the “/data/qca” file system by 10 megabytes (MB).

15 Reboot the Inactive node by typing

```
# init 6
```

and pressing the Enter key.

16 Wait for the Inactive node to reboot, then log in again using its physical IP address.

17 Verify the status of file systems on the Inactive node by typing

```
# udstat
```

and pressing the Enter key.

If the file systems are	Do
STANBY normal UP clean	step 18
not STANBY normal UP clean	contact your next level of support

18 Log in to the Active node by typing

```
> telnet <server>
```

and pressing the Enter key.

where

server
is the physical IP address of the active node in the cluster

19 When prompted, enter your user ID and password.

20 Change to the root user by typing

```
$ su - root
```

and pressing the Enter key.

21 When prompted, enter the root password.

Note: Ensure you are on the Active server by typing ubmstat. If *ClusterIndicatorSTBY* is displayed in the response, which indicates you are on the Inactive server, log out of that server and log in to the other server through telnet using the physical IP address of the other unit. The response must display *ClusterIndicatorACT*, which indicates you are on the Active server.

At the Active node

22 Stop the cluster by typing

`StopCluster`

and press the Enter key.

This action causes a cluster failover and makes the active node inactive, and the inactive node active.

At the newly Active node

23 Clone the other node using procedure Cloning the image of one server in a cluster to the other server on page 51 if required.

You have completed this procedure.

Performing a backup of file systems on an SPFS-based server

Application

Use this procedure to perform a backup of the file systems on a Server Platform Foundation Software (SPFS)-based server (Sun Netra t1400 or Sun Netra 240).

The server can be hosting one or more of the following components:

- CS 2000 Management Tools
- IEMS
- Audio Provisioning Server (APS)
- Media Gateway 9000 Manager
- Network Patch Manager (NPM)
- Core and Billing Manager (CBM)

Prerequisites

This procedure has the following prerequisites:

- You must perform a data backup prior to performing this procedure Refer to procedure Performing a backup of file systems on an SPFS-based server on page 208 to complete this task.

  Note: The data backup is not required prior to this procedure for the Core and Billing Manager (CBM) or the MG 9000 Manager.

- For a Sun Netra t1400, use a blank 4mm Digital Data Storage (DDS-3) tape of 125m and 12 GB to store the data.
- For a Sun Netra 240, use one or more blank DVD-R or DVD-RW disks to store the data

  Note 1: The backup utility limits the storage to 4 GB on a DVD-R and DVD-RW.

  Note 2: If you are using a new DVD-RW, or want to reuse a used DVD-RW and need to erase the contents, complete procedure “Preparing a CD-RW or DVD-RW for use” in *ATM/IP Security and Administration*, NN10402-600.

Action

ATTENTION
In a two-server configuration, execute this procedure on the active server.

At the server

1 Insert the blank tape DVD into the drive. In a two-server configuration, insert the blank DVD into the active server.

At your workstation

2 Log in to the server by typing

> **telnet <server>**

and pressing the Enter key.

where

server
is the IP address or host name of the SPFS-based server on which you are performing the backup

In a two-server configuration, enter the physical IP address of the active server.

3 When prompted, enter your user ID and password.

4 Change to the root user by typing

$ **su -**

and pressing the Enter key.

5 When prompted, enter the root password.

In a two-server configuration, ensure you are on the active server by typing **ubmstat**. If *ClusterIndicatorSTBY* is displayed in the response, which indicates you are on the inactive server, log out of that server and log in to the other server through telnet using the physical IP address of the other unit. The response must display *ClusterIndicatorACT*, which indicates you are on the active server.

6 Use the following table to determine your next step.

If you are using	Do
a tape for backup	step 7
a DVD for backup	step 8

7 Rewind the tape by typing

```
# mt -f /dev/rmt/0 rewind
```

and pressing the Enter key.

8 Back up the file systems by typing

```
# /opt/nortel/sspfs/bks/bkfullsys
```

and pressing the Enter key.

Example response:

```
Backup Completed Successfully
```

Note: If you are using DVD, the system will prompt you to insert another blank disk if more than one is needed.

9 Use the following table to determine your next step.

If you are using	Do
a tape for backup	step 10
a DVD for backup	step 12

10 List the contents of the tape by typing

```
# gtar -tvMf /dev/rmt/0
```

and pressing the Enter key.

11 Eject and remove the tape from the drive, label it, write-protect it, and store it in a safe place.

Proceed to step step 19.

12 Insert the backup DVD into the drive. If the backup resides on multiple DVDs, insert the first backup DVD.

13 List the contents of the DVD by typing

```
# gtar -tvMf /cdrom/*bkfullsys*/*.tar
```

and pressing the Enter key.

If you	Do
receive a prompt to prepare another volume	step 14
do not receive a prompt to prepare another volume	step 16

14 Press the Return key.

15 Stop the gtar process by pressing the Ctrl and C keys.

16 Ensure you are at the root directory level by typing

```
# cd /
```

and pressing the Enter key.

17 Eject the DVD by typing

```
# eject cdrom
```

and pressing the Enter key.

If the disk drive tray will not open after you have determined that the disk drive is not busy and is not being read from or written to, enter the following commands:

```
# /etc/init.d/volmgt stop
# /etc/init.d/volmgt start
```

Then, press the eject button located on the front of the disk drive.

18 Remove the DVD from the drive, label it, and store it in a safe place.

If the backup	Do
resides multiple DVDs	Insert the next backup DVD in the disk drive and go to step 13.
resides on a single DVD	step 19

19 You have completed this procedure. If applicable, return to the high-level task or procedure that directed you to this procedure.

Verifying disk utilization on an SPFS-based server

Application

Use this procedure to verify disk utilization by the file systems on a Server Platform Foundation Software (SPFS)-based server.

Prerequisites

You must have root user privileges.

Action

Perform the following steps to complete this procedure.

At your workstation

1 Log in to the server by typing

```
> telnet <server>
```

and pressing the Enter key.

where

server
is the IP address or host name of the SPFS-based server

2 When prompted, enter your user ID and password.

3 Change to the root user by typing

```
$ su - root
```

and pressing the Enter key.

4 When prompted, enter the root password.

5 Access the command line interface by typing

```
# cli
```

and pressing the Enter key.

Example response

```
Command Line Interface
 1 - View
 2 - Configuration
 3 - Other

 X - exit

select -
```

6 Display the current disk capacity utilization as follows:

a Enter the number next to the “View” option in the menu.

Example response

```
View
  1 - sspfs_soft (Display Software
      Installation Level Of SSPFS)
  2 - chk_sspfs (Check SSPFS Processes)
  3 - sw_conf (The software configuration of
      the znc0s0jx)
  4 - cpu_util (Overall CPU utilization)
  5 - cpu_util_proc (CPU utilization by
      process)
  6 - port_util (I/O port utilization)
  7 - disk_util (Filesystem utilization)

  X - exit

select -
```

b Enter the number next to the “disk_util” option in the menu.

Example response

```
=== Executing "disk_util"

Filesystem             kbytes    used   avail capacity  Mounted on
/dev/md/dsk/d2       4129290 1892027 2195971    47%    /
/proc                      0       0       0     0%    /proc
fd                         0       0       0     0%    /dev/fd
mnttab                     0       0       0     0%    /etc/mnttab
/dev/md/dsk/d8       2053605  155600 1836397     8%    /var
swap                 3505488      40 3505448     1%    /var/run
swap                  524288     448  523840     1%    /tmp
/dev/md/dsk/d11      5161437 1428691 3681132    28%    /opt
/dev/md/dsk/d23      2031999   34313 1936727     2%    /PROV_data
/dev/md/dsk/d24      2031999  169042 1801998     9%    /audio_files
/dev/md/dsk/d20      3080022  294615 2723807    10%    /data
/dev/md/dsk/d25       949455  440344  452144    50%    /user_audio_files
/dev/md/dsk/d21      3080022  275962 2742460    10%    /opt/nortel
/dev/md/dsk/d22      12386331 10337214 1925254    85%    /data/oradata
/dev/md/dsk/d26       122847    1041  109522     1%    /data/qca

=== "disk_util" completed successfully
```

You have completed this procedure.

Replacing a DVD drive on an SPFS-based server

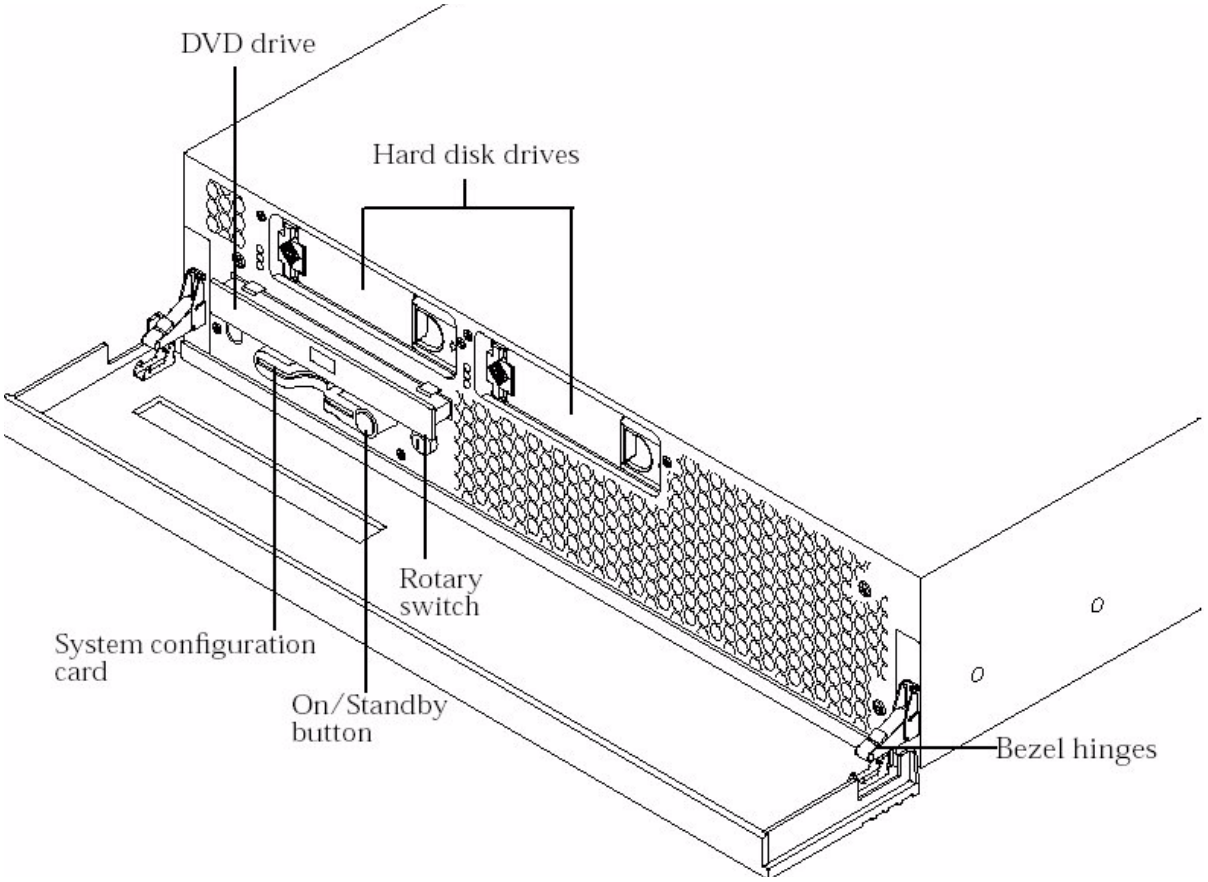
Application

Use this procedure to replace a DVD drive on a Netra 240 server. This procedure applies to simplex and high-availability (HA) systems. An HA system refers to a Sun Netra 240 server pair.

ATTENTION

The DVD drive is not hot-swappable. The server must be powered down. Therefore, ensure the server can be powered down before you proceed with the procedure.

The following figure shows the location of the DVD drive on the Netra 240.



Use one of the methods below according to your office configuration:

- Simplex configuration (one server)
- High-availability configuration (two servers)

Prerequisites

None.

Action

Simplex configuration (one server)

At your workstation

1 Power down the server. Refer to procedure Shutting down an SPFS-based server on page 188 if required.

2 Physically replace the DVD drive using the Sun documentation for the Netra 240.

3 Once the new DVD drive is in place, restore power to the server by turning on the power at the circuit breaker panel of the frame. The server recovers on its own once power is restored.

4 You have completed this procedure.

High-availability configuration (two servers)

At your workstation

1 Use the following table to determine your first step.

If you are replacing the DVD drive on the	Do
active server	step 2
inactive server	step 3

2 Initiate a manual failover. Refer to procedure Initiating a manual failover on a Sun Netra 240 server pair on page 217 if required.

3 Once the active server acquires the status of standby (inactive), power down the server. Refer to procedure Shutting down an SPFS-based server on page 188 if required.

4 Physically replace the DVD drive using the Sun documentation for the Netra 240.

5 Once the new DVD drive is in place, restore power to the server by turning on the power at the circuit breaker panel of the frame. The server recovers on its own once power is restored.

6 You have completed this procedure.

Initiating a manual failover on a Sun Netra 240 server pair

Application

Use this procedure to initiate a manual failover on a Sun Netra 240 server pair. Initiating a manual failover can be required in the following situations:

- general maintenance
- software update without a data schema or configuration change

The failover causes the standby (inactive) server to take over and start providing OAM&P services as the new active server.

ATTENTION
During an automatic or manual failover, the high-availability (HA) cluster takes approximately 5 minutes to failover and bring up the standby node to Active state.

Prerequisites

You must perform this procedure on the active node.

Action

Perform the following steps to complete this procedure.

ATTENTION
Perform the steps that follow on the Active server.

At the active node console

1 Log in to the active node through the console (port A) using the root user ID and password.

Note: Ensure you are on the Active server by typing ubmstat. If *ClusterIndicatorSTBY* is displayed in the response, which indicates you are on the Inactive server, log out of that server and log in to the other server in the pair. The response must display *ClusterIndicatorACT*, which indicates you are on the Active server.

2 Initiate the manual failover by typing

```
# swact
```

and pressing the Enter key.

Example response

```
Are you sure you want to initiate a cluster
failover? [Y/N]
```

3 If it is acceptable to initiate a manual failover, indicate you want the failover to occur by typing

y

and pressing the Enter key.

You have completed this procedure.

Viewing customer logs on an SPFS-based server

Application

Use this procedure to view customer logs for the following components:

- Succession Element and Sub-element Manager (SESM)
- Gateway Controller (GWC)
- Media Gateway 9000 (MG 9000)
- Server Platform Foundation Software (SPFS)

Customer logs reside in directory /var/log on the server. For details on customer logs, refer to the Carrier Voice over IP Fault Management Log Reference document, NN10275-909.

Prerequisites

None

Action

Perform the following steps to complete this procedure.

At your workstation

1 Telnet to the server by typing

```
> telnet <IP address>
```

and pressing the Enter key.

where

IP address
is the IP address of the SPFS-based server

2 When prompted, enter your user ID and password.

3 Access the directory where the customer log files reside by tying

```
$ cd /var/log
```

and pressing the Enter key.

4 List the directory content by typing

```
$ ls
```

and pressing the Enter key.

The customer log files are appended with numbers, for example “customerlog.0”. The files with the lower numbers are the newer files.

5 Use the following table to determine your next step.

If you want to	Do
view the entire content of a log file	substep a only
view specific content of a log file	substep b only

a View the entire content of a log file by typing

```
$ cat <log_filename> |more
```

and pressing the Enter key.

where

log_filename
is the name of the customer log file you want to view.

Example
```
$ cat customerlog.0 |more
```

b View specific content of the log file by typing

```
# cat <log_filename> |grep <search_string>
```

and pressing the Enter key.

where

search_string
is the text you want to search for.

Example
```
$ cat customerlog.0 |grep SPFS350
```

6 To print the contents of this file, contact your site system administrator for assistance with using UNIX print commands and with locating a printer connected to your network.

7 You have completed this procedure.

Performing a manual backup of the remote server

Target

Use this procedure to perform a remote backup of the remote server for the HA cluster it will emulate in the event of an extended outage. Backing up the remote server provides a standby backup system which is ready to provide service if the primary system is unavailable for an extended period of time. The remote server can assume the identity of the primary server with data and files accurate to the last synchronization.

Action

Performing a manual backup of the remote server

At your workstation or the remote server console

1 Determine how to log in to the Sun Netra 240 (N240) server that is installed as the remote backup server

If you want to log in by means of	Do
ssh	Type ssh <server> and press the Enter key. Go to step 2
telnet	Type telnet <server> and press the Enter key. Go to step 2
the remote server console	step 2

where

<server>
is the name of the N240 server.

2 When prompted, enter the root user ID and password.

3 Start the command line interface tool by entering:

```
cli
```

The system responds by displaying a menu.

4 Select the Configuration menu.

The system displays the Configuration menu.

5 Select the Remote Backup option.

Response:

```
Remote Backup Configuration

1-rbackup_display (Display Remote Backup
Configuration)

2-rbackup_config (Remote Backup Configuration)

3-rbackup_exec (Execute Remote Backup Now)

X-exit
```

6 Select:

3-rbackup_exec (Execute Remote Backup Now)

7 A backup will now automatically be made.

8 Exit the Remote Backup Configuration level by typing:

X

and pressing the Enter key.

9 The procedure is complete.

Scheduling automatic backups of the remote server

Target

Use this procedure to schedule automatic backups from the remote server. Backing up the primary server provides a standby backup system which is ready to provide service if the primary system is unavailable for an extended period of time. The remote server can assume the identity of the primary server with data and files accurate to the last synchronization.

Action

Scheduling automatic backups of the remote server

At your workstation or the remote server console

1 Determine how to log in to the Sun Netra 240 (N240) server that is installed as the remote backup server

If you want to log in by means of	Do
ssh	Type ssh <server> and press the Enter key. Go to step 2
telnet	Type telnet <server> and press the Enter key. Go to step 2
the remote server console	step 2

where

<server>
is the name of the N240 server.

2 When prompted, enter the root user ID and password.

3 Start the command line interface tool by entering:

```
cli
```

The system responds by displaying a menu.

4 Select the Configuration menu.

The system displays the Configuration menu.

5 Select the Remote Backup option.

Response:

```
Remote Backup Configuration
```

```
1-rbackup_display (Display Remote Backup
Configuration)

2-rbackup_config (Remote Backup Configuration)

3-rbackup_exec (Execute Remote Backup Now)

X-exit
```

6 Select:

`2-rbackup_config (Remote Backup Configuration)`

The system responds with the IP address of the primary server that is currently configured as the remote server, and the times that are currently configured for automatic backups.

7 Enter the unit 0 IP address of the primary server to be backed up.

Response:

```
<nnn.nnn.nnn.nnn> is alive
```

where

<nnn.nnn.nnn.nnn>
is the IP address that you entered

8 Use the following table to determine your next step.

If the system	Do
prompts you to accept the ssh key	Enter yes. Go to step 9
does not prompt you to accept the ssh key	Go to step 9

Response:

```
Enter a time for a daily backup to occur
(HH:MM):
```

where

HH
is hours. Valid values are 00 to 23.

MM
are minutes. Valid values are 00 to 59.

9 Enter the first time for a daily backup to occur

Note: You can configure up to four times for daily backup to occur.

Response:

```
Enter a second time for a daily backup to occur
(HH:MM) or enter "x" to stop provisioning backup
times:
```

10 Use the following table to determine your next step.

If you	Do
want to enter another time for a remote backup to occur	Enter a second time for a daily backup to occur. Go to step 11
do not want to enter another time for a remote backup to occur	Enter x. Go to step 13

11 Use the following table to determine your next step.

If you	Do
want to enter another time for a remote backup to occur	Enter a third time for a daily backup to occur. Go to step 12
do not want to enter another time for a remote backup to occur	Enter x. Go to step 13

12 Use the following table to determine your next step.

If you	Do
want to enter another time for a remote backup to occur	Enter a fourth time for a daily backup to occur. Go to step 13
do not want to enter another time for a remote backup to occur	Enter x. Go to step 13

13 Use the following table to determine your next step.

If you want to	Do
commit changes	Go to step 14
exit	Enter quit. Go to step 15
re-enter settings	Enter anything other than ok or quit. Go to step 9

14 Enter

ok

Response:

```
=== "rbackup_config"completed successfully
```

15 Exit the Remote Backup Configuration level by typing

x

and pressing the Enter key.

16 The procedure is complete.

Viewing configuration information for remote server backups

Target

Use this procedure to view the current configuration information for remote server backups. The system displays the IP address of the target system that is configured as the remote server, and the times at which automatic backups of the target system occur.

Action

Viewing configuration information for remote server backups

At your workstation or the remote server console

1 Determine how to log in to the Sun Netra 240 (N240) server that is installed as the remote backup server

If you want to log in by means of	Do
ssh	Type ssh <server> and press the Enter key. Go to step 2
telnet	Type telnet <server> and press the Enter key. Go to step 2
the remote server console	step 2

where

<server>
is the name of the N240 server.

2 Start the command line interface tool by entering:

```
cli
```

The system responds by displaying a menu.

3 Select the Configuration menu.

The system displays the Configuration menu.

4 Select the Remote Backup option.

Response:

```
Remote Backup Configuration

1-rbackup_display (Display Remote Backup
Configuration)

2-rbackup_config (Remote Backup Configuration)
```

```
3-rbackup_exec (Execute Remote Backup Now)
X-exit
```

5 Select

1-rbackup_display (Display Remote Backup Configuration)

Response:

```
Current settings:
Target system is: <nnn.nnn.nnn.nnn>
Back up times are: <Time 1>...<Time n>
```

where

<nnn.nnn.nnn.nnn>
is the IP address of the remote server

<Time 1>... <Time n>
is the set of times at which automated backups occur

6 Exit the Remote Backup Configuration level by typing

X

and pressing the Enter key.

7 The procedure is complete.

Viewing logs from a remote backup

Target

Use this procedure to view logs associated with a backup of the remote server. Logs are created during automatic and manual backups of the remote server.

Action

Viewing logs from a remote backup

At your workstation or the remote server console

1 Determine how to log in to the Sun Netra 240 (N240) server that is installed as the remote backup server

If you want to log in by means of	Do
ssh	Type ssh <server> and press the Enter key. Go to step 2
telnet	Type telnet <server> and press the Enter key. Go to step 2
the remote server console	step 2

where

<server>
is the name of the N240 server.

2 Enter:

```
less /var/adm/messages
```

The system responds by displaying the contents of the log file.

3 The procedure is complete.